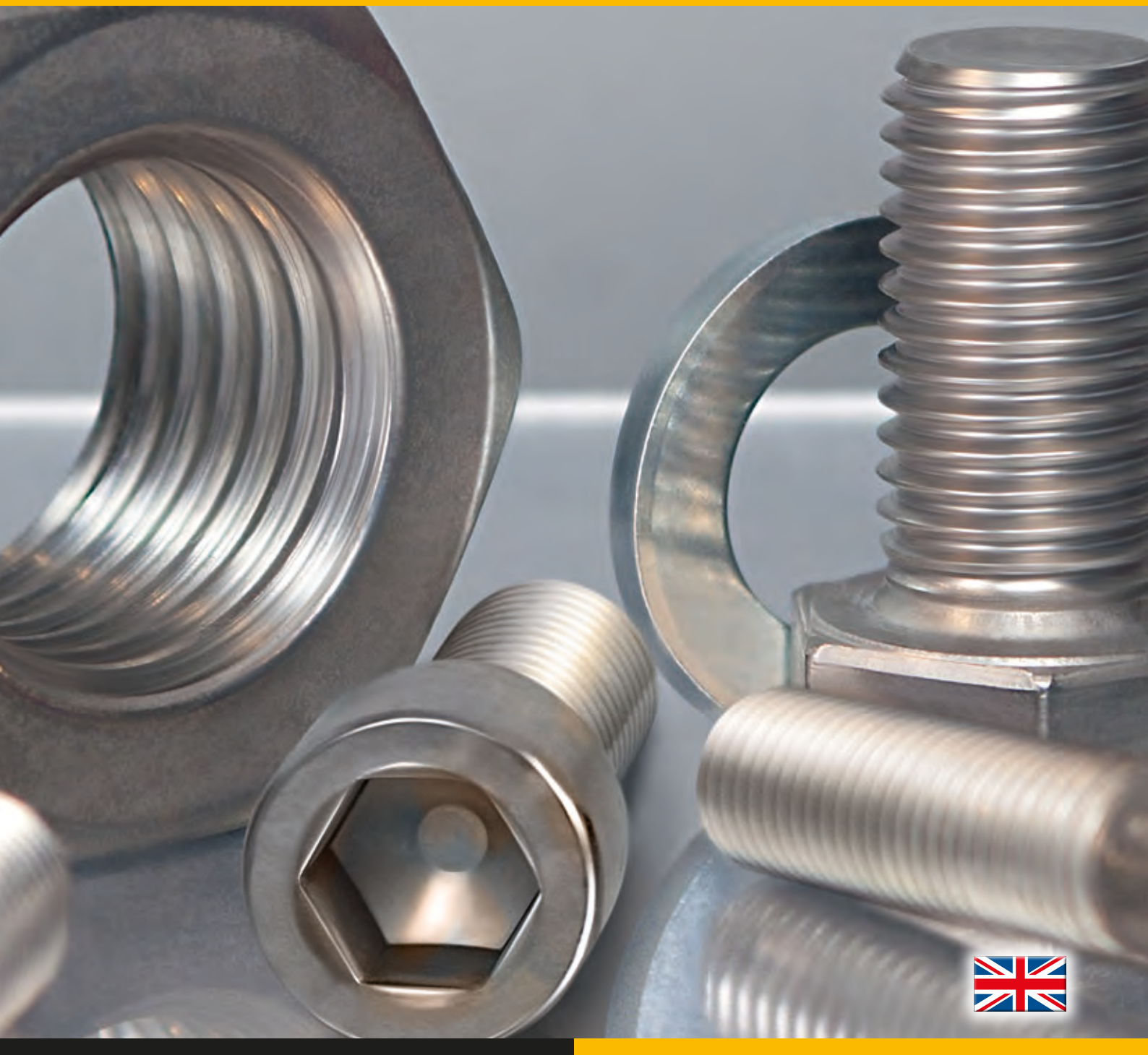
REYHER®

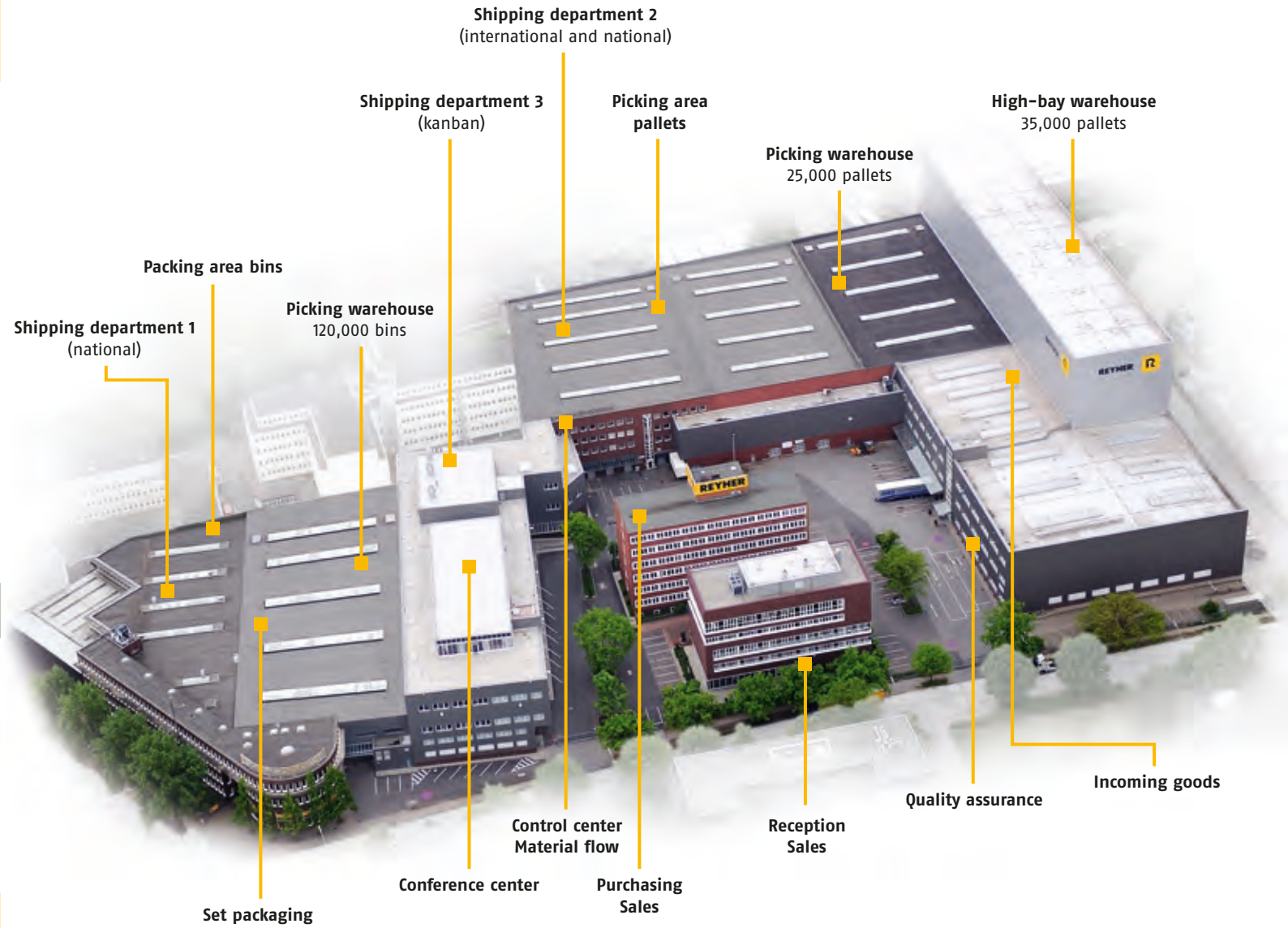
FASTENERS AND FIXING TECHNOLOGY

THE CATALOGUE



Extensive product variety + reliable quality + excellent fill-rate
+ fully automated warehouse logistics + reliable delivery system
= **dependable supply with REYHER**

CENTRAL LOCATION IN HAMBURG



"We always act in the interest of our customers."

Overview catalogue groups

- The REYHER catalogue is sorted in ascending order according to DIN-, ISO- and EN-numbers, afterwards according to article numbers.
- REYHER fixing technology is divided in part 4 according to functional groups.

CATALOGUE GROUP 1 **PAGE 59–426**

Fasteners made of steel, plain/coated steel acc. to DIN, ISO, EN and not standardised products

- Steel zinc plated, hot dip galvanized
- Steel mechanical zinc plated
- Steel zinc flake coating
- Steel nickel plated, chromium plated
- Steel brass plated, browned
- Spax screws
- Assortments and tool boxes

CATALOGUE GROUP 2 **PAGE 427–564**

Fasteners made of stainless steel acc. to DIN, ISO, EN and not standardised products

- Screws/bolts/rods/studs
- Nuts
- Washers
- Accessories

CATALOGUE GROUP 3 **PAGE 565–598**

Fasteners made of non-ferrous materials acc. to DIN, ISO, EN and not standardised products

- Brass, coated brass
- Copper, bronze
- Aluminium, coated aluminium
- Titanium
- Plastic

CATALOGUE GROUP 4 **PAGE 599–646**

- Cable ties and accessories
- LINDAPTER fastener and fixing systems
- Plugs and anchors
- Cam segments and adjusting washers for diagonal tension anchors
- MULTI-MONTI screw-in-anchors
- Assembly tools – bits, wrench keys
- Drills, blind rivet systems

TECHNICAL INFORMATION TI **PAGE 1–248**

Technical Information TI

Contents at a glance

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NEW PRODUCTS 4

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- Non-standard accessories 35–38

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PART 1 – GREEN PAGES 59–426
Fasteners made of steel
- plain/coated

PART 2 – BLUE PAGES 427–564
Fasteners made of stainless steel

PART 3 – YELLOW PAGES 565–598
Fasteners made of non-ferrous materials

PART 4 – ORANGE PAGES 599–646
Fixing technology

RED PAGES
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OUR SERVICES FOR YOU

High-quality awareness

Our requirements for product quality are very high, as is our selection of suppliers. Around 1,300 suppliers fulfil the quality criteria adhering to our Code of Conduct. In order to offer you consistently high quality, we check products as they arrive in-house using the latest methods and technology.

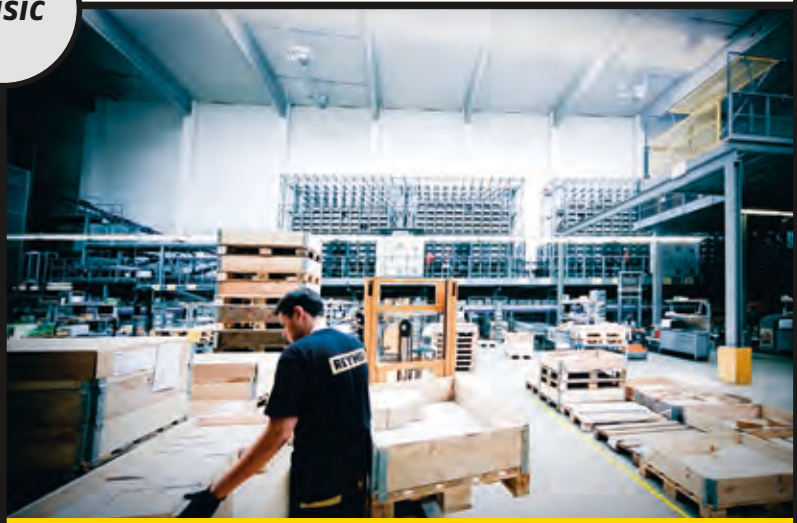
C-parts management & customer-specific parts

With optimum solutions provided by our intelligent C-parts management we reduce our customers' procurement activities. We carry out all your materials procurement, storage and delivery. We offer this service for both standard parts and customer-specific parts which we have manufactured exclusively for our clients.

Basic

Wide range of stock

In total, 130,000 different items are available on stock, which are ready for immediate delivery. Our stock includes 80,000 items from our catalogue available in all dimensions and surfaces, as well as fixing technology. In addition we stock approximately 50,000 customer-specific items ready for call-up.



Fully automated warehouse logistics

About 600 employees work at the central site in Hamburg with individual, flexible solutions and a daily fill-rate of over 99% providing a reliable supply of C-parts worldwide.

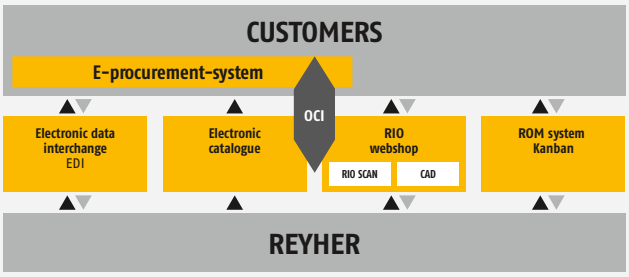
Technical competence

Our experienced engineers and technicians in the REM – REYHER Engineering Management team handle all technical matters and details concerning fasteners and fixing technology. Our technical expertise is always cutting-edge. This benefits our customers, who we are happy to consult with at any time and instruct in our training sessions.

Individual kitting

RKP – REYHER Kitting & Packaging satisfies customer needs in industry and commerce. This includes designing retail packaging and labels, compiling sets into complex kits, as well as deliveries to construction sites, barcode delivery notes and KLT bin management. Our customers' specific needs require our tailor-made solutions.

Special



RIO®
REYHER INTERNET ORDER

Diverse e-business solutions

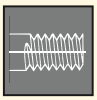
RIO – REYHER Internet Order webshop ordering via barcode, electronic data interchange (EDI) or electronic catalogue – we offer a comprehensive service, working with you to optimise your ordering process.

Flexible kanban supply system

Using ROM – REYHER Order Management provides our customers the most reliable supply procedures. Combinable modules, RFID technology, barcode systems, flexible labels and modern data interchange form an all-round carefree package for seamless materials supply. Adapted precisely and flexibly to meet individual customer needs.

New products in the catalogue

■ Inch dimension fasteners



The comprehensive extension includes screws, nuts and washers with UNC and UNF thread/dimensions in a variety of sizes and finishes.

→ Articles 83125 to 83936

■ Bumax range – high strength stainless steel products

The rust-free stainless steel products in Bumax classes 88 and 109, identical to strength classes 8.8 and 10.9

→ BUMAX 88 ~ DIN 938, DIN 976, ISO 4014, ISO 4017, ISO 4032, ISO 4762, ISO 7089

→ BUMAX 109 ~ ISO 4014, ISO 4017, ISO 4032, ISO 4762, ISO 7089

■ Extension of the product groups with zinc laminated coating

Zinc laminated coatings are the solution for corrosion-resistant coatings, which can also be used at higher temperatures.

→ DIN 471 snap rings (retaining rings) for shafts

→ DIN 472 snap rings (retaining rings) for drilled holes

→ ISO 4762 (DIN 912) hexagon socket head cap screws, 12.9

→ RIPP and corrugated-head screws and nuts, articles 88912, 88913, 88914, 88933, 88934

■ Articles from the material 1.7218 (25CrMo4)

These products are in accordance with the pressure equipment directive from the material 1.7218 and are stocked with acceptance test certificate 3.1 available.

→ ISO 4014 head bolts/screws with shank

→ ISO 4017 fully threaded head bolts/screws

→ ISO 4032 hexagon nuts

■ ISO articles in accordance with AD-W2

Fasteners for pressure vessel construction in accordance with AD-W2 in A2-70 and A4-70

→ ISO 4014 head bolts/screws with shank

→ ISO 4017 fully threaded head bolts/screws

→ ISO 4032 hexagon nuts

■ Articles for the steel construction in accordance with EN 15048

Articles with additional identification SB for structural bolting are galvanized or available hot-dip galvanized in class 8.8

→ ISO 4014/ISO 4032 hexagon bolts/screws with shank and nut

→ ISO 4017/ISO 4032 fully threaded hexagon bolts/screws with shank and nut

■ Product extensions – strength, material/surface, forms

→ DIN 580 lifting eye bolts, hot-dip galvanized

→ DIN 582 ring nuts, hot-dip galvanized

→ DIN 609 hexagon fit bolts with threaded plug, 10.9

→ DIN 610 hexagon fit bolts with short threaded plug, 10.9

→ DIN 3017 hose clamps in B1 and C1 forms

→ DIN 960 head bolts/screws with shank, up to M 42

→ ISO 961 fully threaded head bolts/screws up to M 36

■ Locking elements

→ BILOC clip nuts

→ Nord-Lock X series

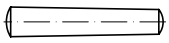
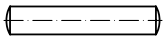
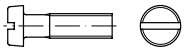
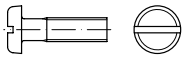
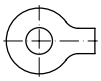
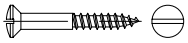
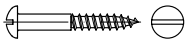
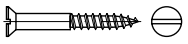
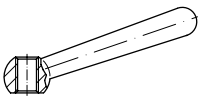
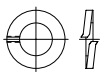
→ LOCKTIX® thread lock

■ Fixing technology

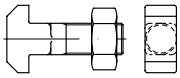
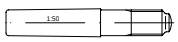
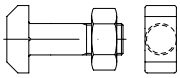
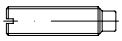
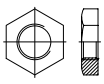
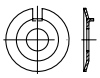
Multi-range blind rivet nuts → articles 88490 to 88491

Monel pop rivet → article 88493

fischer Einfach. Sicher. upat HellermannTyton lindapter

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 1 (ISO 2339**)		Taper pins	59	427			115
DIN 7 (ISO 2338**)		Parallel pins	60	427			114
DIN 84 (ISO 1207**)		Slotted cheese head screws	61	429	565		37
DIN 85 (ISO 1580**)		Slotted pan head screws	63	431	566		37
~DIN 93		Tap washers with a long tap	64	432			88
DIN 94 (ISO 1234*)		Split pins	65	433	566		120
DIN 94		Article 82094 Split pins assortment	66				
DIN 95		Slotted raised countersunk head wood screws	66	433	567		51
DIN 96		Slotted round head wood screws	66	434	568		51
DIN 97		Slotted countersunk head wood screws	66	434	569		51
		SPAX and chipboard screws	406	555			52
DIN 98		Rotatable ball handles	67				123
DIN 99		Tapered handles	67	435			123
DIN 125 (ISO 7089**) (ISO 7090**)		Plain washers, product grade A	67	435	569		84
DIN 125 125/127		Article 82125/Article 82127 Washers assortment Washers and spring lock washers assortment	68 71				
DIN 126 (ISO 7091*)		Plain washers, product grade C	70 407				84
		Article 88100 Plain washers ("type 1")	407				84
~DIN 127		Spring lock washers	70	436	571		88

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
		Article 88123–88129 TECKENTRUP lock washers for hexagon head screws and hexagon socket head cap screws	411	558			104
		Article 88130/88131 Lock rings	412	559			104
~DIN 128		Spring lock washers	72	437			89
~DIN 137		Spring washers	73	437			89
DIN 186		T-head bolts with square neck	74				29
DIN 258		Taper pins with external thread, constant taper length	74				116
DIN 261		T-head bolts	75				29
DIN 315		Wing nuts, rounded or edged wings	75	438	571		70
		Article 88215 Wing nuts, small "American" type	75	438			77
DIN 316		Wing screws, rounded or edged wings	75	439	571		29
DIN 319		Ball knobs			571		123
DIN 404		Slotted capstan screws	76	439			29
DIN 417 (ISO 7435*)		Slotted grub screws with full dog point	76				19
DIN 427 (ISO 2342*)		Slotted headless screws with chamfered end	76	439			19
DIN 431		Pipe nuts	77	439	572		59
~DIN 432		Washers with external tap	77	440			90

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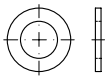
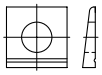
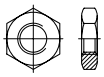
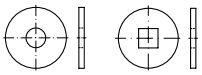
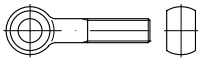
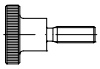
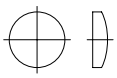
*** Standard conversion DIN : ISO → red pages/ „Technical Information“

Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

DIN/ISO/EN

Standardized Products

		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 433 (ISO 7092**)	 Washers for cheese head screws	78	440	572		84
DIN 434	Square taper washers for U beams (taper 8 %)	78	440			86
DIN 435	 Square taper washers for double-T beams (taper 14 %)	78	440			86
DIN 436	Square washers	79	440			86
DIN 439 (ISO 4035/ 8675***)	 Hexagon thin nuts	79	441	572		62
DIN 440 (ISO 7094**)	 Washers for wood constructions	81	441			84
DIN 443	Sealing push-in type caps	81				111
DIN 444	 Eye bolts	82	442	572		30
DIN 462	Internal tab washers	83				90
~DIN 463	Washers with 2 taps	83	442	573		91
DIN 464	 Knurled thumb screws	84	443	573		30
DIN 466	Knurled nuts, high type	84	443	573		70
DIN 467	Knurled nuts, low type	85	443	573		70
DIN 470	 Sealing discs	85				111
DIN 471	Retaining rings for shafts, normal type, heavy type	85	443			91
DIN 471	Article 82471 Assortment of retaining rings for shafts	86				

* DIN : ISO identical = interchangeable

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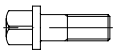
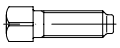
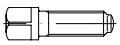
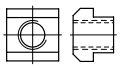
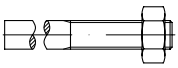
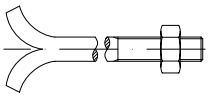
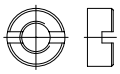
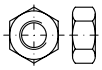
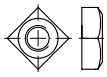
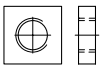
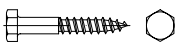
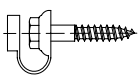
*** Standard conversion DIN : ISO → red pages/ „Technical Information“

Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

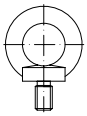
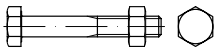
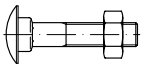
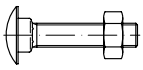
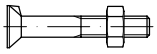
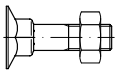
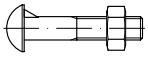
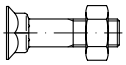
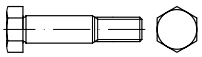
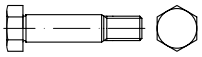
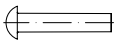
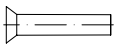
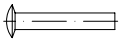
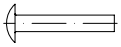
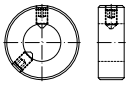
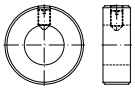
DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 472		Retaining rings for bores		86	443			95
DIN 478		Square head bolts with collar		87				30
DIN 479		Square head bolts with dog point		87				30
DIN 480		Square head bolts with collar, short dog point and rounded end		88				31
DIN 508		T-slot nuts		88				69
DIN 525		Studs for welding		88				31
DIN 529		Masonry bolts (anchor bolts)		88				31
DIN 546		Slotted round nuts		88	444	573		70
DIN 551 (ISO 4766*)		Slotted grub screws with flat point		89	444	573		19
DIN 553 (ISO 7434*)		Slotted grub screws with cone point		90	444	574		19
DIN 555 (ISO 4034***)		Hexagon nuts	WW	90		574		61
DIN 557		Square nuts		91	445			81
DIN 561		Hexagon head set screws with dog point		91				16
DIN 562		Square thin nuts		92	445			82
DIN 564		Hexagon head set screws with short dog point and flat cone end		93				16
DIN 571		Hexagon head wood screws		93	445			51
		Article 88005 Plastic sealings/caps for hexagon head, wood screws for corrugated roof panels				596		51

* DIN : ISO identical = interchangeable

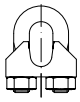
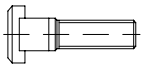
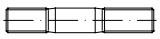
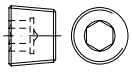
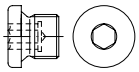
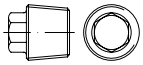
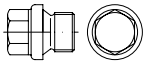
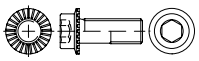
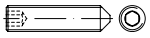
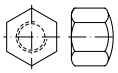
** DIN : ISO/EN mostly interchangeable

*** Standard conversion DIN : ISO → red pages/ „Technical Information“

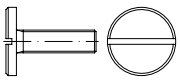
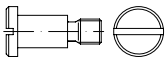
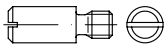
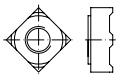
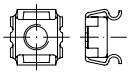
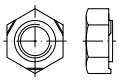
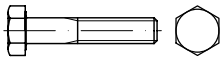
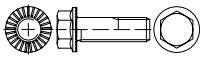
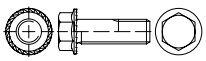
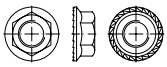
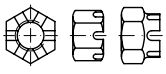
Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 580		Lifting eye bolts	94	446			32 148
DIN 582		Lifting eye nuts	95	446			75 148
DIN 601 (ISO 4016***)		Hexagon head bolts	95				15
DIN 603		Cup head square neck bolts	99	447	574		32
DIN 603		Cup head square neck bolts, thread up to square neck	101				32
DIN 604		Flat countersunk nib bolts	101				32
DIN 605		Flat countersunk square neck bolts	102				33
DIN 607		Cup head nib bolts	102				33
DIN 608		Flat countersunk square neck bolts with short square	102				33
DIN 609		Hexagon fit bolts with long thread	102				16
~DIN 610		Hexagon fit bolts with short thread	103				17
DIN 653		Knurled thumb screws, low type	104	448			33
DIN 660 (ISO 1051*)		Round head rivets	105	448	574		131
DIN 661 (ISO 1051*)		Countersunk head rivets	105	448	575		131
DIN 662 (ISO 1051*)		Mushroom head rivets (sheet metal rivets)	106		576		131
DIN 674 (ISO 1051*)		Flat round head rivets	106				131
~DIN 703		Adjusting rings, heavy range	106				109
DIN 705		Adjusting rings, light range	106	448			110

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
~DIN 741		U-bolt wire rope grips		107	449			130
DIN 787		T-slot screws		107				34
DIN 835		Studs, metal end ≈ 2 d		107	449			18
DIN 906		Hexagon socket pipe plugs with taper thread		107	449	576		22
DIN 908		Hexagon socket screw plugs with cylindrical thread		108	449	577		22
DIN 909		Hexagon head pipe plugs with taper thread		109				23
DIN 910		Hexagon head screw plugs with cylindrical thread		109	450	577		23
DIN 911 (ISO 2936*)		Hexagon socket screw keys (socket wrenchs)		110				
DIN 912 (ISO 4762*)		Hexagon socket head cap screws	M UNC	110 390	450			12
~DIN 912 (ISO 12474*)		Hexagon socket head cap screws with thread up to head, with fine pitch thread		110	450			12
~DIN 912 ISR (ISO 14579)		Hexalobular socket head cap screws		116				12
		Article 88912 Hexagon socket cap screws with flange, lock ribs under the flange		418				28
DIN 913 (ISO 4026*)		Hexagon socket set screws with flat point		128	454			20
DIN 914 (ISO 4027*)		Hexagon socket set screws with cone point		131	455			20
DIN 915 (ISO 4028*)		Hexagon socket set screws with full dog point		132	456			20
DIN 916 (ISO 4029*)		Hexagon socket set screws with cup point		133	456			21
DIN 917		Hexagon cap nuts, low type		135	457	577		61

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

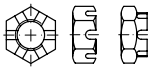
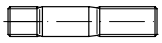
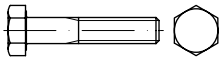
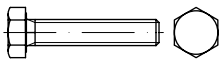
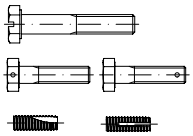
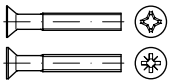
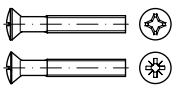
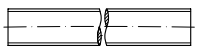
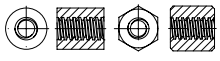
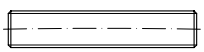
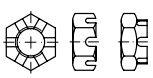
DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 920		Slotted small cheese head screws		135				37
DIN 921		Slotted large cheese head screws		135	458			38
DIN 923		Slotted cheese head shoulder screws		136	458			38
DIN 927		Slotted shoulder screws		136				38
DIN 928		Square weld nuts		137				69
		Article 88109 Square caged nuts		409				76
DIN 929		Hexagon weld nuts		137	458			69
DIN 931 (ISO 4014***)		Hexagon head bolts with shank	M UNC	137 386	458	577		15 16
DIN 933 (ISO 4017***)		Hexagon head screws with thread up to head	M UNC	148 387	462	577		15 16
DIN 933		Slotted hexagon head screws		156				15
		Article 88913 Hexagon head screws with flange and lock ribs		418				28
		Article 88933 Hexagon head locking screws with flange		420				28
		Article 88914 Hexagon nuts with flange and lock ribs		420				68
		Article 88934 Hexagon locking nuts		421				69
DIN 934 (ISO 4032, 4033*** 8673/8674***)		Hexagon nuts	M WW UNC	160 161 389	466 467 551	578 579		61 60
DIN 934		Article 82934, 82935 Hexagon nut assortment		162				
DIN 935		Hexagon slotted and castle nuts		165	468			65

* DIN : ISO identical = interchangeable

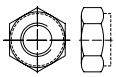
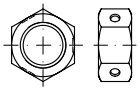
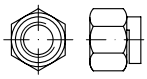
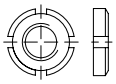
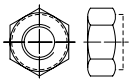
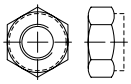
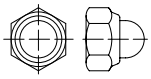
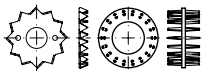
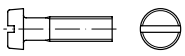
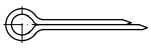
** DIN : ISO/EN mostly interchangeable

*** Standard conversion DIN : ISO → red pages/ „Technical Information“

Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 936 (ISO 4035/ 8675***)		Hexagon thin nuts		166	468	579		62
DIN 937 (→DIN 979)		Hexagon thin slotted and castle nuts		168				65
DIN 938		Studs, metal end ≈ 1 d	AD	169 168	469			18
DIN 939		Studs, metal end ≈ 1,25 d	AD	170 170	470			18
DIN 960 (ISO 8765***)		Hexagon head bolts with shank, with metric fine pitch thread		173				15
DIN 961 (ISO 8676***)		Hexagon head screws with thread up to head, with metric fine pitch thread		175				15
DIN 962		Additional types and finishes for screws/bolts (→ Technical Information)						141
DIN 963 (ISO 2009**)		Slotted countersunk head screws		177	471	580		38
DIN 964 (ISO 2010**)		Slotted raised countersunk head screws		179	473	581		39
DIN 965 (ISO 7046**)		Countersunk head screws with cross recess		180	474			39
~DIN 965 „ISR“		Countersunk head screws with hexalobular socket		181	476			39
DIN 966 (ISO 7047**)		Raised countersunk head screws with cross recess		182	477			39
~DIN 975 DIN 976-1		Threaded rods	1000mm 2000mm WW	182 183 184	478	582		
~DIN 975		Threaded rods with trapezoidal thread		186	478			
		Article 88089, 88090 Nuts with trapezoidal thread, round, hexagon		392	551			64 75
DIN 976-1		Stud bolts		186	479			
DIN 979		Hexagon thin slotted and castle nuts		187				66

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

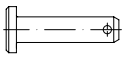
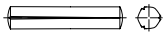
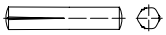
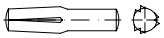
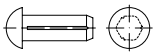
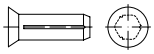
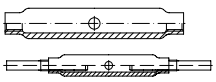
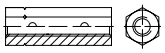
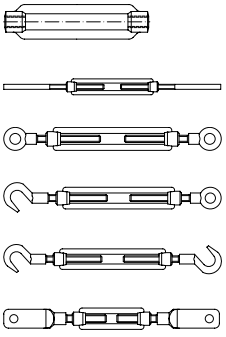
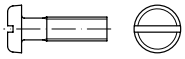
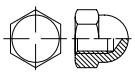
DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 980 (DIN 6925***) (ISO 7042/ 7719/10513)		Prevailing torque type hexagon nuts, all-metal	187	479			66
		Article 84032 Biloc nuts/prevailing torque type hexagon nuts	189	479			61
~DIN 980		Article 88105 THERMAG nuts, prevailing torque type hexagon nuts, all-metal	188				68
DIN 981		Locknuts for rolling bearings	189				71
DIN 982 (DIN 6924***) (ISO 7040/ 7041/10512)		Prevailing torque type hexagon nuts with non-metallic insert (plastic), high type	189	480			66
DIN 983		Retaining rings with lugs for shafts, (retainer rings)	190				98
DIN 985 (DIN 6924***) (ISO 10511/ 10512)		Prevailing torque type hexagon nuts with non-metallic insert (plastic), low type	190	480	582		67
DIN 985		Article 82985 Assortment of prevailing torque type hexagon nuts	190				
DIN 986		Prevailing torque type hexagon domed cap nuts with non-metallic insert	191	480			67
DIN 988		Shim rings/supporting rings	191	481			85
DIN 1052		Timber connectors, spikes one sided or two sided, metal sheet/malleable cast iron	193	481			85
DIN 1052		Washers for timber connectors	193	481			85
ISO 1207 (DIN 84**)		Slotted cheese head screws	194	481	582		37
ISO 1234 (DIN 94*)		Split pins	196	484	584		120
DIN 1440 (ISO 8738**)		Washers for clevis pins, product grade A	197	484			85
DIN 1441		Washers for clevis pins, product grade C	198				85

* DIN : ISO identical = interchangeable

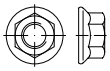
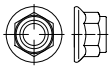
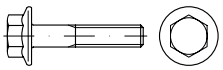
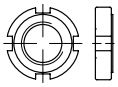
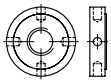
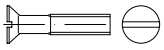
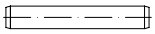
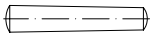
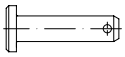
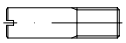
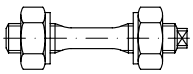
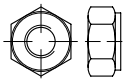
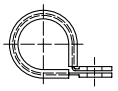
** DIN : ISO/EN mostly interchangeable

*** Standard conversion DIN : ISO → red pages/ „Technical Information“

| Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI |

DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 1444 (ISO 2341**)		Clevis pins with head		199				120
DIN 1471 (ISO 8744**)		Grooved pins, full-length taper grooved		199	484			117
DIN 1472 (ISO 8745**)		Grooved pins, half length taper grooved		200	485			118
DIN 1473 (ISO 8740**)		Grooved pins, full length parallel grooved		200	485			117
DIN 1474 (ISO 8741**)		Grooved pins, half length reverse grooved		201				117
DIN 1475 (ISO 8742/8743)		Grooved pins, third length centre grooved		201				117
DIN 1476 (ISO 8746*)		Grooved pins with round head		202	485	584		118
DIN 1477 (ISO 8747*)		Grooved pins with countersunk head		202				118
DIN 1478		Turnbuckles made from tubes SP = turnbuckles SP-AE = with 2 welding studs	ÜZ	202 203				80
DIN 1479		Hexagon turnbuckles	ÜZ	203 203	486			80
ISO 1479 (DIN 7976*)		Hexagon head tapping screws		203	486			80
DIN 1480		Turnbuckles, forged SP = turnbuckles without accessories SP-AE = with 2 welding studs SP-RR = with 2 eye bolts SP-RH = with eye bolt and hook bolt SP-HH = with 2 hook bolts SP-BS = with 2 flat leaf screws	ÜZ	204 204	486			81
DIN 1481 (ISO 8752**)		Spring type straight pins, heavy duty		205	486			119
DIN 1481		Article 82481 Spring type straight pins assortment		209				
ISO 1580 (DIN 85**)		Slotted pan head screws		209	487	585		37
DIN 1587		Hexagon domed cap nuts, high type		209	488	585		62

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

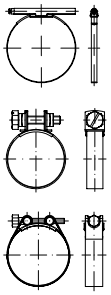
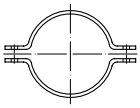
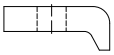
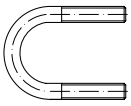
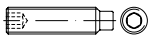
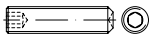
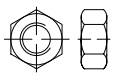
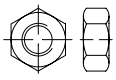
DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
EN 1661 (DIN 6923***)		Hexagon nuts with flange	210	488			63
EN 1663 (DIN 6926**)		Prevailing torque type hexagon nuts with flange and non-metallic insert	210				68
EN 1664 (DIN 6927**)		Prevailing torque type hexagon nuts with flange, all-metal	210				68
EN 1665 (DIN 6921***)		Hexagon bolts with flange	210	489			17
DIN 1804		Slotted round nuts for hook spanner	212	489			72
DIN 1816		Round nuts with set pin holes inside	212				73
ISO 2009 (DIN 963**)		Slotted countersunk flat head screws	212	489	586		38
ISO 2010 (DIN 964**)		Slotted raised countersunk head screws	214	491	587		39
DIN 2093		Disc springs	215	492			142
ISO 2338 (DIN 7**)		Parallel pins	216	492			114
ISO 2339 (DIN 1**)		Taper pins	217	494			115
ISO 2341 (DIN 1444*)		Clevis pins with head	219				120
ISO 2342 (DIN 427*)		Slotted headless screws with shank	219	495			19
DIN 2510		Bolts with waisted shank, with certificate EN 10204/3.2/3.1	220				18, 60
DIN 2510		Hexagon nuts for bolts with waisted shank, with certificate EN 10204/3.1	220				18, 60
DIN 3016		Fastening clamps with rubber profile	221				128

* DIN : ISO identical = interchangeable

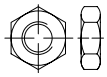
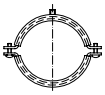
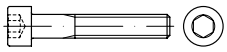
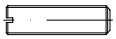
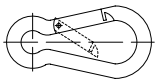
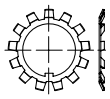
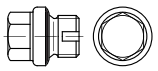
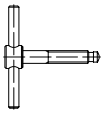
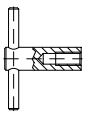
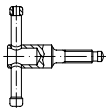
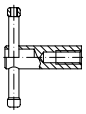
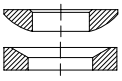
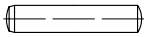
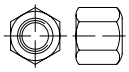
** DIN : ISO/EN mostly interchangeable

*** Standard conversion DIN : ISO → red pages/ „Technical Information“

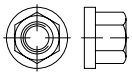
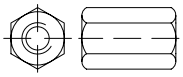
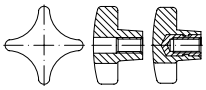
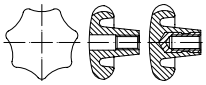
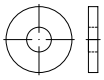
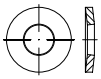
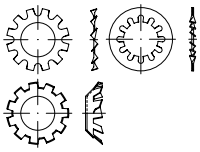
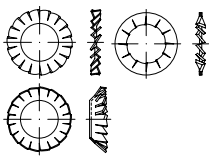
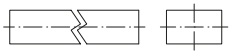
Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 3017		Hose clamps type A = with worm gear drive type B = with fastening lugs type C = with hinge bolts		221	495			81
DIN 3404		Lubricating nipples, button head		222		588		25
DIN 3405		Lubricating nipples, cupped type		222				25
DIN 3567		Pipe clamps		222	496			129
DIN 3568		Clamping plates for pipe fixings		224				129
DIN 3570		Stirrup bolts		224	496			128
ISO 4014 (DIN 931*/***)		Hexagon head bolts with shank	AD DGRL UNC	227 224 226 386	496 498	588		15
ISO 4017 (DIN 933*/***)		Hexagon head screws with thread up to head	AD DGRL UNC	241 241 242 387	502 503	588		15
ISO 4026 (DIN 913*)		Hexagon socket set screws with flat point		257	507			20
ISO 4027 (DIN 914*)		Hexagon socket set screws with cone point		259	509			20
ISO 4028 (DIN 915*)		Hexagon socket set screws with full dog point		260	509			20
ISO 4029 (DIN 916*)		Hexagon socket set screws with cup point		262	510			21
ISO 4032 (DIN 934***)		Hexagon nuts, ISO type 1, coarse thread	AD DGRL UNC	263 264 264 389	511 511	589		61
ISO 4033 (DIN 934***)		Hexagon nuts, ISO type 2, coarse thread, property class 12		268				61

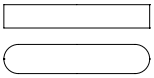
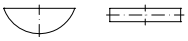
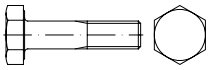
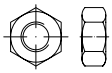
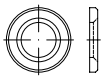
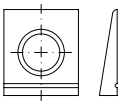
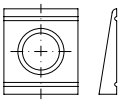
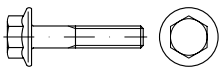
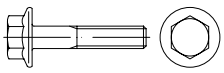
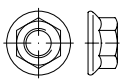
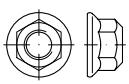
* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products		Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
ISO 4035 (DIN 439/ 936***)		Hexagon thin nuts, chamfered		268	513	590		62
~DIN 4109		Screwed tubular clamps with noise protection inlay		269				129
ISO 4762 (DIN 912*)		Hexagon socket head cap screws	UNC	270 390	513			12
ISO 4766 (DIN 551*)		Slotted grub screws with flat point		287	518	590		19
DIN 5299		Snap hooks, type C		288				130
DIN 5406 MB/MBL		Lockwashers/safety plates for locknuts acc. to DIN 981		288				98
DIN 5586		Hexagon head screw plugs with collar, vent and melted sealing (type B) DIN 910-2, type A		289				24
DIN 6304		Tommy screws with fixed clamping bolt		289				125
DIN 6305		Tommy nuts with fixed clamping bolt		289				125
DIN 6306		Tommy screws with movable clamping bolt		289				126
DIN 6307		Tommy nuts with movable clamping bolt		289				126
DIN 6311		Thrust pads for grub screws with thrust point acc. to DIN 6332		289				126
DIN 6319		Spherical washers type C, Conical seats type D and G		289				111 f.
DIN 6325 (ISO 8734*)		Parallel pins		290				114
DIN 6330		Hexagon nuts with a height of 1,5 d, type B = one spherical bearing face		291	518			62

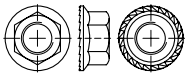
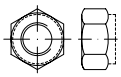
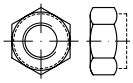
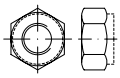
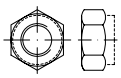
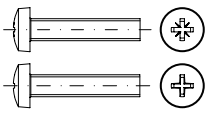
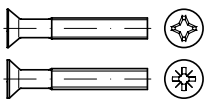
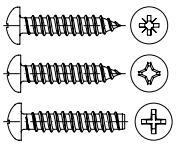
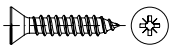
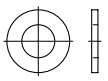
* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 6331		Hexagon nuts with collar, with a height of 1,5 d	291	518			63
DIN 6332		Grub screws with thrust point	292				127
~DIN 6334		Hexagon nuts with a height of 3 d	292	519			63
DIN 6335		Palm grips	292		591		124
DIN 6336		Star grips	292		591		124
DIN 6340		Washers for clamping devices, hardened	292				84
DIN 6796 (ISO 10670**)		Conical spring washers	293	519			
~DIN 6797		Toothed lock washers type A = external teeth type I = internal teeth type V = countersunk	293	519			99
		Article 88123–88126 TECKENTRUP lock washers for hexagon head screws and hexagon socket cap screws	411	558			104
		Article 88129 TECKENTRUP lock washers with contact serrations	412	559			104
~DIN 6798		Serrated lock washers type A = external teeth type I = internal teeth type V = countersunk	294	519	591		99
DIN 6799		Retaining rings for shafts	296	520			100
DIN 6880		Key steel	296				134

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 6885		Parallel keys	296	520			135
DIN 6887		Taper keys with gib head	297				135
DIN 6888		Woodruff keys	298				135
DIN 6899		Thimbles for fibre ropes	298				130
DIN 6911		Hexagon socket screw keys (pin wrenches) with pilot for hexagon socket cap screws acc. to DIN 6912	298				
DIN 6912		Hexagon socket head cap screws with low head and centre	298	521			12
DIN 6914 (→EN 14399)		Hexagon bolts with large head for high-strength structural bolting, system HV	375				57
DIN 6915 (→EN 14399)		Hexagon nuts with large wrench size for high-strength structural bolting, system HV	378				57
DIN 6916 (→EN 14399)		Plain chamfered washers for high-strength structural bolting, system HV	378				58
DIN 6917		Square taper washers for friction grip bolts on double-T beams in steel constructions	301				86
DIN 6918		Square taper washers for friction grip bolts on U beams in steel constructions	301				86
DIN 6921 (EN 1665***)		Hexagon flange bolts	302	522			17
		Article 10105 Hexagon flange bolts acc. to MBN 10105	364				
DIN 6923 (EN 1661***)		Hexagon flange nuts	303	522			63
		Article 13023 Hexagon flange nuts acc. to MBN 13023	371				

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
~DIN 6923		Hexagon locking nuts with flange	303	522			63
DIN 6924 (ISO 7040**/ 10512)		Prevailing torque type hexagon nuts with non-metallic insert (plastic)	303	522			66
DIN 6925 (ISO 7042**/ 10513)		Prevailing torque type hexagon nuts, all-metal	304				66
ISO 7040 (DIN 6924*)		Prevailing torque type hexagon nuts with non-metallic insert (plastic)	305	523			66
ISO 7042 (DIN 6925**)		Prevailing torque type hexagon nuts, all-metal	305	523			66
ISO 7045 (DIN 7985*)		Cheese head screws with cross recess	306	524			40
ISO 7046 (DIN 965*)		Countersunk head screws with cross recess	308	526			39
ISO 7047 (DIN 966**)		Raised countersunk head screws with cross recess	310	528			39
ISO 7049 (DIN 7981*)		Pan head tapping screws with cross recess	310	528			46
ISO 7050 (DIN 7982***)		Countersunk head tapping screws with cross recess, countersunk ⊀ = 90°	312	530			47
ISO 7051 (DIN 7983***)		Raised csk. head tapping screws with cross recess	313	530			47
ISO 7089 (DIN 125**)		Plain washers, normal series, without chamfer, product grade A	313	531			84
ISO 7090 (DIN 125**)		Plain washers, normal series, with chamfer, product grade A	315	532	592		84
ISO 7091 (DIN 126*)		Plain washers, normal series, product grade C	317				84

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*** Standard conversion DIN : ISO → red pages/ „Technical Information“

Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

DIN/ISO/EN

Standardized Products

DIN/ISO/EN	Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
ISO 7092 (DIN 433**)	Plain washers, small series, product grade A	317	532	592		84
ISO 7093 (DIN 9021**)	Plain washers, large series, product grade A	318	533	593		85
ISO 7094 (DIN 440**)	Plain washers, extra large series, product grade C	318	533			84
DIN 7337 (ISO 15973-16585)	Blind rivets → Article 88401-88488				637	200
DIN 7338	Rivets for brake linings and clutch linings			593		132
DIN 7343 (ISO 8750*/ 8751)	Spring-type straight pins, coiled, standard duty	319	533			119
DIN 7344 (ISO 8748**)	Spring-type straight pins, coiled, heavy duty	319				119
DIN 7346 (ISO 13337*)	Spring-type straight pins, slotted, light duty	319				120
DIN 7349	Washers for screws with heavy spring-type straight pins	321	534			85
ISO 7379	Hexagon socket head shoulder screws	322	534			13
ISO 7380-1	Hexagon socket button head screws	322	534			14
ISO 7380-2	Hexagon socket button head screws with flange	323	324			14
~ISO 7380 ISR (ISO 14583)	Hexalobular socket button head screws	323				14
ISO 7434 (DIN 553*)	Slotted grub screws with cone point	324	535	593		19
ISO 7435 (DIN 417*)	Slotted grub screws with full dog point	325				19

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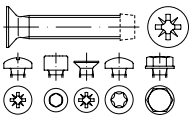
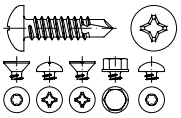
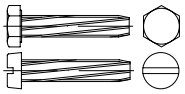
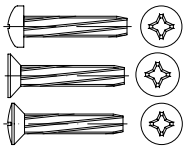
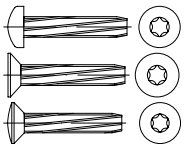
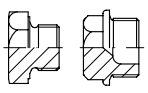
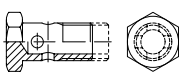
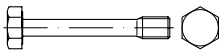
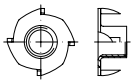
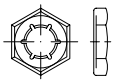
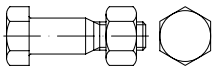
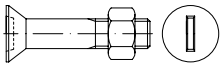
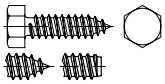
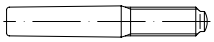
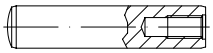
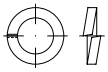
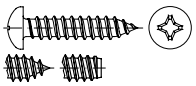
*** Standard conversion DIN : ISO → red pages/ „Technical Information“

Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 7500		Thread rolling screws for ISO metric thread type C = pan head ~type D = hexagon head with collar type E = cylinder head with hexagon socket type M = countersunk head type CE-ISR/PE = pan head, hexalobular socket	325				41
DIN 7504 (ISO 15480-15483)		Drilling screws with tapping screw thread type K = hexagon head with collar type N = pan head type P = countersunk head	327				42
DIN 7513		Thread cutting screws type A = hexagon head type B = slotted cheese head	328				44
DIN 7516		Thread cutting screws with cross recess type A = pan head type D = countersunk head type E = raised countersunk head	329				45
~DIN 7516		Thread cutting screws with hexalobular socket type AE = pan head type DE = countersunk head type EE = raised countersunk head	329				45
DIN 7603		Sealing rings			593		87
DIN 7604		Hexagon head screw plugs with collar	330	535			24
DIN 7643		Hollow screws for ring type banjos	330				34

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
~DIN 7964		Hexagon head screws with waisted shank type D1 = hexagon head acc.to ISO 4014		535			
DIN 7965		Screwed inserts "RAMPA"	330		594		
		Article 88108 Tee nuts with pronge	409				
~DIN 7967		Self locking counter nuts	331	536			67
DIN 7968		Hexagon fit bolts for steel structures	331				56
DIN 7969		Slotted countersunk head bolts for steel structures	332				56
DIN 7976 (ISO 1479**)		Hexagon head tapping screws, type C = cone end, type F = flat end	333	536			46
DIN 7977 (ISO 8737*)		Taper pins with external thread, constant threaded part	333				116
DIN 7978 (ISO 8736*)		Taper pins with internal thread	334				116
DIN 7979 (ISO 8733/ 8735***)		Parallel pins with internal thread	334				115
~DIN 7980		Spring lock washer for cheese head screws	335	536			100
DIN 7981 (ISO 7049**)		Pan head tapping screws with cross recess, type C = cone end, type F = flat end	311 335	537			46
		Article 88981 Cap-head tapping screws	338	538			
~DIN 7981 ISR (ISO 14585)		Pan head tapping screws with hexalobular socket	337 380	550			46
DIN 7982 (ISO 7050***)		Countersunk head tapping screws with cross recess	313 338	538			47
~DIN 7982 ISR (ISO 14586)		Countersunk head tapping screws with hexalobular socket	338 381	550			47
DIN 7983 (ISO 7051***)		Raised countersunk head tapping screws with cross recess	339	539			47

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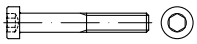
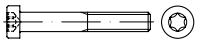
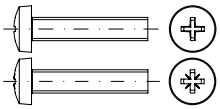
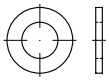
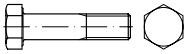
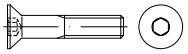
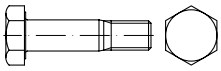
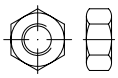
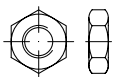
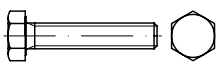
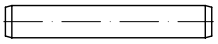
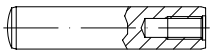
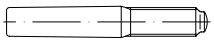
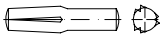
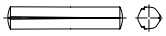
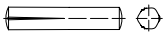
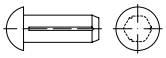
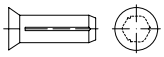
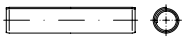
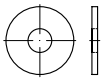
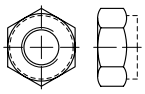
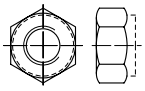
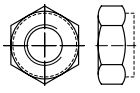
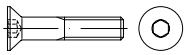
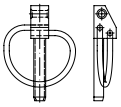
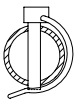
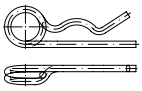
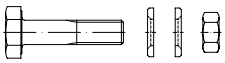
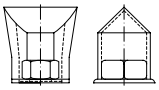
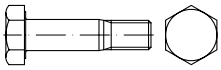
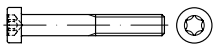
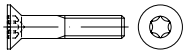
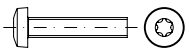
DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 7984		Hexagon socket head cap screws with low head	340	540			13
~DIN 7984 ISR (ISO 14580)		Hexalobular socket head cap screws with low head	341				13
DIN 7985 (ISO 7045**)		Pan head screws with cross recess	342	541			40
~DIN 7985 ISR (ISO 14583**)		Pan head screws with hexalobular socket	344	542			40
DIN 7989		Washers for steel structures	344	543			85
DIN 7990		Hexagon head bolts for steel structures	345				56
DIN 7991 (→ISO 10642)		Hexagon socket countersunk head screws	366	548			14
~DIN 7991 ISR (ISO 14581) (→ISO 10642 ISR)		Hexalobular socket countersunk head screws	368				14
DIN 7993		Snap rings for shafts and bores	346				101
DIN 7999 (→EN 14399-8)		Hexagon fit bolts with large head for high-strength structural bolting, system HV	379				57
DIN 8140		Article 88330-88346 Wire thread inserts, coarse thread, fine pitch thread, with locking		561			150
		Article 88340, 88342 Assortment thread inserts		563			
ISO 8673 (DIN 934***)		Hexagon nuts, ISO type 1, metric fine pitch thread	346	543	594		61
ISO 8675 (DIN 439***)		Hexagon thin nuts with chamfers, metric fine pitch thread	349	543	594		62
ISO 8676 (DIN 961*/***)		Hexagon head screws with thread up to head, metric fine pitch thread	350				15
ISO 8734 (DIN 6325*)		Parallel pins	352				114

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
ISO 8735 (→ DIN 7979***)		Parallel pins with internal thread	334				115
ISO 8736 (DIN 7978*)		Taper pins with internal thread	353				116
ISO 8737 (DIN 7977*)		Taper pins with external thread, constant threaded part	353				116
ISO 8738 (DIN 1440*)		Washers for clevis pins	353	544			116
ISO 8740 (DIN 1473**)		Grooved pins, full length parallel grooved	354	544			117
ISO 8741 (DIN 1474**)		Grooved pins, half length reverse grooved	355				117
ISO 8742 (DIN 1475**)		Grooved pins, third length centre grooved	355				118
ISO 8744 (DIN 1471**)		Grooved pins, full-length taper grooved	356	544			117
ISO 8745 (DIN 1472**)		Grooved pins, half length taper grooved	356	545			117
ISO 8746 (DIN 1476*)		Grooved pins with round head	357	545	594		118
ISO 8747 (DIN 1477*)		Grooved pins with countersunk head	357				118
ISO 8748 (DIN 7344**)		Spring-type straight pins, coiled, heavy duty	357				119
ISO 8750 (DIN 7343**)		Spring-type straight pins, coiled, standard duty	358	545			119
ISO 8752 (DIN 1481**)		Spring type straight pins, heavy duty	358	546			119
ISO 8765 (DIN 960*/***)		Hexagon head bolts with shank, metric fine pitch thread	362				15
DIN 9021 (ISO 7093**)		Plain washers, outside diameter ≈ 3 x d	364	547	595		85
ISO 10511 (DIN 985***)		Prevailing torque type hexagon nuts with non-metallic insert	364	547	595		67
ISO 10512 (DIN 982***)		Prevailing torque type hexagon nuts with non-metallic insert, high type, with metric fine pitch thread	365				66
ISO 10513 (DIN 980***)		Prevailing torque type hexagon nuts with metric fine pitch thread, all metal nuts	365				66

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
ISO 10642 (DIN 7991**)		Hexagon socket countersunk head screws	366	548			14
DIN 11023		Linch pins	370				121
		Article 88023 Linch pins for tubes	370				121
DIN 11024		Spring cotters for a bolt	370	549			121
ISO 12474 (DIN 912*)		Hexagon socket head cap screws with metric fine pitch thread	370				12
ISO 13337 (DIN 7346**)		Spring-type straight pins, slotted, light duty	371				120
EN 14399 -4/-6 (DIN 6914-6916)		Assemblies of hexagon bolts, nuts and washers for high-strength structural bolting, system HV	372				57
		Article 88916 Safety sockets for high-strength structural bolting assemblies	379				58
EN 14399-8 (DIN 7999)		Hexagon fit bolts with large head for high-strength structural bolting, system HV	379				57
ISO 14579 (DIN 912 ISR*)		Hexalobular socket head cap screws	380				12
ISO 14580 (→DIN 7984 ISR*)		Hexalobular socket head cap screws with low head	341				13
~ISO 14581 (ISO 10642 „ISR"**)		Senkschrauben mit Innensechsrund	368				14
ISO 14583 (DIN 7985 ISR)		Cheese head screws with hexalobular socket	380	549			40
ISO 14585 (DIN 7981 ISR)		Pan head tapping screws with hexalobular socket	380	550			46
ISO 14586 (→DIN 7982 ISR)		Countersunk head tapping screws ⊀ = 90°, with hexalobular socket	381	550			47

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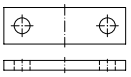
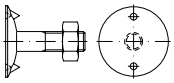
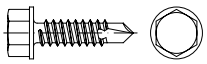
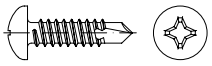
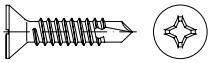
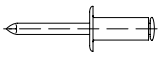
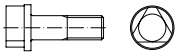
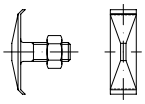
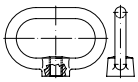
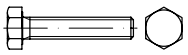
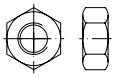
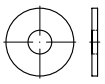
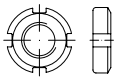
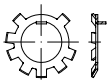
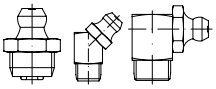
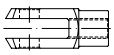
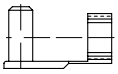
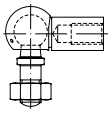
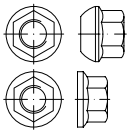
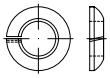
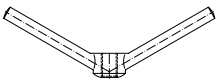
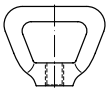
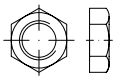
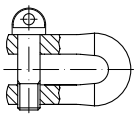
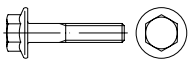
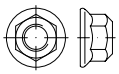
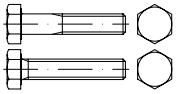
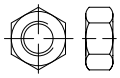
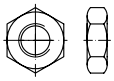
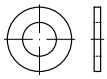
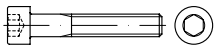
DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 15058		Axle holders (for lifting appliances)	383				134
DIN 15237		Seating screws with cupped washer, for attachment of components to belts	383				35
ISO 15480 (DIN 7504*)		Hexagon washers head drilling screws with tapping screw thread	382				42
ISO 15481 (DIN 7504*)		Pan head drilling screws with tapping screw thread	382				42
ISO 15482 (DIN 7504***)		Countersunk head drilling screws with tapping screw thread, countersunk ⊀ = 90°	383				42
ISO 15975-16858 (DIN 7337)		Blind rivets → Article 88401-88488				637	200
DIN 22424		Triangle head bolts	383				35
DIN 25193		Mushroom head anchor screws	383				35
DIN 28129		Clamp nuts (lifting nuts)	384				127
		Plastic Fasteners					
DIN 34810		Hexagon head screws → DIN 933			578		15
DIN 34814		Hexagon nuts → DIN 555			574		61
DIN 34815		Washers, normal series → DIN 125			571		84
DIN 34816		Washers, large series → DIN 9021			595		

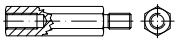
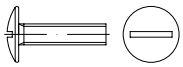
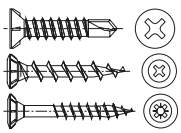
* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

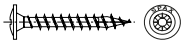
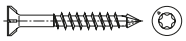
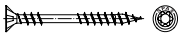
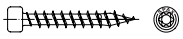
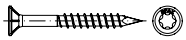
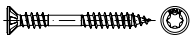
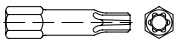
DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
DIN 70852		Locknuts for hook spanners	384				74
DIN 70952		Lockwashers/safety plates for locknuts	384				102
DIN 71412		Lubricating nipples	384	551			25
DIN 71752		Fork joints	385				122
		Article 88752 Spring flap bolts ("ES bolts")	385				122
DIN 71802		Angle joints (ball joints)	385				
DIN 74361		Nuts with spherical collar (type A), Flat collar nuts (type B)	385				63 64
DIN 74361		Spherical springwashers (type C)	385				102
DIN 80701		Butterfly nuts			595		127
DIN 80704		Bow nuts		551	595		127
DIN 80705		Thin hexagonal nuts with small wrench size	385				64
DIN 82101		D-shackles, forged	385				131
MBN 10105		Hexagon head bolts with flange acc. to MBN 10105	364				
MBN 13023		Prevailing torque type hexagon nuts with flange acc. to MBN 13023	371				

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

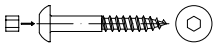
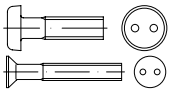
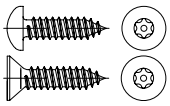
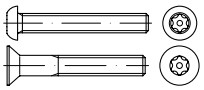
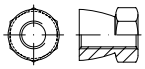
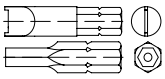
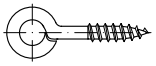
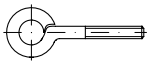
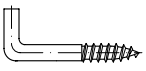
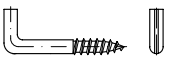
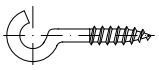
DIN/ISO/EN		Standardized Products	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
		Fasteners acc. to ASME/ANSI standards					
ASME B18.2.1		Hex cap screws with shank/full thread, with UNC/UNF thread	386				16
ASME B18.2.2		Hex nuts with UNC/UNF thread	389	551			69
ASME B18.2.2		Hex jam nuts with UNC/UNF thread	389-390				
ANSI B18.22.1		Plain washers, N = narrow, W = wide	390				85
ASME B18.3		Hexagon socket head cap screws with UNC thread	390				13

* DIN : ISO identical = interchangeable	** DIN : ISO/EN mostly interchangeable	*** Standard conversion DIN : ISO → red pages/ „Technical Information“	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

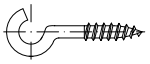
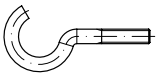
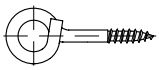
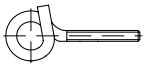
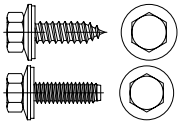
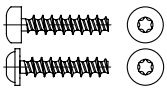
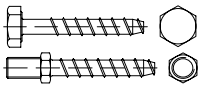
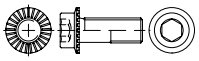
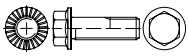
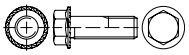
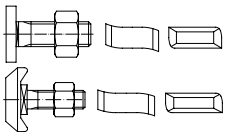
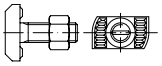
Article-No.		Non Standardized Screws and Bolts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88086		Spacers with thread and with hexagon	391				35
88095 88096 88097		Chipboard screws with Pozidriv cross recess Z – hexalobular socket – pan head – countersunk head	404	554	596		52
88098		Chipboard screws with partial thread, countersunk head, hexalobular socket	406	555			52
88107		Slotted mushroom head screws	408	556			41
	SPAX®						
88099		SPAX chipboard screws with countersunk head, with Pozidriv cross recess Z and center hole	401				
88091		SPAX chipboard screws with countersunk head, with hexalobular socket	392 394	552– 554			
88092		SPAX chipboard screws with raised countersunk head, with Pozidriv cross recess Z, hexalobular socket	396	552			
88093		SPAX chipboard screws with pan head, with Pozidriv cross recess Z, hexalobular socket	397	552			
88094		SPAX chipboard screws with countersunk head, with Pozidrive cross recess Z	398				
88094		SPAX chipboard screws with small countersunk head, with Pozidrive cross recess Z	398				
88187 88188 88189		SPAX window lair screws FEX type A = for fastening metal reinforcements for simple-wall profiles type KS = fitting screws for plastic profiles type H = screws for wooden window frames	403				
88190		SPAX glass strip screws	402	553			
			Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Screws and Bolts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
	SPAX®						
88191		SPAX post screws		553			
88192		SPAX screws with fixing thread for terraces planks		553			
88193		SPAX screws with flange head	401	553			
88195		SPAX screws with milling head for solid timber floors	402				
88196		SPAX screws fully threaded and MULTI countersunk head	395				
88197		SPAX screws with flange head for back boards	402				
88198		SPAX screws for MDF boards	402				
89015		SPAX flooring screws with fixing thread	404				
89010 89011		SPAX frame anchors RA with star socket Seko = with countersunk head Zyko = with cheese head	403				
89014		SPAX screws for wood, glass and frames	403				
89018		SPAX facade screws with raised countersunk head		554			
89019		SPAX facade screws with raised countersunk head and fixing thread		554			
88001		Caps with pin	401				
89012		Caps for SPAX frame anchors RA	403				
89013		SPAX caps with pin	401				
88478 88479		SPAX screws assortment	563				
88654 88663		SPAX BITcheck assortment SPAX CUT-CASE				636	
89017		SPAX assembly tools for SPAX threaded rods without head				637	

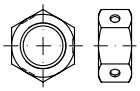
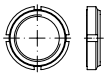
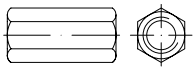
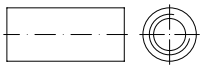
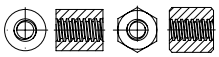
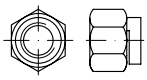
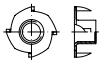
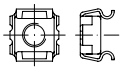
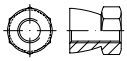
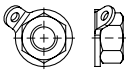
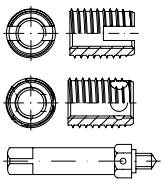
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Screws and Bolts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
		Fasteners with Theft Resistant Drives					
88110		Wood screws thread with hexagon socket and rivet pin	409				
88111 88112		Pan head/countersunk head screws with snake eyes drive, metric thread		556			27
88113		Button head screws with hexagon socket and pin, metric thread		556			27
88114 88115		Pan head/countersunk head screws with hexalobular socket and pin, tapping screw thread		557			48
88116 88117		Button head/countersunk head screws with hexalobular socket and pin, metric thread		557			27
88118		Theft resistant nuts/pull-off nuts for one-way assembly		558			
		Special bits → Articles 88665-88667				637	
88133		Screw eyes with wood screw thread	413				53
88135		S-hooks	413				134
88136		Screw eyes with metric thread	413	559			36
88137		Square bend screw hooks with wood screw thread	415				53
88138		Straight screw hooks with metric thread	415				36
88139		Square bend slotted screw hooks with wood screw thread	415				54
88140		Cup hooks with wood screw thread	415				54

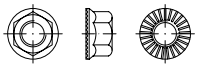
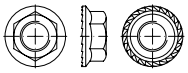
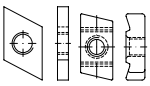
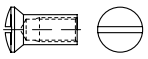
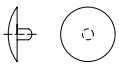
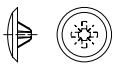
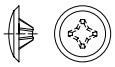
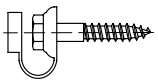
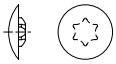
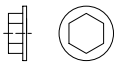
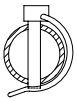
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Screws and Bolts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88141		Cup hooks with wood screw thread, white painted	415				54
88142		Cup hooks with metric thread	415				36
88143		Right angle screw hooks with wood screw thread, with hexalobular socket	415				54
88144		Heavy duty screw eyes, spiral type, with wood screw thread	415				55
88145		Heavy duty screw eyes, spiral type, with metric thread	416				37
88149		Hanger bolts	416	559			55
88176 88276		Tapping screws for facing with assembled sealing washer		560			50
88200 88202 88203 88204		Pan head screws with screw thread for plastic (thermoplastics), with hexalobular socket	416				48
88312		Cylindrical head tapping screws with hexagon socket		536			50
88902- 88908		MULTI-MONTI HMS/MMS screw-in-anchors, wall screws				635	196
88912		Hexagon socket head cap screws with flange and lock ribs	418				28
88913		Hexagon head screws with flange and lock ribs	418				28
88933		Hexagon head locking screws with flange	420				28
88928 88938 88940 88950 88972		T-head bolts/Halfen bolts HS	422	563			
88941 88943 88944		T-head bolts HZS	422	564			
88981		Cap-head tapping screws	338	538			

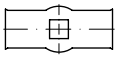
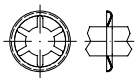
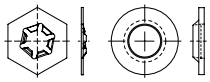
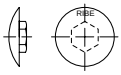
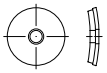
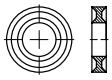
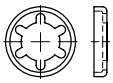
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Nuts and Inserts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
84032		Biloc nuts/prevailing torque type hexagon nuts	189	479			61
88081		Locknuts with non-metallic insert GUK	391				74
88087		Hexagon couplings	391	551			64
88088		Round couplings	391	551			75
88089 88090		Round and hexagon nuts with trapezoidal thread	392	551			75
88105		THERMAG nuts, all-metal nuts with prevailing torque type hexagon nuts	188				68
88106		Rivet nuts	408	556			76
88108		Tee nuts with pronge	409				
88109		Square caged nuts	409				76
88118		Theft resistant nuts/pull-off nuts for one-way assembly		558			
88153		RUV-REYHER captivity nuts for usage acc. to EC machinery directive		560			
88215		Wing nuts, small "American" type	75	438			77
88301 88302 88305 88307 88308		ENSAT threaded inserts, short, long, setting tools for ENSAT threaded inserts	417	561			152
88330 88331- 88346		AMECOIL wire thread inserts, coarse thread, fine pitch thread, self locking, setting tools		561			150
88342 88344		AMECOIL assortment box with threaded inserts		563			

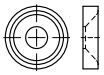
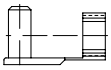
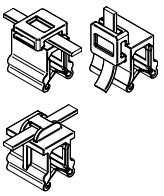
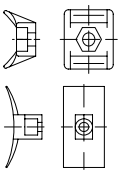
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Nuts and Inserts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88914		Hexagon locking nuts with lock ribs	420				68
88934		Hexagon locking nuts, surface hardened	421				69
88951–88955		T-head thread plates/slide nuts for (Halfen-) profiles	424				77
88964		Sleeve nuts with internal thread		564	598		77
		Non Standardized Accessories					
88001		Caps with pin for chipboard screws for SPAX screws with inner hole			401		
88002		Caps with pin for chipboard screws with Pozidriv cross recess Z			406		
		Decorative caps for cap screws Article 88981 ∅ 3.9			338		
88004		Caps with pin for chipboard screws, for Phillips cross recess H			339		
88005		Plastic sealings and caps for hexagon wood screws, 7 mm ∅ for corrugated roof panels			596		
88006		Caps for countersunk head screws with hexalobular/star socket			396		
88008		Caps for tapping screws for facing			560		
88023		Linch pins for tubes	370				121
88100		Washers "Article 1"	407				84
88101		Plain washers/"Cupal" washers			596		

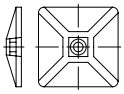
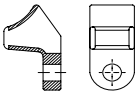
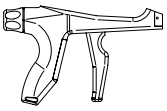
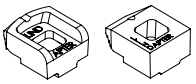
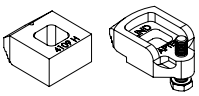
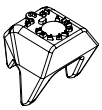
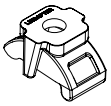
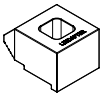
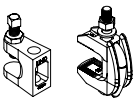
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Accessories	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88102		Joint washers to use with cup head square neck bolts acc. to DIN 603	408				112
88104		Washers with large outside diameter	408	556			85
88119		LOCKTIX washers	412				103
88120 88121		SCHNORR safety washers with serrations on both sides S, VS	409	558			103
88122		Axle locking rings	411				112
88123 88124 88125 88126		TECKENTRUP lock washers for hexagon head screws and hexagon socket head cap screws	411	558			104
88129		TECKENTRUP lock washers with contact serrations	412	559			104
88130 88131		Lock rings	412	559			104
88132		NORD-LOCK washers, preassembled pairs standard = normal outer diameter SP = enlarged outer diameter SC = for HV fastenings X-series	412	559			105
88151 88152		RUV-REYHER captivity washers		560	596		
88251		Ribe caps for hexagon socket head screws			597		
88277		Sealing washers (convex metal washers with vulcanised sealing)		561	597		
88494 88495		DUBO profile washers			597		108
88496		DUBO lock washers			597		109

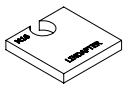
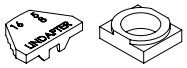
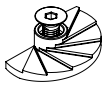
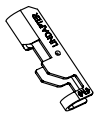
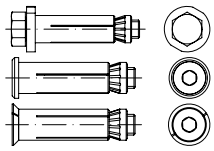
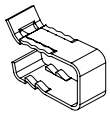
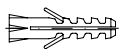
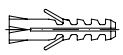
Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

Article-No.		Non Standardized Accessories	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88497		KORREX protection caps			597		
88498		KORREX insulating tubes			598		112
88499		KORREX rosettes			598		112
88752		Spring flap bolts ("ES bolts") for yokes acc. to DIN 71752	385				122
88965 88966		Rosettes/finishing washers			598		113
		Cable Ties					
82500 82505 82510 82515		Cable ties, inside serrations, T series = standard				599- 601	143
82520		Cable ties, internal serrations, LK series = higher tensile strength				599	143
88516		Cable ties, outside serrated, Robusto series = with flat head				599	144
82517		Cable ties, inside serrated, Q-tie = with open head and pre-locking functionality				600	144
82518		2-piece fixing ties, Coupler = for parallel separation				600	144
82521 82522 82523		Fixing ties für edges - EdgeClip-Family				600	145
82543 82546		Cable tie mounts, screwable				601	146

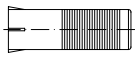
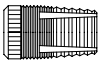
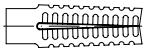
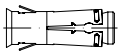
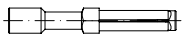
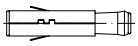
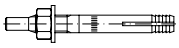
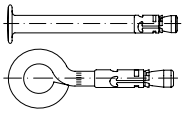
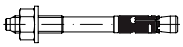
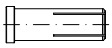
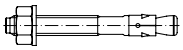
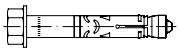
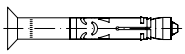
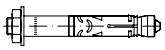
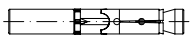
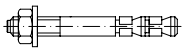
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Non Standardized Accessories	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
82540 82550 82553 82554		Cable tie mounts, self adhesive				601	146
82560		Cable tie mounts				601	147
82535		Manual application tools for cable ties				601	
82580		Cable conduits				602	
82565		Assortment boxes with cable tie mounts				602	
		Fastener and Fixing Technology					
		LINDAPTER clamps					
82001 82002 82040		Type A, B Type AF-K Type A, B Type AF-K				602- 605	154
82003 82007		Type BS, D2, (D3) Type BS, D2, (D3)				608	154
82045		Type CF Type CF				606	154
82010		Type LR Type LR				606- 607	154
82016		Type LS Type LS				608	154
82048		Type BR Type BR				608	154
82008 82009 82022 82025 82058		Type FL-D, FL-M, FL-S, F9, LC, F3 Type FL-D, FL-M, FL-S, F9, LC, F3				610	154

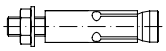
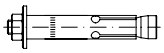
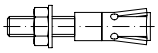
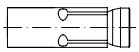
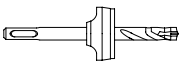
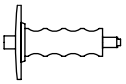
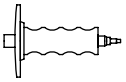
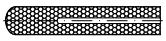
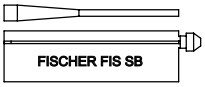
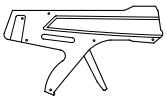
Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Fastener and Fixing Technology	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
		LINDAPTER accessories					
82011 82012- 82016 82042- 82044		Type CW, P, Type AF-CW, AF-P Type CW, P, Type AF-CW, AF-P				604	154
82047		Type LS-P2 Type LS-P2				608	154
82018 82021 82041		Type T, W Type AFW Type T, W Type AFW				605	154
82019		LINDAPTER-FLOOR-FAST-FF for floor plate fixings				610	154
82024		LINDAPTER toggle clamps TC with internal thread for decking fixing				610	154
82031		LINDAPTER HOLLO-BOLT for fixing onto hollow steel sections Type HB = with hexagon head Typ HBCSK = with countersunk head Typ HBFF = FlushFit				609- 610	154
82033		LINDAPTER assembly nut for HOLLO-BOLT Flash Fit					
83030		LINDAPTER clamp for gratings GF				611	154
		Plugs and Anchors					
	fischer	**General Fixings**					
88500		FISCHER plugs S				628	183
88506		FISCHER plugs MS				628	184
88507		FISCHER twist lock anchors GB				628	185

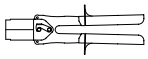
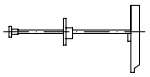
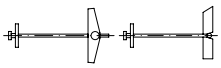
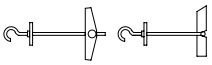
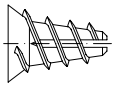
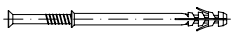
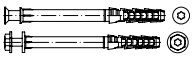
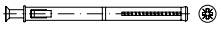
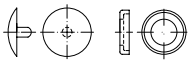
| Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI |

Article-No.		Plugs and Anchors	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88510		FISCHER plugs M				628	184
88520		FISCHER universal plugs UX, UX-R				627	182
88521		FISCHER anchors PA 4				628	185
88545		FISCHER steel expansion plugs FMD				628	183
88554		FISCHER expansion plugs SX				628	182
	fischer	**High Performance Steel Anchors**					
88513		FISCHER hollow ceiling anchors FHY				622	176
88688		FISCHER aircrete anchors FPX-I				622	
88530 88683		FISCHER heavy duty anchors SL, TA-M				622	175
88531		FISCHER wall screws MR				622	176
88546 88548 88547 88549		FISCHER nail anchors FNA, FNAM, FNA OE, FNA-H				620	172 173 174
88561		FISCHER anchor bolts FAZ II				616	167
88567 88568		FISCHER hammerset anchors EA and setting tools EAWH				620	172
88582		FISCHER bolt anchors FB-N				620	174
88593		FISCHER high performance anchors FH II-S				617	167
88594		FISCHER high performance anchors FH II-SK				617	168
88590		FISCHER high performance anchors FH II-H				618	168
88592		FISCHER high performance anchors FH II-B				618	169
88689		FISCHER high performance anchors FH II-I with internal thread				618	
88715		FISCHER bolt anchors EXA				621	

Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Plugs and Anchors	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88583		FISCHER ZYKON bolt anchors FZA				618	
88584		FISCHER ZYKON through anchors FZA-D				618	170
88589		FISCHER ZYKON anchors for fixing step irons FZA ST				619	170
88585		FISCHER ZYKON internally threaded anchors FZA-I				619	171
88597		FISCHER ZYKON hammerset anchors FZEA II				619	171
88587		FISCHER drill bits FZUB				619	
88588		FISCHER setting tools FZE plus				619	
88595		FISCHER setting tools FZED plus				619	
	fischer	**Chemical Fixings**					
88579 88687 88533 88757		FISCHER resin capsules FHB II, RSB, RM, UMV-P				611 612	162
88578 88522 88686 88527		FISCHER injection mortar FIS HB, FIS V, FIS EM, FIS SB				612	
88525 88579 88685 88524 88684		FISCHER accessories for chemical fixings static mixer, blow-out pumps, brushes, dispenser, extension tubes				612 613	
88579 88534 88523 88529		FISCHER anchors FHB II-A, FHB-A dyn, RGM, FIS-A, FIS-E				613- 615	162 164 165
88758		FISCHER multicone dynamic anchors UMV-A dyn				616	
88562 88526		FISCHER anchor sleeves FIS H K, FIS H N, FIS H L				615 616	165 166

Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI

Article-No.		Plugs and Anchors	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
	fischer	**Cavity Fixings**					
88512		FISCHER cavity metal fixings HM				628	186
88511		FISCHER professional tools HM-Z 1 for cavity fixing plugs HM-S				629	
88509		FISCHER toggle fixings K				629	186
88518		FISCHER toggles KD				629	187
88519		FISCHER toggles KDH				629	187
88598		FISCHER plasterboard fixings GK/GK-M				629	188
	fischer	**Long Shaft Anchors, Frame Fixings, Adjustment Fixings**					
88503		FISCHER nail plugs N				626	180
88504		FISCHER universal long shaft anchors SXS-T, SXS-F US				626	179
88542		FISCHER frame fixings SRX-T, SRX-FUS				624-625	177
88551		FISCHER frame fixings SXRL-FUS, SXRL-T				624	177
88515		FISCHER adjustment screws JUSS				627	181
88516		FISCHER frame fixings F-S				627	180
88563 88564		FISCHER frame fixings FUR-T/-TS/-SS				625	178
88680		FISCHER metal frame fixings F-M				627	181
88565		FISCHER rapid installation foam PU 500				630	
88528 88556 88681 88682		FISCHER caps ADT, ADF, ADM, ASM for FISCHER frame fixings				626 627	

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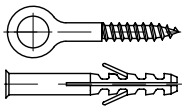
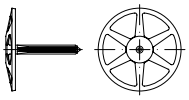
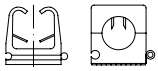
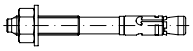
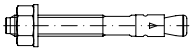
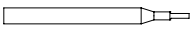
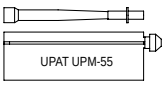
Article-No.		Plugs and Anchors	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
	fischer	**Scaffold Fixings**					
88536		FISCHER scaffold fixings S 14 ROE, GS 12				629	190
	fischer	**Insulation Supports**					
88514 88580		FISCHER insulation supports DHK, DT				630	191
	fischer	**Electrical Fixings**					
88558 88559		FISCHER pipe clips FC and saddles Sch				629	189
	Einfach. Sicher. upat	**Anchors – Heavy Duty Fixings**					
88741		UPAT express anchors MAX				630–632	192
88764		UPAT express anchors IMC				630	192
88716		UPAT impact anchors USA				631	193
88717		UPAT setting tools for USA hammerset anchors				631	
	Einfach. Sicher. upat	**Chemical Fixings**					
88722		UPAT threaded rods UKA 3-ASTA				631	193
88714		UPAT internal thread bushes UKA 3-IST				632	194
88734		UPAT threaded rods UPM-A				632–634	
88770		UPAT internal thread anchors UPM-I				633	195
88735		UPAT mesh bushes UPM-SH-K				633	195
88720		UPAT resin capsules UKA 3				633	195
88733 88772 88774 88775		UPAT injection mortar UPM 55, UPM 44, UPM 33, UPM 11				633	

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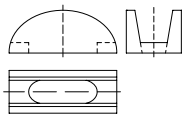
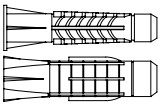
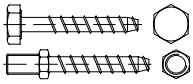
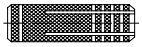
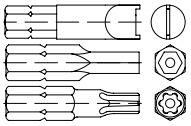
Article-No.		Plugs and Anchors	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88718 88738 88760 88765 88766 88769 88771 88776		UPAT accessories for chemical fixings static mixers, cleaning brushes, blow-out pumps, application guns , setting tools				634	
88777		UPAT side rail anchors				635	
		Other Fixing Elements					
88060 88061		Adjusting washers for cam segments and cam segments for tension anchors for diagonal pull tensioning				636	133
88381- 88383		TOX hook plugs 4 As K, Tri, Trika				635	
88902 88903 88905 88908		MULTI-MONTI HMS/MMS screw anchors, wall screws				635	196
88910		Brass explanding plugs				635	
		Assembly Tools					
88665 88666 88667		Bits for theft resistant screws Article 88111-88117				637	
88654 88663		SPAX CUT-CASE bits for hexalobular socket screws				636	

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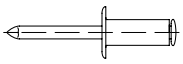
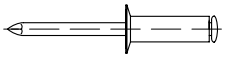
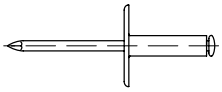
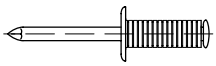
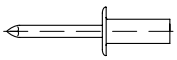
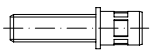
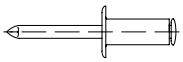
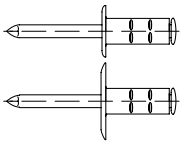
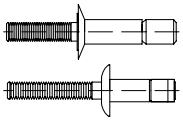
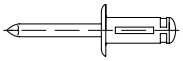
Article-No.	Blind Rivets	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
	 Open-end blind rivets with break pull mandrel DIN 7337 type A = protruding head					
88401 (ISO 15979)	Steel zinc plated/steel zinc plated				637	200
88402 (ISO 15977)	Al alloy/steel zinc plated				637	200
88403	Al alloy/stainless steel A2				638	200
88404 (ISO 15983)	Stainless steel A2/stainless steel A2				638	200
88405	Stainless steel A2/steel zinc plated (Stinox)				639	200
88406 (ISO 16582)	Copper/steel zinc plated				639	200
88407 (ISO 16582)	Copper/bronze				639	200
88408	Plastic/plastic				639	201
88410 (ISO 15981)	Al alloy/Al alloy				638	200
88415	Stainless steel A4/stainless steel A4				638	200
88493 (ISO 16584)	Monel/A4				639	200
88417 (ISO 15977)	Al alloy/steel zinc plated – head painted				639	200
	 Open-end blind rivets with break pull mandrel DIN 7337 type B = countersunk head				639	202
88411 (ISO 15980)	Steel zinc plated/steel zinc plated				639	202
88412 (ISO 15978)	Al alloy/steel zinc plated				640	202
	 Open-end blind rivets with break pull mandrel DIN 7337 type C = large protruding head				640	201
88409	Al alloy/steel zinc plated				640	201
88413	Steel zinc plated/steel zinc plated				640	201
88414	Al alloy/Al alloy				641	201
88416	Al alloy/stainless steel A2				641	201

Steel Plain/ Coated | Stainless steel | Brass Cu / Al / Ti Plastic | Fixing Technology | Dimensions TI

Article-No.		Blind Rivets	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88419		Open-end blind rivets with grooved rivet body for blind hole rivetting				641	202
88420		Closed-end blind rivets for air- and water-tight rivetting Al alloy/steel phosphated Al alloy/stainless steel A2 copper/steel phosphated copper/stainless steel A2				641	202
88421		Open-end blind rivets with break pull mandrel, type M = with connection thread				642	203
88422		Open-end blind rivet with break pull mandrel, type SS-A = protruding head, with peel rivet body, for soft building material				642	203
88474 88475		Open-end blind rivets with multigrip rivet body „PolyGrip“, type A = protruding head, type C = large protruding head, steel zinc plated/steel zinc plated Al alloy/steel zinc plated Al alloy/stainless steel A2 Al alloy/Al alloy				642	203 204
88476 88477		Open-end blind rivets with break pull mandrel, „MEGA G-LOCK“ = for high strength rivet assembly type F = protruding head type S = countersunk head				643	204
88488		Open-end blind rivets with break pull mandrel, „TRIFOLD“ = recessed crown for soft material, type F = protruding head				642	205

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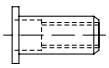
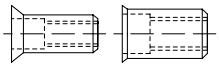
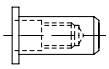
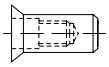
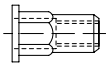
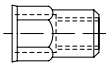
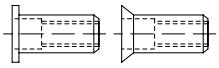
Article-No.		Blind Rivet Nuts	Steel Plain/ Coated	Stainless steel	Brass Cu / Al / Ti Plastic	Fixing Technology	Dimensions TI
88423		Blind rivet nuts, round, open-end, type F = protruding head, zinc plated steel, Al alloy, stainless steel A2				644	206
88424 88418		Blind rivet nuts, round, open-end, type S = countersunk head, type Sk = small countersunk head, zinc plated steel, Al alloy, stainless steel A2				643 644	207 206
88480		Blind rivet nuts, round, closed, for air- and water-tight rivetting, type F = protruding head				645	207
88481		Blind rivet nuts, closed-end for air- and water-tight rivetting, type S = countersunk head				645	207
88483		Blind rivet nuts, hexagon, open-end, type F = protruding head				646	207
88484		Blind rivet nuts, hexagon, open-end, type Sk = small countersunk head				646	208
88490 88491		Blind rivet nuts, round, open-end, with multigrip rivet body, type F = protruding head, type S = countersunk head				645 646	206

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Product	Standardised Products DIN (ISO/EN)	Non Standardised Products Page
A		
ABC-SPAX assortment		399
ABC-SPAX screws		392, 394, 552-554
Actros screws and nuts		364, 371
Adapter, clamping plates	3568	422, 563, 602-605
Adhesive anchor bolts		611-616, 631-635
Adjusting rings	703, 705	
Adjusting screws	479, 480, 561, 564, 933, 961 (4017, 8676)	
Adjusting washers for cam segments	988	636
AMECOIL wire thread inserts and accessories		561
Anchor bolts	529	635
Anchor rods	975, 976	615, 614, 631, 632-634
Angle hooks		415-415
Angle joints	71802	
ASME nuts/screws/bolts	ASME B18.2.1 ASME B18.2.2 ASME B18.3	
Assembly case assortment	➔ Assortments	
Assembly foam		630
Assortment of special bits for theft resistant screws		636
Assortment/construction cases		66, 68, 71, 86, 162, 188, 190, 209, 399, 563, 602, 636
Axle holder	15058	
Axle locking rings		411
B		
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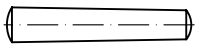
Dimensions	PU Pieces	€/100/Mat.
DIN	00001.002	RAZ 10

1 **Steel** **type B**



Taper pins,
taper 1 : 50
B = turned

Dimensions ➔ TI-115 Standard conversion ➔ TI-10

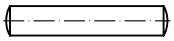
Stainless ➔ S. 427

DIN 1 ➔ replaced by ISO 2339 (DIN EN ISO 22339)

∅ x length (without cones)

Dimensions			PU	Pieces	€/100/Mat.
B 1	x	12	S	200	10,00
B 1	x	18	S	200	11,00
B 1,5	x	10	S	200	9,40
B 1,5	x	12	S	200	10,00
B 1,5	x	16	S	200	10,80
B 1,5	x	20	S	200	11,30
B 2	x	10	S	100	10,20
B 2	x	12	S	100	10,80
B 2	x	14	S	100	11,00
B 2	x	16	S	100	11,40
B 2	x	18	S	100	11,80
B 2	x	20	S	100	12,10
B 2	x	30	S	100	14,60
B 2	x	32	S	100	15,20
B 2	x	36	S	100	16,10
B 2	x	40	S	100	17,00
B 2	x	50	S	100	19,80
B 2,5	x	14	S	100	12,50
B 2,5	x	16	S	100	12,70
B 2,5	x	20	S	100	14,00
B 2,5	x	30	S	100	16,80
B 2,5	x	40	S	100	20,60
B 3	x	10	S	100	11,70
B 3	x	12	S	100	12,00
B 3	x	14	S	100	12,70
B 3	x	16	S	100	13,30
B 3	x	18	S	100	14,00
B 3	x	20	S	100	14,40
B 3	x	24	S	100	15,70
B 3	x	26	S	100	17,10
B 3	x	28	S	100	17,70
B 3	x	30	S	100	18,30
B 3	x	32	S	100	19,20
B 3	x	36	S	100	20,10
B 3	x	40	S	100	21,20
B 3	x	45	S	100	23,60
B 3	x	50	S	100	26,00
B 3	x	60	S	100	32,50
B 4	x	12	S	100	13,80
B 4	x	14	S	100	14,40
B 4	x	16	S	100	15,40
B 4	x	18	S	100	16,00
B 4	x	20	S	100	16,60
B 4	x	22	S	100	17,90
B 4	x	24	S	100	19,10
B 4	x	26	S	100	19,50
B 4	x	28	S	100	20,30
B 4	x	30	S	100	21,50
B 4	x	32	S	100	22,60
B 4	x	36	S	100	24,20
B 4	x	40	S	100	26,00
B 4	x	45	S	100	29,50
B 4	x	50	S	100	32,00
B 4	x	55	S	100	35,50
B 4	x	60	S	100	38,00
B 4	x	70	S	100	46,00
B 4	x	80	S	100	48,00
B 4	x	100	S	100	65,00
B 5	x	16	S	100	16,00
B 5	x	18	S	100	17,00
B 5	x	20	S	100	18,10
B 5	x	22	S	100	19,20
B 5	x	24	S	100	20,30
B 5	x	26	S	100	21,70
B 5	x	28	S	100	22,60
B 5	x	30	S	100	24,20
B 5	x	32	S	100	26,00
B 5	x	36	S	100	28,00
B 5	x	40	S	100	31,00
B 5	x	45	S	100	33,50
B 5	x	50	S	100	36,50
B 5	x	55	S	100	40,00
B 5	x	60	S	100	45,50
B 5	x	65	S	50	51,00
B 5	x	70	S	50	54,00
B 5	x	80	S	50	59,00
B 5	x	90	S	50	64,00
B 5	x	100	S	50	71,00
B 6	x	20	S	100	21,50
B 6	x	24	S	100	25,50
B 6	x	26	S	100	27,00
B 6	x	28	S	100	29,50
B 6	x	30	S	100	31,50
B 6	x	32	S	100	33,50
B 6	x	36	S	100	35,50
B 6	x	40	S	100	38,00
B 6	x	45	S	100	40,50
B 6	x	50	S	100	44,00
B 6	x	55	S	50	51,00
B 6	x	60	S	50	56,00
B 6	x	70	S	50	64,00
B 6	x	80	S	50	71,00
B 6	x	90	S	50	80,00
B 6	x	100	S	50	92,00
B 6	x	120	S	50	171,00
B 6,5	x	40	S	100	52,00
B 6,5	x	50	S	100	63,00
B 6,5	x	60	S	50	79,00
B 6,5	x	100	S	50	134,00
B 7	x	60	S	50	121,00
B 7	x	70	S	50	142,00
B 7	x	80	S	50	156,00
B 7	x	100	S	50	225,00
B 8	x	24	S	50	39,00
B 8	x	26	S	50	42,00
B 8	x	28	S	50	44,00
B 8	x	30	S	50	47,00
B 8	x	32	S	50	50,00
B 8	x	36	S	50	53,00
B 8	x	40	S	50	55,00
B 8	x	45	S	50	56,00
B 8	x	50	S	50	69,00
B 8	x	55	S	50	78,00
B 8	x	60	S	50	85,00
B 8	x	70	S	50	97,00
B 8	x	80	S	50	107,00
B 8	x	90	S	50	129,00
B 8	x	100	S	50	152,00
B 8	x	110	S	50	169,00
B 8	x	120	S	50	185,00
B 8	x	130	S	50	240,00
B 8	x	140	S	50	260,00
B 8	x	150	S	50	315,00
B 10	x	28	S	50	69,00
B 10	x	30	S	50	75,00
B 10	x	32	S	50	78,00
B 10	x	36	S	50	79,00
B 10	x	40	S	50	91,00
B 10	x	45	S	50	97,00
B 10	x	50	S	50	101,00
B 10	x	55	S	25	124,00
B 10	x	60	S	25	135,00
B 10	x	70	S	25	156,00
B 10	x	80	S	25	173,00
B 10	x	90	S	25	184,00
B 10	x	100	S	25	210,00
B 10	x	110	S	25	227,00
B 10	x	120	S	25	240,00
B 10	x	130	S	25	285,00
B 10	x	140	S	25	285,00
B 10	x	150	S	25	315,00
B 12	x	30	S	25	100,00
B 12	x	36	S	25	100,00
B 12	x	40	S	25	117,00
B 12	x	45	S	25	132,00
B 12	x	50	S	25	136,00
B 12	x	55	S	25	150,00
B 12	x	60	S	25	162,00
B 12	x	70	S	25	190,00
B 12	x	80	S	25	210,00
B 12	x	90	S	25	226,00
B 12	x	100	S	25	265,00
B 12	x	110	S	10	315,00
B 12	x	120	S	10	375,00
B 12	x	130	S	10	445,00
B 12	x	140	S	10	445,00
B 12	x	150	S	10	500,00
B 13	x	50	S	25	182,00
B 13	x	60	S	25	209,00
B 13	x	70	S	25	260,00
B 13	x	80	S	25	285,00
B 13	x	100	S	25	355,00
B 13	x	120	S	10	440,00
B 13	x	130	S	10	540,00
B 13	x	150	S	10	620,00
B 14	x	50	S	25	202,00
B 14	x	80	S	25	305,00
B 14	x	100	S	25	405,00
B 14	x	120	S	10	510,00
B 14	x	140	S	10	630,00
B 16	x	40	S	10	236,00
B 16	x	50	S	10	275,00
B 16	x	60	S	10	310,00
B 16	x	70	S	10	360,00
B 16	x	80	S	10	395,00
B 16	x	90	S	10	435,00
B 16	x	100	S	10	495,00
B 16	x	120	S	10	590,00
B 16	x	140	S	10	730,00
B 16	x	150	S	1	870,00
B 16	x	165	S	1	1300,00
B 16	x	180	S	1	1300,00
B 16	x	200	S	1	1490,00
B 20	x	50	S	10	770,00
B 20	x	60	S	10	870,00
B 20	x	70	S	10	950,00
B 20	x	80	S	10	1000,00
B 20	x	100	S	10	1210,00
B 20	x	120	S	1	1380,00
B 20	x	140	S	1	1690,00
B 20	x	150	S	1	1900,00

Dimensions		PU Pieces	€/100/Mat.
DIN	00007.000		RAZ 10
7	**Steel**		**m6**



Parallel pins, tolerance zone m6

Dimensions ➔ TI-114 Standard conversion ➔ TI-10

Stainless ➔ S. 427

DIN 7 ➔ replaced by ISO 2338

∅ – tol. x length (without cones)

Dimensions		PU Pieces	€/100/Mat.
1 m6 x 3	S	200	7,70
1 m6 x 4	S	200	7,70
1 m6 x 5	S	200	7,70
1 m6 x 6	S	200	7,70
1 m6 x 8	S	200	7,70
1 m6 x 10	S	200	7,70
1 m6 x 12	S	200	7,80
1,5 m6 x 4	S	200	7,70
1,5 m6 x 5	S	200	7,70
1,5 m6 x 6	S	200	7,70
1,5 m6 x 8	S	200	7,80
1,5 m6 x 10	S	200	7,80
1,5 m6 x 12	S	200	8,00
1,5 m6 x 14	S	200	8,00
1,5 m6 x 16	S	200	8,30
1,5 m6 x 18	S	200	8,40
1,5 m6 x 20	S	200	8,60
2 m6 x 4	S	200	7,50
2 m6 x 5	S	200	7,80
2 m6 x 6	S	200	8,00
2 m6 x 8	S	200	8,00
2 m6 x 10	S	200	8,00
2 m6 x 12	S	200	8,30
2 m6 x 14	S	200	8,30
2 m6 x 16	S	200	8,40
2 m6 x 18	S	200	8,60
2 m6 x 20	S	200	9,10
2 m6 x 24	S	200	9,60
2 m6 x 28	S	100	10,80
2 m6 x 30	S	100	11,00
2,5 m6 x 5	S	200	8,00
2,5 m6 x 6	S	200	8,00
2,5 m6 x 8	S	200	8,30
2,5 m6 x 10	S	200	8,30
2,5 m6 x 12	S	100	8,40
2,5 m6 x 14	S	100	8,60
2,5 m6 x 16	S	100	8,80
2,5 m6 x 18	S	100	9,10
2,5 m6 x 20	S	100	9,30
2,5 m6 x 24	S	100	9,70
2,5 m6 x 28	S	100	10,80
2,5 m6 x 30	S	100	11,10
2,5 m6 x 32	S	100	11,20
3 m6 x 5	S	200	5,50
3 m6 x 6	S	200	5,50
3 m6 x 8	S	200	5,60
3 m6 x 10	S	200	5,90
3 m6 x 12	S	100	6,20
3 m6 x 14	S	100	6,40
3 m6 x 16	S	100	6,50
3 m6 x 18	S	100	8,40
3 m6 x 20	S	100	8,70
3 m6 x 24	S	100	10,00
3 m6 x 28	S	100	10,80
3 m6 x 30	S	100	11,00
3 m6 x 32	S	100	11,20
3 m6 x 36	S	100	15,20
3 m6 x 40	S	100	16,60
3 m6 x 50	S	100	22,50
4 m6 x 5	S	100	8,90
4 m6 x 6	S	100	8,90
4 m6 x 8	S	100	9,30
4 m6 x 10	S	100	9,60
4 m6 x 12	S	100	10,00
4 m6 x 14	S	100	10,50
4 m6 x 16	S	100	11,00
4 m6 x 18	S	100	11,40
4 m6 x 20	S	100	12,10
4 m6 x 24	S	100	13,00
4 m6 x 26	S	100	13,30
4 m6 x 28	S	100	13,50
4 m6 x 30	S	100	14,00
4 m6 x 32	S	100	14,40
4 m6 x 36	S	100	15,20
4 m6 x 40	S	100	16,80
4 m6 x 45	S	100	21,40
4 m6 x 50	S	100	22,50
5 m6 x 5	S	100	9,60
5 m6 x 6	S	100	9,60
5 m6 x 8	S	100	10,00
5 m6 x 10	S	100	11,10
5 m6 x 12	S	100	11,60
5 m6 x 14	S	100	12,40
5 m6 x 16	S	100	12,70
5 m6 x 18	S	100	13,20
5 m6 x 20	S	100	14,10
5 m6 x 22	S	100	14,50
5 m6 x 24	S	100	14,80
5 m6 x 28	S	100	15,80
5 m6 x 30	S	100	17,00
5 m6 x 32	S	100	17,50
5 m6 x 36	S	100	17,80
5 m6 x 40	S	100	20,00
5 m6 x 45	S	100	21,40
5 m6 x 50	S	100	22,50
5 m6 x 55	S	100	30,00
5 m6 x 60	S	100	33,50
6 m6 x 6	S	100	11,60
6 m6 x 8	S	100	12,10
6 m6 x 10	S	100	12,90
6 m6 x 12	S	100	14,00
6 m6 x 14	S	100	14,80
6 m6 x 16	S	100	15,50
6 m6 x 18	S	100	16,30
6 m6 x 20	S	100	16,80
6 m6 x 22	S	100	17,20
6 m6 x 24	S	100	18,50
6 m6 x 26	S	100	18,80
6 m6 x 28	S	100	19,00
6 m6 x 30	S	100	20,00
6 m6 x 32	S	100	20,90
6 m6 x 36	S	100	22,50
6 m6 x 40	S	100	24,10
6 m6 x 45	S	100	26,50
6 m6 x 50	S	100	28,00
6 m6 x 55	S	100	30,00
6 m6 x 60	S	100	33,50
6 m6 x 70	S	50	63,00
6 m6 x 80	S	50	73,00
6 m6 x 90	S	50	126,00
6 m6 x 100	S	50	146,00
8 m6 x 8	S	100	17,60
8 m6 x 10	S	100	18,50
8 m6 x 12	S	100	18,90
8 m6 x 14	S	100	20,60
8 m6 x 16	S	100	21,90
8 m6 x 18	S	100	24,10
8 m6 x 20	S	100	25,00
8 m6 x 22	S	100	34,26
8 m6 x 24	S	100	26,50
8 m6 x 26	S	50	32,00
8 m6 x 28	S	50	33,50
8 m6 x 30	S	50	36,00
8 m6 x 32	S	50	37,50
8 m6 x 36	S	50	38,50
8 m6 x 40	S	50	42,50
8 m6 x 45	S	50	46,00
8 m6 x 50	S	50	48,00
8 m6 x 55	S	50	52,00
8 m6 x 60	S	50	56,00
8 m6 x 70	S	50	63,00
8 m6 x 80	S	50	73,00
8 m6 x 90	S	50	126,00
8 m6 x 100	S	50	161,00
10 m6 x 10	S	50	30,00
10 m6 x 12	S	50	31,00
10 m6 x 14	S	50	32,50
10 m6 x 16	S	50	35,00
10 m6 x 18	S	50	36,50
10 m6 x 20	S	50	38,50
10 m6 x 24	S	50	42,50
10 m6 x 28	S	50	46,50
10 m6 x 30	S	50	48,50
10 m6 x 32	S	50	51,00
10 m6 x 36	S	50	55,00
10 m6 x 40	S	50	61,00
10 m6 x 45	S	50	64,00
10 m6 x 50	S	50	70,00
10 m6 x 55	S	50	75,00
10 m6 x 60	S	50	80,00
10 m6 x 65	S	50	93,00
10 m6 x 70	S	50	93,00
10 m6 x 80	S	50	108,00
10 m6 x 90	S	50	126,00
10 m6 x 100	S	50	146,00
10 m6 x 120	S	50	184,00
12 m6 x 12	S	50	48,00
12 m6 x 14	S	50	48,00
12 m6 x 16	S	50	49,50
12 m6 x 18	S	50	51,00
12 m6 x 20	S	50	54,00
12 m6 x 24	S	50	57,00
12 m6 x 28	S	50	67,00
12 m6 x 30	S	50	71,00
12 m6 x 32	S	50	77,00
12 m6 x 36	S	50	85,00
12 m6 x 40	S	50	91,00
12 m6 x 45	S	25	105,00
12 m6 x 50	S	25	113,00
12 m6 x 55	S	25	121,00
12 m6 x 60	S	25	127,00
12 m6 x 70	S	25	138,00
12 m6 x 80	S	25	151,00
12 m6 x 90	S	25	165,00
12 m6 x 100	S	25	185,00
12 m6 x 120	S	25	210,00
13 m6 x 20	S	50	75,00
13 m6 x 28	S	50	95,00
13 m6 x 40	S	50	128,00
13 m6 x 50	S	25	159,00
13 m6 x 60	S	25	181,00
13 m6 x 70	S	25	201,00
13 m6 x 80	S	25	234,00
14 m6 x 20	S	25	81,00
14 m6 x 24	S	25	95,00
14 m6 x 28	S	25	100,00
14 m6 x 30	S	25	110,00
14 m6 x 32	S	25	118,00
14 m6 x 36	S	25	125,00
14 m6 x 40	S	25	136,00
14 m6 x 45	S	25	144,00
14 m6 x 50	S	25	165,00
14 m6 x 55	S	25	169,00
14 m6 x 60	S	25	181,00
14 m6 x 70	S	25	210,00
14 m6 x 80	S	25	234,00

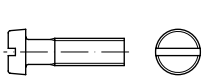
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
14 m6 x 90	S	25	260,00
14 m6 x 100	S	25	275,00
14 m6 x 120	S	25	295,00
16 m6 x 20	S	25	111,00
16 m6 x 24	S	25	126,00
16 m6 x 28	S	25	136,00
16 m6 x 30	S	25	145,00
16 m6 x 32	S	25	154,00
16 m6 x 36	S	25	166,00
16 m6 x 40	S	25	179,00
16 m6 x 45	S	25	197,00
16 m6 x 50	S	25	207,00
16 m6 x 55	S	25	219,00
16 m6 x 60	S	25	242,00
16 m6 x 70	S	25	275,00
16 m6 x 80	S	25	310,00
16 m6 x 90	S	10	340,00
16 m6 x 100	S	10	375,00
16 m6 x 120	S	10	440,00
20 m6 x 24	S	10	224,00
20 m6 x 28	S	10	226,00
20 m6 x 30	S	10	246,00
20 m6 x 32	S	10	255,00
20 m6 x 36	S	10	275,00
20 m6 x 40	S	10	295,00
20 m6 x 45	S	10	315,00
20 m6 x 50	S	10	340,00
20 m6 x 55	S	10	355,00
20 m6 x 60	S	10	385,00
20 m6 x 70	S	10	420,00
20 m6 x 80	S	10	445,00
20 m6 x 90	S	10	510,00
20 m6 x 100	S	10	560,00
20 m6 x 120	S	10	650,00
25 m6 x 40	S	1	880,00
25 m6 x 45	S	1	880,00
25 m6 x 50	S	1	950,00
25 m6 x 60	S	1	1160,00
25 m6 x 70	S	1	1300,00
25 m6 x 80	S	1	1480,00
25 m6 x 90	S	1	1590,00
25 m6 x 100	S	1	1730,00
25 m6 x 120	S	1	2010,00
30 m6 x 50	S	1	1780,00
30 m6 x 60	S	1	2010,00
30 m6 x 70	S	1	2160,00
30 m6 x 80	S	1	2310,00
30 m6 x 90	S	1	2600,00
30 m6 x 100	S	1	2950,00
30 m6 x 120	S	1	3500,00

DIN	00084.004	RAZ 30

84

Steel **turned bare**



Slotted cheese head screws

Dimensions → TI-37 Standard conversion → TI-6

Stainless → S. 429
Brass → S. 565

DIN 84 → replaced by ISO 1207 (compatible)

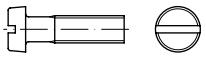
M 1	x	2	S	100	13,50 turned
M 1	x	3	S	100	13,60 turned
M 1	x	5	S	100	14,20 turned
M 1	x	6	S	100	14,50 turned
M 1	x	8	S	100	15,20 turned
M 1	x	10	S	100	17,40 turned

Dimensions	PU	Pieces	€/100/Mat.
M 1,2 x 2	S	100	13,40 turned
M 1,2 x 3	S	100	13,40 turned
M 1,2 x 4	S	100	13,60 turned
M 1,2 x 6	S	100	14,30 turned
M 1,2 x 8	S	100	15,10 turned
M 1,2 x 10	S	100	16,20 turned
M 1,4 x 2	S	100	13,30 turned
M 1,4 x 3	S	100	13,20 turned
M 1,4 x 4	S	100	13,40 turned
M 1,4 x 5	S	100	13,70 turned
M 1,4 x 6	S	100	14,20 turned
M 1,4 x 8	S	100	14,90 turned
M 1,4 x 10	S	100	16,20 turned
M 1,4 x 16	S	100	20,20 turned
M 1,6 x 3	S	100	12,00 turned
M 1,6 x 4	S	100	12,10 turned
M 1,6 x 5	S	100	12,60 turned
M 1,6 x 6	S	100	13,60 turned
M 1,6 x 8	S	100	14,60 turned
M 1,6 x 10	S	100	16,10 turned
M 1,6 x 16	S	100	19,80 turned

DIN	00084.400	RAZ 30

84

4.8



Slotted cheese head screws

Dimensions → TI-37 Standard conversion → TI-6

Stainless → S. 429
Brass, plastic → S. 565

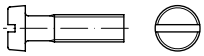
DIN 84 → replaced by ISO 1207 (compatible)

M 2	x	3	S	2000	3,75
M 2	x	4	S	2000	3,00
M 2	x	5	S	2000	2,95
M 2	x	6	S	2000	2,60
M 2	x	8	S	2000	2,60
M 2	x	10	S	2000	2,30
M 2	x	12	S	2000	2,85
M 2	x	16	S	2000	2,75
M 2	x	20	S	2000	4,10
M 2,5	x	4	S	2000	4,20
M 2,5	x	5	S	2000	3,95
M 2,5	x	6	S	2000	2,45
M 2,5	x	8	S	2000	2,55
M 2,5	x	10	S	2000	2,25
M 2,5	x	12	S	2000	2,25
M 2,5	x	16	S	2000	3,40
M 2,5	x	18	S	2000	4,90
M 2,5	x	20	S	2000	4,00
M 2,5	x	25	S	2000	4,50
M 2,5	x	30	S	2000	5,90
M 3	x	3	S	2000	7,20
M 3	x	4	S	2000	4,35
M 3	x	5	S	2000	4,20
M 3	x	6	S	2000	1,10
M 3	x	8	S	2000	1,10
M 3	x	10	S	2000	1,15
M 3	x	12	S	2000	1,25
M 3	x	16	S	2000	1,45
M 3	x	18	S	2000	2,70
M 3	x	20	S	2000	1,80
M 3	x	22	S	2000	3,35
M 3	x	25	S	2000	1,95
M 3	x	30	S	2000	2,55
M 3	x	35	S	2000	4,00
M 3	x	40	S	1000	4,40

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 45	S	1000	6,40
M 3 x 50	S	1000	7,20
M 4 x 4	S	2000	7,90
M 4 x 5	S	2000	5,30
M 4 x 6	S	2000	1,75
M 4 x 8	S	2000	1,75
M 4 x 10	S	2000	1,85
M 4 x 12	S	2000	1,90
M 4 x 16	S	2000	2,25
M 4 x 20	S	2000	2,55
M 4 x 22	S	1000	4,10
M 4 x 25	S	1000	2,95
M 4 x 30	S	1000	3,45
M 4 x 35	S	1000	3,95
M 4 x 40	S	1000	4,30
M 4 x 45	S	1000	5,50
M 4 x 50	S	1000	6,70
M 4 x 55	S	500	10,10
M 4 x 60	S	500	8,20
M 4 x 65	S	500	12,40
M 4 x 70	S	500	17,40
M 5 x 6	S	2000	7,90
M 5 x 8	S	2000	2,65
M 5 x 10	S	2000	2,80
M 5 x 12	S	1000	3,00
M 5 x 16	S	1000	3,40
M 5 x 18	S	1000	4,70
M 5 x 20	S	1000	3,60
M 5 x 22	S	1000	6,00
M 5 x 25	S	1000	4,10
M 5 x 30	S	1000	4,90
M 5 x 35	S	500	6,70
M 5 x 40	S	500	6,00
M 5 x 45	S	500	8,00
M 5 x 50	S	500	7,70
M 5 x 55	S	500	10,60
M 5 x 60	S	200	10,20
M 5 x 70	S	200	10,70
M 5 x 75	S	200	22,60
M 5 x 80	S	200	19,20
M 6 x 8	S	1000	5,30
M 6 x 10	S	1000	4,35
M 6 x 12	S	1000	4,40
M 6 x 16	S	1000	4,85
M 6 x 20	S	1000	5,50
M 6 x 25	S	500	6,00
M 6 x 30	S	500	6,80
M 6 x 35	S	500	7,50
M 6 x 40	S	500	8,30
M 6 x 45	S	500	11,20
M 6 x 50	S	200	12,80
M 6 x 55	S	200	14,60
M 6 x 60	S	200	13,00
M 6 x 65	S	200	19,20
M 6 x 70	S	200	20,20
M 6 x 75	S	200	29,50
M 6 x 80	S	200	22,00
M 6 x 100	S	200	37,50
M 8 x 10	S	500	30,00
M 8 x 12	S	500	11,80
M 8 x 16	S	500	12,20
M 8 x 20	S	500	11,50
M 8 x 25	S	500	12,10
M 8 x 30	S	200	13,40
M 8 x 35	S	200	17,70
M 8 x 40	S	200	19,50
M 8 x 45	S	200	25,50
M 8 x 50	S	200	22,00
M 8 x 55	S	200	33,50
M 8 x 60	S	200	30,00
M 8 x 70	S	200	33,50
M 10 x 12	S	200	76,00
M 10 x 16	S	200	25,50
M 10 x 20	S	200	23,50
M 10 x 25	S	200	24,40

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 30	S	200	23,20
M 10 x 40	S	200	31,00
M 10 x 45	S	100	37,50

DIN	00084.410	RAZ 30
84	**4.8** **zinc plated**	



Slotted cheese head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 429
Brass, plastic ➔ S. 565

DIN 84 ➔ replaced by ISO 1207 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
M 2 x 3	S	2000	4,10 ZP
M 2 x 3	K	200	6,60 ZP
M 2 x 4	S	2000	3,35 ZP
M 2 x 4	K	200	5,70 ZP
M 2 x 5	S	2000	3,20 ZP
M 2 x 5	K	200	5,60 ZP
M 2 x 6	S	2000	2,85 ZP
M 2 x 6	K	200	5,30 ZP
M 2 x 8	S	2000	2,85 ZP
M 2 x 8	K	200	5,30 ZP
M 2 x 10	S	2000	2,55 ZP
M 2 x 10	K	200	4,90 ZP
M 2 x 12	S	2000	3,15 ZP
M 2 x 12	K	200	5,60 ZP
M 2 x 16	S	2000	3,10 ZP
M 2 x 16	K	200	5,50 ZP
M 2 x 18	K	200	8,80 ZP
M 2 x 20	S	2000	4,50 ZP
M 2 x 20	K	200	7,00 ZP
M 2 x 30	S	2000	8,90 ZP
M 2 x 30	K	200	12,00 ZP
M 2,5 x 3	K	200	10,40 ZP
M 2,5 x 4	S	2000	4,60 ZP
M 2,5 x 4	K	200	7,10 ZP
M 2,5 x 5	S	2000	4,30 ZP
M 2,5 x 5	K	200	6,70 ZP
M 2,5 x 6	S	2000	2,70 ZP
M 2,5 x 6	K	200	5,20 ZP
M 2,5 x 8	S	2000	2,75 ZP
M 2,5 x 8	K	200	5,20 ZP
M 2,5 x 10	S	2000	2,45 ZP
M 2,5 x 10	K	200	4,85 ZP
M 2,5 x 12	S	2000	2,55 ZP
M 2,5 x 12	K	200	4,90 ZP
M 2,5 x 16	S	2000	3,65 ZP
M 2,5 x 16	K	200	6,10 ZP
M 2,5 x 18	K	200	7,90 ZP
M 2,5 x 20	S	2000	4,40 ZP
M 2,5 x 20	K	200	6,90 ZP
M 2,5 x 25	S	2000	5,10 ZP
M 2,5 x 25	K	200	7,50 ZP
M 2,5 x 30	S	2000	6,60 ZP
M 2,5 x 30	K	200	9,00 ZP
M 3 x 3	S	2000	8,00 ZP
M 3 x 3	K	200	10,40 ZP
M 3 x 4	S	2000	4,80 ZP
M 3 x 4	K	200	7,20 ZP
M 3 x 5	S	2000	4,60 ZP
M 3 x 5	K	200	7,10 ZP
M 3 x 6	S	2000	1,20 ZP
M 3 x 6	K	200	3,60 ZP
M 3 x 8	S	2000	1,20 ZP

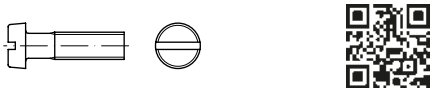
Dimensions	PU	Pieces	€/100/Mat.
M 3 x 8	K	200	3,65 ZP
M 3 x 10	S	2000	1,25 ZP
M 3 x 10	K	200	3,75 ZP
M 3 x 12	S	2000	1,40 ZP
M 3 x 12	K	200	3,80 ZP
M 3 x 14	S	2000	2,30 ZP
M 3 x 14	K	200	4,70 ZP
M 3 x 16	S	2000	1,60 ZP
M 3 x 16	K	200	4,00 ZP
M 3 x 18	S	2000	3,00 ZP
M 3 x 18	K	200	5,50 ZP
M 3 x 20	S	2000	1,95 ZP
M 3 x 20	K	200	4,40 ZP
M 3 x 22	S	2000	3,65 ZP
M 3 x 22	K	200	6,10 ZP
M 3 x 25	S	2000	2,20 ZP
M 3 x 25	K	200	4,60 ZP
M 3 x 28	S	2000	5,50 ZP
M 3 x 28	K	200	7,90 ZP
M 3 x 30	S	2000	2,75 ZP
M 3 x 30	K	200	5,20 ZP
M 3 x 35	S	2000	4,40 ZP
M 3 x 35	K	200	6,80 ZP
M 3 x 40	S	1000	4,85 ZP
M 3 x 40	K	200	7,30 ZP
M 3 x 45	S	1000	7,10 ZP
M 3 x 45	K	200	9,50 ZP
M 3 x 50	S	1000	7,90 ZP
M 3 x 50	K	200	10,40 ZP
M 3 x 55	S	200	14,00 ZP
M 3 x 60	K	200	14,00 ZP
M 3,5 x 5	K	200	9,10 ZP
M 3,5 x 6	S	2000	4,50 ZP
M 3,5 x 6	K	200	7,00 ZP
M 3,5 x 8	K	200	5,50 ZP
M 3,5 x 10	S	2000	3,20 ZP
M 3,5 x 10	K	200	5,60 ZP
M 3,5 x 12	S	2000	3,25 ZP
M 3,5 x 12	K	200	5,70 ZP
M 3,5 x 16	S	2000	3,95 ZP
M 3,5 x 16	K	200	6,40 ZP
M 3,5 x 18	K	200	7,60 ZP
M 3,5 x 20	S	2000	4,40 ZP
M 3,5 x 20	K	200	6,90 ZP
M 3,5 x 25	K	200	7,30 ZP
M 3,5 x 30	K	200	8,60 ZP
M 3,5 x 35	K	200	10,00 ZP
M 3,5 x 40	K	200	10,70 ZP
M 3,5 x 45	K	200	13,20 ZP
M 3,5 x 50	K	200	15,90 ZP
M 4 x 4	S	2000	8,70 ZP
M 4 x 4	K	200	11,00 ZP
M 4 x 5	S	2000	5,90 ZP
M 4 x 5	K	200	8,40 ZP
M 4 x 6	S	2000	1,90 ZP
M 4 x 6	K	200	4,30 ZP
M 4 x 8	S	2000	1,90 ZP
M 4 x 8	K	200	4,35 ZP
M 4 x 10	S	2000	2,00 ZP
M 4 x 10	K	200	4,40 ZP
M 4 x 12	S	2000	2,05 ZP
M 4 x 12	K	200	4,45 ZP
M 4 x 14	S	2000	3,10 ZP
M 4 x 14	K	200	5,50 ZP
M 4 x 16	S	2000	2,45 ZP
M 4 x 16	K	200	4,85 ZP
M 4 x 18	S	2000	3,60 ZP
M 4 x 18	K	200	6,00 ZP
M 4 x 20	S	2000	2,80 ZP
M 4 x 20	K	200	5,20 ZP
M 4 x 22	S	1000	4,50 ZP
M 4 x 22	K	200	7,00 ZP
M 4 x 25	S	1000	3,20 ZP
M 4 x 25	K	200	5,60 ZP
M 4 x 28	S	1000	6,50 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 28	K	200	8,90 ZP
M 4 x 30	S	1000	3,80 ZP
M 4 x 30	K	200	6,20 ZP
M 4 x 35	S	1000	4,35 ZP
M 4 x 35	K	200	6,80 ZP
M 4 x 40	S	1000	4,75 ZP
M 4 x 40	K	200	7,20 ZP
M 4 x 45	S	1000	6,00 ZP
M 4 x 45	K	200	8,50 ZP
M 4 x 50	S	1000	7,30 ZP
M 4 x 50	K	200	9,70 ZP
M 4 x 55	S	500	11,10 ZP
M 4 x 55	K	200	13,60 ZP
M 4 x 60	S	500	9,10 ZP
M 4 x 60	K	200	11,50 ZP
M 4 x 65	K	100	16,60 ZP
M 4 x 70	S	500	19,00 ZP
M 4 x 70	K	100	23,80 ZP
M 4 x 80	K	100	27,50 ZP
M 4 x 90	K	100	41,00 ZP
M 4 x 100	K	100	44,50 ZP
M 5 x 6	S	2000	8,80 ZP
M 5 x 6	K	200	11,20 ZP
M 5 x 8	S	2000	2,95 ZP
M 5 x 8	K	200	5,30 ZP
M 5 x 10	S	2000	3,10 ZP
M 5 x 10	K	200	5,50 ZP
M 5 x 12	S	1000	3,25 ZP
M 5 x 12	K	200	5,70 ZP
M 5 x 14	S	1000	4,95 ZP
M 5 x 14	K	200	7,40 ZP
M 5 x 16	S	1000	3,75 ZP
M 5 x 16	K	200	6,20 ZP
M 5 x 18	S	1000	5,20 ZP
M 5 x 18	K	200	7,60 ZP
M 5 x 20	S	1000	4,00 ZP
M 5 x 20	K	200	6,40 ZP
M 5 x 22	S	1000	6,70 ZP
M 5 x 22	K	200	9,10 ZP
M 5 x 25	S	1000	4,50 ZP
M 5 x 25	K	200	6,90 ZP
M 5 x 30	S	1000	5,50 ZP
M 5 x 30	K	200	7,90 ZP
M 5 x 35	S	500	7,40 ZP
M 5 x 35	K	200	9,80 ZP
M 5 x 40	S	500	6,70 ZP
M 5 x 40	K	200	9,10 ZP
M 5 x 45	S	500	8,80 ZP
M 5 x 45	K	200	11,20 ZP
M 5 x 50	S	500	8,50 ZP
M 5 x 50	K	200	10,90 ZP
M 5 x 55	S	500	11,80 ZP
M 5 x 55	K	200	13,30 ZP
M 5 x 60	K	200	15,90 ZP
M 5 x 65	K	100	18,10 ZP
M 5 x 70	S	200	11,80 ZP
M 5 x 70	K	100	16,70 ZP
M 5 x 80	S	200	21,10 ZP
M 5 x 80	K	100	26,00 ZP
M 5 x 90	S	200	40,50 ZP
M 5 x 90	K	100	45,00 ZP
M 5 x 100	S	200	45,50 ZP
M 5 x 100	K	100	55,00 ZP
M 6 x 6	S	1000	17,30 ZP
M 6 x 6	K	200	19,70 ZP
M 6 x 8	S	1000	5,90 ZP
M 6 x 8	K	200	8,30 ZP
M 6 x 10	S	1000	4,80 ZP
M 6 x 10	K	200	7,20 ZP
M 6 x 12	S	1000	4,85 ZP
M 6 x 12	K	200	7,30 ZP
M 6 x 14	S	1000	5,90 ZP
M 6 x 14	K	200	8,35 ZP
M 6 x 16	S	1000	5,40 ZP
M 6 x 16	K	200	7,80 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	18	S	1000	8,40 ZP
M 6	x	18	K	200	10,80 ZP
M 6	x	20	S	1000	6,00 ZP
M 6	x	20	K	200	8,50 ZP
M 6	x	22	K	200	12,90 ZP
M 6	x	25	S	500	6,70 ZP
M 6	x	25	K	200	9,10 ZP
M 6	x	30	S	500	7,50 ZP
M 6	x	30	K	200	10,00 ZP
M 6	x	35	S	500	8,40 ZP
M 6	x	35	K	200	10,20 ZP
M 6	x	40	S	500	9,20 ZP
M 6	x	40	K	200	11,60 ZP
M 6	x	45	S	500	12,40 ZP
M 6	x	45	K	200	17,20 ZP
M 6	x	50	K	200	16,50 ZP
M 6	x	55	K	100	21,00 ZP
M 6	x	60	S	200	14,50 ZP
M 6	x	60	K	100	19,30 ZP
M 6	x	65	S	200	17,30 ZP
M 6	x	70	S	200	22,20 ZP
M 6	x	70	K	100	32,00 ZP
M 6	x	80	K	100	34,00 ZP
M 6	x	90	K	100	47,50 ZP
M 6	x	100	S	200	41,00 ZP
M 6	x	100	K	100	51,00 ZP
M 8	x	10	K	100	33,00 ZP
M 8	x	12	K	100	15,50 ZP
M 8	x	16	S	500	13,60 ZP
M 8	x	16	K	100	15,90 ZP
M 8	x	18	K	100	21,50 ZP
M 8	x	20	S	500	12,80 ZP
M 8	x	20	K	100	15,20 ZP
M 8	x	25	S	500	13,40 ZP
M 8	x	25	K	100	18,20 ZP
M 8	x	30	S	200	14,90 ZP
M 8	x	30	K	100	19,70 ZP
M 8	x	35	K	100	24,20 ZP
M 8	x	40	K	100	23,90 ZP
M 8	x	45	K	100	30,00 ZP
M 8	x	50	K	100	27,00 ZP
M 8	x	55	K	100	39,50 ZP
M 8	x	60	K	100	35,50 ZP
M 8	x	70	K	100	39,50 ZP
M 8	x	80	K	100	52,00 ZP
M 8	x	90	K	100	57,00 ZP
M 8	x	100	K	100	66,00 ZP
M 10	x	12	K	100	80,50 ZP
M 10	x	16	K	100	30,00 ZP
M 10	x	20	K	100	28,50 ZP
M 10	x	25	K	100	29,50 ZP
M 10	x	30	K	100	28,50 ZP
M 10	x	35	K	100	39,00 ZP
M 10	x	40	K	100	37,00 ZP
M 10	x	50	K	100	43,00 ZP
M 10	x	60	K	100	49,50 ZP
M 10	x	70	K	100	60,00 ZP
M 10	x	80	K	50	71,00 ZP
M 10	x	100	K	50	97,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00084.460		RAZ 30
84	**4.8**		
	zinc plated yellow		



Slotted cheese head screws

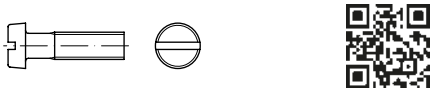
Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 429
Brass, plastic → S. 565

DIN 84 → replaced by ISO 1207 (compatible)

M 3	x	4	S	2000	6,20 YZP
M 3	x	5	S	2000	6,20 YZP
M 3	x	6	S	2000	1,40 YZP
M 3	x	8	S	2000	1,80 YZP
M 3	x	10	S	2000	1,85 YZP
M 3	x	12	S	2000	1,90 YZP
M 3	x	16	S	2000	2,30 YZP
M 3	x	18	S	2000	3,60 YZP
M 3	x	20	S	2000	2,60 YZP
M 3	x	25	S	2000	2,75 YZP
M 4	x	6	S	2000	2,65 YZP
M 4	x	8	S	2000	3,25 YZP
M 4	x	10	S	2000	3,40 YZP
M 4	x	12	S	2000	3,50 YZP
M 4	x	16	S	2000	4,10 YZP
M 4	x	20	S	2000	4,75 YZP
M 4	x	25	S	1000	5,30 YZP
M 4	x	30	S	1000	5,70 YZP
M 4	x	35	S	1000	6,30 YZP
M 4	x	40	S	1000	4,90 YZP
M 4	x	45	S	1000	7,41 YZP
M 5	x	8	S	2000	4,85 YZP
M 5	x	10	S	2000	5,20 YZP
M 5	x	12	S	1000	5,50 YZP
M 5	x	16	S	1000	6,30 YZP
M 5	x	20	S	1000	6,70 YZP
M 5	x	25	S	1000	7,50 YZP
M 5	x	30	S	1000	8,00 YZP
M 5	x	35	S	500	9,50 YZP
M 5	x	40	S	500	10,00 YZP
M 5	x	45	S	500	10,10 YZP
M 6	x	10	S	1000	8,10 YZP
M 6	x	12	S	1000	8,10 YZP
M 6	x	16	S	1000	9,00 YZP
M 6	x	20	S	1000	10,10 YZP
M 6	x	25	S	500	10,20 YZP
M 6	x	30	S	500	10,70 YZP
M 6	x	35	S	500	10,90 YZP
M 6	x	40	S	500	13,00 YZP
M 6	x	50	S	200	17,00 YZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00084.430		RAZ 30
84	**4.8**		
	nickel plated		



Slotted cheese head screws

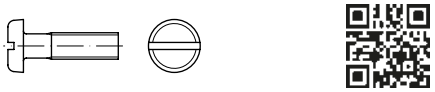
Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 429
Brass, plastic → S. 565

DIN 84 → replaced by ISO 1207 (compatible)

M 3	x	6	S	2000	2,05 NP
M 3	x	8	S	2000	2,15 NP
M 3	x	10	S	2000	2,25 NP
M 3	x	12	S	2000	2,40 NP
M 3	x	16	S	2000	2,80 NP
M 4	x	8	S	2000	3,35 NP
M 4	x	10	S	2000	3,50 NP
M 4	x	12	S	2000	3,60 NP
M 4	x	16	S	2000	4,30 NP
M 5	x	8	S	2000	5,10 NP
M 5	x	10	S	2000	5,50 NP
M 5	x	12	S	1000	5,70 NP
M 5	x	16	S	1000	6,50 NP

DIN	00085.400	RAZ 30
85	**4.8**	



Slotted pan head screws

Dimensions → TI-37 Standard conversion → TI-6

Stainless → S. 431
Brass, plastic → S. 566

DIN 85 → replaced by ISO 1580 (compatible)

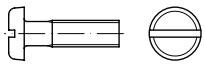
M 3	x	5	S	2000	5,10
M 3	x	6	S	2000	2,65
M 3	x	8	S	2000	1,15
M 3	x	10	S	2000	1,55
M 3	x	12	S	2000	1,75
M 3	x	16	S	2000	1,90
M 3	x	25	S	2000	2,75
M 4	x	6	S	2000	4,05
M 4	x	8	S	2000	1,95
M 4	x	10	S	2000	1,95
M 4	x	12	S	2000	2,00
M 4	x	16	S	2000	2,35
M 4	x	20	S	2000	2,70
M 4	x	25	S	1000	3,95
M 4	x	30	S	1000	4,30
M 4	x	35	S	1000	5,20
M 4	x	40	S	1000	5,50
M 5	x	8	S	2000	3,00
M 5	x	10	S	2000	3,05
M 5	x	12	S	1000	3,20
M 5	x	16	S	1000	3,65
M 5	x	20	S	1000	4,00
M 5	x	35	S	500	6,00
M 5	x	40	S	500	7,90

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	50	S	500	9,80
M 6	x	8	S	1000	10,90
M 6	x	10	S	1000	4,60
M 6	x	12	S	1000	4,75
M 6	x	16	S	1000	5,30
M 6	x	20	S	1000	5,80
M 6	x	25	S	500	6,60
M 6	x	30	S	500	7,30
M 6	x	35	S	500	8,20
M 6	x	50	S	200	13,40

DIN	00085.410	RAZ 30

85

4.8
zinc plated



Slotted pan head screws

Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 431
Brass, plastic → S. 566

DIN 85 → replaced by ISO 1580 (compatible)

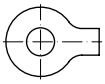
M 3	x	4	S	2000	5,95 ZP
M 3	x	4	K	200	8,40 ZP
M 3	x	5	S	2000	5,55 ZP
M 3	x	5	K	200	8,00 ZP
M 3	x	6	S	2000	2,60 ZP
M 3	x	6	K	200	5,30 ZP
M 3	x	8	S	2000	1,25 ZP
M 3	x	8	K	200	3,75 ZP
M 3	x	10	S	2000	1,40 ZP
M 3	x	10	K	200	4,10 ZP
M 3	x	12	S	2000	1,60 ZP
M 3	x	12	K	200	4,35 ZP
M 3	x	16	S	2000	1,75 ZP
M 3	x	16	K	200	4,45 ZP
M 3	x	20	S	2000	2,40 ZP
M 3	x	20	K	200	5,20 ZP
M 3	x	25	S	2000	2,75 ZP
M 3	x	25	K	200	5,50 ZP
M 3	x	30	K	200	6,30 ZP
M 3	x	35	K	200	7,50 ZP
M 3	x	40	K	200	8,10 ZP
M 3	x	45	K	200	11,30 ZP
M 3	x	50	K	200	12,80 ZP
M 3	x	60	K	200	15,90 ZP
M 4	x	5	S	2000	8,60 ZP
M 4	x	5	K	200	11,50 ZP
M 4	x	6	S	2000	4,00 ZP
M 4	x	6	K	200	6,90 ZP
M 4	x	8	S	2000	2,05 ZP
M 4	x	8	K	200	4,50 ZP
M 4	x	10	S	2000	2,15 ZP
M 4	x	10	K	200	4,60 ZP
M 4	x	12	S	2000	2,20 ZP
M 4	x	12	K	200	4,65 ZP
M 4	x	16	S	2000	2,60 ZP
M 4	x	16	K	200	5,10 ZP
M 4	x	20	S	2000	2,85 ZP
M 4	x	20	K	200	5,50 ZP
M 4	x	25	S	1000	3,45 ZP
M 4	x	25	K	200	6,80 ZP
M 4	x	30	S	1000	4,40 ZP
M 4	x	30	K	200	7,20 ZP
M 4	x	35	K	200	8,10 ZP
M 4	x	40	K	200	8,50 ZP
M 4	x	45	K	200	11,20 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	50	K	200	11,80 ZP
M 4	x	60	K	200	15,90 ZP
M 5	x	6	S	2000	10,50 ZP
M 5	x	6	K	200	14,60 ZP
M 5	x	8	S	2000	3,20 ZP
M 5	x	8	K	200	5,70 ZP
M 5	x	10	S	2000	3,35 ZP
M 5	x	10	K	200	5,80 ZP
M 5	x	12	S	1000	3,45 ZP
M 5	x	12	K	200	6,00 ZP
M 5	x	16	S	1000	4,00 ZP
M 5	x	16	K	200	6,50 ZP
M 5	x	20	S	1000	4,35 ZP
M 5	x	20	K	200	6,90 ZP
M 5	x	25	S	1000	4,75 ZP
M 5	x	25	K	200	7,20 ZP
M 5	x	30	S	1000	5,65 ZP
M 5	x	30	K	200	8,10 ZP
M 5	x	35	S	2000	6,55 ZP
M 5	x	35	K	200	9,00 ZP
M 5	x	40	S	2000	8,65 ZP
M 5	x	40	K	200	11,10 ZP
M 5	x	45	S	500	9,55 ZP
M 5	x	45	K	200	12,00 ZP
M 5	x	50	K	200	13,30 ZP
M 5	x	60	K	200	18,10 ZP
M 6	x	8	S	1000	11,60 ZP
M 6	x	8	K	200	14,50 ZP
M 6	x	10	S	1000	5,00 ZP
M 6	x	10	K	200	7,50 ZP
M 6	x	12	S	1000	5,20 ZP
M 6	x	12	K	200	7,70 ZP
M 6	x	16	S	1000	5,70 ZP
M 6	x	16	K	200	8,30 ZP
M 6	x	20	S	1000	6,40 ZP
M 6	x	20	K	200	8,80 ZP
M 6	x	25	S	500	7,20 ZP
M 6	x	25	K	200	9,70 ZP
M 6	x	30	S	500	7,90 ZP
M 6	x	30	K	200	10,50 ZP
M 6	x	35	K	200	11,50 ZP
M 6	x	40	K	200	14,30 ZP
M 6	x	45	K	200	15,90 ZP
M 6	x	50	K	200	17,30 ZP
M 6	x	55	K	100	28,00 ZP
M 6	x	60	K	100	21,30 ZP
M 8	x	10	K	100	36,00 ZP
M 8	x	12	K	100	18,50 ZP
M 8	x	16	K	100	19,20 ZP
M 8	x	20	K	100	20,20 ZP
M 8	x	25	K	100	22,40 ZP
M 8	x	30	K	100	21,80 ZP
M 8	x	40	K	100	22,50 ZP
M 8	x	50	K	100	32,50 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00093.000		RAZ 40

93

Steel



Tap washers with a long tap

Caution!
Not suitable for high-tensile screwed fastenings.

Dimensions → TI-88

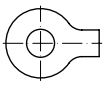
Stainless → S. 432

3,2	K	100	11,90
4,3	S	1000	8,90
4,3	K	100	12,60
5,3	S	1000	9,20
5,3	K	100	12,80
6,4	S	1000	10,30
6,4	K	100	15,00
8,4	S	1000	12,80
8,4	K	100	16,80
10,5	S	1000	14,90
10,5	K	100	19,20
13	S	500	20,10
13	K	100	26,00
15	K	100	28,50
17	S	500	28,50
17	K	100	35,00
19	K	100	36,50
21	S	250	32,50
21	K	100	40,00
23	S	100	52,00
25	S	100	54,00
28	S	50	100,00
31	S	50	112,00
34	S	50	128,00
37	S	50	140,00
40	S	50	161,00
43	S	25	174,00
46	S	25	201,00
50	S	25	231,00
54	S	25	255,00

~DIN	00093.010	RAZ 40

93

Steel
zinc plated



Tap washers with a long tap

Caution!
Not suitable for high-tensile screwed fastenings.

Dimensions → TI-88 Corrosion protection → TI-217

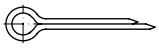
Stainless → S. 432

4,3	K	100	12,70 ZP
5,3	K	100	13,20 ZP
6,4	S	1000	10,60 ZP
6,4	K	100	15,40 ZP
8,4	S	1000	13,40 ZP
8,4	K	100	17,50 ZP
10,5	S	1000	15,70 ZP
10,5	K	100	20,10 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
13	S	500	21,70 ZP
13	K	100	28,00 ZP
15	K	100	31,00 ZP
17	S	500	31,00 ZP
17	K	100	38,00 ZP
19	K	100	40,00 ZP
21	S	250	36,00 ZP
21	K	100	43,50 ZP
23	S	100	56,00 ZP
25	S	100	59,00 ZP
28	S	50	109,00 ZP
31	S	50	122,00 ZP
34	S	50	140,00 ZP
37	S	50	154,00 ZP
43	S	25	193,00 ZP
50	S	25	260,00 ZP
54	S	25	280,00 ZP

DIN	00094.010	RAZ 40
94	**Steel zinc plated**	



Split pins

Dimensions ➔ TI-120 Standard conversion ➔ TI-10
Corrosion protection ➔ TI-217

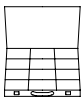
Stainless ➔ S. 432
Brass, copper ➔ S. 566

DIN 94 ➔ replaced by ISO 1234 (compatible)

Nominal ∅ = drilling ∅ x length

Dimensions	PU	Pieces	€/100/Mat.
1 x 6	S	1000	1,40 ZP
1 x 8	S	1000	1,40 ZP
1 x 10	S	1000	1,40 ZP
1 x 12	S	1000	1,40 ZP
1 x 16	S	1000	1,40 ZP
1 x 18	S	1000	1,40 ZP
1 x 20	S	1000	1,55 ZP
1 x 22	S	1000	1,80 ZP
1 x 25	S	1000	2,00 ZP
1 x 32	S	1000	2,45 ZP
1 x 40	S	1000	3,10 ZP
1,2 x 8	S	1000	1,50 ZP
1,2 x 10	S	1000	1,50 ZP
1,2 x 12	S	1000	1,50 ZP
1,2 x 14	S	1000	1,50 ZP
1,2 x 16	S	1000	1,50 ZP
1,2 x 20	S	1000	1,65 ZP
1,2 x 25	S	1000	2,05 ZP
1,2 x 32	S	1000	2,45 ZP
1,2 x 36	S	1000	2,95 ZP
1,2 x 40	S	1000	3,10 ZP
1,6 x 8	S	1000	1,80 ZP
1,6 x 10	S	1000	1,80 ZP
1,6 x 12	S	1000	1,80 ZP
1,6 x 14	S	1000	1,80 ZP
1,6 x 16	S	1000	1,80 ZP
1,6 x 18	S	1000	1,80 ZP
1,6 x 20	S	1000	2,00 ZP
1,6 x 22	S	1000	2,05 ZP
1,6 x 25	S	1000	2,20 ZP
1,6 x 28	S	1000	2,25 ZP
1,6 x 32	S	1000	2,55 ZP
1,6 x 36	S	1000	2,95 ZP
1,6 x 40	S	1000	3,15 ZP
1,6 x 50	S	1000	4,30 ZP
2 x 8	S	1000	2,30 ZP
2 x 10	S	1000	2,30 ZP
2 x 12	S	1000	2,30 ZP
2 x 14	S	1000	2,30 ZP
2 x 16	S	1000	2,30 ZP
2 x 18	S	1000	2,35 ZP
2 x 20	S	1000	2,35 ZP
2 x 22	S	1000	2,55 ZP
2 x 25	S	1000	2,70 ZP
2 x 28	S	1000	2,80 ZP
2 x 32	S	1000	2,95 ZP
2 x 36	S	1000	3,15 ZP
2 x 40	S	1000	3,40 ZP
2 x 45	S	1000	4,40 ZP
2 x 50	S	1000	4,65 ZP
2,5 x 10	S	500	2,75 ZP
2,5 x 12	S	500	2,75 ZP
2,5 x 14	S	500	2,75 ZP
2,5 x 16	S	500	2,75 ZP
2,5 x 18	S	500	2,75 ZP
2,5 x 20	S	500	2,95 ZP
2,5 x 22	S	500	3,10 ZP
2,5 x 25	S	500	3,25 ZP
2,5 x 28	S	500	3,50 ZP
2,5 x 32	S	500	3,65 ZP
2,5 x 36	S	500	3,90 ZP
2,5 x 40	S	500	4,20 ZP
2,5 x 45	S	500	4,50 ZP
2,5 x 50	S	500	4,75 ZP
2,5 x 56	S	500	6,40 ZP
2,5 x 63	S	500	7,20 ZP
3,2 x 10	S	500	3,40 ZP
3,2 x 12	S	500	3,40 ZP
3,2 x 14	S	500	3,40 ZP
3,2 x 16	S	500	3,40 ZP
3,2 x 18	S	500	3,45 ZP
3,2 x 20	S	500	3,65 ZP
3,2 x 22	S	500	3,80 ZP
3,2 x 25	S	500	4,05 ZP
3,2 x 28	S	500	4,30 ZP
3,2 x 32	S	500	4,60 ZP
3,2 x 36	S	500	4,90 ZP
3,2 x 40	S	500	5,30 ZP
3,2 x 45	S	500	5,90 ZP
3,2 x 50	S	500	6,30 ZP
3,2 x 56	S	500	6,70 ZP
3,2 x 63	S	500	7,60 ZP
3,2 x 71	S	500	8,50 ZP
4 x 15	S	500	4,80 ZP
4 x 18	S	500	4,85 ZP
4 x 20	S	500	5,10 ZP
4 x 22	S	500	5,30 ZP
4 x 25	S	500	5,60 ZP
4 x 28	S	500	6,00 ZP
4 x 32	S	500	6,50 ZP
4 x 36	S	500	6,90 ZP
4 x 40	S	500	7,50 ZP
4 x 45	S	500	8,00 ZP
4 x 50	S	500	8,70 ZP
4 x 56	S	500	9,40 ZP
4 x 63	S	500	10,30 ZP
4 x 71	S	500	11,30 ZP
4 x 80	S	500	12,60 ZP
4 x 90	S	500	21,10 ZP
4 x 100	S	500	23,80 ZP
4 x 112	S	250	27,30 ZP
4 x 125	S	250	30,80 ZP
5 x 20	S	250	7,50 ZP
5 x 22	S	250	7,70 ZP
5 x 25	S	250	8,00 ZP
5 x 28	S	250	9,10 ZP
5 x 32	S	250	10,10 ZP
5 x 36	S	250	11,00 ZP
5 x 40	S	250	11,80 ZP
5 x 45	S	250	12,80 ZP
5 x 50	S	250	13,70 ZP
5 x 56	S	250	15,00 ZP
5 x 63	S	250	16,70 ZP
5 x 71	S	250	18,40 ZP
5 x 80	S	250	19,90 ZP
5 x 90	S	250	22,00 ZP
5 x 100	S	250	24,60 ZP
5 x 112	S	250	42,00 ZP
5 x 125	S	250	47,50 ZP
5 x 210	S	50	700,00 ZP
5,5 x 50	S	250	20,30 ZP
6,3 x 25	S	250	15,10 ZP
6,3 x 32	S	250	15,20 ZP
6,3 x 36	S	250	16,60 ZP
6,3 x 40	S	250	17,60 ZP
6,3 x 45	S	250	19,00 ZP
6,3 x 50	S	250	20,60 ZP
6,3 x 56	S	250	22,80 ZP
6,3 x 63	S	250	26,00 ZP
6,3 x 71	S	250	28,00 ZP
6,3 x 80	S	250	31,00 ZP
6,3 x 90	S	250	34,50 ZP
6,3 x 100	S	250	38,50 ZP
6,3 x 112	S	250	43,50 ZP
6,3 x 125	S	250	49,50 ZP
6,3 x 140	S	250	92,00 ZP
8 x 40	S	100	38,00 ZP
8 x 45	S	100	40,00 ZP
8 x 50	S	100	42,50 ZP
8 x 56	S	100	46,50 ZP
8 x 63	S	100	49,50 ZP
8 x 71	S	100	53,00 ZP
8 x 80	S	100	59,00 ZP
8 x 90	S	100	63,00 ZP
8 x 100	S	100	68,00 ZP
8 x 112	S	100	76,00 ZP
8 x 125	S	100	87,00 ZP
8 x 140	S	100	97,00 ZP
10 x 56	S	100	70,00 ZP
10 x 63	S	100	75,00 ZP
10 x 71	S	100	85,00 ZP
10 x 80	S	100	94,00 ZP
10 x 90	S	100	102,00 ZP
10 x 100	S	100	113,00 ZP
10 x 112	S	100	120,00 ZP
10 x 125	S	100	132,00 ZP
10 x 140	S	100	145,00 ZP
10 x 160	S	100	181,00 ZP
10 x 180	S	100	249,00 ZP
10 x 200	S	100	270,00 ZP
13 x 170	S	25	193,00 ZP
13 x 80	S	25	194,00 ZP
13 x 90	S	25	195,00 ZP
13 x 100	S	25	209,00 ZP
13 x 112	S	25	230,00 ZP
13 x 125	S	25	250,00 ZP
13 x 140	S	25	275,00 ZP
13 x 160	S	25	830,00 ZP
13 x 180	S	25	860,00 ZP
13 x 200	S	25	960,00 ZP
13 x 250	S	25	1110,00 ZP
16 x 125	S	25	2010,00 ZP
16 x 140	S	25	2030,00 ZP
16 x 160	S	25	2090,00 ZP
16 x 180	S	25	2160,00 ZP
16 x 200	S	25	2190,00 ZP
16 x 250	S	25	2340,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article	82094.010				RAZ 5001
82094	**Assortments steel, zinc plated**				**DIN 94**



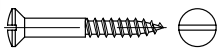
Split pin assortments DIN 94

Content: 12 frequent dimensions
from 1 x 20 – 8 x 80, approx. 910 pieces
(metal box)

Your own selection on request

DIN 94	S	1	7696,00

DIN	00095.010	RAZ 50
95	**Steel zinc plated**	



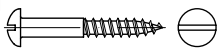
Slotted raised countersunk head wood screws

Dimensions → TI-51 Corrosion protection → TI-217

Stainless → S. 433
Brass → S. 567

2	x	10	S	500	3,45 ZP
2	x	20	S	500	5,10 ZP
2,5	x	10	S	500	3,50 ZP
2,5	x	12	S	500	3,05 ZP
2,5	x	16	S	500	2,25 ZP
2,5	x	20	S	500	2,60 ZP
3	x	10	S	200	3,80 ZP
3	x	12	S	200	2,85 ZP
3	x	16	S	200	2,25 ZP
3	x	20	S	200	2,40 ZP
3	x	25	S	200	2,60 ZP
3	x	30	S	200	3,60 ZP
3	x	35	S	200	5,10 ZP
3	x	40	S	200	5,90 ZP
3,5	x	16	S	200	2,85 ZP
3,5	x	20	S	200	2,60 ZP
3,5	x	25	S	200	2,95 ZP
3,5	x	30	S	200	3,40 ZP
3,5	x	35	S	200	3,85 ZP
3,5	x	40	S	200	6,40 ZP
4	x	16	S	200	4,30 ZP
4	x	20	S	200	3,05 ZP
4	x	25	S	200	3,50 ZP
4	x	30	S	200	3,95 ZP
4	x	35	S	200	4,35 ZP
4	x	40	S	200	4,80 ZP
4	x	45	S	200	8,00 ZP
4	x	50	S	200	8,80 ZP
4	x	70	S	200	17,70 ZP
4,5	x	16	S	200	7,20 ZP
4,5	x	20	S	200	5,90 ZP
4,5	x	25	S	200	5,10 ZP
4,5	x	30	S	200	4,65 ZP
4,5	x	35	S	200	5,10 ZP
4,5	x	40	S	200	5,70 ZP
4,5	x	45	S	200	9,20 ZP
4,5	x	50	S	200	11,50 ZP
5	x	20	S	200	7,10 ZP
5	x	25	S	200	6,50 ZP
5	x	30	S	200	5,50 ZP
5	x	35	S	200	7,30 ZP
5	x	40	S	200	7,00 ZP
5	x	45	S	200	10,50 ZP
5	x	50	S	200	8,30 ZP
5	x	55	S	200	17,10 ZP
5	x	60	S	200	12,10 ZP
5	x	70	S	200	17,70 ZP
5	x	80	S	200	19,90 ZP
6	x	40	S	200	14,60 ZP
6	x	45	S	200	17,00 ZP
6	x	50	S	200	13,70 ZP
6	x	60	S	100	16,90 ZP
6	x	70	S	100	24,40 ZP
6	x	80	S	100	28,50 ZP
6	x	90	S	100	30,50 ZP
6	x	100	S	100	34,00 ZP

DIN	00096.010	RAZ 50
96	**Steel zinc plated**	



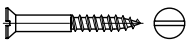
Slotted round head wood screws

Dimensions → TI-51 Corrosion protection → TI-217

Stainless → S. 434
Brass → S. 568

1,6	x	8	S	500	4,75 ZP
1,6	x	10	S	500	3,65 ZP
1,6	x	12	S	500	4,75 ZP
1,6	x	16	S	500	4,75 ZP
2	x	8	S	500	3,95 ZP
2	x	10	S	500	2,75 ZP
2	x	12	S	500	3,00 ZP
2	x	16	S	500	3,65 ZP
2,5	x	10	S	500	3,35 ZP
2,5	x	12	S	500	2,70 ZP
2,5	x	16	S	500	2,20 ZP
2,5	x	20	S	500	2,40 ZP
2,5	x	25	S	500	3,55 ZP
3	x	10	S	200	3,25 ZP
3	x	12	S	200	2,75 ZP
3	x	16	S	200	2,15 ZP
3	x	20	S	200	2,30 ZP
3	x	25	S	200	2,55 ZP
3	x	30	S	200	3,45 ZP
3,5	x	10	S	200	4,50 ZP
3,5	x	12	S	200	3,10 ZP
3,5	x	16	S	200	2,30 ZP
3,5	x	20	S	200	2,55 ZP
3,5	x	25	S	200	2,80 ZP
3,5	x	30	S	200	3,35 ZP
3,5	x	35	S	200	3,75 ZP
3,5	x	40	S	200	5,20 ZP
3,5	x	45	S	200	6,90 ZP
3,5	x	50	S	200	7,30 ZP
4	x	10	S	200	5,20 ZP
4	x	12	S	200	3,90 ZP
4	x	16	S	200	4,10 ZP
4	x	20	S	200	3,00 ZP
4	x	25	S	200	3,40 ZP
4	x	30	S	200	3,80 ZP
4	x	35	S	200	4,20 ZP
4	x	40	S	200	4,65 ZP
4	x	45	S	200	6,40 ZP
4	x	50	S	200	7,00 ZP
4	x	55	S	200	12,10 ZP
4	x	60	S	200	8,80 ZP
4	x	70	S	200	13,30 ZP
4	x	80	S	200	26,50 ZP
4	x	100	S	200	36,00 ZP
4,5	x	16	S	200	6,50 ZP
4,5	x	20	S	200	5,10 ZP
4,5	x	25	S	200	4,05 ZP
4,5	x	30	S	200	4,45 ZP
4,5	x	35	S	200	4,90 ZP
4,5	x	40	S	200	5,50 ZP
4,5	x	45	S	200	7,40 ZP
4,5	x	50	S	200	8,50 ZP
4,5	x	55	S	200	13,60 ZP
4,5	x	60	S	200	13,10 ZP
4,5	x	70	S	200	14,90 ZP
5	x	12	S	200	6,90 ZP
5	x	16	S	200	6,90 ZP
5	x	20	S	200	6,00 ZP
5	x	25	S	200	5,10 ZP
5	x	30	S	200	5,30 ZP
5	x	35	S	200	6,00 ZP
5	x	40	S	200	6,70 ZP
5	x	45	S	200	8,50 ZP
5	x	50	S	200	7,90 ZP
5	x	55	S	200	15,20 ZP
5	x	60	S	200	12,10 ZP
5	x	70	S	200	16,90 ZP
5	x	80	S	200	19,30 ZP
6	x	20	S	200	15,50 ZP
6	x	25	S	200	11,80 ZP
6	x	30	S	200	10,90 ZP
6	x	35	S	200	11,50 ZP
6	x	40	S	200	11,30 ZP
6	x	45	S	200	14,50 ZP
6	x	50	S	200	12,90 ZP
6	x	55	S	100	19,50 ZP
6	x	60	S	100	15,70 ZP
6	x	70	S	100	19,00 ZP
6	x	80	S	100	24,60 ZP
6	x	90	S	100	28,50 ZP
6	x	100	S	100	32,50 ZP
8	x	40	S	100	55,00 ZP
8	x	45	S	100	55,00 ZP
8	x	50	S	100	55,00 ZP
8	x	60	S	100	55,00 ZP
8	x	70	S	100	55,00 ZP
8	x	80	S	100	55,00 ZP

DIN	00097.010	RAZ 50
97	**Steel zinc plated**	



Slotted countersunk head wood screws

Dimensions → TI-51 Corrosion protection → TI-217

Stainless → S. 434
Brass → S. 569

1,6	x	10	S	500	3,60 ZP
1,6	x	12	S	500	3,25 ZP
1,6	x	16	S	500	4,35 ZP
2	x	10	S	500	2,40 ZP
2	x	12	S	500	2,60 ZP
2	x	16	S	500	2,85 ZP
2,5	x	10	S	500	2,60 ZP
2,5	x	12	S	500	2,45 ZP
2,5	x	16	S	500	1,90 ZP

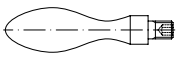
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
2,5	x	20	S	500	2,00 ZP
2,5	x	25	S	500	2,80 ZP
2,5	x	30	S	500	3,85 ZP
3	x	10	S	200	2,85 ZP
3	x	12	S	200	2,55 ZP
3	x	16	S	200	2,00 ZP
3	x	20	S	200	2,15 ZP
3	x	25	S	200	2,25 ZP
3	x	30	S	200	2,65 ZP
3	x	35	S	200	4,30 ZP
3	x	40	S	200	4,80 ZP
3	x	50	S	200	7,90 ZP
3,5	x	10	S	200	4,35 ZP
3,5	x	12	S	200	2,65 ZP
3,5	x	16	S	200	3,00 ZP
3,5	x	20	S	200	2,30 ZP
3,5	x	25	S	200	2,60 ZP
3,5	x	30	S	200	3,00 ZP
3,5	x	35	S	200	4,05 ZP
3,5	x	40	S	200	5,60 ZP
3,5	x	45	S	200	5,90 ZP
3,5	x	50	S	200	7,10 ZP
3,5	x	60	S	200	13,60 ZP
4	x	10	S	200	4,30 ZP
4	x	12	S	200	4,30 ZP
4	x	16	S	200	3,50 ZP
4	x	20	S	200	3,20 ZP
4	x	25	S	200	3,05 ZP
4	x	30	S	200	3,45 ZP
4	x	35	S	200	3,80 ZP
4	x	40	S	200	4,20 ZP
4	x	45	S	200	4,85 ZP
4	x	50	S	200	5,40 ZP
4	x	55	S	200	12,40 ZP
4	x	60	S	200	7,90 ZP
4	x	70	S	200	12,10 ZP
4	x	80	S	200	22,60 ZP
4	x	90	S	200	31,00 ZP
4	x	100	S	200	33,00 ZP
4,5	x	12	S	200	6,60 ZP
4,5	x	16	S	200	4,85 ZP
4,5	x	20	S	200	4,70 ZP
4,5	x	25	S	200	4,40 ZP
4,5	x	30	S	200	4,05 ZP
4,5	x	35	S	200	4,45 ZP
4,5	x	40	S	200	5,10 ZP
4,5	x	45	S	200	6,70 ZP
4,5	x	50	S	200	7,90 ZP
4,5	x	55	S	200	13,40 ZP
4,5	x	60	S	200	11,20 ZP
4,5	x	70	S	200	12,90 ZP
5	x	16	S	200	4,75 ZP
5	x	20	S	200	5,30 ZP
5	x	25	S	200	5,90 ZP
5	x	30	S	200	6,20 ZP
5	x	35	S	200	6,70 ZP
5	x	40	S	200	6,10 ZP
5	x	45	S	200	6,60 ZP
5	x	50	S	200	7,20 ZP
5	x	55	S	200	13,10 ZP
5	x	60	S	200	9,60 ZP
5	x	65	S	200	15,40 ZP
5	x	70	S	200	10,70 ZP
5	x	80	S	200	15,90 ZP
5	x	90	S	200	24,50 ZP
5	x	100	S	200	26,50 ZP
5	x	120	S	200	62,00 ZP
6	x	20	S	200	14,00 ZP
6	x	25	S	200	14,00 ZP
6	x	30	S	200	9,90 ZP
6	x	35	S	200	10,40 ZP
6	x	40	S	200	9,30 ZP
6	x	45	S	200	10,00 ZP
6	x	50	S	200	10,40 ZP
6	x	55	S	100	16,80 ZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	60	S	100	11,60 ZP
6	x	65	S	100	20,20 ZP
6	x	70	S	100	16,60 ZP
6	x	75	S	100	22,30 ZP
6	x	80	S	100	14,50 ZP
6	x	90	S	100	23,50 ZP
6	x	100	S	100	25,00 ZP
6	x	110	S	100	52,00 ZP
6	x	120	S	100	56,00 ZP
7	x	50	S	100	49,50 ZP
7	x	60	S	100	49,50 ZP
7	x	70	S	100	49,50 ZP
7	x	80	S	100	33,50 ZP
7	x	90	S	100	38,50 ZP
7	x	100	S	100	43,50 ZP
8	x	40	S	100	49,50 ZP
8	x	45	S	100	49,50 ZP
8	x	50	S	100	38,00 ZP
8	x	60	S	100	38,00 ZP
8	x	70	S	100	38,00 ZP
8	x	80	S	100	40,00 ZP
8	x	90	S	100	46,00 ZP
8	x	100	S	100	51,00 ZP

DIN 00098.004 RAZ 80

98 Steel type E



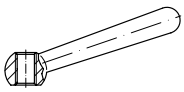
Rotatable ball handles, E = with threaded shank, with hexagon socket

Dimensions → TI-123

Ball ∅/threaded shank M			PU	Pieces	
E 16	M	6	S	10	2240,00
E 20	M	8	S	10	2550,00
E 25	M	10	S	10	3200,00
E 32	M	12	S	10	5200,00
E 36	M	16	S	10	6800,00

DIN 00099.007 RAZ 80

99 Steel type N



Tapered handles with handle bracket via thread, N = tilted handle

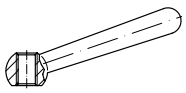
Dimensions → TI-123

Stainless → S. 435

Length/internal thread M			PU	Pieces	
N 50	M	6	S	10	1670,00
N 63	M	8	S	10	1030,00
N 80	M	10	S	1	1240,00
N 100	M	12	S	1	1650,00
N 125	M	16	S	1	2850,00
N 160	M	20	S	1	4800,00
N 200	M	24	S	1	13400,00

DIN 00099.017 RAZ 80

99 Steel zinc plated type N



Tapered handles with handle bracket via thread, N = tilted handle

Dimensions → TI-123 Corrosion protection → TI-217

Stainless → S. 435

Length/internal thread M			PU	Pieces	
N 80	M	10	S	10	1320,00 ZP
N 100	M	12	S	1	1710,00 ZP
N 125	M	16	S	1	3050,00 ZP
N 160	M	20	S	1	5100,00 ZP

DIN 00125.001 RAZ 90

125-1 Steel 140 HV type A

Plain washers, A = without chamfer

Dimensions → TI-84

Stainless → S. 435

Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness						
2,2	x	5	x	0,3	S 5000	0,70
2,2	x	5	x	0,3	K 200	2,40
2,5	x	6	x	0,5	S 5000	0,90
2,5	x	6	x	0,5	K 200	2,65
2,7	x	6	x	0,5	S 5000	1,00
2,7	x	6	x	0,5	K 200	2,80
2,8	x	7	x	0,5	K 200	2,80
3,2	x	7	x	0,5	S 5000	0,30
3,2	x	7	x	0,5	K 200	1,95
3,7	x	8	x	0,5	S 5000	0,55
3,7	x	8	x	0,5	K 200	2,65
4,3	x	9	x	0,8	S 1000	0,90
4,3	x	9	x	0,8	K 200	2,65
5,3	x	10	x	1	S 1000	1,05
5,3	x	10	x	1	K 100	2,80
6,4	x	12	x	1,6	S 1000	1,75
6,4	x	12	x	1,6	K 100	3,75
7,4	x	14	x	1,6	S 1000	2,55
7,4	x	14	x	1,6	K 100	4,65
8,4	x	16	x	1,6	S 1000	2,40
8,4	x	16	x	1,6	K 100	4,05
10,5	x	20	x	2	S 1000	3,95
10,5	x	20	x	2	K 100	5,90
13	x	24	x	2,5	S 500	7,10
13	x	24	x	2,5	K 100	9,60
15	x	28	x	2,5	S 500	8,60
15	x	28	x	2,5	K 100	11,40
17	x	30	x	3	S 250	10,30
17	x	30	x	3	K 100	13,50
19	x	34	x	3	S 250	18,50
19	x	34	x	3	K 100	22,40
21	x	37	x	3	S 200	18,90

Dimensions	PU	Pieces	€/100/Mat.
DIN	00125.011		RAZ 90
125-1	**Steel 140 HV zinc plated**		**type A**

Plain washers, A = without chamfer

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 435
Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness							
2,2	x	5	x	0,3	S	5000	0,80 ZP
2,2	x	5	x	0,3	K	200	2,65 ZP
2,5	x	6	x	0,5	S	5000	1,00 ZP
2,5	x	6	x	0,5	K	200	2,75 ZP
2,7	x	6	x	0,5	S	5000	1,05 ZP
2,7	x	6	x	0,5	K	200	2,85 ZP
2,8	x	7	x	0,5	K	200	2,85 ZP
3,2	x	7	x	0,5	S	5000	0,60 ZP
3,2	x	7	x	0,5	K	200	2,15 ZP
3,7	x	8	x	0,5	S	5000	0,70 ZP
3,7	x	8	x	0,5	K	200	2,60 ZP
4,3	x	9	x	0,8	S	1000	0,90 ZP
4,3	x	9	x	0,8	K	200	2,65 ZP
5,3	x	10	x	1	S	1000	1,25 ZP
5,3	x	10	x	1	K	100	3,05 ZP
6,4	x	12	x	1,6	S	1000	2,20 ZP
6,4	x	12	x	1,6	K	100	4,25 ZP
7,4	x	14	x	1,6	S	1000	3,25 ZP
7,4	x	14	x	1,6	K	100	5,50 ZP
8,4	x	16	x	1,6	S	1000	3,10 ZP
8,4	x	16	x	1,6	K	100	4,80 ZP
10,5	x	20	x	2	S	1000	5,30 ZP
10,5	x	20	x	2	K	100	7,30 ZP
13	x	24	x	2,5	S	500	9,50 ZP
13	x	24	x	2,5	K	100	12,40 ZP
15	x	28	x	2,5	S	500	11,20 ZP
15	x	28	x	2,5	K	100	14,60 ZP
17	x	30	x	3	S	250	14,20 ZP
17	x	30	x	3	K	100	17,70 ZP
19	x	34	x	3	S	250	23,50 ZP
19	x	34	x	3	K	100	28,00 ZP
21	x	37	x	3	S	200	24,70 ZP
21	x	37	x	3	K	100	29,50 ZP

Article	82125.010	RAZ 5001
82125	**Assortments Steel, zinc plated**	**DIN 125/A**

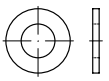
Washer assortments DIN 125 type A

Content: 12 frequent dimensions from 3,2 - 25 ∅, approx. 810 pieces (metal box)

Your own selection on request

DIN 125	S	1	7696,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00125.(*)		RAZ 90
125-1	**Steel 140 HV zinc plated yellow***		**type A**



Plain washers, A = without chamfer

< ∅ 6,4 min. coating thickness 5µm = (061)
*from ∅ 6,4 min. coating thickness 8µm = (334)

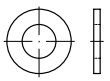
Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 435
Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness							
2,5	x	6	x	0,5	S	1000	0,55 YZP
2,8	x	7	x	0,5	S	1000	0,55 YZP
3,2	x	7	x	0,5	S	1000	0,60 YZP
3,2	x	7	x	0,5	K	200	2,15 YZP
4,3	x	9	x	0,8	S	1000	0,90 YZP
4,3	x	9	x	0,8	K	200	2,80 YZP
5,3	x	10	x	1	S	1000	1,30 YZP
5,3	x	10	x	1	K	100	3,45 YZP
6,4	x	12	x	1,6	S	1000	2,35 YZP8
6,4	x	12	x	1,6	K	100	5,10 YZP8
8,4	x	16	x	1,6	S	1000	3,15 YZP8
8,4	x	16	x	1,6	K	100	6,00 YZP8
10,5	x	20	x	2	S	1000	5,40 YZP8
10,5	x	20	x	2	K	100	9,50 YZP8
13	x	24	x	2,5	S	500	9,70 YZP8
13	x	24	x	2,5	K	100	15,50 YZP8
15	x	28	x	2,5	S	500	14,90 YZP8
15	x	28	x	2,5	K	100	18,40 YZP8
17	x	30	x	3	S	250	14,50 YZP8
17	x	30	x	3	K	100	22,60 YZP8
19	x	34	x	3	S	250	26,50 YZP8
21	x	37	x	3	S	200	25,50 YZP8
21	x	37	x	3	K	100	37,50 YZP8

DIN	00125.021	RAZ 90
125-1	**Steel 140 HV hot dip galvanized**	**type A**



Plain washers, A = without chamfer

Dimensions → TI-84 Corrosion protection → TI-219

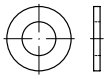
Stainless → S. 435
Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness							
6,4	x	12	x	1,6	S	1000	4,65 HDG
6,4	x	12	x	1,6	K	100	7,00 HDG
8,4	x	16	x	1,6	S	1000	6,50 HDG
8,4	x	16	x	1,6	K	100	8,80 HDG
10,5	x	20	x	2	S	1000	12,80 HDG
10,5	x	20	x	2	K	100	15,10 HDG
13	x	24	x	2,5	S	500	16,20 HDG
13	x	24	x	2,5	K	100	18,70 HDG
15	x	28	x	2,5	S	500	25,00 HDG

Dimensions					PU	Pieces	€/100/Mat.
15	x	28	x	2,5	K	100	28,00 HDG
17	x	30	x	3	S	250	25,50 HDG
17	x	30	x	3	K	100	29,50 HDG
19	x	34	x	3	S	250	36,00 HDG
19	x	34	x	3	K	100	40,00 HDG
21	x	37	x	3	S	200	39,50 HDG
21	x	37	x	3	K	100	43,50 HDG

DIN	00125.031	RAZ 90
125-1	**Steel 140 HV nickel plated**	**type A**



Plain washers, A = without chamfer

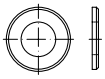
Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 435
Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness							
3,2	x	7	x	0,5	S	1000	0,70 NP
4,3	x	9	x	0,8	S	1000	1,05 NP
5,3	x	10	x	1	S	1000	1,45 NP
6,4	x	12	x	1,6	S	1000	2,40 NP
8,4	x	16	x	1,6	S	1000	3,40 NP
10,5	x	20	x	2	S	1000	5,90 NP

DIN	00125.004	RAZ 90
125-1	**Steel 140 HV turned**	**type B**



Plain washers, B = with chamfer (turned)

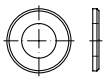
Dimensions → TI-84

Stainless → S. 435
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

Inside ∅ x outside ∅ x thickness							
1,1	x	3	x	0,3	S	100	12,70 turned
1,3	x	3,5	x	0,3	S	100	12,70 turned
1,5	x	4	x	0,3	S	100	12,70 turned
1,7	x	4	x	0,3	S	100	12,90 turned
1,8	x	4,5	x	0,3	S	100	12,90 turned
2,2	x	5	x	0,5	S	100	12,90 turned
3,2	x	7	x	0,5	S	100	13,70 turned

Dimensions	PU Pieces	€/100/Mat.
DIN	00125.002	RAZ 90
125-1	Steel 140 HV	type B



Plain washers, B = with chamfer (punched)

Dimensions → TI-84

Stainless → S. 435
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

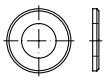
Inside ∅ x outside ∅ x thickness							
4,3	x	9	x	0,8	S	1000	1,75
5,3	x	10	x	1	S	1000	2,15
6,4	x	12	x	1,6	S	1000	2,75
8,4	x	16	x	1,6	S	1000	3,90
10,5	x	20	x	2	S	1000	7,20
13	x	24	x	2,5	S	500	8,40
15	x	28	x	2,5	S	500	10,60
17	x	30	x	3	S	250	12,50
19	x	34	x	3	S	250	20,50
21	x	37	x	3	S	200	20,30
23	x	39	x	3	S	200	26,50
23	x	39	x	3	K	100	30,00
25	x	44	x	4	S	200	39,00
25	x	44	x	4	K	100	43,00
27	x	50	x	4	S	50	70,00
28	x	50	x	4	S	50	70,00
31	x	56	x	4	S	50	83,00
34	x	60	x	5	S	50	125,00
37	x	66	x	5	S	50	159,00
40	x	72	x	6	S	25	177,00
43	x	78	x	7	S	25	305,00
46	x	85	x	7	S	25	325,00
50	x	92	x	8	S	10	480,00
54	x	98	x	8	S	1	770,00
58	x	105	x	9	S	1	1040,00
60	x	110	x	9	S	1	1240,00
62	x	110	x	9	S	1	1240,00
66	x	115	x	9	S	1	1240,00
70	x	120	x	10	S	1	2320,00
74	x	125	x	10	S	1	2320,00
78	x	135	x	10	S	1	2850,00
82	x	140	x	12	S	1	3450,00
93	x	160	x	12	S	1	4950,00

E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions	PU Pieces	€/100/Mat.
DIN	00125.012	RAZ 90
125-1	Steel 140 HV zinc plated	type B



Plain washers, B = with chamfer (punched)

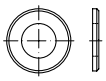
Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 435
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

Inside ∅ x outside ∅ x thickness							
3,2	x	7	x	0,5	S	1000	2,55 ZP
3,2	x	7	x	0,5	K	200	5,10 ZP
4,3	x	9	x	0,8	S	1000	1,85 ZP
4,3	x	9	x	0,8	K	200	3,65 ZP
5,3	x	10	x	1	S	1000	2,30 ZP
5,3	x	10	x	1	K	100	4,10 ZP
6,4	x	12	x	1,6	S	1000	3,25 ZP
6,4	x	12	x	1,6	K	100	5,30 ZP
8,4	x	16	x	1,6	S	1000	4,80 ZP
8,4	x	16	x	1,6	K	100	6,50 ZP
10,5	x	20	x	2	S	1000	9,10 ZP
10,5	x	20	x	2	K	100	11,10 ZP
13	x	24	x	2,5	S	500	10,60 ZP
13	x	24	x	2,5	K	100	13,50 ZP
15	x	28	x	2,5	S	500	13,50 ZP
15	x	28	x	2,5	K	100	16,90 ZP
17	x	30	x	3	S	250	16,30 ZP
17	x	30	x	3	K	100	19,90 ZP
19	x	34	x	3	S	250	25,50 ZP
19	x	34	x	3	K	100	30,00 ZP
21	x	37	x	3	S	200	26,00 ZP
21	x	37	x	3	K	100	30,00 ZP
23	x	39	x	3	S	200	32,00 ZP
23	x	39	x	3	K	100	36,00 ZP
25	x	44	x	4	S	200	48,50 ZP
25	x	44	x	4	K	100	54,00 ZP
27	x	50	x	4	S	50	96,00 ZP
28	x	50	x	4	S	50	96,00 ZP
31	x	56	x	4	S	50	114,00 ZP
34	x	60	x	5	S	50	170,00 ZP
37	x	66	x	5	S	50	216,00 ZP
40	x	72	x	6	S	25	260,00 ZP
43	x	78	x	7	S	25	420,00 ZP
46	x	85	x	7	S	25	460,00 ZP
50	x	92	x	8	S	10	670,00 ZP
54	x	98	x	8	S	1	960,00 ZP
58	x	105	x	9	S	1	1330,00 ZP
60	x	110	x	9	S	1	1540,00 ZP
62	x	110	x	9	S	1	1540,00 ZP
66	x	115	x	9	S	1	1570,00 ZP
70	x	120	x	10	S	1	2750,00 ZP
74	x	125	x	10	S	1	2750,00 ZP
78	x	135	x	10	S	1	3350,00 ZP
82	x	140	x	12	S	1	4050,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00125.062	RAZ 90
125-1	Steel 140 HV zinc plated yellow	type B



Plain washers, B = with chamfer (punched)

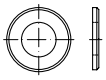
Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 435
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

Inside ∅ x outside ∅ x thickness							
6,4	x	12	x	1,6	S	1000	3,50 YZP
8,4	x	16	x	1,6	S	1000	5,50 YZP
10,5	x	20	x	2	S	1000	9,80 YZP
13	x	24	x	2,5	S	500	11,40 YZP
17	x	30	x	3	S	250	17,40 YZP
21	x	37	x	3	S	200	28,00 YZP
23	x	39	x	3	S	200	42,00 YZP
25	x	44	x	4	S	200	69,00 YZP
25	x	44	x	4	K	100	68,00 YZP
28	x	50	x	4	S	50	110,00 YZP
31	x	56	x	4	S	50	117,00 YZP
37	x	66	x	5	S	50	230,00 YZP
43	x	78	x	7	S	25	435,00 YZP
50	x	92	x	8	S	10	810,00 YZP

DIN	00125.052	RAZ 90
125-1	Steel 140 HV black zinc plated	type B



Plain washers, B = with chamfer (punched)

Dimensions → TI-84 Corrosion protection → TI-217

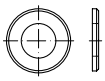
Stainless → S. 435
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

Inside ∅ x outside ∅ x thickness							
4,3	x	9	x	0,8	S	1000	3,85 ZP black
5,3	x	10	x	1	S	1000	5,20 ZP black
6,4	x	12	x	1,6	S	1000	5,50 ZP black
8,4	x	16	x	1,6	S	1000	6,80 ZP black

Dimensions	PU	Pieces	€/100/Mat.
DIN 00125.022			RAZ 90

125-1 Steel 140 HV hot dip galvanized type B



Plain washers, B = with chamfer (punched)

Dimensions → TI-84 Corrosion protection → TI-219

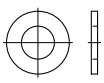
Stainless → S. 435
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

Inside ∅ x outside ∅ x thickness							
6,4	x	12	x	1,6	S	1000	7,10 HDG
8,4	x	16	x	1,6	S	1000	7,50 HDG
10,5	x	20	x	2	S	1000	13,60 HDG
13	x	24	x	2,5	S	500	17,60 HDG
17	x	30	x	3	S	250	30,00 HDG
21	x	37	x	3	S	200	46,00 HDG
23	x	39	x	3	S	200	47,50 HDG
23	x	39	x	3	K	100	53,00 HDG
25	x	44	x	4	S	200	76,00 HDG
25	x	44	x	4	K	100	84,00 HDG
27	x	50	x	4	S	100	119,00 HDG
28	x	50	x	4	S	100	119,00 HDG
31	x	56	x	4	S	100	143,00 HDG
34	x	60	x	5	S	50	183,00 HDG
37	x	66	x	5	S	50	239,00 HDG
40	x	72	x	6	S	25	325,00 HDG
43	x	78	x	7	S	25	460,00 HDG
46	x	85	x	7	S	25	480,00 HDG
50	x	92	x	8	S	25	890,00 HDG
54	x	98	x	8	S	1	890,00 HDG

DIN	00126.000	RAZ 100

126 Steel 100 HV



Plain washers, punched

Dimensions → TI-84

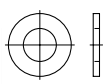
DIN 126 → replaced by ISO 7091

Inside ∅ x outside ∅ x thickness							
5,5	x	10	x	1	S	1000	1,25
5,5	x	10	x	1	K	100	5,00
6,6	x	12	x	1,6	S	1000	1,45
6,6	x	12	x	1,6	K	100	5,20
9	x	16	x	1,6	S	1000	2,70
9	x	16	x	1,6	K	100	6,40
11	x	20	x	2	S	1000	4,00
11	x	20	x	2	K	100	8,10
13,5	x	24	x	2,5	S	500	5,70
13,5	x	24	x	2,5	K	100	11,40
15,5	x	28	x	2,5	K	100	15,20
17,5	x	30	x	3	S	250	8,40
17,5	x	30	x	3	K	100	13,80
20	x	34	x	3	K	100	20,00
22	x	37	x	3	S	250	13,70
22	x	37	x	3	K	100	18,90
24	x	39	x	3	S	100	17,50
26	x	44	x	4	S	100	21,70

Dimensions	PU	Pieces	€/100/Mat.
30 x 50 x 4	S	100	29,50
33 x 56 x 4	S	100	35,50
36 x 60 x 5	S	100	54,00
39 x 66 x 5	S	100	69,00
42 x 72 x 6	S	50	83,00
45 x 78 x 7	S	50	130,00
48 x 85 x 7	S	50	149,00
52 x 92 x 8	S	25	185,00
56 x 98 x 8	S	25	390,00
62 x 105 x 9	S	25	560,00
66 x 110 x 9	S	10	620,00
70 x 115 x 9	S	10	670,00
78 x 125 x 10	S	10	870,00
86 x 140 x 12	S	1	1400,00

DIN	00126.010	RAZ 100

126 Steel 100 HV zinc plated



Plain washers, punched

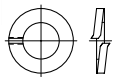
Dimensions → TI-84 Corrosion protection → TI-217

DIN 126 → replaced by ISO 7091

Inside ∅ x outside ∅ x thickness							
5,5	x	10	x	1	S	1000	1,40 ZP
5,5	x	10	x	1	K	100	5,10 ZP
6,6	x	12	x	1,6	S	1000	1,80 ZP
6,6	x	12	x	1,6	K	100	5,50 ZP
9	x	16	x	1,6	S	1000	3,25 ZP
9	x	16	x	1,6	K	100	6,90 ZP
11	x	20	x	2	S	1000	5,10 ZP
11	x	20	x	2	K	100	9,10 ZP
13,5	x	24	x	2,5	S	500	7,60 ZP
13,5	x	24	x	2,5	K	100	13,20 ZP
15,5	x	28	x	2,5	K	100	17,70 ZP
17,5	x	30	x	3	S	250	11,80 ZP
17,5	x	30	x	3	K	100	16,90 ZP
20	x	34	x	3	K	100	24,30 ZP
22	x	37	x	3	S	250	18,90 ZP
22	x	37	x	3	K	100	23,40 ZP
24	x	39	x	3	S	100	22,80 ZP
26	x	44	x	4	S	100	31,50 ZP
30	x	50	x	4	S	100	40,50 ZP
33	x	56	x	4	S	100	50,00 ZP
36	x	60	x	5	S	100	73,00 ZP
39	x	66	x	5	S	100	93,00 ZP
42	x	72	x	6	S	50	118,00 ZP
45	x	78	x	7	S	50	178,00 ZP
48	x	85	x	7	S	50	207,00 ZP
52	x	92	x	8	S	25	265,00 ZP
56	x	98	x	8	S	25	480,00 ZP
62	x	105	x	9	S	25	680,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN 00127.001			RAZ 110

127 Spring steel type A



Spring lock washers, A = bent end

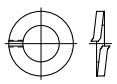
Dimensions → TI-88

Stainless → S. 436

A 3	S	1000	0,85
A 3	K	100	3,15
A 3,5	S	1000	0,90
A 3,5	K	100	3,25
A 4	S	1000	1,00
A 4	K	100	3,35
A 5	S	1000	1,25
A 5	K	100	3,55
A 6	S	1000	1,85
A 6	K	100	4,25
A 7	S	1000	2,20
A 7	K	100	4,50
A 8	S	1000	3,05
A 8	K	100	5,50
A 10	S	1000	4,35
A 10	K	100	7,00
A 12	S	500	6,50
A 12	K	100	9,40
A 14	S	500	10,80
A 14	K	100	13,80
A 16	S	250	13,60
A 16	K	100	16,90
A 18	S	250	14,50
A 18	K	100	17,80
A 20	S	100	21,80
A 22	S	100	24,60
A 24	S	100	37,50
A 27	S	100	43,50
A 30	S	50	89,00
A 33	S	25	129,00
A 36	S	25	148,00
A 39	S	25	161,00
A 42	S	25	285,00
A 45	S	25	315,00
A 48	S	25	335,00

~DIN	00127.011	RAZ 110

127 Spring steel zinc plated type A



Spring lock washers, A = bent end

Dimensions → TI-88 Corrosion protection → TI-217

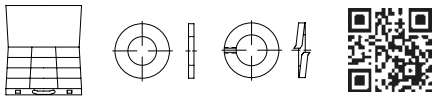
Stainless → S. 436

A 3	S	1000	0,95 ZP
A 3	K	100	3,55 ZP
A 3,5	S	1000	1,00 ZP
A 3,5	K	100	3,75 ZP
A 4	S	1000	1,10 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
A 4	K	100	3,80 ZP
A 5	S	1000	1,45 ZP
A 5	K	100	4,05 ZP
A 6	S	1000	2,55 ZP
A 6	K	100	5,00 ZP
A 7	S	1000	2,95 ZP
A 7	K	100	5,50 ZP
A 8	S	1000	4,35 ZP
A 8	K	100	7,00 ZP
A 10	S	1000	6,40 ZP
A 10	K	100	9,20 ZP
A 12	S	500	9,40 ZP
A 12	K	100	12,40 ZP
A 14	S	500	15,20 ZP
A 14	K	100	18,70 ZP
A 16	S	250	20,30 ZP
A 16	K	100	24,30 ZP
A 18	S	250	21,90 ZP
A 18	K	100	26,00 ZP
A 20	S	100	34,00 ZP
A 22	S	100	38,00 ZP
A 24	S	100	57,00 ZP
A 27	S	100	65,00 ZP
A 30	S	50	127,00 ZP
A 33	S	25	181,00 ZP
A 36	S	25	201,00 ZP
A 39	S	25	218,00 ZP
A 42	S	25	380,00 ZP
A 45	S	25	400,00 ZP
A 48	S	25	430,00 ZP
A 52	S	25	810,00 ZP

Article	82127.000	RAZ 5001
82127	**Assortm. Steel, zinc plated**	**DIN 125/127**



Washers-/spring lock washers assortments, DIN 125 type A and DIN 127 type A

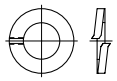
Content: per 6 frequent dimensions 5,3 - 17∅/A 5 - A 16 ∅, approx. 1000 pieces (metal box)

Corrosion protection → TI-217

Your own selection on request

DIN 125 / 127	S	1	7696,00

~DIN	00127.041	RAZ 110
127	**Spring steel zinc plated 8 TLP**	**type A**



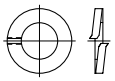
Spring lock washers, A = bent end

Dimensions → TI-88 Corrosion protection → TI-217

Stainless → S. 436

A 3	S	1000	1,35 ZP TLP
A 4	S	1000	1,40 ZP TLP
A 5	S	1000	1,85 ZP TLP
A 6	S	1000	3,20 ZP TLP
A 8	S	1000	5,45 ZP TLP
A 10	S	1000	8,40 ZP TLP
A 12	S	500	12,20 ZP TLP
A 14	S	500	19,70 ZP TLP
A 16	S	250	27,00 ZP TLP
A 20	S	100	44,40 ZP TLP
A 24	S	100	73,80 ZP TLP

~DIN	00127.061	RAZ 110
127	**Spring steel zinc plated yellow**	**type A**



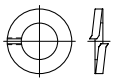
Spring lock washers, A = bent end

Dimensions → TI-88 Corrosion protection → TI-217

Stainless → S. 436

A 3	S	1000	1,05 YZP
A 4	S	1000	1,10 YZP
A 5	S	1000	1,45 YZP
A 6	S	1000	2,55 YZP
A 8	S	1000	4,35 YZP
A 10	S	1000	6,70 YZP
A 12	S	500	9,70 YZP
A 14	S	500	15,70 YZP
A 16	S	250	21,60 YZP
A 20	S	100	35,50 YZP
A 24	S	100	59,00 YZP

~DIN	00127.021	RAZ 110
127	**Spring steel hot dip galvanized**	**type A**



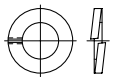
Spring lock washers, A = bent end

Dimensions → TI-88 Corrosion protection → TI-219

Stainless → S. 436

A 6	S	1000	4,35 HDG
A 6	K	100	6,70 HDG
A 8	S	1000	4,35 HDG
A 8	K	100	6,70 HDG
A 10	S	1000	6,70 HDG
A 10	K	100	8,70 HDG
A 12	S	500	10,10 HDG
A 12	K	100	12,70 HDG
A 14	K	100	18,50 HDG
A 16	S	250	21,10 HDG
A 16	K	100	24,70 HDG
A 18	S	250	23,00 HDG
A 18	K	100	26,50 HDG
A 20	S	100	35,50 HDG
A 22	S	100	40,00 HDG
A 24	S	100	64,00 HDG
A 27	S	100	71,00 HDG
A 30	S	50	136,00 HDG
A 36	S	25	218,00 HDG

~DIN	00127.002	RAZ 110
127	**Spring steel**	**type B**



Spring lock washers, B = flat end

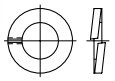
Dimensions → TI-88

Stainless → S. 436
Bronze → S. 571

B 2	S	1000	0,70
B 2	K	100	3,10
B 2,5	S	1000	0,85
B 2,5	K	100	3,10
B 3	S	1000	0,85
B 3	K	100	3,15
B 4	S	1000	1,00
B 4	K	100	3,35
B 5	S	1000	1,25
B 5	K	100	3,55
B 6	S	1000	1,85
B 6	K	100	4,25
B 7	S	1000	2,35
B 7	K	100	4,50
B 8	S	1000	3,05
B 8	K	100	5,50
B 10	S	1000	4,35
B 10	K	100	7,00
B 12	S	500	6,50
B 12	K	100	9,40
B 14	S	500	10,80
B 14	K	100	13,80
B 16	S	250	13,60
B 16	K	100	16,90
B 18	S	250	14,50
B 18	K	100	17,80
B 20	S	100	21,80
B 22	S	100	24,60
B 24	S	100	37,50
B 27	S	100	43,50
B 30	S	50	89,00
B 33	S	25	129,00
B 36	S	25	148,00
B 39	S	25	161,00
B 42	S	25	285,00
B 48	S	25	335,00
B 52	S	25	680,00
B 56	S	1	2700,00
B 64	S	1	2700,00
B 80	S	1	3900,00
B 90	S	1	3900,00
B 100	S	1	3900,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00127.012		RAZ 110

127 **Spring steel zinc plated type B**



Spring lock washers, B = flat end

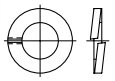
Dimensions → TI-88 Corrosion protection → TI-217

Stainless → S. 436
Bronze → S. 571

B 2	S	1000	0,85 ZP
B 2	K	100	3,40 ZP
B 2,5	S	1000	0,85 ZP
B 2,5	K	100	3,40 ZP
B 3	S	1000	0,95 ZP
B 3	K	100	3,55 ZP
B 3,5	S	1000	1,00 ZP
B 3,5	K	100	3,75 ZP
B 4	S	1000	1,10 ZP
B 4	K	100	3,80 ZP
B 5	S	1000	1,45 ZP
B 5	K	100	4,05 ZP
B 6	S	1000	2,55 ZP
B 6	K	100	5,00 ZP
B 7	S	1000	2,95 ZP
B 7	K	100	5,50 ZP
B 8	S	1000	4,35 ZP
B 8	K	100	7,00 ZP
B 10	S	1000	6,40 ZP
B 10	K	100	9,20 ZP
B 12	S	500	9,40 ZP
B 12	K	100	12,40 ZP
B 14	S	500	15,20 ZP
B 14	K	100	18,70 ZP
B 16	S	250	20,30 ZP
B 16	K	100	24,30 ZP
B 18	S	250	21,90 ZP
B 18	K	100	26,00 ZP
B 20	S	100	34,00 ZP
B 22	S	100	38,00 ZP
B 24	S	100	57,00 ZP
B 27	S	100	65,00 ZP
B 30	S	50	127,00 ZP
B 33	S	25	181,00 ZP
B 36	S	25	201,00 ZP
B 39	S	25	218,00 ZP
B 42	S	25	380,00 ZP
B 48	S	25	430,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00127.043		RAZ 110

127 **Spring steel zinc plated 8 TLP type B**



Spring lock washers, B = flat end

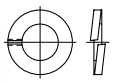
Dimensions → TI-88 Corrosion protection → TI-217

Stainless → S. 436
Bronze → S. 571

B 8	S	1000	5,45 ZP TLP
B 10	S	1000	8,40 ZP TLP
B 12	S	500	12,20 ZP TLP
B 16	S	250	27,00 ZP TLP
B 20	S	100	45,70 ZP TLP
B 24	S	100	80,00 ZP TLP

~DIN	00127.062	RAZ 110

127 **Spring steel zinc plated yellow type B**



Spring lock washers, B = flat end

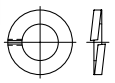
Dimensions → TI-88 Corrosion protection → TI-217

Stainless → S. 436
Bronze → S. 571

B 8	S	1000	4,35 YZP
B 10	S	1000	6,70 YZP
B 12	S	500	9,70 YZP
B 16	S	250	21,60 YZP
B 20	S	100	36,50 YZP
B 24	S	100	64,00 YZP

~DIN	00127.022	RAZ 110

127 **Spring steel hot dip galvanized type B**



Spring lock washers, B = flat end

Dimensions → TI-88 Corrosion protection → TI-219

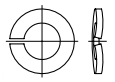
Stainless → S. 436
Bronze → S. 571

B 6	S	1000	4,35 HDG
B 6	K	100	6,70 HDG
B 8	S	1000	4,35 HDG
B 8	K	100	6,70 HDG
B 10	S	1000	6,70 HDG
B 10	K	100	8,70 HDG
B 12	S	500	10,10 HDG

Dimensions	PU	Pieces	€/100/Mat.
B 12	K	100	12,70 HDG
B 14	K	100	18,50 HDG
B 16	S	250	21,10 HDG
B 16	K	100	24,70 HDG
B 18	S	250	23,00 HDG
B 20	S	100	35,50 HDG
B 22	S	100	40,00 HDG
B 24	S	100	64,00 HDG
B 27	S	100	71,00 HDG
B 30	S	50	136,00 HDG
B 36	S	25	218,00 HDG
B 42	S	25	445,00 HDG

~DIN	00128.001	RAZ 100

128 **Spring steel type A**



Spring lock washers, A = curved

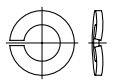
Dimensions → TI-89

Stainless → S. 437

A 3	S	1000	1,35
A 3	K	100	3,85
A 4	S	1000	1,00
A 4	K	100	3,35
A 5	S	1000	1,25
A 5	K	100	3,55
A 6	S	1000	1,85
A 6	K	100	4,25
A 8	S	1000	3,05
A 8	K	100	5,50
A 10	S	1000	4,35
A 10	K	100	7,00
A 12	S	500	6,50
A 12	K	100	9,40
A 14	S	500	10,80
A 14	K	100	13,80
A 16	S	250	13,60
A 16	K	100	16,90
A 18	K	100	18,60
A 20	S	100	23,50
A 22	S	100	27,50
A 24	S	100	41,50
A 30	S	50	99,00
A 36	S	25	160,00

~DIN	00128.011	RAZ 100

128 **Spring steel mech. zinc plated type A**



Spring lock washers, A = curved

Dimensions → TI-89 Corrosion protection → TI-217

Stainless → S. 437

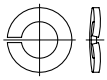
A 2,5	S	1000	1,40 mech ZP
A 3	S	1000	1,40 mech ZP
A 3	K	100	4,30 mech ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
A 4	S	1000	1,10 mech ZP
A 4	K	100	3,80 mech ZP
A 5	S	1000	1,45 mech ZP
A 5	K	100	4,05 mech ZP
A 6	S	1000	2,55 mech ZP
A 6	K	100	5,00 mech ZP
A 8	S	1000	4,35 mech ZP
A 8	K	100	7,00 mech ZP
A 10	S	1000	6,40 mech ZP
A 10	K	100	9,20 mech ZP
A 12	S	500	9,40 mech ZP
A 12	K	100	12,40 mech ZP
A 14	S	500	15,20 mech ZP
A 14	K	100	18,70 mech ZP
A 16	S	250	21,20 mech ZP
A 16	K	100	25,50 mech ZP
A 18	S	250	24,60 mech ZP
A 18	K	100	29,50 mech ZP
A 20	S	100	39,00 mech ZP
A 22	S	100	44,00 mech ZP
A 24	S	100	68,00 mech ZP
A 30	S	50	149,00 mech ZP
A 36	S	25	265,00 mech ZP

~DIN	00128.061	RAZ 100

128 Spring steel mech. YZP type A



Spring lock washers, A = curved

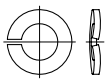
Dimensions → TI-89 Corrosion protection → TI-217

Stainless → S. 437

A 2,5	S	1000	1,40 mech YZP
A 3	S	1000	1,40 mech YZP
A 4	S	1000	1,20 mech YZP
A 5	S	1000	1,60 mech YZP
A 6	S	1000	2,75 mech YZP
A 8	S	1000	4,70 mech YZP
A 10	S	1000	6,80 mech YZP
A 12	S	500	10,20 mech YZP
A 16	S	250	21,20 mech YZP
A 20	S	100	39,00 mech YZP

~DIN	00128.021	RAZ 100

128 Spring steel hot dip galvanized type A



Spring lock washers, A = curved

Dimensions → TI-89 Corrosion protection → TI-219

Stainless → S. 437

A 10	S	1000	9,50 HDG
A 12	S	500	14,20 HDG
A 16	S	250	31,50 HDG
A 20	S	100	75,00 HDG
A 27	S	100	118,50 HDG

Dimensions	PU	Pieces	€/100/Mat.
B 3	S	1000	1,40 mech ZP
B 4	S	1000	1,10 mech ZP
B 4	K	100	3,80 mech ZP
B 5	S	1000	1,45 mech ZP
B 5	K	100	4,05 mech ZP
B 6	S	1000	2,55 mech ZP
B 6	K	100	5,00 mech ZP
B 8	S	1000	4,35 mech ZP
B 8	K	100	7,00 mech ZP
B 10	S	1000	6,40 mech ZP
B 10	K	100	9,20 mech ZP
B 12	S	500	9,40 mech ZP
B 12	K	100	12,40 mech ZP
B 14	S	500	15,20 mech ZP
B 14	K	100	18,70 mech ZP
B 16	S	250	21,20 mech ZP
B 16	K	100	25,50 mech ZP
B 18	S	250	24,60 mech ZP
B 20	S	100	39,00 mech ZP
B 22	S	100	44,00 mech ZP
B 24	S	100	68,00 mech ZP
B 30	S	50	149,00 mech ZP

~DIN	00137.001	RAZ 100

137 Spring steel type A

Spring washers, A = curved

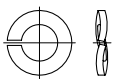
Dimensions → TI-89

Stainless → S. 437

A 2	S	1000	0,50
A 2	K	100	3,50
A 2,3	S	1000	0,40
A 2,3	K	100	3,50
A 2,6	S	1000	0,90
A 2,6	K	100	4,70
A 3	S	1000	1,95
A 3	K	100	4,85
A 3,5	S	1000	0,50
A 4	S	1000	0,60
A 4	K	100	3,75
A 5	S	1000	0,90
A 5	K	100	3,95
A 6	S	1000	1,05
A 6	K	100	3,95
A 7	S	1000	1,50
A 7	K	100	4,60
A 8	S	1000	1,25

~DIN	00128.012	RAZ 100

128 Spring steel mech. zinc plated type B



Spring lock washers, B = waved

Dimensions → TI-89 Corrosion protection → TI-217

Stainless → S. 437

Dimensions	PU	Pieces	€/100/Mat.
A 8	K	100	4,60
A 10	S	1000	3,45
A 10	K	100	6,80

~DIN	00137.011	RAZ 100

137 Spring steel mech. zinc plated type A

Spring washers, A = curved

Dimensions → TI-89 Corrosion protection → TI-217

Stainless → S. 437

A 2	S	1000	0,50 mech ZP
A 2	K	100	3,55 mech ZP
A 2,3	S	1000	0,50 mech ZP
A 2,6	S	1000	0,50 mech ZP
A 2,6	K	100	3,55 mech ZP
A 3	S	1000	0,55 mech ZP
A 3	K	100	3,60 mech ZP
A 3,5	S	1000	0,60 mech ZP
A 3,5	K	100	3,60 mech ZP
A 4	S	1000	0,90 mech ZP
A 4	K	100	3,95 mech ZP
A 5	S	1000	1,05 mech ZP
A 5	K	100	4,10 mech ZP
A 6	S	1000	1,30 mech ZP
A 6	K	100	4,40 mech ZP
A 7	S	1000	1,65 mech ZP
A 7	K	100	4,80 mech ZP
A 8	S	1000	2,20 mech ZP
A 8	K	100	5,20 mech ZP
A 10	S	1000	4,50 mech ZP
A 10	K	100	7,90 mech ZP

~DIN	00137.002	RAZ 100

137 Spring steel type B

Spring washers, B = waved

Dimensions → TI-89

Stainless → S. 438

B 3	S	1000	0,75
B 3	K	100	3,80
B 3,5	K	100	3,80
B 4	S	1000	0,75
B 4	K	100	3,80
B 5	S	1000	1,05
B 5	K	100	4,10
B 6	S	1000	1,20
B 6	K	100	4,30
B 7	S	1000	2,95
B 7	K	100	6,20
B 8	S	1000	2,45
B 8	K	100	5,60
B 10	S	1000	4,50
B 10	K	100	6,50

Dimensions	PU	Pieces	€/100/Mat.
B 12	S	500	8,80
B 12	K	100	12,60
B 14	S	500	17,10
B 14	K	100	21,60
B 16	S	250	18,70
B 16	K	100	23,40
B 18	S	250	26,00
B 18	K	100	31,50
B 20	S	100	29,50
B 22	S	100	44,50
B 24	S	100	59,00
B 27	S	100	85,00
B 30	S	100	159,00
B 33	S	50	190,00
B 36	S	50	244,00

~DIN	00137.012	RAZ 100

137

Spring steel type B mech. zinc plated

Spring washers, B = waved

Dimensions → TI-89 Corrosion protection → TI-217

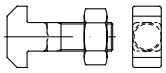
Stainless → S. 438

B 3	S	1000	0,90	mech ZP
B 3	K	100	3,95	mech ZP
B 4	S	1000	0,95	mech ZP
B 4	K	100	4,00	mech ZP
B 5	S	1000	1,30	mech ZP
B 5	K	100	4,40	mech ZP
B 6	S	1000	1,55	mech ZP
B 6	K	100	4,65	mech ZP
B 7	S	1000	3,60	mech ZP
B 7	K	100	6,90	mech ZP
B 8	S	1000	3,25	mech ZP
B 8	K	100	6,50	mech ZP
B 10	S	1000	6,30	mech ZP
B 10	K	100	9,80	mech ZP
B 12	S	500	11,90	mech ZP
B 12	K	100	16,00	mech ZP
B 14	S	500	22,50	mech ZP
B 14	K	100	27,50	mech ZP
B 16	S	250	24,70	mech ZP
B 16	K	100	30,50	mech ZP
B 18	S	250	34,00	mech ZP
B 18	K	100	39,50	mech ZP
B 20	S	100	38,00	mech ZP
B 22	S	100	57,00	mech ZP
B 24	S	100	72,00	mech ZP
B 27	S	100	107,00	mech ZP
B 30	S	100	189,00	mech ZP

DIN	00186.402	RAZ 120

186

Mu 4.6 type B



T-head bolts with square neck, B = with long thread, Mu = with hexagon nut

Dimensions → TI-29 Tightening torque → TI-230

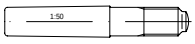
Mech. properties → TI-220

BM 6	x	25	S	50	190,00
BM 6	x	30	S	50	190,00
BM 6	x	45	S	50	226,00
BM 6	x	50	S	50	226,00
BM 6	x	60	S	25	300,00
BM 8	x	25	S	25	165,00
BM 8	x	30	S	25	165,00
BM 8	x	35	S	25	183,00
BM 8	x	40	S	25	183,00
BM 8	x	45	S	25	194,00
BM 8	x	50	S	25	194,00
BM 8	x	60	S	25	206,00
BM 8	x	80	S	25	350,00
BM 10	x	25	S	25	158,00
BM 10	x	30	S	25	158,00
BM 10	x	35	S	25	169,00
BM 10	x	40	S	25	169,00
BM 10	x	45	S	25	183,00
BM 10	x	50	S	25	183,00
BM 10	x	55	S	25	191,00
BM 10	x	60	S	25	191,00
BM 10	x	65	S	25	209,00
BM 10	x	70	S	10	233,00
BM 10	x	80	S	10	260,00
BM 10	x	90	S	10	305,00
BM 10	x	100	S	10	340,00
BM 10	x	110	S	10	510,00
BM 12	x	30	S	25	197,00
BM 12	x	35	S	25	224,00
BM 12	x	40	S	10	249,00
BM 12	x	45	S	10	295,00
BM 12	x	50	S	10	295,00
BM 12	x	55	S	10	310,00
BM 12	x	60	S	10	310,00
BM 12	x	65	S	10	335,00
BM 12	x	70	S	10	335,00
BM 12	x	80	S	10	350,00
BM 12	x	90	S	10	360,00
BM 12	x	100	S	10	385,00
BM 12	x	110	S	10	400,00
BM 12	x	120	S	10	420,00
BM 16	x	40	S	10	405,00
BM 16	x	45	S	10	435,00
BM 16	x	50	S	10	435,00
BM 16	x	60	S	10	455,00
BM 16	x	65	S	10	495,00
BM 16	x	70	S	10	495,00
BM 16	x	75	S	10	520,00
BM 16	x	80	S	10	520,00
BM 16	x	90	S	10	540,00
BM 16	x	100	S	10	560,00
BM 16	x	110	S	10	570,00
BM 16	x	120	S	10	600,00
BM 16	x	130	S	10	620,00
BM 16	x	140	S	10	640,00
BM 16	x	160	S	10	710,00
BM 20	x	60	S	10	670,00
BM 20	x	70	S	10	700,00
BM 20	x	80	S	10	720,00
BM 20	x	90	S	10	750,00
BM 20	x	100	S	10	780,00
BM 20	x	120	S	10	850,00
BM 20	x	140	S	10	910,00
BM 20	x	160	S	1	960,00
BM 20	x	200	S	1	1100,00
BM 24	x	70	S	10	910,00
BM 24	x	80	S	1	930,00
BM 24	x	90	S	1	960,00
BM 24	x	100	S	1	1020,00
BM 24	x	110	S	1	1070,00
BM 24	x	120	S	1	1100,00
BM 24	x	160	S	1	1260,00
BM 24	x	200	S	1	1380,00

DIN	00258.000	RAZ 120

258

Steel



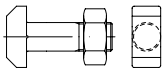
Taper pins with external thread and constant taper lengths

Type with constant thread bolt lengths → DIN 7977

5	x	40	S	100	109,00
5	x	50	S	100	125,00
6	x	45	S	25	145,00
6	x	50	S	25	153,00
6	x	55	S	100	164,00
6	x	60	S	25	167,00
8	x	55	S	10	191,00
8	x	60	S	10	191,00
8	x	65	S	100	199,00
8	x	75	S	100	209,00
10	x	65	S	10	265,00
10	x	75	S	100	285,00
10	x	85	S	10	315,00
10	x	100	S	10	345,00
12	x	85	S	10	375,00
12	x	100	S	10	435,00
12	x	120	S	10	510,00
12	x	140	S	10	590,00
16	x	100	S	1	690,00
16	x	120	S	1	690,00
16	x	140	S	1	950,00
16	x	160	S	1	1030,00
20	x	120	S	1	1070,00
20	x	140	S	1	1090,00
20	x	190	S	1	1340,00
25	x	140	S	1	3550,00
25	x	160	S	1	4300,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00261.400	RAZ 120

261 Mu 4.6



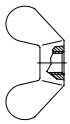
T-head bolts, Mu = with hexagon nut

Dimensions → TI-29 Tightening torque → TI-230
Mech. properties → TI-220

M 8	x	30	S	25	165,00
M 10	x	30	S	25	158,00
M 10	x	40	S	25	169,00
M 10	x	50	S	25	183,00
M 10	x	60	S	25	191,00
M 12	x	40	S	10	249,00
M 12	x	50	S	10	295,00
M 12	x	60	S	10	310,00
M 16	x	60	S	10	455,00
M 16	x	70	S	10	495,00
M 16	x	80	S	10	520,00
M 16	x	120	S	10	600,00
M 20	x	60	S	10	670,00
M 20	x	80	S	10	720,00
M 20	x	90	S	10	750,00
M 24	x	90	S	1	960,00

DIN	00315.000	RAZ 130

315 Malleable iron



Wing nuts, rounded wings, product grade C (g)

Dimensions → TI-70

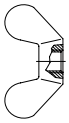
Stainless → S. 438
Brass → S. 571

DIN 314 = edged wing, pressed, on request

M 4	S 100	23,10
M 5	S 100	26,50
M 6	S 100	34,50
M 8	S 100	51,00
M 10	S 100	85,00
M 12	S 50	146,00
M 14	S 50	185,00
M 16	S 20	275,00
M 20	S 25	630,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00315.010	RAZ 130

315 Malleable iron/steel zinc plated



Wing nuts, rounded wings, product grade C (g)

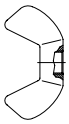
Dimensions → TI-70 Corrosion protection → TI-217

Stainless → S. 438
Brass → S. 571

M 4	S 100	23,50 ZP
M 5	S 100	27,50 ZP
M 6	S 100	36,50 ZP
M 8	S 100	55,00 ZP
M 10	S 100	95,00 ZP
M 12	S 50	164,00 ZP
M 14	S 50	206,00 ZP
M 16	S 20	300,00 ZP
M 20	S 10	690,00 ZP
M 24	S 5	1330,00 ZP

~DIN	88215.010	RAZ 878

315 Steel article 88215 zinc plated



Wing nuts, edged wings, small "American" type, product grade C (g)

Dimensions → TI-70 Corrosion protection → TI-217
Mech. properties → TI-221

M 3	S 500	13,00 ZP
M 4	S 500	13,80 ZP
M 5	S 500	14,50 ZP
M 6	S 500	16,10 ZP
M 8	S 200	20,70 ZP
M 10	S 100	34,00 ZP
M 12	S 50	73,00 ZP

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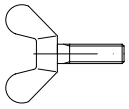
Dimensions	PU Pieces	€/100/Mat.
DIN	00316.010	RAZ 130

316 Malleable iron/steel zinc plated



Wing screws, rounded wings, product grade C (g)

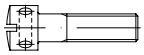
Dimensions → TI-29 Corrosion protection → TI-217

Stainless → S. 439
Brass → S. 571

M 4	x	8	S	100	50,00 ZP
M 4	x	10	S	100	52,00 ZP
M 4	x	12	S	100	46,00 ZP
M 4	x	16	S	100	47,00 ZP
M 4	x	20	S	100	55,00 ZP
M 4	x	25	S	100	55,00 ZP
M 4	x	30	S	100	50,00 ZP
M 5	x	10	S	100	55,00 ZP
M 5	x	12	S	100	55,00 ZP
M 5	x	16	S	100	56,00 ZP
M 5	x	20	S	100	57,00 ZP
M 5	x	25	S	100	59,00 ZP
M 5	x	30	S	100	60,00 ZP
M 5	x	35	S	100	61,00 ZP
M 5	x	40	S	100	63,00 ZP
M 5	x	50	S	100	64,00 ZP
M 6	x	10	S	100	68,00 ZP
M 6	x	12	S	100	68,00 ZP
M 6	x	16	S	100	69,00 ZP
M 6	x	20	S	100	68,00 ZP
M 6	x	25	S	100	71,00 ZP
M 6	x	30	S	100	72,00 ZP
M 6	x	35	S	100	75,00 ZP
M 6	x	40	S	100	76,00 ZP
M 6	x	50	S	100	79,00 ZP
M 8	x	10	S	100	93,00 ZP
M 8	x	12	S	100	93,00 ZP
M 8	x	16	S	100	95,00 ZP
M 8	x	20	S	100	96,00 ZP
M 8	x	25	S	100	100,00 ZP
M 8	x	30	S	100	101,00 ZP
M 8	x	35	S	100	103,00 ZP
M 8	x	40	S	50	105,00 ZP
M 8	x	50	S	50	110,00 ZP
M 8	x	60	S	50	125,00 ZP
M 10	x	16	S	50	145,00 ZP
M 10	x	20	S	50	148,00 ZP
M 10	x	25	S	50	157,00 ZP
M 10	x	30	S	50	154,00 ZP
M 10	x	35	S	50	173,00 ZP
M 10	x	40	S	50	177,00 ZP
M 10	x	50	S	20	183,00 ZP
M 10	x	60	S	20	202,00 ZP
M 10	x	70	S	20	228,00 ZP
M 12	x	16	S	20	267,00 ZP
M 12	x	20	S	20	270,00 ZP
M 12	x	25	S	20	275,00 ZP
M 12	x	30	S	20	280,00 ZP
M 12	x	40	S	20	300,00 ZP
M 12	x	50	S	20	320,00 ZP
M 12	x	60	S	20	335,00 ZP
M 12	x	70	S	20	400,00 ZP
M 12	x	80	S	20	400,00 ZP
M 16	x	30	S	10	970,00 ZP
M 16	x	40	S	10	980,00 ZP
M 16	x	50	S	10	1070,00 ZP
M 16	x	60	S	10	1150,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00404.500	RAZ 131

404 5.8



Slotted capstan screws

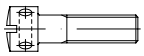
Dimensions → TI-29

Stainless → S. 439

M 3	x	6	S	100	34,00
M 3	x	8	S	100	34,50
M 3	x	10	S	100	36,50
M 4	x	5	S	100	35,50
M 4	x	6	S	100	35,50
M 4	x	8	S	100	39,50
M 4	x	10	S	100	40,50
M 5	x	10	S	100	46,50
M 5	x	16	S	100	56,00
M 5	x	18	S	100	57,00
M 5	x	20	S	100	61,00
M 6	x	16	S	100	80,00
M 6	x	20	S	100	87,00

DIN	00404.510	RAZ 131

404 5.8 zinc plated



Slotted capstan screws

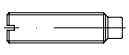
Dimensions → TI-29 Corrosion protection → TI-217

Stainless → S. 439

M 3	x	5	S	100	43,50 ZP
M 3	x	6	S	100	44,00 ZP
M 3	x	8	S	100	44,50 ZP
M 3	x	10	S	100	46,50 ZP
M 4	x	6	S	100	66,47 ZP
M 4	x	8	S	100	48,06 ZP
M 4	x	10	S	100	50,50 ZP
M 5	x	8	S	100	45,50 ZP
M 5	x	10	S	100	56,50 ZP
M 5	x	16	S	100	66,00 ZP
M 5	x	20	S	100	71,00 ZP
M 6	x	10	S	100	85,00 ZP
M 6	x	12	S	100	89,00 ZP
M 6	x	16	S	100	90,00 ZP
M 6	x	20	S	100	97,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00417.000	RAZ 140

417 14 H



Slotted grub screws with full dog point

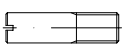
Dimensions → TI-19

DIN 417 → replaced by ISO 7435 (compatible)

M 3	x	5	S	100	8,00
M 3	x	6	S	100	5,20
M 3	x	8	S	100	5,30
M 3	x	10	S	100	6,70
M 3	x	12	S	100	7,10
M 4	x	5	S	100	11,00
M 4	x	6	S	100	8,80
M 4	x	8	S	100	5,50
M 4	x	10	S	100	5,70
M 4	x	12	S	100	7,50
M 4	x	16	S	100	6,40
M 5	x	8	S	100	6,30
M 5	x	10	S	100	6,80
M 5	x	12	S	100	7,10
M 5	x	16	S	100	8,50
M 5	x	20	S	100	11,00
M 5	x	25	S	100	11,60
M 6	x	8	S	100	7,20
M 6	x	10	S	100	7,50
M 6	x	12	S	100	7,80
M 6	x	16	S	100	8,70
M 6	x	20	S	100	9,50
M 6	x	25	S	100	10,60
M 6	x	30	S	100	14,80
M 8	x	10	S	100	17,80
M 8	x	12	S	100	10,10
M 8	x	16	S	100	10,50
M 8	x	20	S	100	12,50
M 8	x	25	S	100	13,70
M 8	x	30	S	100	16,70
M 8	x	35	S	100	23,80
M 8	x	40	S	100	32,00
M 10	x	12	S	50	22,00
M 10	x	16	S	50	23,20
M 10	x	20	S	50	32,00
M 10	x	25	S	50	27,50
M 10	x	30	S	50	36,50
M 10	x	35	S	50	39,50
M 10	x	40	S	50	42,00
M 10	x	50	S	50	44,00
M 12	x	20	S	50	51,00
M 12	x	25	S	50	55,00
M 12	x	40	S	50	69,00
M 12	x	50	S	50	77,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00427.000	RAZ 140

427 14 H



Slotted headless screws with chamfered end

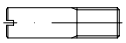
Dimensions → TI-19

Stainless → S. 439

DIN 427 → replaced by ISO 2342 (compatible)

M 3	x	6	S	100	5,70
M 3	x	8	S	100	5,90
M 3	x	10	S	100	5,90
M 3	x	12	S	100	7,80
M 4	x	8	S	100	6,10
M 4	x	10	S	100	6,20
M 4	x	12	S	100	6,70
M 4	x	16	S	100	8,40
M 4	x	20	S	100	9,70
M 4	x	25	S	100	10,80
M 5	x	10	S	100	7,50
M 5	x	12	S	100	7,90
M 5	x	16	S	100	9,50
M 5	x	18	S	100	9,80
M 5	x	20	S	100	9,80
M 5	x	25	S	100	12,90
M 5	x	30	S	100	14,80
M 5	x	35	S	100	21,70
M 5	x	40	S	100	29,50
M 6	x	12	S	100	8,70
M 6	x	16	S	100	9,70
M 6	x	18	S	100	10,60
M 6	x	20	S	100	10,60
M 6	x	25	S	100	12,00
M 6	x	30	S	100	16,60
M 6	x	35	S	100	31,00
M 6	x	40	S	100	47,00
M 6	x	45	S	100	48,50
M 6	x	50	S	100	51,00
M 8	x	16	S	100	11,80
M 8	x	18	S	100	14,10
M 8	x	20	S	100	14,10
M 8	x	25	S	100	15,40
M 8	x	30	S	100	19,00
M 8	x	35	S	100	21,60
M 8	x	40	S	100	29,50
M 8	x	45	S	100	56,00
M 8	x	50	S	100	46,50
M 8	x	60	S	100	64,00
M 10	x	20	S	50	34,50
M 10	x	25	S	50	37,50
M 10	x	30	S	50	40,00
M 10	x	35	S	50	43,00
M 10	x	40	S	50	46,00
M 10	x	45	S	50	57,00
M 10	x	50	S	50	60,00
M 12	x	20	S	50	86,00
M 12	x	25	S	50	92,00
M 12	x	30	S	50	105,00
M 12	x	35	S	50	117,00
M 12	x	40	S	50	134,00
M 12	x	50	S	50	169,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00427.010	RAZ 140
427	**14 H zinc plated**	



Slotted headless screws with chamfered end

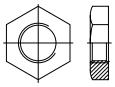
Dimensions ➔ TI-19 Corrosion protection ➔ TI-217

Stainless ➔ S. 439

DIN 427 ➔ replaced by ISO 2342 (compatible)

M 3	x	6	S	100	17,70 ZP
M 3	x	8	S	100	17,90 ZP
M 3	x	10	S	100	17,90 ZP
M 3	x	12	S	100	19,80 ZP
M 3	x	16	S	100	20,40 ZP
M 4	x	8	S	100	18,10 ZP
M 4	x	10	S	100	18,20 ZP
M 4	x	12	S	100	18,70 ZP
M 4	x	16	S	100	20,40 ZP
M 4	x	20	S	100	21,70 ZP
M 4	x	25	S	100	22,80 ZP
M 4	x	30	S	100	29,10 ZP
M 5	x	10	S	100	19,50 ZP
M 5	x	12	S	100	19,90 ZP
M 5	x	16	S	100	21,50 ZP
M 5	x	20	S	100	21,80 ZP
M 5	x	25	S	100	24,90 ZP
M 5	x	30	S	100	26,80 ZP
M 5	x	40	S	100	41,50 ZP
M 6	x	12	S	100	20,70 ZP
M 6	x	16	S	100	21,70 ZP
M 6	x	20	S	100	22,60 ZP
M 6	x	25	S	100	24,00 ZP
M 6	x	30	S	100	28,60 ZP
M 6	x	50	S	100	63,00 ZP
M 8	x	16	S	100	23,80 ZP
M 8	x	20	S	100	26,10 ZP
M 8	x	25	S	100	27,40 ZP
M 8	x	30	S	100	31,00 ZP
M 8	x	35	S	100	33,60 ZP
M 8	x	40	S	100	41,50 ZP
M 10	x	20	S	50	46,50 ZP
M 10	x	25	S	50	49,50 ZP
M 10	x	30	S	50	52,00 ZP
M 10	x	35	S	50	55,00 ZP
M 10	x	40	S	50	58,00 ZP
M 10	x	50	S	50	72,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00431.002	RAZ 140
431	**14 H type B**	



Pipe nuts with inch pipe thread G, B = thread one-sided countersunk

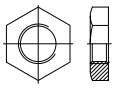
Dimensions ➔ TI-59 Mech. properties ➔ TI-221

Stainless ➔ S. 439
Brass ➔ S. 572

Nuts with wrench sizes acc. to ISO on request

Nominal size - wrench sizes			
BG 1/8 SW19	S	50	59,00
BG 1/4 SW22	S	50	77,00
BG 3/8	S	50	109,00
BG 1/2 SW32	S	50	154,00
BG 3/4	S	25	216,00
BG 1	S	10	500,00
BG 1 1/4	S	1	620,00
BG 1 1/2	S	1	840,00
BG 1 3/4	S	1	1400,00
BG 2	S	1	1780,00

DIN	00431.012	RAZ 140
431	**14 H zinc plated**	**type B**



Pipe nuts with inch pipe thread G, B = thread one-sided countersunk

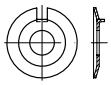
Dimensions ➔ TI-59 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-221

Stainless ➔ S. 439
Brass ➔ S. 572

Nuts with wrench sizes acc. to ISO on request

Nominal size - wrench sizes			
BG 1/8 SW19	S	50	63,00 ZP
BG 1/4 SW22	S	50	81,00 ZP
BG 3/8	S	50	116,00 ZP
BG 1/2 SW32	S	50	166,00 ZP
BG 3/4	S	25	228,00 ZP
BG 1	S	10	520,00 ZP
BG 1 1/2	S	1	880,00 ZP
BG 2	S	1	1890,00 ZP

Dimensions	PU Pieces	€/100/Mat.
~DIN	00432.000	RAZ 140
432	**Steel**	



Washers with external tap

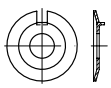
Caution!
Not suitable for high-tensile screwed fastenings.

Dimensions ➔ TI-90

Stainless ➔ S. 440

4,3	S	100	55,00
5,3	S	100	55,00
6,4	S	100	60,00
8,4	S	100	80,00
10,5	S	50	101,00
13	S	50	103,00
15	S	50	107,00
17	S	50	111,00
19	S	50	135,00
21	S	50	142,00
23	S	50	149,00
25	S	50	152,00
28	S	25	200,00
31	S	25	217,00
34	S	25	232,00
37	S	25	260,00
40	S	25	295,00
43	S	25	315,00
46	S	10	350,00
50	S	10	365,00
54	S	10	395,00
58	S	1	1660,00
66	S	1	1950,00

~DIN	00432.010	RAZ 140
432	**Steel zinc plated**	



Washers with external tap

Caution!
Not suitable for high-tensile screwed fastenings.

Dimensions ➔ TI-90 Corrosion protection ➔ TI-217

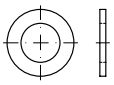
Stainless ➔ S. 440

5,3	S	100	51,00 ZP
6,4	S	100	60,00 ZP
8,4	S	100	81,00 ZP
10,5	S	50	102,00 ZP
13	S	50	104,00 ZP
17	S	50	113,00 ZP
21	S	50	144,00 ZP
25	S	50	154,00 ZP
31	S	25	220,00 ZP
37	S	25	265,00 ZP
43	S	25	320,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 00433.000			RAZ 140

433-1

Steel 140 HV



Washers

primarily for cheese head screws

Dimensions → TI-84

Stainless → S. 440
Brass → S. 572

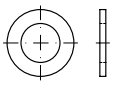
DIN 433 → replaced by ISO 7092

Inside ∅ x outside ∅ x thickness								
2,2	x	4,5	x	0,3	S	5000		0,50
2,2	x	4,5	x	0,3	K	500		1,65
2,7	x	5	x	0,5	S	5000		0,45
2,7	x	5	x	0,5	K	500		1,35
3,2	x	6	x	0,5	S	5000		0,25
3,2	x	6	x	0,5	K	500		1,25
3,7	x	7	x	0,5	K	500		1,40
4,3	x	8	x	0,5	S	5000		0,35
4,3	x	8	x	0,5	K	500		1,30
5,3	x	9	x	1	S	5000		0,80
5,3	x	9	x	1	K	500		1,75
6,4	x	11	x	1,6	S	1000		1,40
6,4	x	11	x	1,6	K	250		3,25
8,4	x	15	x	1,6	S	1000		2,60
8,4	x	15	x	1,6	K	250		4,45
10,5	x	18	x	1,6	S	1000		3,95
10,5	x	18	x	1,6	K	250		6,80
13	x	20	x	2	S	1000		6,20
13	x	20	x	2	K	100		12,10
15	x	24	x	2,5	S	500		9,10
15	x	24	x	2,5	K	100		15,00
17	x	28	x	2,5	S	500		11,70
17	x	28	x	2,5	K	100		17,00
19	x	30	x	2,5	S	500		17,50
19	x	30	x	2,5	K	100		22,50
21	x	34	x	3	S	500		20,90
21	x	34	x	3	K	100		25,50

DIN	00433.010	RAZ 140

433-1

Steel 140 HV zinc plated



Washers

primarily for cheese head screws

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 440
Brass → S. 572

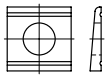
DIN 433 → replaced by ISO 7092

Inside ∅ x outside ∅ x thickness								
2,2	x	4,5	x	0,3	S	5000		0,75 ZP
2,2	x	4,5	x	0,3	K	500		1,65 ZP
2,7	x	5	x	0,5	S	5000		0,55 ZP
2,7	x	5	x	0,5	K	500		1,80 ZP
3,2	x	6	x	0,5	S	5000		0,45 ZP
3,2	x	6	x	0,5	K	500		1,40 ZP
3,7	x	7	x	0,5	K	500		1,50 ZP
4,3	x	8	x	0,5	S	5000		0,35 ZP
4,3	x	8	x	0,5	K	500		1,25 ZP
5,3	x	9	x	1	S	5000		0,85 ZP
5,3	x	9	x	1	K	500		1,80 ZP
6,4	x	11	x	1,6	S	1000		1,60 ZP
6,4	x	11	x	1,6	K	250		3,40 ZP
8,4	x	15	x	1,6	S	1000		3,00 ZP
8,4	x	15	x	1,6	K	250		4,75 ZP
10,5	x	18	x	1,6	S	1000		4,40 ZP
10,5	x	18	x	1,6	K	250		7,10 ZP
13	x	20	x	2	S	1000		6,90 ZP
13	x	20	x	2	K	100		12,20 ZP
15	x	24	x	2,5	S	500		10,10 ZP
15	x	24	x	2,5	K	100		15,30 ZP
17	x	28	x	2,5	S	500		12,90 ZP
17	x	28	x	2,5	K	100		17,50 ZP
19	x	30	x	2,5	S	500		19,40 ZP
19	x	30	x	2,5	K	100		23,60 ZP
21	x	34	x	3	S	500		23,30 ZP
21	x	34	x	3	K	100		27,00 ZP

DIN	00434.000	RAZ 150

434

Steel



Square taper washers for U beams, taper 8 %

Dimensions → TI-86

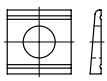
Stainless → S. 440

Inside ∅			• ÜH products
9	S	100	26,50
11	S	100	26,50
13,5	S	100	36,00
17,5	S	100	47,50
22	S	100	84,00
24	S	100	161,00
26	S	50	233,00

DIN	00434.010	RAZ 150

434

Steel zinc plated



Square taper washers for U beams, taper 8 %

Dimensions → TI-86 Corrosion protection → TI-217

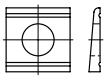
Stainless → S. 440

Inside ∅			• ÜH products
9	S	100	24,60 ZP
11	S	100	31,00 ZP
13,5	S	100	36,50 ZP
17,5	S	100	54,00 ZP
22	S	100	87,00 ZP
26	S	50	255,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 00434.020			RAZ 150

434

Steel hot dip galvanized



Square taper washers for U beams, taper 8 %

Dimensions → TI-86 Corrosion protection → TI-219

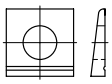
Stainless → S. 440

Inside ∅			• ÜH products
9	S	100	31,00 HDG
11	S	100	30,50 HDG
13,5	S	100	44,00 HDG
17,5	S	100	62,00 HDG
22	S	100	109,00 HDG
24	S	100	198,00 HDG
26	S	50	295,00 HDG
33	S	50	360,00 HDG

DIN	00435.000	RAZ 150

435

Steel



Square taper washers for double-T beams, taper 14 %

Dimensions → TI-86

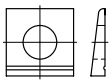
Stainless → S. 440

Inside ∅			• ÜH products
9	S	100	44,50
11	S	100	44,50
13,5	S	100	46,50
17,5	S	100	71,00
22	S	100	116,00
24	S	100	195,00

DIN	00435.020	RAZ 150

435

Steel hot dip galvanized



Square taper washers for double-T beams, taper 14 %

Dimensions → TI-86 Corrosion protection → TI-219

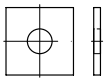
Stainless → S. 440

Inside ∅			• ÜH products
9	S	100	50,00 HDG
11	S	100	49,50 HDG
13,5	S	100	56,00 HDG
17,5	S	100	88,00 HDG
22	S	100	150,00 HDG
24	S	100	240,00 HDG

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
DIN	00436.000	RAZ 160

436 Steel



Square washers, especially for wood constructions

Dimensions → TI-86

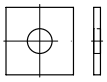
Stainless → S. 440

Inside ∅ x outside dimension x thickness

11	x	30	x	3	S 100	14,10
13,5	x	40	x	4	S 100	29,50
17,5	x	50	x	5	S 50	53,00
22	x	60	x	5	S 50	79,00
24	x	70	x	6	S 50	161,00
26	x	80	x	6	S 50	207,00
30	x	90	x	6	S 25	260,00
33	x	95	x	6	S 25	285,00
36	x	100	x	6	S 25	315,00
39	x	110	x	8	S 25	530,00

DIN	00436.010	RAZ 160

436 Steel zinc plated



Square washers, especially for wood constructions

Dimensions → TI-86 Corrosion protection → TI-217

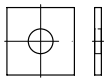
Stainless → S. 440

Inside ∅ x outside dimension x thickness

11	x	30	x	3	S 100	17,40 ZP
13,5	x	40	x	4	S 100	34,00 ZP
17,5	x	50	x	5	S 50	65,00 ZP
22	x	60	x	5	S 50	100,00 ZP
24	x	70	x	6	S 50	192,00 ZP
26	x	80	x	6	S 25	200,00 ZP
30	x	90	x	6	S 25	345,00 ZP
33	x	95	x	6	S 25	385,00 ZP
36	x	100	x	6	S 25	425,00 ZP
39	x	110	x	8	S 25	710,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00436.020	RAZ 160

436 Steel hot dip galvanized



Square washers, especially for wood constructions

Dimensions → TI-86 Corrosion protection → TI-219

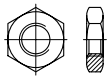
Stainless → S. 440

Inside ∅ x outside dimension x thickness

11	x	30	x	3	S 100	23,00 HDG
13,5	x	40	x	4	S 100	49,50 HDG
17,5	x	50	x	5	S 50	93,00 HDG
22	x	60	x	5	S 50	135,00 HDG
24	x	70	x	6	S 50	255,00 HDG
26	x	80	x	6	S 50	335,00 HDG
30	x	90	x	6	S 25	415,00 HDG
33	x	95	x	6	S 25	460,00 HDG
36	x	100	x	6	S 25	510,00 HDG
39	x	110	x	8	S 25	870,00 HDG

DIN	00439.402	RAZ 170

439 04 type B



Hexagon thin nuts, B = with chamfers

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 441
Brass → S. 572

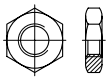
DIN 439 → replaced by ISO 4035

BM 2	S	1000	3,20
BM 2	K	100	6,30
BM 2,5	S	1000	3,20
BM 2,5	K	100	6,30
BM 3	S	1000	2,55
BM 3	K	100	5,40
BM 3,5	K	100	5,60
BM 4	S	1000	2,85
BM 4	K	100	5,90
BM 5	S	1000	3,25
BM 5	K	100	6,20
BM 6	S	1000	3,60
BM 6	K	100	6,50
BM 8	S	1000	7,00
BM 8	K	100	9,80
BM 10	S	500	13,50
BM 10	K	100	16,00
BM 12	S	100	24,20
BM 14	S	100	29,50
BM 16	S	100	32,00
BM 18	S	100	60,00
BM 20	S	50	71,00
BM 22	S	50	109,00
BM 24	S	50	128,00
BM 27	S	25	240,00
BM 30	S	25	255,00

Dimensions	PU Pieces	€/100/Mat.
BM 33	S 10	455,00
BM 36	S 10	540,00
BM 42	S 10	1110,00

DIN	00439.412	RAZ 170

439 04 type B zinc plated



Hexagon thin nuts, B = with chamfers

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

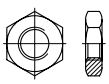
Stainless → S. 441
Brass → S. 572

DIN 439 → replaced by ISO 4035

BM 2	S	1000	3,25 ZP
BM 2,5	S	1000	3,25 ZP
BM 3	S	1000	2,60 ZP
BM 3	K	100	5,50 ZP
BM 4	S	1000	3,05 ZP
BM 4	K	100	6,00 ZP
BM 5	S	1000	3,55 ZP
BM 5	K	100	6,40 ZP
BM 6	S	1000	4,05 ZP
BM 6	K	100	7,00 ZP
BM 8	S	1000	7,90 ZP
BM 8	K	100	10,90 ZP
BM 10	S	500	15,70 ZP
BM 10	K	100	18,30 ZP
BM 12	S	100	27,50 ZP
BM 14	S	100	33,50 ZP
BM 16	S	100	36,50 ZP
BM 20	S	50	79,00 ZP
BM 24	S	50	143,00 ZP
BM 30	S	25	285,00 ZP
BM 33	S	10	515,00 ZP
BM 36	S	10	600,00 ZP
BM 42	S	10	1170,00 ZP

DIN	00439.304	RAZ 170

439 04 type B zinc plated 8 TLP



Hexagon thin nuts, B = with chamfers

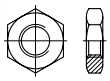
Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 441
Brass → S. 572

DIN 439 → replaced by ISO 4035

BM 3	S	1000	3,50 ZP TLP
BM 4	S	1000	4,20 ZP TLP
BM 5	S	1000	4,90 ZP TLP
BM 6	S	100	5,65 ZP TLP
BM 8	S	1000	10,70 ZP TLP
BM 10	S	500	20,80 ZP TLP
BM 12	S	100	37,00 ZP TLP
BM 16	S	100	49,00 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00439.462		RAZ 170
439	04		type B
	zinc plated yellow		



Hexagon thin nuts, B = with chamfers

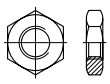
Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 441
Brass → S. 572

DIN 439 → replaced by ISO 4035

BM 3	S	1000	2,80 YZP
BM 4	S	1000	3,35 YZP
BM 5	S	1000	3,90 YZP
BM 6	S	1000	4,50 YZP
BM 8	S	1000	8,50 YZP
BM 10	S	500	16,60 YZP
BM 12	S	100	29,50 YZP
BM 16	S	100	39,00 YZP

DIN	00439.352	RAZ 1510
439	04	type B
	zinc flake coated	



Hexagon thin nuts, B = with chamfers

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

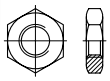
Dimensions → TI-62 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 441
Brass → S. 572

DIN 439 → replaced by ISO 4035

BM 6	S	1000	5,30 flZn
BM 8	S	1000	10,30 flZn
BM 10	S	500	20,50 flZn
BM 12	S	100	36,00 flZn
BM 16	S	100	47,50 flZn
BM 20	S	50	103,00 flZn
BM 24	S	50	186,00 flZn
BM 30	S	25	414,00 flZn

Dimensions	PU	Pieces	€/100/Mat.
DIN	00439.422		RAZ 170
439	04		type B
	hot dip galvanized*		



Hexagon thin nuts, B = with chamfers

*thread tolerance 6H

Dimensions → TI-62 Corrosion protection → TI-219
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 441
Brass → S. 572

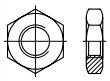
DIN 439 → replaced by ISO 4035

BM 8	S	100	40,00 HDG
BM 10	S	100	40,00 HDG
BM 12	S	100	40,00 HDG
BM 16	S	100	45,50 HDG
BM 20	S	50	97,00 HDG
BM 24	S	50	173,00 HDG
BM 27	S	25	310,00 HDG
BM 30	S	25	345,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

DIN	00439.407	RAZ 170
439	04	type B – fine



Hexagon thin nuts, B = with chamfers, with metric fine pitch thread

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

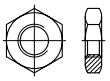
Stainless → S. 441

DIN 439 fine thread → replaced by ISO 8676

BM 8	x	1	S	100	11,30
BM 10	x	1	S	100	17,40
BM 10	x	1,25	S	100	17,40
BM 12	x	1	S	100	27,00
BM 12	x	1,25	S	100	27,00
BM 12	x	1,5	S	100	27,00
BM 14	x	1,5	S	100	31,50
BM 16	x	1,5	S	50	37,50

Dimensions			PU	Pieces	€/100/Mat.
BM 18	x	1,5	S	50	69,00
BM 20	x	1,5	S	50	78,00
BM 20	x	2	S	50	78,00
BM 24	x	1,5	S	25	157,00
BM 24	x	2	S	25	157,00
BM 27	x	1,5	S	25	260,00
BM 30	x	1,5	S	25	270,00
BM 30	x	2	S	25	270,00
BM 33	x	1,5	S	10	485,00
BM 36	x	1,5	S	10	570,00
BM 36	x	3	S	10	570,00
BM 39	x	1,5	S	10	870,00
BM 39	x	3	S	10	870,00
BM 42	x	1,5	S	10	1140,00
BM 42	x	2	S	10	1140,00
BM 42	x	3	S	10	1140,00
BM 48	x	1,5	S	10	2010,00
BM 48	x	2	S	10	2100,00
BM 48	x	3	S	10	2010,00

DIN	00439.417	RAZ 170
439	04	type B – fine
	zinc plated	



Hexagon thin nuts, B = with chamfers, with metric fine pitch thread

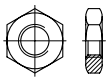
Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 441

DIN 439 fine thread → replaced by ISO 8676

BM 8	x	1	S	100	13,20 ZP
BM 10	x	1	S	100	19,50 ZP
BM 10	x	1,25	S	100	19,50 ZP
BM 12	x	1	S	100	30,50 ZP
BM 12	x	1,25	S	100	30,50 ZP
BM 12	x	1,5	S	100	30,50 ZP
BM 14	x	1,5	S	100	35,00 ZP
BM 16	x	1	S	100	45,00 ZP
BM 16	x	1,5	S	50	42,00 ZP
BM 18	x	1,5	S	50	75,00 ZP
BM 20	x	1,5	S	50	87,00 ZP
BM 22	x	1,5	S	50	140,00 ZP
BM 24	x	1,5	S	25	171,00 ZP
BM 24	x	2	S	25	190,00 ZP
BM 27	x	1,5	S	25	350,00 ZP
BM 30	x	1,5	S	25	305,00 ZP
BM 30	x	2	S	25	305,00 ZP
BM 33	x	1,5	S	50	580,00 ZP
BM 35	x	1,5	S	50	1250,00 ZP
BM 36	x	1,5	S	10	640,00 ZP
BM 36	x	2	S	10	640,00 ZP
BM 36	x	3	S	10	640,00 ZP
BM 39	x	2	S	10	970,00 ZP
BM 42	x	1,5	S	10	1260,00 ZP
BM 42	x	2	S	10	1260,00 ZP
BM 42	x	3	S	10	1260,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00439.415		RAZ 170
439	**04**	**type B – left**	
	zinc plated		



Hexagon thin nuts, B = with chamfers, with metric left hand thread

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 439 → replaced by ISO 4035

BM 6	S	100	30,00 ZP
BM 8	S	100	15,00 ZP
BM 10	S	100	30,00 ZP
BM 12	S	100	60,00 ZP
BM 16	S	50	95,00 ZP
BM 20	S	50	180,00 ZP
BM 24	S	25	350,00 ZP
BM 30	S	25	600,00 ZP
BM 36	S	10	1600,00 ZP
BM 42	S	10	1800,00 ZP

DIN	00440.008	RAZ 170
440	**Steel 100 HV**	**type R**

Washers, R = with round hole

especially for wood constructions

Dimensions → TI-84

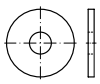
Stainless → S. 441

DIN 440 type R → replaced by ISO 7094

Inside ∅ x outside ∅ x thickness

R 5,5	x	18	x	2	S	100	5,10
R 6,6	x	22	x	2	S	100	5,60
R 9	x	28	x	3	S	100	9,40
R 11	x	34	x	3	S	100	13,20
R 13,5	x	44	x	4	S	100	23,20
R 17,5	x	56	x	5	S	50	40,50
R 22	x	72	x	6	S	50	68,00
R 24	x	80	x	6	S	50	104,00
R 26	x	85	x	6	S	50	135,00
R 30	x	98	x	6	S	25	177,00
R 33	x	105	x	6	S	25	206,00
R 36	x	112	x	6	S	25	235,00
R 39	x	125	x	8	S	25	380,00
R 42	x	140	x	8	S	25	750,00
R 45	x	150	x	8	S	10	800,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00440.018		RAZ 170
440	**Steel 100 HV**	**type R**	
	zinc plated		



Washers, R = with round hole

especially for wood constructions

Dimensions → TI-84 Corrosion protection → TI-217

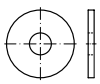
Stainless → S. 441

DIN 440 type R → replaced by ISO 7094

Inside ∅ x outside ∅ x thickness

R 5,5	x	18	x	2	S	100	5,90 ZP
R 6,6	x	22	x	2	S	100	6,80 ZP
R 9	x	28	x	3	S	100	12,10 ZP
R 11	x	34	x	3	S	100	17,10 ZP
R 13,5	x	44	x	4	S	100	32,50 ZP
R 17,5	x	56	x	5	S	50	60,00 ZP
R 22	x	72	x	6	S	50	117,00 ZP
R 24	x	80	x	6	S	50	149,00 ZP
R 26	x	85	x	6	S	50	185,00 ZP
R 30	x	98	x	6	S	25	244,00 ZP
R 33	x	105	x	6	S	25	285,00 ZP
R 36	x	112	x	6	S	25	325,00 ZP
R 39	x	125	x	8	S	25	520,00 ZP
R 42	x	140	x	8	S	25	910,00 ZP

DIN	00440.028	RAZ 170
440	**Steel 100 HV**	**type R**
	hot dip galvanized	



Washers, R = with round hole

especially for wood constructions

Dimensions → TI-84 Corrosion protection → TI-219

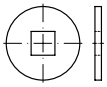
Stainless → S. 441

DIN 440 type R → replaced by ISO 7094

Inside ∅ x outside ∅ x thickness

R 6,6	x	22	x	2	S	100	24,30 HDG
R 9	x	28	x	3	S	100	32,50 HDG
R 11	x	34	x	3	S	100	32,50 HDG
R 13,5	x	44	x	4	S	100	39,50 HDG
R 17,5	x	56	x	5	S	50	73,00 HDG
R 22	x	72	x	6	S	50	118,00 HDG
R 26	x	85	x	6	S	50	243,00 HDG

Dimensions	PU	Pieces	€/100/Mat.
DIN	00440.004		RAZ 170
440	**Steel 100 HV**	**type V**	



Washers, V = with square hole

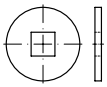
especially for wood constructions

Dimensions → TI-84

Inside x outside ∅ x thickness

V 6,6	x	22	x	2	S	100	5,60
V 9	x	28	x	3	S	100	9,40
V 11	x	34	x	3	S	100	13,20
V 14	x	44	x	4	S	100	23,20
V 18	x	56	x	5	S	100	40,50

DIN	00440.014	RAZ 170
440	**Steel 100 HV**	**type V**
	zinc plated	



Washers, V = with square hole

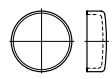
especially for wood constructions

Dimensions → TI-84 Corrosion protection → TI-217

Inside x outside ∅ x thickness

V 6,6	x	22	x	2	S	100	8,70 ZP
V 9	x	28	x	3	S	100	12,50 ZP
V 11	x	34	x	3	S	100	16,30 ZP
V 14	x	44	x	4	S	100	31,00 ZP
V 18	x	56	x	5	S	100	56,00 ZP
V 22	x	72	x	6	S	50	83,00 ZP

DIN	00443.000	RAZ 170
443	**Steel**	



Sealing push-in caps

Dimensions → TI-111

8	S	100	19,70
10	S	100	22,00
12	S	100	26,00
14	S	100	28,50
16	S	100	31,50
18	S	100	35,50
20	S	100	38,00
22	S	100	49,50
25	S	100	55,00
28	S	100	61,00
30	S	50	71,00
32	S	50	77,00
36	S	50	111,00

Dimensions	PU	Pieces	€/100/Mat.
38	S	50	124,00
40	S	25	133,00
42	S	25	149,00
45	S	25	160,00
50	S	25	183,00
56	S	10	270,00

DIN	00444.402	RAZ 180

444

4.6 **type B**

Eye bolts, B = product grade B (mg)

Dimensions → TI-30 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 442
Brass → S. 572

Thread M x length l

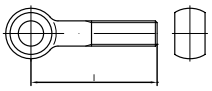
BM 5	x	25	S	50	265,00
BM 5	x	30	S	50	265,00
BM 5	x	35	S	50	243,00
BM 5	x	40	S	25	350,00
BM 6	x	25	S	50	265,00
BM 6	x	30	S	50	265,00
BM 6	x	35	S	50	243,00
BM 6	x	40	S	50	243,00
BM 6	x	45	S	25	265,00
BM 6	x	50	S	25	265,00
BM 6	x	55	S	25	280,00
BM 6	x	60	S	25	280,00
BM 6	x	65	S	25	335,00
BM 6	x	70	S	25	335,00
BM 6	x	75	S	25	385,00
BM 6	x	80	S	25	385,00
BM 8	x	25	S	50	295,00
BM 8	x	30	S	50	295,00
BM 8	x	35	S	50	305,00
BM 8	x	40	S	25	310,00
BM 8	x	45	S	25	315,00
BM 8	x	50	S	25	315,00
BM 8	x	55	S	25	320,00
BM 8	x	60	S	25	320,00
BM 8	x	65	S	25	335,00
BM 8	x	70	S	25	335,00
BM 8	x	75	S	25	345,00
BM 8	x	80	S	25	345,00
BM 8	x	90	S	25	355,00
BM 8	x	100	S	25	360,00
BM 8	x	110	S	25	415,00
BM 8	x	120	S	25	445,00
BM 8	x	130	S	25	475,00
BM 8	x	140	S	25	500,00
BM 10	x	30	S	50	335,00
BM 10	x	35	S	50	345,00
BM 10	x	40	S	25	350,00
BM 10	x	45	S	25	360,00
BM 10	x	50	S	25	360,00
BM 10	x	55	S	25	375,00
BM 10	x	60	S	25	375,00
BM 10	x	65	S	25	385,00
BM 10	x	70	S	25	385,00
BM 10	x	75	S	25	390,00
BM 10	x	80	S	25	390,00
BM 10	x	90	S	25	405,00
BM 10	x	100	S	25	415,00
BM 10	x	110	S	25	435,00
BM 10	x	120	S	10	475,00

Dimensions	PU	Pieces	€/100/Mat.
BM 10 x 130	S	10	500,00
BM 10 x 140	S	10	540,00
BM 12 x 30	S	25	360,00
BM 12 x 40	S	25	375,00
BM 12 x 45	S	25	390,00
BM 12 x 50	S	10	420,00
BM 12 x 55	S	10	430,00
BM 12 x 60	S	10	430,00
BM 12 x 65	S	10	440,00
BM 12 x 70	S	10	440,00
BM 12 x 75	S	10	445,00
BM 12 x 80	S	10	445,00
BM 12 x 90	S	10	465,00
BM 12 x 100	S	10	510,00
BM 12 x 110	S	10	530,00
BM 12 x 120	S	10	560,00
BM 12 x 130	S	10	610,00
BM 12 x 140	S	10	650,00
BM 12 x 150	S	10	710,00
BM 12 x 160	S	10	800,00
BM 12 x 180	S	10	850,00
BM 12 x 200	S	10	890,00
BM 16 x 40	S	10	640,00
BM 16 x 50	S	10	640,00
BM 16 x 60	S	10	640,00
BM 16 x 65	S	10	670,00
BM 16 x 70	S	10	670,00
BM 16 x 75	S	10	680,00
BM 16 x 80	S	10	680,00
BM 16 x 90	S	10	700,00
BM 16 x 100	S	10	700,00
BM 16 x 110	S	10	730,00
BM 16 x 120	S	10	750,00
BM 16 x 130	S	10	770,00
BM 16 x 140	S	10	790,00
BM 16 x 150	S	10	810,00
BM 16 x 160	S	10	840,00
BM 16 x 180	S	10	890,00
BM 16 x 200	S	10	940,00
BM 20 x 80	S	10	920,00
BM 20 x 90	S	10	960,00
BM 20 x 100	S	1	1010,00
BM 20 x 110	S	1	1040,00
BM 20 x 120	S	1	1090,00
BM 20 x 130	S	1	1120,00
BM 20 x 140	S	1	1210,00
BM 20 x 150	S	1	1290,00
BM 20 x 160	S	1	1370,00
BM 20 x 170	S	1	1500,00
BM 20 x 180	S	1	1620,00
BM 20 x 200	S	1	1830,00
BM 20 x 260	S	1	2280,00
BM 24 x 80	S	1	1280,00
BM 24 x 90	S	1	1340,00
BM 24 x 100	S	1	1400,00
BM 24 x 110	S	1	1460,00
BM 24 x 120	S	1	1530,00
BM 24 x 130	S	1	1610,00
BM 24 x 140	S	1	1690,00
BM 24 x 150	S	1	1780,00
BM 24 x 160	S	1	1850,00
BM 24 x 170	S	1	1950,00
BM 24 x 180	S	1	2060,00
BM 24 x 200	S	1	2270,00
BM 30 x 120	S	1	3000,00
BM 30 x 130	S	1	3050,00
BM 30 x 140	S	1	3150,00
BM 30 x 150	S	1	3200,00
BM 30 x 160	S	1	3350,00
BM 30 x 180	S	1	3600,00
BM 30 x 200	S	1	3800,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00444.412		RAZ 180

444

4.6 **type B**
zinc plated



Eye bolts, B = product grade B (mg)

Dimensions → TI-30 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

Stainless → S. 442
Brass → S. 572

Thread M x length l

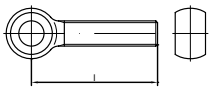
BM 5	x	25	S	50	270,00 ZP
BM 5	x	30	S	50	270,00 ZP
BM 5	x	35	S	50	260,00 ZP
BM 5	x	40	S	50	248,00 ZP
BM 6	x	20	S	50	265,00 ZP
BM 6	x	25	S	50	270,00 ZP
BM 6	x	30	S	50	270,00 ZP
BM 6	x	35	S	50	275,00 ZP
BM 6	x	40	S	50	249,00 ZP
BM 6	x	45	S	25	270,00 ZP
BM 6	x	50	S	25	270,00 ZP
BM 6	x	55	S	25	280,00 ZP
BM 6	x	60	S	25	285,00 ZP
BM 6	x	65	S	25	340,00 ZP
BM 6	x	70	S	25	340,00 ZP
BM 6	x	75	S	25	375,00 ZP
BM 6	x	80	S	25	400,00 ZP
BM 8	x	25	S	50	335,00 ZP
BM 8	x	30	S	50	335,00 ZP
BM 8	x	35	S	50	350,00 ZP
BM 8	x	40	S	25	320,00 ZP
BM 8	x	45	S	25	345,00 ZP
BM 8	x	50	S	25	325,00 ZP
BM 8	x	55	S	25	425,00 ZP
BM 8	x	60	S	25	340,00 ZP
BM 8	x	65	S	50	414,15 ZP
BM 8	x	70	S	25	350,00 ZP
BM 8	x	75	S	25	475,00 ZP
BM 8	x	80	S	25	360,00 ZP
BM 8	x	90	S	25	370,00 ZP
BM 8	x	100	S	25	385,00 ZP
BM 8	x	110	S	25	440,00 ZP
BM 8	x	120	S	25	470,00 ZP
BM 8	x	130	S	25	515,00 ZP
BM 8	x	140	S	25	550,00 ZP
BM 10	x	30	S	50	345,00 ZP
BM 10	x	35	S	50	315,00 ZP
BM 10	x	40	S	25	360,00 ZP
BM 10	x	45	S	25	375,00 ZP
BM 10	x	50	S	25	380,00 ZP
BM 10	x	55	S	25	390,00 ZP
BM 10	x	60	S	25	390,00 ZP
BM 10	x	65	S	25	405,00 ZP
BM 10	x	70	S	25	405,00 ZP
BM 10	x	75	S	25	405,00 ZP
BM 10	x	80	S	25	415,00 ZP
BM 10	x	90	S	25	430,00 ZP
BM 10	x	100	S	25	440,00 ZP
BM 10	x	110	S	25	540,00 ZP
BM 10	x	120	S	10	580,00 ZP
BM 10	x	130	S	10	625,00 ZP
BM 10	x	140	S	10	675,00 ZP
BM 12	x	30	S	25	375,00 ZP
BM 12	x	40	S	25	395,00 ZP
BM 12	x	45	S	25	420,00 ZP
BM 12	x	50	S	10	445,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
BM 12	x	55	S	10	460,00 ZP
BM 12	x	60	S	10	460,00 ZP
BM 12	x	65	S	10	470,00 ZP
BM 12	x	70	S	10	475,00 ZP
BM 12	x	75	S	10	500,00 ZP
BM 12	x	80	S	10	485,00 ZP
BM 12	x	90	S	10	520,00 ZP
BM 12	x	100	S	10	550,00 ZP
BM 12	x	110	S	10	570,00 ZP
BM 12	x	120	S	10	620,00 ZP
BM 12	x	130	S	10	670,00 ZP
BM 12	x	140	S	10	725,00 ZP
BM 12	x	150	S	10	780,00 ZP
BM 12	x	160	S	10	870,00 ZP
BM 12	x	180	S	10	950,00 ZP
BM 12	x	140	S	10	1050,00 ZP
BM 16	x	40	S	25	600,00 ZP
BM 16	x	50	S	10	650,00 ZP
BM 16	x	60	S	10	700,00 ZP
BM 16	x	65	S	10	720,00 ZP
BM 16	x	70	S	10	720,00 ZP
BM 16	x	75	S	10	735,00 ZP
BM 16	x	80	S	10	750,00 ZP
BM 16	x	90	S	10	780,00 ZP
BM 16	x	100	S	10	780,00 ZP
BM 16	x	110	S	10	830,00 ZP
BM 16	x	120	S	10	850,00 ZP
BM 16	x	130	S	10	840,00 ZP
BM 16	x	140	S	10	910,00 ZP
BM 16	x	150	S	10	940,00 ZP
BM 16	x	160	S	10	960,00 ZP
BM 16	x	180	S	10	1020,00 ZP
BM 16	x	200	S	10	1090,00 ZP
BM 20	x	80	S	10	1040,00 ZP
BM 20	x	90	S	1	1050,00 ZP
BM 20	x	100	S	1	1140,00 ZP
BM 20	x	110	S	1	1190,00 ZP
BM 20	x	120	S	1	1250,00 ZP
BM 20	x	130	S	1	1290,00 ZP
BM 20	x	140	S	1	1400,00 ZP
BM 20	x	150	S	1	1410,00 ZP
BM 20	x	160	S	1	1580,00 ZP
BM 20	x	170	S	1	1700,00 ZP
BM 20	x	180	S	1	1850,00 ZP
BM 20	x	200	S	1	2070,00 ZP
BM 20	x	220	S	1	2300,00 ZP
BM 20	x	240	S	1	2540,00 ZP
BM 20	x	260	S	1	2780,00 ZP
BM 20	x	280	S	1	3040,00 ZP
BM 20	x	300	S	1	1625,00 ZP
BM 24	x	80	S	1	1580,00 ZP
BM 24	x	90	S	1	1650,00 ZP
BM 24	x	100	S	1	1700,00 ZP
BM 24	x	110	S	1	1760,00 ZP
BM 24	x	120	S	1	1830,00 ZP
BM 24	x	130	S	1	1910,00 ZP
BM 24	x	140	S	1	1990,00 ZP
BM 24	x	150	S	1	2080,00 ZP
BM 24	x	160	S	1	2220,00 ZP
BM 24	x	170	S	1	2300,00 ZP
BM 24	x	180	S	1	2360,00 ZP
BM 24	x	200	S	1	2570,00 ZP
BM 30	x	120	S	1	3900,00 ZP
BM 30	x	130	S	1	3970,00 ZP
BM 30	x	140	S	1	4100,00 ZP
BM 30	x	150	S	1	4200,00 ZP
BM 30	x	160	S	1	4350,00 ZP
BM 30	x	180	S	1	4680,00 ZP
BM 30	x	200	S	1	4940,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00444.414		RAZ 180

444 4.6 zinc plated type LB



Eye bolts, L = long thread B = product grade B (mg)

Dimensions → TI-30 Corrosion protection → TI-217
Mech. properties → TI-220

Thread M x length l					
LBM 8	x	60	S	25	405,00 ZP
LBM 8	x	70	S	25	425,00 ZP
LBM 8	x	80	S	25	440,00 ZP
LBM 8	x	100	S	25	465,00 ZP
LBM 10	x	60	S	25	425,00 ZP
LBM 10	x	70	S	25	485,00 ZP
LBM 10	x	80	S	25	510,00 ZP
LBM 10	x	100	S	25	540,00 ZP
LBM 12	x	80	S	10	590,00 ZP
LBM 12	x	90	S	10	640,00 ZP
LBM 12	x	100	S	10	670,00 ZP
LBM 12	x	120	S	10	770,00 ZP
LBM 12	x	140	S	10	880,00 ZP
LBM 16	x	80	S	10	910,00 ZP
LBM 16	x	100	S	10	950,00 ZP
LBM 16	x	120	S	10	1020,00 ZP
LBM 16	x	140	S	10	1080,00 ZP
LBM 16	x	150	S	10	1210,00 ZP
LBM 16	x	160	S	10	1290,00 ZP
LBM 16	x	180	S	10	1450,00 ZP
LBM 16	x	200	S	10	1620,00 ZP
LBM 20	x	100	S	10	1370,00 ZP
LBM 20	x	120	S	1	1490,00 ZP
LBM 20	x	130	S	1	1560,00 ZP
LBM 20	x	140	S	1	1680,00 ZP
LBM 20	x	150	S	1	1710,00 ZP
LBM 20	x	160	S	1	1900,00 ZP
LBM 24	x	80	S	1	2050,00 ZP
LBM 24	x	90	S	1	2150,00 ZP
LBM 24	x	100	S	1	2210,00 ZP
LBM 24	x	110	S	1	2290,00 ZP
LBM 24	x	120	S	1	2380,00 ZP
LBM 24	x	130	S	1	2500,00 ZP
LBM 24	x	140	S	1	2590,00 ZP
LBM 24	x	150	S	1	2710,00 ZP
LBM 24	x	160	S	1	2920,00 ZP
LBM 24	x	170	S	1	2990,00 ZP
LBM 24	x	180	S	1	3080,00 ZP
LBM 24	x	200	S	1	3250,00 ZP

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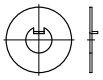
Technical Competence
REM – REYHER Engineering Management

- Experienced engineers and technicians with comprehensive specialist expertise
- Technology hotline for customer consulting
- Our training lifts you to the cutting-edge of technology

Dimensions	PU	Pieces	€/100/Mat.
DIN	00462.000		RAZ 180

462 Steel



Internal tab washers

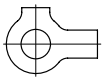
(for groove nuts DIN 1804)

Dimensions → TI-90

8	S	100	78,00
10	S	100	83,00
14	S	100	92,00
16	S	50	99,00
18	S	50	104,00
20	S	50	113,00
22	S	50	118,00
24	S	50	122,00
28	S	50	132,00
30	S	50	132,00
32	S	50	143,00
35	S	25	169,00
38	S	25	182,00
40	S	25	194,00
42	S	25	194,00
45	S	25	207,00
48	S	25	214,00
50	S	25	214,00
52	S	25	239,00
55	S	25	239,00
58	S	10	285,00
60	S	10	285,00
62	S	10	310,00
65	S	10	310,00
70	S	10	340,00
72	S	10	415,00
75	S	10	415,00
80	S	10	475,00
85	S	10	530,00
95	S	10	750,00
100	S	10	880,00

~DIN	00463.000	RAZ 180

463 Steel



Washers with 2 taps

Caution! Not suitable for high-tensile screwed fastenings.

Dimensions → TI-91

Stainless → S. 442
Brass → S. 573

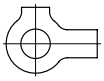
3,2	K	100	11,40
5,3	S	1000	9,30
5,3	K	100	12,70
6,4	S	1000	10,40
6,4	K	100	14,10
8,4	S	1000	14,00
8,4	K	100	17,90
10,5	S	1000	15,90

Dimensions	PU	Pieces	€/100/Mat.
10,5	K	100	20,10
13	S	500	19,30
13	K	100	24,00
15	K	100	25,00
17	S	500	28,00
17	K	100	33,50
19	K	100	34,50
21	S	250	31,50
21	K	100	36,50
23	S	100	52,00
25	S	100	55,00
28	S	50	110,00
31	S	50	120,00
34	S	50	133,00
37	S	50	150,00
40	S	25	178,00
43	S	25	184,00
50	S	25	243,00
54	S	25	280,00

~DIN	00463.010	RAZ 180

463

Steel
zinc plated



Washers with 2 taps

Caution! Not suitable for high-tensile screwed fastenings.

Dimensions → TI-91 Corrosion protection → TI-217

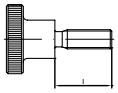
Stainless → S. 442
Brass → S. 573

3,2	K	100	11,40 ZP
4,3	K	100	12,20 ZP
5,3	K	100	12,90 ZP
6,4	S	1000	10,60 ZP
6,4	K	100	14,20 ZP
8,4	S	1000	14,30 ZP
8,4	K	100	18,40 ZP
10,5	S	1000	16,50 ZP
10,5	K	100	20,80 ZP
13	S	500	20,50 ZP
13	K	100	25,50 ZP
15	K	100	26,50 ZP
17	S	500	30,00 ZP
17	K	100	35,00 ZP
19	K	100	36,50 ZP
21	S	250	34,00 ZP
21	K	100	39,00 ZP
23	S	100	55,00 ZP
25	S	100	59,00 ZP
28	S	50	117,00 ZP
31	S	50	129,00 ZP
34	S	50	143,00 ZP
37	S	50	161,00 ZP
40	S	25	189,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00464.500		RAZ 190

464

Steel



Knurled thumb screws, high type

Dimensions → TI-30

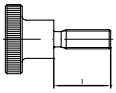
Stainless → S. 443
Brass → S. 573

Thread M x length l					
M 3	x	5	S	50	62,00
M 3	x	6	S	50	64,00
M 3	x	8	S	50	64,00
M 3	x	10	S	50	65,00
M 3	x	12	S	50	70,00
M 3	x	16	S	50	76,00
M 4	x	5	S	50	83,00
M 4	x	6	S	50	86,00
M 4	x	8	S	50	89,00
M 4	x	10	S	50	92,00
M 4	x	12	S	50	95,00
M 4	x	16	S	50	100,00
M 4	x	18	S	50	124,00
M 4	x	20	S	50	112,00
M 4	x	25	S	50	113,00
M 4	x	30	S	50	125,00
M 5	x	8	S	50	103,00
M 5	x	10	S	50	105,00
M 5	x	12	S	50	109,00
M 5	x	16	S	50	116,00
M 5	x	20	S	50	126,00
M 5	x	25	S	25	136,00
M 5	x	30	S	25	151,00
M 5	x	40	S	25	171,00
M 6	x	8	S	25	136,00
M 6	x	10	S	25	140,00
M 6	x	12	S	25	144,00
M 6	x	16	S	25	152,00
M 6	x	20	S	25	166,00
M 6	x	25	S	25	178,00
M 6	x	30	S	25	190,00
M 6	x	35	S	25	201,00
M 6	x	40	S	25	217,00
M 8	x	10	S	25	248,00
M 8	x	12	S	25	255,00
M 8	x	16	S	25	265,00
M 8	x	20	S	25	285,00
M 8	x	25	S	25	310,00
M 8	x	30	S	10	345,00
M 8	x	35	S	10	365,00
M 8	x	40	S	10	400,00
M 10	x	20	S	10	425,00
M 10	x	25	S	10	460,00
M 10	x	30	S	10	495,00
M 10	x	40	S	10	560,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00464.510		RAZ 190

464

Steel
zinc plated



Knurled thumb screws, high type

Dimensions → TI-30 Corrosion protection → TI-217

Stainless → S. 443
Brass → S. 573

Thread M x length l					
M 3	x	6	S	50	75,00 ZP
M 3	x	8	S	50	80,00 ZP
M 3	x	10	S	50	86,00 ZP
M 3	x	16	S	50	92,00 ZP
M 4	x	6	S	50	100,00 ZP
M 4	x	8	S	50	105,00 ZP
M 4	x	10	S	50	114,00 ZP
M 4	x	12	S	50	120,00 ZP
M 4	x	16	S	50	126,00 ZP
M 4	x	20	S	50	143,00 ZP
M 5	x	8	S	50	114,00 ZP
M 5	x	10	S	50	126,00 ZP
M 5	x	12	S	50	135,00 ZP
M 5	x	16	S	50	143,00 ZP
M 5	x	20	S	50	149,00 ZP
M 5	x	25	S	25	159,00 ZP
M 5	x	30	S	25	174,00 ZP
M 5	x	40	S	25	195,00 ZP
M 6	x	10	S	25	187,00 ZP
M 6	x	12	S	25	194,00 ZP
M 6	x	16	S	25	206,00 ZP
M 6	x	20	S	25	228,00 ZP
M 6	x	25	S	25	275,00 ZP
M 6	x	30	S	25	300,00 ZP
M 6	x	35	S	25	320,00 ZP
M 6	x	40	S	25	327,00 ZP
M 8	x	12	S	25	285,00 ZP
M 8	x	16	S	25	300,00 ZP
M 8	x	20	S	25	310,00 ZP
M 8	x	25	S	25	570,00 ZP
M 10	x	25	S	10	490,00 ZP

DIN	00466.500	RAZ 190

466

5

Knurled nuts, high type

Dimensions → TI-70

Stainless → S. 443
Brass → S. 573

M 3	S	100	23,90
M 4	S	100	36,50
M 5	S	100	54,00
M 6	S	50	87,00
M 8	S	50	161,00
M 10	S	25	275,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
DIN	00466.510		RAZ 190
466	**5** **zinc plated**		

Knurled nuts, high type

Dimensions → TI-70 Corrosion protection → TI-217

Stainless → S. 443
Brass → S. 573

M 3	S	100	24,60 ZP
M 4	S	100	38,50 ZP
M 5	S	100	56,00 ZP
M 6	S	50	93,00 ZP
M 8	S	50	173,00 ZP
M 10	S	25	290,00 ZP
M 12	S	25	350,00 ZP

DIN	00467.500	RAZ 190
467	**5**	

Knurled nuts, low type

Dimensions → TI-70

Stainless → S. 443
Brass → S. 573

M 3	S	100	19,90
M 4	S	100	28,00
M 5	S	100	38,50
M 6	S	100	56,00
M 8	S	50	108,00
M 10	S	50	173,00

DIN	00467.510	RAZ 190
467	**5** **zinc plated**	

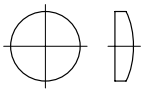
Knurled nuts, low type

Dimensions → TI-70 Corrosion protection → TI-217

Stainless → S. 443
Brass → S. 573

M 3	S	100	20,50 ZP
M 4	S	100	30,00 ZP
M 5	S	100	40,50 ZP
M 6	S	100	61,00 ZP
M 8	S	50	117,00 ZP
M 10	S	50	170,00 ZP
M 12	S	25	250,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00470.000		RAZ 190
470	**Steel**		



Sealing discs

Dimensions → TI-111

6	K	100	26,00
8	K	100	20,90
10	S	1000	17,00
10	K	100	21,00
12	K	100	21,50
14	S	1000	19,30
14	K	100	23,60
16	S	1000	19,80
16	K	100	24,10
18	K	100	24,60
20	S	500	23,00
20	K	100	27,00
22	K	100	35,50
25	S	500	35,00
25	K	100	40,50
28	S	500	38,50
28	K	100	44,00
30	S	250	43,50
30	K	100	50,00
32	S	100	47,50
34	S	50	56,00
36	S	50	60,00
38	S	50	68,00
40	S	50	71,00
42	S	50	78,00
45	S	50	84,00
48	S	50	92,00
50	S	50	96,00
52	S	50	107,00
56	S	50	117,00
60	S	50	137,00
63	S	25	146,00
80	S	25	255,00
100	S	10	395,00
125	S	10	760,00

DIN	00471.000	RAZ 200
471	**Spring steel**	**normal**

Retaining rings for shafts, normal type

Dimensions → TI-91

Nominal size = for shafts ∅ x thickness

3	x	0,4	S	10000	1,10
3	x	0,4	K	200	4,05
4	x	0,4	S	10000	1,10
4	x	0,4	K	200	4,05

Dimensions			PU	Pieces	€/100/Mat.
5	x	0,6	S	5000	1,45
5	x	0,6	K	200	4,70
6	x	0,7	S	5000	1,45
6	x	0,7	K	200	4,70
7	x	0,8	S	2500	1,85
7	x	0,8	K	200	5,30
8	x	0,8	S	2000	1,65
8	x	0,8	K	200	5,10
9	x	1	S	2000	2,85
9	x	1	K	200	7,00
10	x	1	S	2000	2,40
10	x	1	K	200	6,40
11	x	1	S	1000	3,15
11	x	1	K	200	7,60
12	x	1	S	1000	2,75
12	x	1	K	200	6,90
13	x	1	S	1000	3,40
13	x	1	K	200	7,90
14	x	1	S	1000	3,35
14	x	1	K	200	7,90
15	x	1	S	1000	3,60
15	x	1	K	200	8,40
16	x	1	S	1000	3,80
16	x	1	K	200	8,60
17	x	1	S	1000	4,25
17	x	1	K	200	9,40
18	x	1,2	S	1000	5,50
18	x	1,2	K	200	11,40
19	x	1,2	S	1000	6,10
19	x	1,2	K	200	12,60
20	x	1,2	S	1000	6,00
20	x	1,2	K	200	12,20
21	x	1,2	S	1000	6,90
21	x	1,2	K	200	13,80
22	x	1,2	S	500	7,10
22	x	1,2	K	200	14,20
23	x	1,2	S	500	9,60
23	x	1,2	K	200	18,30
24	x	1,2	S	500	8,00
24	x	1,2	K	200	15,80
25	x	1,2	S	500	8,70
25	x	1,2	K	200	16,80
26	x	1,2	S	500	10,70
26	x	1,2	K	200	20,20
27	x	1,2	S	500	13,20
27	x	1,2	K	200	24,40
28	x	1,5	S	500	14,20
28	x	1,5	K	100	26,00
29	x	1,5	S	500	16,90
29	x	1,5	K	100	31,00
30	x	1,5	S	250	14,10
30	x	1,5	K	100	26,00
31	x	1,5	S	250	20,20
31	x	1,5	K	100	36,00
32	x	1,5	S	250	16,30
32	x	1,5	K	100	30,00
33	x	1,5	K	100	40,50
34	x	1,5	S	1000	19,30
34	x	1,5	K	100	35,00
35	x	1,5	S	1000	18,40
35	x	1,5	K	100	33,50
36	x	1,75	S	1000	26,00
36	x	1,75	K	100	46,00
37	x	1,75	S	1000	33,00
37	x	1,75	K	100	59,00
38	x	1,75	S	1000	27,50
38	x	1,75	K	100	48,00
39	x	1,75	K	100	62,00
40	x	1,75	S	1000	29,50
40	x	1,75	K	100	52,00
41	x	1,75	S	1000	40,50
41	x	1,75	K	100	60,00
42	x	1,75	S	1000	34,00
42	x	1,75	K	100	60,00
44	x	1,75	S	1000	41,00

Dimensions			PU	Pieces	€/100/Mat.
44	x	1,75	K	100	60,00
45	x	1,75	S	1000	34,50
45	x	1,75	K	100	60,00
46	x	1,75	S	1000	53,00
46	x	1,75	K	100	72,00
47	x	1,75	S	1000	44,00
47	x	1,75	K	100	64,00
48	x	1,75	S	1000	44,00
48	x	1,75	K	100	65,00
50	x	2	S	100	41,50
52	x	2	S	100	52,00
54	x	2	S	100	57,00
55	x	2	S	100	45,00
56	x	2	S	100	64,00
57	x	2	S	100	61,00
58	x	2	S	100	61,00
60	x	2	S	100	52,00
62	x	2	S	100	62,00
63	x	2	S	100	71,00
65	x	2,5	S	50	73,00
67	x	2,5	S	50	91,00
68	x	2,5	S	50	91,00
70	x	2,5	S	50	78,00
72	x	2,5	S	50	105,00
75	x	2,5	S	50	90,00
77	x	2,5	S	50	109,00
78	x	2,5	S	50	109,00
80	x	2,5	S	50	93,00
82	x	2,5	S	50	113,00
85	x	3	S	50	125,00
87	x	3	S	50	178,00
88	x	3	S	50	157,00
90	x	3	S	50	133,00
92	x	3	S	50	169,00
95	x	3	S	50	145,00
97	x	3	S	50	181,00
98	x	3	S	50	181,00
100	x	3	S	50	148,00
102	x	4	S	1	385,00
105	x	4	S	1	385,00
107	x	4	S	1	460,00
108	x	4	S	1	1130,00
110	x	4	S	1	340,00
112	x	4	S	1	1220,00
115	x	4	S	1	425,00
117	x	4	S	1	1250,00
118	x	4	S	1	1250,00
120	x	4	S	1	365,00
122	x	4	S	1	1330,00
125	x	4	S	1	445,00
127	x	4	S	1	640,00
128	x	4	S	1	1530,00
130	x	4	S	1	480,00
132	x	4	S	1	1650,00
135	x	4	S	1	580,00
137	x	4	S	1	1690,00
138	x	4	S	1	1690,00
140	x	4	S	1	570,00
145	x	4	S	1	610,00
147	x	4	S	1	660,00
148	x	4	S	1	1830,00
150	x	4	S	1	560,00
155	x	4	S	1	700,00
160	x	4	S	1	660,00
165	x	4	S	1	800,00
168	x	4	S	1	1640,00
170	x	4	S	1	990,00
175	x	4	S	1	1140,00
180	x	4	S	1	1040,00
185	x	4	S	1	1250,00
190	x	4	S	1	1230,00
195	x	4	S	1	1330,00
200	x	4	S	1	1180,00
210	x	5	S	1	3800,00
215	x	5	S	1	4300,00
220	x	5	S	1	3650,00
230	x	5	S	1	4250,00
240	x	5	S	1	4300,00
250	x	5	S	1	4550,00
255	x	5	S	1	5700,00
260	x	5	S	1	4950,00
270	x	5	S	1	5200,00
280	x	5	S	1	5400,00
290	x	5	S	1	6300,00
300	x	5	S	1	5700,00

Article	82471.000	RAZ 5001

82471 Assortments spring steel DIN 471

Assortments of retaining rings for shafts DIN 471

Content: 12 frequently used dim. for shafts ∅ 8 – 30, approx. 925 pieces, normal type (metal box)

Your own selection on request

DIN 471	S	1	7696,00

DIN	00471.004	RAZ 200

471 Spring steel heavy

Retaining rings for shafts, heavy type

Dimensions → TI-91

Nominal size = for shafts ∅ x thickness

15	x	1,5	S	1000	14,20
16	x	1,5	S	1000	13,70
20	x	1,75	S	1000	23,20
25	x	2	S	500	32,50
30	x	2	S	250	41,50
35	x	2,5	S	200	81,00
40	x	2,5	S	50	91,00
45	x	2,5	S	50	112,00
50	x	3	S	50	208,00
55	x	3	S	50	222,00
60	x	3	S	50	255,00

Dimensions			PU	Pieces	€/100/Mat.

DIN	00471.318	RAZ 200

471 Spring steel zinc flake coated normal

Retaining rings for shafts, normal type

Dimensions → TI-91 Corrosion protection → TI-218

Nominal size = for shafts ∅ x thickness

10	x	1	S	2000	16,50 flZn
12	x	1	S	1000	21,50 flZn
14	x	1	S	1000	22,50 flZn
15	x	1	S	1000	23,00 flZn
16	x	1	S	1000	24,00 flZn
17	x	1	S	1000	25,00 flZn
20	x	1,2	S	1000	27,50 flZn
25	x	1,2	S	500	30,00 flZn
30	x	1,5	S	250	56,00 flZn
32	x	1,5	S	250	62,00 flZn
35	x	1,5	S	250	65,00 flZn
38	x	1,75	S	100	67,00 flZn
40	x	1,75	S	100	68,00 flZn
42	x	1,75	S	100	79,00 flZn
45	x	1,75	S	100	98,00 flZn
50	x	2	S	100	115,00 flZn
55	x	2	S	100	128,00 flZn
60	x	2	S	100	130,00 flZn
70	x	2,5	S	50	170,00 flZn

DIN	00472.000	RAZ 200

472 Spring steel normal

Retaining rings for bores, normal type

Dimensions → TI-95

Nominal size = for bore ∅ x thickness

8	x	0,8	S	2000	2,15
8	x	0,8	K	200	5,90
9	x	0,8	S	2000	2,15
9	x	0,8	K	200	5,90
10	x	1	S	2000	2,70
10	x	1	K	200	6,80
11	x	1	S	2000	2,70
11	x	1	K	200	6,80
12	x	1	S	2000	2,70
12	x	1	K	200	6,80
13	x	1	S	2000	3,10
13	x	1	K	200	7,50
14	x	1	S	2000	3,15
14	x	1	K	200	7,60
15	x	1	S	2000	3,00
15	x	1	K	200	7,20
16	x	1	S	2000	3,35
16	x	1	K	200	7,80
17	x	1	S	2000	3,90
17	x	1	K	200	8,80
18	x	1	S	2000	3,85
18	x	1	K	200	8,70
19	x	1	S	2000	4,00

Dimensions			PU	Pieces	€/100/Mat.
19	x	1	K	200	9,10
20	x	1	S	2000	4,20
20	x	1	K	200	9,30
21	x	1	S	2000	4,90
21	x	1	K	200	10,50
22	x	1	S	2000	4,80
22	x	1	K	200	10,40
23	x	1,2	S	2000	7,20
23	x	1,2	K	200	14,30
24	x	1,2	S	2000	6,70
24	x	1,2	K	200	13,50
25	x	1,2	S	2000	7,00
25	x	1,2	K	200	14,00
26	x	1,2	S	2000	7,50
26	x	1,2	K	200	14,80
27	x	1,2	S	2000	8,50
27	x	1,2	K	200	16,50
28	x	1,2	S	2000	7,80
28	x	1,2	K	200	15,30
29	x	1,2	S	2000	10,30
29	x	1,2	K	200	19,50
30	x	1,2	S	2000	8,80
30	x	1,2	K	200	17,00
31	x	1,2	S	2000	11,50
31	x	1,2	K	200	21,50
32	x	1,2	S	2000	9,30
32	x	1,2	K	200	17,80
33	x	1,2	S	1000	13,90
33	x	1,2	K	100	26,00
34	x	1,5	S	1000	13,10
34	x	1,5	K	100	24,20
35	x	1,5	S	1000	13,90
35	x	1,5	K	100	26,00
36	x	1,5	S	1000	15,30
36	x	1,5	K	100	28,00
37	x	1,5	S	1000	17,90
37	x	1,5	K	100	32,50
38	x	1,5	S	1000	18,20
38	x	1,5	K	100	33,50
39	x	1,5	S	1000	26,00
39	x	1,5	K	100	46,00
40	x	1,75	S	100	24,00
41	x	1,75	S	100	36,00
42	x	1,75	S	100	26,50
44	x	1,75	S	100	36,00
45	x	1,75	S	100	28,00
46	x	1,75	S	100	35,50
47	x	1,75	S	100	29,50
48	x	1,75	S	100	30,50
50	x	2	S	100	32,50
51	x	2	S	100	40,50
52	x	2	S	100	33,00
53	x	2	S	100	46,50
54	x	2	S	100	45,50
55	x	2	S	100	36,50
56	x	2	S	100	46,50
57	x	2	S	100	47,00
58	x	2	S	100	44,50
60	x	2	S	100	41,50
62	x	2	S	100	41,50
62	x	3	S	100	145,00
63	x	2	S	100	56,00
64	x	2	S	100	176,00
65	x	2,5	S	100	65,00
67	x	2,5	S	100	76,00
68	x	2,5	S	100	62,00
70	x	2,5	S	100	73,00
72	x	2,5	S	50	65,00
75	x	2,5	S	50	68,00
77	x	2,5	S	50	70,00
78	x	2,5	S	50	85,00
80	x	2,5	S	50	73,00
82	x	2,5	S	50	83,00
85	x	3	S	50	92,00
88	x	3	S	50	116,00

Dimensions			PU	Pieces	€/100/Mat.
90	x	3	S	50	105,00
92	x	3	S	50	112,00
95	x	3	S	50	116,00
97	x	3	S	50	118,00
98	x	3	S	50	137,00
100	x	3	S	50	121,00
102	x	4	S	1	222,00
105	x	4	S	1	183,00
108	x	4	S	1	217,00
110	x	4	S	1	192,00
112	x	4	S	1	310,00
115	x	4	S	1	226,00
118	x	4	S	1	320,00
120	x	4	S	1	230,00
122	x	4	S	1	239,00
125	x	4	S	1	235,00
128	x	4	S	1	310,00
130	x	4	S	1	260,00
132	x	4	S	1	290,00
135	x	4	S	1	305,00
138	x	4	S	1	430,00
140	x	4	S	1	315,00
142	x	4	S	1	415,00
145	x	4	S	1	350,00
148	x	4	S	1	425,00
150	x	4	S	1	345,00
152	x	4	S	1	480,00
155	x	4	S	1	460,00
160	x	4	S	1	420,00
165	x	4	S	1	510,00
168	x	4	S	1	650,00
170	x	4	S	1	470,00
175	x	4	S	1	650,00
180	x	4	S	1	590,00
185	x	4	S	1	740,00
190	x	4	S	1	690,00
195	x	4	S	1	820,00
200	x	4	S	1	750,00
205	x	5	S	1	3550,00
210	x	5	S	1	2600,00
215	x	5	S	1	2650,00
220	x	5	S	1	3150,00
225	x	5	S	1	3200,00
230	x	5	S	1	2950,00
240	x	5	S	1	3050,00
245	x	5	S	1	3600,00
250	x	5	S	1	3250,00
255	x	5	S	1	4200,00
260	x	5	S	1	4050,00
265	x	5	S	1	5100,00
270	x	5	S	1	4250,00
275	x	5	S	1	5200,00
280	x	5	S	1	4000,00
285	x	5	S	1	4350,00
290	x	5	S	1	4600,00
295	x	5	S	1	5400,00
300	x	5	S	1	5400,00
310	x	6	S	1	5100,00
320	x	6	S	1	3500,00
340	x	6	S	1	12200,00
360	x	6	S	1	17300,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00472.318		RAZ 200

472 **Spring steel normal zinc flake coated**

Retaining rings for bores, normal type

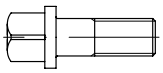
Dimensions → TI-95 Corrosion protection → TI-218

Nominal size = for bore ∅ x thickness

10	x	1	S	1000	18,00 flZn
12	x	1	S	1000	22,00 flZn
16	x	1	S	1000	25,00 flZn
20	x	1	S	1000	28,00 flZn
25	x	1,2	S	1000	30,00 flZn
30	x	1,2	S	1000	60,00 flZn
35	x	1,5	S	1000	70,00 flZn
40	x	1,75	S	100	80,00 flZn
50	x	2	S	100	120,00 flZn
60	x	2	S	100	140,00 flZn
70	x	2,5	S	50	180,00 flZn

DIN	00478.100	RAZ 210

478 **10.9**



Square head bolts with collar

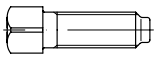
Dimensions → TI-30 Mech. properties → TI-220

Bolts with wrench sizes acc. to ISO (M 16, M 20) on request

M 8	x	30	S	50	164,00
M 10	x	30	S	50	205,00
M 10	x	40	S	50	215,00
M 10	x	50	S	50	226,00
M 12	x	40	S	25	340,00
M 16	x	60	S	10	550,00

DIN	00479.800	RAZ 210

479 **8.8**



Square head bolts with short dog point

Dimensions → TI-30 Mech. properties → TI-220

Bolts with wrench sizes acc. to ISO (M 16, M 20) on request

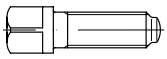
M 6	x	16	S	100	33,50
M 6	x	20	S	100	34,50
M 6	x	25	S	100	36,50
M 8	x	20	S	100	47,50
M 8	x	25	S	100	50,00
M 8	x	30	S	100	54,00

Dimensions				PU	Pieces	€/100/Mat.
M 8	x	40		S	100	69,00
M 8	x	50		S	50	92,00
M 10	x	25		S	50	80,00
M 10	x	30		S	50	88,00
M 10	x	35		S	50	91,00
M 10	x	40		S	50	99,00
M 10	x	50		S	50	121,00
M 10	x	60		S	50	137,00
M 12	x	35		S	25	135,00
M 12	x	40		S	25	145,00
M 12	x	50		S	25	169,00
M 12	x	60		S	25	186,00
M 12	x	80		S	25	213,00
M 16	x	50		S	25	295,00
M 16	x	60		S	10	375,00
M 16	x	70		S	10	395,00
M 16	x	80		S	10	425,00
M 16	x	100		S	10	460,00
M 16	x	120		S	10	530,00
M 20	x	50		S	10	368,00
M 20	x	60		S	10	397,00
M 20	x	70		S	10	465,00
M 20	x	80		S	10	530,00
M 20	x	90		S	10	575,00
M 20	x	100		S	10	650,00
M 20	x	120		S	10	725,00

DIN 00480.100 RAZ 210

480

10.9



Square head bolts with collar and short dog point with rounded end

Dimensions → TI-31 Mech. properties → TI-220

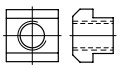
Bolts with wrench sizes acc. to ISO (M 16, M 20) on request

M 10	x	50		S	50	225,00
M 10	x	60		S	50	285,00
M 12	x	50		S	25	345,00
M 16	x	50		S	10	600,00
M 16	x	60		S	10	600,00
M 16	x	70		S	10	610,00
M 16	x	80		S	10	630,00
M 20	x	60		S	10	1160,00

DIN 00508.100 RAZ 210

508

10



T-slot nuts

Dimensions → TI-69 Mech. properties → TI-221

T-slot screws → DIN 787

Internal thread M x slot width a x e

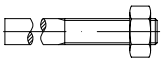
M 5	x	6	x	10	S	25	325,00
M 6	x	8	x	13	S	25	355,00
M 8	x	10	x	15	S	25	375,00
M 10	x	12	x	18	S	10	385,00
M 12	x	14	x	22	S	10	435,00

Dimensions					PU	Pieces	€/100/Mat.
M 14	x	16	x	25	S	10	600,00
M 16	x	18	x	28	S	10	720,00
M 20	x	22	x	35	S	10	1180,00
M 24	x	28	x	44	S	10	2250,00

DIN 00525.000 RAZ 220

525

Mu 3.6



Studs for welding, Mu = with hexagon nuts

Dimensions → TI-31

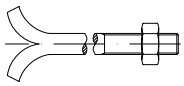
Nominal ∅ x length l/~ thread length

M 6	x	130/ 35	S	100	101,00
M 8	x	140/ 40	S	100	122,00
M 10	x	150/ 45	S	100	191,00
M 12	x	170/ 55	S	50	218,00
M 14	x	180/ 60	S	50	401,00
M 16	x	190/ 65	S	25	410,00
M 20	x	210/ 75	S	25	592,00
M 22	x	220/ 80	S	25	887,00
M 24	x	230/ 85	S	10	898,00
M 27	x	250/ 95	S	10	1273,00
M 30	x	270/105	S	10	1640,00
M 36	x	310/125	S	1	2816,00

DIN 00529.013 RAZ 222

529

Mu 3.6 type C zinc plated



Masonry bolts, C = with split swivels, Mu = with hexagon nut

Dimensions → TI-31 Corrosion protection → TI-217

CM 8	x	80		S	50	146,00 ZP
CM 8	x	100		S	50	159,00 ZP
CM 8	x	150		S	50	208,00 ZP
CM 10	x	100		S	50	202,00 ZP
CM 10	x	120		S	25	250,00 ZP
CM 10	x	130		S	25	260,00 ZP
CM 10	x	150		S	25	265,00 ZP
CM 10	x	160		S	25	285,00 ZP
CM 10	x	180		S	25	305,00 ZP
CM 10	x	200		S	25	310,00 ZP
CM 12	x	100		S	25	255,00 ZP
CM 12	x	120		S	25	260,00 ZP
CM 12	x	130		S	25	270,00 ZP
CM 12	x	140		S	25	275,00 ZP
CM 12	x	150		S	25	285,00 ZP
CM 12	x	160		S	25	300,00 ZP
CM 12	x	180		S	25	310,00 ZP
CM 12	x	200		S	25	320,00 ZP
CM 12	x	220		S	25	340,00 ZP
CM 12	x	250		S	25	360,00 ZP
CM 12	x	300		S	25	400,00 ZP
CM 16	x	100		S	25	415,00 ZP
CM 16	x	120		S	25	445,00 ZP
CM 16	x	150		S	25	485,00 ZP

Dimensions				PU	Pieces	€/100/Mat.
CM 16	x	160		S	25	510,00 ZP
CM 16	x	180		S	25	570,00 ZP
CM 16	x	200		S	25	600,00 ZP
CM 16	x	220		S	10	640,00 ZP
CM 16	x	250		S	10	690,00 ZP
CM 16	x	275		S	10	730,00 ZP
CM 16	x	300		S	10	780,00 ZP
CM 16	x	320		S	10	810,00 ZP
CM 16	x	350		S	10	860,00 ZP
CM 16	x	400		S	10	930,00 ZP
CM 16	x	450		S	10	1200,00 ZP
CM 16	x	500		S	10	1290,00 ZP
CM 20	x	150		S	10	680,00 ZP
CM 20	x	160		S	10	920,00 ZP
CM 20	x	200		S	10	1010,00 ZP
CM 20	x	220		S	10	1040,00 ZP
CM 20	x	250		S	10	1090,00 ZP
CM 20	x	300		S	10	1180,00 ZP
CM 20	x	320		S	10	1210,00 ZP
CM 20	x	350		S	10	1260,00 ZP
CM 20	x	400		S	10	1350,00 ZP
CM 20	x	500		S	1	1900,00 ZP
CM 24	x	180		S	5	1560,00 ZP
CM 24	x	200		S	5	1640,00 ZP
CM 24	x	250		S	1	1860,00 ZP
CM 24	x	300		S	1	2140,00 ZP
CM 24	x	320		S	1	2230,00 ZP
CM 24	x	350		S	1	2360,00 ZP
CM 24	x	400		S	1	2650,00 ZP
CM 24	x	450		S	1	2850,00 ZP
CM 24	x	500		S	1	3050,00 ZP
CM 30	x	250		S	1	2650,00 ZP
CM 30	x	320		S	1	3050,00 ZP
CM 30	x	400		S	1	3600,00 ZP
CM 30	x	500		S	1	4200,00 ZP

DIN 00546.500 RAZ 230

546

Steel

Slotted round nuts

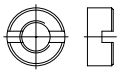
Dimensions → TI-70 Mech. properties → TI-221

Stainless → S. 444
Brass → S. 573

M 3	S	1000	13,20
M 3	K	100	16,60
M 4	S	1000	14,00
M 4	K	100	17,50
M 5	S	1000	17,60
M 5	K	100	21,60
M 6	S	1000	20,10
M 6	K	100	24,30
M 8	S	500	47,00
M 8	K	100	54,00
M 10	K	100	110,00
M 12	K	50	134,00
M 16	S	50	232,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
DIN	00546.510		RAZ 230
546	**Steel zinc plated**		



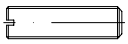
Slotted round nuts

Dimensions ➔ TI-70 Corrosion protection ➔ TI-217

Stainless ➔ S. 444
Brass ➔ S. 573

M 3	S	1000	16,00 ZP
M 4	S	1000	20,00 ZP
M 5	S	1000	23,00 ZP
M 6	S	1000	30,00 ZP
M 8	S	500	65,00 ZP
M 10	S	500	125,00 ZP
M 12	S	250	200,00 ZP
M 16	S	250	350,00 ZP

DIN	00551.000	RAZ 230
551	**14 H**	



Slotted grub screws with flat point

Dimensions ➔ TI-19 Standard conversion ➔ TI-6

Stainless ➔ S. 444
Brass, plastic ➔ S. 573

DIN 551 ➔ replaced by ISO 4766 (compatible)

M 1,6	x	2	K	100	10,00
M 1,6	x	3	K	100	10,00
M 2	x	3	K	200	8,70
M 2	x	4	K	200	8,80
M 2	x	5	K	200	8,90
M 2	x	6	K	200	9,10
M 2	x	8	K	200	9,20
M 2,5	x	3	K	200	9,20
M 2,5	x	4	K	200	8,90
M 2,5	x	5	K	200	9,10
M 2,5	x	6	K	200	9,20
M 2,5	x	8	K	200	9,30
M 2,5	x	10	K	200	9,70
M 2,5	x	16	K	200	11,00
M 3	x	3	S	1000	6,10
M 3	x	3	K	200	6,90
M 3	x	4	S	1000	3,40
M 3	x	4	K	200	4,10
M 3	x	5	S	1000	3,25
M 3	x	5	K	200	4,00
M 3	x	6	S	1000	3,35
M 3	x	6	K	200	4,05
M 3	x	8	S	1000	3,40
M 3	x	8	K	200	4,10
M 3	x	10	S	1000	3,40
M 3	x	10	K	200	4,10
M 3	x	12	S	1000	3,80
M 3	x	12	K	200	4,50
M 3	x	16	K	200	5,20
M 3	x	20	K	200	5,70
M 3	x	22	K	200	8,50
M 3	x	25	K	200	9,20
M 3	x	30	K	200	10,60
M 4	x	3	K	200	10,90
M 4	x	4	S	1000	3,40
M 4	x	4	K	200	4,10
M 4	x	5	S	1000	3,55
M 4	x	5	K	200	4,30
M 4	x	6	S	1000	3,55
M 4	x	6	K	200	4,35
M 4	x	8	S	1000	3,55
M 4	x	8	K	200	4,35
M 4	x	10	S	1000	3,80
M 4	x	10	K	200	4,50
M 4	x	12	S	1000	4,00
M 4	x	12	K	200	4,80
M 4	x	16	S	1000	4,45
M 4	x	16	K	200	5,20
M 4	x	20	K	200	5,90
M 4	x	25	K	200	6,50
M 4	x	30	K	200	7,70
M 4	x	40	K	100	35,00
M 5	x	4	K	200	7,70
M 5	x	5	S	1000	4,50
M 5	x	5	K	200	5,30
M 5	x	6	S	1000	4,00
M 5	x	6	K	200	4,80
M 5	x	8	S	1000	4,35
M 5	x	8	K	200	5,10
M 5	x	10	S	1000	4,80
M 5	x	10	K	200	5,60
M 5	x	12	S	1000	5,10
M 5	x	12	K	200	6,00
M 5	x	16	S	1000	6,50
M 5	x	16	K	200	7,20
M 5	x	20	K	200	7,60
M 5	x	25	K	200	8,00
M 5	x	30	K	200	9,30
M 5	x	35	K	100	14,90
M 5	x	40	K	100	19,70
M 6	x	4	K	200	7,70
M 6	x	5	K	200	7,70
M 6	x	6	S	1000	4,80
M 6	x	6	K	200	5,60
M 6	x	8	S	1000	5,20
M 6	x	8	K	200	6,10
M 6	x	10	S	1000	5,50
M 6	x	10	K	200	6,30
M 6	x	12	S	1000	5,90
M 6	x	12	K	200	6,50
M 6	x	16	S	1000	6,70
M 6	x	16	K	200	7,50
M 6	x	18	K	200	7,70
M 6	x	20	S	1000	7,50
M 6	x	20	K	200	8,10
M 6	x	25	S	1000	8,60
M 6	x	25	K	100	9,40
M 6	x	30	K	100	11,40
M 6	x	35	K	100	13,40
M 6	x	40	K	100	46,00
M 6	x	50	K	100	49,50
M 6	x	60	K	100	54,00
M 8	x	5	K	100	19,70
M 8	x	6	K	100	13,80
M 8	x	8	K	100	7,70
M 8	x	10	K	100	8,60
M 8	x	12	S	1000	8,00
M 8	x	12	K	100	9,70
M 8	x	16	S	1000	8,50
M 8	x	16	K	100	10,20
M 8	x	18	K	100	11,80
M 8	x	20	S	1000	10,40
M 8	x	20	K	100	12,10
M 8	x	25	S	1000	11,60
M 8	x	25	K	100	13,30
M 8	x	30	K	100	16,20
M 8	x	35	K	100	18,40
M 8	x	40	K	100	24,70
M 8	x	45	K	100	38,00
M 8	x	50	K	100	39,50
M 8	x	60	K	100	43,00
M 8	x	70	K	100	47,00
M 8	x	80	K	100	51,00
M 10	x	6	K	100	27,00
M 10	x	8	K	100	27,00
M 10	x	10	K	100	19,10
M 10	x	12	K	100	19,40
M 10	x	16	K	100	20,60
M 10	x	20	K	100	22,50
M 10	x	25	K	100	24,40
M 10	x	30	K	100	26,50
M 10	x	35	K	100	28,50
M 10	x	40	K	100	30,50
M 10	x	45	K	100	55,00
M 10	x	50	K	100	40,50
M 10	x	60	K	100	44,50
M 10	x	70	K	100	69,00
M 10	x	80	K	100	75,00
M 12	x	20	S	100	41,50
M 12	x	25	S	100	44,50
M 12	x	30	S	100	53,00
M 12	x	35	S	100	56,00
M 12	x	40	S	100	60,00
M 12	x	60	S	50	85,00

DIN	00551.010	RAZ 230
551	**14 H zinc plated**	

Slotted grub screws with flat point

Dimensions ➔ TI-19 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 444
Brass, plastic ➔ S. 573

DIN 551 ➔ replaced by ISO 4766 (compatible)

M 3	x	3	S	200	9,20 ZP
M 3	x	4	S	200	6,40 ZP
M 3	x	5	S	200	6,30 ZP
M 3	x	6	S	200	6,40 ZP
M 3	x	8	S	200	6,40 ZP
M 3	x	10	S	200	6,40 ZP
M 3	x	12	S	200	6,80 ZP
M 3	x	16	S	200	7,50 ZP
M 3	x	20	S	200	8,00 ZP
M 4	x	4	S	200	6,40 ZP
M 4	x	5	S	200	6,60 ZP
M 4	x	6	S	200	6,70 ZP
M 4	x	8	S	200	6,70 ZP
M 4	x	10	S	200	6,80 ZP
M 4	x	12	S	200	7,10 ZP
M 4	x	16	S	200	7,50 ZP
M 4	x	20	S	200	8,10 ZP
M 4	x	25	S	200	8,80 ZP
M 4	x	30	S	200	10,00 ZP
M 4	x	40	S	200	38,00 ZP
M 5	x	5	S	200	7,60 ZP
M 5	x	6	S	200	7,10 ZP
M 5	x	8	S	200	7,40 ZP
M 5	x	10	S	200	8,20 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	12	S	200	8,30 ZP
M 5	x	16	S	200	9,10 ZP
M 5	x	20	S	200	9,80 ZP
M 5	x	25	S	200	38,00 ZP
M 5	x	30	S	200	12,30 ZP
M 5	x	35	S	100	18,00 ZP
M 6	x	6	S	200	8,30 ZP
M 6	x	8	S	200	8,70 ZP
M 6	x	10	S	200	9,20 ZP
M 6	x	12	S	200	9,50 ZP
M 6	x	16	S	200	9,70 ZP
M 6	x	20	S	200	10,40 ZP
M 6	x	25	S	100	11,70 ZP
M 6	x	30	S	100	13,70 ZP
M 6	x	35	S	100	15,70 ZP
M 6	x	40	S	100	43,00 ZP
M 6	x	50	S	100	45,00 ZP
M 8	x	6	S	100	18,20 ZP
M 8	x	8	S	100	10,70 ZP
M 8	x	10	S	100	12,30 ZP
M 8	x	12	S	100	13,40 ZP
M 8	x	16	S	100	13,90 ZP
M 8	x	20	S	100	15,80 ZP
M 8	x	25	S	100	17,80 ZP
M 8	x	30	S	100	19,70 ZP
M 8	x	35	S	100	22,20 ZP
M 8	x	40	S	100	28,50 ZP
M 8	x	45	S	100	41,50 ZP
M 8	x	50	S	100	43,50 ZP
M 8	x	60	S	100	46,50 ZP
M 10	x	6	S	100	30,50 ZP
M 10	x	10	S	100	23,10 ZP
M 10	x	12	S	100	21,70 ZP
M 10	x	16	S	100	22,80 ZP
M 10	x	20	S	100	24,80 ZP
M 10	x	25	S	100	27,00 ZP
M 10	x	30	S	100	29,00 ZP
M 10	x	35	S	100	27,10 ZP
M 10	x	40	S	100	34,50 ZP
M 10	x	45	S	100	59,00 ZP
M 10	x	50	S	100	44,50 ZP
M 10	x	60	S	100	48,50 ZP
M 10	x	70	S	100	73,00 ZP
M 10	x	80	S	100	80,00 ZP
M 12	x	12	S	100	45,50 ZP
M 12	x	16	S	100	45,50 ZP
M 12	x	20	S	100	45,50 ZP
M 12	x	25	S	100	48,50 ZP
M 12	x	30	S	100	57,00 ZP
M 12	x	35	S	100	61,00 ZP
M 12	x	40	S	100	65,00 ZP
M 12	x	45	S	100	70,00 ZP
M 12	x	50	S	100	80,00 ZP
M 12	x	60	S	50	90,00 ZP

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Dimensions	PU	Pieces	€/100/Mat.
DIN	00553.000		RAZ 230

553 **14 H**

Slotted grub screws with cone point

Dimensions → TI-19 Standard conversion → TI-6

Stainless → S. 444
Brass → S. 574

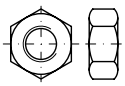
DIN 553 → replaced by ISO 7434 (compatible)

M 1,6	x	2	K	100	10,00
M 1,6	x	3	K	100	10,00
M 2	x	3	K	200	8,70
M 2	x	4	K	200	8,80
M 2	x	5	K	200	8,90
M 2	x	6	K	200	9,10
M 2	x	12	K	200	10,20
M 2,5	x	3	K	200	9,20
M 2,5	x	4	K	200	8,90
M 2,5	x	5	K	200	9,10
M 2,5	x	6	K	200	9,20
M 2,5	x	8	K	200	9,30
M 2,5	x	10	K	200	9,70
M 2,5	x	12	K	200	10,40
M 3	x	3	K	200	6,90
M 3	x	4	S	1000	3,40
M 3	x	4	K	200	4,10
M 3	x	5	S	1000	3,25
M 3	x	5	K	200	4,00
M 3	x	6	S	1000	3,35
M 3	x	6	K	200	4,05
M 3	x	8	S	1000	3,40
M 3	x	8	K	200	4,10
M 3	x	10	S	1000	3,40
M 3	x	10	K	200	4,10
M 3	x	12	K	200	4,50
M 3	x	16	K	200	7,50
M 3	x	20	K	200	5,70
M 4	x	4	S	1000	3,40
M 4	x	4	K	200	4,10
M 4	x	5	S	1000	3,55
M 4	x	5	K	200	4,30
M 4	x	6	S	1000	3,55
M 4	x	6	K	200	4,35
M 4	x	8	S	1000	3,55
M 4	x	8	K	200	4,35
M 4	x	10	S	1000	3,80
M 4	x	10	K	200	4,50
M 4	x	12	S	1000	4,00
M 4	x	12	K	200	4,80
M 4	x	16	K	200	5,20
M 4	x	20	K	200	5,90
M 4	x	30	K	200	7,70
M 5	x	5	S	1000	4,00
M 5	x	5	K	200	4,75
M 5	x	6	S	1000	4,00
M 5	x	6	K	200	4,80
M 5	x	8	S	1000	4,35
M 5	x	8	K	200	5,10
M 5	x	10	S	1000	4,80
M 5	x	10	K	200	5,60
M 5	x	12	S	1000	5,10
M 5	x	12	K	200	6,00
M 5	x	16	S	1000	6,50
M 5	x	16	K	200	7,20
M 5	x	20	K	200	7,60
M 5	x	25	K	200	8,00

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	5	K	200	7,70
M 6	x	6	S	1000	4,80
M 6	x	6	K	200	5,60
M 6	x	8	S	1000	5,20
M 6	x	8	K	200	6,10
M 6	x	10	S	1000	5,50
M 6	x	10	K	200	6,30
M 6	x	12	S	1000	5,90
M 6	x	12	K	200	6,50
M 6	x	16	S	1000	6,70
M 6	x	16	K	200	7,50
M 6	x	20	S	1000	7,50
M 6	x	20	K	200	8,10
M 6	x	25	S	1000	8,60
M 6	x	25	K	100	9,40
M 6	x	30	K	100	11,40
M 6	x	40	K	100	32,00
M 8	x	8	K	100	7,70
M 8	x	10	S	1000	6,90
M 8	x	10	K	100	8,60
M 8	x	12	S	1000	8,00
M 8	x	12	K	100	9,70
M 8	x	16	S	1000	8,50
M 8	x	16	K	100	10,20
M 8	x	18	K	100	11,80
M 8	x	20	S	1000	10,40
M 8	x	20	K	100	12,10
M 8	x	25	S	1000	11,60
M 8	x	25	K	100	13,30
M 8	x	30	K	100	16,20
M 8	x	40	K	100	27,00
M 8	x	50	K	100	56,00
M 10	x	10	K	100	19,10
M 10	x	12	K	100	19,40
M 10	x	16	K	100	20,60
M 10	x	20	K	100	22,50
M 10	x	25	K	100	24,40
M 10	x	30	K	100	26,50
M 10	x	35	K	100	28,50
M 10	x	40	K	100	43,50
M 10	x	60	K	100	64,00

DIN	00555.504	RAZ 240

555 **5** **Ww-BSW**

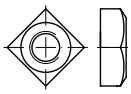


Hexagon nuts with Whitworth thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

WW 5/8	S	100	52,00
WW 3/4	S	50	85,00
WW 1	S	25	148,00
WW 1 1/8	S	25	197,00
WW 1 1/4	S	25	335,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 00557.500			RAZ 245
557 5			



Square nuts

Dimensions ➔ TI-81 Standard conversion ➔ TI-7
Mech. properties ➔ TI-221

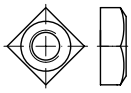
Stainless ➔ S. 445

Nuts with wrench sizes acc. to ISO on request

SW = wrench size

M 5	S	100	5,30
M 6	S	100	7,90
M 8	S	100	11,60
M 10 SW 17	S	100	19,30
M 12 SW 19	S	100	34,50
M 16	S	50	63,00

DIN 00557.510			RAZ 245
557 5 zinc plated			



Square nuts

Dimensions ➔ TI-81 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-221 Standard conversion ➔ TI-7

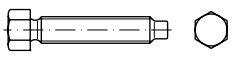
Stainless ➔ S. 445

Nuts with wrench sizes acc. to ISO on request

SW = wrench size

M 5	S	100	5,60 ZP
M 6	S	100	8,50 ZP
M 8	S	100	13,00 ZP
M 10 SW 17	S	100	22,30 ZP
M 12 SW 19	S	100	38,50 ZP
M 16	S	100	69,00 ZP

DIN 00561.801			RAZ 260
561 22 H (8.8)			Ri



Hexagon head set screws with dog point and small hexagon, with undercut

(type A)

Dimensions ➔ TI-16

M 12 and M 16 with wrench sizes acc. to ISO on request

AM 6	x	12	S	100	72,00
AM 6	x	16	S	100	64,00
AM 6	x	20	S	100	67,00

Dimensions			PU	Pieces	€/100/Mat.
AM 6	x	25	S	100	69,00
AM 6	x	30	S	100	72,00
AM 8	x	16	S	100	83,00
AM 8	x	20	S	100	85,00
AM 8	x	25	S	100	87,00
AM 8	x	30	S	100	91,00
AM 8	x	35	S	100	93,00
AM 8	x	40	S	100	99,00
AM 8	x	45	S	50	140,00
AM 8	x	50	S	50	140,00
AM 10	x	20	S	100	121,00
AM 10	x	25	S	100	129,00
AM 10	x	30	S	50	137,00
AM 10	x	35	S	50	143,00
AM 10	x	40	S	50	151,00
AM 10	x	50	S	50	177,00
AM 10	x	60	S	50	211,00
AM 12	x	25	S	50	206,00
AM 12	x	30	S	50	187,00
AM 12	x	35	S	25	222,00
AM 12	x	40	S	25	232,00
AM 12	x	45	S	25	260,00
AM 12	x	50	S	25	260,00
AM 12	x	60	S	25	280,00
AM 12	x	70	S	25	305,00
AM 12	x	80	S	25	390,00
AM 12	x	100	S	25	540,00
AM 12	x	120	S	25	710,00
AM 16	x	30	S	25	380,00
AM 16	x	35	S	25	385,00
AM 16	x	40	S	25	400,00
AM 16	x	45	S	25	415,00
AM 16	x	50	S	25	435,00
AM 16	x	60	S	10	485,00
AM 16	x	70	S	10	520,00
AM 16	x	80	S	10	540,00
AM 16	x	90	S	10	620,00
AM 16	x	100	S	10	650,00
AM 16	x	120	S	10	730,00
AM 20	x	40	S	10	790,00
AM 20	x	50	S	10	840,00
AM 20	x	60	S	10	870,00
AM 20	x	70	S	10	930,00
AM 20	x	80	S	10	960,00
AM 20	x	90	S	10	1010,00
AM 20	x	100	S	1	1050,00
AM 20	x	120	S	1	1120,00
AM 20	x	140	S	1	2020,00
AM 24	x	50	S	1	2280,00
AM 24	x	60	S	1	1440,00
AM 24	x	70	S	1	1500,00
AM 24	x	80	S	1	1560,00
AM 24	x	90	S	1	1610,00
AM 24	x	100	S	1	1680,00
AM 24	x	120	S	1	1820,00
AM 24	x	140	S	1	3350,00
AM 30	x	60	S	1	3150,00
AM 30	x	70	S	1	3400,00
AM 30	x	80	S	1	3550,00
AM 30	x	90	S	1	3750,00
AM 30	x	100	S	1	3950,00
AM 30	x	120	S	1	4400,00
AM 30	x	140	S	1	4850,00
AM 30	x	160	S	1	5400,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 00561.811			RAZ 260
561 22 H (8.8) zinc plated			Ri

Hexagon head set screws with dog point and small hexagon, with undercut

(type A)

Dimensions ➔ TI-16 Corrosion protection ➔ TI-217

M 12 and M 16 with wrench sizes acc. to ISO on request

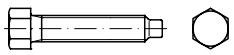
AM 6	x	12	S	100	73,60 ZP
AM 6	x	16	S	100	66,00 ZP
AM 6	x	20	S	100	70,00 ZP
AM 6	x	25	S	100	72,00 ZP
AM 6	x	30	S	100	75,00 ZP
AM 8	x	16	S	100	87,00 ZP
AM 8	x	20	S	100	90,00 ZP
AM 8	x	25	S	100	92,00 ZP
AM 8	x	30	S	100	96,00 ZP
AM 8	x	35	S	100	100,00 ZP
AM 8	x	40	S	100	106,00 ZP
AM 8	x	45	S	50	148,00 ZP
AM 8	x	50	S	50	150,00 ZP
AM 10	x	20	S	100	128,00 ZP
AM 10	x	25	S	100	137,00 ZP
AM 10	x	30	S	50	146,00 ZP
AM 10	x	35	S	50	153,00 ZP
AM 10	x	40	S	50	161,00 ZP
AM 10	x	50	S	50	190,00 ZP
AM 10	x	60	S	50	225,00 ZP
AM 12	x	25	S	50	220,00 ZP
AM 12	x	30	S	50	202,00 ZP
AM 12	x	35	S	25	240,00 ZP
AM 12	x	40	S	25	250,00 ZP
AM 12	x	45	S	25	278,00 ZP
AM 12	x	50	S	25	282,00 ZP
AM 12	x	60	S	25	305,00 ZP
AM 12	x	70	S	25	330,00 ZP
AM 12	x	80	S	25	420,00 ZP
AM 12	x	90	S	25	515,00 ZP
AM 12	x	100	S	25	575,00 ZP
AM 12	x	120	S	25	750,00 ZP
AM 16	x	30	S	25	405,00 ZP
AM 16	x	35	S	25	415,00 ZP
AM 16	x	40	S	25	430,00 ZP
AM 16	x	45	S	25	450,00 ZP
AM 16	x	50	S	25	470,00 ZP
AM 16	x	60	S	10	525,00 ZP
AM 16	x	70	S	10	565,00 ZP
AM 16	x	80	S	10	590,00 ZP
AM 16	x	90	S	10	620,00 ZP
AM 16	x	100	S	10	710,00 ZP
AM 16	x	120	S	10	800,00 ZP
AM 20	x	40	S	10	845,00 ZP
AM 20	x	50	S	10	905,00 ZP
AM 20	x	60	S	10	940,00 ZP
AM 20	x	70	S	10	1010,00 ZP
AM 20	x	80	S	10	1050,00 ZP
AM 20	x	90	S	10	1100,00 ZP
AM 20	x	100	S	1	1150,00 ZP
AM 20	x	120	S	1	1240,00 ZP
AM 20	x	140	S	1	2160,00 ZP
AM 24	x	50	S	1	2380,00 ZP
AM 24	x	60	S	1	1550,00 ZP
AM 24	x	70	S	1	1620,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
AM 24	x	80	S	1	1700,00 ZP
AM 24	x	90	S	1	1750,00 ZP
AM 24	x	100	S	1	1850,00 ZP
AM 24	x	120	S	1	2000,00 ZP
AM 24	x	140	S	1	3555,00 ZP
AM 30	x	60	S	1	3400,00 ZP
AM 30	x	70	S	1	3600,00 ZP
AM 30	x	80	S	1	3800,00 ZP
AM 30	x	90	S	1	4000,00 ZP
AM 30	x	100	S	1	4200,00 ZP
AM 30	x	120	S	1	4700,00 ZP
AM 30	x	140	S	1	5200,00 ZP
AM 30	x	160	S	1	5800,00 ZP

DIN	00561.802	RAZ 260

561

22 H (8.8)



Hexagon head set screws with dog point and small hexagon, with thread run-out

(type B)

Dimensions → TI-16

M 12 and M 16 with wrench sizes acc. to ISO on request

BM 6	x	12	S	100	42,50
BM 6	x	16	S	100	42,50
BM 6	x	20	S	100	45,50
BM 6	x	25	S	100	47,50
BM 6	x	30	S	100	56,00
BM 8	x	16	S	100	61,00
BM 8	x	18	S	100	64,00
BM 8	x	20	S	100	64,00
BM 8	x	25	S	100	69,00
BM 8	x	30	S	100	75,00
BM 8	x	35	S	100	83,00
BM 8	x	40	S	100	87,00
BM 8	x	50	S	50	101,00
BM 8	x	60	S	50	125,00
BM 8	x	70	S	50	190,00
BM 8	x	80	S	50	216,00
BM 10	x	20	S	100	111,00
BM 10	x	25	S	100	119,00
BM 10	x	30	S	50	125,00
BM 10	x	35	S	50	133,00
BM 10	x	40	S	50	143,00
BM 10	x	45	S	50	169,00
BM 10	x	50	S	50	169,00
BM 10	x	60	S	50	177,00
BM 10	x	70	S	50	190,00
BM 10	x	80	S	50	216,00
BM 10	x	100	S	50	420,00
BM 12	x	25	S	50	113,00
BM 12	x	30	S	50	118,00
BM 12	x	35	S	25	124,00
BM 12	x	40	S	25	132,00
BM 12	x	45	S	25	151,00
BM 12	x	50	S	25	151,00
BM 12	x	60	S	25	161,00
BM 12	x	70	S	25	182,00
BM 12	x	80	S	25	236,00
BM 12	x	90	S	25	300,00
BM 12	x	100	S	25	340,00
BM 12	x	120	S	25	455,00
BM 16	x	30	S	25	216,00
BM 16	x	35	S	25	222,00

Dimensions			PU	Pieces	€/100/Mat.
BM 16	x	40	S	25	233,00
BM 16	x	45	S	25	239,00
BM 16	x	50	S	25	250,00
BM 16	x	60	S	10	295,00
BM 16	x	70	S	10	310,00
BM 16	x	80	S	10	325,00
BM 16	x	90	S	10	360,00
BM 16	x	100	S	10	385,00
BM 16	x	120	S	10	440,00
BM 20	x	50	S	10	840,00
BM 20	x	60	S	10	870,00
BM 20	x	70	S	10	930,00
BM 20	x	80	S	10	960,00
BM 20	x	90	S	10	1010,00
BM 20	x	100	S	1	1050,00
BM 20	x	120	S	1	1120,00
BM 20	x	140	S	1	2020,00
BM 24	x	50	S	1	1510,00
BM 24	x	60	S	1	950,00
BM 24	x	70	S	1	990,00
BM 24	x	80	S	1	1030,00
BM 24	x	90	S	1	1070,00
BM 24	x	100	S	1	1110,00
BM 24	x	120	S	1	1190,00
BM 24	x	140	S	1	2150,00
BM 30	x	60	S	1	2060,00
BM 30	x	70	S	1	2180,00
BM 30	x	80	S	1	2310,00
BM 30	x	90	S	1	2430,00
BM 30	x	100	S	1	2600,00
BM 30	x	120	S	1	2850,00
BM 30	x	140	S	1	3200,00
BM 30	x	160	S	1	3500,00

DIN	00561.812	RAZ 260

561

22 H (8.8)
zinc plated

Hexagon head set screws with dog point and small hexagon, with thread run-out

(type B)

Dimensions → TI-16 Corrosion protection → TI-217

M 12 and M 16 with wrench sizes acc. to ISO on request

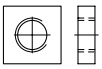
BM 6	x	12	S	100	45,00 ZP
BM 6	x	16	S	100	46,00 ZP
BM 6	x	20	S	100	48,00 ZP
BM 6	x	25	S	100	50,00 ZP
BM 6	x	30	S	100	60,00 ZP
BM 8	x	16	S	100	65,00 ZP
BM 8	x	18	S	100	68,00 ZP
BM 8	x	20	S	100	68,50 ZP
BM 8	x	25	S	100	74,00 ZP
BM 8	x	30	S	100	80,00 ZP
BM 8	x	35	S	100	89,00 ZP
BM 8	x	40	S	100	95,00 ZP
BM 8	x	50	S	50	110,00 ZP
BM 8	x	60	S	50	135,00 ZP
BM 8	x	70	S	50	200,00 ZP
BM 8	x	80	S	50	226,00 ZP
BM 10	x	20	S	100	118,00 ZP
BM 10	x	25	S	100	128,00 ZP
BM 10	x	30	S	50	135,00 ZP
BM 10	x	35	S	50	142,00 ZP
BM 10	x	40	S	50	155,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
BM 10	x	45	S	50	180,00 ZP
BM 10	x	50	S	50	183,00 ZP
BM 10	x	60	S	50	192,00 ZP
BM 10	x	70	S	50	207,00 ZP
BM 10	x	80	S	50	245,00 ZP
BM 10	x	90	S	50	390,00 ZP
BM 10	x	100	S	50	445,00 ZP
BM 12	x	25	S	50	128,00 ZP
BM 12	x	30	S	50	135,00 ZP
BM 12	x	35	S	25	140,00 ZP
BM 12	x	40	S	25	150,00 ZP
BM 12	x	45	S	25	170,00 ZP
BM 12	x	50	S	25	173,00 ZP
BM 12	x	60	S	25	185,00 ZP
BM 12	x	70	S	25	210,00 ZP
BM 12	x	80	S	25	270,00 ZP
BM 12	x	90	S	25	335,00 ZP
BM 12	x	100	S	25	375,00 ZP
BM 12	x	120	S	25	495,00 ZP
BM 16	x	30	S	25	240,00 ZP
BM 16	x	35	S	25	250,00 ZP
BM 16	x	40	S	25	265,00 ZP
BM 16	x	45	S	25	270,00 ZP
BM 16	x	50	S	25	290,00 ZP
BM 16	x	60	S	10	335,00 ZP
BM 16	x	70	S	10	355,00 ZP
BM 16	x	80	S	10	380,00 ZP
BM 16	x	90	S	10	420,00 ZP
BM 16	x	100	S	10	440,00 ZP
BM 16	x	120	S	10	510,00 ZP
BM 20	x	50	S	10	900,00 ZP
BM 20	x	60	S	10	940,00 ZP
BM 20	x	70	S	10	1005,00 ZP
BM 20	x	80	S	10	1050,00 ZP
BM 20	x	90	S	10	1100,00 ZP
BM 20	x	100	S	1	1150,00 ZP
BM 20	x	120	S	1	1240,00 ZP
BM 20	x	140	S	1	2160,00 ZP
BM 24	x	50	S	1	1610,00 ZP
BM 24	x	60	S	1	1100,00 ZP
BM 24	x	70	S	1	1125,00 ZP
BM 24	x	80	S	1	1160,00 ZP
BM 24	x	90	S	1	1220,00 ZP
BM 24	x	100	S	1	1275,00 ZP
BM 24	x	120	S	1	1375,00 ZP
BM 24	x	140	S	1	2380,00 ZP
BM 30	x	60	S	1	2250,00 ZP
BM 30	x	70	S	1	2375,00 ZP
BM 30	x	80	S	1	2550,00 ZP
BM 30	x	90	S	1	2700,00 ZP
BM 30	x	100	S	1	2900,00 ZP
BM 30	x	140	S	1	3530,00 ZP
BM 30	x	160	S	1	3900,00 ZP

DIN	00562.400	RAZ 260

562

04



Square thin nuts product grade B

Dimensions → TI-82

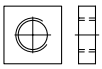
Stainless → S. 445

SW = wrench size

M 2	S	100	5,20
M 3	S	1000	2,35
M 3	K	100	5,20
M 4	S	1000	2,75

Dimensions	PU	Pieces	€/100/Mat.
M 4	K	100	5,60
M 5	S	100	6,50
M 6	S	100	7,30
M 8	S	100	11,80
M 10 SW 17	S	100	18,40

DIN	00562.410	RAZ 260
562	04 zinc plated	



Square thin nuts, product grade B

Dimensions → TI-82 Corrosion protection → TI-217

Stainless → S. 445

SW = wrench size

M 3	S	1000	2,40 ZP
M 4	S	1000	2,85 ZP
M 5	S	1000	6,80 ZP
M 6	S	1000	7,80 ZP
M 8	S	500	12,70 ZP
M 10 SW 17	S	100	23,10 ZP

DIN	00564.801	RAZ 260
564	22 H (8.8)	Ri

Hexagon head set screws with small hexagon and short dog point with turncoated cone, with thread undercut

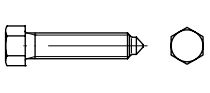
(type A)

Dimensions → TI-16

M 12 and M 16 with wrench sizes acc. to ISO on request

AM 6	x	12	S	100	72,00
AM 6	x	20	S	100	67,00
AM 8	x	20	S	100	85,00
AM 8	x	25	S	100	87,00
AM 8	x	30	S	100	91,00
AM 8	x	40	S	100	99,00
AM 10	x	20	S	100	137,00
AM 10	x	30	S	50	156,00
AM 10	x	35	S	50	161,00
AM 10	x	50	S	50	200,00
AM 12	x	25	S	50	206,00
AM 12	x	50	S	25	260,00
AM 12	x	60	S	25	280,00
AM 12	x	80	S	25	390,00
AM 16	x	50	S	25	630,00
AM 16	x	60	S	10	720,00
AM 16	x	80	S	10	770,00
AM 20	x	100	S	1	1990,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00564.802		RAZ 260
564	22 H (8.8)		



Hexagon head set screws with short dog point with turncoated and small hexagon, with thread run-out

(type B)

Dimensions → TI-16

M 12 and M 16 with wrench sizes acc. to ISO on request

BM 6	x	12	S	100	42,50
BM 6	x	16	S	100	42,50
BM 6	x	20	S	100	45,50
BM 6	x	25	S	100	47,50
BM 6	x	30	S	100	56,00
BM 8	x	16	S	100	61,00
BM 8	x	20	S	100	64,00
BM 8	x	25	S	100	69,00
BM 8	x	30	S	100	75,00
BM 8	x	35	S	100	83,00
BM 10	x	20	S	100	124,00
BM 10	x	25	S	100	133,00
BM 10	x	30	S	50	138,00
BM 10	x	35	S	50	146,00
BM 10	x	40	S	50	159,00
BM 10	x	50	S	50	187,00
BM 10	x	60	S	50	197,00
BM 12	x	25	S	50	113,00
BM 12	x	30	S	50	118,00
BM 12	x	35	S	25	124,00
BM 12	x	40	S	25	132,00
BM 12	x	45	S	25	151,00
BM 12	x	50	S	25	151,00
BM 12	x	60	S	25	161,00
BM 12	x	70	S	25	182,00
BM 12	x	80	S	25	236,00
BM 16	x	40	S	25	390,00
BM 16	x	50	S	25	415,00
BM 16	x	60	S	10	470,00
BM 16	x	70	S	10	480,00
BM 16	x	80	S	10	510,00
BM 16	x	90	S	10	540,00
BM 16	x	100	S	10	610,00
BM 20	x	60	S	10	1700,00
BM 20	x	70	S	10	1780,00
BM 20	x	80	S	10	1850,00
BM 20	x	90	S	10	1920,00
BM 20	x	100	S	1	1990,00
BM 24	x	60	S	1	1860,00
BM 24	x	100	S	1	2130,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00571.000		RAZ 270
571	Steel		

Hexagon head wood screws

Dimensions → TI-51

Stainless → S. 445

6	x	35	S	200	9,00
6	x	40	S	200	9,75
6	x	50	S	200	11,50
6	x	60	S	200	12,95
8	x	30	S	200	13,80
8	x	40	S	200	15,20
8	x	50	S	200	16,55
8	x	60	S	200	18,45
8	x	70	S	200	21,10
10	x	50	S	100	27,60
10	x	60	S	100	28,70
10	x	70	S	100	33,10
10	x	80	S	100	34,95
10	x	100	S	100	46,10
10	x	120	S	50	56,30

DIN	00571.010	RAZ 270
571	Steel zinc plated	

Hexagon head wood screws

Dimensions → TI-51 Corrosion protection → TI-217

Stainless → S. 445

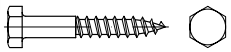
5	x	20	S	500	10,70 ZP
5	x	20	K	100	13,75 ZP
5	x	25	S	500	10,35 ZP
5	x	25	K	100	13,40 ZP
5	x	30	S	500	10,35 ZP
5	x	30	K	100	13,40 ZP
5	x	35	S	200	10,90 ZP
5	x	40	S	200	11,35 ZP
5	x	45	S	200	12,90 ZP
5	x	50	S	200	13,35 ZP
5	x	60	S	200	15,15 ZP
6	x	20	S	500	11,10 ZP
6	x	20	K	100	14,15 ZP
6	x	25	S	500	10,80 ZP
6	x	25	K	100	13,85 ZP
6	x	30	S	500	10,90 ZP
6	x	30	K	100	14,00 ZP
6	x	35	S	200	11,55 ZP
6	x	40	S	200	12,00 ZP
6	x	45	S	200	13,55 ZP
6	x	50	S	200	14,05 ZP
6	x	55	S	200	15,75 ZP
6	x	60	S	200	15,90 ZP
6	x	65	S	200	19,45 ZP
6	x	70	S	200	19,75 ZP
6	x	75	S	200	19,95 ZP
6	x	80	S	200	22,15 ZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	90	S	100	25,80 ZP
6	x	100	S	100	29,70 ZP
6	x	110	S	100	46,75 ZP
6	x	120	S	100	47,35 ZP
6	x	140	S	100	81,60 ZP
8	x	25	S	200	18,45 ZP
8	x	30	S	200	18,65 ZP
8	x	35	S	200	18,95 ZP
8	x	40	S	200	19,35 ZP
8	x	45	S	200	20,75 ZP
8	x	50	S	200	21,40 ZP
8	x	55	S	200	23,70 ZP
8	x	60	S	200	24,00 ZP
8	x	65	S	200	27,05 ZP
8	x	70	S	200	27,40 ZP
8	x	75	S	200	30,05 ZP
8	x	80	S	200	30,45 ZP
8	x	90	S	100	38,20 ZP
8	x	100	S	100	40,65 ZP
8	x	110	S	100	53,25 ZP
8	x	120	S	100	53,90 ZP
8	x	130	S	100	71,10 ZP
8	x	140	S	50	71,75 ZP
8	x	150	S	50	130,00 ZP
8	x	160	S	50	132,00 ZP
8	x	180	S	50	151,00 ZP
8	x	200	S	50	174,00 ZP
10	x	30	S	200	39,10 ZP
10	x	35	S	100	39,70 ZP
10	x	40	S	100	36,45 ZP
10	x	45	S	100	35,15 ZP
10	x	50	S	100	36,10 ZP
10	x	55	S	100	37,85 ZP
10	x	60	S	100	38,40 ZP
10	x	65	S	100	43,35 ZP
10	x	70	S	100	43,90 ZP
10	x	75	S	100	46,35 ZP
10	x	80	S	100	46,95 ZP
10	x	90	S	100	57,20 ZP
10	x	100	S	100	60,45 ZP
10	x	110	S	50	72,35 ZP
10	x	120	S	50	73,55 ZP
10	x	130	S	50	88,35 ZP
10	x	140	S	50	89,60 ZP
10	x	150	S	50	153,00 ZP
10	x	160	S	50	154,00 ZP
10	x	180	S	50	172,00 ZP
10	x	200	S	50	199,00 ZP
10	x	220	S	25	286,00 ZP
10	x	240	S	25	307,00 ZP
10	x	260	S	25	338,00 ZP
10	x	280	S	25	381,00 ZP
10	x	300	S	25	414,00 ZP
12	x	40	S	100	67,40 ZP
12	x	45	S	100	68,60 ZP
12	x	50	S	100	71,10 ZP
12	x	60	S	100	73,55 ZP
12	x	65	S	50	76,05 ZP
12	x	70	S	50	76,65 ZP
12	x	75	S	50	77,90 ZP
12	x	80	S	50	79,15 ZP
12	x	90	S	50	91,50 ZP
12	x	100	S	50	97,05 ZP
12	x	110	S	50	118,00 ZP
12	x	120	S	50	120,00 ZP
12	x	130	S	50	132,00 ZP
12	x	140	S	50	133,00 ZP
12	x	150	S	50	176,00 ZP
12	x	160	S	25	177,00 ZP
12	x	180	S	25	197,00 ZP
12	x	200	S	25	226,00 ZP
12	x	220	S	25	319,00 ZP
12	x	240	S	25	340,00 ZP
12	x	260	S	25	376,00 ZP
12	x	280	S	25	413,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
12	x	300	S	25	454,00 ZP
12	x	320	S	25	927,00 ZP
12	x	340	S	25	1014,00 ZP
12	x	360	S	25	1095,00 ZP
12	x	380	S	25	1175,00 ZP
16	x	60	S	50	151,00 ZP
16	x	70	S	25	159,00 ZP
16	x	80	S	25	164,00 ZP
16	x	90	S	25	181,00 ZP
16	x	100	S	25	186,00 ZP
16	x	110	S	25	214,00 ZP
16	x	120	S	25	217,00 ZP
16	x	130	S	25	260,00 ZP
16	x	140	S	25	263,00 ZP
16	x	150	S	25	300,00 ZP
16	x	160	S	25	304,00 ZP
16	x	180	S	25	332,00 ZP
16	x	200	S	25	363,00 ZP
16	x	220	S	25	390,00 ZP
16	x	240	S	25	402,00 ZP
16	x	260	S	25	442,00 ZP
16	x	280	S	25	482,00 ZP
16	x	300	S	25	509,00 ZP
20	x	80	S	25	379,00 ZP
20	x	100	S	25	421,00 ZP
20	x	120	S	25	452,00 ZP
20	x	150	S	25	536,00 ZP
20	x	180	S	10	576,00 ZP
20	x	200	S	10	642,00 ZP

DIN | 00571.020 | RAZ 271

571 Steel hot dip galvanized



Hexagon head wood screws

Dimensions → TI-51 Corrosion protection → TI-219

Stainless → S. 445

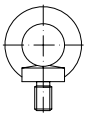
Combination seal for ∅ 7 mm
→ article no. 88005 → pg.

6	x	35	S	200	12,85 HDG
6	x	40	S	200	14,25 HDG
6	x	50	S	200	16,70 HDG
7	x	60	S	200	47,00 HDG
7	x	70	S	200	48,85 HDG
7	x	80	S	200	51,95 HDG
7	x	90	S	200	55,05 HDG
7	x	100	S	100	59,35 HDG
7	x	110	S	100	61,20 HDG
7	x	120	S	100	66,75 HDG
7	x	130	S	100	71,10 HDG
8	x	40	S	200	22,95 HDG
8	x	50	S	200	26,00 HDG
8	x	60	S	200	29,10 HDG
8	x	65	S	200	32,80 HDG
8	x	70	S	200	33,40 HDG
8	x	80	S	200	37,15 HDG
8	x	100	S	100	48,85 HDG
8	x	140	S	50	71,85 HDG
10	x	40	S	100	40,10 HDG
10	x	50	S	100	43,90 HDG
10	x	60	S	100	47,60 HDG
10	x	70	S	100	53,75 HDG
10	x	80	S	100	58,10 HDG
10	x	90	S	100	63,70 HDG
10	x	100	S	100	73,55 HDG
10	x	120	S	50	89,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
10	x	140	S	50	108,00 HDG
10	x	150	S	50	174,00 HDG
12	x	70	S	50	90,90 HDG
12	x	80	S	50	94,60 HDG
12	x	100	S	50	117,00 HDG
12	x	120	S	50	142,00 HDG
12	x	140	S	50	159,00 HDG
12	x	150	S	50	202,00 HDG
12	x	180	S	25	289,00 HDG

DIN | 00580.300 | RAZ 280

580 C 15 E



Lifting eye bolts

Caution! See user information.
→ attachment B DIN 580-2003 or TI's

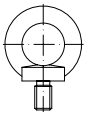
Dimensions → TI-32 Product information → TI-148

Stainless → S. 446

M 6	S	25	315,00
M 8	S	25	315,00
M 10	S	25	380,00
M 12	S	10	510,00
M 14	S	10	730,00
M 16	S	10	690,00
M 18	S	1	1000,00
M 20	S	1	940,00
M 22	S	1	1840,00
M 24	S	1	1840,00
M 27	S	1	3050,00
M 30	S	1	3250,00
M 33	S	1	4400,00
M 36	S	1	4800,00
M 39	S	1	7900,00
M 42	S	1	8300,00
M 45	S	1	11900,00
M 48	S	1	12400,00
M 52	S	1	13600,00
M 56	S	1	22700,00
M 64	S	1	33200,00

DIN | 00580.310 | RAZ 280

580 C 15 E zinc plated



Lifting eye bolts

Caution! See user information.
→ attachment B DIN 580-2003 or TI's

Dimensions → TI-32 Corrosion protection → TI-217
Product information → TI-148

Stainless → S. 446

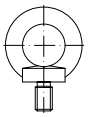
M 6	S	25	325,00 ZP
M 8	S	25	335,00 ZP
M 10	S	25	415,00 ZP
M 12	S	10	560,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 14	S	10	790,00 ZP
M 16	S	10	780,00 ZP
M 18	S	1	1140,00 ZP
M 20	S	1	1080,00 ZP
M 22	S	1	1980,00 ZP
M 24	S	1	2070,00 ZP
M 27	S	1	3550,00 ZP
M 30	S	1	3800,00 ZP
M 33	S	1	5400,00 ZP
M 36	S	1	5700,00 ZP
M 42	S	1	9200,00 ZP
M 48	S	1	13350,00 ZP
M 56	S	1	23900,00 ZP

DIN 00580.360 RAZ 280

580 C 15 E zinc plated yellow



Lifting eye bolts

Caution! See user information.
→ attachment B DIN 580-2003 or TI's

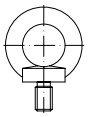
Dimensions → TI-32 Corrosion protection → TI-217
Product information → TI-148

Stainless → S. 446

M 8	S	25	335,00 YZP
M 10	S	25	415,00 YZP
M 12	S	10	560,00 YZP
M 16	S	10	780,00 YZP

DIN 00580.320 RAZ 280

580 C 15 E hot dip galvanized



Lifting eye bolts

Thread undersize (6az + HDG = U)

Caution! See user information.
→ attachment B DIN 580-2003 or TI's

Dimensions → TI-32 Corrosion protection → TI-219
Product information → TI-148

Stainless → S. 446

M 8	S	25	585,00 HDG
M 10	S	25	725,00 HDG
M 12	S	10	980,00 HDG
M 16	S	10	1365,00 HDG
M 20	S	1	1890,00 HDG
M 24	S	1	3625,00 HDG

Dimensions	PU	Pieces	€/100/Mat.
DIN	00582.300		RAZ 280

582 C 15 E

Lifting eye nuts

Caution! See user information.
→ attachment B DIN 582-2003 or TI's

Dimensions → TI-75 Product information → TI-148

Stainless → S. 446

M 6	S	25	320,00
M 8	S	25	320,00
M 10	S	25	390,00
M 12	S	10	510,00
M 14	S	10	690,00
M 16	S	10	670,00
M 18	S	1	950,00
M 20	S	1	910,00
M 22	S	1	1690,00
M 24	S	1	1940,00
M 27	S	1	2230,00
M 30	S	1	3400,00
M 33	S	1	4850,00
M 36	S	1	4850,00
M 42	S	1	10500,00
M 48	S	1	14200,00
M 56	S	1	24000,00

DIN 00582.310 RAZ 280

582 C 15 E zinc plated

Lifting eye nuts

Caution! See user information.
→ attachment B DIN 582-2003 or TI's

Dimensions → TI-75 Corrosion protection → TI-217
Product information → TI-148

Stainless → S. 446

M 6	S	25	340,00 ZP
M 8	S	25	340,00 ZP
M 10	S	25	415,00 ZP
M 12	S	10	560,00 ZP
M 14	S	10	730,00 ZP
M 16	S	10	730,00 ZP
M 18	S	1	1030,00 ZP
M 20	S	1	1020,00 ZP
M 24	S	1	2170,00 ZP
M 27	S	1	2630,00 ZP
M 30	S	1	3800,00 ZP
M 33	S	1	5260,00 ZP
M 36	S	1	5600,00 ZP
M 42	S	1	11250,00 ZP
M 48	S	1	14950,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00582.320		RAZ 280

582 C 15 E hot dip galvanized

Lifting eye nuts

Thread tolerance 6H

Caution! See user information.
→ attachment B DIN 582-2003 or TI's

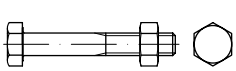
Dimensions → TI-75 Corrosion protection → TI-219
Product information → TI-148

Stainless → S. 446

M 8	S	25	595,00 HDG
M 10	S	25	725,00 HDG
M 12	S	10	980,00 HDG
M 16	S	10	1275,00 HDG
M 20	S	1	2015,00 HDG
M 24	S	1	3750,00 HDG

DIN 00601.400 RAZ 290

601 Mu steel



Hexagon head bolts, Mu = with hexagon nut

Construction screws M 12, M 16, M 20, M 24
from length 160 = ÜH products

Dimensions → TI-15

DIN 601 → replaced by ISO 4016
→ ISO dimensions M 10, 12, 14, 22 on request

M 5	x	16	S	500	12,35
M 5	x	20	S	500	12,35
M 5	x	25	S	500	14,25
M 5	x	30	S	500	14,25
M 5	x	40	S	200	15,90
M 5	x	50	S	200	19,50
M 5	x	80	S	200	77,25
M 6	x	16	S	500	5,80
M 6	x	20	S	500	5,80
M 6	x	25	S	500	6,00
M 6	x	30	S	500	6,65
M 6	x	35	S	200	10,85
M 6	x	40	S	200	11,35
M 6	x	45	S	200	16,10
M 6	x	50	S	200	16,10
M 6	x	55	S	200	21,10
M 6	x	60	S	200	21,10
M 6	x	65	S	200	29,55
M 6	x	70	S	200	26,85
M 6	x	75	S	200	32,10
M 6	x	80	S	200	29,45
M 6	x	90	S	100	39,65
M 6	x	100	S	100	39,65
M 8	x	16	S	200	9,50
M 8	x	20	S	200	9,50
M 8	x	25	S	200	10,05
M 8	x	30	S	200	10,45

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 35	S	200	11,75
M 8 x 40	S	200	12,10
M 8 x 45	S	200	13,10
M 8 x 50	S	200	13,95
M 8 x 55	S	200	22,10
M 8 x 60	S	200	22,10
M 8 x 65	S	200	33,75
M 8 x 70	S	200	33,40
M 8 x 75	S	200	46,70
M 8 x 80	S	200	44,80
M 8 x 90	S	100	54,75
M 8 x 100	S	100	58,90
M 8 x 110	S	100	64,30
M 8 x 120	S	100	64,30
M 8 x 130	S	100	86,55
M 8 x 140	S	50	91,50
M 8 x 150	S	50	104,00
M 10 x 16	S	200	38,10
M 10 x 20	S	200	17,40
M 10 x 25	S	200	17,50
M 10 x 30	S	200	18,15
M 10 x 35	S	100	18,95
M 10 x 40	S	100	19,95
M 10 x 45	S	100	21,10
M 10 x 50	S	100	21,85
M 10 x 55	S	100	25,65
M 10 x 60	S	100	25,65
M 10 x 65	S	100	29,50
M 10 x 70	S	100	29,50
M 10 x 75	S	100	48,25
M 10 x 80	S	100	45,75
M 10 x 90	S	100	67,40
M 10 x 100	S	100	72,35
M 10 x 110	S	50	82,85
M 10 x 120	S	50	118,00
M 10 x 130	S	50	140,00
M 10 x 140	S	50	140,00
M 10 x 150	S	50	146,00
M 10 x 160	S	50	182,00
M 10 x 170	S	50	205,00
M 10 x 190	S	50	225,00
M 10 x 200	S	50	225,00
M 10 x 220	S	25	278,00
M 10 x 240	S	25	297,00
M 12 x 20	S	100	24,95
M 12 x 25	S	100	24,75
M 12 x 30	S	100	26,00
M 12 x 35	S	100	27,10
M 12 x 40	S	100	28,30
M 12 x 45	S	100	30,00
M 12 x 50	S	100	31,10
M 12 x 55	S	100	34,00
M 12 x 60	S	100	35,60
M 12 x 65	S	50	39,10
M 12 x 70	S	50	39,10
M 12 x 75	S	50	65,50
M 12 x 80	S	50	62,45
M 12 x 85	S	50	93,35
M 12 x 90	S	50	84,65
M 12 x 100	S	50	93,35
M 12 x 110	S	50	125,00
M 12 x 120	S	50	132,00
M 12 x 130	S	50	191,00
M 12 x 140	S	50	210,00
M 12 x 150	S	50	206,00
M 12 x 160	S	50	201,00
M 12 x 170	S	50	234,00
M 12 x 180	S	50	234,00
M 12 x 190	S	50	258,00
M 12 x 200	S	50	258,00
M 12 x 220	S	25	287,00
M 12 x 240	S	25	312,00
M 12 x 260	S	25	325,00
M 12 x 280	S	25	352,00
M 12 x 300	S	25	373,00

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 320	S	25	390,00
M 12 x 340	S	25	400,00
M 12 x 360	S	25	417,00
M 12 x 380	S	25	435,00
M 12 x 400	S	25	460,00
M 12 x 420	S	25	500,00
M 12 x 440	S	25	526,00
M 14 x 30	S	100	101,00
M 14 x 35	S	100	104,00
M 14 x 40	S	100	104,00
M 14 x 45	S	50	107,00
M 14 x 50	S	50	117,00
M 14 x 60	S	50	121,00
M 14 x 65	S	50	158,00
M 14 x 70	S	50	129,00
M 14 x 80	S	50	144,00
M 14 x 90	S	50	154,00
M 14 x 100	S	50	165,00
M 14 x 140	S	25	606,00
M 16 x 30	S	50	51,20
M 16 x 35	S	50	52,80
M 16 x 40	S	50	53,25
M 16 x 45	S	50	54,45
M 16 x 50	S	50	59,35
M 16 x 55	S	50	59,75
M 16 x 60	S	50	61,85
M 16 x 65	S	25	63,90
M 16 x 70	S	25	67,40
M 16 x 75	S	25	72,40
M 16 x 80	S	25	75,65
M 16 x 85	S	25	87,65
M 16 x 90	S	25	83,60
M 16 x 95	S	25	92,60
M 16 x 100	S	25	87,65
M 16 x 110	S	25	92,60
M 16 x 120	S	25	113,00
M 16 x 130	S	25	117,00
M 16 x 140	S	25	125,00
M 16 x 150	S	25	184,00
M 16 x 160	S	25	352,00
M 16 x 170	S	25	372,00
M 16 x 180	S	25	372,00
M 16 x 190	S	25	387,00
M 16 x 200	S	25	387,00
M 16 x 220	S	25	453,00
M 16 x 240	S	25	482,00
M 16 x 250	S	25	629,00
M 16 x 260	S	25	510,00
M 16 x 280	S	25	543,00
M 16 x 300	S	25	564,00
M 16 x 320	S	10	601,00
M 16 x 340	S	10	629,00
M 16 x 360	S	10	664,00
M 16 x 380	S	10	675,00
M 16 x 400	S	10	689,00
M 16 x 420	S	10	711,00
M 16 x 440	S	10	723,00
M 16 x 460	S	10	746,00
M 16 x 480	S	10	778,00
M 16 x 500	S	10	814,00
M 16 x 520	S	10	1351,00
M 16 x 540	S	10	1396,00
M 16 x 560	S	10	1446,00
M 16 x 580	S	10	1497,00
M 18 x 50	S	50	387,00
M 18 x 60	S	25	394,00
M 18 x 70	S	25	396,00
M 18 x 80	S	25	406,00
M 18 x 100	S	25	476,00
M 18 x 110	S	25	488,00
M 20 x 30	S	25	248,00
M 20 x 35	S	25	248,00
M 20 x 40	S	25	107,00
M 20 x 45	S	25	113,00
M 20 x 50	S	25	113,00

Dimensions	PU	Pieces	€/100/Mat.
M 20 x 55	S	25	114,00
M 20 x 60	S	25	114,00
M 20 x 65	S	25	117,00
M 20 x 70	S	25	117,00
M 20 x 75	S	25	121,00
M 20 x 80	S	25	125,00
M 20 x 85	S	25	145,00
M 20 x 90	S	25	133,00
M 20 x 95	S	25	153,00
M 20 x 100	S	25	145,00
M 20 x 110	S	25	153,00
M 20 x 120	S	25	162,00
M 20 x 130	S	25	184,00
M 20 x 140	S	25	192,00
M 20 x 150	S	25	308,00
M 20 x 160	S	10	565,00
M 20 x 170	S	10	569,00
M 20 x 180	S	10	588,00
M 20 x 190	S	10	600,00
M 20 x 200	S	10	628,00
M 20 x 220	S	10	640,00
M 20 x 240	S	10	648,00
M 20 x 250	S	10	686,00
M 20 x 260	S	10	686,00
M 20 x 280	S	10	722,00
M 20 x 300	S	10	737,00
M 20 x 320	S	10	759,00
M 20 x 340	S	10	781,00
M 20 x 360	S	10	824,00
M 20 x 380	S	10	854,00
M 20 x 400	S	10	915,00
M 20 x 420	S	10	1038,00
M 20 x 440	S	10	1088,00
M 20 x 460	S	10	1128,00
M 20 x 480	S	1	1178,00
M 20 x 500	S	1	1218,00
M 20 x 520	S	1	2041,00
M 20 x 540	S	1	2120,00
M 20 x 600	S	1	2345,00
M 22 x 50	S	25	503,00
M 22 x 60	S	25	508,00
M 22 x 70	S	25	512,00
M 22 x 80	S	25	527,00
M 22 x 90	S	25	536,00
M 22 x 100	S	10	598,00
M 22 x 110	S	10	730,00
M 22 x 120	S	10	760,00
M 22 x 130	S	10	885,00
M 22 x 140	S	10	911,00
M 22 x 150	S	10	931,00
M 22 x 300	S	1	2075,00
M 22 x 340	S	1	2245,00
M 22 x 400	S	1	2584,00
M 24 x 40	S	25	460,00
M 24 x 50	S	25	195,00
M 24 x 55	S	25	195,00
M 24 x 60	S	25	195,00
M 24 x 65	S	25	211,00
M 24 x 70	S	25	193,00
M 24 x 75	S	25	206,00
M 24 x 80	S	25	198,00
M 24 x 85	S	10	226,00
M 24 x 90	S	10	213,00
M 24 x 100	S	10	226,00
M 24 x 110	S	10	246,00
M 24 x 120	S	10	254,00
M 24 x 130	S	10	279,00
M 24 x 140	S	10	305,00
M 24 x 150	S	10	442,00
M 24 x 160	S	10	868,00
M 24 x 170	S	10	907,00
M 24 x 180	S	10	907,00
M 24 x 200	S	10	920,00
M 24 x 220	S	10	933,00
M 24 x 240	S	10	1013,00

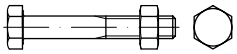
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	250	S	10	1080,00
M 24	x	260	S	10	1080,00
M 24	x	280	S	1	1154,00
M 24	x	300	S	1	1231,00
M 24	x	320	S	1	1353,00
M 24	x	340	S	1	1428,00
M 24	x	360	S	1	1501,00
M 24	x	380	S	1	1582,00
M 24	x	400	S	1	1660,00
M 24	x	440	S	1	1844,00
M 24	x	480	S	1	1994,00
M 24	x	500	S	1	2074,00
M 24	x	520	S	1	3166,00
M 24	x	540	S	1	3279,00
M 24	x	560	S	1	3395,00
M 24	x	580	S	1	3517,00
M 24	x	600	S	1	3623,00
M 27	x	60	S	10	625,00
M 27	x	70	S	10	625,00
M 27	x	75	S	10	625,00
M 27	x	80	S	10	625,00
M 27	x	85	S	10	703,00
M 27	x	90	S	10	661,00
M 27	x	100	S	10	703,00
M 27	x	110	S	10	749,00
M 27	x	120	S	10	749,00
M 27	x	130	S	10	811,00
M 27	x	140	S	10	811,00
M 27	x	150	S	10	866,00
M 27	x	160	S	10	1094,00
M 27	x	180	S	10	1176,00
M 27	x	200	S	1	1234,00
M 27	x	220	S	1	1780,00
M 27	x	240	S	1	1961,00
M 27	x	260	S	1	2139,00
M 27	x	280	S	1	2328,00
M 27	x	300	S	1	2547,00
M 30	x	60	S	10	846,00
M 30	x	65	S	10	846,00
M 30	x	70	S	10	846,00
M 30	x	80	S	10	846,00
M 30	x	90	S	10	879,00
M 30	x	100	S	10	898,00
M 30	x	110	S	10	981,00
M 30	x	120	S	10	981,00
M 30	x	130	S	1	1050,00
M 30	x	140	S	1	1050,00
M 30	x	150	S	1	1087,00
M 30	x	160	S	1	1330,00
M 30	x	180	S	1	1380,00
M 30	x	200	S	1	1511,00
M 30	x	220	S	1	2206,00
M 30	x	240	S	1	2527,00
M 30	x	260	S	1	2866,00
M 30	x	280	S	1	3154,00
M 30	x	300	S	1	3448,00
M 30	x	320	S	1	3785,00
M 30	x	340	S	1	4077,00
M 30	x	360	S	1	4419,00
M 30	x	400	S	1	5048,00
M 33	x	80	S	1	1453,00
M 33	x	100	S	1	1551,00
M 33	x	110	S	1	1643,00
M 33	x	120	S	1	1643,00
M 33	x	130	S	1	1747,00
M 33	x	140	S	1	1747,00
M 33	x	150	S	1	1813,00
M 33	x	160	S	1	2214,00
M 33	x	180	S	1	2358,00
M 33	x	200	S	1	2516,00
M 33	x	300	S	1	3650,00
M 36	x	80	S	1	1781,00
M 36	x	90	S	1	1781,00
M 36	x	100	S	1	1781,00
M 36	x	110	S	1	1920,00
M 36	x	120	S	1	1920,00
M 36	x	130	S	1	2042,00
M 36	x	140	S	1	2042,00
M 36	x	150	S	1	2114,00
M 36	x	160	S	1	2591,00
M 36	x	180	S	1	2756,00
M 36	x	200	S	1	2931,00
M 36	x	220	S	1	3383,00
M 36	x	240	S	1	3580,00
M 36	x	280	S	1	3967,00
M 39	x	140	S	1	2792,00
M 39	x	180	S	1	3084,00
M 42	x	120	S	1	2914,00
M 45	x	140	S	1	3941,00
M 48	x	200	S	1	5587,00

DIN	00601.410	RAZ 290

601

Mu steel zinc plated



Hexagon screws, Mu = with hexagon nut

Construction screws M 12, M 16, M 20, M 24 from length 160 = ÜH products

Dimensions ➔ TI-15 Corrosion protection ➔ TI-217

DIN 601 ➔ replaced by ISO 4016
➔ ISO dimensions M 10, 12, 14, 22 on request

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	16	S	500	13,60 ZP
M 5	x	16	K	100	16,65 ZP
M 5	x	20	S	500	14,00 ZP
M 5	x	20	K	100	17,05 ZP
M 5	x	25	S	500	16,10 ZP
M 5	x	25	K	100	19,15 ZP
M 5	x	30	S	500	16,25 ZP
M 5	x	30	K	100	19,35 ZP
M 5	x	35	S	200	17,80 ZP
M 5	x	40	S	200	18,35 ZP
M 5	x	45	S	200	21,20 ZP
M 5	x	50	S	200	22,40 ZP
M 5	x	55	S	200	25,80 ZP
M 5	x	60	S	200	26,60 ZP
M 5	x	70	S	200	34,20 ZP
M 6	x	10	S	500	8,35 ZP
M 6	x	10	K	100	13,25 ZP
M 6	x	12	S	500	8,40 ZP
M 6	x	12	K	100	13,30 ZP
M 6	x	16	S	500	7,25 ZP
M 6	x	16	K	100	12,20 ZP
M 6	x	20	S	500	7,35 ZP
M 6	x	20	K	100	12,35 ZP
M 6	x	25	S	500	7,85 ZP
M 6	x	25	K	100	12,80 ZP
M 6	x	30	S	500	8,65 ZP
M 6	x	30	K	100	13,60 ZP
M 6	x	35	S	200	13,10 ZP
M 6	x	40	S	200	13,80 ZP
M 6	x	45	S	200	19,15 ZP
M 6	x	50	S	200	19,45 ZP
M 6	x	55	S	200	24,70 ZP
M 6	x	60	S	200	25,00 ZP
M 6	x	65	S	200	33,65 ZP
M 6	x	70	S	200	31,25 ZP
M 6	x	75	S	200	36,75 ZP
M 6	x	80	S	200	34,30 ZP
M 6	x	90	S	100	45,00 ZP
M 6	x	100	S	100	45,50 ZP
M 8	x	16	S	200	12,60 ZP
M 8	x	20	S	200	12,90 ZP
M 8	x	25	S	200	13,75 ZP
M 8	x	30	S	200	14,60 ZP
M 8	x	35	S	200	16,25 ZP
M 8	x	40	S	200	16,95 ZP
M 8	x	45	S	200	18,35 ZP
M 8	x	50	S	200	19,65 ZP
M 8	x	55	S	200	28,20 ZP
M 8	x	60	S	200	28,60 ZP
M 8	x	65	S	200	41,80 ZP
M 8	x	70	S	200	41,90 ZP
M 8	x	75	S	200	55,65 ZP
M 8	x	80	S	200	54,25 ZP
M 8	x	90	S	100	65,50 ZP
M 8	x	100	S	100	70,45 ZP
M 8	x	110	S	100	76,65 ZP
M 8	x	120	S	100	77,25 ZP
M 8	x	130	S	100	101,00 ZP
M 8	x	140	S	50	109,00 ZP
M 8	x	150	S	50	122,00 ZP
M 8	x	160	S	50	153,00 ZP
M 10	x	16	S	200	45,55 ZP
M 10	x	20	S	200	24,20 ZP
M 10	x	25	S	200	24,75 ZP
M 10	x	30	S	200	25,90 ZP
M 10	x	35	S	100	27,25 ZP
M 10	x	40	S	100	29,00 ZP
M 10	x	45	S	100	30,70 ZP
M 10	x	50	S	100	32,05 ZP
M 10	x	55	S	100	36,50 ZP
M 10	x	60	S	100	37,15 ZP
M 10	x	65	S	100	41,55 ZP
M 10	x	70	S	100	42,20 ZP
M 10	x	75	S	100	61,45 ZP
M 10	x	80	S	100	59,60 ZP
M 10	x	90	S	100	85,30 ZP
M 10	x	100	S	100	91,50 ZP
M 10	x	110	S	50	104,00 ZP
M 10	x	120	S	50	140,00 ZP
M 10	x	130	S	50	162,00 ZP
M 10	x	140	S	50	165,00 ZP
M 10	x	150	S	50	174,00 ZP
M 10	x	160	S	50	209,00 ZP
M 10	x	170	S	50	234,00 ZP
M 10	x	180	S	50	235,00 ZP
M 10	x	200	S	50	258,00 ZP
M 10	x	220	S	25	313,00 ZP
M 10	x	240	S	25	335,00 ZP
M 10	x	260	S	25	365,00 ZP
M 10	x	280	S	25	433,00 ZP
M 10	x	300	S	25	436,00 ZP
M 12	x	20	S	100	34,60 ZP
M 12	x	25	S	100	35,15 ZP
M 12	x	30	S	100	37,15 ZP
M 12	x	35	S	100	38,90 ZP
M 12	x	40	S	100	40,95 ZP
M 12	x	45	S	100	43,55 ZP
M 12	x	50	S	100	45,55 ZP
M 12	x	55	S	100	49,35 ZP
M 12	x	60	S	100	51,70 ZP
M 12	x	65	S	50	56,10 ZP
M 12	x	70	S	50	57,00 ZP
M 12	x	75	S	50	84,65 ZP
M 12	x	80	S	50	82,20 ZP
M 12	x	85	S	50	118,00 ZP
M 12	x	90	S	50	110,00 ZP
M 12	x	100	S	50	121,00 ZP
M 12	x	110	S	50	154,00 ZP
M 12	x	120	S	50	162,00 ZP
M 12	x	130	S	50	225,00 ZP
M 12	x	140	S	50	246,00 ZP
M 12	x	150	S	50	243,00 ZP
M 12	x	160	S	50	243,00 ZP
M 12	x	170	S	50	270,00 ZP

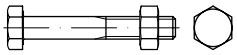
Dimensions			PU	Pieces	€/100/Mat.
M 12	x	180	S	50	282,00 ZP
M 12	x	200	S	50	312,00 ZP
M 12	x	220	S	25	344,00 ZP
M 12	x	240	S	25	374,00 ZP
M 12	x	250	S	25	386,00 ZP
M 12	x	260	S	25	393,00 ZP
M 12	x	280	S	25	422,00 ZP
M 12	x	300	S	25	450,00 ZP
M 12	x	320	S	25	470,00 ZP
M 12	x	340	S	25	485,00 ZP
M 12	x	360	S	25	506,00 ZP
M 12	x	380	S	25	529,00 ZP
M 12	x	400	S	25	558,00 ZP
M 12	x	420	S	25	592,00 ZP
M 12	x	440	S	25	631,00 ZP
M 12	x	460	S	25	657,00 ZP
M 12	x	480	S	25	683,00 ZP
M 12	x	500	S	25	708,00 ZP
M 12	x	520	S	25	805,00 ZP
M 12	x	540	S	25	843,00 ZP
M 12	x	560	S	25	879,00 ZP
M 12	x	580	S	25	915,00 ZP
M 12	x	600	S	25	950,00 ZP
M 14	x	30	S	100	121,00 ZP
M 14	x	35	S	100	125,00 ZP
M 14	x	40	S	100	128,00 ZP
M 14	x	45	S	50	132,00 ZP
M 14	x	50	S	50	143,00 ZP
M 14	x	55	S	50	145,00 ZP
M 14	x	60	S	50	151,00 ZP
M 14	x	65	S	50	189,00 ZP
M 14	x	70	S	50	162,00 ZP
M 14	x	80	S	50	179,00 ZP
M 14	x	90	S	50	193,00 ZP
M 14	x	100	S	50	206,00 ZP
M 14	x	110	S	50	223,00 ZP
M 14	x	120	S	50	259,00 ZP
M 14	x	130	S	50	691,00 ZP
M 14	x	180	S	25	783,00 ZP
M 14	x	200	S	25	865,00 ZP
M 16	x	30	S	50	72,90 ZP
M 16	x	35	S	50	75,45 ZP
M 16	x	40	S	50	77,25 ZP
M 16	x	45	S	50	80,35 ZP
M 16	x	50	S	50	86,55 ZP
M 16	x	55	S	50	88,35 ZP
M 16	x	60	S	50	92,10 ZP
M 16	x	65	S	25	95,80 ZP
M 16	x	70	S	25	101,00 ZP
M 16	x	75	S	25	108,00 ZP
M 16	x	80	S	25	112,00 ZP
M 16	x	85	S	25	127,00 ZP
M 16	x	90	S	25	124,00 ZP
M 16	x	95	S	25	135,00 ZP
M 16	x	100	S	25	132,00 ZP
M 16	x	110	S	25	140,00 ZP
M 16	x	120	S	25	162,00 ZP
M 16	x	130	S	25	169,00 ZP
M 16	x	140	S	25	179,00 ZP
M 16	x	150	S	25	242,00 ZP
M 16	x	160	S	25	443,00 ZP
M 16	x	170	S	25	459,00 ZP
M 16	x	180	S	25	471,00 ZP
M 16	x	190	S	25	478,00 ZP
M 16	x	200	S	25	483,00 ZP
M 16	x	220	S	25	557,00 ZP
M 16	x	240	S	25	593,00 ZP
M 16	x	250	S	25	629,00 ZP
M 16	x	260	S	25	629,00 ZP
M 16	x	280	S	25	671,00 ZP
M 16	x	300	S	25	699,00 ZP
M 16	x	320	S	10	744,00 ZP
M 16	x	340	S	10	781,00 ZP
M 16	x	360	S	10	825,00 ZP
M 16	x	380	S	10	843,00 ZP
M 16	x	400	S	10	865,00 ZP
M 16	x	420	S	10	887,00 ZP
M 16	x	440	S	10	909,00 ZP
M 16	x	460	S	10	939,00 ZP
M 16	x	480	S	10	979,00 ZP
M 16	x	500	S	10	1023,00 ZP
M 16	x	520	S	10	1568,00 ZP
M 16	x	540	S	10	1619,00 ZP
M 16	x	560	S	10	1677,00 ZP
M 16	x	580	S	10	1736,00 ZP
M 16	x	600	S	10	1794,00 ZP
M 20	x	30	S	25	291,00 ZP
M 20	x	35	S	25	293,00 ZP
M 20	x	40	S	25	150,00 ZP
M 20	x	45	S	25	157,00 ZP
M 20	x	50	S	25	159,00 ZP
M 20	x	55	S	25	161,00 ZP
M 20	x	60	S	25	165,00 ZP
M 20	x	65	S	25	169,00 ZP
M 20	x	70	S	25	172,00 ZP
M 20	x	75	S	25	179,00 ZP
M 20	x	80	S	25	185,00 ZP
M 20	x	85	S	25	209,00 ZP
M 20	x	90	S	25	198,00 ZP
M 20	x	95	S	25	221,00 ZP
M 20	x	100	S	25	216,00 ZP
M 20	x	110	S	25	229,00 ZP
M 20	x	120	S	25	243,00 ZP
M 20	x	130	S	25	270,00 ZP
M 20	x	140	S	25	283,00 ZP
M 20	x	150	S	25	404,00 ZP
M 20	x	160	S	10	711,00 ZP
M 20	x	170	S	10	756,00 ZP
M 20	x	180	S	10	769,00 ZP
M 20	x	190	S	10	773,00 ZP
M 20	x	200	S	10	780,00 ZP
M 20	x	220	S	10	806,00 ZP
M 20	x	240	S	10	828,00 ZP
M 20	x	250	S	10	866,00 ZP
M 20	x	260	S	10	878,00 ZP
M 20	x	280	S	10	928,00 ZP
M 20	x	300	S	10	957,00 ZP
M 20	x	320	S	10	992,00 ZP
M 20	x	340	S	10	1028,00 ZP
M 20	x	360	S	10	1082,00 ZP
M 20	x	380	S	10	1131,00 ZP
M 20	x	400	S	10	1200,00 ZP
M 20	x	420	S	10	1324,00 ZP
M 20	x	440	S	10	1388,00 ZP
M 20	x	460	S	10	1439,00 ZP
M 20	x	480	S	1	1503,00 ZP
M 20	x	500	S	1	1555,00 ZP
M 20	x	520	S	1	2392,00 ZP
M 20	x	540	S	1	2483,00 ZP
M 20	x	560	S	1	2571,00 ZP
M 20	x	580	S	1	2657,00 ZP
M 20	x	600	S	1	2747,00 ZP
M 22	x	90	S	25	633,00 ZP
M 24	x	45	S	25	542,00 ZP
M 24	x	50	S	25	270,00 ZP
M 24	x	55	S	25	272,00 ZP
M 24	x	60	S	25	276,00 ZP
M 24	x	65	S	25	296,00 ZP
M 24	x	70	S	25	281,00 ZP
M 24	x	75	S	25	297,00 ZP
M 24	x	80	S	25	291,00 ZP
M 24	x	85	S	10	323,00 ZP
M 24	x	90	S	10	314,00 ZP
M 24	x	100	S	10	335,00 ZP
M 24	x	110	S	10	361,00 ZP
M 24	x	120	S	10	377,00 ZP
M 24	x	130	S	10	409,00 ZP
M 24	x	140	S	10	441,00 ZP
M 24	x	150	S	10	585,00 ZP
M 24	x	160	S	10	1093,00 ZP
M 24	x	170	S	10	1121,00 ZP
M 24	x	180	S	10	1134,00 ZP
M 24	x	200	S	10	1148,00 ZP
M 24	x	220	S	10	1180,00 ZP
M 24	x	240	S	10	1277,00 ZP
M 24	x	260	S	10	1364,00 ZP
M 24	x	280	S	10	1455,00 ZP
M 24	x	300	S	1	1549,00 ZP
M 24	x	320	S	1	1690,00 ZP
M 24	x	340	S	1	1781,00 ZP
M 24	x	360	S	1	1875,00 ZP
M 24	x	380	S	1	1973,00 ZP
M 24	x	400	S	1	2068,00 ZP
M 24	x	420	S	1	2179,00 ZP
M 24	x	440	S	1	2271,00 ZP
M 24	x	460	S	1	2364,00 ZP
M 27	x	60	S	10	755,00 ZP
M 27	x	65	S	10	761,00 ZP
M 27	x	70	S	10	765,00 ZP
M 27	x	75	S	10	771,00 ZP
M 27	x	80	S	10	777,00 ZP
M 27	x	85	S	10	859,00 ZP
M 27	x	90	S	10	822,00 ZP
M 27	x	100	S	10	875,00 ZP
M 27	x	110	S	10	932,00 ZP
M 27	x	120	S	10	942,00 ZP
M 27	x	130	S	10	1015,00 ZP
M 27	x	140	S	10	1025,00 ZP
M 27	x	150	S	10	1089,00 ZP
M 27	x	200	S	1	1511,00 ZP
M 27	x	240	S	1	2302,00 ZP
M 27	x	260	S	1	2502,00 ZP
M 30	x	60	S	10	1019,00 ZP
M 30	x	70	S	10	1031,00 ZP
M 30	x	80	S	10	1044,00 ZP
M 30	x	90	S	10	1089,00 ZP
M 30	x	100	S	10	1121,00 ZP
M 30	x	110	S	10	1217,00 ZP
M 30	x	120	S	10	1228,00 ZP
M 30	x	130	S	1	1310,00 ZP
M 30	x	140	S	1	1324,00 ZP
M 30	x	150	S	1	1372,00 ZP
M 30	x	160	S	1	1627,00 ZP
M 30	x	180	S	1	1704,00 ZP
M 30	x	200	S	1	1861,00 ZP
M 30	x	260	S	1	3312,00 ZP
M 30	x	360	S	1	4997,00 ZP
M 33	x	110	S	1	1941,00 ZP
M 33	x	120	S	1	1957,00 ZP
M 33	x	130	S	1	2074,00 ZP
M 33	x	150	S	1	2171,00 ZP
M 33	x	200	S	1	2951,00 ZP
M 36	x	100	S	1	2133,00 ZP
M 36	x	110	S	1	2291,00 ZP
M 36	x	120	S	1	2309,00 ZP
M 36	x	140	S	1	2469,00 ZP
M 36	x	160	S	1	3055,00 ZP
M 36	x	180	S	1	3256,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
DIN	00601.420	RAZ 291

601

Mu steel
hot dip galvanized



Hexagon screws,
Mu = with hexagon nut

Caution! See information box.

Dimensions ➔ TI-15 Corrosion protection ➔ TI-219

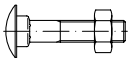
DIN 601 ➔ replaced by ISO 4016
➔ ISO dimensions M 10, 12, 14, 22 on request

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	20	S	200	29,40 HDG
M 10	x	25	S	200	30,30 HDG
M 10	x	30	S	200	32,15 HDG
M 10	x	35	S	100	34,00 HDG
M 10	x	40	S	100	35,85 HDG
M 10	x	50	S	100	40,20 HDG
M 10	x	60	S	100	45,75 HDG
M 12	x	25	S	100	43,30 HDG
M 12	x	30	S	100	45,75 HDG
M 12	x	35	S	100	48,25 HDG
M 12	x	40	S	100	50,70 HDG
M 12	x	45	S	100	53,75 HDG
M 12	x	50	S	100	56,90 HDG
M 12	x	55	S	100	61,20 HDG
M 12	x	60	S	100	64,30 HDG
M 12	x	70	S	50	70,45 HDG
M 12	x	80	S	50	97,05 HDG
M 12	x	90	S	50	124,00 HDG
M 12	x	100	S	50	135,00 HDG
M 12	x	110	S	50	172,00 HDG
M 12	x	120	S	50	181,00 HDG
M 12	x	130	S	50	242,00 HDG
M 12	x	140	S	50	264,00 HDG
M 12	x	150	S	50	264,00 HDG
M 16	x	30	S	50	88,35 HDG
M 16	x	35	S	50	92,70 HDG
M 16	x	40	S	50	95,20 HDG
M 16	x	45	S	50	98,90 HDG
M 16	x	50	S	50	107,00 HDG
M 16	x	55	S	50	111,00 HDG
M 16	x	60	S	50	116,00 HDG
M 16	x	65	S	25	120,00 HDG
M 16	x	70	S	25	127,00 HDG
M 16	x	75	S	25	137,00 HDG
M 16	x	80	S	25	140,00 HDG
M 16	x	90	S	25	153,00 HDG
M 16	x	100	S	25	165,00 HDG
M 16	x	110	S	25	174,00 HDG
M 16	x	120	S	25	199,00 HDG
M 16	x	130	S	25	208,00 HDG
M 16	x	140	S	25	221,00 HDG
M 16	x	150	S	25	289,00 HDG
M 16	x	160	S	25	464,00 HDG
M 16	x	180	S	25	495,00 HDG
M 16	x	200	S	25	520,00 HDG
M 20	x	40	S	25	181,00 HDG
M 20	x	45	S	25	190,00 HDG
M 20	x	50	S	25	193,00 HDG
M 20	x	55	S	25	199,00 HDG
M 20	x	60	S	25	202,00 HDG
M 20	x	65	S	25	208,00 HDG
M 20	x	70	S	25	214,00 HDG
M 20	x	75	S	25	224,00 HDG
M 20	x	80	S	25	233,00 HDG
M 20	x	90	S	25	248,00 HDG
M 20	x	100	S	25	270,00 HDG
M 20	x	110	S	25	286,00 HDG
M 20	x	120	S	25	304,00 HDG
M 20	x	130	S	25	335,00 HDG
M 20	x	140	S	25	353,00 HDG
M 20	x	150	S	25	477,00 HDG
M 20	x	160	S	10	743,00 HDG
M 20	x	180	S	10	779,00 HDG
M 20	x	200	S	10	842,00 HDG
M 20	x	220	S	10	873,00 HDG
M 20	x	240	S	10	897,00 HDG
M 20	x	260	S	10	952,00 HDG
M 20	x	280	S	10	1008,00 HDG
M 20	x	300	S	10	1039,00 HDG
M 24	x	80	S	10	365,00 HDG
M 24	x	90	S	10	396,00 HDG
M 24	x	100	S	10	415,00 HDG
M 24	x	120	S	10	470,00 HDG
M 24	x	150	S	10	842,00 HDG
M 24	x	180	S	10	1632,00 HDG
M 24	x	200	S	10	1655,00 HDG

DIN	00603.400	RAZ 300

603

Mu steel



Cup head square neck bolts,
Mu = with hexagon nut

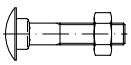
Dimensions ➔ TI-32

Stainless ➔ S. 447
Brass ➔ S. 574

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	16	S	500	17,60
M 5	x	20	S	500	17,65
M 5	x	25	S	500	17,75
M 5	x	30	S	500	18,55
M 5	x	35	S	200	18,95
M 5	x	40	S	200	21,40
M 5	x	45	S	200	22,30
M 5	x	50	S	200	23,05
M 5	x	60	S	200	27,25
M 5	x	70	S	200	38,85
M 6	x	16	S	500	7,05
M 6	x	20	S	500	6,90
M 6	x	25	S	500	7,10
M 6	x	30	S	500	7,30
M 6	x	35	S	200	8,05
M 6	x	40	S	200	8,70
M 6	x	45	S	200	8,95
M 6	x	50	S	200	9,35
M 6	x	55	S	200	11,35
M 6	x	60	S	200	10,40
M 6	x	65	S	200	19,70
M 6	x	70	S	200	18,30
M 6	x	80	S	200	28,75
M 6	x	90	S	100	30,90
M 6	x	100	S	100	36,95
M 6	x	110	S	100	48,45
M 6	x	120	S	100	48,45
M 6	x	130	S	100	80,35
M 8	x	16	S	200	11,10
M 8	x	20	S	200	11,10
M 8	x	25	S	200	11,20
M 8	x	30	S	200	11,50
M 8	x	35	S	200	12,45
M 8	x	40	S	200	13,00
M 8	x	45	S	200	13,75
M 8	x	50	S	200	13,95
M 8	x	55	S	200	16,10
M 8	x	60	S	200	16,10
M 8	x	65	S	200	19,10
M 8	x	70	S	200	18,25
M 8	x	75	S	200	22,40
M 8	x	80	S	200	21,05
M 8	x	90	S	100	31,75
M 8	x	100	S	100	37,65
M 8	x	110	S	100	46,80
M 8	x	120	S	100	57,50
M 8	x	130	S	100	59,75
M 8	x	140	S	100	59,75
M 8	x	150	S	100	117,00
M 8	x	160	S	100	117,00
M 8	x	170	S	50	134,00
M 8	x	180	S	50	134,00
M 10	x	20	S	200	18,90
M 10	x	25	S	200	18,90
M 10	x	30	S	200	19,65
M 10	x	35	S	100	19,75
M 10	x	40	S	100	21,00
M 10	x	45	S	100	21,60
M 10	x	50	S	100	22,65
M 10	x	55	S	100	23,30
M 10	x	60	S	100	24,45
M 10	x	65	S	100	28,10
M 10	x	70	S	100	28,25
M 10	x	80	S	100	31,75
M 10	x	90	S	100	47,90
M 10	x	100	S	100	54,65
M 10	x	110	S	50	63,05
M 10	x	120	S	50	78,50
M 10	x	130	S	50	86,55
M 10	x	140	S	50	90,90
M 10	x	150	S	50	117,00
M 10	x	160	S	50	138,00
M 10	x	170	S	50	179,00
M 10	x	180	S	50	183,00
M 10	x	190	S	50	197,00
M 10	x	200	S	50	197,00
M 10	x	220	S	25	260,00
M 10	x	240	S	25	284,00
M 10	x	260	S	25	307,00
M 10	x	280	S	25	330,00
M 10	x	300	S	25	355,00
M 12	x	25	S	100	69,20
M 12	x	30	S	100	83,45
M 12	x	35	S	100	83,45
M 12	x	40	S	100	71,75
M 12	x	45	S	100	75,45
M 12	x	50	S	100	77,90
M 12	x	55	S	100	81,60
M 12	x	60	S	100	84,05
M 12	x	65	S	50	99,50
M 12	x	70	S	50	87,75
M 12	x	75	S	50	107,00
M 12	x	80	S	50	97,05
M 12	x	90	S	50	112,00
M 12	x	100	S	50	117,00
M 12	x	110	S	50	132,00
M 12	x	120	S	50	140,00
M 12	x	130	S	50	150,00
M 12	x	140	S	50	162,00
M 12	x	150	S	50	177,00
M 12	x	160	S	25	193,00
M 12	x	170	S	25	211,00
M 12	x	180	S	25	211,00
M 12	x	190	S	25	238,00
M 12	x	200	S	25	238,00
M 12	x	220	S	25	272,00
M 12	x	240	S	25	293,00
M 12	x	250	S	25	313,00
M 12	x	260	S	25	313,00

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	280	S	25	337,00
M 12	x	300	S	25	360,00
M 12	x	320	S	25	423,00
M 12	x	340	S	25	462,00
M 12	x	360	S	25	518,00
M 12	x	380	S	25	571,00
M 12	x	400	S	25	667,00
M 16	x	40	S	50	217,00
M 16	x	45	S	50	217,00
M 16	x	50	S	50	197,00
M 16	x	55	S	50	211,00
M 16	x	60	S	50	211,00
M 16	x	65	S	25	241,00
M 16	x	70	S	25	224,00
M 16	x	75	S	25	271,00
M 16	x	80	S	25	225,00
M 16	x	90	S	25	235,00
M 16	x	100	S	25	241,00
M 16	x	110	S	25	272,00
M 16	x	120	S	25	274,00
M 16	x	130	S	25	328,00
M 16	x	140	S	25	329,00
M 16	x	150	S	25	338,00
M 16	x	160	S	25	369,00
M 16	x	170	S	25	390,00
M 16	x	180	S	25	390,00
M 16	x	200	S	25	409,00
M 16	x	220	S	25	487,00
M 16	x	240	S	25	525,00
M 16	x	260	S	25	569,00
M 16	x	280	S	25	604,00
M 16	x	300	S	25	641,00
M 16	x	320	S	10	667,00
M 16	x	340	S	10	702,00
M 16	x	360	S	10	732,00
M 16	x	400	S	10	808,00
M 20	x	80	S	25	732,00
M 20	x	100	S	25	788,00
M 20	x	120	S	25	840,00
M 20	x	140	S	1	897,00
M 20	x	160	S	1	990,00
M 20	x	180	S	1	1030,00
M 20	x	200	S	1	1082,00
M 20	x	220	S	1	1112,00
M 20	x	240	S	1	1169,00
M 20	x	280	S	1	1321,00
M 20	x	300	S	1	1381,00

DIN	00603.410	RAZ 300
603	**Mu steel zinc plated**	



Cup head square neck bolts, Mu = with hexagon nut

Dimensions → TI-32 Corrosion protection → TI-217

Stainless → S. 447
Brass → S. 574

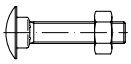
Dimensions			PU	Pieces	€/100/Mat.
M 5	x	16	S	500	18,95 ZP
M 5	x	16	K	100	23,90 ZP
M 5	x	20	S	500	19,15 ZP
M 5	x	20	K	100	24,15 ZP
M 5	x	25	S	500	19,45 ZP
M 5	x	25	K	100	24,40 ZP
M 5	x	30	S	500	20,50 ZP
M 5	x	30	K	100	25,40 ZP
M 5	x	35	S	200	21,05 ZP
M 5	x	40	S	200	23,75 ZP
M 5	x	45	S	200	24,85 ZP
M 5	x	50	S	200	25,85 ZP
M 5	x	55	S	200	30,15 ZP
M 5	x	60	S	200	30,55 ZP
M 5	x	65	S	200	42,30 ZP
M 5	x	70	S	200	42,55 ZP
M 5	x	80	S	200	47,90 ZP
M 5	x	90	S	200	80,95 ZP
M 6	x	16	S	500	8,85 ZP
M 6	x	16	K	100	13,80 ZP
M 6	x	20	S	500	8,85 ZP
M 6	x	20	K	100	13,80 ZP
M 6	x	25	S	500	9,25 ZP
M 6	x	25	K	100	14,15 ZP
M 6	x	30	S	500	9,65 ZP
M 6	x	30	K	100	14,60 ZP
M 6	x	35	S	200	10,60 ZP
M 6	x	40	S	200	11,50 ZP
M 6	x	45	S	200	12,05 ZP
M 6	x	50	S	200	12,60 ZP
M 6	x	55	S	200	14,80 ZP
M 6	x	60	S	200	14,10 ZP
M 6	x	65	S	200	23,55 ZP
M 6	x	70	S	200	22,40 ZP
M 6	x	75	S	200	27,55 ZP
M 6	x	80	S	200	34,05 ZP
M 6	x	90	S	100	36,75 ZP
M 6	x	100	S	100	43,35 ZP
M 6	x	110	S	100	55,30 ZP
M 6	x	120	S	100	55,80 ZP
M 6	x	130	S	100	88,35 ZP
M 6	x	140	S	100	93,35 ZP
M 6	x	150	S	100	152,00 ZP
M 8	x	16	S	200	14,50 ZP
M 8	x	20	S	200	14,75 ZP
M 8	x	25	S	200	15,20 ZP
M 8	x	30	S	200	15,80 ZP
M 8	x	35	S	200	17,20 ZP
M 8	x	40	S	200	18,15 ZP
M 8	x	45	S	200	19,25 ZP
M 8	x	50	S	200	19,80 ZP
M 8	x	55	S	200	22,35 ZP
M 8	x	60	S	200	22,75 ZP
M 8	x	65	S	200	26,20 ZP
M 8	x	70	S	200	25,75 ZP
M 8	x	75	S	200	30,25 ZP
M 8	x	80	S	200	29,30 ZP
M 8	x	90	S	100	40,85 ZP
M 8	x	100	S	100	47,50 ZP
M 8	x	110	S	100	57,40 ZP
M 8	x	120	S	100	71,10 ZP
M 8	x	130	S	100	74,20 ZP
M 8	x	140	S	100	75,45 ZP
M 8	x	150	S	100	133,00 ZP
M 8	x	160	S	100	134,00 ZP
M 8	x	170	S	50	152,00 ZP
M 8	x	180	S	50	152,00 ZP
M 8	x	190	S	50	169,00 ZP
M 8	x	200	S	50	170,00 ZP
M 10	x	20	S	200	25,50 ZP
M 10	x	25	S	200	26,00 ZP
M 10	x	30	S	200	27,25 ZP
M 10	x	35	S	100	27,85 ZP
M 10	x	40	S	100	29,60 ZP
M 10	x	45	S	100	31,05 ZP
M 10	x	50	S	100	32,50 ZP
M 10	x	55	S	100	33,75 ZP
M 10	x	60	S	100	35,60 ZP
M 10	x	65	S	100	39,80 ZP
M 10	x	70	S	100	40,50 ZP
M 10	x	75	S	100	47,35 ZP
M 10	x	80	S	100	45,30 ZP
M 10	x	90	S	100	63,05 ZP
M 10	x	100	S	100	71,10 ZP
M 10	x	110	S	50	79,75 ZP
M 10	x	120	S	50	101,00 ZP
M 10	x	130	S	50	110,00 ZP
M 10	x	140	S	50	117,00 ZP
M 10	x	150	S	50	143,00 ZP
M 10	x	160	S	50	166,00 ZP
M 10	x	170	S	50	208,00 ZP
M 10	x	180	S	50	213,00 ZP
M 10	x	190	S	50	229,00 ZP
M 10	x	200	S	50	230,00 ZP
M 10	x	220	S	25	297,00 ZP
M 10	x	240	S	25	322,00 ZP
M 10	x	260	S	25	349,00 ZP
M 10	x	280	S	25	376,00 ZP
M 10	x	300	S	25	403,00 ZP
M 12	x	30	S	100	97,65 ZP
M 12	x	35	S	100	98,90 ZP
M 12	x	40	S	100	87,75 ZP
M 12	x	45	S	100	92,70 ZP
M 12	x	50	S	100	95,80 ZP
M 12	x	55	S	100	101,00 ZP
M 12	x	60	S	100	104,00 ZP
M 12	x	65	S	50	121,00 ZP
M 12	x	70	S	50	111,00 ZP
M 12	x	75	S	50	130,00 ZP
M 12	x	80	S	50	122,00 ZP
M 12	x	90	S	50	138,00 ZP
M 12	x	100	S	50	145,00 ZP
M 12	x	110	S	50	161,00 ZP
M 12	x	120	S	50	172,00 ZP
M 12	x	130	S	50	184,00 ZP
M 12	x	140	S	50	199,00 ZP
M 12	x	150	S	50	216,00 ZP
M 12	x	160	S	25	234,00 ZP
M 12	x	170	S	25	254,00 ZP
M 12	x	180	S	25	256,00 ZP
M 12	x	190	S	25	284,00 ZP
M 12	x	200	S	25	287,00 ZP
M 12	x	220	S	25	325,00 ZP
M 12	x	240	S	25	350,00 ZP
M 12	x	250	S	25	372,00 ZP
M 12	x	260	S	25	377,00 ZP
M 12	x	280	S	25	404,00 ZP
M 12	x	300	S	25	431,00 ZP
M 12	x	320	S	25	502,00 ZP
M 12	x	340	S	25	547,00 ZP
M 12	x	360	S	25	607,00 ZP
M 12	x	380	S	25	663,00 ZP
M 12	x	400	S	25	764,00 ZP
M 16	x	35	S	50	266,00 ZP
M 16	x	40	S	50	248,00 ZP
M 16	x	45	S	50	249,00 ZP
M 16	x	50	S	50	232,00 ZP
M 16	x	55	S	50	248,00 ZP
M 16	x	60	S	50	249,00 ZP
M 16	x	65	S	25	282,00 ZP
M 16	x	70	S	25	265,00 ZP
M 16	x	75	S	25	314,00 ZP
M 16	x	80	S	25	271,00 ZP
M 16	x	90	S	25	286,00 ZP
M 16	x	100	S	25	295,00 ZP
M 16	x	110	S	25	329,00 ZP
M 16	x	120	S	25	335,00 ZP
M 16	x	130	S	25	392,00 ZP
M 16	x	140	S	25	397,00 ZP
M 16	x	150	S	25	410,00 ZP
M 16	x	160	S	25	444,00 ZP
M 16	x	170	S	25	469,00 ZP
M 16	x	180	S	25	474,00 ZP
M 16	x	190	S	25	493,00 ZP
M 16	x	200	S	25	499,00 ZP
M 16	x	220	S	25	584,00 ZP
M 16	x	240	S	25	630,00 ZP
M 16	x	260	S	25	686,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	280	S	25	727,00 ZP
M 16	x	300	S	25	772,00 ZP
M 16	x	320	S	10	812,00 ZP
M 16	x	340	S	10	853,00 ZP
M 16	x	360	S	10	892,00 ZP
M 16	x	380	S	10	932,00 ZP
M 16	x	400	S	10	983,00 ZP
M 20	x	80	S	25	812,00 ZP
M 20	x	100	S	25	881,00 ZP
M 20	x	120	S	25	944,00 ZP
M 20	x	140	S	1	1013,00 ZP
M 20	x	180	S	1	1171,00 ZP
M 20	x	200	S	1	1235,00 ZP
M 20	x	240	S	1	1346,00 ZP
M 20	x	280	S	1	1545,00 ZP
M 20	x	300	S	1	1618,00 ZP

DIN	00603.404	RAZ 300

603 **Mu steel** **F**



Cup head square neck bolts, Mu = with hexagon nut, F = thread up to square neck

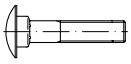
Dimensions → TI-32

Stainless → S. 447
Brass → S. 574

M 8	x	70	S	200	45,60

DIN	00603.814	RAZ 302

603 **8.8 zinc plated**



Cup head square neck bolts

(without nuts)

Nuts → DIN 934/ISO 4034 prop. class 8 ZP

Dimensions → TI-32 Tightening torque → TI-230
Mech. properties → TI-220 Corrosion protection → TI-217

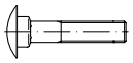
Stainless → S. 447
Brass → S. 574

M 6	x	10	S	500	22,80 ZP
M 6	x	16	S	500	23,20 ZP
M 6	x	20	S	500	24,30 ZP
M 6	x	25	S	500	26,00 ZP
M 6	x	30	S	500	28,50 ZP
M 6	x	35	S	200	30,50 ZP
M 6	x	40	S	200	32,50 ZP
M 6	x	45	S	200	35,00 ZP
M 6	x	50	S	200	37,50 ZP
M 6	x	60	S	200	39,50 ZP
M 6	x	70	S	200	42,00 ZP
M 8	x	16	S	200	38,50 ZP
M 8	x	20	S	200	41,50 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	25	S	200	44,00 ZP
M 8	x	30	S	200	47,00 ZP
M 8	x	35	S	200	51,00 ZP
M 8	x	40	S	200	54,00 ZP
M 8	x	45	S	200	57,00 ZP
M 8	x	50	S	200	62,00 ZP
M 8	x	55	S	200	65,00 ZP
M 8	x	60	S	200	69,00 ZP
M 8	x	65	S	200	75,00 ZP
M 8	x	70	S	200	80,00 ZP
M 8	x	80	S	200	92,00 ZP
M 8	x	90	S	100	103,00 ZP
M 8	x	100	S	100	113,00 ZP
M 8	x	110	S	100	120,00 ZP
M 8	x	120	S	100	120,00 ZP
M 8	x	140	S	100	130,00 ZP
M 10	x	20	S	200	64,00 ZP
M 10	x	25	S	200	68,00 ZP
M 10	x	30	S	200	71,00 ZP
M 10	x	35	S	100	76,00 ZP
M 10	x	40	S	100	85,00 ZP
M 10	x	45	S	100	91,00 ZP
M 10	x	50	S	100	96,00 ZP
M 10	x	55	S	100	100,00 ZP
M 10	x	60	S	100	108,00 ZP
M 10	x	65	S	100	114,00 ZP
M 10	x	70	S	100	120,00 ZP
M 10	x	75	S	100	126,00 ZP
M 10	x	80	S	100	129,00 ZP
M 10	x	90	S	100	146,00 ZP
M 10	x	100	S	100	162,00 ZP
M 10	x	110	S	100	165,00 ZP
M 10	x	120	S	100	170,00 ZP
M 12	x	25	S	100	95,00 ZP
M 12	x	30	S	100	97,00 ZP
M 12	x	35	S	100	102,00 ZP
M 12	x	40	S	100	109,00 ZP
M 12	x	45	S	100	116,00 ZP
M 12	x	50	S	100	122,00 ZP
M 12	x	60	S	100	137,00 ZP
M 12	x	70	S	50	149,00 ZP
M 12	x	75	S	50	150,00 ZP
M 12	x	80	S	50	167,00 ZP
M 12	x	90	S	50	190,00 ZP
M 12	x	100	S	50	201,00 ZP
M 12	x	110	S	50	213,00 ZP
M 12	x	120	S	50	224,00 ZP
M 12	x	130	S	50	240,00 ZP
M 16	x	40	S	50	520,00 ZP
M 16	x	45	S	50	540,00 ZP
M 16	x	50	S	50	540,00 ZP
M 16	x	60	S	50	560,00 ZP
M 16	x	65	S	25	590,00 ZP
M 16	x	70	S	25	590,00 ZP
M 16	x	80	S	25	620,00 ZP
M 16	x	90	S	25	640,00 ZP
M 16	x	100	S	25	670,00 ZP
M 16	x	110	S	25	680,00 ZP
M 16	x	120	S	25	690,00 ZP
M 16	x	130	S	25	710,00 ZP
M 16	x	140	S	25	720,00 ZP
M 16	x	160	S	25	750,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00603.824		RAZ 302

603 **8.8 hot dip galvanized**



Cup head square neck bolts

without nuts,
Thread undersize (6az + HDG = U)

Nuts → DIN 934/ISO 4034 prop. class 8 HDG

Dimensions → TI-32 Tightening torque → TI-230
Mech. properties → TI-220 Corrosion protection → TI-219

Stainless → S. 447
Brass → S. 574

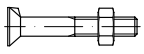
M 10	x	25	S	100	73,00 HDG
M 10	x	30	S	100	76,00 HDG
M 10	x	35	S	100	81,00 HDG
M 10	x	40	S	100	90,00 HDG
M 12	x	25	S	100	100,00 HDG
M 12	x	30	S	100	102,00 HDG
M 12	x	35	S	100	107,00 HDG
M 12	x	40	S	100	114,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

DIN	00604.400	RAZ 310

604 **Mu steel**



Flat countersunk nib bolts, Mu = with hexagon nut

Dimensions → TI-32

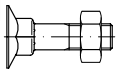
M 6	x	20	S	500	33,55
M 6	x	25	S	500	35,45
M 6	x	30	S	500	36,60
M 6	x	35	S	200	37,60
M 6	x	40	S	200	38,95
M 6	x	60	S	200	48,95
M 8	x	20	S	200	39,50
M 8	x	25	S	200	39,50
M 8	x	30	S	200	40,70
M 8	x	35	S	200	42,50
M 8	x	40	S	200	43,45
M 8	x	45	S	200	44,60

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	50	S	200	46,35
M 8	x	55	S	200	52,25
M 8	x	60	S	200	53,95
M 8	x	70	S	200	62,45
M 10	x	25	S	200	69,20
M 10	x	30	S	200	70,45
M 10	x	35	S	100	72,35
M 10	x	40	S	100	74,80
M 10	x	45	S	100	77,25
M 10	x	50	S	100	78,50
M 10	x	55	S	100	85,90
M 10	x	60	S	100	85,90
M 10	x	70	S	100	92,10
M 10	x	80	S	100	98,90
M 10	x	100	S	100	140,00
M 12	x	25	S	100	93,95
M 12	x	30	S	100	93,95
M 12	x	35	S	100	93,95
M 12	x	40	S	100	97,05
M 12	x	45	S	100	98,90
M 12	x	50	S	100	103,00
M 12	x	55	S	100	105,00
M 12	x	60	S	100	107,00
M 12	x	65	S	50	125,00
M 12	x	70	S	50	117,00
M 12	x	80	S	50	120,00
M 12	x	90	S	50	132,00
M 12	x	100	S	50	137,00
M 12	x	110	S	50	335,00
M 12	x	120	S	50	358,00
M 16	x	30	S	50	182,00
M 16	x	35	S	50	182,00
M 16	x	40	S	50	185,00
M 16	x	45	S	50	185,00
M 16	x	50	S	50	189,00
M 16	x	55	S	50	201,00
M 16	x	60	S	50	201,00
M 16	x	65	S	25	214,00
M 16	x	70	S	25	214,00
M 16	x	75	S	25	272,00
M 16	x	80	S	25	272,00
M 16	x	90	S	25	279,00
M 16	x	100	S	25	296,00
M 16	x	110	S	25	412,00
M 16	x	120	S	25	417,00
M 16	x	130	S	25	514,00
M 16	x	140	S	25	726,00
M 20	x	40	S	25	333,00
M 20	x	45	S	25	333,00
M 20	x	50	S	25	333,00
M 20	x	55	S	25	352,00
M 20	x	60	S	25	352,00
M 20	x	65	S	25	379,00
M 20	x	70	S	25	379,00
M 20	x	75	S	25	387,00
M 20	x	80	S	25	387,00
M 20	x	90	S	25	410,00
M 20	x	100	S	25	419,00
M 20	x	110	S	25	681,00
M 20	x	120	S	25	681,00
M 20	x	130	S	25	708,00
M 20	x	140	S	25	804,00
M 24	x	60	S	25	596,00
M 24	x	65	S	25	621,00
M 24	x	70	S	25	621,00
M 24	x	75	S	25	647,00
M 24	x	80	S	25	647,00
M 24	x	90	S	10	672,00
M 24	x	100	S	10	702,00
M 24	x	110	S	10	898,00
M 24	x	120	S	10	1066,00
M 24	x	130	S	10	1232,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00605.400		RAZ 310

605

Mu steel



Flat countersunk square neck bolts with long square, Mu = with hexagon nut

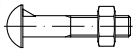
Dimensions → TI-33

M 6	x	30	S	500	80,35
M 6	x	35	S	200	80,95
M 6	x	40	S	200	82,20
M 6	x	45	S	200	83,45
M 6	x	50	S	200	84,05
M 6	x	55	S	200	84,65
M 6	x	60	S	200	85,90
M 8	x	30	S	200	86,55
M 8	x	35	S	200	87,15
M 8	x	40	S	200	89,00
M 8	x	45	S	200	90,90
M 8	x	50	S	200	92,70
M 8	x	55	S	200	93,95
M 8	x	60	S	200	97,05
M 8	x	65	S	200	101,00
M 8	x	70	S	200	102,00
M 10	x	30	S	200	108,00
M 10	x	35	S	100	109,00
M 10	x	40	S	100	109,00
M 10	x	50	S	100	117,00
M 10	x	60	S	100	122,00
M 10	x	70	S	100	143,00

DIN	00607.400	RAZ 310

607

Mu steel



Cup head nib bolts, Mu = with hexagon nut

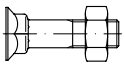
Dimensions → TI-33

M 8	x	20	S	200	63,70
M 8	x	25	S	200	64,90
M 8	x	35	S	200	70,45
M 8	x	40	S	200	70,45
M 10	x	20	S	200	73,55
M 10	x	25	S	200	73,55
M 10	x	30	S	200	73,55
M 10	x	40	S	100	80,35
M 12	x	30	S	100	104,00
M 12	x	35	S	100	106,00
M 12	x	40	S	100	114,00
M 16	x	35	S	50	233,00
M 16	x	40	S	50	238,00
M 16	x	45	S	50	247,00
M 16	x	50	S	50	249,00
M 16	x	60	S	50	271,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00608.800		RAZ 310

608

Mu 8.8



Flat countersunk square neck bolts with short square, Mu = with hexagon nut

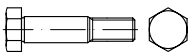
Dimensions → TI-33 Tightening torque → TI-230

M 8	x	30	S	200	144,00
M 8	x	35	S	200	150,00
M 10	x	25	S	200	130,00
M 10	x	30	S	200	138,00
M 10	x	35	S	100	152,00
M 10	x	40	S	100	165,00
M 10	x	45	S	100	169,00
M 10	x	50	S	100	223,00
M 10	x	60	S	100	308,00
M 12	x	25	S	100	217,00
M 12	x	30	S	100	224,00
M 12	x	35	S	100	249,00
M 12	x	40	S	100	252,00
M 12	x	45	S	100	260,00
M 12	x	50	S	100	281,00
M 12	x	55	S	100	362,00
M 12	x	60	S	100	362,00
M 12	x	65	S	50	405,00
M 12	x	70	S	50	405,00
M 16	x	40	S	50	496,00
M 16	x	50	S	50	516,00
M 16	x	55	S	50	547,00
M 16	x	60	S	50	547,00
M 16	x	70	S	25	616,00
M 16	x	80	S	25	688,00

DIN	00609.800	RAZ 320

609

8.8



Hexagon fit bolts with long thread

Dimensions → TI-16 Tightening torque → TI-230
Mech. properties → TI-220

Transfer wrench sizes to ISO:
M 10 → 16, M 12 → 18, M 14 → 21, M 22 → 34

M 8	x	25	S	25	365,00
M 8	x	30	S	25	385,00
M 8	x	32	S	25	385,00
M 8	x	35	S	25	390,00
M 8	x	40	S	25	405,00
M 8	x	45	S	25	420,00
M 8	x	50	S	25	430,00
M 8	x	60	S	25	590,00
M 8	x	70	S	25	620,00
M 10	x	30	S	25	395,00
M 10	x	35	S	25	405,00
M 10	x	40	S	25	420,00

€/100 = price in € plus VAT when ordering full package unit

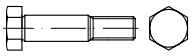
Dimensions			PU	Pieces	€/100/Mat.
M 10	x	50	S	25	455,00
M 10	x	55	S	25	460,00
M 10	x	60	S	25	465,00
M 10	x	65	S	25	630,00
M 10	x	70	S	25	630,00
M 10	x	75	S	25	640,00
M 10	x	80	S	25	650,00
M 10	x	90	S	25	670,00
M 10	x	100	S	25	700,00
M 12	x	30	S	25	440,00
M 12	x	35	S	25	455,00
M 12	x	40	S	25	475,00
M 12	x	45	S	25	500,00
M 12	x	50	S	25	530,00
M 12	x	55	S	25	550,00
M 12	x	60	S	25	550,00
M 12	x	65	S	25	730,00
M 12	x	70	S	25	760,00
M 12	x	75	S	10	770,00
M 12	x	80	S	10	770,00
M 12	x	90	S	10	810,00
M 12	x	100	S	10	810,00
M 14	x	35	S	10	510,00
M 14	x	40	S	10	530,00
M 14	x	45	S	10	550,00
M 14	x	50	S	10	570,00
M 14	x	60	S	10	600,00
M 14	x	65	S	10	620,00
M 14	x	70	S	10	640,00
M 14	x	80	S	10	920,00
M 16	x	40	S	10	570,00
M 16	x	45	S	10	600,00
M 16	x	50	S	10	620,00
M 16	x	55	S	10	640,00
M 16	x	60	S	10	670,00
M 16	x	65	S	10	680,00
M 16	x	70	S	10	710,00
M 16	x	75	S	10	720,00
M 16	x	80	S	10	750,00
M 16	x	85	S	10	810,00
M 16	x	90	S	10	810,00
M 16	x	100	S	10	920,00
M 16	x	120	S	10	1100,00
M 20	x	45	S	10	950,00
M 20	x	50	S	10	1020,00
M 20	x	55	S	10	1030,00
M 20	x	60	S	10	1050,00
M 20	x	65	S	10	1100,00
M 20	x	70	S	10	1110,00
M 20	x	75	S	10	1140,00
M 20	x	80	S	1	1180,00
M 20	x	85	S	1	1200,00
M 20	x	90	S	1	1250,00
M 20	x	100	S	1	1320,00
M 20	x	110	S	1	1420,00
M 20	x	120	S	1	1460,00
M 20	x	130	S	1	3650,00
M 20	x	140	S	1	3800,00
M 20	x	150	S	1	3950,00
M 20	x	160	S	1	4050,00
M 20	x	180	S	1	4400,00
M 20	x	200	S	1	4700,00
M 24	x	60	S	1	1900,00
M 24	x	65	S	1	1930,00
M 24	x	70	S	1	1980,00
M 24	x	75	S	1	2010,00
M 24	x	80	S	1	2060,00
M 24	x	85	S	1	2100,00
M 24	x	90	S	1	2140,00
M 24	x	100	S	1	2230,00
M 24	x	110	S	1	2320,00
M 24	x	120	S	1	2420,00
M 24	x	130	S	1	4200,00
M 24	x	140	S	1	4350,00
M 24	x	150	S	1	4450,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	160	S	1	4700,00
M 24	x	180	S	1	5100,00
M 24	x	200	S	1	5500,00
M 30	x	70	S	1	3000,00
M 30	x	75	S	1	3050,00
M 30	x	80	S	1	3150,00
M 30	x	85	S	1	3200,00
M 30	x	90	S	1	3250,00
M 30	x	100	S	1	3450,00
M 30	x	110	S	1	3600,00
M 30	x	120	S	1	3800,00
M 30	x	130	S	1	3900,00
M 30	x	140	S	1	4050,00
M 30	x	150	S	1	4250,00
M 30	x	160	S	1	4400,00
M 30	x	200	S	1	5200,00
M 36	x	90	S	1	3900,00
M 36	x	100	S	1	4140,00
M 36	x	110	S	1	4320,00
M 36	x	120	S	1	4560,00
M 36	x	130	S	1	4680,00
M 36	x	140	S	1	4860,00
M 36	x	150	S	1	5100,00
M 36	x	160	S	1	5280,00

DIN	00609.100	RAZ 320

609

10.9



Hexagon fit bolts with long thread

Dimensions → TI-16 Tightening torque → TI-230
Mech. properties → TI-220

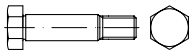
M 8	x	25	S	25	474,50
M 8	x	30	S	25	500,50
M 8	x	35	S	25	507,00
M 8	x	40	S	25	526,50
M 8	x	45	S	25	546,00
M 8	x	50	S	50	559,00
M 10	x	30	S	25	513,50
M 10	x	35	S	25	579,00
M 10	x	40	S	25	546,00
M 10	x	45	S	25	572,00
M 10	x	50	S	25	591,50
M 10	x	55	S	25	598,00
M 10	x	60	S	25	604,50
M 12	x	30	S	25	572,00
M 12	x	35	S	25	591,50
M 12	x	40	S	25	617,50
M 12	x	45	S	25	650,00
M 12	x	50	S	25	689,00
M 12	x	55	S	25	715,00
M 12	x	60	S	25	715,00
M 16	x	40	S	10	741,00
M 16	x	45	S	10	780,00
M 16	x	50	S	10	806,00
M 16	x	55	S	10	832,00
M 16	x	60	S	10	871,00
M 16	x	65	S	10	884,00
M 16	x	70	S	10	923,00
M 16	x	80	S	10	975,00
M 16	x	90	S	10	1053,00
M 16	x	100	S	10	1196,00
M 20	x	45	S	10	1235,00
M 20	x	50	S	10	1326,00
M 20	x	55	S	10	1339,00

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	60	S	10	1365,00
M 20	x	65	S	10	1430,00
M 20	x	70	S	10	1443,00
M 20	x	75	S	10	1482,00
M 20	x	80	S	1	1534,00
M 20	x	85	S	1	1560,00
M 20	x	90	S	1	1625,00
M 20	x	100	S	1	1716,00
M 20	x	110	S	1	1846,00
M 20	x	120	S	1	1898,00
M 24	x	60	S	1	2470,00
M 24	x	65	S	1	2509,00
M 24	x	70	S	1	2574,00
M 24	x	75	S	1	2613,00
M 24	x	80	S	1	2678,00
M 24	x	85	S	1	2730,00
M 24	x	90	S	1	2782,00
M 24	x	100	S	1	2899,00
M 24	x	110	S	1	3016,00
M 24	x	120	S	1	3146,00
M 24	x	130	S	1	5460,00
M 24	x	140	S	1	5655,00

~DIN	00610.800	RAZ 320

610

8.8



Hexagon fit bolts with short thread

Dimensions → TI-17 Tightening torque → TI-230
Mech. properties → TI-220

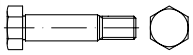
M 8	x	25	S	25	365,00
M 8	x	30	S	25	385,00
M 8	x	35	S	25	390,00
M 8	x	40	S	25	405,00
M 8	x	45	S	25	420,00
M 8	x	50	S	25	430,00
M 8	x	60	S	25	590,00
M 8	x	70	S	25	620,00
M 8	x	80	S	25	680,00
M 10	x	30	S	25	395,00
M 10	x	35	S	25	405,00
M 10	x	40	S	25	420,00
M 10	x	45	S	25	440,00
M 10	x	50	S	25	455,00
M 10	x	55	S	25	460,00
M 10	x	60	S	25	465,00
M 10	x	65	S	25	630,00
M 10	x	70	S	25	630,00
M 10	x	80	S	25	650,00
M 10	x	90	S	25	670,00
M 10	x	100	S	25	700,00
M 12	x	30	S	25	440,00
M 12	x	35	S	25	455,00
M 12	x	40	S	25	475,00
M 12	x	45	S	25	500,00
M 12	x	50	S	25	530,00
M 12	x	55	S	25	550,00
M 12	x	60	S	25	550,00
M 12	x	65	S	25	730,00
M 12	x	70	S	25	760,00
M 12	x	75	S	10	770,00
M 12	x	80	S	10	770,00
M 12	x	90	S	10	810,00
M 12	x	100	S	10	810,00
M 14	x	35	S	10	510,00

Dimensions			PU	Pieces	€/100/Mat.
M 14	x	40	S	10	530,00
M 14	x	45	S	10	550,00
M 14	x	50	S	10	570,00
M 14	x	55	S	10	590,00
M 14	x	60	S	10	600,00
M 14	x	65	S	10	620,00
M 14	x	70	S	10	640,00
M 14	x	80	S	10	920,00
M 16	x	35	S	10	550,00
M 16	x	40	S	10	570,00
M 16	x	45	S	10	600,00
M 16	x	50	S	10	620,00
M 16	x	55	S	10	640,00
M 16	x	60	S	10	670,00
M 16	x	65	S	10	680,00
M 16	x	70	S	10	710,00
M 16	x	75	S	10	720,00
M 16	x	80	S	10	750,00
M 16	x	85	S	10	810,00
M 16	x	90	S	10	810,00
M 16	x	100	S	10	920,00
M 16	x	110	S	10	1000,00
M 16	x	120	S	10	1100,00
M 20	x	40	S	10	920,00
M 20	x	45	S	10	950,00
M 20	x	50	S	10	1020,00
M 20	x	55	S	10	1030,00
M 20	x	60	S	10	1050,00
M 20	x	65	S	10	1100,00
M 20	x	70	S	10	1110,00
M 20	x	75	S	10	1140,00
M 20	x	80	S	1	1180,00
M 20	x	85	S	1	1200,00
M 20	x	90	S	1	1250,00
M 20	x	100	S	1	1320,00
M 20	x	110	S	1	1420,00
M 20	x	120	S	1	1460,00
M 20	x	130	S	1	3650,00
M 20	x	150	S	1	3950,00
M 24	x	60	S	1	1900,00
M 24	x	65	S	1	1930,00
M 24	x	70	S	1	1980,00
M 24	x	75	S	1	2010,00
M 24	x	80	S	1	2060,00
M 24	x	85	S	1	2100,00
M 24	x	90	S	1	2140,00
M 24	x	100	S	1	2230,00
M 24	x	110	S	1	2320,00
M 24	x	120	S	1	2420,00
M 24	x	130	S	1	4200,00
M 24	x	140	S	1	4350,00
M 24	x	150	S	1	4550,00
M 30	x	80	S	1	3150,00
M 30	x	90	S	1	3250,00
M 30	x	95	S	1	3400,00
M 30	x	100	S	1	3450,00
M 30	x	110	S	1	3600,00
M 30	x	120	S	1	3800,00
M 30	x	130	S	1	3900,00
M 36	x	90	S	1	3900,00
M 36	x	100	S	1	4140,00
M 36	x	110	S	1	4320,00
M 36	x	120	S	1	4560,00
M 36	x	130	S	1	4680,00
M 36	x	140	S	1	4860,00
M 36	x	150	S	1	5100,00
M 36	x	160	S	1	5280,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00610.100		RAZ 320

610

10.9



Hexagon fit bolts with short thread

Dimensions → TI-17
Mech. properties → TI-220
Tightening torque → TI-230

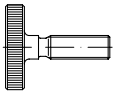
M 8	x	25	S	25	474,50
M 8	x	30	S	25	500,50
M 8	x	35	S	25	507,00
M 8	x	40	S	25	526,50
M 8	x	45	S	25	546,00
M 8	x	50	S	25	559,00
M 10	x	30	S	25	513,50
M 10	x	35	S	25	526,50
M 10	x	40	S	25	546,00
M 10	x	45	S	25	572,00
M 10	x	50	S	25	591,50
M 10	x	55	S	25	598,00
M 10	x	60	S	25	604,50
M 12	x	30	S	25	572,00
M 12	x	35	S	25	373,24
M 12	x	40	S	25	617,50
M 12	x	45	S	25	650,00
M 12	x	50	S	25	689,00
M 12	x	55	S	25	715,00
M 12	x	60	S	25	715,00
M 16	x	35	S	10	715,00
M 16	x	40	S	10	741,00
M 16	x	45	S	10	780,00
M 16	x	50	S	10	806,00
M 16	x	55	S	10	832,00
M 16	x	60	S	10	871,00
M 16	x	65	S	10	884,00
M 16	x	70	S	10	923,00
M 16	x	75	S	10	936,00
M 16	x	80	S	10	975,00
M 16	x	85	S	10	1053,00
M 16	x	90	S	10	1053,00
M 16	x	100	S	10	1196,00
M 16	x	110	S	10	1300,00
M 20	x	40	S	10	1196,00
M 20	x	45	S	10	1235,00
M 20	x	50	S	10	1326,00
M 20	x	55	S	10	1339,00
M 20	x	60	S	10	1365,00
M 20	x	65	S	10	1430,00
M 20	x	70	S	10	1443,00
M 20	x	75	S	10	1482,00
M 20	x	80	S	1	1534,00
M 20	x	85	S	1	1560,00
M 20	x	90	S	1	1625,00
M 20	x	100	S	1	1716,00
M 20	x	110	S	1	1846,00
M 20	x	120	S	1	1898,00
M 24	x	60	S	1	2470,00
M 24	x	65	S	1	2509,00
M 24	x	70	S	1	2574,00
M 24	x	75	S	1	2613,00
M 24	x	80	S	1	2678,00
M 24	x	85	S	1	2730,00
M 24	x	90	S	1	2782,00
M 24	x	100	S	1	2899,00
M 24	x	110	S	1	3016,00
M 24	x	120	S	1	3146,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	130	S	1	5460,00
M 24	x	140	S	1	5655,00

DIN	00653.000	RAZ 320

653

Steel



Knurled thumb screws, low type

Dimensions → TI-33

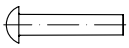
Stainless → S. 448

M 3	x	6	S	50	68,00
M 3	x	8	S	50	69,00
M 3	x	10	S	50	72,00
M 3	x	12	S	50	76,00
M 3	x	16	S	50	79,00
M 4	x	8	S	50	79,00
M 4	x	10	S	50	86,00
M 4	x	12	S	50	88,00
M 4	x	16	S	50	92,00
M 4	x	20	S	50	96,00
M 4	x	25	S	50	104,00
M 4	x	30	S	50	145,00
M 4	x	35	S	50	153,00
M 5	x	10	S	50	102,00
M 5	x	12	S	50	108,00
M 5	x	16	S	50	113,00
M 5	x	20	S	50	126,00
M 5	x	25	S	25	141,00
M 5	x	30	S	25	152,00
M 5	x	35	S	25	170,00
M 5	x	40	S	25	189,00
M 6	x	12	S	25	132,00
M 6	x	16	S	25	142,00
M 6	x	20	S	25	158,00
M 6	x	25	S	25	174,00
M 6	x	30	S	25	192,00
M 6	x	35	S	25	208,00
M 6	x	40	S	25	226,00
M 6	x	45	S	25	260,00
M 8	x	16	S	25	203,00
M 8	x	20	S	25	226,00
M 8	x	25	S	25	243,00
M 8	x	30	S	25	275,00
M 8	x	35	S	25	295,00
M 8	x	40	S	10	335,00
M 8	x	45	S	10	365,00
M 8	x	50	S	10	405,00
M 8	x	60	S	10	540,00
M 10	x	20	S	25	365,00
M 10	x	25	S	10	435,00
M 10	x	30	S	10	495,00
M 10	x	40	S	10	570,00
M 10	x	50	S	10	630,00
M 10	x	60	S	10	830,00
M 10	x	70	S	1	1010,00
M 10	x	80	S	1	1180,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00660.000	RAZ 330

660

Steel



Round head rivets

Dimensions → TI-131

Stainless → S. 448
Brass, copper, aluminium → S. 574

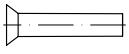
∅ ≤ 9 = DIN 660, ∅ 10 = DIN 124

2	x	4	S	1000	1,50
2	x	5	S	1000	1,50
2	x	6	S	1000	1,50
2	x	8	S	1000	1,60
2	x	10	S	1000	1,65
2	x	12	S	1000	1,80
2	x	16	S	1000	1,95
2,5	x	6	S	1000	1,55
2,5	x	8	S	1000	1,65
2,5	x	10	S	1000	1,75
2,5	x	12	S	1000	1,80
2,5	x	16	S	1000	1,95
2,5	x	20	S	1000	2,40
3	x	4	S	1000	1,60
3	x	5	S	1000	1,60
3	x	6	S	1000	1,60
3	x	8	S	1000	1,75
3	x	10	S	1000	1,85
3	x	12	S	1000	1,95
3	x	16	S	1000	2,25
3	x	18	S	1000	2,40
3	x	20	S	1000	2,40
3	x	25	S	1000	4,00
3	x	30	S	1000	4,45
4	x	6	S	1000	2,15
4	x	8	S	1000	2,40
4	x	10	S	1000	2,70
4	x	12	S	1000	2,95
4	x	16	S	1000	3,50
4	x	18	S	1000	4,00
4	x	20	S	1000	4,00
4	x	22	S	500	5,40
4	x	25	S	500	5,40
4	x	30	S	500	6,10
4	x	35	S	500	6,70
4	x	40	S	250	7,50
4	x	45	S	250	8,00
4	x	50	S	250	8,70
5	x	6	S	1000	3,20
5	x	8	S	1000	3,20
5	x	10	S	1000	3,55
5	x	12	S	1000	3,85
5	x	16	S	1000	4,90
5	x	18	S	500	6,10
5	x	20	S	500	6,10
5	x	22	S	500	7,20
5	x	25	S	500	7,20
5	x	28	S	500	8,00
5	x	30	S	500	8,00
5	x	35	S	250	8,70
5	x	40	S	250	9,50
5	x	45	S	250	10,20
5	x	50	S	250	11,00
5	x	55	S	100	11,90
5	x	60	S	100	12,60
6	x	10	S	500	6,90
6	x	12	S	500	7,20
6	x	16	S	500	8,00
6	x	18	S	500	8,80
6	x	20	S	500	8,80
6	x	22	S	250	9,50
6	x	25	S	250	9,50
6	x	30	S	250	10,50
6	x	32	S	250	11,40
6	x	35	S	250	11,40
6	x	40	S	250	12,20
6	x	45	S	250	13,50
6	x	50	S	250	14,30
6	x	55	S	100	15,30
6	x	60	S	100	16,20
6	x	70	S	100	19,10
7	x	12	S	250	10,60
7	x	25	S	250	14,80
7	x	30	S	250	16,50
7	x	50	S	100	34,00
7	x	60	S	100	36,50
8	x	10	S	250	10,00
8	x	12	S	250	10,60
8	x	16	S	250	11,90
8	x	18	S	250	13,20
8	x	20	S	250	13,20
8	x	22	S	250	14,80
8	x	25	S	250	14,80
8	x	30	S	250	16,50
8	x	32	S	100	18,10
8	x	35	S	100	18,10
8	x	40	S	100	19,70
8	x	45	S	100	32,00
8	x	50	S	100	34,00
8	x	55	S	100	35,50
8	x	60	S	100	36,50
10	x	12	S	100	26,50
10	x	16	S	100	31,00
10	x	20	S	100	35,50
10	x	25	S	100	39,50
10	x	30	S	100	45,50
10	x	35	S	100	53,00
10	x	40	S	100	59,00
10	x	45	S	100	64,00
10	x	50	S	100	70,00
10	x	60	S	100	81,00

DIN	00661.000	RAZ 330

661

Steel



Countersunk head rivets

Dimensions → TI-131

Stainless → S. 448
Brass, copper, aluminium → S. 575

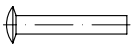
∅ ≤ 9 = DIN 661, ∅ 10 = DIN 302

2	x	6	S	1000	1,50
2	x	8	S	1000	1,60
2	x	10	S	1000	1,65
2	x	12	S	1000	1,80
2	x	16	S	1000	1,95
2,5	x	6	S	1000	1,55
2,5	x	8	S	1000	1,65
2,5	x	10	S	1000	1,75
2,5	x	12	S	1000	1,80
2,5	x	20	S	1000	2,40
3	x	5	S	1000	1,60
3	x	6	S	1000	1,60
3	x	8	S	1000	1,75
3	x	10	S	1000	1,85
3	x	12	S	1000	1,95
3	x	16	S	1000	2,25
3	x	18	S	1000	2,40
3	x	20	S	1000	2,40
3	x	25	S	1000	4,00
3	x	30	S	1000	4,45
4	x	6	S	1000	2,15
4	x	8	S	1000	2,40
4	x	10	S	1000	2,70
4	x	12	S	1000	2,95
4	x	16	S	1000	3,50
4	x	18	S	1000	4,00
4	x	20	S	1000	4,00
4	x	22	S	500	5,40
4	x	25	S	500	5,40
4	x	30	S	500	6,10
4	x	40	S	250	8,00
4	x	50	S	250	8,70
5	x	6	S	1000	3,20
5	x	8	S	1000	3,20
5	x	10	S	1000	3,55
5	x	12	S	1000	3,85
5	x	16	S	1000	4,90
5	x	18	S	500	6,10
5	x	20	S	500	6,10
5	x	22	S	500	7,20
5	x	25	S	500	7,20
5	x	30	S	250	8,70
5	x	32	S	250	8,70
5	x	35	S	250	8,70
5	x	40	S	250	9,50
5	x	45	S	250	10,20
5	x	50	S	250	11,00
5	x	60	S	100	12,60
6	x	10	S	500	6,90
6	x	12	S	500	7,20
6	x	16	S	500	8,00
6	x	18	S	500	8,80
6	x	20	S	500	8,80
6	x	22	S	250	9,50
6	x	25	S	250	9,50
6	x	30	S	250	10,50
6	x	35	S	250	11,40
6	x	40	S	250	12,20
6	x	45	S	250	13,50
6	x	50	S	250	14,30
6	x	60	S	100	16,20
7	x	25	S	250	14,80
7	x	30	S	250	16,50
8	x	12	S	250	10,60
8	x	16	S	250	11,90
8	x	20	S	250	13,20
8	x	25	S	250	14,80
8	x	30	S	250	16,50
8	x	35	S	100	18,10
8	x	40	S	100	19,70
8	x	50	S	100	34,00
8	x	60	S	100	36,50

Dimensions	PU	Pieces	€/100/Mat.
DIN	00662.000		RAZ 330

662

Steel



Mushroom head rivest (sheet metal rivets)

Dimensions → TI-131

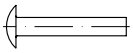
Copper, aluminium → S. 576

2	x	4	S	2000	1,45
2,5	x	5	S	1000	1,50
3	x	6	S	1000	1,60
3	x	8	S	1000	1,75
3,5	x	8	S	1000	2,20
4	x	8	S	1000	2,40
4	x	12	S	1000	2,95
5	x	16	S	500	4,90
6	x	16	S	500	8,00

DIN	00674.000	RAZ 330

674

Steel



Flat round head rivets

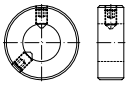
Dimensions → TI-131

3	x	6	S	1000	1,75
3	x	8	S	1000	1,85
3	x	10	S	1000	1,95
3	x	16	S	1000	2,30
4	x	6	S	1000	2,25
4	x	8	S	1000	2,45
4	x	10	S	1000	2,80
4	x	12	S	1000	3,10
4	x	16	S	1000	3,60
5	x	10	S	1000	3,75
5	x	12	S	1000	4,05
5	x	16	S	1000	5,20

~DIN	00703.000	RAZ 340

703

Steel



Adjusting rings, heavy range, with set screw acc. to DIN 914/ISO 4027

Dimensions → TI-109

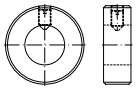
Inside/nominal ∅ x outside ∅ x width

20	x	40	x	20	S	1	690,00
25	x	56	x	22	S	1	950,00
30	x	63	x	22	S	1	1360,00
35	x	70	x	22	S	1	1520,00
40	x	80	x	28	S	1	2600,00
45	x	80	x	28	S	1	2600,00
50	x	90	x	28	S	1	3250,00
60	x	100	x	28	S	1	4050,00
70	x	110	x	32	S	1	5200,00
80	x	125	x	32	S	1	6400,00
90	x	125	x	32	S	1	6400,00
100	x	140	x	32	S	1	9300,00

DIN	00705.001	RAZ 340

705

Steel **type A**



Adjusting rings, light range, A = with grub screw DIN 553/ISO 7434

from ∅ 75 with set screw DIN 914/ISO 4027

Dimensions → TI-110

Stainless → S. 448

Inside/nominal ∅ x outside ∅ x width

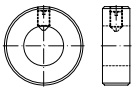
A 4	x	8	x	5	S	25	110,00
A 5	x	10	x	6	S	25	111,00
A 6	x	12	x	8	S	25	114,00
A 8	x	16	x	8	S	25	133,00
A 9	x	18	x	10	S	25	162,00
A 10	x	20	x	10	S	25	168,00
A 12	x	22	x	12	S	10	206,00
A 13	x	22	x	12	S	10	206,00
A 14	x	25	x	12	S	10	228,00
A 15	x	25	x	12	S	10	228,00
A 16	x	28	x	12	S	10	243,00
A 18	x	32	x	14	S	10	300,00
A 20	x	32	x	14	S	10	300,00
A 22	x	36	x	14	S	10	350,00
A 24	x	40	x	16	S	10	445,00
A 25	x	40	x	16	S	10	445,00
A 26	x	40	x	16	S	10	445,00
A 28	x	45	x	16	S	10	690,00
A 30	x	45	x	16	S	10	690,00
A 32	x	50	x	16	S	10	700,00
A 34	x	50	x	16	S	5	700,00
A 35	x	56	x	16	S	5	790,00
A 36	x	56	x	16	S	5	790,00
A 38	x	56	x	16	S	5	790,00
A 40	x	63	x	18	S	5	1010,00
A 42	x	63	x	18	S	5	1010,00
A 45	x	70	x	18	S	1	1200,00
A 50	x	80	x	18	S	1	1540,00
A 55	x	80	x	18	S	1	1540,00
A 60	x	90	x	20	S	1	2140,00
A 65	x	100	x	20	S	1	2650,00
A 70	x	100	x	20	S	1	2650,00
A 75	x	110	x	22	S	1	3550,00
A 80	x	110	x	22	S	1	3550,00
A 85	x	125	x	22	S	1	5500,00
A 90	x	125	x	22	S	1	5500,00
A 100	x	140	x	25	S	1	7800,00
A 110	x	160	x	25	S	1	10200,00
A 120	x	160	x	25	S	1	10200,00
A 125	x	180	x	28	S	1	14500,00
A 130	x	180	x	28	S	1	14500,00
A 140	x	200	x	28	S	1	21500,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00705.011		RAZ 340

705

Steel **type A**

zinc plated



Adjusting rings, light range, A = with grub screw DIN 553/ISO 7434

from ∅ 75 with set screw DIN 914/ISO 4027

Dimensions → TI-110 Corrosion protection → TI-217

Stainless → S. 448

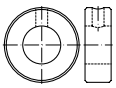
Inside/nominal ∅ x outside ∅ x width

A 4	x	8	x	5	S	25	115,00 ZP
A 5	x	10	x	6	S	25	116,00 ZP
A 6	x	12	x	8	S	25	117,00 ZP
A 8	x	16	x	8	S	25	135,00 ZP
A 9	x	18	x	10	S	1	165,00 ZP
A 10	x	20	x	10	S	25	174,00 ZP
A 12	x	22	x	12	S	10	213,00 ZP
A 14	x	25	x	12	S	10	238,00 ZP
A 15	x	25	x	12	S	10	238,00 ZP
A 16	x	28	x	12	S	10	255,00 ZP
A 17	x	28	x	12	S	10	285,00 ZP
A 18	x	32	x	14	S	10	305,00 ZP
A 20	x	32	x	14	S	10	310,00 ZP
A 22	x	36	x	14	S	10	360,00 ZP
A 25	x	40	x	16	S	10	475,00 ZP
A 28	x	45	x	16	S	10	720,00 ZP
A 30	x	45	x	16	S	10	720,00 ZP
A 32	x	50	x	16	S	10	730,00 ZP
A 35	x	56	x	16	S	5	830,00 ZP
A 36	x	56	x	16	S	5	830,00 ZP
A 40	x	63	x	18	S	5	1070,00 ZP
A 42	x	63	x	18	S	5	1200,00 ZP
A 45	x	70	x	18	S	1	1270,00 ZP
A 50	x	80	x	18	S	1	1640,00 ZP
A 55	x	80	x	18	S	1	1850,00 ZP
A 60	x	90	x	20	S	1	2250,00 ZP
A 65	x	100	x	20	S	1	2700,00 ZP
A 70	x	100	x	20	S	1	2800,00 ZP
A 75	x	110	x	22	S	1	3300,00 ZP
A 80	x	110	x	22	S	1	3750,00 ZP
A 90	x	125	x	22	S	1	6100,00 ZP

DIN	00705.002	RAZ 340

705

Steel **type B**



Adjusting rings, light range, B = with drilling for taper pin

Dimensions → TI-110

Inside/nominal ∅ x outside ∅ x width

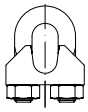
B 4	x	8	x	5	S	25	133,00
B 5	x	10	x	6	S	25	109,00
B 6	x	12	x	8	S	25	109,00
B 8	x	16	x	8	S	25	126,00
B 10	x	20	x	10	S	25	145,00
B 12	x	22	x	12	S	10	176,00
B 14	x	25	x	12	S	10	197,00
B 15	x	25	x	12	S	10	197,00

Dimensions						PU	Pieces	€/100/Mat.
B 16	x	28	x	12		S	10	221,00
B 18	x	32	x	14		S	10	260,00
B 20	x	32	x	14		S	10	260,00
B 22	x	36	x	14		S	10	325,00
B 24	x	40	x	16		S	10	385,00
B 25	x	40	x	16		S	10	385,00
B 28	x	45	x	16		S	10	485,00
B 30	x	45	x	16		S	10	485,00
B 32	x	50	x	16		S	10	590,00
B 35	x	56	x	16		S	5	670,00
B 36	x	56	x	16		S	5	670,00
B 40	x	63	x	18		S	1	950,00
B 45	x	70	x	18		S	1	1140,00
B 50	x	80	x	18		S	1	1490,00
B 55	x	80	x	18		S	1	1490,00
B 60	x	90	x	20		S	1	2090,00
B 65	x	100	x	20		S	1	2600,00
B 70	x	100	x	20		S	1	2600,00
B 80	x	110	x	22		S	1	3450,00
B 85	x	125	x	22		S	1	5400,00
B 90	x	125	x	22		S	1	5400,00
B 100	x	140	x	25		S	1	7700,00

~DIN	00741.010	RAZ 341

741

Steel
zinc plated



Clips for free ends of wire ropes

Thimbles ➔ DIN 6899

Dimensions ➔ TI-130 Corrosion protection ➔ TI-217

Stainless ➔ S. 449

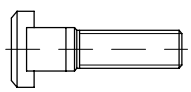
safety wire rope grips
➔ DIN 1142/EN 13411-5 on request

For rope ∅	max./thread ∅			
3	MM / M 4	S	100	39,00 ZP
5	MM / M 5	S	100	41,50 ZP
6,5	MM / M 5	S	100	44,50 ZP
8	MM / M 6	S	100	60,00 ZP
11	MM / M 8	S	20	153,00 ZP
13	MM / M 10	S	10	205,00 ZP
16	MM / M 12	S	10	270,00 ZP

DIN	00787.800	RAZ 340

787

8.8



T-slot screws

Dimensions ➔ TI-34 Tightening torque ➔ TI-230
Mech. properties ➔ TI-220

T-slot nuts ➔ DIN 508

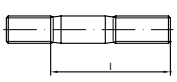
8	M 8	x	32	S	25	1890,00
8	M 8	x	40	S	25	2050,00
8	M 8	x	50	S	25	2090,00
10	M 10	x	40	S	25	1910,00
10	M 10	x	50	S	25	2000,00

Dimensions						PU	Pieces	€/100/Mat.
10	M 10	x	65			S	25	2050,00
12	M 12	x	40			S	10	1330,00
12	M 12	x	50			S	10	1350,00
12	M 12	x	65			S	10	1440,00
12	M 12	x	80			S	10	2160,00
12	M 12	x	100			S	10	2330,00
12	M 12	x	125			S	10	2470,00
18	M 16	x	63			S	10	1740,00
16	M 16	x	80			S	10	1830,00
16	M 16	x	100			S	10	1940,00
18	M 16	x	100			S	10	1830,00
16	M 16	x	125			S	10	2220,00
16	M 16	x	160			S	10	2270,00
20	M 20	x	80			S	5	2550,00
20	M 20	x	100			S	5	2650,00
20	M 20	x	125			S	5	2800,00
20	M 20	x	160			S	5	2950,00
20	M 20	x	200			S	5	3450,00
20	M 20	x	250			S	5	6200,00
28	M 24	x	100			S	5	5900,00
24	M 24	x	160			S	5	7000,00
28	M 24	x	160			S	5	7000,00

DIN	00835.500	RAZ 340

835

5.8



Studs, metal end ≈ 2 d

Dimensions ➔ TI-18 Mech. properties ➔ TI-220

Stainless ➔ S. 449

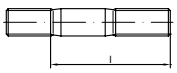
M 6	x	16			S	100	40,50
M 6	x	18			S	100	43,50
M 6	x	20			S	100	45,50
M 6	x	25			S	100	47,00
M 6	x	30			S	100	48,50
M 6	x	35			S	100	52,00
M 6	x	40			S	100	55,00
M 6	x	45			S	100	56,00
M 6	x	70			S	100	68,00
M 6	x	100			S	100	91,00
M 8	x	18			S	100	116,00
M 8	x	20			S	100	116,00
M 8	x	25			S	100	134,00
M 8	x	30			S	100	105,00
M 8	x	35			S	100	110,00
M 8	x	40			S	100	116,00
M 8	x	45			S	100	121,00
M 8	x	50			S	100	127,00
M 8	x	60			S	100	138,00
M 8	x	65			S	100	148,00
M 8	x	70			S	100	149,00
M 8	x	80			S	100	156,00
M 8	x	90			S	100	170,00
M 10	x	20			S	100	114,00
M 10	x	25			S	100	145,00
M 10	x	30			S	100	148,00
M 10	x	35			S	100	150,00
M 10	x	40			S	100	151,00
M 10	x	45			S	100	154,00
M 10	x	50			S	100	161,00
M 10	x	60			S	50	176,00
M 10	x	70			S	50	195,00
M 10	x	100			S	50	240,00
M 12	x	25			S	50	149,00
M 12	x	30			S	50	167,00

Dimensions						PU	Pieces	€/100/Mat.
M 12	x	35			S	50	170,00
M 12	x	40			S	50	177,00
M 12	x	45			S	50	187,00
M 12	x	50			S	50	199,00
M 12	x	55			S	50	209,00
M 12	x	60			S	50	219,00
M 12	x	80			S	25	265,00
M 16	x	35			S	25	226,00
M 16	x	40			S	25	240,00
M 16	x	50			S	25	270,00
M 16	x	55			S	25	285,00
M 16	x	60			S	25	300,00
M 16	x	65			S	25	315,00
M 16	x	80			S	25	360,00
M 16	x	100			S	25	420,00

DIN	00835.800	RAZ 340

835

8.8



Studs, metal end ≈ 2 d

Dimensions ➔ TI-18 Mech. properties ➔ TI-220

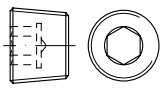
Stainless ➔ S. 449

M 8	x	16			S	100	95,00
M 8	x	18			S	100	95,00
M 8	x	20			S	100	146,00
M 8	x	25			S	100	168,00
M 8	x	30			S	100	181,00
M 8	x	35			S	100	193,00
M 8	x	40			S	100	206,00
M 10	x	25			S	100	183,00
M 10	x	30			S	100	186,00
M 10	x	35			S	100	190,00
M 10	x	40			S	50	193,00
M 10	x	50			S	50	205,00
M 10	x	55			S	50	210,00
M 10	x	60			S	50	240,00
M 12	x	35			S	50	214,00
M 12	x	40			S	50	226,00
M 12	x	45			S	50	242,00

DIN	00906.500	RAZ 350

906

Steel **taper fine**



Hexagon socket pipe plugs with taper fine pitch thread

Dimensions ➔ TI-22

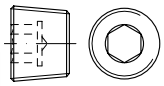
Stainless ➔ S. 449
Brass ➔ S. 576

M 8	x	1			S	100	51,00
M 10	x	1			S	100	52,00
M 12	x	1,5			S	50	67,00
M 14	x	1,5			S	50	80,00
M 16	x	1,5			S	50	86,00

Dimensions			PU	Pieces	€/100/Mat.
M 18	x	1,5	S	25	104,00
M 20	x	1,5	S	25	134,00
M 22	x	1,5	S	25	145,00
M 24	x	1,5	S	25	148,00
M 26	x	1,5	S	25	222,00
M 27	x	2	S	10	300,00
M 30	x	1,5	S	10	310,00
M 30	x	2	S	10	355,00
M 33	x	2	S	10	440,00
M 36	x	1,5	S	10	590,00
M 36	x	2	S	10	590,00
M 38	x	1,5	S	10	730,00
M 42	x	1,5	S	10	870,00

DIN 00906.510 RAZ 350

906 Steel zinc plated taper fine



Hexagon socket pipe plugs with taper fine pitch thread

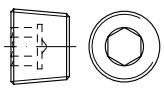
Dimensions → TI-22 Corrosion protection → TI-217

Stainless → S. 449
Brass → S. 576

M 8	x	1	S	100	61,00 ZP
M 10	x	1	S	100	63,00 ZP
M 12	x	1,5	S	50	80,00 ZP
M 16	x	1,5	S	50	103,00 ZP
M 20	x	1,5	S	25	154,00 ZP
M 24	x	1,5	S	25	173,00 ZP
M 30	x	1,5	S	10	335,00 ZP
M 33	x	2	S	10	470,00 ZP

DIN 00906.504 RAZ 350

906 Steel taper pipe R



Hexagon socket pipe plugs, R = with taper pipe thread

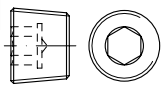
Dimensions → TI-22

Stainless → S. 449
Brass → S. 577

R 1/8			S	100	52,00
R 1/4			S	100	70,00
R 3/8			S	50	89,00
R 1/2			S	50	121,00
R 3/4			S	25	217,00
R 1			S	25	300,00
R 1 1/4			S	10	800,00
R 1 1/2			S	1	1350,00
R 1 3/4			S	1	1950,00
R 2			S	1	2950,00

Dimensions			PU	Pieces	€/100/Mat.
DIN		00906.514			RAZ 350

906 Steel zinc plated taper pipe R



Hexagon socket pipe plugs, R = with taper pipe thread

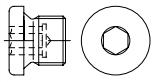
Dimensions → TI-22 Corrosion protection → TI-217

Stainless → S. 449
Brass → S. 577

R 1/8			S	100	55,00 ZP
R 1/4			S	100	73,00 ZP
R 3/8			S	50	94,00 ZP
R 1/2			S	50	130,00 ZP
R 3/4			S	25	240,00 ZP
R 1			S	25	320,00 ZP

DIN 00908.500 RAZ 350

908 Steel cyl. fine



Hexagon socket screw plugs with cylindrical fine pitch thread

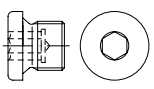
Dimensions → TI-22

Stainless → S. 449

M 8	x	1	S	100	52,00
M 10	x	1	S	100	52,00
M 12	x	1,5	S	50	84,00
M 14	x	1,5	S	50	110,00
M 16	x	1,5	S	50	144,00
M 18	x	1,5	S	25	152,00
M 20	x	1,5	S	25	184,00
M 22	x	1,5	S	25	209,00
M 24	x	1,5	S	25	236,00
M 26	x	1,5	S	25	300,00
M 27	x	2	S	10	340,00
M 30	x	1,5	S	10	380,00
M 30	x	2	S	10	455,00
M 33	x	2	S	10	510,00
M 36	x	1,5	S	10	650,00
M 36	x	2	S	10	650,00
M 38	x	1,5	S	10	790,00
M 42	x	1,5	S	1	920,00
M 45	x	1,5	S	1	1330,00
M 48	x	1,5	S	1	1340,00
M 52	x	1,5	S	1	1740,00
M 52	x	2	S	1	1910,00
M 56	x	2	S	1	2430,00
M 64	x	2	S	1	3200,00

Dimensions			PU	Pieces	€/100/Mat.
DIN		00908.510			RAZ 350

908 Steel zinc plated cyl. fine



Hexagon socket screw plugs with cylindrical fine pitch thread

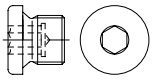
Dimensions → TI-22 Corrosion protection → TI-217

Stainless → S. 449

M 8	x	1	S	100	55,00 ZP
M 10	x	1	S	100	55,00 ZP
M 12	x	1,5	S	50	89,00 ZP
M 14	x	1,5	S	50	117,00 ZP
M 16	x	1,5	S	50	153,00 ZP
M 18	x	1,5	S	100	158,00 ZP
M 20	x	1,5	S	25	226,00 ZP
M 22	x	1,5	S	25	250,00 ZP
M 24	x	1,5	S	25	330,00 ZP
M 26	x	1,5	S	25	394,00 ZP
M 30	x	1,5	S	10	420,00 ZP
M 36	x	1,5	S	10	1035,00 ZP
M 36	x	1,5	S	10	1290,00 ZP
M 42	x	1,5	S	1	1680,00 ZP

DIN 00908.504 RAZ 350

908 Steel cyl. pipe G



Hexagon socket screw plugs, G = with cylindrical pipe thread

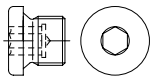
Dimensions → TI-22

Stainless → S. 450
Brass → S. 577

G 1/8 A			S	100	76,00
G 1/4 A			S	100	109,00
G 3/8 A			S	50	129,00
G 1/2 A			S	50	184,00
G 3/4 A			S	25	280,00
G 1 A			S	25	485,00
G 1 1/8 A			S	10	1080,00
G 1 1/4 A			S	1	1160,00
G 1 1/2 A			S	1	1200,00
G 1 3/4 A			S	1	1840,00
G 2 A			S	1	1930,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00908.514		RAZ 350

908 Steel zinc plated — cyl. pipe G



Hexagon socket screw plugs, G = with cylindrical pipe thread

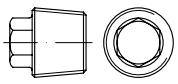
Dimensions → TI-22 Corrosion protection → TI-217

Stainless → S. 450
Brass → S. 577

G	1/8 A	S	100	80,00 ZP
G	1/4 A	S	100	116,00 ZP
G	3/8 A	S	50	138,00 ZP
G	1/2 A	S	50	203,00 ZP
G	3/4 A	S	25	315,00 ZP
G	1 A	S	25	540,00 ZP
G	1 1/4 A	S	1	1430,00 ZP
G	1 1/2 A	S	1	1575,00 ZP
G	2 A	S	1	2900,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00909.500		RAZ 350

909 Steel — taper fine



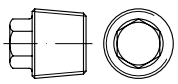
Hexagon head pipe plugs with taper fine pitch thread

Dimensions → TI-23

M	16	x 1,5	S	50	217,00
M	18	x 1,5	S	25	248,00
M	24	x 1,5	S	25	315,00
M	30	x 1,5	S	10	620,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00909.504		RAZ 350

909 Steel — taper pipe R



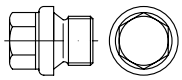
Hexagon head pipe plugs, R = with taper pipe thread

Dimensions → TI-23

R	1/8	S	100	164,00
R	1/4	S	100	202,00
R	3/8	S	50	205,00
R	1/2	S	50	285,00
R	3/4	S	25	430,00
R	1	S	25	1010,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00910.500		RAZ 350

910 Steel — cyl. fine



Hexagon head screw plugs, heavy type, cylindrical fine pitch thread

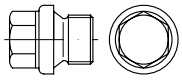
Dimensions → TI-23

Stainless → S. 450
Brass → S. 577

M	8	x 1	S	100	80,00
M	10	x 1	S	100	86,00
M	12	x 1,5	S	50	122,00
M	14	x 1,5	S	50	140,00
M	16	x 1,5	S	50	149,00
M	18	x 1,5	S	25	178,00
M	20	x 1,5	S	25	211,00
M	22	x 1,5	S	25	295,00
M	24	x 1,5	S	25	310,00
M	26	x 1,5	S	25	360,00
M	27	x 2	S	10	470,00
M	30	x 1,5	S	10	520,00
M	30	x 2	S	10	570,00
M	33	x 2	S	10	610,00
M	36	x 1,5	S	10	720,00
M	36	x 2	S	10	720,00
M	38	x 1,5	S	5	810,00
M	42	x 1,5	S	1	1130,00
M	42	x 2	S	1	1260,00
M	45	x 1,5	S	1	1740,00
M	45	x 2	S	1	1350,00
M	48	x 1,5	S	1	1740,00
M	48	x 2	S	1	1740,00
M	52	x 1,5	S	1	1930,00
M	56	x 2	S	1	2420,00
M	64	x 2	S	1	3500,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00910.510		RAZ 350

910 Steel zinc plated — cyl. fine



Hexagon head screw plugs, heavy type, cylindrical fine pitch thread

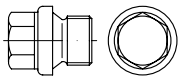
Dimensions → TI-23 Corrosion protection → TI-217

Stainless → S. 450
Brass → S. 577

M	10	x 1	S	100	91,00 ZP
M	12	x 1,5	S	50	130,00 ZP
M	14	x 1,5	S	50	148,00 ZP
M	16	x 1,5	S	50	162,00 ZP
M	18	x 1,5	S	25	198,00 ZP
M	20	x 1,5	S	25	238,00 ZP
M	22	x 1,5	S	25	325,00 ZP
M	24	x 1,5	S	25	345,00 ZP
M	26	x 1,5	S	25	395,00 ZP
M	27	x 2	S	10	710,00 ZP
M	30	x 1,5	S	10	560,00 ZP
M	30	x 2	S	10	860,00 ZP
M	33	x 2	S	10	910,00 ZP
M	36	x 1,5	S	10	1080,00 ZP
M	36	x 2	S	10	1080,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00910.504		RAZ 350

910 Steel — cyl. pipe G



Hexagon head screw plugs, heavy type, G = with cylindrical pipe thread

Dimensions → TI-23

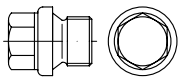
Stainless → S. 450
Brass → S. 577

Type with ventilation and sealing → DIN 5586

G	1/8 A	S	100	81,00
G	1/4 A	S	100	116,00
G	3/8 A	S	50	150,00
G	1/2 A	S	50	184,00
G	5/8 A	S	25	305,00
G	3/4 A	S	25	385,00
G	7/8 A	S	25	720,00
G	1 A	S	25	500,00
G	1 1/8 A	S	1	1010,00
G	1 1/4 A	S	1	1180,00
G	1 1/2 A	S	1	1500,00
G	1 3/4 A	S	1	2100,00
G	2 A	S	1	2390,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00910.514		RAZ 350

910 Steel zinc plated — cyl. pipe G



Hexagon head screw plugs, heavy type, G = with cylindrical pipe thread

Dimensions → TI-23 Corrosion protection → TI-217

Stainless → S. 450
Brass → S. 577

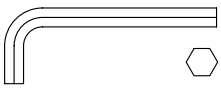
Type with ventilation and sealing → DIN 5586

G	1/8 A	S	100	95,00 ZP
G	1/4 A	S	100	125,00 ZP
G	3/8 A	S	50	164,00 ZP
G	1/2 A	S	50	210,00 ZP
G	3/4 A	S	25	440,00 ZP
G	1 A	S	25	600,00 ZP
G	1 1/4 A	S	1	1320,00 ZP
G	1 1/2 A	S	1	1660,00 ZP
G	2 A	S	1	2700,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00911.204		RAZ 350

911

Steel QT blackened



Hexagon socket screw keys (hexagon socket wrenchs)

(QT = quenched and tempered)

DIN 911 → replaced by ISO 2936

SW 0,7	S	100	77,00
SW 0,7	K	10	110,00
SW 0,9	S	100	72,00
SW 0,9	K	10	114,00
SW 1,3	S	100	51,00
SW 1,3	K	10	85,00
SW 1,5	S	100	30,00
SW 1,5	K	10	54,00
SW 2	S	100	31,50
SW 2	K	10	65,00
SW 2,5	S	100	36,00
SW 2,5	K	10	70,00
SW 3	S	100	42,00
SW 3	K	10	85,00
SW 4	S	100	46,50
SW 4	K	10	86,00
SW 5	S	100	57,00
SW 5	K	10	100,00
SW 6	S	50	78,00
SW 6	K	10	120,00
SW 7	S	10	125,00
SW 8	S	10	133,00
SW 10	S	10	192,00
SW 12	S	5	315,00
SW 14	S	5	445,00
SW 17	S	5	790,00
SW 19	S	5	1130,00
SW 22	S	1	1670,00
SW 27	S	1	3200,00

DIN	00911.210	RAZ 350

911

Steel QT zinc plated

Hexagon socket screw keys (hexagon socket wrenchs)

(QT = quenched and tempered)

Corrosion protection → TI-217

DIN 911 → replaced by ISO 2936

SW 4	S	100	56,00 ZP
SW 5	S	100	68,00 ZP
SW 6	S	50	90,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00912.800		RAZ 360

912

8.8

Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 450

DIN 912 → replaced by ISO 4762

M 3	x	4	S	500	27,50
M 3	x	5	S	500	27,50
M 3	x	6	S	500	7,70
M 3	x	8	S	500	5,30
M 3	x	10	S	500	4,40
M 3	x	12	S	500	4,65
M 3	x	14	S	500	7,55
M 3	x	16	S	500	4,85
M 3	x	18	S	500	5,05
M 3	x	20	S	500	5,20
M 3	x	22	S	500	9,75
M 3	x	25	S	500	5,55
M 3	x	30	S	500	6,25
M 3	x	35	S	500	24,25
M 3	x	35	K	100	27,25
M 3	x	40	S	500	25,60
M 3	x	40	K	100	28,65
M 3	x	45	S	500	64,90
M 3	x	45	K	100	67,90
M 3	x	50	S	500	72,20
M 3	x	50	K	100	75,20
M 4	x	4	S	500	86,00
M 4	x	5	S	500	16,10
M 4	x	5	K	100	19,10
M 4	x	6	S	500	9,25
M 4	x	6	K	100	12,30
M 4	x	8	S	500	5,40
M 4	x	8	K	100	8,40
M 4	x	10	S	500	4,00
M 4	x	10	K	100	7,05
M 4	x	12	S	500	4,30
M 4	x	12	K	100	7,30
M 4	x	14	S	500	6,85
M 4	x	16	S	500	4,10
M 4	x	16	K	100	7,15
M 4	x	18	S	500	4,35
M 4	x	18	K	100	7,35
M 4	x	20	S	500	4,40
M 4	x	20	K	100	7,50
M 4	x	22	S	500	8,40
M 4	x	25	S	500	4,90
M 4	x	25	K	100	8,00
M 4	x	28	S	500	9,70
M 4	x	30	S	500	5,40
M 4	x	30	K	100	8,45
M 4	x	35	S	500	6,50
M 4	x	35	K	100	9,55
M 4	x	40	S	500	6,85
M 4	x	40	K	100	9,90
M 4	x	45	S	500	14,85
M 4	x	45	K	100	17,85
M 4	x	50	S	500	16,40
M 4	x	50	K	100	19,45
M 4	x	55	S	200	19,70
M 4	x	55	K	100	22,70
M 4	x	60	S	200	19,70
M 4	x	60	K	100	22,70
M 4	x	65	S	200	30,80
M 4	x	65	K	100	33,80
M 4	x	70	S	200	30,80
M 4	x	70	K	100	33,80
M 4	x	75	S	200	55,95
M 4	x	80	S	200	64,30
M 4	x	85	S	200	247,00
M 4	x	90	S	200	272,00
M 4	x	95	S	200	298,00
M 4	x	100	S	200	322,00
M 4	x	110	S	200	345,00
M 4	x	120	S	200	395,00
M 5	x	5	S	500	87,90
M 5	x	6	S	500	9,75
M 5	x	6	K	100	12,80
M 5	x	8	S	500	7,55
M 5	x	8	K	100	10,55
M 5	x	10	S	500	3,90
M 5	x	10	K	100	6,90
M 5	x	12	S	500	4,00
M 5	x	12	K	100	7,05
M 5	x	14	S	500	6,85
M 5	x	16	S	500	3,90
M 5	x	16	K	100	6,90
M 5	x	18	S	500	4,20
M 5	x	18	K	100	7,20
M 5	x	20	S	500	4,30
M 5	x	20	K	100	7,30
M 5	x	22	S	500	7,70
M 5	x	25	S	500	4,40
M 5	x	25	K	100	7,50
M 5	x	30	S	500	5,45
M 5	x	30	K	100	8,50
M 5	x	35	S	200	5,85
M 5	x	40	S	200	6,20
M 5	x	45	S	200	10,60
M 5	x	50	S	200	15,20
M 5	x	55	S	200	18,75
M 5	x	60	S	200	19,95
M 5	x	65	S	200	28,50
M 5	x	70	S	200	29,05
M 5	x	75	S	200	36,65
M 5	x	80	S	200	38,55
M 5	x	85	S	200	53,60
M 5	x	90	S	200	49,10
M 5	x	95	S	200	63,05
M 5	x	100	S	200	52,50
M 5	x	105	S	100	136,00
M 5	x	110	S	200	58,95
M 5	x	115	S	100	161,00
M 5	x	120	S	100	64,90
M 5	x	125	S	100	274,00
M 5	x	130	S	100	250,00
M 5	x	135	S	100	301,00
M 5	x	140	S	100	420,00
M 5	x	145	S	100	558,00
M 5	x	150	S	100	540,00
M 5	x	155	S	100	566,00
M 5	x	160	S	100	553,00
M 5	x	165	S	100	590,00
M 5	x	170	S	100	586,00
M 5	x	175	S	100	625,00
M 5	x	180	S	100	607,00
M 5	x	185	S	100	745,00
M 5	x	190	S	100	745,00
M 5	x	195	S	100	813,00
M 5	x	200	S	100	795,00
M 5	x	210	S	100	950,00
M 5	x	220	S	100	972,00
M 6	x	6	S	500	25,45
M 6	x	8	S	500	8,55
M 6	x	8	K	100	11,60
M 6	x	10	S	500	4,10
M 6	x	10	K	100	7,15
M 6	x	12	S	500	4,30

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 12	K	100	7,30
M 6 x 14	S	500	6,35
M 6 x 16	S	500	4,00
M 6 x 16	K	100	7,05
M 6 x 18	S	500	4,30
M 6 x 18	K	100	7,30
M 6 x 20	S	500	4,35
M 6 x 20	K	100	7,35
M 6 x 22	S	500	7,70
M 6 x 22	K	100	10,75
M 6 x 25	S	500	4,40
M 6 x 25	K	100	7,50
M 6 x 28	S	500	12,05
M 6 x 30	S	500	5,15
M 6 x 30	K	100	8,15
M 6 x 35	S	200	5,55
M 6 x 40	S	200	6,20
M 6 x 45	S	200	8,10
M 6 x 50	S	200	8,50
M 6 x 55	S	200	13,55
M 6 x 60	S	200	14,40
M 6 x 65	S	200	19,45
M 6 x 70	S	200	19,95
M 6 x 75	S	200	27,80
M 6 x 80	S	200	28,50
M 6 x 85	S	200	37,20
M 6 x 90	S	200	33,60
M 6 x 95	S	200	87,90
M 6 x 100	S	200	39,40
M 6 x 105	S	100	87,90
M 6 x 110	S	100	57,40
M 6 x 115	S	100	111,00
M 6 x 120	S	100	66,70
M 6 x 125	S	100	152,00
M 6 x 130	S	100	107,00
M 6 x 135	S	100	170,00
M 6 x 140	S	100	145,00
M 6 x 145	S	100	329,00
M 6 x 150	S	100	172,00
M 6 x 155	S	100	428,00
M 6 x 160	S	100	486,00
M 6 x 165	S	100	510,00
M 6 x 170	S	100	583,00
M 6 x 175	S	100	656,00
M 6 x 180	S	100	656,00
M 6 x 185	S	100	801,00
M 6 x 190	S	100	801,00
M 6 x 195	S	100	874,00
M 6 x 200	S	100	874,00
M 6 x 210	S	100	923,00
M 6 x 220	S	100	971,00
M 6 x 230	S	100	1048,00
M 6 x 240	S	100	1048,00
M 6 x 250	S	100	1093,00
M 6 x 280	S	100	1179,00
M 6 x 300	S	100	1310,00
M 8 x 8	S	200	22,70
M 8 x 10	S	200	10,10
M 8 x 12	S	200	10,55
M 8 x 14	S	200	10,60
M 8 x 16	S	200	6,50
M 8 x 18	S	200	6,90
M 8 x 20	S	200	6,60
M 8 x 22	S	200	11,80
M 8 x 25	S	200	7,20
M 8 x 30	S	200	7,55
M 8 x 35	S	200	8,25
M 8 x 40	S	200	9,35
M 8 x 45	S	200	9,55
M 8 x 50	S	200	10,70
M 8 x 55	S	200	12,60
M 8 x 60	S	200	14,05
M 8 x 65	S	200	20,35
M 8 x 70	S	200	20,95
M 8 x 75	S	200	25,95

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 80	S	200	33,10
M 8 x 85	S	100	49,00
M 8 x 90	S	100	41,10
M 8 x 95	S	100	68,55
M 8 x 100	S	100	45,85
M 8 x 105	S	100	68,55
M 8 x 110	S	100	54,25
M 8 x 115	S	100	106,00
M 8 x 120	S	100	63,70
M 8 x 125	S	100	135,00
M 8 x 130	S	100	84,30
M 8 x 135	S	100	143,00
M 8 x 140	S	100	93,40
M 8 x 145	S	100	244,00
M 8 x 150	S	100	158,00
M 8 x 155	S	100	272,00
M 8 x 160	S	100	200,00
M 8 x 165	S	100	293,00
M 8 x 170	S	100	306,00
M 8 x 180	S	100	275,00
M 8 x 190	S	100	362,00
M 8 x 200	S	100	290,00
M 8 x 210	S	100	401,00
M 8 x 220	S	100	421,00
M 8 x 230	S	100	452,00
M 8 x 240	S	100	485,00
M 8 x 250	S	100	501,00
M 8 x 260	S	100	534,00
M 8 x 270	S	100	551,00
M 8 x 280	S	100	568,00
M 8 x 300	S	100	601,00
M 10 x 10	S	200	85,50
M 10 x 12	S	200	37,35
M 10 x 14	S	200	29,05
M 10 x 16	S	200	19,15
M 10 x 18	S	200	38,90
M 10 x 20	S	200	11,95
M 10 x 22	S	200	23,40
M 10 x 25	S	200	12,30
M 10 x 28	S	200	26,70
M 10 x 30	S	200	13,25
M 10 x 35	S	100	14,05
M 10 x 40	S	100	15,30
M 10 x 45	S	100	16,90
M 10 x 50	S	100	18,00
M 10 x 55	S	100	19,30
M 10 x 60	S	100	20,90
M 10 x 65	S	100	22,65
M 10 x 70	S	100	23,15
M 10 x 75	S	100	28,60
M 10 x 80	S	100	29,40
M 10 x 85	S	100	58,35
M 10 x 90	S	100	39,20
M 10 x 95	S	100	102,00
M 10 x 100	S	100	42,70
M 10 x 105	S	100	112,00
M 10 x 110	S	100	48,85
M 10 x 115	S	100	121,00
M 10 x 120	S	50	60,05
M 10 x 125	S	50	137,00
M 10 x 130	S	50	88,55
M 10 x 135	S	50	168,00
M 10 x 140	S	50	108,00
M 10 x 150	S	50	148,00
M 10 x 155	S	50	233,00
M 10 x 160	S	50	162,00
M 10 x 170	S	50	265,00
M 10 x 180	S	50	244,00
M 10 x 185	S	50	361,00
M 10 x 190	S	50	290,00
M 10 x 200	S	50	271,00
M 10 x 210	S	50	529,00
M 10 x 220	S	50	529,00
M 10 x 230	S	50	550,00
M 10 x 240	S	50	550,00

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 250	S	50	682,00
M 10 x 260	S	50	659,00
M 10 x 270	S	50	726,00
M 10 x 280	S	50	726,00
M 10 x 290	S	50	792,00
M 10 x 300	S	50	792,00
M 10 x 320	S	50	1055,00
M 10 x 340	S	50	1187,00
M 12 x 14	S	100	113,00
M 12 x 16	S	100	23,80
M 12 x 18	S	100	41,05
M 12 x 20	S	100	22,10
M 12 x 22	S	100	37,70
M 12 x 25	S	100	19,35
M 12 x 30	S	100	19,30
M 12 x 35	S	100	19,55
M 12 x 40	S	100	20,55
M 12 x 45	S	100	21,55
M 12 x 50	S	100	23,45
M 12 x 55	S	100	25,85
M 12 x 60	S	100	27,80
M 12 x 65	S	50	31,85
M 12 x 70	S	50	32,85
M 12 x 75	S	50	34,45
M 12 x 80	S	50	34,85
M 12 x 85	S	50	77,65
M 12 x 90	S	50	43,75
M 12 x 95	S	50	121,00
M 12 x 100	S	50	53,85
M 12 x 105	S	50	130,00
M 12 x 110	S	50	61,85
M 12 x 115	S	50	143,00
M 12 x 120	S	50	72,20
M 12 x 125	S	50	161,00
M 12 x 130	S	50	103,00
M 12 x 135	S	50	177,00
M 12 x 140	S	50	122,00
M 12 x 145	S	50	199,00
M 12 x 150	S	50	157,00
M 12 x 155	S	50	213,00
M 12 x 160	S	50	189,00
M 12 x 165	S	50	310,00
M 12 x 170	S	50	255,00
M 12 x 180	S	50	255,00
M 12 x 190	S	50	295,00
M 12 x 200	S	50	295,00
M 12 x 210	S	25	756,00
M 12 x 220	S	25	547,00
M 12 x 230	S	25	811,00
M 12 x 240	S	25	614,00
M 12 x 250	S	25	882,00
M 12 x 260	S	25	677,00
M 12 x 270	S	25	941,00
M 12 x 280	S	25	721,00
M 12 x 290	S	25	1128,00
M 12 x 300	S	25	778,00
M 12 x 310	S	25	983,00
M 12 x 320	S	25	983,00
M 12 x 340	S	25	1164,00
M 12 x 360	S	25	1638,00
M 12 x 380	S	25	1747,00
M 12 x 400	S	25	1820,00
M 14 x 20	S	100	91,00
M 14 x 25	S	100	67,35
M 14 x 30	S	100	60,35
M 14 x 35	S	100	69,75
M 14 x 40	S	100	62,50
M 14 x 45	S	50	71,00
M 14 x 50	S	50	69,75
M 14 x 55	S	50	87,35
M 14 x 60	S	50	80,05
M 14 x 65	S	50	101,00
M 14 x 70	S	50	102,00
M 14 x 75	S	50	113,00
M 14 x 80	S	50	118,00

Dimensions	PU	Pieces	€/100/Mat.
M 14 x 85	S	50	127,00
M 14 x 90	S	50	127,00
M 14 x 95	S	50	150,00
M 14 x 100	S	50	140,00
M 14 x 110	S	50	168,00
M 14 x 120	S	50	184,00
M 14 x 130	S	50	210,00
M 14 x 140	S	25	219,00
M 14 x 150	S	25	283,00
M 14 x 160	S	25	492,00
M 14 x 170	S	25	519,00
M 14 x 180	S	25	543,00
M 14 x 190	S	25	560,00
M 14 x 200	S	25	578,00
M 14 x 210	S	25	875,00
M 14 x 220	S	25	695,00
M 14 x 230	S	25	909,00
M 14 x 240	S	25	721,00
M 14 x 250	S	25	951,00
M 14 x 260	S	25	754,00
M 14 x 270	S	25	1005,00
M 14 x 280	S	25	796,00
M 14 x 290	S	25	1160,00
M 14 x 300	S	25	853,00
M 16 x 16	S	50	267,00
M 16 x 18	S	50	267,00
M 16 x 20	S	50	81,25
M 16 x 25	S	50	59,70
M 16 x 30	S	50	38,10
M 16 x 35	S	50	38,55
M 16 x 40	S	50	40,50
M 16 x 45	S	50	43,45
M 16 x 50	S	50	47,35
M 16 x 55	S	50	50,65
M 16 x 60	S	50	52,55
M 16 x 65	S	25	61,25
M 16 x 70	S	25	61,25
M 16 x 75	S	25	68,55
M 16 x 80	S	25	68,55
M 16 x 85	S	25	178,00
M 16 x 90	S	25	83,10
M 16 x 95	S	25	141,00
M 16 x 100	S	25	91,00
M 16 x 110	S	25	120,00
M 16 x 120	S	25	132,00
M 16 x 130	S	25	151,00
M 16 x 140	S	25	195,00
M 16 x 150	S	25	252,00
M 16 x 160	S	25	264,00
M 16 x 170	S	25	343,00
M 16 x 180	S	25	306,00
M 16 x 190	S	25	491,00
M 16 x 200	S	25	368,00
M 16 x 210	S	25	592,00
M 16 x 220	S	25	444,00
M 16 x 230	S	25	667,00
M 16 x 240	S	25	563,00
M 16 x 250	S	25	612,00
M 16 x 260	S	25	612,00
M 16 x 270	S	25	787,00
M 16 x 280	S	25	662,00
M 16 x 290	S	25	809,00
M 16 x 300	S	25	780,00
M 16 x 310	S	10	1446,00
M 16 x 320	S	10	1315,00
M 16 x 330	S	10	1687,00
M 16 x 340	S	10	1547,00
M 16 x 350	S	10	2009,00
M 16 x 360	S	10	1827,00
M 16 x 370	S	10	2249,00
M 16 x 380	S	10	2042,00
M 16 x 390	S	10	2414,00
M 16 x 400	S	10	2190,00
M 16 x 410	S	10	2640,00
M 16 x 420	S	10	2399,00

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 440	S	10	2556,00
M 16 x 460	S	10	2799,00
M 16 x 480	S	10	2920,00
M 16 x 500	S	10	3503,00
M 16 x 520	S	10	3651,00
M 16 x 540	S	10	3871,00
M 16 x 560	S	10	4162,00
M 16 x 580	S	10	4380,00
M 16 x 600	S	10	4673,00
M 18 x 30	S	50	200,00
M 18 x 35	S	50	200,00
M 18 x 40	S	50	175,00
M 18 x 45	S	50	186,00
M 18 x 50	S	50	190,00
M 18 x 55	S	25	197,00
M 18 x 60	S	25	201,00
M 18 x 65	S	25	222,00
M 18 x 70	S	25	229,00
M 18 x 75	S	25	236,00
M 18 x 80	S	25	242,00
M 18 x 85	S	25	263,00
M 18 x 90	S	25	263,00
M 18 x 100	S	25	293,00
M 18 x 110	S	25	382,00
M 18 x 120	S	25	418,00
M 18 x 130	S	25	443,00
M 18 x 140	S	25	520,00
M 18 x 150	S	25	605,00
M 18 x 160	S	25	658,00
M 18 x 170	S	25	692,00
M 18 x 180	S	25	727,00
M 18 x 190	S	25	754,00
M 18 x 200	S	1	894,00
M 18 x 210	S	1	1166,00
M 18 x 220	S	1	951,00
M 18 x 230	S	1	1310,00
M 18 x 240	S	1	1008,00
M 18 x 250	S	1	1398,00
M 18 x 260	S	1	1073,00
M 18 x 270	S	1	1496,00
M 18 x 280	S	1	1148,00
M 18 x 300	S	1	1229,00
M 18 x 320	S	1	1534,00
M 18 x 350	S	1	2129,00
M 20 x 20	S	25	327,00
M 20 x 25	S	25	327,00
M 20 x 30	S	25	152,00
M 20 x 35	S	25	152,00
M 20 x 40	S	25	86,10
M 20 x 45	S	25	89,75
M 20 x 50	S	25	92,20
M 20 x 55	S	25	98,25
M 20 x 60	S	25	98,25
M 20 x 65	S	25	108,00
M 20 x 70	S	25	108,00
M 20 x 75	S	25	114,00
M 20 x 80	S	25	114,00
M 20 x 85	S	25	862,00
M 20 x 90	S	25	141,00
M 20 x 95	S	25	909,00
M 20 x 100	S	25	150,00
M 20 x 110	S	25	162,00
M 20 x 120	S	25	175,00
M 20 x 130	S	25	254,00
M 20 x 140	S	25	372,00
M 20 x 150	S	25	433,00
M 20 x 160	S	10	437,00
M 20 x 170	S	10	534,00
M 20 x 180	S	10	534,00
M 20 x 190	S	10	635,00
M 20 x 200	S	1	635,00
M 20 x 210	S	1	714,00
M 20 x 220	S	1	714,00
M 20 x 230	S	1	836,00
M 20 x 240	S	1	836,00

Dimensions	PU	Pieces	€/100/Mat.
M 20 x 250	S	1	885,00
M 20 x 260	S	1	885,00
M 20 x 270	S	1	1004,00
M 20 x 280	S	1	1004,00
M 20 x 290	S	1	1098,00
M 20 x 300	S	1	1098,00
M 20 x 310	S	1	1252,00
M 20 x 320	S	1	954,00
M 20 x 330	S	1	1224,00
M 20 x 340	S	1	1244,00
M 20 x 350	S	1	1457,00
M 20 x 360	S	1	1323,00
M 20 x 370	S	1	1691,00
M 20 x 380	S	1	1536,00
M 20 x 390	S	1	1982,00
M 20 x 400	S	1	1801,00
M 20 x 410	S	1	1853,00
M 20 x 420	S	1	1853,00
M 20 x 440	S	1	1985,00
M 20 x 450	S	1	2328,00
M 20 x 460	S	1	2117,00
M 20 x 480	S	1	2250,00
M 20 x 500	S	1	2382,00
M 20 x 520	S	1	3173,00
M 20 x 540	S	1	3293,00
M 20 x 560	S	1	3413,00
M 20 x 580	S	1	3571,00
M 20 x 600	S	1	3770,00
M 22 x 35	S	25	514,00
M 22 x 40	S	25	514,00
M 22 x 45	S	25	514,00
M 22 x 50	S	25	648,00
M 22 x 55	S	25	648,00
M 22 x 60	S	25	648,00
M 22 x 65	S	25	670,00
M 22 x 70	S	25	670,00
M 22 x 75	S	25	700,00
M 22 x 80	S	25	700,00
M 22 x 85	S	25	700,00
M 22 x 90	S	25	749,00
M 22 x 100	S	10	768,00
M 22 x 110	S	1	783,00
M 22 x 120	S	1	801,00
M 22 x 130	S	1	822,00
M 22 x 140	S	1	857,00
M 22 x 150	S	1	879,00
M 22 x 160	S	1	899,00
M 22 x 170	S	1	1072,00
M 22 x 180	S	1	972,00
M 22 x 190	S	1	1154,00
M 22 x 200	S	1	1044,00
M 22 x 210	S	1	1549,00
M 22 x 220	S	1	1237,00
M 22 x 240	S	1	1321,00
M 22 x 250	S	1	1732,00
M 22 x 260	S	1	1387,00
M 22 x 280	S	1	1459,00
M 22 x 300	S	1	1557,00
M 24 x 30	S	25	1025,00
M 24 x 35	S	25	1025,00
M 24 x 40	S	25	588,00
M 24 x 45	S	25	588,00
M 24 x 50	S	25	214,00
M 24 x 55	S	25	236,00
M 24 x 60	S	25	236,00
M 24 x 65	S	25	255,00
M 24 x 70	S	25	255,00
M 24 x 75	S	25	260,00
M 24 x 80	S	25	260,00
M 24 x 85	S	10	873,00
M 24 x 90	S	10	313,00
M 24 x 95	S	10	909,00
M 24 x 100	S	10	324,00
M 24 x 105	S	10	870,00
M 24 x 110	S	10	379,00

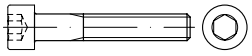
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 24 x 120	S	10	406,00
M 24 x 125	S	10	870,00
M 24 x 130	S	1	470,00
M 24 x 140	S	1	596,00
M 24 x 150	S	1	744,00
M 24 x 160	S	1	654,00
M 24 x 170	S	1	710,00
M 24 x 180	S	1	728,00
M 24 x 190	S	1	785,00
M 24 x 200	S	1	799,00
M 24 x 210	S	1	1365,00
M 24 x 220	S	1	1095,00
M 24 x 230	S	1	1452,00
M 24 x 240	S	1	1166,00
M 24 x 250	S	1	1540,00
M 24 x 260	S	1	1236,00
M 24 x 270	S	1	1655,00
M 24 x 280	S	1	1327,00
M 24 x 290	S	1	1802,00
M 24 x 300	S	1	1446,00
M 24 x 310	S	1	2474,00
M 24 x 320	S	1	2120,00
M 24 x 330	S	1	2516,00
M 24 x 340	S	1	2189,00
M 24 x 350	S	1	2535,00
M 24 x 360	S	1	2478,00
M 24 x 370	S	1	2632,00
M 24 x 380	S	1	2632,00
M 24 x 390	S	1	2787,00
M 24 x 400	S	1	2787,00
M 24 x 410	S	1	2980,00
M 24 x 420	S	1	2980,00
M 24 x 430	S	1	3214,00
M 24 x 440	S	1	3214,00
M 24 x 450	S	1	3405,00
M 24 x 460	S	1	3405,00
M 24 x 470	S	1	3598,00
M 24 x 480	S	1	3598,00
M 24 x 490	S	1	3869,00
M 24 x 500	S	1	3869,00
M 24 x 520	S	1	5275,00
M 24 x 530	S	1	5495,00
M 24 x 540	S	1	5694,00
M 24 x 560	S	1	5908,00
M 24 x 580	S	1	6120,00
M 24 x 600	S	1	6330,00
M 27 x 40	S	10	1274,00
M 27 x 45	S	10	1274,00
M 27 x 50	S	10	892,00
M 27 x 55	S	10	892,00
M 27 x 60	S	10	892,00
M 27 x 65	S	10	925,00
M 27 x 70	S	10	925,00
M 27 x 75	S	10	964,00
M 27 x 80	S	10	964,00
M 27 x 85	S	10	1004,00
M 27 x 90	S	10	1004,00
M 27 x 100	S	10	1049,00
M 27 x 110	S	10	1076,00
M 27 x 120	S	10	1190,00
M 27 x 130	S	1	1237,00
M 27 x 140	S	1	1288,00
M 27 x 150	S	1	1337,00
M 27 x 160	S	1	1370,00
M 27 x 170	S	1	1575,00
M 27 x 180	S	1	1470,00
M 27 x 190	S	1	1665,00
M 27 x 200	S	1	1535,00
M 27 x 210	S	1	2292,00
M 27 x 220	S	1	1658,00
M 27 x 230	S	1	2467,00
M 27 x 240	S	1	1789,00
M 27 x 250	S	1	2625,00
M 27 x 260	S	1	1909,00
M 27 x 270	S	1	2812,00
M 27 x 280	S	1	2032,00
M 27 x 300	S	1	2163,00
M 27 x 320	S	1	4535,00
M 30 x 35	S	10	1638,00
M 30 x 40	S	10	1638,00
M 30 x 45	S	10	1638,00
M 30 x 50	S	10	1082,00
M 30 x 55	S	10	1082,00
M 30 x 60	S	10	1082,00
M 30 x 65	S	10	1106,00
M 30 x 70	S	10	1130,00
M 30 x 75	S	10	1176,00
M 30 x 80	S	10	1176,00
M 30 x 85	S	1	1221,00
M 30 x 90	S	1	1221,00
M 30 x 95	S	1	1221,00
M 30 x 100	S	1	1268,00
M 30 x 110	S	1	1314,00
M 30 x 120	S	1	1362,00
M 30 x 130	S	1	1408,00
M 30 x 140	S	1	1454,00
M 30 x 150	S	1	1524,00
M 30 x 160	S	1	1594,00
M 30 x 170	S	1	1640,00
M 30 x 180	S	1	1688,00
M 30 x 190	S	1	1756,00
M 30 x 200	S	1	1827,00
M 30 x 210	S	1	1968,00
M 30 x 220	S	1	1968,00
M 30 x 230	S	1	2060,00
M 30 x 240	S	1	2060,00
M 30 x 250	S	1	2152,00
M 30 x 260	S	1	2152,00
M 30 x 270	S	1	2292,00
M 30 x 280	S	1	2292,00
M 30 x 290	S	1	3128,00
M 30 x 300	S	1	2478,00
M 30 x 310	S	1	3101,00
M 30 x 320	S	1	2801,00
M 30 x 330	S	1	3169,00
M 30 x 340	S	1	2968,00
M 30 x 350	S	1	3169,00
M 30 x 360	S	1	3269,00
M 30 x 370	S	1	4417,00
M 30 x 380	S	1	4417,00
M 30 x 390	S	1	4802,00
M 30 x 400	S	1	4802,00
M 30 x 420	S	1	4802,00
M 30 x 430	S	1	4802,00
M 30 x 440	S	1	5239,00
M 30 x 450	S	1	5239,00
M 30 x 460	S	1	6184,00
M 30 x 470	S	1	6483,00
M 30 x 480	S	1	6483,00
M 30 x 490	S	1	6911,00
M 30 x 500	S	1	6911,00
M 30 x 540	S	1	12731,00
M 30 x 700	S	1	15124,00
M 33 x 50	S	1	3223,00
M 33 x 55	S	1	3223,00
M 33 x 60	S	1	1319,00
M 33 x 65	S	1	1319,00
M 33 x 70	S	1	1319,00
M 33 x 80	S	1	1319,00
M 33 x 90	S	1	1392,00
M 33 x 100	S	1	1503,00
M 33 x 110	S	1	1568,00
M 33 x 120	S	1	1680,00
M 33 x 130	S	1	1737,00
M 33 x 140	S	1	1836,00
M 33 x 150	S	1	1944,00
M 33 x 160	S	1	1991,00
M 33 x 180	S	1	2187,00
M 33 x 190	S	1	3120,00
M 33 x 200	S	1	2318,00
M 36 x 50	S	1	1747,00
M 36 x 55	S	1	1747,00
M 36 x 60	S	1	1747,00
M 36 x 65	S	1	1747,00
M 36 x 70	S	1	1713,00
M 36 x 75	S	1	1713,00
M 36 x 80	S	1	1713,00
M 36 x 85	S	1	1761,00
M 36 x 90	S	1	1761,00
M 36 x 95	S	1	1811,00
M 36 x 100	S	1	1811,00
M 36 x 110	S	1	1859,00
M 36 x 120	S	1	1944,00
M 36 x 130	S	1	2003,00
M 36 x 140	S	1	2074,00
M 36 x 150	S	1	2155,00
M 36 x 160	S	1	2225,00
M 36 x 170	S	1	2547,00
M 36 x 180	S	1	2400,00
M 36 x 190	S	1	2760,00
M 36 x 200	S	1	2586,00
M 36 x 210	S	1	3032,00
M 36 x 220	S	1	2737,00
M 36 x 230	S	1	3199,00
M 36 x 240	S	1	2888,00
M 36 x 250	S	1	3354,00
M 36 x 260	S	1	3027,00
M 36 x 270	S	1	3573,00
M 36 x 280	S	1	3224,00
M 36 x 290	S	1	3895,00
M 36 x 300	S	1	3516,00
M 36 x 310	S	1	5264,00
M 36 x 320	S	1	4784,00
M 36 x 330	S	1	5657,00
M 36 x 340	S	1	5151,00
M 36 x 350	S	1	6210,00
M 36 x 360	S	1	5646,00
M 36 x 370	S	1	7693,00
M 36 x 380	S	1	6992,00
M 36 x 390	S	1	8123,00
M 36 x 400	S	1	7381,00
M 36 x 420	S	1	14417,00
M 36 x 430	S	1	14691,00
M 36 x 440	S	1	14691,00
M 36 x 500	S	1	15515,00
M 36 x 560	S	1	16334,00
M 36 x 600	S	1	16885,00
M 42 x 70	S	1	2947,00
M 42 x 80	S	1	2947,00
M 42 x 90	S	1	2947,00
M 42 x 100	S	1	3056,00
M 42 x 110	S	1	3056,00
M 42 x 120	S	1	3202,00
M 42 x 130	S	1	3318,00
M 42 x 140	S	1	3275,00
M 42 x 150	S	1	3690,00
M 42 x 160	S	1	3456,00
M 42 x 170	S	1	3972,00
M 42 x 180	S	1	3638,00
M 42 x 190	S	1	4453,00
M 42 x 200	S	1	4184,00
M 42 x 210	S	1	4759,00
M 42 x 220	S	1	4759,00
M 42 x 240	S	1	7870,00
M 42 x 260	S	1	8470,00
M 42 x 270	S	1	16688,00
M 42 x 280	S	1	8989,00
M 42 x 300	S	1	9743,00
M 42 x 350	S	1	18671,00
M 42 x 400	S	1	19742,00
M 42 x 500	S	1	22386,00
M 42 x 560	S	1	23870,00
M 48 x 80	S	1	5438,00
M 48 x 90	S	1	5438,00
M 48 x 100	S	1	5438,00

DIN 912

Dimensions	PU	Pieces	€/100/Mat.
M 48 x 110	S	1	5719,00
M 48 x 120	S	1	6009,00
M 48 x 130	S	1	6239,00
M 48 x 140	S	1	6584,00
M 48 x 150	S	1	6951,00
M 48 x 160	S	1	7330,00
M 48 x 170	S	1	8010,00
M 48 x 180	S	1	8010,00
M 48 x 190	S	1	8581,00
M 48 x 200	S	1	8581,00
M 48 x 210	S	1	11444,00
M 48 x 220	S	1	11444,00
M 48 x 240	S	1	12422,00
M 48 x 260	S	1	13451,00
M 48 x 270	S	1	20596,00
M 48 x 280	S	1	14306,00
M 48 x 300	S	1	14873,00
M 56 x 120	S	1	13051,00
M 56 x 130	S	1	14142,00
M 56 x 140	S	1	14735,00
M 56 x 150	S	1	15779,00
M 56 x 160	S	1	16437,00
M 56 x 180	S	1	17008,00
M 56 x 200	S	1	18132,00
M 56 x 210	S	1	20347,00
M 56 x 220	S	1	18499,00
M 56 x 230	S	1	21468,00
M 56 x 260	S	1	20129,00
M 56 x 280	S	1	21220,00
M 56 x 300	S	1	22850,00

DIN	00912.810	RAZ 360
912	**8.8** **zinc plated**	



Hexagon socket head cap screws

Dimensions → TI-12
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 450

DIN 912 → replaced by ISO 4762

M 3 x 4	S	500	27,60 ZP
M 3 x 5	S	500	27,60 ZP
M 3 x 6	S	500	7,75 ZP
M 3 x 8	S	500	5,40 ZP
M 3 x 10	S	500	4,60 ZP
M 3 x 12	S	500	4,75 ZP
M 3 x 14	S	500	7,70 ZP
M 3 x 16	S	500	5,05 ZP
M 3 x 18	S	500	5,20 ZP
M 3 x 20	S	500	5,40 ZP
M 3 x 22	S	500	10,00 ZP
M 3 x 25	S	500	5,80 ZP
M 3 x 30	S	500	6,50 ZP
M 3 x 35	S	500	24,65 ZP
M 3 x 40	S	500	26,00 ZP
M 3 x 45	S	500	65,50 ZP
M 3 x 50	S	500	72,75 ZP
M 4 x 4	S	500	87,00 ZP
M 4 x 5	S	500	16,50 ZP
M 4 x 6	S	500	9,55 ZP
M 4 x 6	K	100	12,55 ZP
M 4 x 8	S	500	5,60 ZP
M 4 x 8	K	100	8,65 ZP
M 4 x 10	S	500	4,30 ZP
M 4 x 10	K	100	7,30 ZP
M 4 x 12	S	500	4,50 ZP
M 4 x 12	K	100	7,60 ZP
M 4 x 14	S	500	7,25 ZP
M 4 x 16	S	500	4,40 ZP
M 4 x 16	K	100	7,45 ZP
M 4 x 18	S	500	4,70 ZP
M 4 x 20	S	500	4,80 ZP
M 4 x 20	K	100	7,85 ZP
M 4 x 22	S	500	8,95 ZP
M 4 x 25	S	500	5,40 ZP
M 4 x 25	K	100	8,45 ZP
M 4 x 28	S	500	10,50 ZP
M 4 x 30	S	500	5,90 ZP
M 4 x 30	K	100	8,95 ZP
M 4 x 35	S	500	7,10 ZP
M 4 x 35	K	100	10,10 ZP
M 4 x 40	S	500	7,55 ZP
M 4 x 40	K	100	10,50 ZP
M 4 x 45	S	500	15,85 ZP
M 4 x 50	S	500	17,45 ZP
M 4 x 55	S	200	23,60 ZP
M 4 x 60	S	200	23,75 ZP
M 4 x 65	S	200	36,10 ZP
M 4 x 70	S	200	36,20 ZP
M 4 x 75	S	200	62,15 ZP
M 4 x 80	S	200	70,70 ZP
M 4 x 85	S	200	254,00 ZP
M 4 x 90	S	200	279,00 ZP
M 4 x 95	S	200	305,00 ZP
M 4 x 100	S	200	329,00 ZP
M 4 x 110	S	200	354,00 ZP
M 4 x 120	S	200	405,00 ZP
M 5 x 5	S	500	88,30 ZP
M 5 x 6	S	500	10,20 ZP
M 5 x 6	K	100	13,25 ZP
M 5 x 8	S	500	8,05 ZP
M 5 x 8	K	100	11,10 ZP
M 5 x 10	S	500	4,30 ZP
M 5 x 10	K	100	7,30 ZP
M 5 x 12	S	500	4,40 ZP
M 5 x 12	K	100	7,50 ZP
M 5 x 14	S	500	7,50 ZP
M 5 x 14	K	100	10,50 ZP
M 5 x 16	S	500	4,40 ZP
M 5 x 16	K	100	7,50 ZP
M 5 x 18	S	500	4,70 ZP
M 5 x 18	K	100	7,70 ZP
M 5 x 20	S	500	4,80 ZP
M 5 x 20	K	100	7,85 ZP
M 5 x 22	S	500	8,50 ZP
M 5 x 22	K	100	11,50 ZP
M 5 x 25	S	500	5,15 ZP
M 5 x 25	K	100	8,15 ZP
M 5 x 30	S	500	6,30 ZP
M 5 x 30	K	100	9,30 ZP
M 5 x 35	S	200	6,70 ZP
M 5 x 40	S	200	7,15 ZP
M 5 x 45	S	200	12,10 ZP
M 5 x 50	S	200	16,85 ZP
M 5 x 55	S	200	20,60 ZP
M 5 x 60	S	200	21,90 ZP
M 5 x 65	S	200	30,55 ZP
M 5 x 70	S	200	31,25 ZP
M 5 x 75	S	200	39,10 ZP
M 5 x 80	S	200	41,10 ZP
M 5 x 85	S	200	56,35 ZP
M 5 x 90	S	200	51,95 ZP
M 5 x 95	S	200	65,80 ZP
M 5 x 100	S	200	55,70 ZP
M 5 x 110	S	200	62,50 ZP
M 5 x 115	S	100	165,00 ZP
M 5 x 120	S	100	68,55 ZP
M 5 x 125	S	100	278,00 ZP
M 5 x 130	S	100	254,00 ZP
M 5 x 140	S	100	425,00 ZP
M 5 x 150	S	100	544,00 ZP
M 5 x 160	S	100	559,00 ZP
M 5 x 170	S	100	592,00 ZP
M 5 x 180	S	100	612,00 ZP
M 5 x 200	S	100	802,00 ZP
M 6 x 6	S	500	26,20 ZP
M 6 x 6	K	100	29,60 ZP
M 6 x 8	S	500	9,45 ZP
M 6 x 8	K	100	12,45 ZP
M 6 x 10	S	500	4,75 ZP
M 6 x 10	K	100	7,75 ZP
M 6 x 12	S	500	5,00 ZP
M 6 x 12	K	100	8,00 ZP
M 6 x 14	S	500	7,35 ZP
M 6 x 14	K	100	10,35 ZP
M 6 x 16	S	500	4,80 ZP
M 6 x 16	K	100	7,85 ZP
M 6 x 18	S	500	5,15 ZP
M 6 x 18	K	100	8,15 ZP
M 6 x 20	S	500	5,25 ZP
M 6 x 20	K	100	8,30 ZP
M 6 x 22	S	500	9,05 ZP
M 6 x 22	K	100	12,05 ZP
M 6 x 25	S	500	5,55 ZP
M 6 x 25	K	100	8,55 ZP
M 6 x 28	S	500	13,15 ZP
M 6 x 28	K	100	16,15 ZP
M 6 x 30	S	500	6,35 ZP
M 6 x 30	K	100	9,45 ZP
M 6 x 35	S	200	6,95 ZP
M 6 x 40	S	200	7,70 ZP
M 6 x 45	S	200	9,90 ZP
M 6 x 50	S	200	10,40 ZP
M 6 x 55	S	200	16,25 ZP
M 6 x 60	S	200	17,30 ZP
M 6 x 65	S	200	22,55 ZP
M 6 x 70	S	200	23,35 ZP
M 6 x 75	S	200	31,35 ZP
M 6 x 80	S	200	32,30 ZP
M 6 x 85	S	200	41,15 ZP
M 6 x 90	S	200	37,80 ZP
M 6 x 95	S	200	92,00 ZP
M 6 x 100	S	200	44,00 ZP
M 6 x 105	S	100	92,00 ZP
M 6 x 110	S	100	63,05 ZP
M 6 x 115	S	100	116,00 ZP
M 6 x 120	S	100	72,20 ZP
M 6 x 125	S	100	157,00 ZP
M 6 x 130	S	100	114,00 ZP
M 6 x 140	S	100	152,00 ZP
M 6 x 145	S	100	335,00 ZP
M 6 x 150	S	100	178,00 ZP
M 6 x 160	S	100	495,00 ZP
M 6 x 170	S	100	610,00 ZP
M 6 x 180	S	100	665,00 ZP
M 6 x 200	S	100	885,00 ZP
M 6 x 210	S	100	934,00 ZP
M 6 x 220	S	100	983,00 ZP
M 6 x 230	S	100	1060,00 ZP
M 6 x 280	S	100	1195,00 ZP
M 6 x 300	S	100	1337,00 ZP
M 8 x 8	S	200	24,55 ZP
M 8 x 10	S	200	11,60 ZP
M 8 x 12	S	200	12,10 ZP
M 8 x 14	S	200	12,80 ZP
M 8 x 16	S	200	8,25 ZP
M 8 x 18	S	200	8,75 ZP
M 8 x 20	S	200	8,50 ZP
M 8 x 22	S	200	14,45 ZP
M 8 x 25	S	200	9,30 ZP
M 8 x 30	S	200	9,95 ZP
M 8 x 35	S	200	10,90 ZP
M 8 x 40	S	200	12,35 ZP
M 8 x 45	S	200	12,80 ZP
M 8 x 50	S	200	14,25 ZP

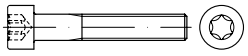
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 55	S	200	16,45 ZP
M 8 x 60	S	200	18,15 ZP
M 8 x 65	S	200	26,30 ZP
M 8 x 70	S	200	27,20 ZP
M 8 x 75	S	200	32,60 ZP
M 8 x 80	S	200	40,15 ZP
M 8 x 85	S	100	61,85 ZP
M 8 x 90	S	100	48,95 ZP
M 8 x 95	S	100	69,54 ZP
M 8 x 100	S	100	54,45 ZP
M 8 x 105	S	100	77,55 ZP
M 8 x 110	S	100	63,70 ZP
M 8 x 115	S	100	117,00 ZP
M 8 x 120	S	100	74,00 ZP
M 8 x 125	S	100	145,30 ZP
M 8 x 130	S	100	95,20 ZP
M 8 x 135	S	100	154,00 ZP
M 8 x 140	S	100	105,00 ZP
M 8 x 145	S	100	256,00 ZP
M 8 x 150	S	100	170,00 ZP
M 8 x 160	S	100	214,00 ZP
M 8 x 170	S	100	320,00 ZP
M 8 x 180	S	100	290,00 ZP
M 8 x 190	S	100	379,00 ZP
M 8 x 200	S	100	308,00 ZP
M 8 x 210	S	100	420,00 ZP
M 8 x 220	S	100	452,00 ZP
M 8 x 230	S	100	484,00 ZP
M 8 x 240	S	100	517,00 ZP
M 8 x 250	S	100	534,00 ZP
M 8 x 260	S	100	534,00 ZP
M 8 x 270	S	100	586,00 ZP
M 8 x 280	S	100	730,00 ZP
M 10 x 10	S	200	88,95 ZP
M 10 x 12	S	200	40,95 ZP
M 10 x 14	S	200	32,50 ZP
M 10 x 16	S	200	22,15 ZP
M 10 x 18	S	200	43,05 ZP
M 10 x 20	S	200	15,20 ZP
M 10 x 22	S	200	27,95 ZP
M 10 x 25	S	200	15,90 ZP
M 10 x 30	S	200	17,20 ZP
M 10 x 35	S	100	18,50 ZP
M 10 x 40	S	100	20,15 ZP
M 10 x 45	S	100	22,20 ZP
M 10 x 50	S	100	23,70 ZP
M 10 x 55	S	100	25,50 ZP
M 10 x 60	S	100	27,50 ZP
M 10 x 65	S	100	29,70 ZP
M 10 x 70	S	100	30,70 ZP
M 10 x 75	S	100	36,50 ZP
M 10 x 80	S	100	37,75 ZP
M 10 x 85	S	100	51,05 ZP
M 10 x 90	S	100	51,60 ZP
M 10 x 95	S	100	117,00 ZP
M 10 x 100	S	100	56,35 ZP
M 10 x 110	S	100	63,70 ZP
M 10 x 115	S	100	137,00 ZP
M 10 x 120	S	50	76,40 ZP
M 10 x 125	S	50	154,00 ZP
M 10 x 130	S	50	106,00 ZP
M 10 x 135	S	50	185,00 ZP
M 10 x 140	S	50	127,00 ZP
M 10 x 150	S	50	167,00 ZP
M 10 x 155	S	50	255,00 ZP
M 10 x 160	S	50	184,00 ZP
M 10 x 170	S	50	258,00 ZP
M 10 x 180	S	50	266,00 ZP
M 10 x 190	S	50	316,00 ZP
M 10 x 200	S	50	296,00 ZP
M 10 x 210	S	50	558,00 ZP
M 10 x 220	S	50	559,00 ZP
M 10 x 230	S	50	581,00 ZP
M 10 x 240	S	50	582,00 ZP
M 10 x 250	S	50	717,00 ZP
M 10 x 260	S	50	695,00 ZP
M 10 x 270	S	50	762,00 ZP
M 10 x 280	S	50	765,00 ZP
M 10 x 300	S	50	834,00 ZP
M 12 x 14	S	100	118,00 ZP
M 12 x 16	S	100	28,00 ZP
M 12 x 20	S	100	26,65 ZP
M 12 x 22	S	100	44,00 ZP
M 12 x 25	S	100	23,95 ZP
M 12 x 30	S	100	24,95 ZP
M 12 x 35	S	100	25,75 ZP
M 12 x 40	S	100	27,25 ZP
M 12 x 45	S	100	28,90 ZP
M 12 x 50	S	100	31,45 ZP
M 12 x 55	S	100	34,50 ZP
M 12 x 60	S	100	37,00 ZP
M 12 x 65	S	50	41,70 ZP
M 12 x 70	S	50	43,35 ZP
M 12 x 75	S	50	45,55 ZP
M 12 x 80	S	50	46,60 ZP
M 12 x 85	S	50	97,05 ZP
M 12 x 90	S	50	56,75 ZP
M 12 x 95	S	50	134,00 ZP
M 12 x 100	S	50	68,55 ZP
M 12 x 110	S	50	83,10 ZP
M 12 x 115	S	50	165,00 ZP
M 12 x 120	S	50	94,60 ZP
M 12 x 125	S	50	183,00 ZP
M 12 x 130	S	50	128,00 ZP
M 12 x 135	S	50	199,00 ZP
M 12 x 140	S	50	149,00 ZP
M 12 x 145	S	50	226,00 ZP
M 12 x 150	S	50	184,00 ZP
M 12 x 155	S	50	240,00 ZP
M 12 x 160	S	50	218,00 ZP
M 12 x 170	S	50	289,00 ZP
M 12 x 180	S	50	288,00 ZP
M 12 x 190	S	50	331,00 ZP
M 12 x 200	S	50	331,00 ZP
M 12 x 210	S	25	797,00 ZP
M 12 x 220	S	25	590,00 ZP
M 12 x 230	S	25	856,00 ZP
M 12 x 240	S	25	661,00 ZP
M 12 x 250	S	25	931,00 ZP
M 12 x 260	S	25	726,00 ZP
M 12 x 270	S	25	990,00 ZP
M 12 x 290	S	25	1178,00 ZP
M 12 x 300	S	25	828,00 ZP
M 14 x 20	S	100	98,85 ZP
M 14 x 25	S	100	76,40 ZP
M 14 x 30	S	100	71,00 ZP
M 14 x 35	S	100	80,70 ZP
M 14 x 40	S	100	74,60 ZP
M 14 x 45	S	50	83,70 ZP
M 14 x 50	S	50	83,70 ZP
M 14 x 55	S	50	104,00 ZP
M 14 x 60	S	50	96,40 ZP
M 14 x 65	S	50	119,00 ZP
M 14 x 70	S	50	122,00 ZP
M 14 x 75	S	50	133,00 ZP
M 14 x 80	S	50	138,00 ZP
M 14 x 90	S	50	150,00 ZP
M 14 x 100	S	50	166,00 ZP
M 14 x 110	S	50	195,00 ZP
M 14 x 120	S	50	214,00 ZP
M 14 x 130	S	50	243,00 ZP
M 14 x 140	S	25	255,00 ZP
M 14 x 150	S	25	320,00 ZP
M 14 x 160	S	25	532,00 ZP
M 14 x 200	S	25	626,00 ZP
M 16 x 20	S	50	93,40 ZP
M 16 x 25	S	50	73,40 ZP
M 16 x 30	S	50	49,15 ZP
M 16 x 35	S	50	50,50 ZP
M 16 x 40	S	50	53,50 ZP
M 16 x 45	S	50	57,30 ZP
M 16 x 50	S	50	62,50 ZP
M 16 x 55	S	50	67,35 ZP
M 16 x 60	S	50	70,35 ZP
M 16 x 65	S	25	79,40 ZP
M 16 x 70	S	25	80,70 ZP
M 16 x 75	S	25	89,75 ZP
M 16 x 80	S	25	91,00 ZP
M 16 x 85	S	25	206,00 ZP
M 16 x 90	S	25	108,00 ZP
M 16 x 95	S	25	169,00 ZP
M 16 x 100	S	25	119,00 ZP
M 16 x 110	S	25	159,00 ZP
M 16 x 120	S	25	174,00 ZP
M 16 x 130	S	25	195,00 ZP
M 16 x 140	S	25	243,00 ZP
M 16 x 150	S	25	303,00 ZP
M 16 x 160	S	25	317,00 ZP
M 16 x 170	S	25	400,00 ZP
M 16 x 180	S	25	366,00 ZP
M 16 x 190	S	25	567,00 ZP
M 16 x 200	S	25	434,00 ZP
M 16 x 210	S	25	675,00 ZP
M 16 x 220	S	25	516,00 ZP
M 16 x 230	S	25	759,00 ZP
M 16 x 240	S	25	641,00 ZP
M 16 x 250	S	25	697,00 ZP
M 16 x 260	S	25	697,00 ZP
M 16 x 270	S	25	878,00 ZP
M 16 x 280	S	25	753,00 ZP
M 16 x 300	S	25	878,00 ZP
M 16 x 320	S	10	1419,00 ZP
M 16 x 340	S	10	1660,00 ZP
M 16 x 360	S	10	1950,00 ZP
M 18 x 30	S	50	222,00 ZP
M 18 x 35	S	50	223,00 ZP
M 18 x 40	S	50	200,00 ZP
M 18 x 45	S	50	213,00 ZP
M 18 x 50	S	50	217,00 ZP
M 18 x 55	S	25	226,00 ZP
M 18 x 60	S	25	234,00 ZP
M 18 x 70	S	25	264,00 ZP
M 18 x 80	S	25	282,00 ZP
M 18 x 90	S	25	306,00 ZP
M 18 x 100	S	25	340,00 ZP
M 18 x 110	S	25	435,00 ZP
M 18 x 120	S	25	472,00 ZP
M 20 x 25	S	25	351,00 ZP
M 20 x 30	S	25	176,00 ZP
M 20 x 35	S	25	178,00 ZP
M 20 x 40	S	25	108,00 ZP
M 20 x 45	S	25	113,00 ZP
M 20 x 50	S	25	118,00 ZP
M 20 x 55	S	25	125,00 ZP
M 20 x 60	S	25	127,00 ZP
M 20 x 65	S	25	137,00 ZP
M 20 x 70	S	25	140,00 ZP
M 20 x 75	S	25	148,00 ZP
M 20 x 80	S	25	149,00 ZP
M 20 x 85	S	25	897,00 ZP
M 20 x 90	S	25	179,00 ZP
M 20 x 100	S	25	191,00 ZP
M 20 x 110	S	25	223,00 ZP
M 20 x 120	S	25	241,00 ZP
M 20 x 130	S	25	324,00 ZP
M 20 x 140	S	25	447,00 ZP
M 20 x 150	S	25	512,00 ZP
M 20 x 160	S	10	523,00 ZP
M 20 x 170	S	10	629,00 ZP
M 20 x 180	S	10	629,00 ZP
M 20 x 190	S	10	730,00 ZP
M 20 x 200	S	1	739,00 ZP
M 20 x 210	S	1	821,00 ZP
M 20 x 220	S	1	827,00 ZP
M 20 x 230	S	1	952,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	240	S	1	958,00 ZP
M 20	x	250	S	1	1012,00 ZP
M 20	x	260	S	1	1016,00 ZP
M 20	x	270	S	1	1135,00 ZP
M 20	x	280	S	1	1144,00 ZP
M 20	x	300	S	1	1223,00 ZP
M 20	x	310	S	1	1410,00 ZP
M 20	x	320	S	1	1420,00 ZP
M 22	x	50	S	25	696,00 ZP
M 22	x	80	S	25	764,00 ZP
M 22	x	100	S	10	843,00 ZP
M 24	x	30	S	25	1049,00 ZP
M 24	x	40	S	25	638,00 ZP
M 24	x	45	S	25	642,00 ZP
M 24	x	50	S	25	256,00 ZP
M 24	x	55	S	25	281,00 ZP
M 24	x	60	S	25	283,00 ZP
M 24	x	65	S	25	304,00 ZP
M 24	x	70	S	25	306,00 ZP
M 24	x	75	S	25	314,00 ZP
M 24	x	80	S	25	317,00 ZP
M 24	x	85	S	10	930,00 ZP
M 24	x	90	S	10	374,00 ZP
M 24	x	100	S	10	392,00 ZP
M 24	x	110	S	10	476,00 ZP
M 24	x	120	S	10	510,00 ZP
M 24	x	130	S	1	581,00 ZP
M 24	x	140	S	1	713,00 ZP
M 24	x	150	S	1	868,00 ZP
M 24	x	160	S	1	785,00 ZP
M 24	x	170	S	10	835,00 ZP
M 24	x	180	S	1	871,00 ZP
M 24	x	200	S	1	955,00 ZP
M 24	x	210	S	1	1258,00 ZP
M 24	x	220	S	1	1264,00 ZP
M 24	x	230	S	1	1339,00 ZP
M 24	x	240	S	1	1345,00 ZP
M 24	x	250	S	1	1421,00 ZP
M 24	x	260	S	1	1427,00 ZP
M 24	x	280	S	1	1530,00 ZP
M 24	x	300	S	1	1659,00 ZP
M 25	x	50	S	10	960,00 ZP
M 27	x	60	S	10	967,00 ZP
M 27	x	65	S	10	1005,00 ZP
M 27	x	70	S	10	1008,00 ZP
M 27	x	80	S	10	1056,00 ZP
M 27	x	90	S	10	1104,00 ZP
M 27	x	100	S	10	1159,00 ZP
M 27	x	110	S	10	1194,00 ZP
M 27	x	120	S	10	1316,00 ZP
M 27	x	130	S	1	1373,00 ZP
M 27	x	140	S	1	1432,00 ZP
M 27	x	200	S	1	1730,00 ZP
M 30	x	35	S	10	1680,00 ZP
M 30	x	40	S	10	1680,00 ZP
M 30	x	50	S	10	1117,00 ZP
M 30	x	55	S	10	1117,00 ZP
M 30	x	60	S	10	1117,00 ZP
M 30	x	65	S	10	1146,00 ZP
M 30	x	70	S	10	1171,00 ZP
M 30	x	80	S	10	1219,00 ZP
M 30	x	85	S	1	1268,00 ZP
M 30	x	90	S	1	1268,00 ZP
M 30	x	100	S	1	1316,00 ZP
M 30	x	110	S	1	1365,00 ZP
M 30	x	120	S	1	1420,00 ZP
M 30	x	130	S	1	1468,00 ZP
M 30	x	140	S	1	1517,00 ZP
M 30	x	150	S	1	1608,00 ZP
M 30	x	160	S	1	1668,00 ZP
M 30	x	170	S	1	1740,00 ZP
M 30	x	180	S	1	1760,00 ZP
M 30	x	190	S	1	1850,00 ZP
M 30	x	200	S	1	1910,00 ZP
M 30	x	210	S	1	2062,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	220	S	1	2062,00 ZP
M 30	x	240	S	1	2153,00 ZP
M 30	x	250	S	1	2275,00 ZP
M 30	x	260	S	1	2275,00 ZP
M 30	x	280	S	1	2396,00 ZP
M 30	x	300	S	1	2608,00 ZP
M 36	x	50	S	1	1930,00 ZP
M 36	x	60	S	1	1930,00 ZP
M 36	x	65	S	1	1930,00 ZP
M 36	x	70	S	1	1900,00 ZP
M 36	x	80	S	1	1917,00 ZP
M 36	x	90	S	1	1981,00 ZP
M 36	x	100	S	1	2046,00 ZP
M 36	x	110	S	1	2110,00 ZP
M 36	x	120	S	1	2210,00 ZP
M 36	x	130	S	1	2284,00 ZP
M 36	x	140	S	1	2369,00 ZP
M 36	x	150	S	1	2466,00 ZP
M 36	x	160	S	1	2552,00 ZP
M 36	x	180	S	1	2757,00 ZP
M 36	x	200	S	1	2974,00 ZP
M 36	x	220	S	1	3155,00 ZP
M 36	x	230	S	1	3321,00 ZP
M 36	x	260	S	1	3507,00 ZP
M 36	x	310	S	1	5820,00 ZP
M 36	x	320	S	1	5360,00 ZP
M 42	x	70	S	1	3230,00 ZP
M 42	x	80	S	1	3250,00 ZP
M 42	x	90	S	1	3270,00 ZP
M 42	x	100	S	1	3400,00 ZP

~DIN	00912.814	RAZ 1000
912	**8.8**	**ISR**
	zinc plated	



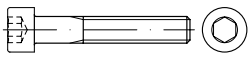
Hexalobular socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Identical to ISO 14579

M 6	x	16 -T30	S	200	7,20 ZP
M 6	x	20 -T30	S	200	7,90 ZP
M 8	x	20 -T45	S	200	12,75 ZP
M 8	x	25 -T45	S	200	13,95 ZP
M 8	x	30 -T45	S	200	14,90 ZP
M 8	x	35 -T45	S	200	16,35 ZP

Dimensions		PU	Pieces	€/100/Mat.
DIN	00912.362			RAZ 360
912	**8.8**			
	zinc plated 8 TLP			



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

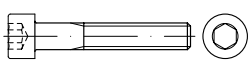
Stainless → S. 450

DIN 912 → replaced by ISO 4762

M 3	x	6	S	500	9,70 ZP TLP
M 3	x	8	S	500	6,75 ZP TLP
M 3	x	10	S	500	5,75 ZP TLP
M 3	x	12	S	500	5,95 ZP TLP
M 3	x	16	S	500	6,35 ZP TLP
M 3	x	20	S	500	6,75 ZP TLP
M 4	x	6	S	500	11,90 ZP TLP
M 4	x	8	S	500	7,00 ZP TLP
M 4	x	10	S	500	5,40 ZP TLP
M 4	x	12	S	500	5,65 ZP TLP
M 4	x	16	S	500	5,50 ZP TLP
M 4	x	20	S	500	6,00 ZP TLP
M 4	x	25	S	500	6,85 ZP TLP
M 4	x	30	S	500	7,35 ZP TLP
M 4	x	35	S	500	8,95 ZP TLP
M 4	x	40	S	500	9,50 ZP TLP
M 5	x	6	S	500	12,80 ZP TLP
M 5	x	8	S	500	10,10 ZP TLP
M 5	x	10	S	500	5,45 ZP TLP
M 5	x	12	S	500	5,60 ZP TLP
M 5	x	16	S	500	5,55 ZP TLP
M 5	x	20	S	500	6,00 ZP TLP
M 5	x	25	S	500	6,45 ZP TLP
M 5	x	30	S	500	7,90 ZP TLP
M 5	x	35	S	200	8,45 ZP TLP
M 5	x	40	S	200	9,00 ZP TLP
M 5	x	45	S	200	16,50 ZP TLP
M 5	x	50	S	200	21,30 ZP TLP
M 6	x	8	S	500	11,90 ZP TLP
M 6	x	10	S	500	5,95 ZP TLP
M 6	x	12	S	500	6,25 ZP TLP
M 6	x	16	S	500	6,00 ZP TLP
M 6	x	20	S	500	6,65 ZP TLP
M 6	x	22	S	500	11,60 ZP TLP
M 6	x	25	S	500	6,95 ZP TLP
M 6	x	30	S	500	8,00 ZP TLP
M 6	x	35	S	200	8,85 ZP TLP
M 6	x	40	S	200	9,65 ZP TLP
M 6	x	45	S	200	12,40 ZP TLP
M 6	x	50	S	200	13,00 ZP TLP
M 6	x	55	S	200	20,30 ZP TLP
M 6	x	60	S	200	21,70 ZP TLP
M 6	x	65	S	200	31,10 ZP TLP
M 6	x	70	S	200	32,30 ZP TLP
M 6	x	75	S	200	42,50 ZP TLP
M 6	x	80	S	200	43,90 ZP TLP
M 6	x	100	S	200	54,90 ZP TLP
M 8	x	10	S	200	14,50 ZP TLP
M 8	x	12	S	200	15,15 ZP TLP
M 8	x	16	S	200	10,35 ZP TLP
M 8	x	20	S	200	10,65 ZP TLP
M 8	x	25	S	200	11,65 ZP TLP
M 8	x	30	S	200	12,50 ZP TLP
M 8	x	35	S	200	13,70 ZP TLP
M 8	x	40	S	200	15,45 ZP TLP
M 8	x	45	S	200	16,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	50	S	200	17,85 ZP TLP
M 8	x	55	S	200	27,00 ZP TLP
M 8	x	60	S	200	22,80 ZP TLP
M 8	x	65	S	200	38,50 ZP TLP
M 8	x	70	S	200	40,70 ZP TLP
M 8	x	80	S	200	56,90 ZP TLP
M 8	x	90	S	100	64,40 ZP TLP
M 8	x	100	S	100	77,00 ZP TLP
M 10	x	16	S	200	27,80 ZP TLP
M 10	x	20	S	200	19,00 ZP TLP
M 10	x	25	S	200	20,20 ZP TLP
M 10	x	30	S	200	21,65 ZP TLP
M 10	x	35	S	100	23,20 ZP TLP
M 10	x	40	S	100	25,45 ZP TLP
M 10	x	45	S	100	28,15 ZP TLP
M 10	x	50	S	100	29,70 ZP TLP
M 10	x	55	S	100	31,90 ZP TLP
M 10	x	60	S	100	34,50 ZP TLP
M 10	x	70	S	100	50,90 ZP TLP
M 10	x	80	S	100	61,50 ZP TLP
M 10	x	90	S	100	77,00 ZP TLP
M 10	x	100	S	100	82,70 ZP TLP
M 12	x	20	S	100	41,00 ZP TLP
M 12	x	25	S	100	30,00 ZP TLP
M 12	x	30	S	100	31,50 ZP TLP
M 12	x	35	S	100	32,30 ZP TLP
M 12	x	40	S	100	34,20 ZP TLP
M 12	x	45	S	100	36,50 ZP TLP
M 12	x	50	S	100	39,50 ZP TLP
M 12	x	60	S	100	46,40 ZP TLP
M 12	x	65	S	50	52,40 ZP TLP
M 12	x	70	S	50	54,50 ZP TLP
M 12	x	75	S	50	57,20 ZP TLP
M 12	x	80	S	50	58,50 ZP TLP
M 12	x	90	S	50	71,20 ZP TLP
M 16	x	25	S	50	88,40 ZP TLP
M 16	x	30	S	50	62,20 ZP TLP
M 16	x	35	S	50	63,40 ZP TLP
M 16	x	40	S	50	67,10 ZP TLP
M 16	x	50	S	50	78,50 ZP TLP
M 16	x	55	S	50	90,20 ZP TLP
M 16	x	60	S	50	116,00 ZP TLP
M 16	x	65	S	25	102,00 ZP TLP
M 16	x	70	S	25	103,00 ZP TLP
M 16	x	80	S	25	150,00 ZP TLP
M 16	x	90	S	25	175,00 ZP TLP
M 16	x	100	S	25	190,00 ZP TLP
M 16	x	120	S	25	254,00 ZP TLP

DIN	00912.(*)	RAZ 360
912	**8.8** **zinc plated yellow***	



Hexagon socket head cap screws

*< M 6 min. coating thickness 5µm = (860)
* from M 6 min. coating thickness 8µm = (325)

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 450

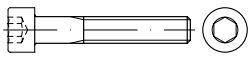
DIN 912 → replaced by ISO 4762

M 3	x	6	S	500	7,75 YZP
M 3	x	8	S	500	5,40 YZP
M 3	x	10	S	500	4,60 YZP
M 3	x	12	S	500	4,75 YZP
M 3	x	16	S	500	5,05 YZP

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	20	S	500	5,40 YZP
M 4	x	6	S	500	9,50 YZP
M 4	x	8	S	500	5,60 YZP
M 4	x	10	S	500	4,30 YZP
M 4	x	12	S	500	4,50 YZP
M 4	x	16	S	500	4,40 YZP
M 4	x	20	S	500	4,80 YZP
M 4	x	25	S	500	5,45 YZP
M 4	x	30	S	500	5,85 YZP
M 4	x	35	S	500	7,15 YZP
M 4	x	40	S	500	7,60 YZP
M 4	x	45	S	500	16,50 YZP
M 4	x	50	S	500	19,50 YZP
M 5	x	6	S	500	10,20 YZP
M 5	x	8	S	500	8,05 YZP
M 5	x	10	S	500	4,35 YZP
M 5	x	12	S	500	4,45 YZP
M 5	x	14	S	500	7,60 YZP
M 5	x	16	S	500	4,40 YZP
M 5	x	20	S	500	4,80 YZP
M 5	x	25	S	500	5,15 YZP
M 5	x	30	S	500	6,30 YZP
M 5	x	35	S	200	6,75 YZP
M 5	x	40	S	200	7,20 YZP
M 5	x	45	S	200	13,20 YZP
M 5	x	50	S	200	17,00 YZP
M 5	x	55	S	200	18,50 YZP
M 6	x	8	S	500	9,45 YZP8
M 6	x	10	S	500	4,75 YZP8
M 6	x	12	S	500	5,00 YZP8
M 6	x	16	S	500	4,80 YZP8
M 6	x	20	S	500	5,30 YZP8
M 6	x	22	S	500	9,25 YZP8
M 6	x	25	S	500	5,55 YZP8
M 6	x	30	S	500	6,40 YZP8
M 6	x	35	S	200	7,05 YZP8
M 6	x	40	S	200	7,70 YZP8
M 6	x	45	S	200	9,90 YZP8
M 6	x	50	S	200	10,40 YZP8
M 6	x	55	S	200	16,20 YZP8
M 6	x	60	S	200	17,30 YZP8
M 6	x	65	S	200	24,85 YZP8
M 6	x	70	S	200	25,80 YZP8
M 6	x	75	S	200	34,00 YZP8
M 6	x	80	S	200	35,10 YZP8
M 6	x	100	S	200	43,90 YZP8
M 8	x	10	S	200	11,60 YZP8
M 8	x	12	S	200	12,10 YZP8
M 8	x	16	S	200	8,25 YZP8
M 8	x	20	S	200	8,50 YZP8
M 8	x	25	S	200	9,30 YZP8
M 8	x	30	S	200	10,00 YZP8
M 8	x	35	S	200	10,95 YZP8
M 8	x	40	S	200	12,35 YZP8
M 8	x	45	S	200	12,80 YZP8
M 8	x	50	S	200	14,25 YZP8
M 8	x	55	S	200	21,55 YZP8
M 8	x	60	S	200	18,20 YZP8
M 8	x	65	S	200	30,80 YZP8
M 8	x	70	S	200	32,50 YZP8
M 8	x	80	S	200	45,50 YZP8
M 8	x	90	S	100	51,50 YZP8
M 8	x	100	S	100	61,60 YZP8
M 8	x	110	S	100	71,40 YZP8
M 10	x	12	S	200	40,95 YZP8
M 10	x	16	S	200	22,15 YZP8
M 10	x	20	S	200	15,20 YZP8
M 10	x	25	S	200	16,10 YZP8
M 10	x	30	S	200	17,30 YZP8
M 10	x	35	S	100	18,55 YZP8
M 10	x	40	S	100	20,35 YZP8
M 10	x	45	S	100	22,50 YZP8
M 10	x	50	S	100	23,70 YZP8
M 10	x	55	S	100	25,50 YZP8
M 10	x	60	S	100	27,60 YZP8

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	70	S	100	40,65 YZP8
M 10	x	80	S	100	49,15 YZP8
M 10	x	90	S	100	61,60 YZP8
M 10	x	100	S	100	66,15 YZP8
M 10	x	110	S	100	74,10 YZP8
M 10	x	120	S	50	87,80 YZP8
M 12	x	20	S	100	32,80 YZP8
M 12	x	25	S	100	23,95 YZP8
M 12	x	30	S	100	25,20 YZP8
M 12	x	35	S	100	25,80 YZP8
M 12	x	40	S	100	27,30 YZP8
M 12	x	45	S	100	29,15 YZP8
M 12	x	50	S	100	72,86 YZP8
M 12	x	60	S	100	37,10 YZP8
M 12	x	65	S	50	41,85 YZP8
M 12	x	70	S	50	43,55 YZP8
M 12	x	75	S	50	45,75 YZP8
M 12	x	80	S	50	46,75 YZP8
M 12	x	90	S	50	56,95 YZP8
M 12	x	100	S	50	73,00 YZP8
M 16	x	25	S	50	70,70 YZP8
M 16	x	30	S	50	49,70 YZP8
M 16	x	35	S	50	50,65 YZP8
M 16	x	40	S	50	53,65 YZP8
M 16	x	45	S	50	59,50 YZP8
M 16	x	50	S	50	62,80 YZP8
M 16	x	55	S	50	72,15 YZP8
M 16	x	60	S	50	92,75 YZP8
M 16	x	65	S	25	80,95 YZP8
M 16	x	70	S	25	82,10 YZP8
M 16	x	80	S	25	120,00 YZP8
M 16	x	85	S	25	210,00 YZP8
M 16	x	90	S	25	140,00 YZP8
M 16	x	100	S	25	152,00 YZP8
M 16	x	120	S	25	203,00 YZP8
M 16	x	130	S	25	226,00 YZP8
M 16	x	140	S	25	251,00 YZP8
M 16	x	150	S	25	313,00 YZP8
M 20	x	50	S	25	118,00 YZP8
M 20	x	60	S	25	127,00 YZP8
M 20	x	65	S	25	137,00 YZP8

DIN	00912.453	RAZ 1570
912	**8.8** **zinc flake coated**	



Hexagon socket head cap screws

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-12 Corrosion protection → TI-218
Mech. properties → TI-221 Tightening torque → TI-230

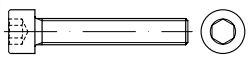
Stainless → S. 450

DIN 912 → replaced by ISO 4762

M 6	x	12	S	500	6,50 flZn
M 6	x	14	S	500	9,60 flZn
M 6	x	16	S	500	6,25 flZn
M 6	x	18	S	500	6,70 flZn
M 6	x	20	S	500	6,85 flZn
M 6	x	22	S	500	11,80 flZn
M 6	x	25	S	500	7,25 flZn
M 6	x	28	S	500	17,10 flZn
M 6	x	30	S	500	8,30 flZn
M 6	x	35	S	200	9,05 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	40	S	200	10,05 flZn
M 6	x	45	S	200	12,90 flZn
M 6	x	50	S	200	13,55 flZn
M 6	x	55	S	200	21,15 flZn
M 6	x	60	S	200	22,50 flZn
M 6	x	65	S	200	29,35 flZn
M 6	x	70	S	200	30,40 flZn
M 6	x	75	S	200	40,80 flZn
M 6	x	80	S	200	42,00 flZn
M 8	x	16	S	200	10,75 flZn
M 8	x	20	S	200	11,05 flZn
M 8	x	25	S	200	12,10 flZn
M 8	x	30	S	200	12,95 flZn
M 8	x	35	S	200	14,20 flZn
M 8	x	40	S	200	16,10 flZn
M 8	x	45	S	200	16,65 flZn
M 8	x	50	S	200	18,55 flZn
M 8	x	55	S	200	21,40 flZn
M 8	x	60	S	200	23,60 flZn
M 8	x	65	S	200	34,20 flZn
M 8	x	70	S	200	35,40 flZn
M 8	x	75	S	200	42,40 flZn
M 8	x	80	S	200	52,20 flZn
M 8	x	90	S	100	63,65 flZn
M 10	x	20	S	200	19,80 flZn
M 10	x	25	S	200	20,70 flZn
M 10	x	30	S	200	22,40 flZn
M 10	x	35	S	100	24,05 flZn
M 10	x	40	S	100	26,20 flZn
M 10	x	45	S	100	28,90 flZn
M 10	x	50	S	100	30,85 flZn
M 10	x	55	S	100	33,15 flZn
M 10	x	60	S	100	35,75 flZn
M 10	x	65	S	100	38,65 flZn
M 10	x	70	S	100	39,95 flZn
M 10	x	75	S	100	47,45 flZn
M 10	x	80	S	100	49,10 flZn
M 10	x	90	S	100	67,10 flZn
M 12	x	20	S	100	34,65 flZn
M 12	x	25	S	100	31,15 flZn
M 12	x	30	S	100	32,45 flZn
M 12	x	35	S	100	33,50 flZn
M 12	x	40	S	100	35,45 flZn
M 12	x	45	S	100	37,58 flZn
M 12	x	50	S	100	40,90 flZn
M 12	x	55	S	100	44,85 flZn
M 12	x	60	S	100	48,10 flZn
M 12	x	65	S	50	54,25 flZn
M 12	x	70	S	50	56,40 flZn
M 12	x	75	S	50	59,25 flZn
M 12	x	80	S	50	60,60 flZn
M 12	x	90	S	50	73,80 flZn
M 12	x	100	S	50	89,15 flZn
M 16	x	30	S	50	63,90 flZn
M 16	x	35	S	50	65,65 flZn
M 16	x	40	S	50	69,55 flZn
M 16	x	45	S	50	74,50 flZn
M 16	x	50	S	50	81,25 flZn
M 16	x	55	S	50	87,60 flZn
M 16	x	60	S	50	91,45 flZn
M 16	x	65	S	25	104,00 flZn
M 16	x	70	S	25	105,00 flZn
M 16	x	75	S	25	117,00 flZn
M 16	x	80	S	25	119,00 flZn
M 16	x	90	S	25	141,00 flZn
M 16	x	100	S	25	155,00 flZn
M 16	x	110	S	25	207,00 flZn
M 16	x	120	S	25	227,00 flZn
M 20	x	65	S	25	179,00 flZn
M 20	x	70	S	25	182,00 flZn
M 20	x	75	S	25	193,00 flZn
M 20	x	80	S	25	194,00 flZn
M 20	x	90	S	25	233,00 flZn
M 20	x	100	S	25	249,00 flZn
M 20	x	110	S	25	290,00 flZn
M 20	x	120	S	25	314,00 flZn
M 20	x	130	S	25	422,00 flZn
M 20	x	140	S	25	582,00 flZn
M 20	x	150	S	25	666,00 flZn
M 20	x	160	S	10	680,00 flZn
M 20	x	170	S	10	818,00 flZn
M 20	x	180	S	10	818,00 flZn
M 24	x	75	S	25	409,00 flZn
M 24	x	80	S	25	413,00 flZn
M 24	x	90	S	10	487,00 flZn
M 24	x	100	S	10	510,00 flZn
M 24	x	110	S	10	619,00 flZn
M 24	x	120	S	10	663,00 flZn
M 24	x	130	S	1	756,00 flZn
M 24	x	140	S	1	927,00 flZn
M 24	x	150	S	1	1129,00 flZn
M 24	x	160	S	1	1021,00 flZn
M 24	x	170	S	1	1086,00 flZn
M 24	x	180	S	1	1133,00 flZn

~DIN	00912.807	RAZ 364
912	8.8	FT



Hexagon socket head cap screws, FT = full thread (thread up to head)

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Design and other dimensions identical to ISO 4762

M 5	x	40	S	200	20,30
M 5	x	50	S	200	23,20
M 5	x	60	S	200	26,00
M 5	x	70	S	200	28,80
M 5	x	80	S	200	31,60
M 6	x	40	S	200	22,40
M 6	x	50	S	200	28,00
M 6	x	60	S	200	33,60
M 6	x	70	S	200	38,40
M 6	x	80	S	200	42,40
M 6	x	90	S	200	54,60
M 6	x	100	S	200	114,00
M 8	x	50	S	200	42,40
M 8	x	60	S	200	48,70
M 8	x	70	S	200	60,20
M 8	x	80	S	200	72,10
M 8	x	90	S	100	78,40
M 8	x	100	S	100	91,70
M 10	x	50	S	100	65,50
M 10	x	60	S	100	108,00
M 10	x	70	S	100	125,00
M 10	x	80	S	100	146,00
M 10	x	90	S	100	210,00
M 10	x	100	S	100	240,00
M 12	x	70	S	50	150,00
M 12	x	80	S	50	180,00
M 12	x	90	S	50	240,00
M 12	x	100	S	50	340,00
M 16	x	70	S	25	200,00
M 16	x	80	S	25	240,00
M 16	x	90	S	25	320,00
M 16	x	100	S	25	450,00
M 16	x	120	S	25	540,00

Dimensions			PU	Pieces	€/100/Mat.
~DIN	00912.815				RAZ 364
912	8.8 zinc plated				FT

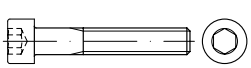
Hexagon socket head cap screws, FT = full thread (thread up to head)

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Design and other dimensions identical to ISO 4762

M 4	x	30	S	500	29,00 ZP
M 5	x	40	S	200	29,00 ZP
M 5	x	45	S	200	31,20 ZP
M 5	x	50	S	200	33,10 ZP
M 5	x	60	S	200	37,10 ZP
M 5	x	70	S	200	41,05 ZP
M 5	x	80	S	200	45,05 ZP
M 6	x	40	S	200	32,00 ZP
M 6	x	50	S	200	39,90 ZP
M 6	x	60	S	200	47,90 ZP
M 6	x	70	S	200	54,75 ZP
M 6	x	75	S	200	75,00 ZP
M 6	x	80	S	200	60,45 ZP
M 6	x	90	S	200	78,00 ZP
M 6	x	100	S	200	162,00 ZP
M 8	x	45	S	200	58,15 ZP
M 8	x	50	S	200	60,45 ZP
M 8	x	60	S	200	69,55 ZP
M 8	x	70	S	200	86,00 ZP
M 8	x	75	S	200	95,00 ZP
M 8	x	80	S	200	103,00 ZP
M 8	x	90	S	100	112,00 ZP
M 8	x	100	S	100	131,00 ZP
M 10	x	40	S	100	88,00 ZP
M 10	x	50	S	100	93,50 ZP
M 10	x	60	S	100	154,00 ZP
M 10	x	80	S	100	208,00 ZP
M 10	x	90	S	100	297,00 ZP
M 10	x	100	S	100	343,00 ZP
M 12	x	60	S	100	183,00 ZP
M 12	x	80	S	50	258,00 ZP
M 12	x	100	S	50	485,00 ZP

DIN	00912.805	RAZ 364
912	8.8	fine



Hexagon socket head cap screws with metrical fine pitch thread

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

DIN 912 fine thread → replaced by ISO 12474

M 8	x	1	x	12	S	200	114,00
M 8	x	1	x	16	S	200	118,00
M 8	x	1	x	20	S	200	122,00
M 8	x	1	x	25	S	200	125,00
M 8	x	1	x	30	S	200	130,00

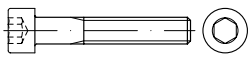
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 1 x 16	S	200	84,00
M 10 x 1 x 20	S	200	90,10
M 10 x 1,25 x 20	S	200	70,10
M 10 x 1 x 25	S	200	99,20
M 10 x 1,25 x 25	S	200	99,20
M 10 x 1 x 30	S	200	104,00
M 10 x 1,25 x 30	S	200	104,00
M 10 x 1 x 40	S	100	114,00
M 10 x 1,25 x 40	S	100	114,00
M 10 x 1 x 50	S	100	123,00
M 10 x 1 x 60	S	100	132,00
M 10 x 1 x 70	S	100	141,00
M 10 x 1 x 80	S	100	152,00
M 10 x 1 x 90	S	100	164,00
M 10 x 1 x 100	S	100	172,00
M 12 x 1,5 x 20	S	100	115,00
M 12 x 1,5 x 25	S	100	129,00
M 12 x 1,5 x 30	S	100	138,00
M 12 x 1,5 x 35	S	100	150,00
M 12 x 1,25 x 40	S	100	200,00
M 12 x 1,5 x 40	S	100	161,00
M 12 x 1,5 x 50	S	100	175,00
M 14 x 1,5 x 30	S	100	184,00
M 14 x 1,5 x 35	S	100	208,00
M 14 x 1,5 x 40	S	100	222,00
M 14 x 1,5 x 45	S	50	232,00
M 16 x 1,5 x 30	S	50	274,00
M 16 x 1,5 x 35	S	50	291,00
M 16 x 1,5 x 40	S	50	320,00
M 16 x 1,5 x 45	S	50	337,00
M 16 x 1,5 x 50	S	50	371,00
M 16 x 1,5 x 55	S	50	400,00
M 16 x 1,5 x 60	S	50	422,00
M 16 x 1,5 x 70	S	25	479,00

DIN	00912.100	RAZ 362

912

10.9



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 450

DIN 912 → replaced by ISO 4762

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 6	S	500	8,30
M 3 x 8	S	500	6,60
M 3 x 10	S	500	5,40
M 3 x 12	S	500	5,65
M 3 x 14	S	500	13,40
M 3 x 16	S	500	5,85
M 3 x 20	S	500	6,20
M 3 x 25	S	500	6,75
M 3 x 30	S	500	7,70
M 4 x 6	S	500	16,65
M 4 x 8	S	500	6,35
M 4 x 10	S	500	5,85
M 4 x 12	S	500	5,90
M 4 x 14	S	500	16,85
M 4 x 16	S	500	6,00
M 4 x 18	S	500	6,25
M 4 x 20	S	500	6,35
M 4 x 22	S	500	16,90
M 4 x 25	S	500	6,60
M 4 x 30	S	500	7,05
M 4 x 35	S	500	7,35
M 4 x 40	S	500	8,00
M 4 x 45	S	500	20,65
M 4 x 50	S	500	21,30
M 4 x 55	S	200	23,40
M 4 x 60	S	200	24,85
M 4 x 65	S	200	25,50
M 4 x 70	S	200	28,50
M 5 x 6	S	500	19,35
M 5 x 8	S	500	13,80
M 5 x 10	S	500	5,05
M 5 x 12	S	500	5,30
M 5 x 14	S	500	14,00
M 5 x 16	S	500	5,40
M 5 x 18	S	500	6,60
M 5 x 20	S	500	5,70
M 5 x 22	S	500	14,55
M 5 x 25	S	500	6,00
M 5 x 30	S	500	6,40
M 5 x 35	S	200	8,55
M 5 x 40	S	200	8,75
M 5 x 45	S	200	14,85
M 5 x 50	S	200	19,95
M 5 x 55	S	200	22,70
M 5 x 60	S	200	23,90
M 5 x 65	S	200	32,80
M 5 x 70	S	200	33,40
M 5 x 75	S	200	52,85
M 5 x 80	S	200	52,85
M 5 x 85	S	200	112,00
M 5 x 90	S	200	57,30
M 5 x 95	S	200	160,00
M 5 x 100	S	200	63,70
M 5 x 110	S	100	149,00
M 5 x 120	S	100	153,00
M 5 x 130	S	100	438,00
M 5 x 135	S	100	521,00
M 5 x 140	S	100	521,00
M 5 x 150	S	100	532,00
M 5 x 160	S	100	542,00
M 5 x 170	S	100	576,00
M 5 x 180	S	100	594,00
M 5 x 190	S	100	683,00
M 5 x 200	S	100	745,00
M 6 x 8	S	500	15,30
M 6 x 10	S	500	5,20
M 6 x 12	S	500	5,30
M 6 x 14	S	500	12,05
M 6 x 16	S	500	5,40
M 6 x 18	S	500	6,05
M 6 x 20	S	500	5,50
M 6 x 22	S	500	14,95
M 6 x 25	S	500	5,65
M 6 x 30	S	500	6,45
M 6 x 35	S	200	6,90
M 6 x 40	S	200	7,75
M 6 x 45	S	200	10,10
M 6 x 50	S	200	12,05
M 6 x 55	S	200	19,10
M 6 x 60	S	200	19,45
M 6 x 65	S	200	24,45
M 6 x 70	S	200	32,55
M 6 x 75	S	200	40,10
M 6 x 80	S	200	44,15
M 6 x 85	S	200	78,85
M 6 x 90	S	200	54,05
M 6 x 95	S	200	94,60
M 6 x 100	S	200	64,90
M 6 x 110	S	100	88,55
M 6 x 120	S	100	96,40
M 6 x 130	S	100	296,00
M 6 x 135	S	100	344,00
M 6 x 140	S	100	311,00
M 6 x 145	S	100	425,00
M 6 x 150	S	100	350,00
M 6 x 160	S	100	592,00
M 6 x 170	S	100	651,00
M 6 x 180	S	100	692,00
M 6 x 190	S	100	849,00
M 6 x 200	S	100	941,00
M 6 x 210	S	50	965,00
M 6 x 220	S	50	977,00
M 6 x 230	S	50	1062,00
M 6 x 240	S	50	1062,00
M 8 x 10	S	200	12,60
M 8 x 12	S	200	12,60
M 8 x 14	S	200	18,75
M 8 x 16	S	200	8,85
M 8 x 18	S	200	9,65
M 8 x 20	S	200	8,40
M 8 x 22	S	200	19,35
M 8 x 25	S	200	9,05
M 8 x 30	S	200	9,55
M 8 x 35	S	200	10,60
M 8 x 40	S	200	11,75
M 8 x 45	S	200	12,45
M 8 x 50	S	200	13,65
M 8 x 55	S	200	18,55
M 8 x 60	S	200	19,00
M 8 x 65	S	200	25,55
M 8 x 70	S	200	26,15
M 8 x 75	S	200	32,50
M 8 x 80	S	200	42,85
M 8 x 85	S	100	63,70
M 8 x 90	S	100	51,85
M 8 x 95	S	100	74,00
M 8 x 100	S	100	60,35
M 8 x 110	S	100	78,85
M 8 x 120	S	100	80,05
M 8 x 125	S	100	172,00
M 8 x 130	S	100	122,00
M 8 x 135	S	100	185,00
M 8 x 140	S	50	134,00
M 8 x 150	S	50	226,00
M 8 x 160	S	50	255,00
M 8 x 170	S	50	292,00
M 8 x 180	S	50	309,00
M 8 x 190	S	50	485,00
M 8 x 200	S	50	485,00
M 8 x 220	S	50	544,00
M 8 x 240	S	50	685,00
M 8 x 250	S	50	723,00
M 8 x 260	S	50	723,00
M 8 x 270	S	50	781,00
M 8 x 280	S	50	781,00
M 8 x 300	S	50	820,00
M 10 x 10	S	200	57,80
M 10 x 12	S	200	57,80
M 10 x 16	S	200	25,60
M 10 x 18	S	200	59,15
M 10 x 20	S	200	15,45
M 10 x 22	S	200	43,00
M 10 x 25	S	200	16,70
M 10 x 30	S	200	17,35
M 10 x 35	S	100	18,35
M 10 x 40	S	100	19,15
M 10 x 45	S	100	21,20
M 10 x 50	S	100	22,40
M 10 x 55	S	100	24,40
M 10 x 60	S	100	25,10
M 10 x 65	S	100	26,15
M 10 x 70	S	100	27,10
M 10 x 75	S	100	36,80
M 10 x 80	S	100	37,80
M 10 x 85	S	100	85,50
M 10 x 90	S	100	49,45
M 10 x 95	S	100	92,75
M 10 x 100	S	100	55,05
M 10 x 110	S	50	91,55
M 10 x 115	S	50	189,00
M 10 x 120	S	50	120,00
M 10 x 125	S	50	189,00

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 130	S	50	142,00
M 10 x 135	S	50	211,00
M 10 x 140	S	50	159,00
M 10 x 145	S	50	314,00
M 10 x 150	S	50	234,00
M 10 x 160	S	50	262,00
M 10 x 170	S	50	306,00
M 10 x 180	S	50	324,00
M 10 x 190	S	50	366,00
M 10 x 200	S	50	366,00
M 10 x 210	S	50	458,00
M 10 x 220	S	50	439,00
M 10 x 230	S	50	532,00
M 10 x 240	S	50	514,00
M 10 x 250	S	50	566,00
M 10 x 260	S	50	586,00
M 10 x 270	S	50	792,00
M 10 x 280	S	50	659,00
M 10 x 290	S	50	878,00
M 10 x 300	S	50	732,00
M 10 x 310	S	50	1799,00
M 10 x 320	S	50	1937,00
M 10 x 340	S	50	2325,00
M 10 x 350	S	50	3044,00
M 10 x 400	S	50	4013,00
M 12 x 12	S	100	234,00
M 12 x 14	S	100	67,90
M 12 x 16	S	100	67,90
M 12 x 18	S	100	67,90
M 12 x 20	S	100	30,45
M 12 x 25	S	100	25,60
M 12 x 30	S	100	26,60
M 12 x 35	S	100	27,30
M 12 x 40	S	100	27,80
M 12 x 45	S	100	29,50
M 12 x 50	S	100	30,95
M 12 x 55	S	100	34,20
M 12 x 60	S	100	35,70
M 12 x 65	S	50	39,60
M 12 x 70	S	50	41,00
M 12 x 75	S	50	43,45
M 12 x 80	S	50	44,20
M 12 x 85	S	50	119,00
M 12 x 90	S	50	55,40
M 12 x 95	S	50	132,00
M 12 x 100	S	50	62,50
M 12 x 110	S	50	95,85
M 12 x 120	S	50	107,00
M 12 x 125	S	50	217,00
M 12 x 130	S	50	165,00
M 12 x 135	S	50	257,00
M 12 x 140	S	50	193,00
M 12 x 150	S	50	250,00
M 12 x 160	S	25	278,00
M 12 x 170	S	25	301,00
M 12 x 180	S	25	320,00
M 12 x 190	S	25	635,00
M 12 x 200	S	25	412,00
M 12 x 210	S	25	604,00
M 12 x 220	S	25	604,00
M 12 x 230	S	25	710,00
M 12 x 240	S	25	691,00
M 12 x 250	S	25	1017,00
M 12 x 260	S	25	756,00
M 12 x 270	S	25	1034,00
M 12 x 280	S	25	802,00
M 12 x 290	S	25	1052,00
M 12 x 300	S	25	875,00
M 12 x 310	S	25	1717,00
M 12 x 320	S	25	1884,00
M 12 x 330	S	25	2217,00
M 12 x 340	S	25	2217,00
M 12 x 360	S	25	2770,00
M 12 x 380	S	25	3325,00
M 12 x 400	S	25	3601,00

Dimensions	PU	Pieces	€/100/Mat.
M 14 x 20	S	100	162,00
M 14 x 25	S	100	125,00
M 14 x 30	S	100	120,00
M 14 x 35	S	100	124,00
M 14 x 40	S	100	98,85
M 14 x 45	S	50	102,00
M 14 x 50	S	50	108,00
M 14 x 55	S	50	162,00
M 14 x 60	S	50	119,00
M 14 x 65	S	50	145,00
M 14 x 70	S	50	150,00
M 14 x 75	S	50	170,00
M 14 x 80	S	50	170,00
M 14 x 90	S	50	182,00
M 14 x 100	S	50	205,00
M 14 x 110	S	50	216,00
M 14 x 120	S	50	244,00
M 14 x 125	S	50	543,00
M 14 x 130	S	50	273,00
M 14 x 140	S	25	350,00
M 14 x 150	S	25	398,00
M 14 x 160	S	25	637,00
M 14 x 170	S	25	672,00
M 14 x 180	S	25	704,00
M 14 x 190	S	25	727,00
M 14 x 200	S	25	749,00
M 16 x 20	S	50	162,00
M 16 x 25	S	50	118,00
M 16 x 30	S	50	54,00
M 16 x 35	S	50	56,85
M 16 x 40	S	50	58,00
M 16 x 45	S	50	59,65
M 16 x 50	S	50	61,85
M 16 x 55	S	50	63,70
M 16 x 60	S	50	66,70
M 16 x 65	S	25	76,40
M 16 x 70	S	25	76,40
M 16 x 75	S	25	87,35
M 16 x 80	S	25	87,35
M 16 x 85	S	25	308,00
M 16 x 90	S	25	106,00
M 16 x 100	S	25	116,00
M 16 x 110	S	25	140,00
M 16 x 120	S	25	169,00
M 16 x 125	S	25	371,00
M 16 x 130	S	25	236,00
M 16 x 140	S	25	309,00
M 16 x 150	S	25	350,00
M 16 x 160	S	25	429,00
M 16 x 170	S	25	499,00
M 16 x 180	S	25	499,00
M 16 x 190	S	25	626,00
M 16 x 200	S	25	706,00
M 16 x 210	S	25	1120,00
M 16 x 220	S	25	757,00
M 16 x 230	S	25	1158,00
M 16 x 240	S	25	759,00
M 16 x 250	S	25	1236,00
M 16 x 260	S	25	846,00
M 16 x 270	S	25	1306,00
M 16 x 280	S	25	933,00
M 16 x 290	S	25	1508,00
M 16 x 300	S	25	1049,00
M 16 x 320	S	10	1398,00
M 16 x 330	S	10	1400,00
M 16 x 340	S	10	1513,00
M 16 x 350	S	10	1536,00
M 16 x 360	S	10	1632,00
M 16 x 380	S	10	2303,00
M 16 x 400	S	10	2425,00
M 18 x 35	S	50	306,00
M 18 x 40	S	50	258,00
M 18 x 45	S	50	263,00
M 18 x 50	S	50	263,00
M 18 x 55	S	25	264,00

Dimensions	PU	Pieces	€/100/Mat.
M 18 x 60	S	25	264,00
M 18 x 65	S	25	281,00
M 18 x 70	S	25	281,00
M 18 x 75	S	25	317,00
M 18 x 80	S	25	311,00
M 18 x 90	S	25	317,00
M 18 x 120	S	25	407,00
M 18 x 130	S	25	697,00
M 18 x 140	S	25	768,00
M 18 x 150	S	25	854,00
M 18 x 160	S	25	942,00
M 18 x 180	S	25	1039,00
M 18 x 200	S	25	1039,00
M 18 x 210	S	10	1237,00
M 18 x 220	S	10	1237,00
M 18 x 240	S	10	1308,00
M 18 x 250	S	10	1398,00
M 18 x 260	S	10	1398,00
M 18 x 280	S	10	1496,00
M 18 x 300	S	10	1594,00
M 20 x 20	S	25	470,00
M 20 x 25	S	25	470,00
M 20 x 30	S	25	258,00
M 20 x 35	S	25	258,00
M 20 x 40	S	25	112,00
M 20 x 45	S	25	113,00
M 20 x 50	S	25	114,00
M 20 x 55	S	25	121,00
M 20 x 60	S	25	125,00
M 20 x 65	S	25	136,00
M 20 x 70	S	25	136,00
M 20 x 75	S	25	142,00
M 20 x 80	S	25	142,00
M 20 x 85	S	25	350,00
M 20 x 90	S	25	166,00
M 20 x 95	S	25	638,00
M 20 x 100	S	25	181,00
M 20 x 110	S	25	205,00
M 20 x 120	S	25	248,00
M 20 x 125	S	25	1169,00
M 20 x 130	S	25	320,00
M 20 x 135	S	25	1195,00
M 20 x 140	S	25	468,00
M 20 x 145	S	25	1221,00
M 20 x 150	S	25	543,00
M 20 x 160	S	10	708,00
M 20 x 170	S	10	865,00
M 20 x 180	S	10	754,00
M 20 x 190	S	10	840,00
M 20 x 200	S	10	705,00
M 20 x 210	S	1	1469,00
M 20 x 220	S	1	1030,00
M 20 x 230	S	1	1651,00
M 20 x 240	S	1	1091,00
M 20 x 250	S	1	1761,00
M 20 x 260	S	1	1152,00
M 20 x 270	S	1	1885,00
M 20 x 280	S	1	1211,00
M 20 x 290	S	1	2163,00
M 20 x 300	S	1	1341,00
M 20 x 310	S	1	1695,00
M 20 x 320	S	1	1747,00
M 20 x 330	S	1	1919,00
M 20 x 340	S	1	1980,00
M 20 x 350	S	1	2123,00
M 20 x 360	S	1	2189,00
M 20 x 380	S	1	2375,00
M 20 x 400	S	1	2608,00
M 22 x 40	S	25	883,00
M 22 x 45	S	25	708,00
M 22 x 50	S	25	882,00
M 22 x 60	S	25	927,00
M 22 x 65	S	25	958,00
M 22 x 70	S	25	958,00
M 22 x 75	S	25	1001,00

€/100 = price in € plus VAT when ordering full package unit

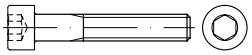
Dimensions	PU	Pieces	€/100/Mat.
M 22 x 80	S	25	1001,00
M 22 x 90	S	25	1072,00
M 22 x 100	S	10	1097,00
M 22 x 110	S	10	1120,00
M 22 x 120	S	10	1122,00
M 22 x 130	S	10	1177,00
M 22 x 140	S	10	1227,00
M 22 x 150	S	10	1258,00
M 22 x 160	S	10	1286,00
M 22 x 180	S	10	1446,00
M 22 x 200	S	10	1687,00
M 22 x 220	S	10	1752,00
M 24 x 30	S	25	763,00
M 24 x 35	S	25	763,00
M 24 x 40	S	25	688,00
M 24 x 45	S	25	708,00
M 24 x 50	S	25	343,00
M 24 x 55	S	25	365,00
M 24 x 60	S	25	365,00
M 24 x 65	S	25	380,00
M 24 x 70	S	25	380,00
M 24 x 75	S	25	396,00
M 24 x 80	S	25	396,00
M 24 x 85	S	10	714,00
M 24 x 90	S	10	452,00
M 24 x 95	S	10	742,00
M 24 x 100	S	10	464,00
M 24 x 110	S	10	516,00
M 24 x 120	S	10	531,00
M 24 x 130	S	10	702,00
M 24 x 140	S	10	891,00
M 24 x 150	S	10	1049,00
M 24 x 160	S	10	1122,00
M 24 x 170	S	10	1339,00
M 24 x 180	S	10	1389,00
M 24 x 190	S	10	1697,00
M 24 x 200	S	10	1492,00
M 24 x 210	S	1	1911,00
M 24 x 220	S	1	1738,00
M 24 x 230	S	1	2081,00
M 24 x 240	S	1	1895,00
M 24 x 250	S	1	2238,00
M 24 x 260	S	1	2033,00
M 24 x 270	S	1	2382,00
M 24 x 280	S	1	2091,00
M 24 x 290	S	1	2518,00
M 24 x 300	S	1	2156,00
M 24 x 310	S	1	2330,00
M 24 x 320	S	1	2330,00
M 24 x 330	S	1	2621,00
M 24 x 340	S	1	2621,00
M 24 x 350	S	1	2866,00
M 24 x 360	S	1	2866,00
M 24 x 380	S	1	3098,00
M 24 x 400	S	1	3354,00
M 24 x 420	S	1	4402,00
M 24 x 440	S	1	4802,00
M 24 x 450	S	1	4958,00
M 24 x 460	S	1	5202,00
M 24 x 480	S	1	5602,00
M 24 x 500	S	1	6003,00
M 24 x 520	S	1	6293,00
M 27 x 40	S	10	1365,00
M 27 x 45	S	10	1365,00
M 27 x 50	S	10	1115,00
M 27 x 55	S	10	1115,00
M 27 x 60	S	10	1115,00
M 27 x 65	S	10	1158,00
M 27 x 70	S	10	1158,00
M 27 x 75	S	10	1208,00
M 27 x 80	S	10	1208,00
M 27 x 85	S	10	1253,00
M 27 x 90	S	10	1253,00
M 27 x 95	S	10	1313,00
M 27 x 100	S	10	1313,00

Dimensions	PU	Pieces	€/100/Mat.
M 27 x 110	S	10	1342,00
M 27 x 120	S	10	1487,00
M 27 x 130	S	1	1546,00
M 27 x 140	S	1	1610,00
M 27 x 150	S	1	1668,00
M 27 x 160	S	1	1711,00
M 27 x 170	S	1	2122,00
M 27 x 180	S	1	1837,00
M 27 x 190	S	1	2306,00
M 27 x 200	S	1	1920,00
M 27 x 210	S	1	2949,00
M 27 x 220	S	1	2155,00
M 27 x 230	S	1	3210,00
M 27 x 240	S	1	2325,00
M 27 x 250	S	1	3413,00
M 27 x 260	S	1	2486,00
M 27 x 270	S	1	2566,00
M 27 x 280	S	1	2638,00
M 27 x 290	S	1	2714,00
M 27 x 300	S	1	2812,00
M 27 x 320	S	1	4102,00
M 27 x 340	S	1	4399,00
M 27 x 360	S	1	4721,00
M 27 x 380	S	1	5443,00
M 27 x 400	S	1	6390,00
M 30 x 40	S	10	1380,00
M 30 x 45	S	10	1380,00
M 30 x 50	S	10	1258,00
M 30 x 55	S	10	1258,00
M 30 x 60	S	10	1258,00
M 30 x 65	S	10	1306,00
M 30 x 70	S	10	1306,00
M 30 x 75	S	10	1342,00
M 30 x 80	S	10	1342,00
M 30 x 85	S	10	1404,00
M 30 x 90	S	10	1404,00
M 30 x 95	S	10	1487,00
M 30 x 100	S	10	1487,00
M 30 x 110	S	10	1561,00
M 30 x 120	S	10	1632,00
M 30 x 130	S	10	1690,00
M 30 x 140	S	10	1756,00
M 30 x 150	S	10	1846,00
M 30 x 160	S	10	1932,00
M 30 x 170	S	10	2027,00
M 30 x 180	S	10	2047,00
M 30 x 190	S	10	2189,00
M 30 x 200	S	10	2222,00
M 30 x 210	S	1	2397,00
M 30 x 220	S	1	2397,00
M 30 x 230	S	1	2674,00
M 30 x 240	S	1	2674,00
M 30 x 250	S	1	2856,00
M 30 x 260	S	1	2856,00
M 30 x 270	S	1	3086,00
M 30 x 280	S	1	2804,00
M 30 x 290	S	1	3552,00
M 30 x 300	S	1	3039,00
M 30 x 310	S	1	4521,00
M 30 x 320	S	1	3954,00
M 30 x 330	S	1	4859,00
M 30 x 340	S	1	5034,00
M 30 x 350	S	1	5730,00
M 30 x 360	S	1	5395,00
M 30 x 380	S	1	5946,00
M 30 x 400	S	1	6493,00
M 30 x 420	S	1	6879,00
M 30 x 440	S	1	8936,00
M 30 x 450	S	1	9809,00
M 30 x 460	S	1	9809,00
M 30 x 480	S	1	10971,00
M 30 x 500	S	1	11412,00
M 30 x 520	S	1	11704,00
M 33 x 60	S	1	1649,00
M 33 x 70	S	1	1649,00

Dimensions	PU	Pieces	€/100/Mat.
M 33 x 80	S	1	1649,00
M 33 x 90	S	1	1744,00
M 33 x 100	S	1	1877,00
M 33 x 110	S	1	1960,00
M 33 x 120	S	1	2096,00
M 33 x 130	S	1	2165,00
M 33 x 140	S	1	2295,00
M 33 x 150	S	1	2432,00
M 33 x 160	S	1	2487,00
M 33 x 170	S	1	3255,00
M 33 x 180	S	1	2734,00
M 33 x 190	S	1	3512,00
M 33 x 200	S	1	2897,00
M 33 x 220	S	1	3161,00
M 33 x 240	S	1	3370,00
M 33 x 260	S	1	3606,00
M 33 x 280	S	1	3780,00
M 33 x 300	S	1	4083,00
M 33 x 320	S	1	4675,00
M 33 x 340	S	1	5060,00
M 33 x 360	S	1	5356,00
M 33 x 380	S	1	5833,00
M 33 x 400	S	1	6306,00
M 36 x 50	S	1	3275,00
M 36 x 55	S	1	3275,00
M 36 x 60	S	1	2225,00
M 36 x 65	S	1	2225,00
M 36 x 70	S	1	2225,00
M 36 x 75	S	1	2225,00
M 36 x 80	S	1	2225,00
M 36 x 90	S	1	2284,00
M 36 x 100	S	1	2352,00
M 36 x 110	S	1	2422,00
M 36 x 120	S	1	2515,00
M 36 x 130	S	1	2608,00
M 36 x 140	S	1	2701,00
M 36 x 150	S	1	2796,00
M 36 x 160	S	1	2888,00
M 36 x 170	S	1	3564,00
M 36 x 180	S	1	3122,00
M 36 x 190	S	1	3260,00
M 36 x 200	S	1	3378,00
M 36 x 210	S	1	3564,00
M 36 x 220	S	1	3564,00
M 36 x 230	S	1	3750,00
M 36 x 240	S	1	3750,00
M 36 x 250	S	1	3936,00
M 36 x 260	S	1	3936,00
M 36 x 270	S	1	4008,00
M 36 x 280	S	1	4192,00
M 36 x 290	S	1	4390,00
M 36 x 300	S	1	4564,00
M 36 x 310	S	1	5074,00
M 36 x 320	S	1	5449,00
M 36 x 330	S	1	5644,00
M 36 x 340	S	1	5728,00
M 36 x 350	S	1	5872,00
M 36 x 360	S	1	5984,00
M 36 x 380	S	1	6356,00
M 36 x 400	S	1	6846,00
M 36 x 420	S	1	8711,00
M 36 x 440	S	1	10549,00
M 36 x 450	S	1	10963,00
M 36 x 460	S	1	10963,00
M 36 x 480	S	1	11475,00
M 36 x 500	S	1	11779,00
M 42 x 80	S	1	7475,00
M 42 x 90	S	1	7475,00
M 42 x 100	S	1	3695,00
M 42 x 110	S	1	3817,00
M 42 x 120	S	1	4067,00
M 42 x 130	S	1	4120,00
M 42 x 140	S	1	4549,00
M 42 x 150	S	1	4864,00
M 42 x 160	S	1	5030,00

DIN 912

DIN		00912.110	RAZ 362
912		**10.9 zinc plated***	



Hexagon socket head cap screws

*baked

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 450

DIN 912 → replaced by ISO 4762

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6	S	500	8,65 ZP
M 3	x	8	S	500	7,00 ZP
M 3	x	10	S	500	5,85 ZP
M 3	x	12	S	500	6,15 ZP
M 3	x	16	S	500	6,45 ZP
M 3	x	20	S	500	6,90 ZP
M 3	x	25	S	500	7,60 ZP
M 3	x	30	S	500	8,70 ZP
M 4	x	6	S	500	12,20 ZP
M 4	x	8	S	500	7,15 ZP
M 4	x	10	S	500	6,70 ZP
M 4	x	12	S	500	6,80 ZP
M 4	x	14	S	500	17,90 ZP
M 4	x	16	S	500	7,10 ZP
M 4	x	18	S	500	7,25 ZP
M 4	x	20	S	500	7,50 ZP
M 4	x	25	S	500	8,00 ZP
M 4	x	30	S	500	8,75 ZP
M 4	x	35	S	500	9,50 ZP
M 4	x	40	S	500	10,25 ZP
M 4	x	45	S	500	22,75 ZP
M 4	x	50	S	500	24,30 ZP
M 4	x	60	S	200	27,50 ZP
M 4	x	65	S	200	28,50 ZP
M 5	x	6	S	500	20,50 ZP
M 5	x	8	S	500	15,00 ZP
M 5	x	10	S	500	6,30 ZP
M 5	x	12	S	500	6,70 ZP
M 5	x	14	S	500	15,00 ZP
M 5	x	16	S	500	7,05 ZP
M 5	x	18	S	500	8,50 ZP
M 5	x	20	S	500	7,60 ZP
M 5	x	25	S	500	8,10 ZP
M 5	x	30	S	500	8,90 ZP
M 5	x	35	S	200	11,30 ZP
M 5	x	40	S	200	11,90 ZP
M 5	x	45	S	200	18,25 ZP
M 5	x	50	S	200	23,75 ZP
M 5	x	55	S	200	26,80 ZP
M 5	x	60	S	200	28,40 ZP
M 5	x	65	S	200	37,65 ZP
M 5	x	70	S	200	38,80 ZP
M 5	x	75	S	200	58,00 ZP
M 5	x	80	S	200	58,00 ZP
M 5	x	85	S	200	118,00 ZP
M 5	x	90	S	200	63,30 ZP
M 5	x	95	S	200	166,00 ZP
M 5	x	100	S	200	70,20 ZP
M 5	x	110	S	100	155,50 ZP
M 5	x	120	S	100	159,00 ZP
M 5	x	130	S	100	444,50 ZP
M 5	x	140	S	100	444,50 ZP
M 5	x	150	S	100	539,00 ZP
M 5	x	160	S	100	552,00 ZP
M 6	x	8	S	500	18,95 ZP
M 6	x	10	S	500	9,75 ZP
M 6	x	12	S	500	10,10 ZP
M 6	x	14	S	500	16,45 ZP
M 6	x	16	S	500	10,40 ZP
M 6	x	18	S	500	11,45 ZP
M 6	x	20	S	500	10,90 ZP
M 6	x	22	S	500	20,25 ZP
M 6	x	25	S	500	11,50 ZP
M 6	x	30	S	500	13,10 ZP
M 6	x	35	S	200	13,75 ZP
M 6	x	40	S	200	16,10 ZP
M 6	x	45	S	200	17,30 ZP
M 6	x	50	S	200	18,20 ZP
M 6	x	55	S	200	25,30 ZP
M 6	x	60	S	200	26,70 ZP
M 6	x	65	S	200	31,00 ZP
M 6	x	70	S	200	40,65 ZP
M 6	x	75	S	200	48,50 ZP
M 6	x	80	S	200	52,00 ZP
M 6	x	85	S	200	87,00 ZP
M 6	x	90	S	200	62,40 ZP
M 6	x	100	S	200	72,00 ZP
M 6	x	110	S	100	97,00 ZP
M 6	x	120	S	100	105,00 ZP
M 6	x	125	S	100	182,00 ZP
M 6	x	130	S	100	307,00 ZP
M 6	x	140	S	100	325,00 ZP
M 6	x	150	S	100	365,00 ZP
M 6	x	160	S	100	612,00 ZP
M 8	x	10	S	200	16,60 ZP
M 8	x	12	S	200	16,60 ZP
M 8	x	14	S	200	23,15 ZP
M 8	x	16	S	200	13,25 ZP
M 8	x	20	S	200	17,90 ZP
M 8	x	22	S	200	28,85 ZP
M 8	x	25	S	200	19,45 ZP
M 8	x	30	S	200	20,65 ZP
M 8	x	35	S	200	23,05 ZP
M 8	x	40	S	200	25,50 ZP
M 8	x	45	S	200	26,80 ZP
M 8	x	50	S	200	29,70 ZP
M 8	x	55	S	200	35,60 ZP
M 8	x	60	S	200	37,00 ZP
M 8	x	65	S	200	43,55 ZP
M 8	x	70	S	200	41,25 ZP
M 8	x	75	S	200	47,00 ZP
M 8	x	80	S	200	59,30 ZP
M 8	x	90	S	100	69,00 ZP
M 8	x	100	S	100	78,00 ZP
M 8	x	120	S	100	105,00 ZP
M 8	x	125	S	100	198,00 ZP
M 8	x	130	S	100	147,00 ZP
M 8	x	140	S	50	159,00 ZP
M 8	x	150	S	50	252,00 ZP
M 8	x	160	S	50	283,00 ZP
M 8	x	170	S	50	322,00 ZP
M 8	x	180	S	50	340,00 ZP
M 8	x	200	S	50	521,00 ZP
M 10	x	10	S	200	66,00 ZP
M 10	x	12	S	200	66,00 ZP
M 10	x	16	S	200	35,00 ZP
M 10	x	20	S	200	32,15 ZP
M 10	x	25	S	200	35,20 ZP
M 10	x	30	S	200	37,00 ZP
M 10	x	35	S	100	39,45 ZP
M 10	x	40	S	100	41,85 ZP
M 10	x	45	S	100	34,90 ZP
M 10	x	50	S	100	37,30 ZP
M 10	x	55	S	100	44,30 ZP
M 10	x	60	S	100	46,70 ZP
M 10	x	65	S	100	47,90 ZP
M 10	x	70	S	100	51,55 ZP
M 10	x	75	S	100	62,70 ZP
M 10	x	80	S	100	63,85 ZP
M 10	x	85	S	100	110,00 ZP
M 10	x	90	S	100	77,55 ZP
M 10	x	95	S	100	121,00 ZP
M 10	x	100	S	100	85,50 ZP
M 10	x	110	S	50	125,00 ZP
M 10	x	120	S	50	157,00 ZP
M 10	x	130	S	50	180,00 ZP
M 10	x	140	S	50	197,00 ZP
M 10	x	160	S	50	300,00 ZP
M 10	x	170	S	50	344,00 ZP
M 10	x	180	S	50	364,00 ZP
M 10	x	210	S	50	503,00 ZP
M 10	x	220	S	50	500,00 ZP
M 12	x	20	S	100	42,15 ZP
M 12	x	25	S	100	52,80 ZP
M 12	x	30	S	100	55,20 ZP
M 12	x	35	S	100	57,65 ZP
M 12	x	40	S	100	59,45 ZP
M 12	x	45	S	100	53,35 ZP
M 12	x	50	S	100	67,35 ZP
M 12	x	55	S	100	73,45 ZP
M 12	x	60	S	100	77,65 ZP
M 12	x	65	S	50	84,40 ZP
M 12	x	70	S	50	87,80 ZP
M 12	x	75	S	50	94,10 ZP
M 12	x	80	S	50	94,65 ZP
M 12	x	85	S	50	154,00 ZP
M 12	x	90	S	50	95,80 ZP
M 12	x	95	S	50	170,00 ZP
M 12	x	100	S	50	109,00 ZP
M 12	x	110	S	50	155,00 ZP
M 12	x	120	S	50	159,00 ZP
M 12	x	125	S	50	266,00 ZP
M 12	x	130	S	50	241,00 ZP
M 12	x	135	S	50	309,00 ZP
M 12	x	140	S	50	275,00 ZP
M 12	x	150	S	50	337,00 ZP
M 12	x	160	S	25	370,00 ZP
M 12	x	170	S	25	399,00 ZP
M 12	x	180	S	25	423,00 ZP
M 12	x	190	S	25	744,00 ZP
M 12	x	200	S	25	526,00 ZP
M 12	x	210	S	25	723,00 ZP
M 12	x	220	S	25	729,00 ZP
M 12	x	230	S	25	840,00 ZP
M 12	x	240	S	25	827,00 ZP
M 12	x	250	S	25	1160,00 ZP
M 12	x	260	S	25	903,00 ZP
M 12	x	270	S	25	1185,00 ZP
M 12	x	280	S	25	959,00 ZP
M 12	x	290	S	25	1215,00 ZP
M 12	x	300	S	25	1045,00 ZP
M 12	x	310	S	25	1890,00 ZP
M 12	x	320	S	25	2065,00 ZP
M 12	x	330	S	25	2400,00 ZP
M 12	x	340	S	25	2410,00 ZP
M 12	x	360	S	25	2975,00 ZP
M 12	x	380	S	25	3550,00 ZP

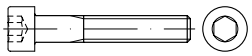
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 14 x 30	S	100	141,00 ZP
M 14 x 35	S	100	147,00 ZP
M 14 x 40	S	100	124,00 ZP
M 14 x 45	S	50	130,00 ZP
M 14 x 50	S	50	138,00 ZP
M 14 x 55	S	50	195,00 ZP
M 14 x 60	S	50	154,00 ZP
M 14 x 65	S	50	182,00 ZP
M 14 x 70	S	50	189,00 ZP
M 14 x 80	S	50	214,00 ZP
M 14 x 90	S	50	231,00 ZP
M 14 x 100	S	50	259,00 ZP
M 14 x 110	S	50	275,00 ZP
M 14 x 120	S	50	307,00 ZP
M 14 x 130	S	50	341,00 ZP
M 16 x 20	S	50	188,00 ZP
M 16 x 25	S	50	147,00 ZP
M 16 x 30	S	50	89,75 ZP
M 16 x 35	S	50	95,85 ZP
M 16 x 40	S	50	91,30 ZP
M 16 x 45	S	50	95,20 ZP
M 16 x 50	S	50	101,00 ZP
M 16 x 55	S	50	118,00 ZP
M 16 x 60	S	50	123,00 ZP
M 16 x 65	S	25	134,00 ZP
M 16 x 70	S	25	137,00 ZP
M 16 x 75	S	25	144,00 ZP
M 16 x 80	S	25	144,00 ZP
M 16 x 85	S	25	364,00 ZP
M 16 x 90	S	25	176,00 ZP
M 16 x 100	S	25	201,00 ZP
M 16 x 110	S	25	228,00 ZP
M 16 x 120	S	25	271,00 ZP
M 16 x 125	S	25	462,00 ZP
M 16 x 130	S	25	345,00 ZP
M 16 x 140	S	25	419,00 ZP
M 16 x 150	S	25	460,00 ZP
M 16 x 160	S	25	595,00 ZP
M 16 x 170	S	25	678,00 ZP
M 16 x 180	S	25	687,00 ZP
M 16 x 200	S	25	914,00 ZP
M 16 x 210	S	25	1340,00 ZP
M 16 x 230	S	25	1320,00 ZP
M 16 x 240	S	25	925,00 ZP
M 16 x 250	S	25	1410,00 ZP
M 16 x 270	S	25	1490,00 ZP
M 18 x 50	S	50	325,00 ZP
M 18 x 55	S	25	328,00 ZP
M 18 x 60	S	25	330,00 ZP
M 18 x 65	S	25	350,00 ZP
M 18 x 70	S	25	355,00 ZP
M 18 x 80	S	25	395,00 ZP
M 18 x 80	S	25	410,00 ZP
M 18 x 120	S	25	525,00 ZP
M 18 x 130	S	25	820,00 ZP
M 18 x 140	S	25	890,00 ZP
M 18 x 150	S	25	990,00 ZP
M 18 x 160	S	25	1090,00 ZP
M 18 x 180	S	25	1200,00 ZP
M 20 x 20	S	25	540,00 ZP
M 20 x 30	S	25	328,00 ZP
M 20 x 35	S	25	328,00 ZP
M 20 x 40	S	25	182,00 ZP
M 20 x 45	S	25	185,00 ZP
M 20 x 50	S	25	195,00 ZP
M 20 x 55	S	25	212,00 ZP
M 20 x 60	S	25	216,00 ZP
M 20 x 65	S	25	232,00 ZP
M 20 x 70	S	25	238,00 ZP
M 20 x 75	S	25	235,00 ZP
M 20 x 80	S	25	256,00 ZP
M 20 x 90	S	25	280,00 ZP
M 20 x 100	S	25	316,00 ZP
M 20 x 110	S	25	344,00 ZP
M 20 x 120	S	25	398,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 20 x 130	S	25	480,00 ZP
M 20 x 140	S	25	639,00 ZP
M 20 x 150	S	25	724,00 ZP
M 20 x 160	S	10	902,00 ZP
M 20 x 170	S	10	1065,00 ZP
M 20 x 180	S	10	975,00 ZP
M 20 x 190	S	10	1150,00 ZP
M 20 x 200	S	10	1030,00 ZP
M 20 x 210	S	1	1810,00 ZP
M 20 x 220	S	1	1386,00 ZP
M 20 x 230	S	1	2007,00 ZP
M 20 x 240	S	1	2007,00 ZP
M 20 x 260	S	1	1520,00 ZP
M 24 x 40	S	25	810,00 ZP
M 24 x 45	S	25	825,00 ZP
M 24 x 50	S	25	479,00 ZP
M 24 x 60	S	25	516,00 ZP
M 24 x 65	S	25	520,00 ZP
M 24 x 70	S	25	545,00 ZP
M 24 x 80	S	25	578,00 ZP
M 24 x 90	S	10	650,00 ZP
M 24 x 100	S	10	679,00 ZP
M 24 x 110	S	10	747,00 ZP
M 24 x 120	S	10	778,00 ZP
M 24 x 130	S	10	966,00 ZP
M 24 x 140	S	10	1171,00 ZP
M 24 x 150	S	10	1346,00 ZP
M 24 x 160	S	10	1437,00 ZP
M 24 x 170	S	10	1665,00 ZP
M 24 x 180	S	10	1739,00 ZP
M 24 x 190	S	10	2053,00 ZP
M 24 x 200	S	10	1870,00 ZP
M 24 x 210	S	1	2250,00 ZP
M 24 x 220	S	1	2116,00 ZP
M 24 x 230	S	1	2445,00 ZP
M 24 x 240	S	1	2275,00 ZP
M 24 x 260	S	1	2415,00 ZP
M 24 x 280	S	1	2490,00 ZP
M 24 x 300	S	1	2600,00 ZP
M 24 x 320	S	1	3600,00 ZP
M 24 x 330	S	1	3100,00 ZP
M 27 x 50	S	10	1260,00 ZP
M 27 x 60	S	10	1275,00 ZP
M 27 x 65	S	10	1325,00 ZP
M 27 x 70	S	10	1335,00 ZP
M 30 x 40	S	10	1570,00 ZP
M 30 x 50	S	10	1470,00 ZP
M 30 x 60	S	10	1490,00 ZP
M 30 x 65	S	1	1550,00 ZP
M 30 x 70	S	10	1560,00 ZP
M 30 x 80	S	10	1620,00 ZP
M 30 x 90	S	10	1700,00 ZP
M 30 x 100	S	10	1810,00 ZP
M 30 x 110	S	10	1900,00 ZP
M 30 x 120	S	10	2000,00 ZP
M 30 x 130	S	10	2080,00 ZP
M 30 x 150	S	10	2280,00 ZP
M 30 x 160	S	10	2380,00 ZP
M 30 x 170	S	10	2500,00 ZP
M 30 x 180	S	10	2550,00 ZP
M 30 x 200	S	10	2765,00 ZP
M 30 x 220	S	1	2980,00 ZP
M 30 x 230	S	1	3280,00 ZP
M 30 x 240	S	1	3300,00 ZP
M 30 x 250	S	1	3480,00 ZP
M 30 x 260	S	1	3530,00 ZP
M 30 x 280	S	1	3525,00 ZP
M 30 x 300	S	1	3800,00 ZP
M 30 x 320	S	1	4760,00 ZP
M 30 x 340	S	1	5990,00 ZP
M 30 x 350	S	1	6600,00 ZP
M 36 x 50	S	1	3650,00 ZP
M 36 x 60	S	1	2590,00 ZP
M 36 x 70	S	1	2620,00 ZP
M 36 x 80	S	1	2620,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 36 x 90	S	1	2750,00 ZP
M 36 x 100	S	1	2850,00 ZP
M 36 x 110	S	1	2950,00 ZP
M 36 x 130	S	1	3200,00 ZP
M 36 x 140	S	1	3300,00 ZP
M 36 x 150	S	1	3450,00 ZP
M 36 x 160	S	1	3580,00 ZP
M 36 x 170	S	1	3720,00 ZP
M 36 x 180	S	1	3870,00 ZP
M 36 x 200	S	1	4400,00 ZP
M 36 x 220	S	1	4440,00 ZP

DIN	00912.454	RAZ 1580
912	**10.9** **zinc flake coated**	



Hexagon socket head cap screws

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-12 Corrosion protection → TI-218
Mech. properties → TI-221 Tightening torque → TI-230

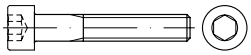
Stainless → S. 450

DIN 912 → replaced by ISO 4762

M 6	x	12	S	500	11,65 flZn
M 6	x	14	S	500	19,50 flZn
M 6	x	16	S	500	12,00 flZn
M 6	x	18	S	500	13,20 flZn
M 6	x	20	S	500	12,55 flZn
M 6	x	22	S	500	23,30 flZn
M 6	x	25	S	500	13,25 flZn
M 6	x	30	S	500	15,10 flZn
M 6	x	35	S	200	15,85 flZn
M 6	x	40	S	200	18,55 flZn
M 6	x	45	S	200	19,90 flZn
M 6	x	50	S	200	20,95 flZn
M 6	x	55	S	200	29,10 flZn
M 6	x	60	S	200	30,75 flZn
M 6	x	65	S	200	35,65 flZn
M 6	x	70	S	200	46,75 flZn
M 6	x	75	S	200	55,80 flZn
M 6	x	80	S	200	59,80 flZn
M 8	x	16	S	200	15,25 flZn
M 8	x	20	S	200	20,60 flZn
M 8	x	25	S	200	22,40 flZn
M 8	x	30	S	200	23,75 flZn
M 8	x	35	S	200	26,55 flZn
M 8	x	40	S	200	29,35 flZn
M 8	x	45	S	200	30,85 flZn
M 8	x	50	S	200	34,20 flZn
M 8	x	55	S	200	40,95 flZn
M 8	x	60	S	200	42,55 flZn
M 8	x	65	S	200	50,10 flZn
M 8	x	70	S	200	47,45 flZn
M 8	x	75	S	200	54,05 flZn
M 8	x	80	S	200	68,20 flZn
M 8	x	90	S	100	79,35 flZn
M 10	x	20	S	200	37,00 flZn
M 10	x	25	S	200	40,50 flZn
M 10	x	30	S	200	42,55 flZn
M 10	x	35	S	100	45,40 flZn
M 10	x	40	S	100	48,15 flZn
M 10	x	45	S	100	40,15 flZn
M 10	x	50	S	100	42,90 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	55	S	100	50,95 flZn
M 10	x	60	S	100	53,75 flZn
M 10	x	60	S	100	55,10 flZn
M 10	x	70	S	100	59,30 flZn
M 10	x	75	S	100	72,15 flZn
M 10	x	80	S	100	73,45 flZn
M 10	x	90	S	100	89,20 flZn
M 12	x	20	S	100	48,50 flZn
M 12	x	25	S	100	60,75 flZn
M 12	x	30	S	100	63,50 flZn
M 12	x	35	S	100	66,30 flZn
M 12	x	40	S	100	68,40 flZn
M 12	x	45	S	100	61,35 flZn
M 12	x	50	S	100	77,45 flZn
M 12	x	55	S	100	84,50 flZn
M 12	x	60	S	100	89,30 flZn
M 12	x	65	S	50	97,10 flZn
M 12	x	70	S	50	101,00 flZn
M 12	x	75	S	50	109,00 flZn
M 12	x	80	S	50	109,00 flZn
M 12	x	90	S	50	111,00 flZn
M 12	x	100	S	50	126,00 flZn
M 16	x	30	S	50	104,00 flZn
M 16	x	35	S	50	111,00 flZn
M 16	x	40	S	50	105,00 flZn
M 16	x	45	S	50	110,00 flZn
M 16	x	50	S	50	117,00 flZn
M 16	x	55	S	50	136,00 flZn
M 16	x	60	S	50	142,00 flZn
M 16	x	65	S	25	155,00 flZn
M 16	x	70	S	25	158,00 flZn
M 16	x	75	S	25	166,00 flZn
M 16	x	80	S	25	166,00 flZn
M 16	x	90	S	25	203,00 flZn
M 16	x	100	S	25	232,00 flZn
M 16	x	110	S	25	263,00 flZn
M 16	x	120	S	25	312,00 flZn
M 20	x	65	S	25	267,00 flZn
M 20	x	70	S	25	274,00 flZn
M 20	x	75	S	25	271,00 flZn
M 20	x	80	S	25	295,00 flZn
M 20	x	90	S	25	322,00 flZn
M 20	x	100	S	25	364,00 flZn
M 20	x	110	S	25	396,00 flZn
M 20	x	120	S	25	458,00 flZn
M 20	x	130	S	25	552,00 flZn
M 20	x	140	S	25	735,00 flZn
M 20	x	150	S	25	833,00 flZn
M 20	x	160	S	10	1038,00 flZn
M 20	x	170	S	10	1225,00 flZn
M 20	x	180	S	10	1122,00 flZn
M 24	x	80	S	25	665,00 flZn
M 24	x	90	S	10	748,00 flZn
M 24	x	100	S	10	781,00 flZn
M 24	x	110	S	10	860,00 flZn
M 24	x	120	S	10	895,00 flZn
M 24	x	130	S	10	1111,00 flZn
M 24	x	140	S	10	1347,00 flZn
M 24	x	150	S	10	1548,00 flZn
M 24	x	150	S	10	1653,00 flZn
M 24	x	170	S	10	1915,00 flZn
M 24	x	180	S	10	2000,00 flZn

Dimensions			PU	Pieces	€/100/Mat.
DIN		00912.200			RAZ 363
912		**12.9**			



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 450

DIN 912 → replaced by ISO 4762

M 1,4	x	6	S	100	128,00
M 1,4	x	10	S	100	152,00
M 1,6	x	3	S	100	93,40
M 1,6	x	4	S	100	104,00
M 1,6	x	5	S	100	110,00
M 1,6	x	6	S	100	113,00
M 2	x	3	S	100	78,20
M 2	x	4	S	100	80,70
M 2	x	5	S	100	81,25
M 2	x	6	S	100	86,70
M 2	x	8	S	100	88,55
M 2	x	10	S	100	92,75
M 2	x	12	S	100	111,00
M 2,5	x	4	S	100	66,70
M 2,5	x	5	S	100	69,75
M 2,5	x	6	S	100	74,00
M 2,5	x	8	S	100	75,20
M 2,5	x	10	S	100	78,20
M 2,5	x	12	S	100	94,60
M 2,5	x	16	S	100	113,00
M 3	x	4	S	500	29,60
M 3	x	5	S	500	29,60
M 3	x	5	K	100	32,60
M 3	x	6	S	500	8,30
M 3	x	6	K	100	11,30
M 3	x	8	S	500	6,60
M 3	x	8	K	100	9,60
M 3	x	10	S	500	5,40
M 3	x	10	K	100	8,40
M 3	x	12	S	500	5,65
M 3	x	12	K	100	8,65
M 3	x	14	S	500	5,85
M 3	x	14	K	100	8,85
M 3	x	16	S	500	5,85
M 3	x	16	K	100	8,85
M 3	x	18	S	500	6,20
M 3	x	18	K	100	9,20
M 3	x	20	S	500	6,20
M 3	x	20	K	100	9,20
M 3	x	22	S	500	6,75
M 3	x	22	K	100	9,75
M 3	x	25	S	500	6,75
M 3	x	25	K	100	9,75
M 3	x	30	S	500	7,70
M 3	x	30	K	100	10,75
M 3	x	35	S	500	21,80
M 3	x	35	K	100	24,80
M 3	x	40	S	500	36,35
M 3	x	45	S	500	47,80
M 3	x	50	S	500	52,90
M 4	x	5	S	500	30,40
M 4	x	5	K	100	33,40
M 4	x	6	S	500	16,85
M 4	x	6	K	100	19,90
M 4	x	8	S	500	6,35
M 4	x	8	K	100	9,35
M 4	x	10	S	500	5,85

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	10	K	100	8,85
M 4	x	12	S	500	5,90
M 4	x	12	K	100	8,95
M 4	x	14	S	500	16,50
M 4	x	14	K	100	19,50
M 4	x	16	S	500	6,00
M 4	x	16	K	100	9,05
M 4	x	18	S	500	6,25
M 4	x	18	K	100	9,25
M 4	x	20	S	500	6,35
M 4	x	20	K	100	9,35
M 4	x	22	S	500	16,25
M 4	x	22	K	100	19,30
M 4	x	25	S	500	6,60
M 4	x	25	K	100	9,60
M 4	x	30	S	500	7,05
M 4	x	30	K	100	10,05
M 4	x	35	S	500	7,35
M 4	x	35	K	100	10,40
M 4	x	40	S	500	8,00
M 4	x	40	K	100	11,00
M 4	x	45	S	500	19,65
M 4	x	45	K	100	22,65
M 4	x	50	S	500	19,65
M 4	x	50	K	100	22,65
M 4	x	55	S	200	23,35
M 4	x	60	S	200	24,25
M 4	x	65	S	200	29,85
M 4	x	70	S	200	34,95
M 4	x	75	S	500	86,70
M 4	x	80	S	200	92,75
M 4	x	90	S	200	306,00
M 4	x	100	S	200	336,00
M 4	x	110	S	200	492,00
M 4	x	120	S	200	509,00
M 5	x	6	S	500	19,35
M 5	x	6	K	100	22,35
M 5	x	8	S	500	13,80
M 5	x	8	K	100	16,85
M 5	x	10	S	500	5,05
M 5	x	10	K	100	8,05
M 5	x	12	S	500	5,30
M 5	x	12	K	100	8,35
M 5	x	14	S	500	14,00
M 5	x	14	K	100	17,00
M 5	x	16	S	500	5,40
M 5	x	16	K	100	8,40
M 5	x	18	S	500	6,60
M 5	x	18	K	100	9,60
M 5	x	20	S	500	5,70
M 5	x	20	K	100	8,75
M 5	x	22	S	500	14,55
M 5	x	22	K	100	17,60
M 5	x	25	S	500	6,00
M 5	x	25	K	100	9,05
M 5	x	30	S	500	6,40
M 5	x	30	K	100	9,45
M 5	x	35	S	200	8,55
M 5	x	40	S	200	8,75
M 5	x	45	S	200	14,85
M 5	x	50	S	200	19,95
M 5	x	55	S	200	22,70
M 5	x	60	S	200	23,90
M 5	x	65	S	200	32,80
M 5	x	70	S	200	33,40
M 5	x	75	S	200	51,85
M 5	x	80	S	200	52,85
M 5	x	85	S	200	60,10
M 5	x	90	S	200	57,30
M 5	x	95	S	200	67,35
M 5	x	100	S	200	63,70
M 5	x	105	S	100	150,00
M 5	x	110	S	100	71,55
M 5	x	115	S	100	175,00
M 5	x	120	S	100	105,00

Dimensions	PU	Pieces	€/100/Mat.
M 5 x 125	S	100	482,00
M 5 x 130	S	100	435,00
M 5 x 135	S	100	535,00
M 5 x 140	S	100	548,00
M 5 x 145	S	100	535,00
M 5 x 150	S	100	552,00
M 5 x 155	S	100	544,00
M 5 x 160	S	100	583,00
M 5 x 165	S	100	576,00
M 5 x 170	S	100	614,00
M 5 x 175	S	100	614,00
M 5 x 180	S	100	614,00
M 5 x 190	S	100	745,00
M 5 x 200	S	100	745,00
M 5 x 210	S	100	949,00
M 5 x 220	S	100	949,00
M 5 x 230	S	100	966,00
M 5 x 240	S	100	1008,00
M 6 x 6	S	500	158,00
M 6 x 6	K	100	161,00
M 6 x 8	S	500	15,30
M 6 x 8	K	100	18,30
M 6 x 10	S	500	5,20
M 6 x 10	K	100	8,25
M 6 x 12	S	500	11,70
M 6 x 12	K	100	14,75
M 6 x 14	S	500	12,05
M 6 x 16	S	500	5,40
M 6 x 16	K	100	8,40
M 6 x 18	S	500	6,05
M 6 x 18	K	100	9,10
M 6 x 20	S	500	5,45
M 6 x 20	K	100	8,50
M 6 x 22	S	500	13,35
M 6 x 22	K	100	16,40
M 6 x 25	S	500	5,65
M 6 x 25	K	100	8,70
M 6 x 30	S	500	6,40
M 6 x 30	K	100	9,45
M 6 x 35	S	200	6,90
M 6 x 40	S	200	7,75
M 6 x 45	S	200	10,10
M 6 x 50	S	200	12,05
M 6 x 55	S	200	19,10
M 6 x 60	S	200	19,45
M 6 x 65	S	200	24,45
M 6 x 70	S	200	32,55
M 6 x 75	S	200	40,10
M 6 x 80	S	200	44,15
M 6 x 85	S	200	83,10
M 6 x 90	S	100	54,05
M 6 x 95	S	100	107,00
M 6 x 100	S	100	64,90
M 6 x 105	S	100	132,00
M 6 x 110	S	100	88,55
M 6 x 115	S	100	172,00
M 6 x 120	S	100	96,40
M 6 x 125	S	100	270,00
M 6 x 130	S	100	287,00
M 6 x 135	S	100	377,00
M 6 x 140	S	100	301,00
M 6 x 145	S	100	537,00
M 6 x 150	S	100	571,00
M 6 x 155	S	100	588,00
M 6 x 160	S	100	573,00
M 6 x 165	S	100	617,00
M 6 x 170	S	100	632,00
M 6 x 175	S	100	682,00
M 6 x 180	S	100	671,00
M 6 x 185	S	100	835,00
M 6 x 190	S	100	820,00
M 6 x 200	S	100	913,00
M 6 x 210	S	100	951,00
M 6 x 220	S	100	989,00
M 6 x 230	S	100	1074,00

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 240	S	100	1086,00
M 6 x 250	S	100	1190,00
M 6 x 260	S	100	1213,00
M 6 x 270	S	100	1334,00
M 6 x 280	S	100	1681,00
M 6 x 290	S	100	1958,00
M 6 x 300	S	100	2300,00
M 8 x 8	S	200	149,00
M 8 x 10	S	200	12,60
M 8 x 12	S	200	12,60
M 8 x 14	S	200	18,60
M 8 x 16	S	200	8,85
M 8 x 18	S	200	9,65
M 8 x 20	S	200	8,40
M 8 x 22	S	200	19,35
M 8 x 25	S	200	9,05
M 8 x 30	S	200	9,55
M 8 x 35	S	200	10,60
M 8 x 40	S	200	11,75
M 8 x 45	S	200	12,45
M 8 x 50	S	200	13,65
M 8 x 55	S	200	18,55
M 8 x 60	S	200	19,00
M 8 x 65	S	200	25,55
M 8 x 70	S	200	26,15
M 8 x 75	S	200	32,50
M 8 x 80	S	200	42,85
M 8 x 90	S	100	51,85
M 8 x 100	S	100	60,35
M 8 x 110	S	100	78,85
M 8 x 120	S	100	80,05
M 8 x 130	S	100	122,00
M 8 x 140	S	50	134,00
M 8 x 150	S	50	226,00
M 8 x 160	S	50	267,00
M 8 x 170	S	50	306,00
M 8 x 180	S	50	327,00
M 8 x 190	S	50	539,00
M 8 x 200	S	50	471,00
M 8 x 210	S	50	586,00
M 8 x 220	S	50	600,00
M 8 x 230	S	50	633,00
M 8 x 240	S	50	657,00
M 8 x 250	S	50	699,00
M 8 x 260	S	50	729,00
M 8 x 270	S	50	757,00
M 8 x 280	S	50	778,00
M 8 x 290	S	50	1008,00
M 8 x 300	S	50	1068,00
M 8 x 310	S	50	1351,00
M 10 x 10	S	200	194,00
M 10 x 12	S	200	64,90
M 10 x 16	S	200	25,60
M 10 x 18	S	200	25,60
M 10 x 20	S	200	15,45
M 10 x 22	S	200	42,85
M 10 x 25	S	200	16,70
M 10 x 30	S	200	17,35
M 10 x 35	S	100	18,35
M 10 x 40	S	100	19,15
M 10 x 45	S	100	21,20
M 10 x 50	S	100	22,40
M 10 x 55	S	100	24,40
M 10 x 60	S	100	27,10
M 10 x 65	S	100	30,25
M 10 x 70	S	100	27,10
M 10 x 75	S	100	36,80
M 10 x 80	S	100	37,80
M 10 x 85	S	100	85,50
M 10 x 90	S	100	49,45
M 10 x 100	S	100	55,05
M 10 x 110	S	50	91,55
M 10 x 120	S	50	120,00
M 10 x 130	S	50	142,00
M 10 x 140	S	50	159,00

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 150	S	50	234,00
M 10 x 160	S	50	293,00
M 10 x 170	S	50	343,00
M 10 x 180	S	50	365,00
M 10 x 190	S	50	490,00
M 10 x 200	S	50	410,00
M 10 x 210	S	50	458,00
M 10 x 220	S	50	439,00
M 10 x 230	S	50	532,00
M 10 x 240	S	50	514,00
M 10 x 250	S	50	566,00
M 10 x 260	S	50	586,00
M 10 x 270	S	50	792,00
M 10 x 280	S	50	659,00
M 10 x 290	S	50	878,00
M 10 x 300	S	50	732,00
M 12 x 12	S	100	267,00
M 12 x 16	S	100	34,35
M 12 x 18	S	100	34,35
M 12 x 20	S	100	30,45
M 12 x 22	S	100	83,70
M 12 x 25	S	100	25,60
M 12 x 30	S	100	26,60
M 12 x 35	S	100	27,30
M 12 x 40	S	100	27,80
M 12 x 45	S	100	29,50
M 12 x 50	S	100	30,95
M 12 x 55	S	100	34,20
M 12 x 60	S	100	35,70
M 12 x 65	S	50	39,60
M 12 x 70	S	50	41,00
M 12 x 75	S	50	48,20
M 12 x 80	S	50	48,80
M 12 x 90	S	50	55,40
M 12 x 100	S	50	62,50
M 12 x 110	S	50	95,85
M 12 x 120	S	50	107,00
M 12 x 130	S	50	165,00
M 12 x 140	S	50	193,00
M 12 x 150	S	50	254,00
M 12 x 160	S	25	281,00
M 12 x 170	S	25	322,00
M 12 x 180	S	25	325,00
M 12 x 190	S	25	419,00
M 12 x 200	S	25	419,00
M 12 x 220	S	25	645,00
M 12 x 230	S	25	932,00
M 12 x 240	S	25	691,00
M 12 x 250	S	25	1017,00
M 12 x 260	S	25	756,00
M 12 x 280	S	25	802,00
M 12 x 300	S	25	875,00
M 12 x 310	S	25	2358,00
M 12 x 320	S	1	2358,00
M 12 x 340	S	1	2579,00
M 12 x 360	S	1	2947,00
M 12 x 380	S	1	4583,00
M 12 x 400	S	1	5239,00
M 14 x 20	S	100	159,00
M 14 x 25	S	100	125,00
M 14 x 30	S	100	120,00
M 14 x 35	S	100	124,00
M 14 x 40	S	100	111,00
M 14 x 45	S	50	114,00
M 14 x 50	S	50	121,00
M 14 x 55	S	50	162,00
M 14 x 60	S	50	133,00
M 14 x 65	S	50	145,00
M 14 x 70	S	50	150,00
M 14 x 75	S	50	170,00
M 14 x 80	S	50	170,00
M 14 x 90	S	50	182,00
M 14 x 100	S	50	205,00
M 14 x 110	S	50	216,00
M 14 x 120	S	50	244,00

Dimensions			PU	Pieces	€/100/Mat.
M 14	x	130	S	50	273,00
M 14	x	140	S	25	350,00
M 14	x	150	S	25	398,00
M 14	x	160	S	25	637,00
M 14	x	170	S	25	672,00
M 14	x	180	S	25	704,00
M 14	x	190	S	25	727,00
M 14	x	200	S	25	749,00
M 14	x	220	S	10	903,00
M 14	x	240	S	10	939,00
M 14	x	260	S	10	977,00
M 14	x	280	S	10	1034,00
M 14	x	300	S	10	1106,00
M 16	x	20	S	50	162,00
M 16	x	22	S	50	196,00
M 16	x	25	S	50	118,00
M 16	x	30	S	50	54,00
M 16	x	35	S	50	56,85
M 16	x	40	S	50	58,00
M 16	x	45	S	50	59,65
M 16	x	50	S	50	61,85
M 16	x	55	S	50	63,70
M 16	x	60	S	50	66,70
M 16	x	65	S	25	76,40
M 16	x	70	S	25	76,40
M 16	x	75	S	25	87,35
M 16	x	80	S	25	87,35
M 16	x	85	S	25	106,00
M 16	x	90	S	25	106,00
M 16	x	100	S	25	116,00
M 16	x	110	S	25	140,00
M 16	x	120	S	25	169,00
M 16	x	130	S	25	251,00
M 16	x	140	S	25	273,00
M 16	x	150	S	25	324,00
M 16	x	160	S	25	360,00
M 16	x	170	S	25	446,00
M 16	x	180	S	25	446,00
M 16	x	190	S	25	583,00
M 16	x	200	S	25	501,00
M 16	x	210	S	25	1136,00
M 16	x	220	S	25	756,00
M 16	x	230	S	25	1185,00
M 16	x	240	S	25	759,00
M 16	x	250	S	25	1236,00
M 16	x	260	S	25	846,00
M 16	x	270	S	25	1306,00
M 16	x	280	S	25	933,00
M 16	x	290	S	25	1508,00
M 16	x	300	S	25	1049,00
M 16	x	310	S	1	1285,00
M 16	x	320	S	1	1398,00
M 16	x	330	S	1	1400,00
M 16	x	340	S	1	1513,00
M 16	x	350	S	1	1536,00
M 16	x	360	S	1	1632,00
M 16	x	370	S	1	2390,00
M 16	x	380	S	1	2303,00
M 16	x	390	S	1	2731,00
M 16	x	400	S	1	2425,00
M 16	x	420	S	1	3072,00
M 18	x	30	S	50	339,00
M 18	x	35	S	50	339,00
M 18	x	40	S	50	258,00
M 18	x	45	S	50	263,00
M 18	x	50	S	50	263,00
M 18	x	55	S	25	264,00
M 18	x	60	S	25	264,00
M 18	x	65	S	25	281,00
M 18	x	70	S	25	281,00
M 18	x	75	S	25	311,00
M 18	x	80	S	25	311,00
M 18	x	90	S	25	317,00
M 18	x	100	S	25	346,00
M 18	x	110	S	25	368,00
M 18	x	120	S	25	407,00
M 18	x	130	S	25	454,00
M 18	x	140	S	25	533,00
M 18	x	150	S	25	624,00
M 18	x	160	S	25	857,00
M 18	x	170	S	25	901,00
M 18	x	180	S	25	944,00
M 18	x	190	S	25	981,00
M 18	x	200	S	10	1015,00
M 18	x	220	S	10	1237,00
M 18	x	240	S	10	1308,00
M 18	x	260	S	1	1398,00
M 18	x	280	S	1	1496,00
M 18	x	300	S	1	1594,00
M 20	x	30	S	25	291,00
M 20	x	35	S	25	291,00
M 20	x	40	S	25	112,00
M 20	x	45	S	25	113,00
M 20	x	50	S	25	114,00
M 20	x	55	S	25	121,00
M 20	x	60	S	25	125,00
M 20	x	65	S	25	136,00
M 20	x	70	S	25	136,00
M 20	x	75	S	25	142,00
M 20	x	80	S	25	158,00
M 20	x	90	S	25	166,00
M 20	x	100	S	25	181,00
M 20	x	110	S	25	205,00
M 20	x	120	S	25	248,00
M 20	x	130	S	25	320,00
M 20	x	140	S	25	468,00
M 20	x	150	S	25	543,00
M 20	x	160	S	10	553,00
M 20	x	170	S	10	772,00
M 20	x	180	S	10	755,00
M 20	x	190	S	10	840,00
M 20	x	200	S	10	705,00
M 20	x	210	S	10	1469,00
M 20	x	220	S	10	1030,00
M 20	x	230	S	10	1651,00
M 20	x	240	S	10	1091,00
M 20	x	250	S	10	1761,00
M 20	x	260	S	10	1152,00
M 20	x	270	S	10	1885,00
M 20	x	280	S	10	1211,00
M 20	x	290	S	10	2163,00
M 20	x	300	S	10	1341,00
M 20	x	310	S	1	1695,00
M 20	x	320	S	1	1747,00
M 20	x	330	S	1	1919,00
M 20	x	340	S	1	1980,00
M 20	x	350	S	1	2123,00
M 20	x	360	S	1	2189,00
M 20	x	380	S	1	2375,00
M 20	x	400	S	1	2608,00
M 20	x	420	S	1	2911,00
M 20	x	440	S	1	3202,00
M 20	x	460	S	1	3492,00
M 20	x	480	S	1	3784,00
M 20	x	500	S	1	4075,00
M 22	x	40	S	25	670,00
M 22	x	45	S	25	670,00
M 22	x	50	S	25	850,00
M 22	x	55	S	25	964,00
M 22	x	60	S	25	964,00
M 22	x	65	S	25	997,00
M 22	x	70	S	25	997,00
M 22	x	75	S	25	1044,00
M 22	x	80	S	25	1044,00
M 22	x	90	S	25	1118,00
M 22	x	100	S	10	1144,00
M 22	x	110	S	10	1166,00
M 22	x	120	S	10	1196,00
M 22	x	130	S	1	1225,00
M 22	x	140	S	1	1275,00
M 22	x	150	S	1	1310,00
M 22	x	160	S	1	1341,00
M 22	x	170	S	1	1398,00
M 22	x	180	S	1	1446,00
M 22	x	200	S	1	1687,00
M 22	x	220	S	1	1752,00
M 22	x	240	S	1	1839,00
M 22	x	260	S	1	1905,00
M 22	x	280	S	1	1970,00
M 22	x	300	S	1	2026,00
M 24	x	40	S	25	688,00
M 24	x	45	S	25	708,00
M 24	x	50	S	25	343,00
M 24	x	55	S	25	365,00
M 24	x	60	S	25	365,00
M 24	x	65	S	25	380,00
M 24	x	70	S	25	380,00
M 24	x	75	S	25	396,00
M 24	x	80	S	25	396,00
M 24	x	90	S	10	452,00
M 24	x	100	S	10	464,00
M 24	x	110	S	10	516,00
M 24	x	120	S	10	531,00
M 24	x	130	S	1	886,00
M 24	x	140	S	1	903,00
M 24	x	150	S	1	1064,00
M 24	x	160	S	1	1403,00
M 24	x	170	S	1	1567,00
M 24	x	180	S	1	1753,00
M 24	x	190	S	1	1848,00
M 24	x	200	S	1	1848,00
M 24	x	210	S	1	2013,00
M 24	x	220	S	1	1894,00
M 24	x	230	S	1	2144,00
M 24	x	240	S	1	1970,00
M 24	x	250	S	1	2253,00
M 24	x	260	S	1	2037,00
M 24	x	270	S	1	2382,00
M 24	x	280	S	1	2091,00
M 24	x	290	S	1	2518,00
M 24	x	300	S	1	2156,00
M 24	x	310	S	1	2330,00
M 24	x	320	S	1	2330,00
M 24	x	330	S	1	2621,00
M 24	x	340	S	1	2621,00
M 24	x	350	S	1	2866,00
M 24	x	360	S	1	2866,00
M 24	x	380	S	1	3098,00
M 24	x	400	S	1	3354,00
M 24	x	420	S	1	4402,00
M 24	x	440	S	1	4802,00
M 24	x	450	S	1	5300,00
M 24	x	460	S	1	5202,00
M 24	x	480	S	1	5602,00
M 24	x	500	S	1	6003,00
M 27	x	50	S	10	1159,00
M 27	x	55	S	10	1159,00

E-Business

Electronically supported processes make c-part sourcing easier

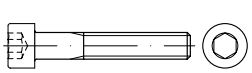
- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 27	x	60	S	10	1159,00
M 27	x	65	S	10	1202,00
M 27	x	70	S	10	1202,00
M 27	x	75	S	10	1256,00
M 27	x	80	S	10	1256,00
M 27	x	90	S	10	1304,00
M 27	x	100	S	10	1367,00
M 27	x	110	S	10	1399,00
M 27	x	120	S	10	1544,00
M 27	x	130	S	1	1610,00
M 27	x	140	S	1	1674,00
M 27	x	150	S	1	1739,00
M 27	x	160	S	1	1782,00
M 27	x	170	S	1	2536,00
M 27	x	180	S	1	1908,00
M 27	x	190	S	1	2770,00
M 27	x	200	S	1	1998,00
M 27	x	210	S	1	2984,00
M 27	x	220	S	1	2155,00
M 27	x	230	S	1	3210,00
M 27	x	240	S	1	2325,00
M 27	x	250	S	1	3413,00
M 27	x	260	S	1	2486,00
M 27	x	280	S	1	2638,00
M 27	x	300	S	1	2812,00
M 30	x	45	S	1	1292,00
M 30	x	50	S	1	1292,00
M 30	x	55	S	1	1292,00
M 30	x	60	S	1	1292,00
M 30	x	65	S	1	1323,00
M 30	x	70	S	1	1349,00
M 30	x	75	S	1	1349,00
M 30	x	80	S	1	1408,00
M 30	x	90	S	1	1467,00
M 30	x	100	S	1	1524,00
M 30	x	110	S	1	1583,00
M 30	x	120	S	1	1640,00
M 30	x	130	S	1	1699,00
M 30	x	140	S	1	1756,00
M 30	x	150	S	1	1846,00
M 30	x	160	S	1	1932,00
M 30	x	170	S	1	2028,00
M 30	x	180	S	1	2047,00
M 30	x	190	S	1	2189,00
M 30	x	200	S	1	2222,00
M 30	x	210	S	1	2397,00
M 30	x	220	S	1	2397,00
M 30	x	230	S	1	2674,00
M 30	x	240	S	1	2513,00
M 30	x	250	S	1	2856,00
M 30	x	260	S	1	2856,00
M 30	x	270	S	1	3086,00
M 30	x	280	S	1	2804,00
M 30	x	290	S	1	3552,00
M 30	x	300	S	1	3039,00
M 30	x	320	S	1	3954,00
M 30	x	340	S	1	5034,00
M 30	x	360	S	1	5395,00
M 30	x	380	S	1	5946,00
M 30	x	400	S	1	6493,00
M 30	x	420	S	1	6879,00
M 30	x	440	S	1	8936,00
M 30	x	460	S	1	9809,00
M 33	x	60	S	1	1717,00
M 33	x	70	S	1	1717,00
M 33	x	80	S	1	1717,00
M 33	x	90	S	1	1811,00
M 33	x	100	S	1	1953,00
M 33	x	110	S	1	2039,00
M 33	x	120	S	1	2184,00
M 33	x	130	S	1	2258,00
M 33	x	140	S	1	2384,00
M 33	x	150	S	1	2527,00
M 33	x	160	S	1	2586,00
M 33	x	170	S	1	3807,00

Dimensions			PU	Pieces	€/100/Mat.
M 33	x	180	S	1	2844,00
M 33	x	200	S	1	3015,00
M 33	x	210	S	1	4485,00
M 33	x	220	S	1	3257,00
M 33	x	240	S	1	3516,00
M 33	x	260	S	1	3778,00
M 33	x	280	S	1	4024,00
M 33	x	300	S	1	4286,00
M 36	x	60	S	1	2225,00
M 36	x	70	S	1	2225,00
M 36	x	80	S	1	2225,00
M 36	x	90	S	1	2284,00
M 36	x	100	S	1	2352,00
M 36	x	110	S	1	2422,00
M 36	x	120	S	1	2515,00
M 36	x	130	S	1	2608,00
M 36	x	140	S	1	2701,00
M 36	x	150	S	1	2796,00
M 36	x	160	S	1	2888,00
M 36	x	170	S	1	3564,00
M 36	x	180	S	1	3122,00
M 36	x	200	S	1	3378,00
M 36	x	220	S	1	3564,00
M 36	x	240	S	1	3750,00
M 36	x	260	S	1	3936,00
M 36	x	280	S	1	4192,00
M 36	x	300	S	1	4564,00
M 36	x	320	S	1	5449,00
M 36	x	340	S	1	5728,00
M 36	x	360	S	1	5984,00
M 36	x	380	S	1	6356,00
M 36	x	400	S	1	6846,00
M 36	x	420	S	1	8711,00
M 39	x	100	S	1	3888,00
M 39	x	110	S	1	4261,00
M 39	x	120	S	1	4387,00
M 39	x	130	S	1	4676,00
M 39	x	140	S	1	4916,00
M 39	x	150	S	1	5126,00
M 39	x	160	S	1	5249,00
M 39	x	170	S	1	5584,00
M 39	x	180	S	1	5779,00
M 39	x	200	S	1	6247,00
M 39	x	220	S	1	6739,00
M 39	x	240	S	1	7232,00
M 39	x	260	S	1	8059,00
M 39	x	280	S	1	8479,00
M 39	x	300	S	1	8971,00
M 42	x	120	S	1	4067,00
M 42	x	130	S	1	4120,00
M 42	x	140	S	1	4549,00
M 42	x	150	S	1	4864,00
M 42	x	160	S	1	5030,00
M 42	x	170	S	1	5140,00
M 42	x	180	S	1	5275,00
M 42	x	190	S	1	5507,00
M 42	x	200	S	1	5783,00
M 42	x	220	S	1	6684,00
M 42	x	240	S	1	7236,00
M 42	x	260	S	1	7783,00
M 42	x	280	S	1	8260,00
M 42	x	300	S	1	8952,00
M 48	x	120	S	1	7236,00
M 48	x	130	S	1	7507,00
M 48	x	140	S	1	7924,00
M 48	x	150	S	1	8340,00
M 48	x	160	S	1	8816,00
M 48	x	180	S	1	9639,00
M 48	x	200	S	1	10325,00
M 48	x	220	S	1	13771,00
M 48	x	240	S	1	14944,00
M 48	x	260	S	1	16186,00
M 48	x	280	S	1	17219,00
M 48	x	300	S	1	17902,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00912.201		RAZ 1580
912	**12.9** **zinc flake coated**		



Hexagon socket head cap screws

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated or without corrosion protection.

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-218

Stainless → S. 450

DIN 912 → replaced by ISO 4762

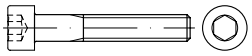
M 6	x	12	S	500	12,85 flZn
M 6	x	14	S	500	21,45 flZn
M 6	x	16	S	500	13,20 flZn
M 6	x	18	S	500	14,55 flZn
M 6	x	20	S	500	13,80 flZn
M 6	x	22	S	500	25,65 flZn
M 6	x	25	S	500	14,60 flZn
M 6	x	30	S	500	16,60 flZn
M 6	x	35	S	200	17,45 flZn
M 6	x	40	S	200	20,40 flZn
M 6	x	45	S	200	21,90 flZn
M 6	x	50	S	200	23,05 flZn
M 6	x	55	S	200	32,00 flZn
M 6	x	60	S	200	33,85 flZn
M 6	x	65	S	200	39,25 flZn
M 6	x	70	S	200	51,45 flZn
M 6	x	75	S	200	61,40 flZn
M 6	x	80	S	200	65,80 flZn
M 8	x	16	S	200	16,80 flZn
M 8	x	20	S	200	22,70 flZn
M 8	x	25	S	200	24,65 flZn
M 8	x	30	S	200	26,15 flZn
M 8	x	35	S	200	29,20 flZn
M 8	x	40	S	200	32,30 flZn
M 8	x	45	S	200	33,95 flZn
M 8	x	50	S	200	37,65 flZn
M 8	x	55	S	200	45,05 flZn
M 8	x	60	S	200	46,80 flZn
M 8	x	65	S	200	55,10 flZn
M 8	x	70	S	200	52,20 flZn
M 8	x	75	S	200	59,45 flZn
M 8	x	80	S	200	75,00 flZn
M 8	x	90	S	100	87,30 flZn
M 10	x	35	S	100	49,95 flZn
M 10	x	40	S	100	53,00 flZn
M 10	x	45	S	100	44,20 flZn
M 10	x	55	S	100	56,00 flZn
M 10	x	60	S	100	59,15 flZn
M 10	x	65	S	100	60,60 flZn
M 10	x	70	S	100	65,20 flZn
M 10	x	75	S	100	79,40 flZn
M 10	x	80	S	100	80,80 flZn
M 10	x	90	S	100	98,10 flZn
M 12	x	20	S	100	53,35 flZn
M 12	x	25	S	100	66,85 flZn
M 12	x	30	S	100	69,85 flZn
M 12	x	35	S	100	72,95 flZn
M 12	x	40	S	100	75,25 flZn
M 12	x	45	S	100	67,50 flZn
M 12	x	60	S	100	98,25 flZn
M 12	x	65	S	50	107,00 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	70	S	50	112,00 flZn
M 12	x	75	S	50	120,00 flZn
M 12	x	100	S	50	139,00 flZn
M 16	x	30	S	50	115,00 flZn
M 16	x	40	S	50	116,00 flZn
M 16	x	45	S	50	121,00 flZn
M 16	x	60	S	50	157,00 flZn
M 16	x	65	S	25	171,00 flZn
M 16	x	70	S	25	174,00 flZn
M 16	x	75	S	25	183,00 flZn
M 16	x	80	S	25	183,00 flZn
M 16	x	110	S	25	290,00 flZn
M 16	x	120	S	25	344,00 flZn
M 20	x	65	S	25	294,00 flZn
M 20	x	70	S	25	302,00 flZn
M 20	x	75	S	25	299,00 flZn
M 20	x	80	S	25	325,00 flZn
M 20	x	90	S	25	355,00 flZn
M 20	x	100	S	25	401,00 flZn
M 20	x	110	S	25	436,00 flZn
M 20	x	120	S	25	504,00 flZn
M 20	x	130	S	25	608,00 flZn
M 20	x	140	S	25	809,00 flZn
M 20	x	150	S	25	917,00 flZn
M 20	x	160	S	10	1142,00 flZn
M 20	x	170	S	10	1348,00 flZn
M 20	x	180	S	10	1235,00 flZn
M 24	x	80	S	25	732,00 flZn
M 24	x	90	S	10	823,00 flZn
M 24	x	100	S	10	860,00 flZn
M 24	x	110	S	10	946,00 flZn
M 24	x	120	S	10	985,00 flZn
M 24	x	130	S	10	1223,00 flZn
M 24	x	140	S	10	1482,00 flZn
M 24	x	150	S	10	1703,00 flZn
M 24	x	160	S	10	1819,00 flZn
M 24	x	170	S	10	2107,00 flZn
M 24	x	180	S	10	2200,00 flZn

DIN	00912.205	RAZ 364

912

12.9 **fine**



Hexagon socket head cap screws with metric fine pitch thread

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

DIN 912 fine thread → replaced by ISO 12474

M 8	x	1	x	20	S	200	136,00
M 8	x	1	x	25	S	200	140,00
M 8	x	1	x	30	S	200	168,00
M 8	x	1	x	35	S	200	195,00
M 10	x	1,25	x	20	S	200	105,00
M 10	x	1,25	x	25	S	200	110,00
M 10	x	1	x	30	S	200	134,00
M 10	x	1,25	x	30	S	200	134,00
M 10	x	1	x	35	S	100	176,00
M 10	x	1	x	40	S	100	169,00
M 10	x	1,25	x	40	S	100	169,00
M 10	x	1	x	45	S	100	184,00
M 10	x	1	x	50	S	100	194,00
M 10	x	1,25	x	50	S	100	194,00
M 10	x	1	x	60	S	100	210,00
M 10	x	1,25	x	60	S	100	235,00
M 10	x	1	x	70	S	100	218,00
M 10	x	1	x	80	S	100	226,00

Dimensions					PU	Pieces	€/100/Mat.
M 10	x	1	x	90	S	100	231,00
M 10	x	1	x	100	S	100	290,00
M 12	x	1,5	x	30	S	100	169,00
M 12	x	1,5	x	35	S	100	184,00
M 12	x	1,5	x	40	S	100	194,00
M 12	x	1,5	x	50	S	100	227,00
M 12	x	1,5	x	60	S	100	262,00
M 10	x	1,5	x	65	S	100	285,00
M 12	x	1,5	x	70	S	50	285,00
M 12	x	1,5	x	80	S	50	305,00
M 14	x	1,5	x	35	S	100	246,00
M 14	x	1,5	x	40	S	100	267,00
M 14	x	1,5	x	45	S	50	291,00
M 14	x	1,5	x	50	S	50	315,00
M 14	x	1,5	x	60	S	50	340,00
M 14	x	1,5	x	80	S	50	366,00
M 14	x	1,5	x	100	S	25	400,00
M 16	x	1,5	x	30	S	50	320,00
M 16	x	1,5	x	35	S	50	337,00
M 16	x	1,5	x	40	S	50	371,00
M 16	x	1,5	x	45	S	50	400,00
M 16	x	1,5	x	50	S	50	428,00
M 16	x	1,5	x	60	S	50	496,00
M 16	x	1,5	x	70	S	25	571,00
M 16	x	1,5	x	80	S	25	620,00
M 16	x	1,5	x	90	S	25	710,00
M 16	x	1,5	x	100	S	25	710,00
M 16	x	1,5	x	110	S	25	750,00
M 16	x	1,5	x	120	S	25	770,00
M 16	x	1,5	x	130	S	25	830,00
M 16	x	1,5	x	140	S	25	870,00
M 16	x	1,5	x	150	S	25	910,00
M 16	x	1,5	x	160	S	25	950,00
M 20	x	1,5	x	40	S	25	628,00
M 20	x	1,5	x	45	S	25	696,00
M 20	x	1,5	x	50	S	25	696,00
M 20	x	1,5	x	55	S	25	776,00
M 20	x	1,5	x	60	S	25	776,00
M 20	x	1,5	x	70	S	25	867,00
M 20	x	1,5	x	80	S	25	935,00
M 20	x	1,5	x	90	S	25	1055,00
M 20	x	1,5	x	100	S	25	1163,00
M 24	x	1,5	x	50	S	25	1340,00
M 24	x	2	x	50	S	25	980,00
M 24	x	2	x	55	S	25	1120,00
M 24	x	1,5	x	60	S	25	1630,00
M 24	x	2	x	60	S	25	1120,00
M 24	x	1,5	x	70	S	25	1840,00
M 24	x	2	x	70	S	25	1240,00
M 24	x	2	x	80	S	25	1380,00
M 24	x	2	x	90	S	10	1520,00
M 24	x	2	x	100	S	10	1680,00

DIN	00913.200	RAZ 370

913

45 H

Hexagon socket set screws with flat point

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6

Stainless → S. 454

DIN 913 → replaced by ISO 4026 (compatible)

M 1,6	x	2			S	100	250,00
M 1,6	x	2,5			S	100	105,00
M 1,6	x	3			S	100	93,00

Dimensions			PU	Pieces	€/100/Mat.
M 1,6	x	4	S	100	92,00
M 1,6	x	5	S	100	97,00
M 1,6	x	6	S	100	97,00
M 1,6	x	8	S	100	98,00
M 1,6	x	10	S	100	98,00
M 2	x	2	S	100	92,00
M 2	x	3	S	100	83,00
M 2	x	4	S	100	85,00
M 2	x	5	S	100	86,00
M 2	x	6	S	100	89,00
M 2	x	8	S	100	94,00
M 2	x	10	S	100	101,00
M 2,5	x	3	S	100	68,00
M 2,5	x	4	S	100	71,00
M 2,5	x	5	S	100	73,00
M 2,5	x	6	S	100	77,00
M 2,5	x	8	S	100	80,00
M 2,5	x	10	S	100	83,00
M 3	x	3	S	200	7,70
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	1000	7,50
M 3	x	6	K	200	7,50
M 3	x	8	S	1000	7,80
M 3	x	8	K	200	7,80
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	6,70
M 4	x	5	S	200	6,40
M 4	x	6	S	1000	6,50
M 4	x	6	K	200	6,50
M 4	x	8	S	1000	6,70
M 4	x	8	K	200	6,70
M 4	x	10	S	1000	6,90
M 4	x	10	K	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	1000	8,30
M 4	x	16	K	200	8,30
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	35	S	200	51,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	7,30
M 5	x	6	S	200	7,10
M 5	x	8	S	1000	7,30
M 5	x	8	K	200	7,30
M 5	x	10	S	500	7,60
M 5	x	10	K	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	14,20
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	4	S	200	16,00
M 6	x	5	S	200	10,90
M 6	x	6	S	500	8,30
M 6	x	6	K	200	8,30
M 6	x	8	S	500	7,70
M 6	x	8	K	200	7,70
M 6	x	10	S	500	7,90
M 6	x	10	K	200	7,90
M 6	x	12	S	500	8,30
M 6	x	12	K	200	8,30
M 6	x	16	S	500	9,30
M 6	x	16	K	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	500	10,60
M 6	x	20	K	200	10,60

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 25	S	200	14,50
M 6 x 30	S	200	15,90
M 6 x 35	S	100	19,40
M 6 x 40	S	100	23,00
M 6 x 45	S	100	27,00
M 6 x 50	S	100	30,00
M 6 x 55	S	100	75,00
M 6 x 60	S	100	33,75
M 6 x 70	S	100	152,00
M 8 x 6	S	200	12,60
M 8 x 8	S	500	9,60
M 8 x 8	K	200	9,60
M 8 x 10	S	200	9,00
M 8 x 12	S	200	9,70
M 8 x 16	S	200	10,70
M 8 x 18	S	200	12,80
M 8 x 20	S	200	12,80
M 8 x 25	S	200	16,70
M 8 x 30	S	100	20,30
M 8 x 35	S	100	22,20
M 8 x 40	S	100	28,50
M 8 x 45	S	100	34,00
M 8 x 50	S	100	39,00
M 8 x 55	S	100	56,00
M 8 x 60	S	100	56,00
M 8 x 70	S	100	64,00
M 8 x 80	S	100	76,00
M 10 x 8	S	200	18,80
M 10 x 10	S	200	14,20
M 10 x 12	S	200	13,10
M 10 x 16	S	200	15,00
M 10 x 18	S	200	17,70
M 10 x 20	S	200	17,70
M 10 x 25	S	100	20,80
M 10 x 30	S	100	24,30
M 10 x 35	S	100	28,00
M 10 x 40	S	100	34,50
M 10 x 45	S	100	44,00
M 10 x 50	S	100	49,00
M 10 x 55	S	100	76,00
M 10 x 60	S	100	76,00
M 10 x 70	S	100	92,00
M 10 x 80	S	100	110,00
M 10 x 90	S	100	111,90
M 10 x 100	S	100	127,90
M 12 x 10	S	100	35,00
M 12 x 12	S	100	26,50
M 12 x 16	S	100	24,20
M 12 x 18	S	100	28,00
M 12 x 20	S	100	28,00
M 12 x 25	S	100	31,00
M 12 x 30	S	100	34,50
M 12 x 35	S	100	37,50
M 12 x 40	S	100	41,00
M 12 x 45	S	100	47,00
M 12 x 50	S	100	56,00
M 12 x 55	S	100	67,00
M 12 x 60	S	50	67,00
M 12 x 70	S	50	94,00
M 12 x 80	S	50	112,00
M 12 x 90	S	50	290,00
M 12 x 100	S	50	500,00
M 14 x 16	S	50	256,10
M 14 x 20	S	100	75,00
M 14 x 30	S	100	86,00
M 14 x 40	S	50	97,00
M 14 x 50	S	50	124,00
M 16 x 12	S	100	210,00
M 16 x 16	S	100	52,00
M 16 x 18	S	100	56,00
M 16 x 20	S	100	56,00
M 16 x 25	S	100	61,00
M 16 x 30	S	100	65,00
M 16 x 35	S	100	70,00
M 16 x 40	S	50	73,00
M 16 x 45	S	50	83,00
M 16 x 50	S	50	93,00
M 16 x 55	S	50	106,00
M 16 x 60	S	50	106,00
M 16 x 70	S	50	149,00
M 16 x 80	S	50	168,00
M 16 x 90	S	25	187,00
M 16 x 100	S	25	475,00
M 20 x 20	S	100	102,00
M 20 x 25	S	100	109,00
M 20 x 30	S	50	116,00
M 20 x 35	S	50	122,00
M 20 x 40	S	50	129,00
M 20 x 45	S	50	136,00
M 20 x 50	S	50	146,00
M 20 x 60	S	25	159,00
M 20 x 70	S	25	211,00
M 20 x 80	S	25	234,00
M 20 x 90	S	25	260,00
M 24 x 20	S	50	556,00
M 24 x 25	S	50	498,00
M 24 x 30	S	50	209,00
M 24 x 35	S	50	218,00
M 24 x 40	S	25	230,00
M 24 x 45	S	25	450,00
M 24 x 50	S	25	265,00
M 24 x 60	S	25	395,00
M 24 x 70	S	25	430,00
M 24 x 80	S	25	470,00
M 24 x 90	S	25	510,00
M 24 x 100	S	25	730,00

DIN	00913.210	RAZ 370
913	**45 H** **zinc plated**	

Hexagon socket set screws with flat point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 454

DIN 913 ➔ replaced by ISO 4026 (compatible)

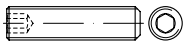
M 2	x	4	S	100	150,00 ZP
M 2	x	6	S	100	160,75 ZP
M 2	x	8	S	100	166,00 ZP
M 2	x	10	S	100	185,25 ZP
M 3	x	3	S	200	12,00 ZP
M 3	x	4	S	200	10,90 ZP
M 3	x	5	S	200	11,00 ZP
M 3	x	6	S	200	11,20 ZP
M 3	x	8	S	200	11,70 ZP
M 3	x	10	S	200	12,10 ZP
M 3	x	12	S	200	12,90 ZP
M 3	x	16	S	200	14,90 ZP
M 3	x	20	S	200	15,40 ZP
M 4	x	4	S	200	8,60 ZP
M 4	x	5	S	200	8,30 ZP
M 4	x	6	S	200	8,50 ZP
M 4	x	8	S	200	10,00 ZP
M 4	x	10	S	200	10,40 ZP
M 4	x	12	S	200	11,00 ZP
M 4	x	14	S	200	24,75 ZP
M 4	x	16	S	200	12,40 ZP
M 4	x	18	S	200	12,80 ZP
M 4	x	20	S	200	12,80 ZP
M 4	x	25	S	200	20,90 ZP
M 4	x	30	S	200	56,00 ZP
M 4	x	35	S	200	76,00 ZP
M 4	x	40	S	200	89,00 ZP
M 5	x	4	S	200	14,70 ZP
M 5	x	5	S	200	14,75 ZP
M 5	x	6	S	200	9,30 ZP
M 5	x	8	S	200	9,70 ZP
M 5	x	10	S	200	10,20 ZP
M 5	x	12	S	200	11,60 ZP
M 5	x	16	S	200	12,50 ZP
M 5	x	18	S	200	14,10 ZP
M 5	x	20	S	200	14,10 ZP
M 5	x	25	S	200	21,20 ZP
M 5	x	30	S	100	25,50 ZP
M 5	x	35	S	100	32,00 ZP
M 5	x	40	S	100	36,50 ZP
M 6	x	5	S	200	19,40 ZP
M 6	x	6	S	200	11,00 ZP
M 6	x	8	S	200	10,40 ZP
M 6	x	10	S	200	10,80 ZP
M 6	x	12	S	200	11,60 ZP
M 6	x	14	S	200	14,45 ZP
M 6	x	16	S	200	13,80 ZP
M 6	x	18	S	200	29,20 ZP
M 6	x	20	S	200	16,10 ZP
M 6	x	25	S	200	21,60 ZP
M 6	x	30	S	200	24,00 ZP
M 6	x	35	S	100	30,50 ZP
M 6	x	40	S	100	35,00 ZP
M 6	x	45	S	200	43,50 ZP
M 6	x	50	S	200	55,00 ZP
M 6	x	60	S	100	59,00 ZP
M 8	x	6	S	200	25,20 ZP
M 8	x	8	S	200	13,20 ZP
M 8	x	10	S	200	12,70 ZP
M 8	x	12	S	200	13,80 ZP
M 8	x	16	S	200	15,90 ZP
M 8	x	18	S	200	22,40 ZP
M 8	x	20	S	200	19,10 ZP
M 8	x	25	S	200	27,00 ZP
M 8	x	30	S	100	32,50 ZP
M 8	x	35	S	100	29,00 ZP
M 8	x	40	S	100	42,50 ZP
M 8	x	45	S	100	51,00 ZP
M 8	x	50	S	100	59,00 ZP
M 8	x	55	S	100	89,00 ZP
M 8	x	60	S	100	97,00 ZP
M 8	x	70	S	100	109,00 ZP
M 8	x	80	S	100	160,00 ZP
M 8	x	90	S	100	285,00 ZP
M 8	x	100	S	100	315,00 ZP
M 8	x	130	S	50	395,00 ZP
M 10	x	8	S	200	28,50 ZP
M 10	x	10	S	200	20,00 ZP
M 10	x	12	S	200	19,10 ZP
M 10	x	16	S	200	22,60 ZP
M 10	x	20	S	200	29,00 ZP
M 10	x	25	S	100	35,00 ZP
M 10	x	30	S	100	41,50 ZP
M 10	x	35	S	100	47,00 ZP
M 10	x	40	S	100	58,00 ZP
M 10	x	45	S	100	71,00 ZP
M 10	x	50	S	100	79,00 ZP
M 10	x	60	S	100	135,00 ZP
M 10	x	70	S	100	161,00 ZP
M 10	x	80	S	100	192,50 ZP
M 10	x	90	S	100	481,25 ZP
M 10	x	100	S	100	551,25 ZP
M 12	x	10	S	100	63,00 ZP
M 12	x	12	S	100	39,50 ZP
M 12	x	14	S	100	36,00 ZP
M 12	x	16	S	100	36,00 ZP
M 12	x	20	S	200	44,50 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	25	S	100	51,00 ZP
M 12	x	30	S	100	59,00 ZP
M 12	x	35	S	100	64,00 ZP
M 12	x	40	S	100	75,00 ZP
M 12	x	45	S	100	86,00 ZP
M 12	x	50	S	100	99,00 ZP
M 12	x	55	S	100	118,00 ZP
M 12	x	60	S	50	120,00 ZP
M 12	x	70	S	50	166,00 ZP
M 12	x	80	S	50	200,00 ZP
M 12	x	90	S	50	278,00 ZP
M 12	x	100	S	50	875,00 ZP
M 14	x	20	S	100	115,00 ZP
M 14	x	50	S	50	164,00 ZP
M 14	x	60	S	50	224,00 ZP
M 16	x	16	S	100	91,00 ZP
M 16	x	20	S	100	99,00 ZP
M 16	x	25	S	100	109,00 ZP
M 16	x	30	S	100	114,00 ZP
M 16	x	35	S	100	122,50 ZP
M 16	x	40	S	50	132,00 ZP
M 16	x	45	S	50	150,00 ZP
M 16	x	50	S	50	170,00 ZP
M 16	x	55	S	50	205,00 ZP
M 16	x	60	S	50	205,00 ZP
M 16	x	70	S	50	275,00 ZP
M 16	x	80	S	50	300,00 ZP
M 16	x	90	S	25	335,00 ZP
M 20	x	20	S	100	178,00 ZP
M 20	x	25	S	100	191,00 ZP
M 20	x	30	S	50	206,00 ZP
M 20	x	35	S	50	212,00 ZP
M 20	x	40	S	50	228,00 ZP
M 20	x	50	S	50	260,00 ZP
M 20	x	60	S	25	280,00 ZP
M 20	x	70	S	25	527,50 ZP
M 20	x	80	S	25	585,00 ZP
M 20	x	90	S	25	650,00 ZP
M 24	x	25	S	50	659,00 ZP
M 24	x	30	S	50	370,00 ZP
M 24	x	35	S	50	379,00 ZP
M 24	x	40	S	25	405,00 ZP
M 24	x	60	S	25	690,00 ZP
M 24	x	70	S	25	780,00 ZP
M 24	x	80	S	25	860,00 ZP

~DIN	00913.205	RAZ 370

913

45 H **fine**



Hexagon socket set screws with flat point, with metric fine pitch thread

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6

DIN 913 → replaced by ISO 4026 (compatible)

M 4	x	0,5	x	4	S	100	195,00
M 4	x	0,5	x	5	S	100	215,00
M 4	x	0,5	x	6	S	100	230,00
M 5	x	0,5	x	6	S	100	130,00
M 5	x	0,5	x	8	S	100	140,00
M 5	x	0,5	x	10	S	100	210,00
M 5	x	0,5	x	12	S	100	154,00
M 5	x	0,5	x	16	S	100	175,00
M 5	x	0,5	x	20	S	100	485,00

Dimensions					PU	Pieces	€/100/Mat.
M 5	x	0,5	x	25	S	100	510,00
M 5	x	0,5	x	30	S	100	535,00
M 6	x	0,75	x	5	S	100	105,00
M 6	x	0,5	x	6	S	100	173,00
M 6	x	0,75	x	6	S	100	155,00
M 6	x	0,5	x	8	S	100	190,00
M 6	x	0,75	x	8	S	100	215,00
M 6	x	0,5	x	10	S	100	147,00
M 6	x	0,75	x	10	S	100	241,00
M 6	x	0,5	x	12	S	100	260,00
M 6	x	0,75	x	12	S	100	241,00
M 6	x	0,5	x	16	S	100	196,00
M 6	x	0,5	x	20	S	100	179,00
M 6	x	0,75	x	20	S	100	268,00
M 8	x	1	x	5	S	100	84,00
M 8	x	1	x	6	S	100	45,00
M 8	x	0,75	x	8	S	100	168,00
M 8	x	1	x	8	S	100	115,00
M 8	x	0,5	x	10	S	100	283,00
M 8	x	0,75	x	10	S	100	238,00
M 8	x	1	x	10	S	100	165,00
M 8	x	0,5	x	12	S	100	172,00
M 8	x	0,75	x	12	S	100	91,00
M 8	x	1	x	12	S	100	190,00
M 8	x	0,5	x	16	S	100	473,00
M 8	x	0,75	x	16	S	100	130,00
M 8	x	1	x	16	S	100	195,00
M 8	x	0,75	x	20	S	100	164,00
M 8	x	1	x	20	S	100	217,00
M 8	x	0,75	x	25	S	100	178,00
M 8	x	1	x	25	S	100	100,00
M 8	x	0,75	x	30	S	100	200,00
M 8	x	1	x	30	S	100	105,00
M 8	x	1	x	35	S	100	108,00
M 8	x	1	x	40	S	100	115,00
M 8	x	1	x	50	S	100	150,00
M 8	x	1	x	60	S	100	200,00
M 8	x	1	x	70	S	100	230,00
M 8	x	1	x	80	S	100	266,00
M 8	x	1	x	90	S	100	312,00
M 8	x	1,0	x	100	S	100	345,00
M10	x	1	x	8	S	100	206,00
M10	x	1,25	x	8	S	100	266,00
M10	x	1	x	10	S	100	206,00
M10	x	1,25	x	10	S	100	114,00
M10	x	1	x	12	S	100	192,00
M10	x	1,25	x	12	S	100	129,00
M10	x	1	x	16	S	100	275,00
M10	x	1,25	x	16	S	100	158,00
M10	x	1	x	20	S	100	285,00
M10	x	1,25	x	20	S	100	169,00
M10	x	1	x	25	S	100	98,00
M10	x	1,25	x	25	S	100	188,00
M10	x	1	x	30	S	100	112,00
M10	x	1,25	x	30	S	100	193,00
M10	x	1	x	35	S	100	120,00
M10	x	1,25	x	35	S	100	204,00
M10	x	1,25	x	40	S	100	219,00
M10	x	1	x	45	S	100	182,00
M10	x	1	x	50	S	100	191,00
M10	x	1,25	x	50	S	100	278,00
M10	x	1	x	60	S	100	208,00
M10	x	1,25	x	60	S	100	282,00
M12	x	1	x	8	S	100	150,00
M12	x	1	x	10	S	100	461,00
M12	x	1,25	x	10	S	50	153,00
M12	x	1,5	x	10	S	100	488,00
M12	x	1,25	x	12	S	50	141,00
M12	x	1,5	x	12	S	100	108,00
M12	x	1	x	16	S	100	505,00
M12	x	1,25	x	16	S	50	155,00
M12	x	1,5	x	16	S	100	113,00
M12	x	1	x	20	S	100	526,00
M12	x	1,25	x	20	S	50	164,00
M12	x	1,5	x	20	S	100	121,00

Dimensions					PU	Pieces	€/100/Mat.
M12	x	1	x	25	S	100	650,00
M12	x	1,25	x	25	S	50	175,00
M12	x	1,5	x	25	S	100	128,00
M12	x	1	x	30	S	100	129,00
M12	x	1,25	x	30	S	50	185,00
M12	x	1,5	x	30	S	100	136,00
M12	x	1	x	40	S	100	166,00
M12	x	1,25	x	40	S	50	195,00
M12	x	1,5	x	40	S	100	166,00
M12	x	1	x	45	S	100	202,00
M12	x	1,5	x	45	S	100	202,00
M12	x	1	x	50	S	100	205,00
M12	x	1,5	x	55	S	100	245,00
M12	x	1	x	60	S	100	316,00
M12	x	1,5	x	70	S	50	424,00
M14	x	1	x	10	S	50	339,00
M14	x	1,5	x	10	S	50	397,00
M14	x	1	x	12	S	50	350,00
M14	x	1,5	x	12	S	50	292,00
M14	x	1	x	16	S	50	401,00
M14	x	1,5	x	16	S	50	266,00
M14	x	1	x	20	S	50	587,00
M14	x	1,5	x	20	S	50	240,00
M14	x	1,5	x	25	S	50	252,00
M14	x	1,5	x	30	S	50	263,00
M14	x	1,5	x	35	S	50	273,00
M14	x	1,5	x	40	S	50	284,00
M14	x	1,5	x	45	S	50	296,00
M14	x	1,5	x	50	S	50	341,00
M14	x	1,5	x	60	S	50	379,00
M16	x	1	x	12	S	50	430,00
M16	x	1,5	x	12	S	50	211,00
M16	x	1	x	16	S	50	349,00
M16	x	1,5	x	16	S	50	264,00
M16	x	1	x	20	S	50	420,00
M16	x	1,5	x	20	S	50	266,00
M16	x	1,5	x	25	S	50	278,00
M16	x	1,5	x	30	S	50	283,00
M16	x	1,5	x	40	S	50	311,00
M16	x	1,5	x	50	S	50	324,00
M16	x	1,5	x	60	S	25	342,00
M16	x	1,5	x	70	S	25	378,00
M20	x	1,5	x	20	S	25	480,00
M20	x	1,5	x	25	S	25	518,00
M20	x	1,5	x	30	S	25	548,00
M20	x	1,5	x	35	S	25	580,00
M20	x	1,5	x	40	S	25	610,00
M20	x	1,5	x	45	S	25	645,00
M20	x	1,5	x	50	S	25	695,00
M20	x	1,5	x	60	S	25	755,00
M20	x	1,5	x	70	S	25	840,00
M20	x	1,5	x	80	S	25	920,00
M20	x	1,5	x	100	S	25	1010,00
M24	x	1,5	x	25	S	10	920,00
M24	x	1,5	x	30	S	10	966,00
M24	x	1,5	x	40	S	10	1115,00
M24	x	1,5	x	60	S	10	1210,00

€/100 = price in € plus VAT when ordering full package unit

DIN	00914.200	RAZ 370

914

45 H

Hexagon socket set screws with cone point

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6

Stainless → S. 455

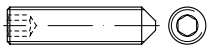
DIN 914 → replaced by ISO 4027 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	2	S	200	106,00
M 2	x	3	S	200	96,00
M 2	x	4	S	200	98,00
M 2	x	5	S	200	100,00
M 2	x	6	S	200	104,00
M 2	x	8	S	200	110,00
M 2	x	10	S	200	118,00
M 2,5	x	3	S	200	80,00
M 2,5	x	3	S	200	82,00
M 2,5	x	5	S	200	84,00
M 2,5	x	6	S	200	90,00
M 2,5	x	8	S	200	94,00
M 2,5	x	10	S	200	96,00
M 3	x	3	S	200	8,50
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	200	7,50
M 3	x	8	S	200	7,80
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	7,30
M 4	x	5	S	200	6,40
M 4	x	6	S	200	6,50
M 4	x	8	S	200	6,70
M 4	x	10	S	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	200	8,30
M 4	x	18	S	200	8,50
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	35	S	200	51,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	8,10
M 5	x	6	S	200	7,10
M 5	x	8	S	200	7,30
M 5	x	10	S	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	14,20
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	5	S	200	10,90
M 6	x	6	S	200	9,10
M 6	x	8	S	200	7,70
M 6	x	10	S	200	7,90
M 6	x	12	S	200	8,30
M 6	x	16	S	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 8	x	6	S	200	12,60
M 8	x	8	S	200	10,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	8	S	200	18,80
M 10	x	10	S	200	15,60
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	18	S	200	17,70
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00
M 10	x	80	S	100	110,00
M 10	x	100	S	50	189,00
M 12	x	10	S	100	35,00
M 12	x	12	S	100	29,00
M 12	x	16	S	100	24,20
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 16	x	16	S	100	57,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 20	x	20	S	100	112,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	40	S	25	230,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	80	S	25	470,00
M 24	x	100	S	25	730,00

DIN	00914.210	RAZ 370

914

45 H
zinc plated



Hexagon socket set screws with cone point

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 455

DIN 914 → replaced by ISO 4027 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	3	S	200	15,00 ZP
M 3	x	4	S	200	9,30 ZP
M 3	x	5	S	200	9,40 ZP
M 3	x	6	S	200	9,60 ZP
M 3	x	8	S	200	10,10 ZP
M 3	x	10	S	200	10,90 ZP
M 4	x	4	S	200	9,40 ZP
M 4	x	5	S	200	8,50 ZP
M 4	x	6	S	200	8,50 ZP
M 4	x	8	S	200	8,70 ZP
M 4	x	10	S	200	9,20 ZP
M 4	x	12	S	200	10,10 ZP
M 4	x	16	S	200	11,40 ZP
M 4	x	18	S	200	15,00 ZP
M 4	x	20	S	200	12,80 ZP
M 4	x	25	S	200	24,50 ZP
M 4	x	30	S	200	64,75 ZP
M 4	x	35	S	200	89,25 ZP
M 5	x	4	S	200	17,15 ZP
M 5	x	5	S	200	14,50 ZP
M 5	x	6	S	200	9,30 ZP
M 5	x	8	S	200	9,70 ZP
M 5	x	10	S	200	10,10 ZP
M 5	x	12	S	200	11,00 ZP
M 5	x	16	S	200	12,00 ZP
M 5	x	20	S	200	13,40 ZP
M 5	x	25	S	200	45,40 ZP
M 5	x	30	S	200	49,90 ZP
M 6	x	5	S	200	13,40 ZP
M 6	x	6	S	200	11,60 ZP
M 6	x	8	S	200	10,30 ZP
M 6	x	10	S	200	10,80 ZP
M 6	x	12	S	200	11,40 ZP
M 6	x	16	S	200	13,20 ZP
M 6	x	18	S	200	18,55 ZP
M 6	x	20	S	200	15,10 ZP
M 6	x	25	S	200	21,60 ZP
M 6	x	30	S	200	24,00 ZP
M 6	x	40	S	100	40,25 ZP
M 6	x	45	S	100	47,25 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	8	S	200	16,50 ZP
M 8	x	10	S	200	12,60 ZP
M 8	x	12	S	200	14,50 ZP
M 8	x	16	S	200	15,80 ZP
M 8	x	20	S	200	19,00 ZP
M 8	x	25	S	200	27,00 ZP
M 8	x	30	S	100	32,50 ZP
M 8	x	35	S	100	36,00 ZP
M 8	x	40	S	100	50,00 ZP
M 8	x	45	S	100	59,50 ZP
M 8	x	50	S	100	68,25 ZP
M 8	x	60	S	100	98,00 ZP
M 10	x	10	S	200	22,50 ZP
M 10	x	12	S	200	20,20 ZP
M 10	x	16	S	200	22,40 ZP
M 10	x	20	S	200	31,50 ZP
M 10	x	25	S	100	35,00 ZP
M 10	x	30	S	100	41,50 ZP
M 10	x	35	S	100	52,00 ZP
M 10	x	40	S	100	63,00 ZP
M 10	x	45	S	100	80,00 ZP
M 10	x	50	S	100	86,00 ZP
M 12	x	10	S	100	48,80 ZP
M 12	x	12	S	100	42,80 ZP
M 12	x	16	S	100	38,00 ZP
M 12	x	20	S	100	44,50 ZP
M 12	x	25	S	100	51,00 ZP
M 12	x	30	S	100	59,00 ZP
M 12	x	35	S	100	75,80 ZP
M 12	x	40	S	100	63,00 ZP
M 12	x	50	S	100	99,00 ZP
M 12	x	60	S	50	110,00 ZP
M 16	x	16	S	50	100,00 ZP
M 16	x	20	S	100	99,00 ZP
M 16	x	25	S	100	109,00 ZP
M 16	x	30	S	100	114,00 ZP
M 16	x	35	S	50	119,00 ZP
M 16	x	40	S	50	130,00 ZP
M 16	x	45	S	50	150,00 ZP
M 16	x	50	S	50	165,00 ZP
M 16	x	60	S	50	190,00 ZP
M 16	x	70	S	50	265,00 ZP
M 16	x	80	S	50	295,00 ZP
M 16	x	90	S	25	330,00 ZP
M 20	x	20	S	100	196,00 ZP
M 20	x	30	S	50	215,00 ZP
M 20	x	40	S	50	230,00 ZP
M 20	x	50	S	50	260,00 ZP
M 20	x	60	S	25	285,00 ZP

DIN	00915.200	RAZ 370

915

45 H

Hexagon socket set screws with full dog point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6

Stainless ➔ S. 456

DIN 915 ➔ replaced by ISO 4028 (compatible)

M 3	x	3	S	200	8,50
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	200	7,50
M 3	x	8	S	200	7,80

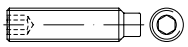
Dimensions			PU	Pieces	€/100/Mat.
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	7,30
M 4	x	5	S	200	6,40
M 4	x	6	S	200	6,50
M 4	x	8	S	200	6,70
M 4	x	10	S	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	200	8,30
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	35	S	200	51,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	8,10
M 5	x	6	S	200	7,10
M 5	x	8	S	200	7,30
M 5	x	10	S	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	14,20
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	5	S	200	10,90
M 6	x	6	S	200	9,10
M 6	x	8	S	200	7,70
M 6	x	10	S	200	7,90
M 6	x	12	S	200	8,30
M 6	x	16	S	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 8	x	6	S	200	12,60
M 8	x	8	S	200	10,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	8	S	200	18,80
M 10	x	10	S	200	15,60
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	18	S	200	17,70
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	55	S	100	81,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	80	S	100	110,00
M 12	x	10	S	100	35,00
M 12	x	12	S	100	29,00
M 12	x	16	S	100	24,20
M 12	x	18	S	100	28,00
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 16	x	16	S	100	57,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 16	x	100	S	25	217,00
M 20	x	20	S	100	112,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	40	S	25	230,00
M 24	x	45	S	25	260,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	70	S	25	430,00
M 24	x	80	S	25	470,00
M 24	x	90	S	25	510,00
M 24	x	100	S	25	730,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00915.210		RAZ 370

915

45 H
zinc plated



Hexagon socket set screws with full dog point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 456

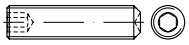
DIN 915 ➔ replaced by ISO 4028 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6	S	200	9,90 ZP
M 3	x	8	S	200	10,20 ZP
M 3	x	10	S	200	10,50 ZP
M 3	x	12	S	200	11,00 ZP
M 3	x	16	S	200	12,00 ZP
M 3	x	20	S	200	12,40 ZP
M 4	x	4	S	200	16,25 ZP
M 4	x	5	S	200	15,00 ZP
M 4	x	6	S	200	13,75 ZP
M 4	x	8	S	200	9,10 ZP
M 4	x	10	S	200	9,50 ZP
M 4	x	12	S	200	15,00 ZP
M 4	x	16	S	200	18,00 ZP
M 4	x	20	S	200	22,00 ZP
M 4	x	25	S	200	25,00 ZP
M 4	x	30	S	200	65,00 ZP
M 5	x	5	S	200	10,90 ZP
M 5	x	6	S	200	14,50 ZP
M 5	x	8	S	200	14,80 ZP
M 5	x	10	S	200	10,40 ZP
M 5	x	12	S	200	11,40 ZP
M 5	x	16	S	200	12,50 ZP
M 5	x	20	S	200	24,00 ZP
M 5	x	25	S	200	17,00 ZP
M 5	x	30	S	200	18,60 ZP
M 6	x	6	S	200	18,20 ZP
M 6	x	8	S	200	15,40 ZP
M 6	x	10	S	200	11,10 ZP
M 6	x	12	S	200	11,90 ZP
M 6	x	16	S	200	13,70 ZP
M 6	x	20	S	200	26,50 ZP
M 6	x	25	S	200	30,75 ZP
M 6	x	30	S	200	33,50 ZP
M 6	x	35	S	100	39,00 ZP
M 6	x	40	S	100	27,40 ZP
M 6	x	45	S	100	31,40 ZP
M 6	x	50	S	100	34,40 ZP
M 8	x	8	S	200	15,40 ZP
M 8	x	10	S	200	13,80 ZP
M 8	x	12	S	200	14,50 ZP
M 8	x	16	S	200	16,70 ZP
M 8	x	20	S	200	20,20 ZP
M 8	x	25	S	200	42,60 ZP
M 8	x	30	S	100	48,50 ZP
M 8	x	35	S	100	29,60 ZP
M 8	x	40	S	100	64,00 ZP
M 8	x	50	S	100	88,00 ZP
M 10	x	8	S	200	30,10 ZP
M 10	x	12	S	200	24,40 ZP
M 10	x	16	S	200	26,30 ZP
M 10	x	20	S	200	29,00 ZP
M 10	x	25	S	100	35,00 ZP
M 10	x	30	S	100	46,00 ZP
M 10	x	35	S	100	36,30 ZP
M 10	x	40	S	100	63,00 ZP
M 10	x	50	S	100	122,00 ZP
M 10	x	55	S	100	93,00 ZP
M 10	x	60	S	100	176,00 ZP
M 12	x	12	S	100	45,50 ZP
M 12	x	16	S	100	48,00 ZP
M 12	x	20	S	100	44,50 ZP
M 12	x	25	S	100	54,25 ZP
M 12	x	30	S	100	60,50 ZP
M 12	x	35	S	100	66,75 ZP
M 12	x	40	S	100	71,75 ZP
M 12	x	50	S	100	112,00 ZP
M 12	x	55	S	100	83,50 ZP
M 12	x	60	S	50	83,50 ZP
M 12	x	70	S	50	110,50 ZP
M 12	x	80	S	50	128,50 ZP
M 16	x	16	S	100	110,00 ZP
M 16	x	20	S	100	108,00 ZP
M 16	x	25	S	100	122,00 ZP
M 16	x	30	S	100	132,50 ZP
M 16	x	35	S	100	144,00 ZP
M 16	x	40	S	100	156,00 ZP
M 16	x	45	S	50	173,75 ZP
M 16	x	50	S	50	186,60 ZP
M 16	x	55	S	50	199,60 ZP
M 16	x	60	S	50	208,00 ZP
M 16	x	70	S	50	298,00 ZP
M 20	x	25	S	100	190,75 ZP
M 20	x	35	S	50	213,50 ZP
M 20	x	40	S	50	225,75 ZP
M 20	x	50	S	50	255,50 ZP
M 20	x	60	S	25	278,25 ZP
M 20	x	70	S	25	369,25 ZP
M 20	x	80	S	25	409,50 ZP
M 24	x	30	S	50	210,00 ZP
M 24	x	40	S	25	223,00 ZP

DIN	00916.200	RAZ 370

916

45 H



Hexagon socket set screws with cup point

Caution! Not for tensile loading.

Dimensions ➔ TI-21 Standard conversion ➔ TI-6

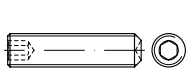
Stainless ➔ S. 456

DIN 916 ➔ replaced by ISO 4029 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	2,5	S	100	92,00
M 2	x	3	S	100	83,00
M 2	x	4	S	100	85,00
M 2	x	5	S	100	86,00
M 2	x	6	S	100	89,00
M 2,5	x	3	S	100	68,00
M 2,5	x	4	S	100	71,00
M 2,5	x	5	S	100	73,00
M 2,5	x	6	S	100	77,00
M 2,5	x	10	S	100	83,00
M 3	x	3	S	200	7,70
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	200	7,50
M 3	x	8	S	200	7,80
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	6,70
M 4	x	5	S	200	6,40
M 4	x	6	S	200	6,50
M 4	x	8	S	200	6,70
M 4	x	10	S	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	200	8,30
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	7,30
M 5	x	6	S	200	7,10
M 5	x	8	S	1000	6,40
M 5	x	8	K	200	7,30
M 5	x	10	S	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	13,80
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	5	S	200	10,90
M 6	x	6	S	500	7,20
M 6	x	6	K	200	8,30
M 6	x	8	S	500	6,75
M 6	x	8	K	200	7,70
M 6	x	10	S	500	6,85
M 6	x	10	K	200	7,90
M 6	x	12	S	500	7,25
M 6	x	12	K	200	8,30
M 6	x	16	S	500	8,15
M 6	x	16	K	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 8	x	6	S	200	12,60
M 8	x	8	S	500	8,35
M 8	x	8	K	200	9,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	8	S	200	18,80
M 10	x	10	S	200	14,20
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	80	S	100	110,00
M 12	x	10	S	100	35,00
M 12	x	12	S	100	26,50
M 12	x	16	S	100	24,20
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 14	x	50	S	50	124,00
M 16	x	16	S	100	52,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 16	x	100	S	25	405,00
M 20	x	20	S	100	102,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	70	S	25	430,00
M 24	x	90	S	25	510,00
M 24	x	100	S	25	730,00

DIN	00916.210	RAZ 370
916	**45 H zinc plated**	



Hexagon socket set screws with cup point

Caution! Not for tensile loading.

Dimensions ➔ TI-21 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 456

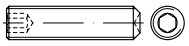
DIN 916 ➔ replaced by ISO 4029 (compatible)

M 3	x	3	S	200	9,70 ZP
M 3	x	4	S	200	9,20 ZP
M 3	x	5	S	200	9,40 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6	S	200	9,60 ZP
M 3	x	8	S	200	10,00 ZP
M 3	x	10	S	200	10,20 ZP
M 3	x	12	S	200	10,80 ZP
M 3	x	16	S	200	11,70 ZP
M 3	x	20	S	200	12,40 ZP
M 4	x	4	S	200	8,50 ZP
M 4	x	5	S	200	8,50 ZP
M 4	x	6	S	200	8,50 ZP
M 4	x	8	S	200	8,70 ZP
M 4	x	10	S	200	12,60 ZP
M 4	x	12	S	200	13,70 ZP
M 4	x	16	S	200	14,90 ZP
M 4	x	20	S	200	15,40 ZP
M 5	x	5	S	200	9,60 ZP
M 5	x	6	S	200	9,30 ZP
M 5	x	8	S	200	9,70 ZP
M 5	x	10	S	200	10,20 ZP
M 5	x	12	S	200	14,90 ZP
M 5	x	16	S	200	15,40 ZP
M 5	x	20	S	200	17,10 ZP
M 5	x	25	S	200	25,50 ZP
M 5	x	30	S	200	27,40 ZP
M 5	x	40	S	100	35,80 ZP
M 6	x	5	S	200	19,50 ZP
M 6	x	6	S	200	13,30 ZP
M 6	x	8	S	200	10,40 ZP
M 6	x	10	S	200	10,80 ZP
M 6	x	12	S	200	11,40 ZP
M 6	x	16	S	200	13,20 ZP
M 6	x	20	S	200	16,10 ZP
M 6	x	25	S	200	21,60 ZP
M 6	x	30	S	200	28,50 ZP
M 6	x	35	S	100	33,95 ZP
M 6	x	40	S	100	49,00 ZP
M 6	x	45	S	100	47,25 ZP
M 6	x	50	S	100	55,00 ZP
M 8	x	6	S	200	22,80 ZP
M 8	x	8	S	200	13,20 ZP
M 8	x	10	S	200	12,70 ZP
M 8	x	12	S	200	13,80 ZP
M 8	x	16	S	200	15,90 ZP
M 8	x	20	S	200	20,50 ZP
M 8	x	25	S	200	27,00 ZP
M 8	x	30	S	100	32,50 ZP
M 8	x	35	S	100	34,40 ZP
M 8	x	40	S	100	40,70 ZP
M 8	x	45	S	100	59,50 ZP
M 8	x	50	S	100	68,25 ZP
M 10	x	8	S	200	22,00 ZP
M 10	x	10	S	200	21,10 ZP
M 10	x	12	S	200	19,10 ZP
M 10	x	14	S	200	30,00 ZP
M 10	x	16	S	200	22,50 ZP
M 10	x	20	S	200	27,00 ZP
M 10	x	25	S	100	36,50 ZP
M 10	x	30	S	100	40,00 ZP
M 10	x	35	S	100	52,00 ZP
M 10	x	40	S	100	63,00 ZP
M 10	x	50	S	100	86,00 ZP
M 10	x	60	S	100	105,00 ZP
M 10	x	70	S	100	121,00 ZP
M 10	x	80	S	100	121,00 ZP
M 12	x	10	S	100	39,00 ZP
M 12	x	12	S	100	31,00 ZP
M 12	x	16	S	100	38,50 ZP
M 12	x	20	S	100	44,50 ZP
M 12	x	25	S	100	51,00 ZP
M 12	x	30	S	100	59,00 ZP
M 12	x	35	S	100	64,00 ZP
M 12	x	40	S	100	70,00 ZP
M 12	x	45	S	100	82,25 ZP
M 12	x	50	S	100	77,00 ZP
M 12	x	60	S	50	84,00 ZP
M 16	x	16	S	100	91,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	20	S	100	99,00 ZP
M 16	x	25	S	100	109,00 ZP
M 16	x	30	S	100	114,00 ZP
M 16	x	35	S	100	121,00 ZP
M 16	x	40	S	50	132,00 ZP
M 16	x	50	S	50	152,00 ZP
M 16	x	60	S	50	165,00 ZP
M 16	x	70	S	50	210,00 ZP
M 16	x	90	S	25	248,00 ZP
M 20	x	20	S	100	162,00 ZP
M 20	x	30	S	50	176,00 ZP

DIN	00916.302	RAZ 370
916	**45 H**	**fine**



Hexagon socket set screws with cup point, with metric fine pitch thread

Caution! Not for tensile loading.

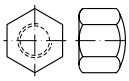
Dimensions ➔ TI-21 Standard conversion ➔ TI-6

DIN 916 ➔ replaced by ISO 4029 (compatible)

M 6	x	0,75	x	6	S	100	91,00
M 6	x	0,75	x	8	S	100	98,00
M 6	x	0,75	x	10	S	100	107,00
M 6	x	0,75	x	12	S	100	112,00
M 6	x	0,75	x	16	S	100	119,00
M 6	x	0,75	x	20	S	100	120,00
M 8	x	1	x	6	S	100	47,00
M 8	x	1	x	8	S	100	32,00
M 8	x	1	x	10	S	100	41,00
M 8	x	1	x	12	S	100	49,00
M 8	x	1	x	16	S	100	73,00
M 8	x	1	x	20	S	100	81,00
M 8	x	1	x	25	S	100	102,00
M 8	x	1	x	30	S	100	110,00
M 8	x	1	x	40	S	100	139,00
M 8	x	1	x	50	S	100	173,00
M 10	x	1	x	8	S	100	64,00
M 10	x	1,25	x	8	S	100	298,00
M 10	x	1	x	10	S	100	48,00
M 10	x	1,25	x	10	S	100	158,00
M 10	x	1	x	12	S	100	66,00
M 10	x	1,25	x	12	S	100	195,00
M 10	x	1	x	16	S	100	82,00
M 10	x	1,25	x	16	S	100	211,00
M 10	x	1	x	20	S	100	121,00
M 10	x	1,25	x	20	S	100	218,00
M 10	x	1	x	25	S	100	124,00
M 10	x	1,25	x	25	S	100	223,00
M 10	x	1	x	30	S	100	129,00
M 10	x	1,25	x	30	S	100	235,00
M 12	x	1	x	10	S	100	336,00
M 12	x	1,50	x	10	S	100	174,00
M 12	x	1	x	12	S	100	132,00
M 12	x	1,25	x	12	S	100	201,00
M 12	x	1,50	x	12	S	100	177,00
M 12	x	1	x	16	S	100	144,00
M 12	x	1,25	x	16	S	100	206,00
M 12	x	1,25	x	20	S	100	222,00
M 12	x	1,50	x	20	S	100	201,00
M 12	x	1,25	x	25	S	100	235,00
M 12	x	1,50	x	25	S	100	210,00
M 12	x	1,25	x	30	S	100	245,00
M 16	x	1,50	x	16	S	50	300,00

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 1,50 x 20	S	50	302,00
M 16 x 1,50 x 25	S	50	313,00
M 16 x 1,50 x 30	S	50	329,00
M 16 x 1,50 x 40	S	50	349,00

DIN	00917.300	RAZ 380
917	6	



Hexagon cap nuts, low type

from M 12 with groove or appropriate screwing in depth t min.

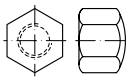
Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 457
Brass → S. 577

SW = wrench size

M 4	S	1000	10,20
M 5	S	1000	10,40
M 6	S	1000	16,20
M 8	S	500	28,00
M 10 SW 17	S	500	51,00
M 12 SW 19	S	250	73,00
M 16	S	250	124,00
M 20	S	25	242,00
M 24	S	10	425,00
M 30	S	1	910,00
M 36	S	1	2190,00

DIN	00917.310	RAZ 380
917	6 zinc plated	



Hexagon cap nuts, low type

from M 12 with groove or appropriate screwing in depth t min.

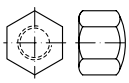
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 457
Brass → S. 577

SW = wrench size

M 4	S	1000	12,70 ZP
M 4	K	100	15,30 ZP
M 5	S	1000	13,20 ZP
M 5	K	100	15,80 ZP
M 6	S	1000	19,90 ZP
M 6	K	100	22,50 ZP
M 8	S	500	34,50 ZP
M 8	K	100	37,50 ZP
M 10 SW 17	S	500	64,00 ZP
M 10 SW 17	K	100	67,00 ZP
M 12 SW 19	S	250	94,00 ZP
M 12 SW 19	K	100	96,00 ZP
M 14 SW 22	S	50	134,00 ZP
M 16	S	50	157,00 ZP
M 20	S	25	285,00 ZP
M 24	S	10	500,00 ZP
M 30	S	1	1200,00 ZP
M 36	S	1	2200,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 00917.305			RAZ 380
917	6		fine



Hexagon cap nuts, low type, with metric fine pitch thread

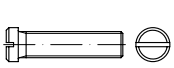
from M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

SW = wrench size

M 8	x	1	S	100	37,50
M 10	x	1 SW 17	S	100	68,00
M 12	x	1,5 SW 19	S	50	97,00
M 16	x	1,5	S	50	159,00
M 20	x	1,5	S	25	285,00
M 24	x	2	S	10	510,00

DIN	00920.500	RAZ 380
920	4.8/5.8	



Slotted small cheese head screws

Dimensions → TI-37

M 3	x	3	S	100	9,40
M 3	x	4	S	100	9,30
M 3	x	5	S	100	9,50
M 3	x	6	S	100	9,70
M 3	x	8	S	100	10,00
M 3	x	10	S	100	10,20
M 3	x	12	S	100	10,40
M 3	x	16	S	100	11,00
M 4	x	6	S	100	12,60
M 4	x	8	S	100	12,80
M 4	x	10	S	100	13,00
M 4	x	12	S	100	13,30
M 4	x	16	S	100	13,50
M 5	x	8	S	100	16,00
M 5	x	10	S	100	16,50
M 5	x	12	S	100	17,50
M 5	x	16	S	100	23,90
M 5	x	25	S	100	50,00

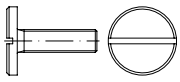
Dimensions	PU	Pieces	€/100/Mat.
DIN 00920.510			RAZ 380
920	4.8/5.8 zinc plated		

Slotted small cheese head screws

Dimensions → TI-37 Corrosion protection → TI-217

M 3	x	3	S	100	13,00 ZP
M 3	x	4	S	100	12,00 ZP
M 3	x	5	S	100	13,00 ZP
M 3	x	6	S	100	13,20 ZP
M 3	x	8	S	100	13,50 ZP
M 3	x	10	S	100	13,80 ZP
M 3	x	12	S	100	14,00 ZP
M 3	x	16	S	100	15,00 ZP
M 4	x	6	S	100	16,50 ZP
M 4	x	8	S	100	16,80 ZP
M 4	x	10	S	100	11,76 ZP
M 4	x	12	S	100	17,30 ZP
M 4	x	16	S	100	17,80 ZP

DIN	00921.500	RAZ 380
921	4.8/5.8	



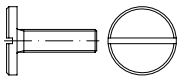
Slotted large cheese head screws, pressed finish

Dimensions → TI-38

Stainless → S. 458

M 3	x	4	S	100	21,90
M 3	x	5	S	100	17,50
M 3	x	6	S	100	17,80
M 3	x	8	S	100	18,30
M 3	x	10	S	100	33,50
M 4	x	5	S	100	26,00
M 4	x	6	S	100	25,50
M 4	x	8	S	100	26,00
M 4	x	10	S	100	26,50
M 4	x	12	S	100	27,00
M 4	x	16	S	100	28,00
M 5	x	6	S	100	47,00
M 5	x	8	S	100	38,50
M 5	x	10	S	100	40,00
M 5	x	12	S	100	47,00
M 5	x	16	S	100	77,00
M 6	x	8	S	100	145,00
M 6	x	10	S	100	84,00
M 6	x	12	S	100	87,00
M 6	x	16	S	100	97,00
M 6	x	20	S	100	109,00
M 8	x	10	S	100	190,00
M 8	x	12	S	100	193,00
M 8	x	16	S	100	221,00
M 8	x	20	S	100	231,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 00921.510			RAZ 380
921 4.8/5.8 zinc plated			



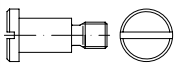
Slotted large cheese head screws

Dimensions → TI-38 Corrosion protection → TI-217

Stainless → S. 458

M 3	x	4	S	100		23,50 ZP
M 3	x	5	S	100		19,00 ZP
M 3	x	6	S	100		19,50 ZP
M 3	x	8	S	100		19,80 ZP
M 3	x	10	S	100		35,00 ZP
M 4	x	5	S	100		27,50 ZP
M 4	x	6	S	100		27,00 ZP
M 4	x	8	S	100		27,50 ZP
M 4	x	10	S	100		28,00 ZP
M 4	x	12	S	100		28,50 ZP
M 4	x	16	S	100		30,00 ZP
M 5	x	6	S	100		48,50 ZP
M 5	x	8	S	100		40,00 ZP
M 5	x	10	S	100		42,50 ZP
M 5	x	12	S	100		49,50 ZP
M 5	x	16	S	100		79,00 ZP
M 6	x	8	S	100		148,00 ZP
M 6	x	10	S	100		87,00 ZP
M 6	x	12	S	100		91,00 ZP
M 6	x	16	S	100		101,00 ZP
M 6	x	20	S	100		115,00 ZP
M 8	x	10	S	100		193,00 ZP
M 8	x	12	S	100		197,00 ZP
M 8	x	16	S	100		224,00 ZP
M 8	x	20	S	100		230,00 ZP
M 10	x	12	S	100		424,00 ZP
M 10	x	16	S	100		449,00 ZP
M 10	x	20	S	100		524,00 ZP

DIN	00923.500	RAZ 380
923	4.8/5.8	



Slotted cheese head shoulder screws, without undercut

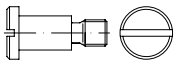
Dimensions → TI-38

Stainless → S. 458

Thread ∅ x shank length x thread length

M 3	x	2	x	4,5	S	100		18,30
M 3	x	3	x	4,5	S	100		26,50
M 3	x	4	x	4,5	S	100		20,00
M 3	x	5	x	4,5	S	100		30,00
M 3	x	6	x	4,5	S	100		21,60
M 3	x	8	x	4,5	S	100		32,00
M 3	x	10	x	4,5	S	100		24,90
M 4	x	2,5	x	6,0	S	100		20,00
M 4	x	3	x	6,0	S	100		20,50
M 4	x	4	x	6,0	S	100		21,10
M 4	x	5	x	6,0	S	100		21,60
M 4	x	6	x	6,0	S	100		22,40
M 4	x	8	x	6,0	S	100		24,60
M 4	x	10	x	6,0	S	100		27,50
M 4	x	12	x	6,0	S	100		30,50
M 4	x	16	x	6,0	S	100		47,50
M 5	x	2,5	x	7,0	S	100		40,00
M 5	x	3	x	7,0	S	100		30,00
M 5	x	4	x	7,0	S	100		31,00
M 5	x	5	x	7,0	S	100		32,00
M 5	x	6	x	7,0	S	100		34,00
M 5	x	8	x	7,0	S	100		36,50
M 5	x	10	x	7,0	S	100		38,00
M 5	x	12	x	7,0	S	100		40,50
M 5	x	16	x	7,0	S	100		46,50
M 5	x	20	x	7,0	S	100		54,50
M 6	x	3	x	9,0	S	100		44,00
M 6	x	4	x	9,0	S	100		45,50
M 6	x	5	x	9,0	S	100		46,50
M 6	x	6	x	9,0	S	100		47,50
M 6	x	8	x	9,0	S	100		55,00
M 6	x	10	x	9,0	S	100		56,00
M 6	x	12	x	9,0	S	100		57,00
M 6	x	16	x	9,0	S	100		73,00
M 6	x	20	x	9,0	S	100		78,00
M 8	x	4	x	11,0	S	100		81,00
M 8	x	5	x	11,0	S	100		116,00
M 8	x	6	x	11,0	S	100		85,00
M 8	x	8	x	11,0	S	100		93,00
M 8	x	10	x	11,0	S	100		97,00
M 8	x	12	x	11,0	S	100		103,00
M 8	x	16	x	11,0	S	100		120,00
M 8	x	20	x	11,0	S	50		132,00
M 8	x	25	x	11,0	S	50		148,00
M10	x	6	x	13,5	S	50		222,00
M10	x	10	x	13,5	S	50		182,00
M10	x	12	x	13,5	S	50		211,00
M10	x	16	x	13,5	S	50		246,00
M10	x	20	x	13,5	S	50		390,00
M10	x	25	x	13,5	S	50		400,00

DIN	00923.510	RAZ 380
923	4.8/5.8 zinc plated	



Slotted cheese head shoulder screws, without undercut

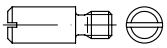
Dimensions → TI-38 Corrosion protection → TI-217

Stainless → S. 458

Thread ∅ x shank length x thread length

M 3	x	2	x	4,5	S	100		21,00 ZP
M 3	x	3	x	4,5	S	100		28,00 ZP
M 3	x	4	x	4,5	S	100		21,50 ZP
M 3	x	5	x	4,5	S	100		31,50 ZP
M 3	x	6	x	4,5	S	100		23,10 ZP
M 3	x	8	x	4,5	S	100		33,50 ZP
M 3	x	10	x	4,5	S	100		26,50 ZP
M 4	x	2,5	x	6,0	S	100		21,70 ZP
M 4	x	3	x	6,0	S	100		22,20 ZP
M 4	x	4	x	6,0	S	100		22,80 ZP
M 4	x	5	x	6,0	S	100		23,30 ZP
M 4	x	6	x	6,0	S	100		24,10 ZP
M 4	x	8	x	6,0	S	100		26,50 ZP
M 4	x	10	x	6,0	S	100		29,00 ZP
M 4	x	12	x	6,0	S	100		32,00 ZP
M 4	x	16	x	6,0	S	100		49,50 ZP
M 5	x	2,5	x	7,0	S	100		41,50 ZP
M 5	x	3	x	7,0	S	100		31,50 ZP
M 5	x	4	x	7,0	S	100		32,50 ZP
M 5	x	5	x	7,0	S	100		33,50 ZP
M 5	x	6	x	7,0	S	100		35,50 ZP
M 5	x	8	x	7,0	S	100		39,00 ZP
M 5	x	10	x	7,0	S	100		40,00 ZP
M 5	x	12	x	7,0	S	100		43,00 ZP
M 5	x	16	x	7,0	S	100		48,50 ZP
M 6	x	3	x	9,0	S	100		47,50 ZP
M 6	x	4	x	9,0	S	100		48,50 ZP
M 6	x	5	x	9,0	S	100		50,00 ZP
M 6	x	6	x	9,0	S	100		51,00 ZP
M 6	x	8	x	9,0	S	100		58,00 ZP
M 6	x	10	x	9,0	S	100		59,00 ZP
M 6	x	12	x	9,0	S	100		61,00 ZP
M 6	x	16	x	9,0	S	100		77,00 ZP
M 6	x	20	x	9,0	S	100		81,00 ZP
M 8	x	4	x	11,0	S	100		84,00 ZP
M 8	x	5	x	11,0	S	100		119,00 ZP
M 8	x	6	x	11,0	S	100		88,00 ZP
M 8	x	8	x	11,0	S	100		96,00 ZP
M 8	x	10	x	11,0	S	100		101,00 ZP
M 8	x	12	x	11,0	S	100		107,00 ZP
M 8	x	16	x	11,0	S	100		124,00 ZP
M 8	x	20	x	11,0	S	100		137,00 ZP
M 8	x	25	x	11,0	S	50		155,00 ZP
M10	x	10	x	13,5	S	50		230,00 ZP
M10	x	12	x	13,5	S	50		240,00 ZP
M10	x	16	x	13,5	S	50		256,00 ZP
M10	x	20	x	13,5	S	50		400,00 ZP
M10	x	25	x	13,5	S	50		410,00 ZP

DIN	00927.000	RAZ 380
927	14 H	



Slotted shoulder screws

Dimensions → TI-38

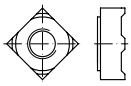
Thread ∅ x bolt length

M 3	x	3	S	100		14,40
M 3	x	4	S	100		15,20
M 3	x	5	S	100		15,70
M 3	x	6	S	100		16,20
M 3	x	8	S	100		16,70
M 4	x	4	S	100		18,60
M 4	x	5	S	100		19,50
M 4	x	6	S	100		20,50
M 4	x	8	S	100		21,70
M 4	x	10	S	100		23,90
M 5	x	5	S	100		25,50
M 5	x	6	S	100		26,50
M 5	x	8	S	100		27,50
M 5	x	10	S	100		28,00
M 5	x	12	S	100		29,50
M 6	x	8	S	100		35,00
M 6	x	10	S	100		38,50
M 6	x	12	S	100		42,00
M 8	x	16	S	100		67,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00928.000	RAZ 390

928

Steel



Square weld nuts

Dimensions ➔ TI-69

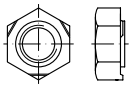
With fine thread or with flange (DIN 977) on request

M 4	S	1000	5,10
M 5	S	1000	5,40
M 6	S	1000	6,10
M 8	S	500	9,80
M 10	S	500	15,00
M 12	S	500	18,10

DIN	00929.000	RAZ 390

929

Steel



Hexagon weld nuts

Dimensions ➔ TI-69

Stainless ➔ S. 458

With fine thread or with flange (DIN 977) on request

M 3	S	1000	3,25
M 3	K	500	4,00
M 4	S	1000	3,55
M 4	K	500	4,35
M 5	S	1000	3,90
M 5	K	500	4,70
M 6	S	1000	4,60
M 6	K	250	5,90
M 8	S	1000	7,20
M 8	K	250	8,70
M 10	S	500	10,90
M 10	K	100	14,80
M 12	S	100	19,50
M 14	S	100	32,50
M 16	S	100	35,50

Dimensions	PU Pieces	€/100/Mat.
DIN	00931.800	RAZ 401

931

8.8

Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions ➔ TI-15
Mech. properties ➔ TI-220
Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

Stainless ➔ S. 458
Brass ➔ S. 577

DIN 931 ➔ replaced by ISO 4014

M 3	x	30	S	500	11,75
M 3	x	30	K	100	14,75
M 3	x	35	S	500	12,05
M 3	x	35	K	100	15,10
M 3	x	40	S	500	12,60
M 3	x	40	K	100	15,65
M 4	x	25	S	500	10,15
M 4	x	25	K	100	13,20
M 4	x	30	S	500	10,15
M 4	x	30	K	100	13,20
M 4	x	35	S	500	11,30
M 4	x	40	S	500	12,00
M 4	x	40	K	100	14,95
M 4	x	45	S	500	12,20
M 4	x	50	S	500	13,55
M 4	x	50	K	100	16,55
M 4	x	55	S	200	42,30
M 4	x	60	S	200	47,55
M 4	x	65	S	200	61,30
M 4	x	70	S	200	61,30
M 4	x	75	S	200	77,50
M 4	x	80	S	200	84,65
M 4	x	100	S	200	257,00
M 5	x	25	S	500	10,15
M 5	x	30	S	500	10,15
M 5	x	30	K	100	13,20
M 5	x	35	S	200	11,30
M 5	x	40	S	200	12,00
M 5	x	45	S	200	12,20
M 5	x	50	S	200	13,55
M 5	x	55	S	200	14,45
M 5	x	60	S	200	15,60
M 5	x	65	S	200	20,75
M 5	x	70	S	200	21,45
M 5	x	75	S	200	27,05
M 5	x	80	S	200	25,95
M 5	x	85	S	200	57,40
M 5	x	90	S	200	61,30
M 5	x	95	S	200	67,30
M 5	x	100	S	200	70,30
M 5	x	110	S	200	101,00
M 5	x	120	S	200	118,00
M 5	x	130	S	200	207,00
M 6	x	30	S	500	5,40
M 6	x	30	K	100	8,40
M 6	x	35	S	200	6,05
M 6	x	40	S	200	6,80
M 6	x	45	S	200	7,60
M 6	x	50	S	200	9,10
M 6	x	55	S	200	11,60
M 6	x	60	S	200	12,35
M 6	x	65	S	200	19,70
M 6	x	70	S	200	19,70
M 6	x	75	S	200	21,45

M 6	x	80	S	200	26,80
M 6	x	85	S	100	35,80
M 6	x	90	S	100	36,05
M 6	x	95	S	100	45,30
M 6	x	100	S	100	45,55
M 6	x	105	S	100	116,00
M 6	x	110	S	100	46,20
M 6	x	115	S	100	130,00
M 6	x	120	S	100	57,50
M 6	x	125	S	100	136,00
M 6	x	130	S	100	74,45
M 6	x	135	S	100	151,00
M 6	x	140	S	100	86,50
M 6	x	145	S	100	177,00
M 6	x	150	S	100	236,00
M 6	x	160	S	100	236,00
M 6	x	170	S	100	254,00
M 6	x	180	S	100	284,00
M 6	x	200	S	100	363,00
M 7	x	30	S	500	18,05
M 7	x	35	S	200	18,05
M 7	x	40	S	200	19,85
M 7	x	45	S	200	21,60
M 7	x	50	S	200	23,45
M 7	x	55	S	200	25,25
M 7	x	60	S	200	32,45
M 7	x	80	S	200	36,05
M 8	x	35	S	200	9,35
M 8	x	40	S	200	10,55
M 8	x	45	S	200	11,95
M 8	x	50	S	200	12,60
M 8	x	55	S	200	12,95
M 8	x	60	S	200	13,70
M 8	x	65	S	200	15,60
M 8	x	70	S	200	15,85
M 8	x	75	S	200	19,95
M 8	x	80	S	200	21,00
M 8	x	85	S	100	32,95
M 8	x	90	S	100	33,90
M 8	x	95	S	100	38,05
M 8	x	100	S	100	47,55
M 8	x	105	S	100	77,55
M 8	x	110	S	100	55,20
M 8	x	115	S	100	103,00
M 8	x	120	S	100	65,45
M 8	x	125	S	100	112,00
M 8	x	130	S	100	71,50
M 8	x	135	S	100	151,00
M 8	x	140	S	100	80,50
M 8	x	145	S	100	168,00
M 8	x	150	S	100	105,00
M 8	x	160	S	100	111,00
M 8	x	170	S	100	121,00
M 8	x	180	S	100	145,00
M 8	x	190	S	100	168,00
M 8	x	200	S	100	179,00
M 8	x	210	S	100	210,00
M 8	x	220	S	100	270,00
M 8	x	230	S	100	316,00
M 8	x	240	S	100	316,00
M 8	x	250	S	100	382,00
M 8	x	260	S	100	382,00
M 8	x	280	S	100	447,00
M 8	x	300	S	100	495,00
M 10	x	40	S	100	17,50
M 10	x	45	S	100	18,25
M 10	x	50	S	100	19,05
M 10	x	55	S	100	20,85
M 10	x	60	S	100	21,20
M 10	x	65	S	100	22,90
M 10	x	70	S	100	23,20
M 10	x	75	S	100	25,85
M 10	x	80	S	100	25,85
M 10	x	85	S	100	34,90
M 10	x	90	S	100	34,90

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 95	S	100	40,10
M 10 x 100	S	100	40,10
M 10 x 105	S	50	90,10
M 10 x 110	S	50	61,30
M 10 x 115	S	50	116,00
M 10 x 120	S	50	69,65
M 10 x 125	S	50	145,00
M 10 x 130	S	50	78,70
M 10 x 135	S	50	175,00
M 10 x 140	S	50	117,00
M 10 x 145	S	50	226,00
M 10 x 150	S	50	141,00
M 10 x 160	S	50	176,00
M 10 x 170	S	50	176,00
M 10 x 180	S	50	195,00
M 10 x 190	S	50	244,00
M 10 x 200	S	50	244,00
M 10 x 210	S	50	255,00
M 10 x 220	S	50	493,00
M 10 x 230	S	50	662,00
M 10 x 240	S	50	529,00
M 10 x 250	S	50	721,00
M 10 x 260	S	50	577,00
M 10 x 270	S	50	769,00
M 10 x 280	S	50	614,00
M 10 x 300	S	50	648,00
M 10 x 320	S	50	771,00
M 10 x 340	S	50	889,00
M 10 x 360	S	50	938,00
M 10 x 380	S	50	1500,00
M 10 x 400	S	50	1562,00
M 12 x 45	S	100	27,25
M 12 x 50	S	100	27,95
M 12 x 55	S	100	28,70
M 12 x 60	S	100	30,75
M 12 x 65	S	50	33,15
M 12 x 70	S	50	33,80
M 12 x 75	S	50	36,00
M 12 x 80	S	50	37,40
M 12 x 85	S	50	49,60
M 12 x 90	S	50	43,25
M 12 x 95	S	50	54,35
M 12 x 100	S	50	54,35
M 12 x 105	S	50	151,00
M 12 x 110	S	50	81,10
M 12 x 115	S	50	157,00
M 12 x 120	S	50	88,30
M 12 x 130	S	50	99,10
M 12 x 140	S	50	144,00
M 12 x 150	S	50	165,00
M 12 x 160	S	25	219,00
M 12 x 170	S	25	246,00
M 12 x 180	S	25	275,00
M 12 x 190	S	25	293,00
M 12 x 200	S	25	319,00
M 12 x 210	S	25	360,00
M 12 x 220	S	25	360,00
M 12 x 230	S	25	499,00
M 12 x 240	S	25	499,00
M 12 x 250	S	25	549,00
M 12 x 260	S	25	549,00
M 12 x 270	S	25	599,00
M 12 x 280	S	25	599,00
M 12 x 290	S	25	654,00
M 12 x 300	S	25	654,00
M 12 x 310	S	25	1033,00
M 12 x 320	S	25	944,00
M 12 x 330	S	25	1198,00
M 12 x 340	S	25	1040,00
M 12 x 350	S	25	1259,00
M 12 x 360	S	25	1166,00
M 12 x 380	S	25	1259,00
M 12 x 400	S	25	1574,00
M 12 x 420	S	25	1952,00
M 12 x 440	S	25	2172,00
M 12 x 460	S	25	2580,00
M 12 x 480	S	25	2832,00
M 12 x 500	S	25	3116,00
M 14 x 50	S	100	72,70
M 14 x 55	S	50	77,50
M 14 x 60	S	50	77,50
M 14 x 65	S	50	84,65
M 14 x 70	S	50	84,65
M 14 x 75	S	50	106,00
M 14 x 80	S	50	110,00
M 14 x 85	S	50	124,00
M 14 x 90	S	50	124,00
M 14 x 95	S	50	140,00
M 14 x 100	S	50	140,00
M 14 x 110	S	50	161,00
M 14 x 120	S	50	184,00
M 14 x 130	S	50	210,00
M 14 x 140	S	25	231,00
M 14 x 150	S	25	252,00
M 14 x 160	S	25	281,00
M 14 x 170	S	25	324,00
M 14 x 180	S	25	324,00
M 14 x 190	S	25	387,00
M 14 x 200	S	25	387,00
M 14 x 210	S	25	499,00
M 14 x 220	S	25	499,00
M 14 x 230	S	25	553,00
M 14 x 240	S	25	553,00
M 14 x 250	S	25	772,00
M 14 x 260	S	25	772,00
M 14 x 270	S	25	816,00
M 14 x 280	S	25	816,00
M 14 x 290	S	25	876,00
M 14 x 300	S	25	876,00
M 14 x 310	S	25	1123,00
M 14 x 320	S	25	1332,00
M 16 x 55	S	50	51,20
M 16 x 60	S	50	52,40
M 16 x 65	S	25	55,75
M 16 x 70	S	25	59,25
M 16 x 75	S	25	62,50
M 16 x 80	S	25	66,10
M 16 x 85	S	25	84,65
M 16 x 90	S	25	73,90
M 16 x 95	S	25	91,30
M 16 x 100	S	25	91,30
M 16 x 110	S	25	138,00
M 16 x 120	S	25	153,00
M 16 x 130	S	25	164,00
M 16 x 140	S	25	222,00
M 16 x 150	S	25	250,00
M 16 x 160	S	25	281,00
M 16 x 170	S	25	350,00
M 16 x 180	S	25	350,00
M 16 x 190	S	25	411,00
M 16 x 200	S	25	411,00
M 16 x 210	S	25	531,00
M 16 x 220	S	25	531,00
M 16 x 230	S	25	596,00
M 16 x 240	S	25	596,00
M 16 x 250	S	25	673,00
M 16 x 260	S	25	673,00
M 16 x 270	S	25	927,00
M 16 x 280	S	1	927,00
M 16 x 290	S	1	1042,00
M 16 x 300	S	1	1042,00
M 16 x 310	S	1	1220,00
M 16 x 320	S	1	1109,00
M 16 x 330	S	1	1301,00
M 16 x 340	S	1	1183,00
M 16 x 350	S	1	1463,00
M 16 x 360	S	1	1330,00
M 16 x 370	S	1	1788,00
M 16 x 380	S	1	1626,00
M 16 x 390	S	1	2032,00
M 16 x 400	S	1	1847,00
M 16 x 410	S	1	2252,00
M 16 x 420	S	1	2070,00
M 16 x 430	S	1	2586,00
M 16 x 440	S	1	2364,00
M 16 x 450	S	1	2658,00
M 16 x 460	S	1	2955,00
M 16 x 480	S	1	3250,00
M 16 x 500	S	1	3544,00
M 18 x 65	S	25	218,00
M 18 x 70	S	25	227,00
M 18 x 75	S	25	234,00
M 18 x 80	S	25	234,00
M 18 x 85	S	25	254,00
M 18 x 90	S	25	254,00
M 18 x 95	S	25	275,00
M 18 x 100	S	25	275,00
M 18 x 110	S	25	315,00
M 18 x 120	S	25	315,00
M 18 x 130	S	25	344,00
M 18 x 140	S	25	423,00
M 18 x 150	S	25	423,00
M 18 x 160	S	25	476,00
M 18 x 170	S	25	650,00
M 18 x 180	S	25	650,00
M 18 x 190	S	1	913,00
M 18 x 200	S	1	913,00
M 18 x 210	S	1	1060,00
M 18 x 220	S	1	1060,00
M 18 x 230	S	1	1184,00
M 18 x 240	S	1	1184,00
M 18 x 250	S	1	1302,00
M 18 x 260	S	1	1302,00
M 18 x 270	S	1	1481,00
M 18 x 280	S	1	1481,00
M 18 x 290	S	1	1700,00
M 18 x 300	S	1	1700,00
M 20 x 65	S	25	99,70
M 20 x 70	S	25	102,00
M 20 x 75	S	25	106,00
M 20 x 80	S	25	110,00
M 20 x 85	S	25	122,00
M 20 x 90	S	25	122,00
M 20 x 95	S	25	150,00
M 20 x 100	S	25	150,00
M 20 x 110	S	25	234,00
M 20 x 120	S	25	243,00
M 20 x 130	S	25	246,00
M 20 x 140	S	25	337,00
M 20 x 150	S	25	376,00
M 20 x 160	S	10	422,00
M 20 x 170	S	10	545,00
M 20 x 180	S	10	545,00
M 20 x 190	S	1	851,00
M 20 x 200	S	1	851,00
M 20 x 210	S	1	1060,00
M 20 x 220	S	1	1060,00
M 20 x 230	S	1	1184,00
M 20 x 240	S	1	1184,00
M 20 x 250	S	1	1302,00
M 20 x 260	S	1	1302,00
M 20 x 270	S	1	1481,00
M 20 x 280	S	1	1481,00
M 20 x 290	S	1	1700,00
M 20 x 300	S	1	1700,00
M 20 x 310	S	1	1804,00
M 20 x 320	S	1	1804,00
M 20 x 330	S	1	1931,00
M 20 x 340	S	1	1931,00
M 20 x 350	S	1	2054,00
M 20 x 360	S	1	2054,00
M 20 x 370	S	1	2203,00
M 20 x 380	S	1	2203,00
M 20 x 390	S	1	2306,00
M 20 x 400	S	1	2306,00

€/100 = price in € plus VAT when ordering full package unit

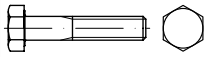
Dimensions	PU	Pieces	€/100/Mat.
M 20 x 410	S	1	2372,00
M 20 x 420	S	1	2372,00
M 20 x 430	S	1	2936,00
M 20 x 440	S	1	2936,00
M 20 x 450	S	1	2967,00
M 20 x 460	S	1	2967,00
M 20 x 480	S	1	2996,00
M 20 x 500	S	1	3027,00
M 22 x 70	S	25	417,00
M 22 x 75	S	25	433,00
M 22 x 80	S	25	433,00
M 22 x 90	S	25	451,00
M 22 x 100	S	10	488,00
M 22 x 110	S	10	527,00
M 22 x 120	S	10	565,00
M 22 x 130	S	10	602,00
M 22 x 140	S	10	602,00
M 22 x 150	S	10	713,00
M 22 x 160	S	10	802,00
M 22 x 170	S	1	1008,00
M 22 x 180	S	1	1008,00
M 22 x 190	S	1	1273,00
M 22 x 200	S	1	1273,00
M 22 x 210	S	1	1436,00
M 22 x 220	S	1	1436,00
M 22 x 230	S	1	1600,00
M 22 x 240	S	1	1600,00
M 22 x 250	S	1	1966,00
M 22 x 260	S	1	1966,00
M 22 x 270	S	1	2193,00
M 22 x 280	S	1	2193,00
M 22 x 300	S	1	2422,00
M 22 x 320	S	1	2925,00
M 24 x 75	S	25	181,00
M 24 x 80	S	25	181,00
M 24 x 85	S	10	236,00
M 24 x 90	S	10	222,00
M 24 x 95	S	10	241,00
M 24 x 100	S	10	241,00
M 24 x 110	S	10	364,00
M 24 x 120	S	10	390,00
M 24 x 130	S	10	400,00
M 24 x 140	S	10	551,00
M 24 x 150	S	10	601,00
M 24 x 160	S	10	664,00
M 24 x 170	S	1	849,00
M 24 x 180	S	1	849,00
M 24 x 190	S	1	1205,00
M 24 x 200	S	1	1205,00
M 24 x 210	S	1	1423,00
M 24 x 220	S	1	1544,00
M 24 x 230	S	1	1583,00
M 24 x 240	S	1	1660,00
M 24 x 250	S	1	1706,00
M 24 x 260	S	1	1706,00
M 24 x 270	S	1	2009,00
M 24 x 280	S	1	2009,00
M 24 x 290	S	1	2220,00
M 24 x 300	S	1	2220,00
M 24 x 310	S	1	2251,00
M 24 x 320	S	1	2251,00
M 24 x 330	S	1	2291,00
M 24 x 340	S	1	2291,00
M 24 x 350	S	1	2389,00
M 24 x 360	S	1	2389,00
M 24 x 370	S	1	2538,00
M 24 x 380	S	1	2538,00
M 24 x 390	S	1	2730,00
M 24 x 400	S	1	2730,00
M 24 x 410	S	1	2929,00
M 24 x 420	S	1	2929,00
M 24 x 430	S	1	3143,00
M 24 x 440	S	1	3143,00
M 24 x 450	S	1	3348,00
M 24 x 460	S	1	3348,00

Dimensions	PU	Pieces	€/100/Mat.
M 24 x 480	S	1	3562,00
M 24 x 500	S	1	3799,00
M 24 x 560	S	1	8069,00
M 24 x 600	S	1	8449,00
M 24 x 640	S	1	8814,00
M 27 x 75	S	10	493,00
M 27 x 80	S	10	493,00
M 27 x 85	S	10	616,00
M 27 x 90	S	10	616,00
M 27 x 100	S	10	731,00
M 27 x 110	S	1	848,00
M 27 x 120	S	1	848,00
M 27 x 130	S	1	910,00
M 27 x 140	S	1	910,00
M 27 x 150	S	1	942,00
M 27 x 160	S	1	942,00
M 27 x 170	S	1	985,00
M 27 x 180	S	1	985,00
M 27 x 190	S	1	1179,00
M 27 x 200	S	1	1179,00
M 27 x 210	S	1	1736,00
M 27 x 220	S	1	1736,00
M 27 x 230	S	1	1879,00
M 27 x 240	S	1	1879,00
M 27 x 250	S	1	2029,00
M 27 x 260	S	1	2029,00
M 27 x 270	S	1	2178,00
M 27 x 280	S	1	2178,00
M 27 x 290	S	1	2497,00
M 27 x 300	S	1	2497,00
M 27 x 320	S	1	3166,00
M 27 x 340	S	1	3488,00
M 27 x 360	S	1	3809,00
M 27 x 380	S	1	4132,00
M 27 x 400	S	1	4364,00
M 27 x 420	S	1	4633,00
M 27 x 440	S	1	4917,00
M 27 x 460	S	1	5200,00
M 27 x 480	S	1	5510,00
M 27 x 500	S	1	5793,00
M 27 x 520	S	1	8045,00
M 27 x 540	S	1	8752,00
M 27 x 560	S	1	9269,00
M 30 x 80	S	1	1291,00
M 30 x 90	S	1	1291,00
M 30 x 100	S	1	1291,00
M 30 x 110	S	1	1535,00
M 30 x 120	S	1	1535,00
M 30 x 130	S	1	1700,00
M 30 x 140	S	1	1700,00
M 30 x 150	S	1	1763,00
M 30 x 160	S	1	1763,00
M 30 x 170	S	1	1944,00
M 30 x 180	S	1	1944,00
M 30 x 190	S	1	2073,00
M 30 x 200	S	1	2073,00
M 30 x 210	S	1	2141,00
M 30 x 220	S	1	2141,00
M 30 x 240	S	1	2303,00
M 30 x 250	S	1	2553,00
M 30 x 260	S	1	2553,00
M 30 x 270	S	1	2553,00
M 30 x 280	S	1	2553,00
M 30 x 290	S	1	2665,00
M 30 x 300	S	1	2665,00
M 30 x 310	S	1	3086,00
M 30 x 320	S	1	3086,00
M 30 x 330	S	1	3156,00
M 30 x 340	S	1	3156,00
M 30 x 350	S	1	3375,00
M 30 x 360	S	1	3375,00
M 30 x 370	S	1	3598,00
M 30 x 380	S	1	3598,00
M 30 x 390	S	1	3965,00
M 30 x 400	S	1	3965,00

Dimensions	PU	Pieces	€/100/Mat.
M 30 x 420	S	1	4117,00
M 30 x 440	S	1	4850,00
M 30 x 450	S	1	5491,00
M 30 x 460	S	1	5491,00
M 30 x 480	S	1	6497,00
M 30 x 500	S	1	7016,00
M 30 x 520	S	1	12042,00
M 30 x 560	S	1	12648,00
M 30 x 580	S	1	12942,00
M 30 x 600	S	1	13239,00
M 33 x 90	S	1	1473,00
M 33 x 100	S	1	1473,00
M 33 x 110	S	1	1562,00
M 33 x 120	S	1	1640,00
M 33 x 130	S	1	1716,00
M 33 x 140	S	1	1797,00
M 33 x 150	S	1	1862,00
M 33 x 160	S	1	2203,00
M 33 x 170	S	1	2268,00
M 33 x 180	S	1	2268,00
M 33 x 190	S	1	2331,00
M 33 x 200	S	1	2331,00
M 33 x 210	S	1	2399,00
M 33 x 220	S	1	2399,00
M 33 x 230	S	1	2555,00
M 33 x 240	S	1	2555,00
M 33 x 250	S	1	2982,00
M 33 x 260	S	1	2982,00
M 33 x 270	S	1	3128,00
M 33 x 280	S	1	3128,00
M 33 x 300	S	1	3275,00
M 33 x 400	S	1	10200,00
M 36 x 100	S	1	1864,00
M 36 x 110	S	1	1864,00
M 36 x 120	S	1	1966,00
M 36 x 130	S	1	2076,00
M 36 x 140	S	1	2185,00
M 36 x 150	S	1	2261,00
M 36 x 160	S	1	2522,00
M 36 x 170	S	1	2686,00
M 36 x 180	S	1	2686,00
M 36 x 190	S	1	2851,00
M 36 x 200	S	1	2851,00
M 36 x 210	S	1	2967,00
M 36 x 220	S	1	2967,00
M 36 x 230	S	1	3262,00
M 36 x 240	S	1	3262,00
M 36 x 250	S	1	3435,00
M 36 x 260	S	1	3435,00
M 36 x 270	S	1	3606,00
M 36 x 280	S	1	3606,00
M 36 x 290	S	1	3768,00
M 36 x 300	S	1	3768,00
M 36 x 310	S	1	4351,00
M 36 x 320	S	1	4351,00
M 36 x 330	S	1	4501,00
M 36 x 340	S	1	4501,00
M 36 x 350	S	1	4663,00
M 36 x 360	S	1	4663,00
M 36 x 380	S	1	4807,00
M 36 x 400	S	1	4843,00
M 36 x 420	S	1	4930,00
M 36 x 440	S	1	5257,00
M 36 x 460	S	1	5674,00
M 36 x 480	S	1	5917,00
M 36 x 500	S	1	6187,00
M 36 x 540	S	1	14827,00
M 36 x 580	S	1	15289,00
M 39 x 110	S	1	3027,00
M 39 x 120	S	1	3027,00
M 39 x 130	S	1	3216,00
M 39 x 140	S	1	3324,00
M 39 x 150	S	1	3513,00
M 39 x 160	S	1	3621,00
M 39 x 170	S	1	3757,00

Dimensions			PU	Pieces	€/100/Mat.
M 39	x	180	S	1	3945,00
M 39	x	190	S	1	4134,00
M 39	x	200	S	1	4323,00
M 39	x	220	S	1	4621,00
M 39	x	240	S	1	4945,00
M 39	x	250	S	1	12721,00
M 39	x	260	S	1	12876,00
M 39	x	280	S	1	13175,00
M 39	x	300	S	1	13480,00
M 42	x	120	S	1	3216,00
M 42	x	130	S	1	3378,00
M 42	x	140	S	1	3513,00
M 42	x	150	S	1	3729,00
M 42	x	160	S	1	3810,00
M 42	x	170	S	1	4000,00
M 42	x	180	S	1	4215,00
M 42	x	190	S	1	4513,00
M 42	x	200	S	1	4513,00
M 42	x	210	S	5	4846,00
M 42	x	220	S	1	5161,00
M 42	x	240	S	1	5500,00
M 42	x	250	S	1	5917,00
M 42	x	260	S	1	5917,00
M 42	x	280	S	1	6620,00
M 42	x	300	S	1	6972,00
M 42	x	320	S	1	7676,00
M 42	x	340	S	1	8169,00
M 42	x	360	S	1	8847,00
M 42	x	380	S	1	9565,00
M 42	x	400	S	1	10025,00
M 42	x	420	S	1	10808,00
M 45	x	120	S	1	4242,00
M 45	x	130	S	1	4507,00
M 45	x	140	S	1	4675,00
M 45	x	150	S	1	4852,00
M 45	x	160	S	1	5194,00
M 45	x	170	S	1	5371,00
M 45	x	180	S	1	5540,00
M 45	x	190	S	1	5803,00
M 45	x	200	S	1	6058,00
M 45	x	220	S	1	14100,00
M 48	x	130	S	1	5452,00
M 48	x	140	S	1	5626,00
M 48	x	150	S	1	6062,00
M 48	x	160	S	1	6323,00
M 48	x	170	S	1	6494,00
M 48	x	180	S	1	6494,00
M 48	x	190	S	1	6924,00
M 48	x	200	S	1	6924,00
M 48	x	220	S	1	7268,00
M 48	x	240	S	1	7619,00
M 48	x	250	S	1	8052,00
M 48	x	260	S	1	8052,00
M 48	x	280	S	1	8659,00
M 48	x	290	S	1	9523,00
M 48	x	300	S	1	9523,00
M 48	x	320	S	1	10795,00
M 48	x	340	S	1	11390,00
M 48	x	360	S	1	11984,00
M 48	x	380	S	1	12525,00
M 48	x	400	S	1	13173,00
M 48	x	420	S	1	18035,00
M 48	x	480	S	1	23591,00
M 52	x	150	S	1	16339,00
M 52	x	200	S	1	17934,00
M 56	x	130	S	1	9565,00
M 56	x	140	S	1	9958,00
M 56	x	150	S	1	10082,00
M 56	x	160	S	1	10499,00
M 56	x	170	S	1	10808,00
M 56	x	180	S	1	11255,00
M 56	x	190	S	1	11429,00
M 56	x	200	S	1	11903,00
M 56	x	220	S	1	11942,00
M 56	x	240	S	1	12888,00
M 56	x	250	S	1	13714,00
M 56	x	260	S	1	13714,00
M 56	x	280	S	1	14548,00
M 56	x	300	S	1	15265,00
M 56	x	380	S	1	24868,00
M 64	x	300	S	1	28586,00

DIN	00931.810	RAZ 401
931	**8.8** **zinc plated**	



Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	30	S	500	12,45 ZP
M 3	x	35	S	500	12,85 ZP
M 3	x	40	S	500	13,55 ZP
M 4	x	25	S	500	10,95 ZP
M 4	x	30	S	500	11,10 ZP
M 4	x	35	S	500	12,35 ZP
M 4	x	40	S	500	13,15 ZP
M 4	x	40	K	100	16,10 ZP
M 4	x	45	S	500	13,45 ZP
M 4	x	50	S	500	14,90 ZP
M 4	x	55	S	200	44,60 ZP
M 4	x	60	S	200	50,10 ZP
M 4	x	70	S	200	63,70 ZP
M 4	x	80	S	200	88,30 ZP
M 5	x	30	S	500	11,55 ZP
M 5	x	30	K	100	14,55 ZP
M 5	x	35	S	200	12,90 ZP
M 5	x	40	S	200	13,75 ZP
M 5	x	45	S	200	14,20 ZP
M 5	x	50	S	200	15,75 ZP
M 5	x	55	S	200	16,85 ZP
M 5	x	60	S	200	18,15 ZP
M 5	x	65	S	200	23,55 ZP
M 5	x	70	S	200	24,40 ZP
M 5	x	80	S	200	29,30 ZP
M 5	x	85	S	200	65,00 ZP
M 5	x	90	S	200	65,45 ZP
M 5	x	95	S	200	72,30 ZP
M 5	x	100	S	200	75,10 ZP
M 5	x	120	S	200	124,00 ZP
M 5	x	130	S	200	214,00 ZP
M 6	x	30	S	500	6,90 ZP
M 6	x	30	K	100	9,95 ZP
M 6	x	35	S	200	7,75 ZP
M 6	x	40	S	200	8,75 ZP
M 6	x	45	S	200	9,70 ZP
M 6	x	50	S	200	11,40 ZP
M 6	x	55	S	200	14,10 ZP
M 6	x	60	S	200	15,10 ZP
M 6	x	65	S	200	23,55 ZP
M 6	x	70	S	200	23,80 ZP
M 6	x	75	S	200	25,85 ZP
M 6	x	80	S	200	31,50 ZP
M 6	x	85	S	100	40,70 ZP
M 6	x	90	S	100	41,25 ZP
M 6	x	95	S	100	50,75 ZP
M 6	x	100	S	100	51,25 ZP
M 6	x	105	S	100	124,00 ZP
M 6	x	110	S	100	52,45 ZP
M 6	x	120	S	100	64,25 ZP
M 6	x	130	S	100	83,45 ZP
M 6	x	140	S	100	95,50 ZP
M 6	x	150	S	100	247,00 ZP
M 6	x	160	S	100	248,00 ZP
M 6	x	170	S	100	265,00 ZP
M 6	x	180	S	100	297,00 ZP
M 6	x	190	S	100	329,00 ZP
M 6	x	200	S	100	377,00 ZP
M 7	x	40	S	200	26,70 ZP
M 7	x	50	S	200	28,85 ZP
M 7	x	60	S	200	42,05 ZP
M 8	x	35	S	200	12,80 ZP
M 8	x	40	S	200	14,40 ZP
M 8	x	45	S	200	16,15 ZP
M 8	x	50	S	200	17,20 ZP
M 8	x	55	S	200	17,80 ZP
M 8	x	60	S	200	18,95 ZP
M 8	x	65	S	200	21,15 ZP
M 8	x	70	S	200	21,90 ZP
M 8	x	75	S	200	26,35 ZP
M 8	x	80	S	200	27,70 ZP
M 8	x	85	S	100	42,35 ZP
M 8	x	90	S	100	43,80 ZP
M 8	x	95	S	100	48,40 ZP
M 8	x	100	S	100	58,45 ZP
M 8	x	110	S	100	67,30 ZP
M 8	x	115	S	100	121,00 ZP
M 8	x	120	S	100	78,10 ZP
M 8	x	125	S	100	133,00 ZP
M 8	x	130	S	100	85,30 ZP
M 8	x	135	S	100	166,00 ZP
M 8	x	140	S	100	95,50 ZP
M 8	x	145	S	100	191,00 ZP
M 8	x	150	S	100	121,00 ZP
M 8	x	160	S	100	128,00 ZP
M 8	x	170	S	100	143,00 ZP
M 8	x	180	S	100	168,00 ZP
M 8	x	190	S	100	192,00 ZP
M 8	x	200	S	100	206,00 ZP
M 8	x	210	S	100	237,00 ZP
M 8	x	220	S	100	304,00 ZP
M 10	x	40	S	100	24,15 ZP
M 10	x	45	S	100	25,50 ZP
M 10	x	50	S	100	26,80 ZP
M 10	x	55	S	100	29,10 ZP
M 10	x	60	S	100	30,10 ZP
M 10	x	65	S	100	32,35 ZP
M 10	x	70	S	100	33,25 ZP
M 10	x	75	S	100	36,50 ZP
M 10	x	80	S	100	37,10 ZP
M 10	x	85	S	100	46,70 ZP
M 10	x	90	S	100	47,35 ZP
M 10	x	95	S	100	53,05 ZP
M 10	x	100	S	100	53,65 ZP
M 10	x	105	S	50	107,00 ZP
M 10	x	110	S	50	80,50 ZP
M 10	x	115	S	50	145,00 ZP
M 10	x	120	S	50	90,70 ZP
M 10	x	130	S	50	102,00 ZP
M 10	x	140	S	50	141,00 ZP
M 10	x	150	S	50	167,00 ZP
M 10	x	160	S	50	203,00 ZP
M 10	x	170	S	50	206,00 ZP
M 10	x	180	S	50	225,00 ZP
M 10	x	190	S	50	275,00 ZP
M 10	x	200	S	50	278,00 ZP
M 10	x	210	S	50	291,00 ZP
M 10	x	220	S	50	533,00 ZP
M 10	x	230	S	50	703,00 ZP
M 10	x	240	S	50	572,00 ZP
M 10	x	250	S	50	764,00 ZP
M 10	x	260	S	50	623,00 ZP

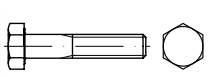
Dimensions	PU	Pieces	€/100/Mat.
M 10 x 270	S	50	816,00 ZP
M 10 x 280	S	50	663,00 ZP
M 10 x 290	S	50	963,00 ZP
M 10 x 300	S	50	699,00 ZP
M 12 x 45	S	100	37,35 ZP
M 12 x 50	S	100	38,90 ZP
M 12 x 55	S	100	40,55 ZP
M 12 x 60	S	100	43,45 ZP
M 12 x 65	S	50	46,40 ZP
M 12 x 70	S	50	47,95 ZP
M 12 x 75	S	50	50,90 ZP
M 12 x 80	S	50	53,20 ZP
M 12 x 85	S	50	66,65 ZP
M 12 x 90	S	50	60,65 ZP
M 12 x 95	S	50	72,70 ZP
M 12 x 100	S	50	73,90 ZP
M 12 x 110	S	50	109,00 ZP
M 12 x 115	S	50	192,00 ZP
M 12 x 120	S	50	119,00 ZP
M 12 x 130	S	50	132,00 ZP
M 12 x 140	S	50	178,00 ZP
M 12 x 150	S	50	200,00 ZP
M 12 x 160	S	25	257,00 ZP
M 12 x 170	S	25	286,00 ZP
M 12 x 180	S	25	317,00 ZP
M 12 x 190	S	25	338,00 ZP
M 12 x 200	S	25	365,00 ZP
M 12 x 210	S	25	410,00 ZP
M 12 x 220	S	25	412,00 ZP
M 12 x 230	S	25	553,00 ZP
M 12 x 240	S	25	555,00 ZP
M 12 x 250	S	25	620,00 ZP
M 12 x 260	S	25	609,00 ZP
M 12 x 270	S	25	675,00 ZP
M 12 x 280	S	25	664,00 ZP
M 12 x 290	S	25	694,00 ZP
M 12 x 300	S	25	724,00 ZP
M 12 x 310	S	25	1120,00 ZP
M 12 x 320	S	25	1034,00 ZP
M 12 x 330	S	1	1466,00 ZP
M 14 x 50	S	100	93,10 ZP
M 14 x 55	S	50	99,10 ZP
M 14 x 60	S	50	101,00 ZP
M 14 x 65	S	50	110,00 ZP
M 14 x 70	S	50	112,00 ZP
M 14 x 75	S	50	134,00 ZP
M 14 x 80	S	50	140,00 ZP
M 14 x 85	S	50	154,00 ZP
M 14 x 90	S	50	156,00 ZP
M 14 x 95	S	50	173,00 ZP
M 14 x 100	S	50	174,00 ZP
M 14 x 110	S	50	199,00 ZP
M 14 x 120	S	50	225,00 ZP
M 14 x 130	S	50	254,00 ZP
M 14 x 140	S	25	276,00 ZP
M 14 x 150	S	25	301,00 ZP
M 14 x 160	S	25	333,00 ZP
M 14 x 170	S	25	379,00 ZP
M 14 x 180	S	25	381,00 ZP
M 14 x 190	S	25	447,00 ZP
M 14 x 200	S	25	450,00 ZP
M 14 x 220	S	25	566,00 ZP
M 14 x 240	S	25	628,00 ZP
M 16 x 50	S	50	73,25 ZP
M 16 x 55	S	50	73,25 ZP
M 16 x 60	S	50	75,65 ZP
M 16 x 65	S	25	81,10 ZP
M 16 x 70	S	25	85,85 ZP
M 16 x 75	S	25	90,10 ZP
M 16 x 80	S	25	95,50 ZP
M 16 x 85	S	25	117,00 ZP
M 16 x 90	S	25	107,00 ZP
M 16 x 95	S	25	127,00 ZP
M 16 x 100	S	25	128,00 ZP
M 16 x 110	S	25	189,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 120	S	25	208,00 ZP
M 16 x 130	S	25	221,00 ZP
M 16 x 140	S	25	282,00 ZP
M 16 x 150	S	25	315,00 ZP
M 16 x 160	S	25	352,00 ZP
M 16 x 170	S	25	423,00 ZP
M 16 x 180	S	25	427,00 ZP
M 16 x 190	S	25	492,00 ZP
M 16 x 200	S	25	496,00 ZP
M 16 x 210	S	25	620,00 ZP
M 16 x 220	S	1	624,00 ZP
M 16 x 230	S	1	692,00 ZP
M 16 x 240	S	1	696,00 ZP
M 16 x 250	S	1	778,00 ZP
M 16 x 260	S	1	781,00 ZP
M 16 x 270	S	1	1040,00 ZP
M 16 x 280	S	1	1044,00 ZP
M 16 x 290	S	1	1164,00 ZP
M 16 x 300	S	1	1168,00 ZP
M 16 x 310	S	1	1376,00 ZP
M 16 x 320	S	1	1307,00 ZP
M 16 x 330	S	1	1466,00 ZP
M 16 x 340	S	1	1324,00 ZP
M 16 x 350	S	1	1638,00 ZP
M 16 x 360	S	1	1479,00 ZP
M 16 x 370	S	1	1973,00 ZP
M 16 x 380	S	1	1815,00 ZP
M 16 x 390	S	1	2226,00 ZP
M 16 x 400	S	1	2046,00 ZP
M 16 x 420	S	1	2279,00 ZP
M 16 x 430	S	1	2799,00 ZP
M 16 x 440	S	1	2582,00 ZP
M 18 x 65	S	25	262,00 ZP
M 18 x 70	S	25	273,00 ZP
M 18 x 75	S	25	281,00 ZP
M 18 x 80	S	25	284,00 ZP
M 18 x 90	S	25	308,00 ZP
M 18 x 95	S	25	332,00 ZP
M 18 x 100	S	25	336,00 ZP
M 18 x 110	S	25	380,00 ZP
M 18 x 120	S	25	386,00 ZP
M 18 x 130	S	25	417,00 ZP
M 18 x 140	S	25	502,00 ZP
M 18 x 150	S	25	507,00 ZP
M 18 x 160	S	25	564,00 ZP
M 18 x 170	S	25	744,00 ZP
M 18 x 180	S	25	749,00 ZP
M 18 x 190	S	1	1016,00 ZP
M 18 x 200	S	1	1021,00 ZP
M 18 x 220	S	1	1204,00 ZP
M 18 x 230	S	1	1334,00 ZP
M 18 x 240	S	1	1340,00 ZP
M 20 x 65	S	25	142,00 ZP
M 20 x 70	S	25	146,00 ZP
M 20 x 75	S	25	153,00 ZP
M 20 x 80	S	25	159,00 ZP
M 20 x 85	S	25	173,00 ZP
M 20 x 90	S	25	175,00 ZP
M 20 x 95	S	25	206,00 ZP
M 20 x 100	S	25	207,00 ZP
M 20 x 110	S	25	315,00 ZP
M 20 x 120	S	25	331,00 ZP
M 20 x 130	S	25	338,00 ZP
M 20 x 140	S	25	436,00 ZP
M 20 x 150	S	25	480,00 ZP
M 20 x 160	S	10	533,00 ZP
M 20 x 170	S	10	663,00 ZP
M 20 x 180	S	10	669,00 ZP
M 20 x 190	S	1	980,00 ZP
M 20 x 200	S	1	987,00 ZP
M 20 x 210	S	1	1202,00 ZP
M 20 x 220	S	1	1209,00 ZP
M 20 x 230	S	1	1338,00 ZP
M 20 x 240	S	1	1345,00 ZP
M 20 x 250	S	1	1469,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 20 x 260	S	1	1476,00 ZP
M 20 x 270	S	1	1541,00 ZP
M 20 x 280	S	1	1667,00 ZP
M 20 x 290	S	1	1770,00 ZP
M 20 x 300	S	1	1899,00 ZP
M 20 x 310	S	1	2050,00 ZP
M 20 x 320	S	1	2014,00 ZP
M 20 x 330	S	1	2084,00 ZP
M 20 x 340	S	1	2153,00 ZP
M 20 x 350	S	1	2330,00 ZP
M 20 x 360	S	1	2337,00 ZP
M 20 x 380	S	1	2501,00 ZP
M 20 x 390	S	1	2612,00 ZP
M 20 x 400	S	1	2619,00 ZP
M 20 x 420	S	1	2684,00 ZP
M 20 x 430	S	1	3272,00 ZP
M 20 x 440	S	1	3279,00 ZP
M 20 x 450	S	1	3318,00 ZP
M 20 x 460	S	1	3325,00 ZP
M 20 x 480	S	1	3369,00 ZP
M 20 x 500	S	1	3415,00 ZP
M 22 x 70	S	25	487,00 ZP
M 22 x 75	S	25	506,00 ZP
M 22 x 80	S	25	510,00 ZP
M 22 x 90	S	25	536,00 ZP
M 22 x 100	S	10	580,00 ZP
M 22 x 110	S	10	628,00 ZP
M 22 x 120	S	10	672,00 ZP
M 22 x 130	S	10	714,00 ZP
M 22 x 140	S	10	721,00 ZP
M 22 x 150	S	10	840,00 ZP
M 22 x 160	S	10	936,00 ZP
M 22 x 180	S	1	1158,00 ZP
M 22 x 200	S	1	1437,00 ZP
M 22 x 240	S	1	1795,00 ZP
M 22 x 260	S	1	2174,00 ZP
M 22 x 280	S	1	2417,00 ZP
M 22 x 300	S	1	2661,00 ZP
M 24 x 75	S	25	250,00 ZP
M 24 x 80	S	25	256,00 ZP
M 24 x 85	S	10	315,00 ZP
M 24 x 90	S	10	303,00 ZP
M 24 x 95	S	10	324,00 ZP
M 24 x 100	S	10	329,00 ZP
M 24 x 110	S	10	488,00 ZP
M 24 x 120	S	10	524,00 ZP
M 24 x 130	S	10	539,00 ZP
M 24 x 140	S	10	699,00 ZP
M 24 x 150	S	10	757,00 ZP
M 24 x 160	S	10	829,00 ZP
M 24 x 170	S	1	1022,00 ZP
M 24 x 180	S	1	1031,00 ZP
M 24 x 190	S	1	1397,00 ZP
M 24 x 200	S	1	1406,00 ZP
M 24 x 210	S	1	1632,00 ZP
M 24 x 220	S	1	1762,00 ZP
M 24 x 230	S	1	1807,00 ZP
M 24 x 240	S	1	1893,00 ZP
M 24 x 250	S	1	1999,00 ZP
M 24 x 260	S	1	1958,00 ZP
M 24 x 270	S	1	2323,00 ZP
M 24 x 280	S	1	2277,00 ZP
M 24 x 300	S	1	2507,00 ZP
M 24 x 310	S	1	2607,00 ZP
M 24 x 320	S	1	2553,00 ZP
M 24 x 330	S	1	2668,00 ZP
M 24 x 340	S	1	2613,00 ZP
M 24 x 350	S	1	2787,00 ZP
M 24 x 360	S	1	2729,00 ZP
M 24 x 380	S	1	2931,00 ZP
M 24 x 390	S	1	3170,00 ZP
M 24 x 400	S	1	3182,00 ZP
M 24 x 410	S	1	3391,00 ZP
M 24 x 420	S	1	3400,00 ZP
M 24 x 430	S	1	3625,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	440	S	1	3635,00 ZP
M 24	x	450	S	1	3851,00 ZP
M 27	x	80	S	10	621,00 ZP
M 27	x	90	S	10	755,00 ZP
M 27	x	100	S	10	882,00 ZP
M 27	x	110	S	1	1009,00 ZP
M 27	x	120	S	1	1021,00 ZP
M 27	x	130	S	1	1090,00 ZP
M 27	x	140	S	1	1101,00 ZP
M 27	x	150	S	1	1144,00 ZP
M 27	x	160	S	1	1155,00 ZP
M 27	x	170	S	1	1210,00 ZP
M 27	x	180	S	1	1221,00 ZP
M 27	x	190	S	1	1426,00 ZP
M 27	x	200	S	1	1436,00 ZP
M 27	x	220	S	1	2017,00 ZP
M 27	x	230	S	1	2099,00 ZP
M 27	x	240	S	1	2181,00 ZP
M 27	x	260	S	1	2352,00 ZP
M 27	x	270	S	1	2487,00 ZP
M 27	x	280	S	1	2523,00 ZP
M 27	x	300	S	1	2866,00 ZP
M 27	x	320	S	1	3637,00 ZP
M 30	x	80	S	1	1489,00 ZP
M 30	x	90	S	1	1469,00 ZP
M 30	x	100	S	1	1483,00 ZP
M 30	x	110	S	1	1740,00 ZP
M 30	x	120	S	1	1754,00 ZP
M 30	x	130	S	1	1931,00 ZP
M 30	x	140	S	1	1944,00 ZP
M 30	x	150	S	1	2018,00 ZP
M 30	x	160	S	1	2033,00 ZP
M 30	x	170	S	1	2228,00 ZP
M 30	x	180	S	1	2243,00 ZP
M 30	x	190	S	1	2384,00 ZP
M 30	x	200	S	1	2399,00 ZP
M 30	x	210	S	1	2482,00 ZP
M 30	x	220	S	1	2496,00 ZP
M 30	x	230	S	1	2547,00 ZP
M 30	x	240	S	1	2685,00 ZP
M 30	x	250	S	10	2879,00 ZP
M 30	x	260	S	1	2961,00 ZP
M 30	x	280	S	1	2990,00 ZP
M 30	x	290	S	1	2695,00 ZP
M 30	x	300	S	1	3128,00 ZP
M 30	x	310	S	1	3353,00 ZP
M 30	x	320	S	1	3577,00 ZP
M 30	x	330	S	1	3765,00 ZP
M 30	x	340	S	1	3780,00 ZP
M 30	x	350	S	1	4017,00 ZP
M 30	x	360	S	1	4032,00 ZP
M 30	x	380	S	1	4288,00 ZP
M 33	x	100	S	1	1711,00 ZP
M 33	x	110	S	1	1817,00 ZP
M 33	x	120	S	1	1912,00 ZP
M 33	x	130	S	1	2002,00 ZP
M 33	x	140	S	1	2100,00 ZP
M 33	x	150	S	1	2184,00 ZP
M 33	x	160	S	1	2539,00 ZP
M 33	x	170	S	1	2619,00 ZP
M 33	x	180	S	1	2636,00 ZP
M 33	x	190	S	1	2715,00 ZP
M 33	x	200	S	1	2732,00 ZP
M 33	x	210	S	1	2817,00 ZP
M 33	x	220	S	1	2836,00 ZP
M 33	x	240	S	1	3024,00 ZP
M 33	x	260	S	1	3485,00 ZP
M 33	x	280	S	1	3666,00 ZP
M 33	x	300	S	1	3845,00 ZP
M 36	x	110	S	1	2173,00 ZP
M 36	x	120	S	1	2294,00 ZP
M 36	x	130	S	1	2423,00 ZP
M 36	x	140	S	1	2552,00 ZP
M 36	x	150	S	1	2646,00 ZP
M 36	x	160	S	1	2929,00 ZP
M 36	x	170	S	1	3113,00 ZP
M 36	x	180	S	1	3132,00 ZP
M 36	x	190	S	1	3317,00 ZP
M 36	x	200	S	1	3336,00 ZP
M 36	x	210	S	1	3472,00 ZP
M 36	x	220	S	1	3492,00 ZP
M 36	x	230	S	1	3807,00 ZP
M 36	x	240	S	1	3827,00 ZP
M 36	x	250	S	1	4023,00 ZP
M 36	x	260	S	1	4041,00 ZP
M 36	x	270	S	1	4359,00 ZP
M 36	x	280	S	1	4253,00 ZP
M 36	x	300	S	1	4453,00 ZP
M 36	x	320	S	1	5433,00 ZP
M 36	x	360	S	1	5865,00 ZP
M 36	x	400	S	1	6163,00 ZP
M 39	x	140	S	1	3822,00 ZP
M 39	x	150	S	1	4035,00 ZP
M 39	x	160	S	1	4170,00 ZP
M 39	x	170	S	1	4333,00 ZP
M 39	x	180	S	1	4548,00 ZP
M 39	x	190	S	1	4764,00 ZP
M 39	x	200	S	1	4983,00 ZP
M 42	x	120	S	1	3777,00 ZP
M 42	x	130	S	1	4115,00 ZP
M 42	x	140	S	1	4290,00 ZP
M 42	x	150	S	1	4548,00 ZP
M 42	x	160	S	1	4670,00 ZP
M 42	x	170	S	1	4896,00 ZP
M 42	x	180	S	1	5153,00 ZP
M 42	x	190	S	1	5302,00 ZP
M 42	x	200	S	1	5532,00 ZP
M 42	x	220	S	1	6049,00 ZP
M 42	x	240	S	1	6454,00 ZP
M 42	x	250	S	1	6904,00 ZP
M 42	x	260	S	1	6937,00 ZP
M 42	x	280	S	1	7676,00 ZP
M 48	x	140	S	1	6690,00 ZP
M 48	x	150	S	1	7181,00 ZP
M 48	x	160	S	1	7498,00 ZP
M 48	x	170	S	1	7722,00 ZP
M 48	x	180	S	1	7774,00 ZP
M 48	x	200	S	1	8307,00 ZP
M 48	x	220	S	1	8842,00 ZP
M 48	x	240	S	1	9383,00 ZP

DIN	00931.328	RAZ 401
931	**8.8** **zinc plated 8 TLP**	



Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 458
Brass → S. 577

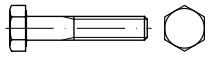
DIN 931 → replaced by ISO 4014

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	40	S	200	17,20 ZP TLP
M 5	x	45	S	200	17,80 ZP TLP
M 5	x	50	S	200	19,70 ZP TLP
M 6	x	30	S	500	8,65 ZP TLP
M 6	x	35	S	200	9,70 ZP TLP
M 6	x	40	S	200	10,95 ZP TLP
M 6	x	45	S	200	12,15 ZP TLP
M 6	x	50	S	200	14,25 ZP TLP
M 6	x	55	S	200	17,65 ZP TLP
M 6	x	60	S	200	18,90 ZP TLP
M 6	x	65	S	200	29,50 ZP TLP
M 6	x	70	S	200	29,80 ZP TLP
M 6	x	75	S	200	32,40 ZP TLP
M 6	x	80	S	200	39,40 ZP TLP
M 6	x	90	S	100	51,60 ZP TLP
M 6	x	100	S	100	64,10 ZP TLP
M 6	x	110	S	100	65,60 ZP TLP
M 6	x	120	S	100	80,40 ZP TLP
M 8	x	35	S	200	16,00 ZP TLP
M 8	x	40	S	200	18,00 ZP TLP
M 8	x	45	S	200	20,20 ZP TLP
M 8	x	50	S	200	21,50 ZP TLP
M 8	x	55	S	200	22,30 ZP TLP
M 8	x	60	S	200	23,70 ZP TLP
M 8	x	35	S	200	26,50 ZP TLP
M 8	x	70	S	200	27,40 ZP TLP
M 8	x	75	S	200	33,00 ZP TLP
M 8	x	80	S	200	34,70 ZP TLP
M 8	x	85	S	100	53,00 ZP TLP
M 8	x	90	S	100	54,80 ZP TLP
M 8	x	100	S	100	73,10 ZP TLP
M 8	x	110	S	100	84,20 ZP TLP
M 8	x	120	S	100	97,70 ZP TLP
M 8	x	130	S	100	107,00 ZP TLP
M 8	x	140	S	50	76,70 ZP TLP
M 8	x	150	S	100	152,00 ZP TLP
M 10	x	40	S	100	30,20 ZP TLP
M 10	x	45	S	100	31,90 ZP TLP
M 10	x	50	S	100	33,50 ZP TLP
M 10	x	55	S	100	36,40 ZP TLP
M 10	x	60	S	100	37,70 ZP TLP
M 10	x	65	S	100	40,50 ZP TLP
M 10	x	70	S	100	41,60 ZP TLP
M 10	x	75	S	100	45,60 ZP TLP
M 10	x	80	S	100	46,40 ZP TLP
M 10	x	85	S	100	58,40 ZP TLP
M 10	x	90	S	100	59,20 ZP TLP
M 10	x	95	S	100	66,40 ZP TLP
M 10	x	100	S	100	67,10 ZP TLP
M 10	x	110	S	50	101,00 ZP TLP
M 10	x	120	S	50	114,00 ZP TLP
M 10	x	130	S	50	128,00 ZP TLP
M 10	x	140	S	50	177,00 ZP TLP
M 10	x	150	S	50	209,00 ZP TLP
M 12	x	45	S	100	46,70 ZP TLP
M 12	x	40	S	100	48,70 ZP TLP
M 12	x	55	S	100	50,70 ZP TLP
M 12	x	60	S	100	54,40 ZP TLP
M 12	x	65	S	50	58,00 ZP TLP
M 12	x	70	S	50	60,00 ZP TLP
M 12	x	75	S	50	63,70 ZP TLP
M 12	x	80	S	50	66,50 ZP TLP
M 12	x	85	S	50	83,40 ZP TLP
M 12	x	90	S	50	75,90 ZP TLP
M 12	x	100	S	50	92,40 ZP TLP
M 12	x	110	S	50	137,00 ZP TLP
M 12	x	120	S	50	149,00 ZP TLP
M 12	x	130	S	50	165,00 ZP TLP
M 12	x	140	S	50	223,00 ZP TLP
M 12	x	150	S	50	250,00 ZP TLP
M 12	x	160	S	25	322,00 ZP TLP
M 12	x	180	S	25	397,00 ZP TLP
M 16	x	55	S	50	91,60 ZP TLP
M 16	x	60	S	50	94,60 ZP TLP
M 16	x	65	S	25	102,00 ZP TLP
M 16	x	70	S	25	108,00 ZP TLP
M 16	x	75	S	25	113,00 ZP TLP
M 16	x	80	S	25	120,00 ZP TLP
M 16	x	90	S	25	134,00 ZP TLP
M 16	x	100	S	25	160,00 ZP TLP
M 16	x	110	S	25	237,00 ZP TLP
M 16	x	120	S	25	260,00 ZP TLP
M 16	x	130	S	25	277,00 ZP TLP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	140	S	25	353,00 ZP TLP
M 16	x	150	S	25	394,00 ZP TLP
M 16	x	160	S	25	440,00 ZP TLP
M 16	x	180	S	25	534,00 ZP TLP
M 16	x	190	S	25	615,00 ZP TLP
M 16	x	200	S	25	620,00 ZP TLP
M 20	x	70	S	25	183,00 ZP TLP
M 20	x	75	S	25	192,00 ZP TLP
M 20	x	80	S	25	199,00 ZP TLP
M 20	x	100	S	25	259,00 ZP TLP
M 20	x	110	S	25	394,00 ZP TLP
M 20	x	120	S	25	414,00 ZP TLP
M 20	x	130	S	25	423,00 ZP TLP
M 20	x	140	S	25	545,00 ZP TLP
M 20	x	160	S	10	667,00 ZP TLP
M 20	x	240	S	1	1682,00 ZP TLP
M 24	x	75	S	25	313,00 ZP TLP
M 24	x	80	S	25	320,00 ZP TLP
M 24	x	90	S	10	379,00 ZP TLP
M 24	x	100	S	10	412,00 ZP TLP
M 24	x	110	S	10	610,00 ZP TLP
M 24	x	120	S	10	655,00 ZP TLP
M 24	x	130	S	10	674,00 ZP TLP
M 24	x	140	S	10	874,00 ZP TLP
M 24	x	150	S	10	947,00 ZP TLP
M 24	x	180	S	1	1289,00 ZP TLP
M 24	x	200	S	1	1758,00 ZP TLP

DIN	00931.(*)	RAZ 401
931	**8.8** **zinc plated yellow***	



Hexagon head bolts with shank

Short dimensions in part thread up to head,
*< M 6 min. coating thickness 5µm = (860)
* from M 6 min. coating thickness 8µm = (311)

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 5	x	45	S	200	14,20 YZP
M 5	x	50	S	200	15,75 YZP
M 6	x	30	S	500	6,90 YZP8
M 6	x	35	S	200	7,75 YZP8
M 6	x	40	S	200	8,75 YZP8
M 6	x	45	S	200	9,70 YZP8
M 6	x	50	S	200	11,40 YZP8
M 6	x	55	S	200	14,10 YZP8
M 6	x	60	S	200	15,10 YZP8
M 6	x	65	S	200	23,55 YZP8
M 6	x	70	S	200	23,80 YZP8
M 6	x	75	S	200	25,85 YZP8
M 6	x	80	S	200	31,50 YZP8
M 6	x	90	S	100	41,25 YZP8
M 6	x	100	S	100	51,25 YZP8
M 6	x	110	S	100	52,45 YZP8
M 6	x	120	S	100	64,25 YZP8
M 8	x	35	S	200	12,80 YZP8
M 8	x	40	S	200	14,40 YZP8
M 8	x	45	S	200	16,15 YZP8
M 8	x	50	S	200	17,20 YZP8
M 8	x	55	S	200	17,80 YZP8
M 8	x	60	S	200	18,95 YZP8
M 8	x	65	S	200	21,15 YZP8
M 8	x	70	S	200	21,90 YZP8
M 8	x	75	S	200	26,35 YZP8
M 8	x	80	S	200	27,70 YZP
M 8	x	85	S	100	42,35 YZP8
M 8	x	90	S	100	43,80 YZP8
M 8	x	95	S	100	58,00 YZP8
M 8	x	100	S	100	58,45 YZP8
M 8	x	110	S	100	67,30 YZP8
M 8	x	115	S	100	121,00 YZP8
M 8	x	120	S	100	78,10 YZP8
M 8	x	130	S	100	85,30 YZP8
M 8	x	140	S	50	61,30 YZP8
M 8	x	150	S	100	121,00 YZP8
M 10	x	40	S	100	24,15 YZP8
M 10	x	45	S	100	25,50 YZP8
M 10	x	50	S	100	26,80 YZP8
M 10	x	55	S	100	29,10 YZP8
M 10	x	60	S	100	30,10 YZP8
M 10	x	65	S	100	32,35 YZP8
M 10	x	70	S	100	33,25 YZP8
M 10	x	75	S	100	36,50 YZP8
M 10	x	80	S	100	37,10 YZP8
M 10	x	85	S	100	46,70 YZP8
M 10	x	90	S	100	47,35 YZP8
M 10	x	95	S	100	53,05 YZP8
M 10	x	100	S	100	53,65 YZP8
M 10	x	110	S	50	80,50 YZP8
M 10	x	120	S	50	90,70 YZP8
M 10	x	130	S	50	102,00 YZP8
M 10	x	140	S	50	141,00 YZP8
M 10	x	150	S	50	167,00 YZP8
M 12	x	45	S	100	37,35 YZP8
M 12	x	50	S	100	38,90 YZP8
M 12	x	55	S	100	40,55 YZP8
M 12	x	60	S	100	43,45 YZP8
M 12	x	65	S	50	46,40 YZP8
M 12	x	70	S	50	47,95 YZP8
M 12	x	75	S	50	50,90 YZP8
M 12	x	80	S	50	53,20 YZP8
M 12	x	85	S	50	66,65 YZP8
M 12	x	90	S	50	60,65 YZP8
M 12	x	100	S	50	73,90 YZP8
M 12	x	110	S	50	109,00 YZP8
M 12	x	120	S	50	119,00 YZP8
M 12	x	130	S	50	132,00 YZP8
M 12	x	140	S	50	178,00 YZP8
M 12	x	150	S	50	200,00 YZP
M 12	x	160	S	25	257,00 YZP8
M 12	x	180	S	25	317,00 YZP8
M 16	x	55	S	50	73,25 YZP8
M 16	x	60	S	50	75,65 YZP8
M 16	x	65	S	25	81,10 YZP8
M 16	x	70	S	25	85,85 YZP8
M 16	x	75	S	25	90,10 YZP
M 16	x	80	S	25	95,50 YZP
M 16	x	90	S	25	107,00 YZP8
M 16	x	100	S	25	128,00 YZP8
M 16	x	110	S	25	189,00 YZP8
M 16	x	120	S	25	208,00 YZP8
M 16	x	130	S	25	221,00 YZP8
M 16	x	140	S	25	282,00 YZP8
M 16	x	150	S	25	315,00 YZP
M 16	x	160	S	25	352,00 YZP8
M 16	x	180	S	25	427,00 YZP8
M 16	x	190	S	25	492,00 YZP8
M 16	x	200	S	25	496,00 YZP8
M 20	x	65	S	25	142,00 YZP8
M 20	x	70	S	25	146,00 YZP8
M 20	x	75	S	25	153,00 YZP8
M 20	x	80	S	25	159,00 YZP8
M 20	x	90	S	25	175,00 YZP8
M 20	x	100	S	25	207,00 YZP8
M 20	x	110	S	25	315,00 YZP8
M 20	x	120	S	25	331,00 YZP8
M 20	x	130	S	25	338,00 YZP8
M 20	x	140	S	25	436,00 YZP8
M 20	x	160	S	10	533,00 YZP8
M 20	x	240	S	1	1345,00 YZP8
M 24	x	75	S	25	250,00 YZP8
M 24	x	80	S	25	256,00 YZP8
M 24	x	90	S	10	303,00 YZP8
M 24	x	100	S	10	329,00 YZP8
M 24	x	110	S	10	488,00 YZP8
M 24	x	120	S	10	524,00 YZP8
M 24	x	130	S	10	539,00 YZP8
M 24	x	140	S	10	699,00 YZP8
M 24	x	150	S	10	757,00 YZP8
M 24	x	180	S	1	1031,00 YZP8
M 24	x	200	S	1	1406,00 YZP8

DIN	00931.353	RAZ 1530
931	**8.8** **zinc flake coated**	

Hexagon head bolts with shank

Short dimensions in part thread up to head,
friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution!
Different tightening torque to zinc plated.

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-218

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 6	x	30	S	500	9,00 flZn
M 6	x	35	S	200	10,10 flZn
M 6	x	40	S	200	11,40 flZn
M 6	x	45	S	200	12,65 flZn
M 6	x	50	S	200	14,85 flZn
M 6	x	55	S	200	18,35 flZn
M 6	x	60	S	200	19,65 flZn
M 6	x	65	S	200	30,65 flZn
M 6	x	70	S	200	30,95 flZn
M 6	x	75	S	200	33,65 flZn
M 6	x	80	S	200	40,95 flZn
M 8	x	35	S	200	16,65 flZn
M 8	x	40	S	200	18,75 flZn
M 8	x	45	S	200	21,00 flZn
M 8	x	50	S	200	22,40 flZn
M 8	x	55	S	200	23,15 flZn
M 8	x	60	S	200	24,65 flZn
M 8	x	65	S	200	27,50 flZn
M 8	x	70	S	200	28,50 flZn
M 8	x	75	S	200	34,30 flZn
M 8	x	80	S	200	36,05 flZn
M 8	x	90	S	100	56,95 flZn
M 8	x	100	S	100	76,00 flZn
M 16	x	55	S	50	95,25 flZn
M 16	x	60	S	50	98,35 flZn
M 16	x	65	S	25	106,00 flZn
M 16	x	70	S	25	112,00 flZn
M 16	x	75	S	25	118,00 flZn
M 16	x	80	S	25	125,00 flZn
M 16	x	90	S	25	140,00 flZn
M 16	x	100	S	25	167,00 flZn
M 16	x	110	S	25	246,00 flZn
M 16	x	120	S	25	271,00 flZn
M 16	x	130	S	25	288,00 flZn
M 16	x	140	S	25	367,00 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	65	S	25	185,00 flZn
M 20	x	70	S	25	190,00 flZn
M 20	x	75	S	25	199,00 flZn
M 20	x	80	S	25	207,00 flZn
M 20	x	90	S	25	228,00 flZn
M 20	x	100	S	25	270,00 flZn
M 20	x	110	S	25	410,00 flZn
M 20	x	120	S	25	431,00 flZn
M 20	x	130	S	25	440,00 flZn
M 20	x	140	S	25	567,00 flZn
M 20	x	150	S	25	624,00 flZn
M 20	x	160	S	10	693,00 flZn
M 20	x	170	S	10	862,00 flZn
M 20	x	180	S	10	870,00 flZn
M 24	x	75	S	25	325,00 flZn
M 24	x	80	S	25	333,00 flZn
M 24	x	90	S	10	394,00 flZn
M 24	x	100	S	10	428,00 flZn
M 24	x	110	S	10	635,00 flZn
M 24	x	120	S	10	682,00 flZn
M 24	x	130	S	10	701,00 flZn
M 24	x	140	S	10	909,00 flZn
M 24	x	150	S	10	985,00 flZn
M 24	x	160	S	10	1078,00 flZn
M 24	x	170	S	1	1329,00 flZn
M 24	x	180	S	1	1341,00 flZn

DIN	00931.820	RAZ 403
931	**8.8** **hot dip galvanized**	

Hexagon head bolts with shank

Short dimensions in part thread up to head,
Thread undersize (6az + HDG = U)

Caution!
Note information about hot dip galvanizing.

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-219

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 8	x	35	S	200	94,60 HDG
M 8	x	40	S	200	104,00 HDG
M 8	x	45	S	200	109,00 HDG
M 8	x	50	S	200	124,00 HDG
M 8	x	60	S	200	138,00 HDG
M 8	x	65	S	200	152,00 HDG
M 8	x	70	S	200	161,00 HDG
M 8	x	80	S	200	257,00 HDG
M 8	x	100	S	200	286,00 HDG
M 10	x	40	S	100	64,30 HDG
M 10	x	45	S	100	68,60 HDG
M 10	x	50	S	100	72,35 HDG
M 10	x	55	S	100	78,50 HDG
M 10	x	60	S	100	81,60 HDG
M 10	x	65	S	100	87,75 HDG
M 10	x	70	S	100	90,90 HDG
M 10	x	75	S	100	98,30 HDG
M 10	x	80	S	100	101,00 HDG
M 10	x	90	S	100	126,00 HDG
M 10	x	100	S	100	142,00 HDG
M 10	x	110	S	50	190,00 HDG
M 10	x	120	S	50	214,00 HDG
M 12	x	45	S	100	99,50 HDG
M 12	x	50	S	100	105,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	55	S	100	114,00 HDG
M 12	x	60	S	100	118,00 HDG
M 12	x	65	S	50	126,00 HDG
M 12	x	70	S	50	130,00 HDG
M 12	x	75	S	50	138,00 HDG
M 12	x	80	S	50	145,00 HDG
M 12	x	90	S	50	165,00 HDG
M 12	x	100	S	50	195,00 HDG
M 12	x	110	S	50	257,00 HDG
M 12	x	120	S	50	279,00 HDG
M 12	x	130	S	50	309,00 HDG
M 12	x	140	S	50	409,00 HDG
M 12	x	150	S	50	459,00 HDG
M 12	x	160	S	25	576,00 HDG
M 12	x	180	S	25	705,00 HDG
M 12	x	200	S	25	810,00 HDG
M 16	x	55	S	50	199,00 HDG
M 16	x	60	S	50	208,00 HDG
M 16	x	65	S	25	224,00 HDG
M 16	x	70	S	25	235,00 HDG
M 16	x	75	S	25	248,00 HDG
M 16	x	80	S	25	264,00 HDG
M 16	x	90	S	25	316,00 HDG
M 16	x	100	S	25	341,00 HDG
M 16	x	110	S	25	452,00 HDG
M 16	x	120	S	25	490,00 HDG
M 16	x	130	S	25	520,00 HDG
M 16	x	140	S	25	656,00 HDG
M 16	x	150	S	25	724,00 HDG
M 16	x	160	S	25	804,00 HDG
M 16	x	180	S	25	971,00 HDG
M 16	x	200	S	25	1119,00 HDG
M 16	x	220	S	1	1397,00 HDG
M 16	x	240	S	1	1577,00 HDG
M 16	x	260	S	1	1762,00 HDG
M 16	x	300	S	1	2566,00 HDG
M 20	x	65	S	25	385,00 HDG
M 20	x	70	S	25	396,00 HDG
M 20	x	75	S	25	415,00 HDG
M 20	x	80	S	25	434,00 HDG
M 20	x	85	S	25	860,00 HDG
M 20	x	90	S	25	477,00 HDG
M 20	x	100	S	25	551,00 HDG
M 20	x	110	S	25	748,00 HDG
M 20	x	120	S	25	786,00 HDG
M 20	x	130	S	25	804,00 HDG
M 20	x	140	S	25	1014,00 HDG
M 20	x	150	S	25	1113,00 HDG
M 20	x	160	S	10	1231,00 HDG
M 20	x	180	S	10	1521,00 HDG
M 20	x	200	S	10	2194,00 HDG
M 20	x	210	S	1	2569,00 HDG
M 20	x	220	S	1	2658,00 HDG
M 20	x	240	S	1	2967,00 HDG
M 20	x	260	S	1	3276,00 HDG
M 20	x	300	S	1	4141,00 HDG
M 24	x	75	S	25	669,00 HDG
M 24	x	80	S	25	687,00 HDG
M 24	x	85	S	10	2071,00 HDG
M 24	x	90	S	10	804,00 HDG
M 24	x	95	S	10	2102,00 HDG
M 24	x	100	S	10	866,00 HDG
M 24	x	110	S	10	1151,00 HDG
M 24	x	120	S	10	1236,00 HDG
M 24	x	130	S	10	1274,00 HDG
M 24	x	140	S	10	1639,00 HDG
M 24	x	150	S	10	1762,00 HDG
M 24	x	160	S	10	1917,00 HDG
M 24	x	180	S	1	2349,00 HDG
M 24	x	200	S	1	3153,00 HDG
M 24	x	220	S	1	3894,00 HDG
M 24	x	240	S	1	4203,00 HDG
M 24	x	260	S	1	4326,00 HDG
M 24	x	300	S	1	5500,00 HDG
M 27	x	90	S	10	1718,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 27	x	100	S	10	2040,00 HDG
M 27	x	110	S	1	2367,00 HDG
M 27	x	120	S	1	2448,00 HDG
M 27	x	130	S	1	2466,00 HDG
M 27	x	140	S	1	2540,00 HDG
M 27	x	150	S	1	2589,00 HDG
M 27	x	160	S	1	2633,00 HDG
M 27	x	180	S	1	2967,00 HDG
M 27	x	200	S	1	3770,00 HDG
M 30	x	90	S	1	3276,00 HDG
M 30	x	100	S	1	3276,00 HDG
M 30	x	110	S	1	3832,00 HDG
M 30	x	120	S	1	3894,00 HDG
M 30	x	130	S	1	4264,00 HDG
M 30	x	140	S	1	4326,00 HDG
M 30	x	150	S	1	4511,00 HDG
M 30	x	160	S	1	4511,00 HDG
M 30	x	180	S	1	5005,00 HDG
M 30	x	200	S	1	5377,00 HDG
M 30	x	220	S	1	6179,00 HDG
M 30	x	240	S	1	7168,00 HDG
M 33	x	120	S	1	4573,00 HDG
M 33	x	130	S	1	4944,00 HDG
M 33	x	140	S	1	5005,00 HDG
M 33	x	180	S	1	5809,00 HDG
M 33	x	200	S	1	6118,00 HDG
M 36	x	120	S	1	5068,00 HDG
M 36	x	130	S	1	5377,00 HDG
M 36	x	140	S	1	5623,00 HDG
M 36	x	150	S	1	5870,00 HDG
M 36	x	160	S	1	6488,00 HDG
M 36	x	180	S	1	6921,00 HDG
M 36	x	190	S	1	7195,00 HDG
M 36	x	200	S	1	7354,00 HDG
M 36	x	220	S	1	7559,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

DIN	00931.100	RAZ 405
931	**10.9**	

Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 6	x	30	S	500	12,30
M 6	x	35	S	200	12,95
M 6	x	40	S	200	13,80

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 45	S	200	16,25
M 6 x 50	S	200	18,10
M 6 x 55	S	200	19,95
M 6 x 60	S	200	21,50
M 6 x 65	S	200	26,10
M 6 x 70	S	200	26,10
M 6 x 80	S	200	57,65
M 6 x 90	S	200	98,50
M 6 x 100	S	100	106,00
M 6 x 110	S	100	114,00
M 6 x 120	S	100	125,00
M 6 x 130	S	100	156,00
M 6 x 140	S	100	172,00
M 8 x 35	S	200	22,30
M 8 x 40	S	200	24,15
M 8 x 45	S	200	27,10
M 8 x 50	S	200	27,60
M 8 x 55	S	200	27,60
M 8 x 60	S	200	28,85
M 8 x 65	S	200	32,50
M 8 x 70	S	200	35,10
M 8 x 75	S	200	43,85
M 8 x 80	S	200	43,85
M 8 x 90	S	100	48,70
M 8 x 100	S	100	56,05
M 8 x 110	S	100	68,50
M 8 x 120	S	100	75,65
M 8 x 130	S	100	122,00
M 8 x 140	S	100	145,00
M 8 x 150	S	100	164,00
M 8 x 160	S	100	185,00
M 8 x 170	S	100	224,00
M 8 x 180	S	100	203,00
M 8 x 190	S	100	263,00
M 8 x 200	S	100	243,00
M 8 x 220	S	100	325,00
M 8 x 240	S	100	384,00
M 10 x 35	S	100	34,55
M 10 x 40	S	100	34,55
M 10 x 45	S	100	36,85
M 10 x 50	S	100	40,00
M 10 x 55	S	100	41,00
M 10 x 60	S	100	43,05
M 10 x 65	S	100	43,55
M 10 x 70	S	100	47,75
M 10 x 75	S	100	52,35
M 10 x 80	S	100	52,85
M 10 x 90	S	100	63,70
M 10 x 100	S	100	72,70
M 10 x 110	S	50	90,10
M 10 x 120	S	50	101,00
M 10 x 130	S	50	133,00
M 10 x 140	S	50	143,00
M 10 x 150	S	50	162,00
M 10 x 160	S	50	388,00
M 10 x 170	S	50	413,00
M 10 x 180	S	50	436,00
M 10 x 190	S	50	447,00
M 10 x 200	S	50	461,00
M 10 x 210	S	25	616,00
M 10 x 220	S	50	495,00
M 10 x 240	S	50	532,00
M 10 x 260	S	50	580,00
M 10 x 280	S	50	616,00
M 10 x 300	S	50	650,00
M 12 x 40	S	100	52,05
M 12 x 45	S	100	52,05
M 12 x 50	S	100	58,25
M 12 x 55	S	100	58,25
M 12 x 60	S	100	61,85
M 12 x 65	S	50	63,70
M 12 x 70	S	50	70,30
M 12 x 75	S	50	78,10
M 12 x 80	S	50	78,10
M 12 x 85	S	50	88,90

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 90	S	50	88,90
M 12 x 95	S	50	97,90
M 12 x 100	S	50	97,90
M 12 x 110	S	50	117,00
M 12 x 120	S	50	130,00
M 12 x 130	S	50	154,00
M 12 x 140	S	50	176,00
M 12 x 150	S	50	195,00
M 12 x 160	S	25	388,00
M 12 x 170	S	25	413,00
M 12 x 180	S	25	436,00
M 12 x 190	S	25	447,00
M 12 x 200	S	25	461,00
M 12 x 210	S	25	616,00
M 12 x 220	S	25	495,00
M 12 x 240	S	25	532,00
M 12 x 260	S	25	580,00
M 12 x 280	S	25	616,00
M 12 x 300	S	25	650,00
M 12 x 320	S	25	775,00
M 14 x 45	S	100	88,90
M 14 x 50	S	50	88,90
M 14 x 55	S	50	88,90
M 14 x 60	S	50	91,90
M 14 x 65	S	50	107,00
M 14 x 70	S	50	107,00
M 14 x 75	S	50	118,00
M 14 x 80	S	50	118,00
M 14 x 90	S	50	133,00
M 14 x 100	S	50	140,00
M 14 x 110	S	50	164,00
M 14 x 120	S	50	186,00
M 14 x 130	S	50	231,00
M 14 x 140	S	25	247,00
M 14 x 150	S	25	268,00
M 14 x 160	S	25	515,00
M 14 x 170	S	25	563,00
M 14 x 180	S	25	589,00
M 14 x 190	S	25	600,00
M 14 x 200	S	25	622,00
M 14 x 220	S	25	667,00
M 14 x 240	S	25	713,00
M 16 x 55	S	50	118,00
M 16 x 60	S	50	124,00
M 16 x 65	S	25	137,00
M 16 x 70	S	25	143,00
M 16 x 75	S	25	154,00
M 16 x 80	S	25	156,00
M 16 x 85	S	25	161,00
M 16 x 90	S	25	161,00
M 16 x 95	S	25	172,00
M 16 x 100	S	25	172,00
M 16 x 110	S	25	208,00
M 16 x 120	S	25	208,00
M 16 x 130	S	25	234,00
M 16 x 140	S	25	250,00
M 16 x 150	S	25	445,00
M 16 x 160	S	25	515,00
M 16 x 170	S	25	563,00
M 16 x 180	S	25	589,00
M 16 x 190	S	25	600,00
M 16 x 200	S	25	622,00
M 16 x 210	S	25	788,00
M 16 x 220	S	25	667,00
M 16 x 230	S	25	840,00
M 16 x 240	S	25	713,00
M 16 x 250	S	25	907,00
M 16 x 260	S	25	754,00
M 16 x 270	S	25	1019,00
M 16 x 280	S	25	958,00
M 16 x 290	S	1	1180,00
M 16 x 300	S	1	1314,00
M 16 x 310	S	1	1397,00
M 16 x 320	S	1	1381,00
M 16 x 330	S	1	1469,00

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 340	S	1	1604,00
M 16 x 350	S	1	1706,00
M 16 x 360	S	1	1595,00
M 16 x 380	S	1	2037,00
M 16 x 400	S	1	2235,00
M 16 x 420	S	1	2851,00
M 18 x 65	S	25	279,00
M 18 x 70	S	25	286,00
M 18 x 75	S	25	305,00
M 18 x 80	S	25	309,00
M 18 x 90	S	25	345,00
M 18 x 100	S	25	360,00
M 18 x 110	S	25	376,00
M 18 x 120	S	25	388,00
M 18 x 130	S	25	455,00
M 18 x 140	S	25	503,00
M 18 x 150	S	25	555,00
M 18 x 160	S	25	788,00
M 18 x 170	S	25	809,00
M 18 x 180	S	25	851,00
M 18 x 190	S	1	893,00
M 18 x 200	S	1	916,00
M 18 x 220	S	1	952,00
M 18 x 240	S	1	1453,00
M 18 x 260	S	1	1506,00
M 18 x 280	S	1	1604,00
M 18 x 300	S	1	1752,00
M 18 x 320	S	1	2000,00
M 20 x 65	S	25	279,00
M 20 x 70	S	25	286,00
M 20 x 75	S	25	305,00
M 20 x 80	S	25	309,00
M 20 x 85	S	25	345,00
M 20 x 90	S	25	345,00
M 20 x 95	S	25	360,00
M 20 x 100	S	25	360,00
M 20 x 110	S	25	376,00
M 20 x 120	S	25	388,00
M 20 x 130	S	25	455,00
M 20 x 140	S	25	503,00
M 20 x 150	S	25	555,00
M 20 x 160	S	10	788,00
M 20 x 170	S	10	809,00
M 20 x 180	S	10	851,00
M 20 x 190	S	1	893,00
M 20 x 200	S	1	916,00
M 20 x 210	S	1	1111,00
M 20 x 220	S	1	952,00
M 20 x 230	S	1	1198,00
M 20 x 240	S	1	1017,00
M 20 x 250	S	1	1299,00
M 20 x 260	S	1	1099,00
M 20 x 270	S	1	1383,00
M 20 x 280	S	1	1153,00
M 20 x 290	S	1	1604,00
M 20 x 300	S	1	1234,00
M 20 x 310	S	1	1853,00
M 20 x 320	S	1	1427,00
M 20 x 330	S	1	1962,00
M 20 x 340	S	1	1553,00
M 20 x 350	S	1	2205,00
M 20 x 360	S	1	1691,00
M 20 x 370	S	1	2767,00
M 20 x 380	S	1	2767,00
M 20 x 390	S	1	3066,00
M 20 x 400	S	1	3066,00
M 22 x 70	S	25	959,00
M 22 x 75	S	25	959,00
M 22 x 80	S	25	702,00
M 22 x 90	S	25	800,00
M 22 x 100	S	10	851,00
M 22 x 110	S	10	916,00
M 22 x 120	S	10	935,00
M 22 x 130	S	10	977,00
M 22 x 140	S	10	1020,00

Dimensions			PU	Pieces	€/100/Mat.
M 22	x	150	S	10	1063,00
M 22	x	160	S	10	1107,00
M 22	x	170	S	1	1136,00
M 22	x	180	S	1	1169,00
M 22	x	200	S	1	1234,00
M 22	x	220	S	1	1310,00
M 22	x	230	S	1	1553,00
M 22	x	240	S	1	1381,00
M 22	x	260	S	1	1452,00
M 22	x	280	S	1	1536,00
M 22	x	300	S	1	2440,00
M 22	x	320	S	1	2796,00
M 24	x	75	S	25	702,00
M 24	x	80	S	25	702,00
M 24	x	85	S	10	800,00
M 24	x	90	S	10	800,00
M 24	x	100	S	10	851,00
M 24	x	110	S	10	916,00
M 24	x	120	S	10	935,00
M 24	x	130	S	10	977,00
M 24	x	140	S	10	1020,00
M 24	x	150	S	10	1063,00
M 24	x	160	S	10	1107,00
M 24	x	170	S	1	1136,00
M 24	x	180	S	1	1169,00
M 24	x	190	S	1	1201,00
M 24	x	200	S	1	1234,00
M 24	x	210	S	1	1457,00
M 24	x	220	S	1	1310,00
M 24	x	230	S	1	1553,00
M 24	x	240	S	1	1381,00
M 24	x	250	S	1	1672,00
M 24	x	260	S	1	1452,00
M 24	x	270	S	1	1765,00
M 24	x	280	S	1	1536,00
M 24	x	290	S	1	1966,00
M 24	x	300	S	1	1638,00
M 24	x	310	S	1	2324,00
M 24	x	320	S	1	1915,00
M 24	x	330	S	1	2445,00
M 24	x	340	S	1	2127,00
M 24	x	350	S	1	2668,00
M 24	x	360	S	1	2276,00
M 24	x	370	S	1	3560,00
M 24	x	380	S	1	3560,00
M 24	x	390	S	1	3833,00
M 24	x	400	S	1	3833,00
M 27	x	80	S	10	987,00
M 27	x	90	S	10	1012,00
M 27	x	100	S	10	1063,00
M 27	x	110	S	10	1107,00
M 27	x	120	S	10	1150,00
M 27	x	130	S	10	1201,00
M 27	x	140	S	1	1262,00
M 27	x	150	S	1	1318,00
M 27	x	160	S	1	1395,00
M 27	x	170	S	1	1469,00
M 27	x	180	S	1	1536,00
M 27	x	190	S	1	1607,00
M 27	x	200	S	1	1680,00
M 27	x	210	S	1	2225,00
M 27	x	220	S	1	1807,00
M 27	x	230	S	1	2445,00
M 27	x	240	S	1	1966,00
M 27	x	250	S	1	2617,00
M 27	x	260	S	1	2104,00
M 27	x	270	S	1	2804,00
M 27	x	280	S	1	2250,00
M 27	x	290	S	1	3250,00
M 27	x	300	S	1	2406,00
M 27	x	320	S	1	2680,00
M 30	x	80	S	1	1167,00
M 30	x	90	S	1	1209,00
M 30	x	100	S	1	1237,00
M 30	x	110	S	1	1268,00

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	120	S	1	1364,00
M 30	x	130	S	1	1438,00
M 30	x	140	S	1	1522,00
M 30	x	150	S	1	1578,00
M 30	x	160	S	1	1641,00
M 30	x	170	S	1	1722,00
M 30	x	180	S	1	1807,00
M 30	x	190	S	1	1892,00
M 30	x	200	S	1	1951,00
M 30	x	210	S	1	2225,00
M 30	x	220	S	1	2018,00
M 30	x	230	S	1	2445,00
M 30	x	240	S	1	2219,00
M 30	x	250	S	1	2617,00
M 30	x	260	S	1	2377,00
M 30	x	270	S	1	2804,00
M 30	x	280	S	1	2546,00
M 30	x	290	S	1	3250,00
M 30	x	300	S	1	2705,00
M 30	x	320	S	1	3116,00
M 30	x	330	S	1	4000,00
M 30	x	340	S	1	3334,00
M 30	x	350	S	1	4205,00
M 30	x	360	S	1	3633,00
M 30	x	380	S	1	3841,00
M 30	x	400	S	1	4030,00
M 33	x	100	S	1	1480,00
M 33	x	110	S	1	1578,00
M 33	x	120	S	1	1691,00
M 33	x	130	S	1	1779,00
M 33	x	140	S	1	1892,00
M 33	x	150	S	1	1993,00
M 33	x	160	S	1	2104,00
M 33	x	170	S	1	2194,00
M 33	x	180	S	1	2304,00
M 33	x	190	S	1	2406,00
M 33	x	200	S	1	2504,00
M 33	x	220	S	1	2607,00
M 33	x	240	S	1	2806,00
M 33	x	250	S	1	3918,00
M 33	x	260	S	1	3001,00
M 33	x	280	S	1	3200,00
M 33	x	300	S	1	3401,00
M 33	x	320	S	1	3915,00
M 36	x	110	S	1	1880,00
M 36	x	120	S	1	2007,00
M 36	x	130	S	1	2120,00
M 36	x	140	S	1	2250,00
M 36	x	150	S	1	2363,00
M 36	x	160	S	1	2479,00
M 36	x	170	S	1	2588,00
M 36	x	180	S	1	2722,00
M 36	x	190	S	1	2848,00
M 36	x	200	S	1	2959,00
M 36	x	210	S	1	3385,00
M 36	x	220	S	1	3074,00
M 36	x	230	S	1	3636,00
M 36	x	240	S	1	3302,00
M 36	x	250	S	1	3918,00
M 36	x	260	S	1	3560,00
M 36	x	270	S	1	4166,00
M 36	x	280	S	1	3788,00
M 36	x	290	S	1	4818,00
M 36	x	300	S	1	4013,00
M 36	x	320	S	1	4627,00
M 36	x	340	S	1	4883,00
M 36	x	360	S	1	5140,00
M 36	x	380	S	1	5526,00
M 36	x	400	S	1	6006,00
M 39	x	110	S	1	2680,00
M 39	x	120	S	1	2680,00
M 39	x	130	S	1	2832,00
M 39	x	140	S	1	2975,00
M 39	x	150	S	1	3133,00
M 39	x	160	S	1	3187,00

Dimensions			PU	Pieces	€/100/Mat.
M 39	x	170	S	1	3334,00
M 39	x	180	S	1	3487,00
M 39	x	200	S	1	3788,00
M 39	x	220	S	1	4055,00
M 39	x	240	S	1	4358,00
M 39	x	260	S	1	4654,00
M 39	x	280	S	1	4939,00
M 39	x	300	S	1	5235,00
M 39	x	320	S	1	5805,00
M 42	x	120	S	1	3145,00
M 42	x	130	S	1	3317,00
M 42	x	140	S	1	3487,00
M 42	x	150	S	1	3672,00
M 42	x	160	S	1	3745,00
M 42	x	170	S	1	3898,00
M 42	x	180	S	1	4084,00
M 42	x	190	S	1	4256,00
M 42	x	200	S	1	4426,00
M 42	x	220	S	1	4755,00
M 42	x	240	S	1	5097,00
M 42	x	260	S	1	5436,00
M 42	x	280	S	1	5783,00
M 42	x	300	S	1	6121,00
M 42	x	320	S	1	6793,00
M 45	x	130	S	1	8006,00
M 45	x	140	S	1	8308,00
M 45	x	150	S	1	8618,00
M 45	x	160	S	1	9237,00
M 45	x	180	S	1	9849,00
M 45	x	200	S	1	10771,00
M 45	x	220	S	1	11542,00
M 45	x	240	S	1	12314,00
M 45	x	260	S	1	13081,00
M 45	x	280	S	1	13852,00
M 45	x	300	S	1	14619,00
M 45	x	320	S	1	17616,00
M 48	x	140	S	1	10001,00
M 48	x	150	S	1	10771,00
M 48	x	160	S	1	11240,00
M 48	x	180	S	1	11542,00
M 48	x	200	S	1	12911,00
M 48	x	220	S	1	13545,00
M 48	x	240	S	1	14315,00
M 48	x	260	S	1	15389,00
M 48	x	280	S	1	16931,00
M 48	x	300	S	1	19092,00
M 48	x	320	S	1	21542,00

DIN	00931.110	RAZ 405
931	**10.9** **zinc plated**	

Hexagon head bolts with shank

Short dimensions in part thread up to head, baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15
Tightening torque → TI-230
Mech. properties → TI-220
Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 6	x	30	S	500	16,50 ZP
M 6	x	35	S	200	17,15 ZP
M 6	x	40	S	200	18,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 45	S	200	21,00 ZP
M 6 x 50	S	200	23,00 ZP
M 6 x 55	S	200	25,50 ZP
M 6 x 60	S	200	27,50 ZP
M 6 x 65	S	200	32,50 ZP
M 6 x 70	S	200	34,00 ZP
M 6 x 80	S	200	65,00 ZP
M 6 x 90	S	200	110,00 ZP
M 6 x 100	S	100	115,00 ZP
M 8 x 35	S	200	29,90 ZP
M 8 x 40	S	200	32,50 ZP
M 8 x 45	S	200	36,20 ZP
M 8 x 50	S	200	37,65 ZP
M 8 x 55	S	200	38,30 ZP
M 8 x 60	S	200	39,65 ZP
M 8 x 65	S	200	44,10 ZP
M 8 x 70	S	200	47,45 ZP
M 8 x 75	S	200	56,90 ZP
M 8 x 80	S	200	57,75 ZP
M 8 x 100	S	100	72,90 ZP
M 8 x 110	S	100	87,40 ZP
M 8 x 120	S	100	96,50 ZP
M 8 x 130	S	100	145,00 ZP
M 8 x 140	S	100	170,00 ZP
M 8 x 150	S	100	190,00 ZP
M 10 x 40	S	100	48,95 ZP
M 10 x 45	S	100	52,55 ZP
M 10 x 50	S	100	55,75 ZP
M 10 x 55	S	100	59,00 ZP
M 10 x 60	S	100	61,10 ZP
M 10 x 65	S	100	63,05 ZP
M 10 x 70	S	100	68,15 ZP
M 10 x 75	S	100	75,15 ZP
M 10 x 80	S	100	75,60 ZP
M 10 x 90	S	100	89,50 ZP
M 10 x 100	S	100	101,00 ZP
M 10 x 110	S	50	121,00 ZP
M 10 x 120	S	50	134,00 ZP
M 10 x 130	S	50	169,00 ZP
M 10 x 140	S	100	185,00 ZP
M 10 x 150	S	50	205,00 ZP
M 10 x 160	S	50	430,00 ZP
M 10 x 170	S	50	460,00 ZP
M 10 x 180	S	50	485,00 ZP
M 12 x 45	S	100	72,70 ZP
M 12 x 50	S	100	76,30 ZP
M 12 x 55	S	100	82,65 ZP
M 12 x 60	S	100	82,90 ZP
M 12 x 65	S	50	85,85 ZP
M 12 x 70	S	50	93,10 ZP
M 12 x 75	S	50	104,00 ZP
M 12 x 80	S	50	106,00 ZP
M 12 x 85	S	50	118,00 ZP
M 12 x 90	S	50	121,00 ZP
M 12 x 95	S	50	135,65 ZP
M 12 x 100	S	50	133,00 ZP
M 12 x 110	S	50	153,00 ZP
M 12 x 120	S	50	169,00 ZP
M 12 x 130	S	50	198,00 ZP
M 12 x 140	S	50	230,00 ZP
M 12 x 150	S	50	251,50 ZP
M 12 x 160	S	25	448,00 ZP
M 12 x 170	S	25	480,00 ZP
M 12 x 180	S	25	505,00 ZP
M 12 x 190	S	25	520,00 ZP
M 12 x 200	S	25	535,00 ZP
M 14 x 45	S	100	115,00 ZP
M 14 x 50	S	50	119,00 ZP
M 14 x 55	S	50	122,00 ZP
M 14 x 60	S	50	127,00 ZP
M 14 x 70	S	50	146,00 ZP
M 14 x 75	S	50	162,00 ZP
M 14 x 80	S	50	161,00 ZP
M 14 x 90	S	50	179,00 ZP
M 14 x 100	S	50	190,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 14 x 110	S	50	223,00 ZP
M 14 x 120	S	50	250,00 ZP
M 14 x 130	S	50	300,00 ZP
M 14 x 140	S	25	320,00 ZP
M 14 x 150	S	25	345,00 ZP
M 16 x 55	S	50	162,00 ZP
M 16 x 60	S	50	165,00 ZP
M 16 x 65	S	25	187,00 ZP
M 16 x 70	S	25	183,00 ZP
M 16 x 75	S	25	203,00 ZP
M 16 x 80	S	25	211,00 ZP
M 16 x 85	S	25	220,00 ZP
M 16 x 90	S	25	223,00 ZP
M 16 x 100	S	25	239,00 ZP
M 16 x 110	S	25	281,00 ZP
M 16 x 120	S	25	287,00 ZP
M 16 x 130	S	25	335,00 ZP
M 16 x 140	S	25	344,00 ZP
M 16 x 150	S	25	545,00 ZP
M 16 x 160	S	25	625,00 ZP
M 16 x 170	S	25	678,00 ZP
M 16 x 180	S	25	710,00 ZP
M 16 x 190	S	25	730,00 ZP
M 16 x 200	S	25	765,00 ZP
M 16 x 210	S	25	935,00 ZP
M 16 x 230	S	25	995,00 ZP
M 16 x 240	S	25	875,00 ZP
M 16 x 250	S	25	1083,00 ZP
M 16 x 260	S	25	930,00 ZP
M 16 x 270	S	25	1200,00 ZP
M 16 x 280	S	25	1150,00 ZP
M 18 x 65	S	25	346,00 ZP
M 18 x 70	S	25	366,00 ZP
M 18 x 80	S	25	387,00 ZP
M 18 x 90	S	25	431,00 ZP
M 18 x 100	S	25	454,00 ZP
M 18 x 110	S	25	480,00 ZP
M 18 x 120	S	25	510,00 ZP
M 18 x 130	S	25	570,00 ZP
M 18 x 140	S	25	628,00 ZP
M 18 x 160	S	25	930,00 ZP
M 20 x 65	S	25	364,00 ZP
M 20 x 70	S	25	361,00 ZP
M 20 x 75	S	25	379,00 ZP
M 20 x 80	S	25	392,00 ZP
M 20 x 85	S	25	450,00 ZP
M 20 x 90	S	25	434,00 ZP
M 20 x 100	S	25	458,00 ZP
M 20 x 110	S	25	502,00 ZP
M 20 x 115	S	25	520,00 ZP
M 20 x 120	S	25	526,00 ZP
M 20 x 130	S	25	605,00 ZP
M 20 x 140	S	25	647,00 ZP
M 20 x 150	S	25	719,00 ZP
M 20 x 160	S	10	1042,00 ZP
M 20 x 170	S	10	995,00 ZP
M 20 x 180	S	10	1118,00 ZP
M 20 x 200	S	10	1127,00 ZP
M 20 x 220	S	1	1185,00 ZP
M 20 x 230	S	1	1440,00 ZP
M 20 x 240	S	1	1270,00 ZP
M 20 x 250	S	1	1560,00 ZP
M 20 x 260	S	1	1375,00 ZP
M 20 x 270	S	1	1675,00 ZP
M 20 x 280	S	1	1450,00 ZP
M 20 x 290	S	1	1925,00 ZP
M 20 x 300	S	1	1550,00 ZP
M 20 x 310	S	1	2175,00 ZP
M 20 x 320	S	1	1760,00 ZP
M 20 x 340	S	1	1800,00 ZP
M 24 x 75	S	25	834,00 ZP
M 24 x 80	S	25	843,00 ZP
M 24 x 90	S	10	959,00 ZP
M 24 x 100	S	10	1019,00 ZP
M 24 x 110	S	10	1110,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 24 x 120	S	10	1142,00 ZP
M 24 x 130	S	10	1194,00 ZP
M 24 x 140	S	10	1237,00 ZP
M 24 x 145	S	10	1307,00 ZP
M 24 x 150	S	10	1307,00 ZP
M 24 x 160	S	10	1365,00 ZP
M 24 x 170	S	1	1421,00 ZP
M 24 x 180	S	1	1454,00 ZP
M 24 x 190	S	1	1488,00 ZP
M 24 x 200	S	1	1546,00 ZP
M 24 x 220	S	1	1757,00 ZP
M 24 x 240	S	1	1861,00 ZP
M 24 x 250	S	1	1952,00 ZP
M 24 x 260	S	1	1961,00 ZP
M 24 x 270	S	1	2041,00 ZP
M 24 x 280	S	1	2082,00 ZP
M 24 x 290	S	1	2120,00 ZP
M 24 x 300	S	1	2080,00 ZP
M 27 x 80	S	10	1190,00 ZP
M 27 x 90	S	10	1230,00 ZP
M 27 x 100	S	10	1300,00 ZP
M 27 x 110	S	10	1360,00 ZP
M 27 x 120	S	10	1430,00 ZP
M 27 x 130	S	10	1475,00 ZP
M 27 x 140	S	1	1560,00 ZP
M 30 x 80	S	1	1425,00 ZP
M 30 x 90	S	1	1490,00 ZP
M 30 x 100	S	1	1537,00 ZP
M 30 x 110	S	1	1590,00 ZP
M 30 x 120	S	1	1710,00 ZP
M 30 x 130	S	1	1800,00 ZP
M 30 x 140	S	1	1900,00 ZP
M 30 x 150	S	1	1980,00 ZP
M 30 x 160	S	1	2065,00 ZP
M 30 x 170	S	1	2165,00 ZP
M 30 x 180	S	1	2275,00 ZP
M 30 x 190	S	1	2380,00 ZP
M 30 x 200	S	1	2465,00 ZP
M 30 x 210	S	1	2760,00 ZP
M 30 x 220	S	1	2575,00 ZP
M 30 x 230	S	1	3030,00 ZP
M 30 x 240	S	1	2820,00 ZP
M 30 x 250	S	1	3240,00 ZP
M 30 x 260	S	1	3010,00 ZP
M 30 x 270	S	1	3475,00 ZP
M 30 x 280	S	1	3230,00 ZP
M 30 x 300	S	1	3430,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

DIN	00931.354	RAZ 1540
931	10.9 zinc flake coated	

Hexagon head bolts with shank

Short dimensions in part thread up to head,
friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution!
Different tightening torque to zinc plated.

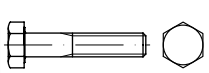
Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-218
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	30	S	500	19,00 flZn
M 6	x	35	S	200	19,75 flZn
M 6	x	40	S	200	20,70 flZn
M 6	x	45	S	200	24,15 flZn
M 6	x	50	S	200	26,45 flZn
M 6	x	55	S	200	29,35 flZn
M 6	x	60	S	200	31,65 flZn
M 6	x	65	S	200	37,40 flZn
M 6	x	70	S	200	39,10 flZn
M 6	x	80	S	200	74,75 flZn
M 8	x	35	S	200	34,40 flZn
M 8	x	40	S	200	37,40 flZn
M 8	x	45	S	200	41,65 flZn
M 8	x	50	S	200	43,30 flZn
M 8	x	55	S	200	44,05 flZn
M 8	x	60	S	200	45,60 flZn
M 8	x	65	S	200	50,75 flZn
M 8	x	70	S	200	54,60 flZn
M 8	x	75	S	200	65,45 flZn
M 8	x	80	S	200	66,45 flZn
M 8	x	100	S	100	83,85 flZn
M 16	x	55	S	50	187,00 flZn
M 16	x	60	S	50	190,00 flZn
M 16	x	65	S	25	216,00 flZn
M 16	x	70	S	25	211,00 flZn
M 16	x	75	S	25	234,00 flZn
M 16	x	80	S	25	243,00 flZn
M 16	x	90	S	25	257,00 flZn
M 16	x	100	S	25	275,00 flZn
M 16	x	110	S	25	324,00 flZn
M 16	x	120	S	25	331,00 flZn
M 16	x	130	S	25	386,00 flZn
M 16	x	140	S	25	396,00 flZn
M 20	x	65	S	25	419,00 flZn
M 20	x	70	S	25	416,00 flZn
M 20	x	75	S	25	436,00 flZn
M 20	x	80	S	25	451,00 flZn
M 20	x	90	S	25	500,00 flZn
M 20	x	100	S	25	527,00 flZn
M 20	x	110	S	25	578,00 flZn
M 20	x	120	S	25	605,00 flZn
M 20	x	130	S	25	696,00 flZn
M 20	x	140	S	25	745,00 flZn
M 20	x	150	S	25	827,00 flZn
M 20	x	160	S	10	1199,00 flZn
M 20	x	170	S	10	1145,00 flZn
M 20	x	180	S	10	1286,00 flZn
M 24	x	75	S	25	960,00 flZn
M 24	x	80	S	25	970,00 flZn
M 24	x	90	S	10	1103,00 flZn
M 24	x	100	S	10	1172,00 flZn
M 24	x	110	S	10	1277,00 flZn
M 24	x	120	S	10	1314,00 flZn
M 24	x	130	S	10	1374,00 flZn
M 24	x	140	S	10	1423,00 flZn
M 24	x	150	S	10	1504,00 flZn
M 24	x	160	S	10	1570,00 flZn
M 24	x	170	S	1	1635,00 flZn
M 24	x	180	S	1	1673,00 flZn
M 24	x	190	S	1	1713,00 flZn
M 24	x	200	S	1	1753,00 flZn
M 24	x	210	S	1	1793,00 flZn
M 24	x	220	S	1	1800,00 flZn
M 24	x	230	S	1	1800,00 flZn

DIN	00931.200	RAZ 406
931	12.9	



Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 458
Brass → S. 577

DIN 931 → replaced by ISO 4014

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	40	S	100	148,00
M 10	x	45	S	100	148,00
M 10	x	50	S	100	176,00
M 10	x	60	S	100	234,00
M 10	x	70	S	100	295,00
M 10	x	80	S	100	325,00
M 10	x	90	S	100	395,00
M 10	x	100	S	100	415,00
M 12	x	45	S	100	164,00
M 12	x	50	S	100	195,00
M 12	x	55	S	100	214,00
M 12	x	60	S	100	260,00
M 12	x	65	S	50	300,00
M 12	x	70	S	50	325,00
M 12	x	80	S	50	395,00
M 12	x	90	S	50	520,00
M 12	x	100	S	50	590,00
M 12	x	120	S	50	690,00
M 12	x	140	S	50	710,00
M 14	x	60	S	50	760,00
M 14	x	80	S	50	790,00
M 14	x	100	S	50	830,00
M 16	x	55	S	50	460,00
M 16	x	60	S	50	460,00
M 16	x	70	S	25	495,00
M 16	x	80	S	25	640,00
M 16	x	90	S	25	790,00
M 16	x	100	S	25	840,00
M 16	x	120	S	25	950,00
M 16	x	130	S	25	1020,00
M 16	x	140	S	25	1100,00
M 16	x	150	S	25	1270,00
M 20	x	65	S	25	495,00
M 20	x	70	S	25	650,00
M 20	x	80	S	25	690,00
M 20	x	90	S	25	720,00
M 20	x	100	S	25	850,00
M 20	x	110	S	25	990,00
M 20	x	120	S	25	1020,00
M 20	x	130	S	25	1180,00
M 20	x	140	S	25	1240,00
M 20	x	150	S	25	1570,00
M 20	x	160	S	25	1680,00
M 24	x	80	S	25	1240,00
M 24	x	90	S	10	1300,00
M 24	x	100	S	10	1570,00
M 24	x	110	S	10	1660,00
M 24	x	120	S	10	1730,00
M 24	x	130	S	10	1950,00
M 24	x	140	S	10	2020,00
M 24	x	150	S	10	2080,00
M 24	x	160	S	10	2150,00
M 24	x	180	S	10	2220,00
M 24	x	200	S	10	2440,00
M 24	x	220	S	10	2470,00
M 24	x	240	S	10	2500,00
M 30	x	90	S	5	2600,00
M 30	x	100	S	5	2700,00
M 30	x	110	S	5	2800,00
M 30	x	120	S	5	2950,00
M 30	x	130	S	5	3250,00
M 30	x	140	S	5	3450,00
M 30	x	150	S	5	3600,00
M 30	x	160	S	5	3800,00
M 30	x	180	S	5	3950,00
M 30	x	200	S	5	4600,00

DIN	00933.800	RAZ 401
933	8.8	

Hexagon head screws with thread up to head

Dimensions → TI-15
Mech. properties → TI-220
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 462
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	S	500	9,65
M 3	x	5	K	100	12,65
M 3	x	6	S	500	4,75
M 3	x	6	K	100	7,75
M 3	x	8	S	500	4,75
M 3	x	8	K	100	7,75
M 3	x	10	S	500	4,75
M 3	x	10	K	100	7,75
M 3	x	12	S	500	5,20
M 3	x	12	K	100	8,25
M 3	x	16	S	500	5,20
M 3	x	16	K	100	8,25
M 3	x	18	S	500	5,90
M 3	x	20	S	500	5,45
M 3	x	20	K	100	8,45
M 3	x	22	S	500	6,60
M 3	x	25	S	500	6,10
M 3	x	25	K	100	9,15
M 3	x	30	S	500	16,85
M 3	x	35	S	500	36,05
M 3	x	40	S	500	45,05
M 3	x	50	S	500	69,10
M 3	x	60	S	500	74,45
M 4	x	6	S	500	4,75
M 4	x	6	K	100	7,75
M 4	x	8	S	500	4,75
M 4	x	8	K	100	7,75

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 10	S	500	4,75
M 4 x 10	K	100	7,75
M 4 x 12	S	500	5,20
M 4 x 12	K	100	8,25
M 4 x 14	S	500	5,65
M 4 x 16	S	500	5,20
M 4 x 16	K	100	8,25
M 4 x 18	S	500	5,90
M 4 x 20	S	500	5,45
M 4 x 20	K	100	8,45
M 4 x 22	S	500	6,60
M 4 x 25	S	500	6,10
M 4 x 25	K	100	9,15
M 4 x 30	S	500	7,05
M 4 x 30	K	100	10,05
M 4 x 35	S	500	7,50
M 4 x 35	K	100	10,50
M 4 x 40	S	500	8,10
M 4 x 40	K	100	11,15
M 4 x 45	S	500	9,65
M 4 x 50	S	500	10,45
M 4 x 50	K	100	13,45
M 4 x 55	S	100	47,90
M 4 x 60	S	100	72,70
M 4 x 65	S	200	103,00
M 4 x 70	S	100	103,00
M 5 x 6	S	500	12,60
M 5 x 6	K	100	15,65
M 5 x 8	S	500	3,35
M 5 x 8	K	100	6,35
M 5 x 10	S	500	3,35
M 5 x 10	K	100	6,35
M 5 x 12	S	500	3,45
M 5 x 12	K	100	6,40
M 5 x 14	S	500	3,60
M 5 x 16	S	500	3,45
M 5 x 16	K	100	6,40
M 5 x 18	S	500	3,80
M 5 x 18	K	100	6,75
M 5 x 20	S	500	3,60
M 5 x 20	K	100	6,70
M 5 x 22	S	500	9,45
M 5 x 25	S	500	4,10
M 5 x 25	K	100	7,10
M 5 x 30	S	500	4,75
M 5 x 30	K	100	7,75
M 5 x 35	S	200	5,40
M 5 x 40	S	200	7,35
M 5 x 45	S	200	8,55
M 5 x 50	S	200	9,50
M 5 x 55	S	200	14,10
M 5 x 60	S	200	14,25
M 5 x 65	S	200	45,70
M 5 x 70	S	200	45,70
M 5 x 80	S	200	69,10
M 5 x 90	S	200	111,00
M 5 x 100	S	200	130,00
M 6 x 6	S	500	18,05
M 6 x 6	K	100	21,05
M 6 x 8	S	500	5,00
M 6 x 8	K	100	7,95
M 6 x 10	S	500	4,50
M 6 x 10	K	100	7,55
M 6 x 12	S	500	4,50
M 6 x 12	K	100	7,55
M 6 x 14	S	500	4,00
M 6 x 16	S	500	4,00
M 6 x 16	K	100	6,95
M 6 x 18	S	500	4,20
M 6 x 18	K	100	7,20
M 6 x 20	S	500	4,20
M 6 x 20	K	100	7,20
M 6 x 22	S	500	4,50
M 6 x 22	K	100	7,55
M 6 x 25	S	500	4,50
M 6 x 25	K	100	7,55
M 6 x 28	S	500	9,95
M 6 x 28	K	100	12,95
M 6 x 30	S	500	4,85
M 6 x 30	K	100	7,90
M 6 x 35	S	200	5,40
M 6 x 40	S	200	5,95
M 6 x 45	S	200	8,70
M 6 x 50	S	200	8,85
M 6 x 55	S	200	15,35
M 6 x 60	S	200	17,35
M 6 x 65	S	200	22,35
M 6 x 70	S	200	27,95
M 6 x 75	S	200	33,15
M 6 x 80	S	200	33,15
M 6 x 85	S	200	59,70
M 6 x 90	S	200	59,10
M 6 x 100	S	100	91,30
M 6 x 110	S	100	106,00
M 6 x 120	S	100	113,00
M 6 x 130	S	100	178,00
M 6 x 140	S	100	191,00
M 6 x 150	S	100	229,00
M 7 x 12	S	500	15,60
M 7 x 16	S	500	12,00
M 7 x 20	S	500	12,60
M 7 x 25	S	500	14,65
M 7 x 30	S	500	15,80
M 7 x 35	S	200	17,65
M 7 x 40	S	200	19,15
M 7 x 45	S	200	20,55
M 8 x 8	S	200	25,05
M 8 x 10	S	200	8,55
M 8 x 12	S	200	7,60
M 8 x 14	S	200	7,60
M 8 x 16	S	200	5,85
M 8 x 18	S	200	6,20
M 8 x 20	S	200	6,20
M 8 x 22	S	200	7,15
M 8 x 25	S	200	7,15
M 8 x 28	S	200	7,70
M 8 x 30	S	200	7,70
M 8 x 35	S	200	8,55
M 8 x 40	S	200	9,35
M 8 x 45	S	200	11,50
M 8 x 50	S	200	13,35
M 8 x 55	S	200	18,75
M 8 x 60	S	200	20,05
M 8 x 65	S	200	27,60
M 8 x 70	S	200	34,50
M 8 x 75	S	200	41,45
M 8 x 80	S	200	41,45
M 8 x 85	S	200	52,30
M 8 x 90	S	100	48,95
M 8 x 100	S	100	56,35
M 8 x 110	S	100	72,70
M 8 x 120	S	100	75,65
M 8 x 130	S	100	122,00
M 8 x 140	S	100	152,00
M 8 x 150	S	100	186,00
M 8 x 160	S	100	236,00
M 8 x 170	S	100	271,00
M 8 x 180	S	100	291,00
M 8 x 200	S	100	380,00
M 10 x 10	S	200	48,75
M 10 x 12	S	200	17,75
M 10 x 16	S	200	11,30
M 10 x 18	S	200	10,55
M 10 x 20	S	200	10,55
M 10 x 22	S	200	11,30
M 10 x 25	S	200	11,30
M 10 x 28	S	200	13,60
M 10 x 30	S	200	12,05
M 10 x 35	S	100	13,35
M 10 x 40	S	100	14,25
M 10 x 45	S	100	17,05
M 10 x 50	S	100	17,85
M 10 x 55	S	100	24,65
M 10 x 60	S	100	26,65
M 10 x 65	S	100	40,95
M 10 x 70	S	100	40,95
M 10 x 75	S	100	46,15
M 10 x 80	S	100	57,65
M 10 x 85	S	100	69,10
M 10 x 90	S	100	69,10
M 10 x 100	S	100	81,70
M 10 x 110	S	50	112,00
M 10 x 120	S	50	116,00
M 10 x 130	S	50	153,00
M 10 x 140	S	50	159,00
M 10 x 150	S	50	175,00
M 10 x 160	S	50	267,00
M 10 x 170	S	50	532,00
M 10 x 180	S	50	521,00
M 10 x 190	S	50	541,00
M 10 x 200	S	50	566,00
M 10 x 220	S	50	842,00
M 10 x 240	S	50	1595,00
M 10 x 280	S	50	1789,00
M 10 x 300	S	50	1889,00
M 12 x 10	S	100	174,00
M 12 x 12	S	100	109,00
M 12 x 16	S	100	20,85
M 12 x 18	S	100	20,85
M 12 x 20	S	100	18,55
M 12 x 22	S	100	18,55
M 12 x 25	S	100	18,55
M 12 x 28	S	100	19,90
M 12 x 30	S	100	17,50
M 12 x 35	S	100	19,05
M 12 x 40	S	100	20,85
M 12 x 45	S	100	23,00
M 12 x 50	S	100	24,55
M 12 x 55	S	100	30,90
M 12 x 60	S	100	33,10
M 12 x 65	S	50	49,70
M 12 x 70	S	50	49,70
M 12 x 75	S	50	56,80
M 12 x 80	S	50	71,50
M 12 x 85	S	50	85,85
M 12 x 90	S	50	85,85
M 12 x 100	S	50	95,50
M 12 x 110	S	50	148,00
M 12 x 120	S	50	150,00
M 12 x 130	S	50	179,00
M 12 x 140	S	50	186,00
M 12 x 150	S	50	201,00
M 12 x 160	S	25	389,00
M 12 x 170	S	25	476,00
M 12 x 180	S	25	476,00
M 12 x 190	S	25	574,00
M 12 x 200	S	25	574,00
M 12 x 220	S	25	677,00
M 12 x 240	S	25	738,00
M 12 x 300	S	25	2355,00
M 14 x 16	S	100	206,00
M 14 x 20	S	100	52,05
M 14 x 25	S	100	52,05
M 14 x 30	S	100	58,25
M 14 x 35	S	100	65,45
M 14 x 40	S	100	65,45
M 14 x 45	S	100	71,50
M 14 x 50	S	100	75,10
M 14 x 55	S	100	87,10
M 14 x 60	S	50	87,10
M 14 x 65	S	50	96,70
M 14 x 70	S	50	96,70
M 14 x 75	S	50	121,00
M 14 x 80	S	50	121,00
M 14 x 90	S	50	172,00

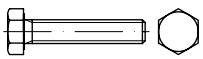
Dimensions			PU	Pieces	€/100/Mat.
M 14	x	100	S	50	197,00
M 14	x	110	S	50	357,00
M 14	x	120	S	50	257,00
M 14	x	130	S	50	420,00
M 14	x	140	S	50	447,00
M 14	x	150	S	50	470,00
M 14	x	160	S	25	584,00
M 14	x	170	S	25	620,00
M 14	x	180	S	25	654,00
M 14	x	200	S	25	715,00
M 14	x	220	S	25	3156,00
M 16	x	12	S	50	166,00
M 16	x	16	S	50	169,00
M 16	x	20	S	50	39,20
M 16	x	25	S	50	39,20
M 16	x	30	S	50	37,00
M 16	x	35	S	50	39,20
M 16	x	40	S	50	40,60
M 16	x	45	S	50	43,05
M 16	x	50	S	50	46,55
M 16	x	55	S	50	56,30
M 16	x	60	S	50	59,00
M 16	x	65	S	25	84,10
M 16	x	70	S	25	84,10
M 16	x	75	S	25	99,70
M 16	x	80	S	25	126,00
M 16	x	85	S	25	164,00
M 16	x	90	S	25	164,00
M 16	x	95	S	25	186,00
M 16	x	100	S	25	186,00
M 16	x	110	S	25	246,00
M 16	x	120	S	25	265,00
M 16	x	130	S	25	275,00
M 16	x	140	S	25	291,00
M 16	x	150	S	25	328,00
M 16	x	160	S	25	541,00
M 16	x	170	S	25	612,00
M 16	x	180	S	25	612,00
M 16	x	190	S	25	736,00
M 16	x	200	S	25	736,00
M 16	x	210	S	25	770,00
M 16	x	220	S	1	799,00
M 16	x	230	S	1	830,00
M 16	x	240	S	1	862,00
M 16	x	250	S	1	1087,00
M 16	x	260	S	1	1168,00
M 16	x	280	S	1	1264,00
M 16	x	300	S	1	1469,00
M 16	x	320	S	1	1655,00
M 16	x	340	S	1	1799,00
M 16	x	400	S	1	2758,00
M 16	x	500	S	1	3531,00
M 18	x	20	S	50	232,00
M 18	x	25	S	50	232,00
M 18	x	30	S	50	172,00
M 18	x	35	S	50	177,00
M 18	x	40	S	50	177,00
M 18	x	45	S	50	177,00
M 18	x	50	S	50	183,00
M 18	x	55	S	25	197,00
M 18	x	60	S	25	197,00
M 18	x	65	S	25	210,00
M 18	x	70	S	25	210,00
M 18	x	75	S	25	244,00
M 18	x	80	S	25	244,00
M 18	x	85	S	25	315,00
M 18	x	90	S	25	315,00
M 18	x	100	S	25	315,00
M 18	x	110	S	25	412,00
M 18	x	120	S	25	412,00
M 18	x	130	S	25	715,00
M 18	x	140	S	25	772,00
M 18	x	150	S	25	830,00
M 18	x	160	S	25	891,00
M 18	x	170	S	25	940,00
M 18	x	180	S	25	989,00
M 18	x	190	S	25	1034,00
M 18	x	200	S	25	1081,00
M 20	x	20	S	25	199,00
M 20	x	25	S	25	150,00
M 20	x	30	S	25	87,10
M 20	x	35	S	25	87,10
M 20	x	40	S	25	81,10
M 20	x	45	S	25	82,25
M 20	x	50	S	25	83,45
M 20	x	55	S	25	87,70
M 20	x	60	S	25	88,90
M 20	x	65	S	25	104,00
M 20	x	70	S	25	107,00
M 20	x	75	S	25	137,00
M 20	x	80	S	25	133,00
M 20	x	85	S	25	198,00
M 20	x	90	S	25	198,00
M 20	x	100	S	25	281,00
M 20	x	110	S	25	312,00
M 20	x	120	S	25	345,00
M 20	x	130	S	25	446,00
M 20	x	140	S	25	516,00
M 20	x	150	S	25	590,00
M 20	x	160	S	10	641,00
M 20	x	170	S	1	939,00
M 20	x	180	S	1	984,00
M 20	x	190	S	1	1031,00
M 20	x	200	S	1	1073,00
M 20	x	210	S	1	1305,00
M 20	x	220	S	1	1381,00
M 20	x	230	S	1	1456,00
M 20	x	240	S	1	1532,00
M 20	x	250	S	1	1546,00
M 20	x	260	S	1	1634,00
M 20	x	280	S	1	1730,00
M 20	x	300	S	1	1875,00
M 20	x	360	S	1	4000,00
M 22	x	30	S	25	496,00
M 22	x	35	S	25	496,00
M 22	x	40	S	25	430,00
M 22	x	45	S	25	324,00
M 22	x	50	S	25	324,00
M 22	x	55	S	25	362,00
M 22	x	60	S	25	362,00
M 22	x	65	S	25	442,00
M 22	x	70	S	25	442,00
M 22	x	75	S	25	482,00
M 22	x	80	S	25	482,00
M 22	x	90	S	25	482,00
M 22	x	100	S	10	601,00
M 22	x	110	S	10	726,00
M 22	x	120	S	10	726,00
M 22	x	130	S	10	926,00
M 22	x	140	S	10	989,00
M 22	x	150	S	10	1050,00
M 22	x	160	S	10	1183,00
M 22	x	170	S	1	1240,00
M 22	x	180	S	1	1298,00
M 22	x	190	S	1	1356,00
M 22	x	200	S	1	1416,00
M 24	x	25	S	25	434,00
M 24	x	30	S	25	434,00
M 24	x	35	S	25	270,00
M 24	x	40	S	25	151,00
M 24	x	45	S	25	151,00
M 24	x	50	S	25	141,00
M 24	x	55	S	25	149,00
M 24	x	60	S	25	153,00
M 24	x	65	S	25	175,00
M 24	x	70	S	25	175,00
M 24	x	75	S	25	240,00
M 24	x	80	S	25	223,00
M 24	x	85	S	10	340,00
M 24	x	90	S	10	340,00
M 24	x	100	S	10	458,00
M 24	x	110	S	10	534,00
M 24	x	120	S	10	555,00
M 24	x	130	S	1	947,00
M 24	x	140	S	1	1005,00
M 24	x	150	S	1	1057,00
M 24	x	160	S	1	1115,00
M 24	x	170	S	1	1240,00
M 24	x	180	S	1	1240,00
M 24	x	190	S	1	1441,00
M 24	x	200	S	1	1441,00
M 24	x	210	S	1	1598,00
M 24	x	220	S	1	1659,00
M 24	x	230	S	1	1722,00
M 24	x	240	S	1	1783,00
M 24	x	250	S	1	1844,00
M 24	x	260	S	1	2210,00
M 24	x	280	S	1	2402,00
M 24	x	300	S	1	2522,00
M 24	x	320	S	1	2882,00
M 24	x	500	S	1	7173,00
M 27	x	30	S	10	794,00
M 27	x	40	S	10	794,00
M 27	x	45	S	10	794,00
M 27	x	50	S	10	683,00
M 27	x	55	S	10	683,00
M 27	x	60	S	10	683,00
M 27	x	65	S	10	727,00
M 27	x	70	S	10	727,00
M 27	x	75	S	10	751,00
M 27	x	80	S	10	751,00
M 27	x	85	S	10	789,00
M 27	x	90	S	1	789,00
M 27	x	100	S	1	841,00
M 27	x	110	S	1	1078,00
M 27	x	120	S	1	1078,00
M 27	x	130	S	1	1088,00
M 27	x	140	S	1	1356,00
M 27	x	150	S	1	1428,00
M 27	x	160	S	1	1590,00
M 27	x	170	S	1	1671,00
M 27	x	180	S	1	1752,00
M 27	x	190	S	1	1823,00
M 27	x	200	S	1	1896,00
M 27	x	300	S	1	3668,00
M 30	x	35	S	1	899,00
M 30	x	40	S	1	899,00
M 30	x	45	S	1	899,00
M 30	x	50	S	1	899,00
M 30	x	55	S	1	899,00
M 30	x	60	S	1	899,00
M 30	x	65	S	1	965,00
M 30	x	70	S	1	965,00
M 30	x	75	S	1	1030,00
M 30	x	80	S	1	1030,00
M 30	x	85	S	1	1082,00
M 30	x	90	S	1	1082,00
M 30	x	100	S	1	1119,00
M 30	x	110	S	1	1184,00
M 30	x	120	S	1	1252,00
M 30	x	130	S	1	1356,00
M 30	x	140	S	1	1408,00
M 30	x	150	S	1	1461,00
M 30	x	160	S	1	1630,00
M 30	x	170	S	1	1722,00
M 30	x	180	S	1	1783,00
M 30	x	190	S	1	1844,00
M 30	x	200	S	1	1904,00
M 30	x	210	S	1	2153,00
M 30	x	220	S	1	2213,00
M 30	x	230	S	1	2274,00
M 30	x	240	S	1	2335,00
M 30	x	250	S	1	2742,00
M 30	x	260	S	1	2812,00
M 30	x	280	S	1	3092,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 30 x 300	S	1	3373,00
M 30 x 320	S	1	3796,00
M 30 x 340	S	1	4076,00
M 30 x 360	S	1	4456,00
M 30 x 380	S	1	4779,00
M 30 x 400	S	1	5271,00
M 30 x 500	S	1	8316,00
M 30 x 600	S	1	9292,00
M 33 x 40	S	1	1184,00
M 33 x 50	S	1	1184,00
M 33 x 60	S	1	1184,00
M 33 x 65	S	1	1305,00
M 33 x 70	S	1	1305,00
M 33 x 75	S	1	1338,00
M 33 x 80	S	1	1338,00
M 33 x 90	S	1	1406,00
M 33 x 100	S	1	1484,00
M 33 x 110	S	1	1623,00
M 33 x 120	S	1	1623,00
M 33 x 130	S	1	1939,00
M 33 x 140	S	1	2098,00
M 33 x 150	S	1	2217,00
M 33 x 160	S	1	2464,00
M 33 x 170	S	1	2571,00
M 33 x 180	S	1	2681,00
M 33 x 190	S	1	2799,00
M 33 x 200	S	1	2918,00
M 33 x 300	S	1	4204,00
M 36 x 40	S	1	1436,00
M 36 x 45	S	1	1436,00
M 36 x 50	S	1	1436,00
M 36 x 55	S	1	1436,00
M 36 x 60	S	1	1436,00
M 36 x 65	S	1	1488,00
M 36 x 70	S	1	1488,00
M 36 x 75	S	1	1565,00
M 36 x 80	S	1	1565,00
M 36 x 85	S	1	1677,00
M 36 x 90	S	1	1677,00
M 36 x 100	S	1	1781,00
M 36 x 110	S	1	1870,00
M 36 x 120	S	1	1923,00
M 36 x 130	S	1	2060,00
M 36 x 140	S	1	2121,00
M 36 x 150	S	1	2242,00
M 36 x 160	S	1	2335,00
M 36 x 170	S	1	2459,00
M 36 x 180	S	1	2584,00
M 36 x 190	S	1	2705,00
M 36 x 200	S	1	2828,00
M 36 x 220	S	1	3626,00
M 36 x 260	S	1	4364,00
M 36 x 280	S	1	4792,00
M 36 x 300	S	1	5101,00
M 36 x 320	S	1	9078,00
M 36 x 340	S	1	9349,00
M 36 x 400	S	1	10123,00
M 36 x 600	S	1	12709,00
M 39 x 80	S	1	3313,00
M 39 x 90	S	1	3508,00
M 39 x 100	S	1	3732,00
M 39 x 110	S	1	3930,00
M 39 x 120	S	1	4360,00
M 39 x 130	S	1	4459,00
M 39 x 140	S	1	4755,00
M 39 x 150	S	1	5086,00
M 39 x 160	S	1	5614,00
M 39 x 180	S	1	6473,00
M 39 x 190	S	1	7266,00
M 39 x 200	S	1	7266,00
M 42 x 50	S	1	3369,00
M 42 x 55	S	1	3369,00
M 42 x 60	S	1	3369,00
M 42 x 70	S	1	3369,00
M 42 x 75	S	1	3468,00

Dimensions	PU	Pieces	€/100/Mat.
M 42 x 80	S	1	3468,00
M 42 x 85	S	1	3601,00
M 42 x 90	S	1	3601,00
M 42 x 100	S	1	3765,00
M 42 x 110	S	1	4162,00
M 42 x 120	S	1	4393,00
M 42 x 130	S	1	4591,00
M 42 x 140	S	1	4789,00
M 42 x 150	S	1	5086,00
M 42 x 160	S	1	5202,00
M 42 x 170	S	1	5944,00
M 42 x 180	S	1	6143,00
M 42 x 190	S	1	6374,00
M 42 x 200	S	1	6803,00
M 42 x 220	S	1	8106,00
M 42 x 250	S	1	9475,00
M 42 x 260	S	1	10159,00
M 42 x 300	S	1	11528,00
M 42 x 360	S	1	13149,00
M 42 x 400	S	1	13761,00
M 45 x 90	S	1	6348,00
M 45 x 100	S	1	6493,00
M 45 x 110	S	1	6823,00
M 45 x 120	S	1	6770,00
M 45 x 130	S	1	7196,00
M 45 x 140	S	1	7473,00
M 45 x 150	S	1	7760,00
M 48 x 60	S	1	7760,00
M 48 x 70	S	1	7760,00
M 48 x 80	S	1	7760,00
M 48 x 90	S	1	7760,00
M 48 x 100	S	1	7903,00
M 48 x 110	S	1	8183,00
M 48 x 120	S	1	8467,00
M 48 x 130	S	1	8685,00
M 48 x 140	S	1	8824,00
M 48 x 150	S	1	9028,00
M 48 x 160	S	1	9174,00
M 48 x 170	S	1	9874,00
M 48 x 180	S	1	10581,00
M 48 x 190	S	1	11168,00
M 48 x 200	S	1	11993,00
M 48 x 420	S	1	16859,00

DIN	00933.810	RAZ 401
933	**8.8 zinc plated**	



Hexagon head screws with thread up to head

Dimensions ➔ TI-15
Mech. properties ➔ TI-220
Corrosion protection ➔ TI-217
Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

Stainless ➔ S. 462
Brass, plastic ➔ S. 577

DIN 933 ➔ replaced by ISO 4017

M 3	x	5	S	500	10,00 ZP
M 3	x	6	S	500	4,90 ZP
M 3	x	8	S	500	4,90 ZP
M 3	x	8	K	100	7,95 ZP
M 3	x	10	S	500	5,00 ZP
M 3	x	10	K	100	7,95 ZP
M 3	x	12	S	500	5,45 ZP
M 3	x	12	K	100	8,45 ZP
M 3	x	16	S	500	5,50 ZP
M 3	x	16	K	100	8,45 ZP

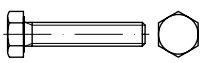
Dimensions	PU	Pieces	€/100/Mat.
M 3 x 20	S	500	5,70 ZP
M 3 x 20	K	100	8,75 ZP
M 3 x 25	S	500	6,45 ZP
M 3 x 30	S	500	17,35 ZP
M 3 x 35	S	500	40,05 ZP
M 3 x 40	S	500	45,70 ZP
M 3 x 50	S	500	70,30 ZP
M 4 x 6	S	500	5,10 ZP
M 4 x 8	S	500	5,15 ZP
M 4 x 8	K	100	8,10 ZP
M 4 x 10	S	500	5,20 ZP
M 4 x 10	K	100	8,15 ZP
M 4 x 12	S	500	5,65 ZP
M 4 x 12	K	100	8,70 ZP
M 4 x 14	S	500	6,10 ZP
M 4 x 16	S	500	5,70 ZP
M 4 x 16	K	100	8,75 ZP
M 4 x 18	S	500	6,45 ZP
M 4 x 20	S	500	6,05 ZP
M 4 x 20	K	100	9,05 ZP
M 4 x 22	S	500	7,20 ZP
M 4 x 25	S	500	6,80 ZP
M 4 x 25	K	100	9,80 ZP
M 4 x 30	S	500	7,85 ZP
M 4 x 30	K	100	10,80 ZP
M 4 x 35	S	500	8,70 ZP
M 4 x 35	K	100	11,70 ZP
M 4 x 40	S	500	9,50 ZP
M 4 x 40	K	100	12,45 ZP
M 4 x 45	S	500	11,10 ZP
M 4 x 50	S	500	12,05 ZP
M 4 x 55	S	100	53,50 ZP
M 4 x 60	S	100	75,10 ZP
M 4 x 70	S	100	106,00 ZP
M 5 x 6	S	500	13,20 ZP
M 5 x 8	S	500	3,80 ZP
M 5 x 8	K	100	6,80 ZP
M 5 x 10	S	500	3,85 ZP
M 5 x 10	K	100	6,80 ZP
M 5 x 12	S	500	4,00 ZP
M 5 x 12	K	100	6,95 ZP
M 5 x 14	S	500	4,25 ZP
M 5 x 16	S	500	4,10 ZP
M 5 x 16	K	100	7,10 ZP
M 5 x 18	S	500	4,45 ZP
M 5 x 20	S	500	4,40 ZP
M 5 x 20	K	100	7,35 ZP
M 5 x 22	S	500	10,40 ZP
M 5 x 25	S	500	5,00 ZP
M 5 x 25	K	100	7,95 ZP
M 5 x 30	S	500	5,70 ZP
M 5 x 30	K	100	8,70 ZP
M 5 x 35	S	200	6,50 ZP
M 5 x 40	S	200	8,55 ZP
M 5 x 45	S	200	9,90 ZP
M 5 x 50	S	200	10,90 ZP
M 5 x 55	S	200	16,15 ZP
M 5 x 60	S	200	16,50 ZP
M 5 x 65	S	200	48,45 ZP
M 5 x 70	S	200	48,65 ZP
M 5 x 75	S	200	132,00 ZP
M 5 x 80	S	200	72,10 ZP
M 5 x 90	S	200	116,00 ZP
M 5 x 100	S	200	135,00 ZP
M 6 x 6	S	500	18,95 ZP
M 6 x 6	K	100	22,00 ZP
M 6 x 8	S	500	5,65 ZP
M 6 x 8	K	100	8,70 ZP
M 6 x 10	S	500	5,30 ZP
M 6 x 10	K	100	8,35 ZP
M 6 x 12	S	500	5,40 ZP
M 6 x 12	K	100	8,40 ZP
M 6 x 14	S	500	4,85 ZP
M 6 x 16	S	500	5,00 ZP
M 6 x 16	K	100	7,95 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	18	S	500	5,20 ZP
M 6	x	18	K	100	8,25 ZP
M 6	x	20	S	500	5,25 ZP
M 6	x	20	K	100	8,30 ZP
M 6	x	22	S	500	5,65 ZP
M 6	x	22	K	100	8,70 ZP
M 6	x	25	S	500	5,80 ZP
M 6	x	25	K	100	8,80 ZP
M 6	x	28	S	500	11,75 ZP
M 6	x	30	S	500	6,30 ZP
M 6	x	30	K	100	9,25 ZP
M 6	x	35	S	200	6,95 ZP
M 6	x	40	S	200	7,70 ZP
M 6	x	45	S	200	10,60 ZP
M 6	x	50	S	200	10,90 ZP
M 6	x	55	S	200	18,30 ZP
M 6	x	60	S	200	20,50 ZP
M 6	x	65	S	200	25,80 ZP
M 6	x	70	S	200	31,55 ZP
M 6	x	75	S	200	36,95 ZP
M 6	x	80	S	200	37,20 ZP
M 6	x	85	S	200	64,25 ZP
M 6	x	90	S	200	63,70 ZP
M 6	x	100	S	200	96,70 ZP
M 6	x	110	S	100	113,00 ZP
M 6	x	120	S	100	121,00 ZP
M 6	x	130	S	100	186,00 ZP
M 6	x	140	S	100	199,00 ZP
M 6	x	150	S	100	236,00 ZP
M 7	x	12	S	500	18,35 ZP
M 7	x	16	S	500	13,95 ZP
M 7	x	20	S	500	14,85 ZP
M 7	x	25	S	500	17,20 ZP
M 7	x	30	S	500	18,60 ZP
M 7	x	40	S	500	22,65 ZP
M 7	x	45	S	200	24,50 ZP
M 8	x	8	S	200	27,15 ZP
M 8	x	10	S	200	10,30 ZP
M 8	x	12	S	200	9,50 ZP
M 8	x	14	S	200	9,60 ZP
M 8	x	16	S	200	7,95 ZP
M 8	x	18	S	200	8,40 ZP
M 8	x	20	S	200	8,50 ZP
M 8	x	22	S	200	9,60 ZP
M 8	x	25	S	200	9,75 ZP
M 8	x	28	S	200	14,20 ZP
M 8	x	30	S	200	10,60 ZP
M 8	x	35	S	200	11,80 ZP
M 8	x	40	S	200	12,90 ZP
M 8	x	45	S	200	15,30 ZP
M 8	x	50	S	200	17,45 ZP
M 8	x	55	S	200	24,65 ZP
M 8	x	60	S	200	26,30 ZP
M 8	x	65	S	200	34,20 ZP
M 8	x	70	S	200	41,50 ZP
M 8	x	75	S	200	48,95 ZP
M 8	x	80	S	200	49,35 ZP
M 8	x	85	S	200	60,65 ZP
M 8	x	90	S	100	57,55 ZP
M 8	x	95	S	100	65,45 ZP
M 8	x	100	S	100	66,10 ZP
M 8	x	110	S	100	82,90 ZP
M 8	x	120	S	100	86,50 ZP
M 8	x	130	S	100	135,00 ZP
M 8	x	140	S	100	166,00 ZP
M 8	x	150	S	100	200,00 ZP
M 8	x	160	S	100	252,00 ZP
M 8	x	170	S	100	288,00 ZP
M 8	x	180	S	100	308,00 ZP
M 8	x	190	S	100	442,00 ZP
M 8	x	200	S	100	402,00 ZP
M 10	x	10	S	200	53,60 ZP
M 10	x	12	S	200	21,00 ZP
M 10	x	16	S	200	14,90 ZP
M 10	x	18	S	200	14,35 ZP
M 10	x	20	S	200	14,55 ZP
M 10	x	22	S	200	15,45 ZP
M 10	x	25	S	200	15,75 ZP
M 10	x	28	S	200	18,30 ZP
M 10	x	30	S	200	17,00 ZP
M 10	x	35	S	100	18,75 ZP
M 10	x	40	S	100	20,15 ZP
M 10	x	45	S	100	23,45 ZP
M 10	x	50	S	100	24,70 ZP
M 10	x	55	S	100	31,95 ZP
M 10	x	60	S	100	34,45 ZP
M 10	x	65	S	100	51,85 ZP
M 10	x	70	S	100	52,45 ZP
M 10	x	75	S	100	58,35 ZP
M 10	x	80	S	100	70,85 ZP
M 10	x	85	S	100	82,25 ZP
M 10	x	90	S	100	82,90 ZP
M 10	x	95	S	100	145,00 ZP
M 10	x	100	S	100	97,30 ZP
M 10	x	110	S	50	129,00 ZP
M 10	x	120	S	50	133,00 ZP
M 10	x	130	S	50	173,00 ZP
M 10	x	140	S	50	178,00 ZP
M 10	x	150	S	50	197,00 ZP
M 10	x	160	S	50	296,00 ZP
M 10	x	170	S	50	560,00 ZP
M 10	x	180	S	50	551,00 ZP
M 10	x	190	S	50	573,00 ZP
M 10	x	200	S	50	599,00 ZP
M 10	x	220	S	50	878,00 ZP
M 12	x	12	S	100	117,00 ZP
M 12	x	16	S	100	26,00 ZP
M 12	x	18	S	100	26,35 ZP
M 12	x	20	S	100	24,35 ZP
M 12	x	22	S	100	24,75 ZP
M 12	x	25	S	100	24,95 ZP
M 12	x	28	S	100	31,00 ZP
M 12	x	30	S	100	24,65 ZP
M 12	x	35	S	100	26,85 ZP
M 12	x	40	S	100	29,30 ZP
M 12	x	45	S	100	32,15 ZP
M 12	x	50	S	100	34,35 ZP
M 12	x	55	S	100	41,40 ZP
M 12	x	60	S	100	44,00 ZP
M 12	x	65	S	50	65,45 ZP
M 12	x	70	S	50	66,65 ZP
M 12	x	75	S	50	74,45 ZP
M 12	x	80	S	50	89,50 ZP
M 12	x	85	S	50	106,00 ZP
M 12	x	90	S	50	106,00 ZP
M 12	x	95	S	50	164,00 ZP
M 12	x	100	S	50	119,00 ZP
M 12	x	110	S	50	172,00 ZP
M 12	x	120	S	50	176,00 ZP
M 12	x	130	S	50	207,00 ZP
M 12	x	140	S	50	215,00 ZP
M 12	x	150	S	50	232,00 ZP
M 12	x	160	S	25	422,00 ZP
M 12	x	170	S	25	510,00 ZP
M 12	x	180	S	25	511,00 ZP
M 12	x	190	S	25	612,00 ZP
M 12	x	200	S	25	616,00 ZP
M 12	x	220	S	25	720,00 ZP
M 12	x	240	S	25	784,00 ZP
M 12	x	260	S	25	2179,00 ZP
M 14	x	20	S	100	64,25 ZP
M 14	x	25	S	100	65,45 ZP
M 14	x	30	S	100	73,25 ZP
M 14	x	35	S	100	81,10 ZP
M 14	x	40	S	100	82,25 ZP
M 14	x	45	S	50	90,10 ZP
M 14	x	50	S	50	94,85 ZP
M 14	x	55	S	50	108,00 ZP
M 14	x	60	S	50	109,00 ZP
M 14	x	65	S	50	120,00 ZP
M 14	x	70	S	50	121,00 ZP
M 14	x	75	S	50	146,00 ZP
M 14	x	80	S	50	148,00 ZP
M 14	x	90	S	50	200,00 ZP
M 14	x	100	S	50	229,00 ZP
M 14	x	110	S	50	391,00 ZP
M 14	x	120	S	50	293,00 ZP
M 14	x	130	S	50	468,00 ZP
M 14	x	140	S	50	487,00 ZP
M 14	x	200	S	25	773,00 ZP
M 16	x	16	S	50	181,00 ZP
M 16	x	20	S	50	51,20 ZP
M 16	x	25	S	50	52,45 ZP
M 16	x	30	S	50	51,50 ZP
M 16	x	35	S	50	54,95 ZP
M 16	x	40	S	50	57,65 ZP
M 16	x	45	S	50	61,85 ZP
M 16	x	50	S	50	66,10 ZP
M 16	x	55	S	50	77,50 ZP
M 16	x	60	S	50	81,70 ZP
M 16	x	65	S	25	116,00 ZP
M 16	x	70	S	25	118,00 ZP
M 16	x	75	S	50	135,00 ZP
M 16	x	80	S	25	161,00 ZP
M 16	x	85	S	25	201,00 ZP
M 16	x	90	S	25	202,00 ZP
M 16	x	95	S	25	229,00 ZP
M 16	x	100	S	25	230,00 ZP
M 16	x	110	S	25	292,00 ZP
M 16	x	120	S	25	314,00 ZP
M 16	x	130	S	25	328,00 ZP
M 16	x	140	S	25	347,00 ZP
M 16	x	150	S	25	387,00 ZP
M 16	x	160	S	25	604,00 ZP
M 16	x	170	S	25	677,00 ZP
M 16	x	180	S	25	680,00 ZP
M 16	x	190	S	25	804,00 ZP
M 16	x	200	S	25	810,00 ZP
M 16	x	210	S	25	865,00 ZP
M 16	x	220	S	1	879,00 ZP
M 16	x	230	S	1	913,00 ZP
M 16	x	240	S	1	947,00 ZP
M 16	x	250	S	1	1177,00 ZP
M 16	x	260	S	1	1274,00 ZP
M 16	x	280	S	1	1386,00 ZP
M 16	x	300	S	1	1599,00 ZP
M 16	x	320	S	1	1790,00 ZP
M 16	x	340	S	1	1944,00 ZP
M 18	x	20	S	50	257,00 ZP
M 18	x	25	S	50	258,00 ZP
M 18	x	30	S	50	198,00 ZP
M 18	x	35	S	50	205,00 ZP
M 18	x	40	S	50	207,00 ZP
M 18	x	45	S	50	209,00 ZP
M 18	x	50	S	50	217,00 ZP
M 18	x	55	S	25	233,00 ZP
M 18	x	60	S	25	234,00 ZP
M 18	x	65	S	25	251,00 ZP
M 18	x	70	S	25	252,00 ZP
M 18	x	75	S	25	289,00 ZP
M 18	x	80	S	25	291,00 ZP
M 18	x	90	S	25	366,00 ZP
M 18	x	100	S	25	370,00 ZP
M 20	x	20	S	25	250,00 ZP
M 20	x	25	S	25	181,00 ZP
M 20	x	30	S	25	113,00 ZP
M 20	x	35	S	25	116,00 ZP
M 20	x	40	S	25	111,00 ZP
M 20	x	45	S	25	114,00 ZP
M 20	x	50	S	25	118,00 ZP
M 20	x	55	S	25	124,00 ZP
M 20	x	60	S	25	127,00 ZP
M 20	x	65	S	25	143,00 ZP
M 20	x	70	S	25	149,00 ZP
M 20	x	75	S	25	179,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	80	S	25	177,00 ZP
M 20	x	85	S	25	259,00 ZP
M 20	x	90	S	25	263,00 ZP
M 20	x	100	S	25	352,00 ZP
M 20	x	110	S	25	387,00 ZP
M 20	x	120	S	25	425,00 ZP
M 20	x	130	S	25	532,00 ZP
M 20	x	140	S	25	606,00 ZP
M 20	x	150	S	25	685,00 ZP
M 20	x	160	S	10	742,00 ZP
M 20	x	170	S	10	1061,00 ZP
M 20	x	180	S	1	1215,00 ZP
M 20	x	190	S	1	1270,00 ZP
M 20	x	200	S	1	1325,00 ZP
M 20	x	210	S	1	1471,00 ZP
M 20	x	220	S	1	1616,00 ZP
M 20	x	230	S	1	1621,00 ZP
M 20	x	240	S	1	1786,00 ZP
M 20	x	250	S	1	1802,00 ZP
M 20	x	260	S	1	1861,00 ZP
M 20	x	280	S	1	1973,00 ZP
M 20	x	300	S	1	2132,00 ZP
M 20	x	320	S	1	3356,00 ZP
M 20	x	340	S	1	3519,00 ZP
M 20	x	360	S	1	4246,00 ZP
M 20	x	460	S	1	6505,00 ZP
M 22	x	40	S	25	510,00 ZP
M 22	x	50	S	25	379,00 ZP
M 22	x	55	S	25	420,00 ZP
M 22	x	60	S	25	422,00 ZP
M 22	x	65	S	25	506,00 ZP
M 22	x	70	S	25	508,00 ZP
M 22	x	75	S	25	552,00 ZP
M 22	x	80	S	25	556,00 ZP
M 22	x	90	S	25	561,00 ZP
M 22	x	100	S	10	688,00 ZP
M 22	x	110	S	10	818,00 ZP
M 22	x	120	S	10	825,00 ZP
M 24	x	25	S	25	494,00 ZP
M 24	x	30	S	25	498,00 ZP
M 24	x	35	S	25	327,00 ZP
M 24	x	40	S	25	197,00 ZP
M 24	x	45	S	25	200,00 ZP
M 24	x	50	S	25	192,00 ZP
M 24	x	55	S	25	202,00 ZP
M 24	x	60	S	25	211,00 ZP
M 24	x	65	S	25	235,00 ZP
M 24	x	70	S	25	239,00 ZP
M 24	x	75	S	25	306,00 ZP
M 24	x	80	S	25	292,00 ZP
M 24	x	85	S	25	434,00 ZP
M 24	x	90	S	10	438,00 ZP
M 24	x	95	S	10	729,00 ZP
M 24	x	100	S	10	563,00 ZP
M 24	x	110	S	10	648,00 ZP
M 24	x	120	S	10	674,00 ZP
M 24	x	130	S	1	1074,00 ZP
M 24	x	140	S	1	1141,00 ZP
M 24	x	150	S	1	1201,00 ZP
M 24	x	160	S	1	1266,00 ZP
M 24	x	170	S	1	1430,00 ZP
M 24	x	180	S	1	1404,00 ZP
M 24	x	190	S	1	1649,00 ZP
M 24	x	200	S	1	1620,00 ZP
M 24	x	210	S	1	1785,00 ZP
M 24	x	220	S	1	1620,00 ZP
M 24	x	240	S	1	2036,00 ZP
M 24	x	250	S	1	2106,00 ZP
M 24	x	260	S	1	2481,00 ZP
M 24	x	280	S	1	2690,00 ZP
M 24	x	300	S	1	2827,00 ZP
M 24	x	320	S	1	3206,00 ZP
M 27	x	40	S	10	986,00 ZP
M 27	x	45	S	10	1204,00 ZP
M 27	x	50	S	10	1097,00 ZP
M 27	x	55	S	10	1102,00 ZP
M 27	x	60	S	10	787,00 ZP
M 27	x	65	S	10	777,00 ZP
M 27	x	70	S	10	840,00 ZP
M 27	x	75	S	10	920,00 ZP
M 27	x	80	S	10	874,00 ZP
M 27	x	90	S	1	922,00 ZP
M 27	x	100	S	1	983,00 ZP
M 27	x	110	S	1	1230,00 ZP
M 27	x	120	S	1	1239,00 ZP
M 27	x	130	S	1	1259,00 ZP
M 27	x	140	S	1	1536,00 ZP
M 27	x	150	S	1	1618,00 ZP
M 27	x	160	S	1	1789,00 ZP
M 27	x	180	S	1	1969,00 ZP
M 27	x	200	S	1	2132,00 ZP
M 30	x	35	S	1	1027,00 ZP
M 30	x	40	S	1	1011,00 ZP
M 30	x	45	S	1	1015,00 ZP
M 30	x	50	S	1	1022,00 ZP
M 30	x	55	S	1	1029,00 ZP
M 30	x	60	S	1	1034,00 ZP
M 30	x	65	S	1	1105,00 ZP
M 30	x	70	S	1	1112,00 ZP
M 30	x	75	S	1	1183,00 ZP
M 30	x	80	S	1	1188,00 ZP
M 30	x	85	S	1	1248,00 ZP
M 30	x	90	S	1	1255,00 ZP
M 30	x	100	S	1	1301,00 ZP
M 30	x	110	S	1	1379,00 ZP
M 30	x	120	S	1	1459,00 ZP
M 30	x	130	S	1	1574,00 ZP
M 30	x	140	S	1	1638,00 ZP
M 30	x	150	S	1	1703,00 ZP
M 30	x	160	S	1	1882,00 ZP
M 30	x	170	S	1	1941,00 ZP
M 30	x	180	S	1	2059,00 ZP
M 30	x	190	S	1	2192,00 ZP
M 30	x	200	S	1	2206,00 ZP
M 30	x	210	S	1	2378,00 ZP
M 30	x	220	S	1	2540,00 ZP
M 30	x	240	S	1	2686,00 ZP
M 30	x	260	S	1	3430,00 ZP
M 30	x	280	S	1	3751,00 ZP
M 30	x	300	S	1	4073,00 ZP
M 30	x	320	S	1	4339,00 ZP
M 33	x	60	S	1	1356,00 ZP
M 33	x	70	S	1	1490,00 ZP
M 33	x	75	S	1	1571,00 ZP
M 33	x	80	S	1	1538,00 ZP
M 33	x	90	S	1	1622,00 ZP
M 33	x	100	S	1	1713,00 ZP
M 33	x	110	S	1	1867,00 ZP
M 33	x	120	S	1	1882,00 ZP
M 33	x	130	S	1	2210,00 ZP
M 33	x	140	S	1	2384,00 ZP
M 33	x	150	S	1	2518,00 ZP
M 33	x	160	S	1	2781,00 ZP
M 33	x	170	S	1	2904,00 ZP
M 33	x	180	S	1	3029,00 ZP
M 33	x	190	S	1	3159,00 ZP
M 33	x	200	S	1	3293,00 ZP
M 36	x	50	S	1	1631,00 ZP
M 36	x	55	S	1	1642,00 ZP
M 36	x	60	S	1	1648,00 ZP
M 36	x	70	S	1	1716,00 ZP
M 36	x	75	S	1	1803,00 ZP
M 36	x	80	S	1	1811,00 ZP
M 36	x	85	S	1	1932,00 ZP
M 36	x	90	S	1	1942,00 ZP
M 36	x	100	S	1	2066,00 ZP
M 36	x	110	S	1	2169,00 ZP
M 36	x	120	S	1	2237,00 ZP
M 36	x	130	S	1	2392,00 ZP
M 36	x	140	S	1	2470,00 ZP
M 36	x	150	S	1	2609,00 ZP
M 36	x	160	S	1	2718,00 ZP
M 36	x	170	S	1	2860,00 ZP
M 36	x	180	S	1	3002,00 ZP
M 36	x	190	S	1	3138,00 ZP
M 36	x	200	S	1	3279,00 ZP
M 36	x	220	S	1	4111,00 ZP
M 36	x	280	S	1	4222,00 ZP
M 39	x	80	S	1	3685,00 ZP
M 39	x	90	S	1	3685,00 ZP
M 39	x	100	S	1	4152,00 ZP
M 39	x	110	S	1	4374,00 ZP
M 39	x	120	S	1	4828,00 ZP
M 39	x	130	S	1	4954,00 ZP
M 39	x	140	S	1	5277,00 ZP
M 39	x	150	S	1	5629,00 ZP
M 39	x	160	S	1	6181,00 ZP
M 39	x	180	S	1	7088,00 ZP
M 39	x	200	S	1	7926,00 ZP
M 42	x	50	S	1	3723,00 ZP
M 42	x	60	S	1	3750,00 ZP
M 42	x	70	S	1	3780,00 ZP
M 42	x	75	S	1	3891,00 ZP
M 42	x	80	S	1	3906,00 ZP
M 42	x	90	S	1	4066,00 ZP
M 42	x	100	S	1	4260,00 ZP
M 42	x	110	S	1	4684,00 ZP
M 42	x	120	S	1	4945,00 ZP
M 42	x	130	S	1	5170,00 ZP
M 42	x	140	S	1	5396,00 ZP
M 42	x	150	S	1	5722,00 ZP
M 42	x	160	S	1	5865,00 ZP
M 42	x	170	S	1	6634,00 ZP
M 42	x	180	S	1	6863,00 ZP
M 42	x	190	S	1	7124,00 ZP
M 42	x	200	S	1	7580,00 ZP
M 42	x	220	S	1	8940,00 ZP
M 48	x	60	S	1	8309,00 ZP
M 48	x	70	S	1	8345,00 ZP
M 48	x	80	S	1	8384,00 ZP
M 48	x	90	S	1	8420,00 ZP
M 48	x	100	S	1	8599,00 ZP
M 48	x	110	S	1	8918,00 ZP
M 48	x	120	S	1	9238,00 ZP
M 48	x	130	S	1	9492,00 ZP
M 48	x	140	S	1	9670,00 ZP
M 48	x	150	S	1	9910,00 ZP
M 48	x	200	S	1	16061,00 ZP

DIN	00933.349	RAZ 401
933	**8.8** **zinc plated 8 TLP**	



Hexagon head screws with thread up to head

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 462
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	8	S	500	6,15 ZP TLP
M 3	x	10	S	500	6,25 ZP TLP
M 3	x	12	S	500	6,85 ZP TLP
M 3	x	16	S	500	6,85 ZP TLP
M 3	x	20	S	500	7,15 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	25	S	500	8,10 ZP TLP
M 4	x	6	S	500	6,40 ZP TLP
M 4	x	10	S	500	6,50 ZP TLP
M 4	x	12	S	500	7,10 ZP TLP
M 4	x	16	S	500	7,15 ZP TLP
M 4	x	20	S	500	7,60 ZP TLP
M 4	x	25	S	500	8,50 ZP TLP
M 4	x	30	S	500	9,85 ZP TLP
M 4	x	35	S	500	10,90 ZP TLP
M 4	x	40	S	500	11,90 ZP TLP
M 5	x	8	S	500	4,75 ZP TLP
M 5	x	10	S	500	4,85 ZP TLP
M 5	x	12	S	500	5,00 ZP TLP
M 5	x	16	S	500	5,15 ZP TLP
M 5	x	20	S	500	5,50 ZP TLP
M 5	x	25	S	500	6,25 ZP TLP
M 5	x	30	S	500	7,15 ZP TLP
M 5	x	35	S	200	8,15 ZP TLP
M 5	x	40	S	200	10,70 ZP TLP
M 5	x	50	S	200	13,90 ZP TLP
M 6	x	8	S	500	7,10 ZP TLP
M 6	x	10	S	500	6,65 ZP TLP
M 6	x	12	S	500	6,75 ZP TLP
M 6	x	16	S	500	6,25 ZP TLP
M 6	x	18	S	500	6,50 ZP TLP
M 6	x	20	S	500	6,60 ZP TLP
M 6	x	25	S	500	7,25 ZP TLP
M 6	x	30	S	100	7,90 ZP TLP
M 6	x	35	S	200	8,70 ZP TLP
M 6	x	40	S	200	9,65 ZP TLP
M 6	x	45	S	200	13,25 ZP TLP
M 6	x	50	S	200	13,65 ZP TLP
M 6	x	55	S	200	22,90 ZP TLP
M 6	x	60	S	200	25,70 ZP TLP
M 6	x	65	S	200	32,30 ZP TLP
M 6	x	70	S	200	39,50 ZP TLP
M 6	x	75	S	200	46,20 ZP TLP
M 6	x	80	S	200	46,50 ZP TLP
M 8	x	10	S	200	12,90 ZP TLP
M 8	x	12	S	200	11,90 ZP TLP
M 8	x	16	S	200	9,95 ZP TLP
M 8	x	18	S	200	10,50 ZP TLP
M 8	x	20	S	200	10,65 ZP TLP
M 8	x	22	S	200	12,00 ZP TLP
M 8	x	25	S	200	12,20 ZP TLP
M 8	x	30	S	200	13,25 ZP TLP
M 8	x	35	S	200	14,75 ZP TLP
M 8	x	40	S	200	16,15 ZP TLP
M 8	x	45	S	200	19,15 ZP TLP
M 8	x	50	S	200	21,90 ZP TLP
M 8	x	55	S	200	30,90 ZP TLP
M 8	x	60	S	200	32,90 ZP TLP
M 8	x	65	S	200	42,80 ZP TLP
M 8	x	70	S	200	51,90 ZP TLP
M 8	x	75	S	200	61,20 ZP TLP
M 8	x	80	S	200	61,70 ZP TLP
M 8	x	90	S	100	72,00 ZP TLP
M 8	x	100	S	100	82,70 ZP TLP
M 8	x	110	S	100	104,00 ZP TLP
M 10	x	12	S	200	26,30 ZP TLP
M 10	x	16	S	200	18,65 ZP TLP
M 10	x	20	S	200	18,20 ZP TLP
M 10	x	25	S	200	19,70 ZP TLP
M 10	x	30	S	200	21,30 ZP TLP
M 10	x	35	S	100	23,50 ZP TLP
M 10	x	40	S	100	25,20 ZP TLP
M 10	x	45	S	100	29,40 ZP TLP
M 10	x	50	S	100	30,90 ZP TLP
M 10	x	55	S	100	40,00 ZP TLP
M 10	x	60	S	100	43,10 ZP TLP
M 10	x	65	S	100	64,90 ZP TLP
M 10	x	70	S	100	65,60 ZP TLP
M 10	x	80	S	100	88,60 ZP TLP
M 10	x	90	S	100	104,00 ZP TLP
M 10	x	100	S	100	122,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	110	S	50	162,00 ZP TLP
M 10	x	120	S	50	167,00 ZP TLP
M 10	x	130	S	50	217,00 ZP TLP
M 12	x	16	S	100	32,50 ZP TLP
M 12	x	20	S	100	30,50 ZP TLP
M 12	x	25	S	100	31,20 ZP TLP
M 12	x	30	S	100	30,90 ZP TLP
M 12	x	35	S	100	33,70 ZP TLP
M 12	x	40	S	100	36,70 ZP TLP
M 12	x	45	S	100	40,20 ZP TLP
M 12	x	50	S	100	43,00 ZP TLP
M 12	x	55	S	100	51,80 ZP TLP
M 12	x	60	S	100	55,00 ZP TLP
M 12	x	65	S	50	81,90 ZP TLP
M 12	x	70	S	50	83,40 ZP TLP
M 12	x	75	S	50	93,10 ZP TLP
M 12	x	80	S	50	112,00 ZP TLP
M 12	x	90	S	50	133,00 ZP TLP
M 12	x	100	S	50	149,00 ZP TLP
M 12	x	120	S	50	220,00 ZP TLP
M 14	x	30	S	100	91,60 ZP TLP
M 14	x	35	S	100	102,00 ZP TLP
M 14	x	40	S	100	103,00 ZP TLP
M 14	x	45	S	100	113,00 ZP TLP
M 14	x	50	S	100	119,00 ZP TLP
M 16	x	20	S	50	64,00 ZP TLP
M 16	x	25	S	50	65,60 ZP TLP
M 16	x	30	S	50	64,40 ZP TLP
M 16	x	35	S	50	68,70 ZP TLP
M 16	x	40	S	50	72,10 ZP TLP
M 16	x	45	S	50	77,40 ZP TLP
M 16	x	50	S	50	82,70 ZP TLP
M 16	x	55	S	50	96,90 ZP TLP
M 16	x	60	S	50	103,00 ZP TLP
M 16	x	65	S	25	145,00 ZP TLP
M 16	x	70	S	25	148,00 ZP TLP
M 16	x	75	S	25	169,00 ZP TLP
M 16	x	80	S	25	202,00 ZP TLP
M 16	x	85	S	25	252,00 ZP TLP
M 16	x	90	S	25	253,00 ZP TLP
M 16	x	100	S	25	288,00 ZP TLP
M 16	x	120	S	25	393,00 ZP TLP
M 16	x	130	S	25	410,00 ZP TLP
M 16	x	150	S	25	484,00 ZP TLP
M 20	x	30	S	25	142,00 ZP TLP
M 20	x	35	S	25	145,00 ZP TLP
M 20	x	40	S	25	139,00 ZP TLP
M 20	x	45	S	25	143,00 ZP TLP
M 20	x	50	S	25	148,00 ZP TLP
M 20	x	60	S	25	159,00 ZP TLP
M 20	x	65	S	25	179,00 ZP TLP
M 20	x	70	S	25	187,00 ZP TLP
M 20	x	75	S	25	224,00 ZP TLP
M 20	x	80	S	25	222,00 ZP TLP
M 20	x	90	S	25	329,00 ZP TLP
M 20	x	100	S	25	440,00 ZP TLP
M 20	x	110	S	25	484,00 ZP TLP
M 20	x	120	S	25	532,00 ZP TLP
M 24	x	50	S	25	240,00 ZP TLP
M 24	x	55	S	25	253,00 ZP TLP
M 24	x	60	S	25	264,00 ZP TLP
M 24	x	65	S	25	294,00 ZP TLP
M 24	x	70	S	25	299,00 ZP TLP
M 24	x	75	S	25	383,00 ZP TLP
M 24	x	80	S	25	365,00 ZP TLP
M 24	x	90	S	10	548,00 ZP TLP
M 24	x	100	S	10	704,00 ZP TLP
M 24	x	110	S	10	810,00 ZP TLP
M 30	x	100	S	1	1627,00 ZP TLP
M 30	x	120	S	1	1825,00 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00933.860		RAZ 401
933	**8.8 zinc plated yellow***		

Hexagon head screws with thread up to head

*< M 6 min. coating thickness 5µm = (860)
* from M 6 min. coating thickness 8µm = (314)

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 462
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	8	S	500	4,90 YZP
M 3	x	10	S	500	5,00 YZP
M 3	x	12	S	500	5,45 YZP
M 3	x	16	S	500	5,45 YZP
M 3	x	20	S	500	5,70 YZP
M 3	x	25	S	500	6,45 YZP
M 4	x	6	S	500	5,10 YZP
M 4	x	8	S	500	5,15 YZP
M 4	x	10	S	500	5,20 YZP
M 4	x	12	S	500	5,65 YZP
M 4	x	16	S	500	5,70 YZP
M 4	x	20	S	500	6,05 YZP
M 4	x	25	S	500	6,80 YZP
M 4	x	30	S	500	7,85 YZP
M 4	x	35	S	500	8,70 YZP
M 4	x	40	S	500	9,50 YZP
M 5	x	8	S	500	3,80 YZP
M 5	x	10	S	500	3,85 YZP
M 5	x	12	S	500	4,00 YZP
M 5	x	16	S	500	4,10 YZP
M 5	x	20	S	500	4,40 YZP
M 5	x	25	S	500	5,00 YZP
M 5	x	30	S	500	5,70 YZP
M 5	x	35	S	200	6,50 YZP
M 5	x	40	S	200	8,55 YZP
M 5	x	50	S	200	11,10 YZP
M 6	x	8	S	500	5,65 YZP8
M 6	x	10	S	500	5,30 YZP8
M 6	x	12	S	500	5,40 YZP8
M 6	x	16	S	500	5,00 YZP8
M 6	x	18	S	500	5,20 YZP8
M 6	x	20	S	500	5,25 YZP8
M 6	x	25	S	500	5,80 YZP8
M 6	x	30	S	500	6,30 YZP8
M 6	x	35	S	200	6,95 YZP8
M 6	x	40	S	200	7,70 YZP8
M 6	x	45	S	200	10,60 YZP8
M 6	x	50	S	200	10,90 YZP8
M 6	x	55	S	200	18,30 YZP8
M 6	x	60	S	200	20,50 YZP8
M 6	x	65	S	200	25,80 YZP8
M 6	x	70	S	200	31,55 YZP8
M 6	x	75	S	200	36,95 YZP8
M 6	x	80	S	200	37,20 YZP8
M 8	x	10	S	200	10,30 YZP8
M 8	x	12	S	200	9,50 YZP8
M 8	x	16	S	200	7,95 YZP8
M 8	x	18	S	200	8,40 YZP8
M 8	x	20	S	200	8,50 YZP8
M 8	x	22	S	200	9,60 YZP8
M 8	x	25	S	200	9,75 YZP8
M 8	x	30	S	200	10,60 YZP8

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	35	S	200	11,80 YZP8
M 8	x	40	S	200	12,90 YZP8
M 8	x	45	S	200	15,30 YZP8
M 8	x	50	S	200	17,45 YZP8
M 8	x	55	S	200	24,65 YZP8
M 8	x	60	S	200	26,30 YZP8
M 8	x	65	S	200	34,20 YZP8
M 8	x	70	S	200	41,50 YZP8
M 8	x	75	S	200	48,95 YZP8
M 8	x	80	S	200	49,35 YZP8
M 8	x	90	S	100	57,55 YZP8
M 8	x	100	S	100	66,10 YZP8
M 8	x	110	S	100	82,90 YZP8
M 10	x	12	S	200	21,00 YZP8
M 10	x	16	S	200	14,90 YZP8
M 10	x	20	S	200	14,55 YZP8
M 10	x	25	S	200	15,75 YZP8
M 10	x	30	S	200	17,00 YZP8
M 10	x	35	S	100	18,75 YZP8
M 10	x	40	S	100	20,15 YZP8
M 10	x	45	S	100	23,45 YZP8
M 10	x	50	S	100	24,70 YZP8
M 10	x	55	S	100	31,95 YZP8
M 10	x	60	S	100	34,45 YZP8
M 10	x	65	S	100	51,85 YZP8
M 10	x	70	S	100	52,45 YZP8
M 10	x	80	S	100	70,85 YZP8
M 10	x	90	S	100	82,90 YZP8
M 10	x	100	S	100	97,30 YZP8
M 10	x	110	S	50	129,00 YZP8
M 10	x	120	S	50	133,00 YZP8
M 10	x	130	S	50	173,00 YZP8
M 12	x	16	S	100	26,00 YZP8
M 12	x	20	S	100	24,35 YZP8
M 12	x	25	S	100	24,95 YZP8
M 12	x	30	S	100	24,65 YZP8
M 12	x	35	S	100	26,85 YZP8
M 12	x	40	S	100	29,30 YZP8
M 12	x	45	S	100	32,15 YZP8
M 12	x	50	S	100	34,35 YZP8
M 12	x	55	S	100	41,40 YZP8
M 12	x	60	S	100	44,00 YZP8
M 12	x	65	S	50	65,45 YZP8
M 12	x	70	S	50	66,65 YZP8
M 12	x	75	S	50	74,45 YZP8
M 12	x	80	S	50	89,50 YZP8
M 12	x	90	S	50	106,00 YZP8
M 12	x	100	S	50	119,00 YZP8
M 12	x	110	S	50	172,00 YZP8
M 12	x	120	S	50	176,00 YZP8
M 14	x	30	S	100	73,25 YZP8
M 14	x	35	S	100	81,10 YZP8
M 14	x	40	S	100	82,25 YZP8
M 14	x	45	S	100	90,10 YZP8
M 14	x	50	S	100	94,85 YZP8
M 16	x	20	S	50	51,20 YZP8
M 16	x	25	S	50	52,45 YZP8
M 16	x	30	S	50	51,50 YZP8
M 16	x	35	S	50	54,95 YZP8
M 16	x	40	S	50	57,65 YZP8
M 16	x	45	S	50	61,85 YZP8
M 16	x	50	S	50	66,10 YZP8
M 16	x	55	S	50	77,50 YZP8
M 16	x	60	S	50	81,70 YZP8
M 16	x	65	S	25	116,00 YZP8
M 16	x	70	S	25	118,00 YZP8
M 16	x	75	S	25	135,00 YZP8
M 16	x	80	S	25	161,00 YZP8
M 16	x	85	S	25	201,00 YZP8
M 16	x	90	S	25	202,00 YZP8
M 16	x	100	S	25	230,00 YZP8
M 16	x	110	S	25	292,00 YZP8
M 16	x	120	S	25	314,00 YZP8
M 16	x	130	S	25	328,00 YZP8
M 16	x	140	S	25	347,00 YZP8

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	150	S	25	387,00 YZP8
M 20	x	30	S	25	113,00 YZP8
M 20	x	35	S	25	116,00 YZP8
M 20	x	40	S	25	111,00 YZP8
M 20	x	45	S	25	114,00 YZP8
M 20	x	50	S	25	118,00 YZP8
M 20	x	55	S	25	124,00 YZP8
M 20	x	60	S	25	127,00 YZP8
M 20	x	65	S	25	143,00 YZP8
M 20	x	70	S	25	149,00 YZP8
M 20	x	75	S	25	179,00 YZP8
M 20	x	80	S	25	177,00 YZP8
M 20	x	90	S	25	263,00 YZP8
M 20	x	100	S	25	352,00 YZP8
M 20	x	110	S	25	387,00 YZP8
M 20	x	120	S	25	425,00 YZP8
M 24	x	50	S	25	192,00 YZP8
M 24	x	55	S	25	202,00 YZP8
M 24	x	60	S	25	211,00 YZP8
M 24	x	65	S	25	235,00 YZP8
M 24	x	70	S	25	239,00 YZP8
M 24	x	75	S	25	306,00 YZP8
M 24	x	80	S	25	292,00 YZP8
M 24	x	90	S	10	438,00 YZP8
M 24	x	100	S	10	563,00 YZP8
M 24	x	110	S	10	648,00 YZP8
M 30	x	100	S	1	1301,00 YZP8
M 30	x	120	S	1	1459,00 YZP8

DIN	00933.353	RAZ 1530
933	**8.8** **zinc flake coated**	

Hexagon head screws with thread up to head

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution!
Different tightening torque to zinc plated.

Dimensions ➔ TI-15

Stainless ➔ S. 462
Brass, plastic ➔ S. 577

DIN 933 ➔ replaced by ISO 4017

M 6	x	10	S	500	6,90 flZn
M 6	x	12	S	500	7,05 flZn
M 6	x	14	S	500	6,35 flZn
M 6	x	16	S	500	6,50 flZn
M 6	x	18	S	500	6,80 flZn
M 6	x	20	S	500	6,85 flZn
M 6	x	25	S	500	7,55 flZn
M 6	x	30	S	500	8,20 flZn
M 6	x	35	S	200	9,05 flZn
M 6	x	40	S	200	10,05 flZn
M 6	x	45	S	200	13,80 flZn
M 6	x	50	S	200	14,20 flZn
M 6	x	55	S	200	23,80 flZn
M 6	x	60	S	200	26,65 flZn
M 8	x	12	S	200	12,35 flZn
M 8	x	16	S	200	10,35 flZn
M 8	x	20	S	200	11,05 flZn
M 8	x	25	S	200	12,70 flZn
M 8	x	30	S	200	13,80 flZn
M 8	x	35	S	200	15,35 flZn
M 8	x	40	S	200	16,80 flZn
M 8	x	45	S	200	19,90 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	50	S	200	22,70 flZn
M 8	x	55	S	200	32,05 flZn
M 8	x	60	S	200	34,20 flZn
M 8	x	65	S	200	44,50 flZn
M 8	x	70	S	200	53,95 flZn
M 16	x	25	S	50	68,20 flZn
M 16	x	30	S	50	66,95 flZn
M 16	x	35	S	50	71,45 flZn
M 16	x	40	S	50	74,95 flZn
M 16	x	45	S	50	80,45 flZn
M 16	x	50	S	50	85,95 flZn
M 16	x	55	S	50	101,00 flZn
M 16	x	60	S	50	107,00 flZn
M 16	x	65	S	25	151,00 flZn
M 16	x	70	S	25	154,00 flZn
M 16	x	75	S	25	176,00 flZn
M 16	x	80	S	25	210,00 flZn
M 16	x	90	S	25	263,00 flZn
M 16	x	100	S	25	299,00 flZn
M 16	x	110	S	25	380,00 flZn
M 16	x	120	S	25	409,00 flZn
M 20	x	30	S	25	147,00 flZn
M 20	x	35	S	25	151,00 flZn
M 20	x	40	S	25	145,00 flZn
M 20	x	45	S	25	149,00 flZn
M 20	x	50	S	25	154,00 flZn
M 20	x	55	S	25	162,00 flZn
M 20	x	60	S	25	166,00 flZn
M 20	x	65	S	25	186,00 flZn
M 20	x	70	S	25	194,00 flZn
M 20	x	75	S	25	233,00 flZn
M 20	x	80	S	25	231,00 flZn
M 20	x	90	S	25	342,00 flZn
M 20	x	100	S	25	458,00 flZn
M 20	x	110	S	25	504,00 flZn
M 20	x	120	S	25	553,00 flZn
M 24	x	40	S	25	257,00 flZn
M 24	x	45	S	25	260,00 flZn
M 24	x	50	S	25	250,00 flZn
M 24	x	55	S	25	263,00 flZn
M 24	x	60	S	25	275,00 flZn
M 24	x	65	S	25	306,00 flZn
M 24	x	70	S	25	311,00 flZn
M 24	x	75	S	25	398,00 flZn
M 24	x	80	S	25	380,00 flZn
M 24	x	90	S	10	570,00 flZn
M 24	x	100	S	10	732,00 flZn
M 24	x	110	S	10	843,00 flZn
M 24	x	120	S	10	877,00 flZn

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DIN	00933.820	RAZ 403
933	**8.8** **hot dip galvanized**	

Hexagon head screws with thread up to head

Thread undersize (6az + HDG = U)

Caution!
Note information about hot dip galvanizing.

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-219
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 462
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	12	S	500	50,10 HDG
M 6	x	16	S	500	49,45 HDG
M 6	x	20	S	500	51,30 HDG
M 6	x	25	S	500	54,40 HDG
M 6	x	30	S	500	61,20 HDG
M 6	x	35	S	200	64,90 HDG
M 6	x	40	S	200	80,95 HDG
M 8	x	10	S	200	75,45 HDG
M 8	x	12	S	200	23,50 HDG
M 8	x	16	S	200	21,05 HDG
M 8	x	18	S	200	62,45 HDG
M 8	x	20	S	200	22,60 HDG
M 8	x	25	S	200	26,00 HDG
M 8	x	30	S	200	28,45 HDG
M 8	x	35	S	200	31,55 HDG
M 8	x	40	S	200	34,60 HDG
M 8	x	45	S	200	40,20 HDG
M 8	x	50	S	200	45,15 HDG
M 8	x	60	S	200	61,80 HDG
M 8	x	70	S	200	93,95 HDG
M 8	x	80	S	200	111,00 HDG
M 8	x	90	S	100	353,00 HDG
M 8	x	100	S	100	370,00 HDG
M 10	x	12	S	200	50,70 HDG
M 10	x	16	S	200	38,95 HDG
M 10	x	18	S	200	117,00 HDG
M 10	x	20	S	200	38,95 HDG
M 10	x	25	S	200	42,65 HDG
M 10	x	30	S	200	46,35 HDG
M 10	x	35	S	100	50,70 HDG
M 10	x	40	S	100	54,40 HDG
M 10	x	45	S	100	62,45 HDG
M 10	x	50	S	100	66,15 HDG
M 10	x	55	S	100	82,20 HDG
M 10	x	60	S	100	88,35 HDG
M 10	x	70	S	100	122,00 HDG
M 10	x	80	S	100	161,00 HDG
M 10	x	90	S	100	193,00 HDG
M 10	x	100	S	100	221,00 HDG
M 10	x	110	S	50	290,00 HDG
M 10	x	120	S	50	330,00 HDG
M 12	x	16	S	100	65,50 HDG
M 12	x	20	S	100	63,05 HDG
M 12	x	25	S	100	65,50 HDG
M 12	x	30	S	100	66,75 HDG
M 12	x	35	S	100	72,90 HDG
M 12	x	40	S	100	79,15 HDG
M 12	x	45	S	100	86,55 HDG
M 12	x	50	S	100	92,70 HDG
M 12	x	55	S	100	109,00 HDG
M 12	x	60	S	100	116,00 HDG
M 12	x	65	S	50	146,00 HDG
M 12	x	70	S	50	159,00 HDG
M 12	x	80	S	50	208,00 HDG
M 12	x	90	S	50	242,00 HDG
M 12	x	100	S	50	270,00 HDG
M 12	x	120	S	50	390,00 HDG
M 16	x	20	S	50	133,00 HDG
M 16	x	25	S	50	138,00 HDG
M 16	x	30	S	50	138,00 HDG
M 16	x	35	S	50	149,00 HDG
M 16	x	40	S	50	159,00 HDG
M 16	x	45	S	50	168,00 HDG
M 16	x	50	S	50	181,00 HDG
M 16	x	55	S	50	208,00 HDG
M 16	x	60	S	50	217,00 HDG
M 16	x	65	S	25	273,00 HDG
M 16	x	70	S	25	279,00 HDG
M 16	x	80	S	25	378,00 HDG
M 16	x	90	S	25	464,00 HDG
M 16	x	100	S	25	520,00 HDG
M 16	x	110	S	25	656,00 HDG
M 16	x	120	S	25	705,00 HDG
M 16	x	130	S	25	781,00 HDG
M 16	x	140	S	25	793,00 HDG
M 16	x	150	S	25	833,00 HDG
M 16	x	160	S	25	890,00 HDG
M 16	x	170	S	25	937,00 HDG
M 16	x	180	S	25	983,00 HDG
M 16	x	200	S	25	1076,00 HDG
M 16	x	220	S	1	1134,00 HDG
M 16	x	240	S	1	1270,00 HDG
M 16	x	260	S	1	1353,00 HDG
M 16	x	280	S	1	1456,00 HDG
M 16	x	300	S	1	1801,00 HDG
M 20	x	30	S	25	289,00 HDG
M 20	x	35	S	25	298,00 HDG
M 20	x	40	S	25	295,00 HDG
M 20	x	45	S	25	304,00 HDG
M 20	x	50	S	25	316,00 HDG
M 20	x	55	S	25	335,00 HDG
M 20	x	60	S	25	347,00 HDG
M 20	x	65	S	25	385,00 HDG
M 20	x	70	S	25	396,00 HDG
M 20	x	75	S	25	439,00 HDG
M 20	x	80	S	25	464,00 HDG
M 20	x	90	S	25	618,00 HDG
M 20	x	100	S	25	804,00 HDG
M 20	x	110	S	25	830,00 HDG
M 20	x	120	S	25	971,00 HDG
M 20	x	130	S	1	1138,00 HDG
M 20	x	140	S	1	1471,00 HDG
M 20	x	150	S	1	1550,00 HDG
M 20	x	160	S	1	1600,00 HDG
M 20	x	180	S	1	1801,00 HDG
M 24	x	40	S	25	508,00 HDG
M 24	x	45	S	25	520,00 HDG
M 24	x	50	S	25	508,00 HDG
M 24	x	55	S	25	539,00 HDG
M 24	x	60	S	25	564,00 HDG
M 24	x	65	S	25	618,00 HDG
M 24	x	70	S	25	631,00 HDG
M 24	x	80	S	25	755,00 HDG
M 24	x	90	S	10	1014,00 HDG
M 24	x	100	S	10	1286,00 HDG
M 24	x	110	S	10	2380,00 HDG
M 24	x	120	S	10	2905,00 HDG
M 24	x	130	S	10	3462,00 HDG
M 24	x	140	S	10	3708,00 HDG
M 24	x	150	S	1	4083,00 HDG
M 24	x	180	S	1	5208,00 HDG
M 30	x	60	S	1	2287,00 HDG
M 30	x	70	S	1	2472,00 HDG
M 30	x	80	S	1	2658,00 HDG
M 30	x	90	S	1	2839,00 HDG
M 30	x	100	S	1	3020,00 HDG
M 30	x	120	S	1	3150,00 HDG
M 30	x	130	S	1	3260,00 HDG
M 30	x	140	S	1	3310,00 HDG
M 30	x	150	S	1	3360,00 HDG
M 30	x	160	S	1	3630,00 HDG
M 30	x	170	S	1	3725,00 HDG
M 30	x	180	S	1	3785,00 HDG
M 30	x	190	S	1	3845,00 HDG
M 30	x	200	S	1	3920,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

DIN	00933.814	RAZ 404
933	**8.8** **zinc plated**	**Sz**

Hexagon head screws with thread up to head, Sz = slotted head as per DIN 962

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 464

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	6	S	500	38,20 ZP
M 4	x	8	S	500	16,80 ZP
M 4	x	10	S	500	17,00 ZP
M 4	x	12	S	500	17,10 ZP
M 4	x	16	S	500	17,25 ZP
M 4	x	20	S	500	17,45 ZP
M 5	x	8	S	500	19,30 ZP
M 5	x	10	S	500	19,65 ZP
M 5	x	12	S	500	19,95 ZP
M 5	x	16	S	500	21,10 ZP
M 5	x	20	S	500	22,00 ZP
M 5	x	25	S	500	23,30 ZP
M 6	x	10	S	500	27,40 ZP
M 6	x	12	S	500	28,05 ZP
M 6	x	16	S	500	29,65 ZP
M 6	x	20	S	500	30,80 ZP
M 6	x	22	S	500	31,35 ZP
M 6	x	25	S	500	32,50 ZP
M 6	x	30	S	500	34,20 ZP
M 8	x	12	S	200	43,35 ZP
M 8	x	16	S	200	43,90 ZP
M 8	x	20	S	200	45,60 ZP
M 8	x	25	S	200	48,45 ZP
M 8	x	30	S	200	51,30 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00933.100	RAZ 405

933

10.9

Hexagon head screws with thread up to head

Dimensions ➔ TI-15 Tightening torque ➔ TI-230
Mech. properties ➔ TI-220 Standard conversion ➔ TI-6

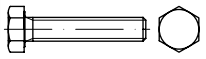
Stainless ➔ S. 462
Brass, plastic ➔ S. 577

DIN 933 ➔ replaced by ISO 4017

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	10	S	500	18,55
M 6	x	12	S	500	11,35
M 6	x	12	K	100	14,40
M 6	x	16	S	500	9,70
M 6	x	16	K	100	12,75
M 6	x	18	S	500	10,35
M 6	x	20	S	500	10,35
M 6	x	20	K	100	13,35
M 6	x	22	S	500	10,75
M 6	x	25	S	500	10,75
M 6	x	25	K	100	13,75
M 6	x	30	S	500	13,00
M 6	x	30	K	100	16,55
M 6	x	35	S	200	14,85
M 6	x	40	S	200	16,25
M 6	x	45	S	200	63,05
M 6	x	50	S	200	75,65
M 6	x	55	S	200	88,30
M 6	x	60	S	200	101,00
M 6	x	70	S	200	195,00
M 6	x	80	S	200	210,00
M 8	x	12	S	200	18,95
M 8	x	16	S	200	13,55
M 8	x	18	S	200	14,10
M 8	x	20	S	200	14,60
M 8	x	22	S	200	16,15
M 8	x	25	S	200	17,05
M 8	x	30	S	200	17,05
M 8	x	35	S	200	20,15
M 8	x	40	S	200	21,70
M 8	x	45	S	200	32,15
M 8	x	50	S	200	34,85
M 8	x	55	S	200	45,40
M 8	x	60	S	200	45,40
M 8	x	65	S	200	114,00
M 8	x	70	S	200	114,00
M 8	x	75	S	200	140,00
M 8	x	80	S	200	140,00
M 8	x	90	S	100	183,00
M 8	x	100	S	100	266,00
M 8	x	110	S	100	365,00
M 8	x	120	S	100	412,00
M 8	x	130	S	100	563,00
M 8	x	140	S	100	614,00
M 8	x	150	S	100	642,00
M 8	x	180	S	100	769,00
M 10	x	12	S	200	38,70
M 10	x	16	S	200	27,60
M 10	x	18	S	200	27,60
M 10	x	20	S	200	24,15
M 10	x	22	S	200	25,65
M 10	x	25	S	200	25,65
M 10	x	30	S	200	27,10
M 10	x	35	S	100	29,15
M 10	x	40	S	100	30,70
M 10	x	45	S	100	36,75
M 10	x	50	S	100	41,25
M 10	x	55	S	100	67,85
M 10	x	60	S	100	67,85
M 10	x	65	S	100	145,00
M 10	x	70	S	100	160,00
M 10	x	75	S	100	184,00
M 10	x	80	S	100	184,00
M 10	x	90	S	100	275,00
M 10	x	100	S	100	340,00
M 10	x	110	S	50	394,00
M 10	x	120	S	50	545,00
M 10	x	130	S	50	617,00
M 10	x	140	S	50	667,00
M 10	x	150	S	50	707,00
M 10	x	200	S	50	974,00
M 12	x	16	S	100	157,00
M 12	x	20	S	100	45,00
M 12	x	25	S	100	41,50
M 12	x	30	S	100	43,85
M 12	x	35	S	100	46,15
M 12	x	40	S	100	48,45
M 12	x	45	S	100	54,65
M 12	x	50	S	100	57,10
M 12	x	55	S	100	79,90
M 12	x	60	S	100	85,85
M 12	x	65	S	50	140,00
M 12	x	70	S	50	177,00
M 12	x	75	S	50	242,00
M 12	x	80	S	50	242,00
M 12	x	90	S	50	319,00
M 12	x	100	S	50	379,00
M 12	x	110	S	50	430,00
M 12	x	120	S	50	480,00
M 12	x	130	S	50	628,00
M 12	x	140	S	50	679,00
M 12	x	150	S	50	714,00
M 12	x	160	S	25	751,00
M 12	x	170	S	25	769,00
M 12	x	180	S	25	837,00
M 12	x	200	S	25	981,00
M 14	x	25	S	100	82,90
M 14	x	30	S	100	79,30
M 14	x	35	S	100	81,70
M 14	x	40	S	100	85,85
M 14	x	45	S	50	88,90
M 14	x	50	S	50	93,10
M 14	x	55	S	50	114,00
M 14	x	60	S	50	114,00
M 14	x	65	S	50	202,00
M 14	x	70	S	50	202,00
M 14	x	75	S	50	229,00
M 14	x	80	S	50	279,00
M 14	x	90	S	50	404,00
M 14	x	100	S	50	480,00
M 14	x	110	S	50	721,00
M 14	x	120	S	50	757,00
M 14	x	160	S	25	1103,00
M 14	x	200	S	25	1435,00
M 16	x	20	S	50	145,00
M 16	x	25	S	50	90,70
M 16	x	30	S	50	90,70
M 16	x	35	S	50	90,70
M 16	x	40	S	50	98,50
M 16	x	45	S	50	101,00
M 16	x	50	S	50	112,00
M 16	x	55	S	50	121,00
M 16	x	60	S	50	121,00
M 16	x	65	S	25	255,00
M 16	x	70	S	25	255,00
M 16	x	75	S	25	323,00
M 16	x	80	S	25	266,00
M 16	x	90	S	25	380,00
M 16	x	100	S	25	485,00
M 16	x	110	S	25	543,00
M 16	x	120	S	25	593,00
M 16	x	130	S	25	667,00
M 16	x	140	S	25	714,00
M 16	x	150	S	25	747,00
M 16	x	160	S	25	789,00
M 16	x	170	S	25	829,00
M 16	x	180	S	25	873,00
M 16	x	190	S	25	952,00
M 16	x	200	S	25	1028,00
M 16	x	220	S	1	1146,00
M 16	x	240	S	1	1428,00
M 16	x	260	S	1	1558,00
M 16	x	280	S	1	1687,00
M 16	x	300	S	1	1817,00
M 18	x	30	S	50	247,00
M 18	x	35	S	50	247,00
M 18	x	40	S	50	222,00
M 18	x	45	S	50	236,00
M 18	x	50	S	50	242,00
M 18	x	55	S	25	250,00
M 18	x	60	S	25	264,00
M 18	x	65	S	25	596,00
M 18	x	70	S	25	686,00
M 18	x	75	S	25	686,00
M 18	x	80	S	25	848,00
M 18	x	90	S	25	866,00
M 18	x	100	S	25	879,00
M 18	x	120	S	25	996,00
M 18	x	130	S	25	1081,00
M 18	x	160	S	25	1326,00
M 18	x	200	S	25	1633,00
M 20	x	30	S	25	361,00
M 20	x	35	S	25	247,00
M 20	x	40	S	25	222,00
M 20	x	45	S	25	236,00
M 20	x	50	S	25	242,00
M 20	x	55	S	25	250,00
M 20	x	60	S	25	264,00
M 20	x	65	S	25	501,00
M 20	x	70	S	25	512,00
M 20	x	75	S	25	524,00
M 20	x	80	S	25	526,00
M 20	x	90	S	25	528,00
M 20	x	100	S	25	555,00
M 20	x	110	S	25	866,00
M 20	x	120	S	25	873,00
M 20	x	130	S	25	1003,00
M 20	x	140	S	25	1068,00
M 20	x	150	S	25	1146,00
M 20	x	160	S	25	1226,00
M 20	x	170	S	25	1305,00
M 20	x	180	S	25	1384,00
M 20	x	190	S	25	1441,00
M 20	x	200	S	1	1506,00
M 20	x	210	S	1	1758,00
M 20	x	220	S	1	1758,00
M 20	x	240	S	1	1972,00
M 20	x	260	S	1	2184,00
M 20	x	280	S	1	2454,00
M 20	x	300	S	1	2667,00
M 22	x	50	S	25	866,00
M 22	x	55	S	25	1009,00
M 22	x	60	S	25	866,00
M 22	x	65	S	25	1009,00
M 22	x	70	S	25	1064,00
M 22	x	75	S	25	1118,00
M 22	x	80	S	25	1154,00
M 22	x	90	S	25	1261,00
M 22	x	100	S	10	1298,00
M 22	x	110	S	10	1463,00
M 22	x	120	S	10	1571,00
M 22	x	130	S	10	1730,00
M 22	x	140	S	10	1845,00
M 22	x	150	S	10	1946,00
M 22	x	200	S	10	2645,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	30	S	25	516,00
M 24	x	35	S	25	516,00
M 24	x	40	S	25	390,00
M 24	x	45	S	25	390,00
M 24	x	50	S	25	639,00
M 24	x	55	S	25	639,00
M 24	x	60	S	25	639,00
M 24	x	65	S	25	648,00
M 24	x	70	S	25	664,00
M 24	x	75	S	25	675,00
M 24	x	80	S	25	685,00
M 24	x	90	S	10	690,00
M 24	x	100	S	10	721,00
M 24	x	110	S	10	805,00
M 24	x	120	S	10	862,00
M 24	x	130	S	1	1154,00
M 24	x	140	S	1	1228,00
M 24	x	150	S	1	1298,00
M 24	x	160	S	1	1436,00
M 24	x	170	S	1	1544,00
M 24	x	180	S	1	1619,00
M 24	x	190	S	1	1685,00
M 24	x	200	S	1	1766,00
M 24	x	210	S	1	1970,00
M 24	x	220	S	1	1970,00
M 24	x	240	S	1	2307,00
M 24	x	260	S	1	2643,00
M 24	x	280	S	1	3027,00
M 24	x	300	S	1	3267,00
M 27	x	50	S	10	862,00
M 27	x	55	S	10	862,00
M 27	x	60	S	10	862,00
M 27	x	65	S	10	874,00
M 27	x	70	S	10	895,00
M 27	x	75	S	10	913,00
M 27	x	80	S	10	924,00
M 27	x	90	S	10	941,00
M 27	x	100	S	10	983,00
M 27	x	110	S	10	1088,00
M 27	x	120	S	10	1142,00
M 27	x	130	S	1	1205,00
M 27	x	140	S	1	1325,00
M 27	x	150	S	1	1395,00
M 27	x	160	S	1	1553,00
M 27	x	180	S	1	1712,00
M 27	x	200	S	1	1853,00
M 30	x	40	S	1	941,00
M 30	x	50	S	1	941,00
M 30	x	55	S	1	941,00
M 30	x	60	S	1	989,00
M 30	x	65	S	1	1014,00
M 30	x	70	S	1	1031,00
M 30	x	75	S	1	1048,00
M 30	x	80	S	1	1065,00
M 30	x	90	S	1	1107,00
M 30	x	100	S	1	1167,00
M 30	x	110	S	1	1310,00
M 30	x	120	S	1	1395,00
M 30	x	130	S	1	1469,00
M 30	x	140	S	1	1595,00
M 30	x	150	S	1	1680,00
M 30	x	160	S	1	1880,00
M 30	x	170	S	1	2760,00
M 30	x	180	S	1	2616,00
M 30	x	190	S	1	2998,00
M 30	x	200	S	1	2836,00
M 33	x	100	S	1	3214,00
M 33	x	160	S	1	3919,00
M 33	x	200	S	1	4672,00
M 36	x	40	S	1	1680,00
M 36	x	50	S	1	1680,00
M 36	x	55	S	1	1680,00
M 36	x	60	S	1	1680,00
M 36	x	65	S	1	1680,00
M 36	x	70	S	1	1712,00
M 36	x	75	S	1	1754,00
M 36	x	80	S	1	1788,00
M 36	x	90	S	1	1853,00
M 36	x	100	S	1	1937,00
M 36	x	110	S	1	2108,00
M 36	x	120	S	1	2239,00
M 36	x	130	S	1	2366,00
M 36	x	140	S	1	2567,00
M 36	x	150	S	1	2680,00
M 36	x	160	S	1	2990,00
M 36	x	170	S	1	3726,00
M 36	x	180	S	1	3246,00
M 36	x	190	S	1	4053,00
M 36	x	200	S	1	3503,00
M 42	x	100	S	1	4842,00
M 42	x	110	S	1	5447,00
M 42	x	130	S	1	6009,00
M 42	x	200	S	1	8905,00

DIN	00933.110	RAZ 405
933	**10.9 zinc plated**	



Hexagon head screws with thread up to head

baked

Caution! Note information about hydrogen embrittlement.

Dimensions ➔ TI-15
Mech. properties ➔ TI-220
Corrosion protection ➔ TI-217
Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

Stainless ➔ S. 462
Brass, plastic ➔ S. 577

DIN 933 ➔ replaced by ISO 4017

M 6	x	10	S	500	20,15 ZP
M 6	x	12	S	500	13,10 ZP
M 6	x	16	S	500	11,70 ZP
M 6	x	20	S	500	12,60 ZP
M 6	x	22	S	500	13,25 ZP
M 6	x	25	S	500	13,35 ZP
M 6	x	30	S	500	15,95 ZP
M 6	x	35	S	500	18,20 ZP
M 6	x	40	S	500	19,90 ZP
M 6	x	45	S	200	66,70 ZP
M 6	x	50	S	200	79,45 ZP
M 6	x	55	S	200	92,15 ZP
M 6	x	60	S	200	104,90 ZP
M 8	x	12	S	200	23,00 ZP
M 8	x	16	S	200	17,65 ZP
M 8	x	18	S	200	18,75 ZP
M 8	x	20	S	200	19,25 ZP
M 8	x	22	S	200	21,50 ZP
M 8	x	25	S	200	22,25 ZP
M 8	x	30	S	200	22,90 ZP
M 8	x	35	S	200	26,60 ZP
M 8	x	40	S	200	28,70 ZP
M 8	x	45	S	200	40,50 ZP
M 8	x	50	S	200	43,50 ZP
M 8	x	55	S	200	54,25 ZP
M 8	x	60	S	200	55,50 ZP
M 8	x	70	S	200	125,00 ZP
M 8	x	75	S	200	151,50 ZP
M 8	x	80	S	200	150,00 ZP
M 8	x	100	S	100	278,00 ZP
M 10	x	12	S	200	45,50 ZP
M 10	x	16	S	200	35,20 ZP
M 10	x	18	S	200	35,00 ZP
M 10	x	20	S	200	32,45 ZP
M 10	x	25	S	200	34,85 ZP
M 10	x	30	S	200	37,25 ZP
M 10	x	35	S	100	39,65 ZP
M 10	x	40	S	100	42,65 ZP
M 10	x	45	S	100	49,65 ZP
M 10	x	50	S	100	55,15 ZP
M 10	x	55	S	100	80,60 ZP
M 10	x	60	S	100	84,00 ZP
M 10	x	70	S	100	178,10 ZP
M 10	x	75	S	100	204,00 ZP
M 10	x	80	S	100	204,00 ZP
M 10	x	90	S	100	297,00 ZP
M 10	x	100	S	100	364,00 ZP
M 10	x	110	S	50	420,00 ZP
M 12	x	20	S	100	56,90 ZP
M 12	x	25	S	100	54,05 ZP
M 12	x	30	S	100	57,65 ZP
M 12	x	35	S	100	61,30 ZP
M 12	x	40	S	100	65,45 ZP
M 12	x	45	S	100	72,70 ZP
M 12	x	50	S	100	76,30 ZP
M 12	x	55	S	100	98,50 ZP
M 12	x	60	S	100	109,00 ZP
M 12	x	65	S	50	164,50 ZP
M 12	x	70	S	50	203,00 ZP
M 12	x	75	S	50	221,77 ZP
M 12	x	80	S	50	255,00 ZP
M 12	x	90	S	50	350,50 ZP
M 12	x	100	S	50	413,50 ZP
M 12	x	110	S	100	468,00 ZP
M 12	x	120	S	100	520,00 ZP
M 12	x	130	S	50	630,00 ZP
M 12	x	140	S	50	725,00 ZP
M 12	x	150	S	50	765,00 ZP
M 12	x	160	S	25	800,00 ZP
M 12	x	180	S	25	895,00 ZP
M 12	x	200	S	25	1045,00 ZP
M 14	x	30	S	100	103,00 ZP
M 14	x	35	S	100	106,00 ZP
M 14	x	40	S	100	112,00 ZP
M 14	x	45	S	50	116,00 ZP
M 14	x	50	S	50	124,00 ZP
M 14	x	60	S	50	149,00 ZP
M 14	x	65	S	50	240,00 ZP
M 14	x	70	S	50	242,00 ZP
M 14	x	80	S	50	325,00 ZP
M 14	x	90	S	50	450,00 ZP
M 16	x	20	S	50	171,30 ZP
M 16	x	25	S	50	117,00 ZP
M 16	x	30	S	50	120,00 ZP
M 16	x	35	S	50	124,00 ZP
M 16	x	40	S	50	133,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 45	S	50	137,00 ZP
M 16 x 50	S	50	150,00 ZP
M 16 x 55	S	50	162,00 ZP
M 16 x 60	S	50	166,00 ZP
M 16 x 65	S	25	300,00 ZP
M 16 x 70	S	25	300,00 ZP
M 16 x 75	S	25	315,00 ZP
M 16 x 80	S	25	322,00 ZP
M 16 x 90	S	25	441,00 ZP
M 16 x 100	S	25	551,00 ZP
M 16 x 110	S	25	615,00 ZP
M 16 x 120	S	25	670,00 ZP
M 16 x 140	S	25	801,50 ZP
M 16 x 150	S	25	840,00 ZP
M 16 x 160	S	25	886,50 ZP
M 16 x 170	S	25	931,50 ZP
M 16 x 180	S	25	981,00 ZP
M 16 x 190	S	25	1065,00 ZP
M 16 x 200	S	25	1145,00 ZP
M 16 x 220	S	1	1275,00 ZP
M 16 x 240	S	1	1570,00 ZP
M 16 x 260	S	1	1710,00 ZP
M 16 x 280	S	1	1850,00 ZP
M 16 x 300	S	1	1985,00 ZP
M 18 x 40	S	50	272,00 ZP
M 18 x 45	S	50	286,00 ZP
M 18 x 50	S	50	293,00 ZP
M 18 x 55	S	25	302,00 ZP
M 18 x 60	S	25	320,00 ZP
M 18 x 70	S	25	741,00 ZP
M 20 x 30	S	25	415,00 ZP
M 20 x 35	S	25	234,50 ZP
M 20 x 40	S	25	283,00 ZP
M 20 x 45	S	25	298,00 ZP
M 20 x 50	S	25	307,00 ZP
M 20 x 55	S	25	317,00 ZP
M 20 x 60	S	25	336,00 ZP
M 20 x 65	S	25	580,00 ZP
M 20 x 70	S	25	592,00 ZP
M 20 x 75	S	25	614,00 ZP
M 20 x 80	S	25	616,00 ZP
M 20 x 90	S	25	625,00 ZP
M 20 x 100	S	25	663,00 ZP
M 20 x 110	S	25	985,00 ZP
M 20 x 120	S	25	998,00 ZP
M 20 x 130	S	25	1140,00 ZP
M 20 x 140	S	25	1210,00 ZP
M 20 x 150	S	25	1295,00 ZP
M 20 x 160	S	25	1385,00 ZP
M 20 x 170	S	25	1470,00 ZP
M 20 x 180	S	25	1560,00 ZP
M 20 x 190	S	25	1625,00 ZP
M 20 x 200	S	25	1695,00 ZP
M 20 x 210	S	1	1955,00 ZP
M 20 x 220	S	1	1965,00 ZP
M 20 x 240	S	1	2195,00 ZP
M 20 x 260	S	1	2425,00 ZP
M 24 x 30	S	25	599,00 ZP
M 24 x 40	S	25	485,00 ZP
M 24 x 45	S	25	495,00 ZP
M 24 x 50	S	25	739,00 ZP
M 24 x 55	S	25	750,00 ZP
M 24 x 60	S	25	752,00 ZP
M 24 x 65	S	25	775,00 ZP
M 24 x 70	S	25	795,00 ZP
M 24 x 75	S	25	810,00 ZP
M 24 x 80	S	25	816,00 ZP
M 24 x 90	S	10	830,00 ZP
M 24 x 100	S	10	878,00 ZP
M 24 x 110	S	10	981,00 ZP
M 24 x 120	S	10	1049,00 ZP
M 24 x 130	S	1	1355,00 ZP
M 24 x 140	S	1	1440,00 ZP
M 24 x 150	S	1	1521,00 ZP
M 24 x 160	S	1	1671,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 24 x 170	S	1	1790,00 ZP
M 24 x 180	S	1	1880,00 ZP
M 24 x 190	S	1	1955,00 ZP
M 24 x 200	S	1	2050,00 ZP
M 27 x 60	S	10	1025,00 ZP
M 27 x 70	S	10	1075,00 ZP
M 27 x 80	S	10	1115,00 ZP
M 27 x 90	S	10	1150,00 ZP
M 27 x 100	S	10	1205,00 ZP
M 27 x 110	S	10	1325,00 ZP
M 27 x 120	S	10	1395,00 ZP
M 27 x 130	S	1	1475,00 ZP
M 27 x 140	S	1	1610,00 ZP
M 30 x 40	S	1	1115,00 ZP
M 30 x 50	S	1	1135,00 ZP
M 30 x 55	S	1	1200,00 ZP
M 30 x 60	S	1	1200,00 ZP
M 30 x 65	S	1	1225,00 ZP
M 30 x 70	S	1	1265,00 ZP
M 30 x 75	S	1	1300,00 ZP
M 30 x 80	S	1	1315,00 ZP
M 30 x 90	S	1	1375,00 ZP
M 30 x 100	S	1	1455,00 ZP
M 30 x 110	S	1	1315,00 ZP
M 30 x 120	S	1	1715,00 ZP
M 30 x 130	S	1	1810,00 ZP
M 30 x 140	S	1	1955,00 ZP
M 30 x 150	S	1	1060,00 ZP
M 30 x 160	S	1	2275,00 ZP
M 30 x 170	S	1	3175,00 ZP
M 30 x 180	S	1	3050,00 ZP
M 30 x 190	S	1	3450,00 ZP
M 30 x 200	S	1	3310,00 ZP
M 36 x 40	S	1	1890,00 ZP
M 36 x 50	S	1	1890,00 ZP
M 36 x 60	S	1	1890,00 ZP
M 36 x 70	S	1	1930,00 ZP
M 36 x 80	S	1	2010,00 ZP
M 36 x 90	S	1	2078,00 ZP
M 36 x 100	S	1	2170,00 ZP
M 36 x 110	S	1	2339,00 ZP
M 36 x 120	S	1	2474,00 ZP
M 36 x 130	S	1	2600,00 ZP
M 36 x 140	S	1	2810,00 ZP
M 36 x 150	S	1	2920,00 ZP
M 36 x 160	S	1	3240,00 ZP
M 36 x 170	S	1	3980,00 ZP
M 36 x 180	S	1	3506,00 ZP
M 36 x 190	S	1	4318,00 ZP
M 36 x 200	S	1	3775,00 ZP

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Dimensions	PU	Pieces	€/100/Mat.
DIN	00933.354		RAZ 1540
933	**10.9** **zinc flake coated**		

Hexagon head screws with thread up to head

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-218
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 462
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 10	S	500	23,20 flZn
M 6 x 12	S	500	15,10 flZn
M 6 x 16	S	500	13,50 flZn
M 6 x 20	S	500	14,50 flZn
M 6 x 22	S	500	15,25 flZn
M 6 x 25	S	500	15,35 flZn
M 6 x 30	S	500	18,35 flZn
M 6 x 35	S	200	20,95 flZn
M 6 x 40	S	200	22,90 flZn
M 6 x 45	S	200	76,75 flZn
M 6 x 50	S	200	91,40 flZn
M 6 x 55	S	200	106,00 flZn
M 6 x 60	S	200	121,00 flZn
M 8 x 12	S	200	26,45 flZn
M 8 x 16	S	200	20,30 flZn
M 8 x 20	S	200	22,15 flZn
M 8 x 25	S	200	25,60 flZn
M 8 x 30	S	200	26,35 flZn
M 8 x 35	S	200	30,60 flZn
M 8 x 40	S	200	33,05 flZn
M 8 x 45	S	200	46,60 flZn
M 8 x 50	S	200	50,05 flZn
M 8 x 55	S	200	62,40 flZn
M 8 x 60	S	200	63,85 flZn
M 8 x 70	S	200	143,75 flZn
M 16 x 25	S	50	135,00 flZn
M 16 x 30	S	50	138,00 flZn
M 16 x 35	S	50	143,00 flZn
M 16 x 40	S	50	153,00 flZn
M 16 x 45	S	50	158,00 flZn
M 16 x 50	S	50	173,00 flZn
M 16 x 55	S	50	187,00 flZn
M 16 x 60	S	50	191,00 flZn
M 16 x 65	S	25	345,00 flZn
M 16 x 70	S	25	345,00 flZn
M 16 x 75	S	25	359,00 flZn
M 16 x 80	S	25	371,00 flZn
M 16 x 90	S	25	508,00 flZn
M 16 x 100	S	25	634,00 flZn
M 16 x 110	S	25	708,00 flZn
M 16 x 120	S	25	771,00 flZn
M 20 x 30	S	25	478,00 flZn
M 20 x 35	S	25	270,00 flZn
M 20 x 40	S	25	326,00 flZn
M 20 x 45	S	25	343,00 flZn
M 20 x 50	S	25	354,00 flZn
M 20 x 55	S	25	365,00 flZn
M 20 x 60	S	25	387,00 flZn
M 20 x 65	S	25	667,00 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	70	S	25	681,00 flZn
M 20	x	75	S	25	707,00 flZn
M 20	x	80	S	25	709,00 flZn
M 20	x	90	S	25	719,00 flZn
M 20	x	100	S	25	763,00 flZn
M 20	x	110	S	25	1133,00 flZn
M 20	x	120	S	25	1148,00 flZn
M 24	x	40	S	25	558,00 flZn
M 24	x	45	S	25	570,00 flZn
M 24	x	50	S	25	850,00 flZn
M 24	x	55	S	25	863,00 flZn
M 24	x	60	S	25	865,00 flZn
M 24	x	65	S	25	892,00 flZn
M 24	x	70	S	25	915,00 flZn
M 24	x	75	S	25	932,00 flZn
M 24	x	80	S	25	939,00 flZn
M 24	x	90	S	10	955,00 flZn
M 24	x	100	S	10	1010,00 flZn
M 24	x	110	S	10	1129,00 flZn
M 24	x	120	S	10	1207,00 flZn

DIN	00933.200	RAZ 406

933

12.9

Hexagon head screws with thread up to head

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 462
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

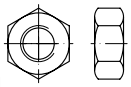
M 6	x	12	S	500	85,00
M 6	x	16	S	500	87,00
M 6	x	20	S	500	89,00
M 6	x	25	S	500	105,00
M 6	x	30	S	500	112,00
M 8	x	16	S	200	94,00
M 8	x	20	S	200	94,00
M 8	x	25	S	200	111,00
M 8	x	30	S	200	118,00
M 8	x	35	S	200	124,00
M 8	x	40	S	200	142,00
M 8	x	45	S	200	156,00
M 8	x	50	S	200	185,00
M 8	x	60	S	200	203,00
M 10	x	20	S	200	99,00
M 10	x	25	S	200	117,00
M 10	x	30	S	200	125,00
M 10	x	35	S	100	130,00
M 10	x	40	S	100	149,00
M 10	x	45	S	100	164,00
M 10	x	50	S	100	195,00
M 10	x	60	S	100	214,00
M 12	x	25	S	100	130,00
M 12	x	30	S	100	164,00
M 12	x	35	S	100	195,00
M 12	x	40	S	100	214,00
M 12	x	45	S	100	228,00
M 12	x	50	S	100	300,00
M 12	x	60	S	100	325,00
M 14	x	35	S	100	228,00
M 14	x	40	S	100	360,00
M 14	x	50	S	50	520,00
M 16	x	30	S	50	260,00
M 16	x	35	S	50	280,00

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	40	S	50	295,00
M 16	x	45	S	50	315,00
M 16	x	50	S	50	325,00
M 16	x	60	S	50	405,00
M 16	x	70	S	25	425,00
M 16	x	80	S	25	460,00
M 16	x	90	S	25	500,00
M 16	x	100	S	25	550,00
M 20	x	40	S	25	325,00
M 20	x	45	S	25	395,00
M 20	x	50	S	25	460,00
M 20	x	55	S	25	520,00
M 20	x	60	S	25	560,00
M 20	x	70	S	25	600,00
M 20	x	80	S	25	630,00
M 20	x	90	S	25	650,00
M 20	x	100	S	25	720,00
M 24	x	60	S	25	990,00
M 24	x	70	S	25	1040,00
M 24	x	80	S	25	1180,00
M 24	x	90	S	10	1210,00
M 24	x	100	S	10	1570,00

DIN	00934.300	RAZ 409

934

1.7218* (KG)
25CrMo4



Hexagon nuts with certificate EN 10204/3.1 (3.1B)

(prices are plus certificate costs)
*alternative 1.7258 (24CrMo5)

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

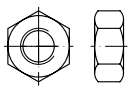
Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

M 10	S	1	133,00
M 12	S	1	140,00
M 16	S	1	169,00
M 20	S	1	320,00
M 24	S	1	600,00
M 27	S	1	1050,00
M 30	S	1	1370,00
M 36	S	1	2550,00

DIN	00934.301	RAZ 411

934

6 AU



Hexagon nuts

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

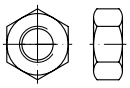
M 1	K	100	186,00
M 1,2	K	100	122,00
M 1,4	K	100	126,00

Dimensions			PU	Pieces	€/100/Mat.
M 1,6			K	100	83,60
M 1,7			K	100	81,20
M 2			S	1000	22,00
M 2			K	100	28,80
M 2,3			S	1000	14,60
M 2,5			S	1000	14,60
M 2,5			K	100	28,80
M 2,6			S	1000	23,60
M 2,6			K	100	28,80
M 3			S	1000	23,60
M 3			K	100	27,20
M 3,5			S	1000	24,80
M 3,5			K	100	28,00
M 4			S	1000	16,20
M 4			K	100	28,40
M 5			S	1000	21,20
M 5			K	100	35,20
M 6			S	1000	27,20
M 6			K	100	48,00
M 7			K	100	58,40
M 8			S	1000	52,80
M 8			K	100	73,20
M 10			S	500	87,60
M 10			K	100	114,00
M 12			S	250	124,00
M 12			K	100	152,00
M 14			S	250	186,00
M 14			K	100	216,00
M 16			S	100	276,00
M 18			S	50	416,00
M 20			S	50	520,00
M 22			S	50	624,00
M 24			S	25	900,00
M 27			S	25	1440,00
M 30			S	10	2080,00
M 36			S	10	3520,00
M 39			S	1	4400,00
M 42			S	1	5800,00
M 45			S	1	7160,00
M 48			S	1	8560,00
M 52			S	1	10400,00
M 56			S	1	14200,00
M 60			S	1	17000,00
M 64			S	1	28000,00
M 68			S	1	32000,00

DIN	00934.305	RAZ 411

934

6 AU **fine**



Hexagon nuts with fine pitch thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

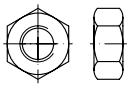
DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	S	100	83,20
M 10	x	1	S	100	134,00
M 10	x	1,25	S	100	134,00
M 12	x	1	S	100	174,00
M 12	x	1,25	S	100	174,00
M 12	x	1,5	S	100	174,00
M 14	x	1,5	S	100	252,00
M 16	x	1,5	S	100	320,00
M 18	x	1,5	S	50	484,00
M 18	x	2	S	50	484,00
M 20	x	1,5	S	50	608,00

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	2	S	50	608,00
M 22	x	1,5	S	25	812,00
M 22	x	2	S	25	812,00
M 24	x	1,5	S	25	1060,00
M 24	x	2	S	25	1060,00
M 26	x	1,5	S	25	1700,00
M 27	x	1,5	S	25	1700,00
M 27	x	2	S	25	1700,00
M 28	x	1,5	S	10	2440,00
M 30	x	1,5	S	10	2440,00
M 30	x	2	S	10	2440,00
M 32	x	1,5	S	10	3440,00
M 33	x	1,5	S	10	3440,00
M 33	x	2	S	10	3440,00
M 35	x	1,5	S	1	4120,00
M 36	x	1,5	S	1	4120,00
M 36	x	3	S	1	4120,00
M 38	x	1,5	S	1	5160,00
M 39	x	1,5	S	1	5160,00
M 39	x	3	S	1	5160,00
M 40	x	1,5	S	1	6920,00
M 42	x	1,5	S	1	6920,00
M 42	x	3	S	1	6920,00
M 45	x	1,5	S	1	8520,00
M 45	x	3	S	1	8520,00
M 48	x	1,5	S	1	10200,00
M 48	x	3	S	1	10200,00
M 50	x	1,5	S	1	3150,00
M 52	x	1,5	S	1	3150,00
M 52	x	3	S	1	12600,00
M 56	x	2	S	1	17000,00
M 56	x	4	S	1	17000,00
M 58	x	2	S	1	5100,00
M 60	x	2	S	1	20400,00
M 60	x	4	S	1	20400,00
M 64	x	2	S	1	33600,00
M 64	x	4	S	1	33600,00
M 68	x	2	S	1	8400,00
M 68	x	4	S	1	8400,00
M 72	x	2	S	1	9900,00
M 72	x	4	S	1	39600,00
M 72	x	6	S	1	37600,00
M 76	x	2	S	1	10400,00
M 76	x	4	S	1	10400,00
M 76	x	6	S	1	40000,00
M 80	x	2	S	1	47200,00
M 80	x	4	S	1	47200,00
M 80	x	6	S	1	44800,00
M 85	x	2	S	1	13500,00
M 85	x	4	S	1	13500,00
M 85	x	6	S	1	12900,00
M 90	x	2	S	1	16000,00
M 90	x	4	S	1	16000,00
M 90	x	6	S	1	61200,00
M 95	x	2	S	1	21900,00
M 95	x	4	S	1	21900,00
M 95	x	6	S	1	20900,00
M 100	x	2	S	1	23000,00
M 100	x	4	S	1	92000,00
M 100	x	6	S	1	87600,00
M 105	x	4	S	1	30600,00
M 110	x	4	S	1	31200,00
M 120	x	4	S	1	36300,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.304		RAZ 411

934 — **6 AU** (≤M8 = 6/8) — **left**



Hexagon nuts with metric left hand thread

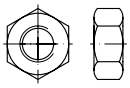
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

DIN 934 → replaced by ISO 4032

M 4 -LH	S	100	97,60
M 5 -LH	S	100	97,60
M 6 -LH	S	100	97,60
M 8 -LH	S	100	102,00
M 10 -LH	S	100	154,00
M 12 -LH	S	100	190,00
M 14 -LH	S	50	316,00
M 16 -LH	S	50	408,00
M 18 -LH	S	50	576,00
M 20 -LH	S	50	764,00
M 22 -LH	S	25	928,00
M 24 -LH	S	25	1200,00
M 27 -LH	S	10	1880,00
M 30 -LH	S	10	2400,00
M 36 -LH	S	5	4200,00
M 42 -LH	S	1	7440,00
M 48 -LH	S	1	11800,00

DIN	00934.307	RAZ 411

934 — **6 AU** (≤M8 = 6/8) — **left fine**



Hexagon nuts with metric left hand fine pitch thread

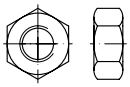
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	-LH	S	100	120,00
M 10	x	1	-LH	S	100	178,00
M 12	x	1,5	-LH	S	100	224,00
M 14	x	1,5	-LH	S	50	372,00
M 16	x	1,5	-LH	S	50	480,00
M 18	x	1,5	-LH	S	50	684,00
M 20	x	1,5	-LH	S	50	908,00
M 22	x	1,5	-LH	S	25	1100,00
M 24	x	1,5	-LH	S	25	1400,00
M 24	x	2	-LH	S	25	1400,00
M 30	x	1,5	-LH	S	10	2800,00
M 30	x	2	-LH	S	10	2800,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.306		RAZ 411

934 — **6 AU** — **Ww-BSW**



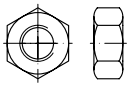
Hexagon nuts with Whitworth thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221 GS → TI-213

WW 1/4	S	100	52,80
WW 5/16	S	100	66,80
WW 3/8	S	100	106,00
WW 1/2	S	100	204,00
WW 5/8	S	50	388,00
WW 3/4	S	50	596,00
WW 7/8	S	25	840,00
WW 1	S	25	1360,00
WW 1 1/8	S	10	1920,00
WW 1 1/4	S	10	2760,00
WW 1 1/2	S	1	4160,00
WW 1 3/4	S	1	6800,00
WW 2	S	1	9960,00

DIN	00934.800	RAZ 412

934 — **8***



Hexagon nuts

*≤ M 5: property class = 6

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

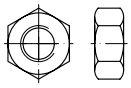
DIN 934 → replaced by ISO 4032

M 2,5	S	1000	2,15 blank
M 2,5	K	100	4,45 blank
M 3	S	1000	1,40 blank
M 3	K	100	3,65 blank
M 4	S	1000	1,55 blank
M 4	K	100	3,90 blank
M 5	S	1000	2,00 blank
M 5	K	100	4,30 blank
M 6	S	1000	2,40 blank
M 6	K	100	4,45 blank
M 7	S	1000	3,85 blank
M 7	K	100	5,90 blank
M 8	S	1000	3,80 blank
M 8	K	100	5,50 blank
M 10	S	500	7,70 blank
M 10	K	100	10,30 blank
M 12	S	500	11,10 blank
M 12	K	100	14,10 blank
M 14	S	250	15,40 blank
M 14	K	100	19,70 blank
M 16	S	200	22,20 blank
M 16	K	50	26,00 blank
M 18	S	100	33,50 blank

Dimensions	PU	Pieces	€/100/Mat.
M 20	S	100	39,00 blank
M 20	K	25	42,50 blank
M 22	S	50	72,00 blank
M 24	S	50	69,00 blank
M 27	S	25	125,00 blank
M 30	S	25	157,00 blank
M 33	S	10	210,00 blank
M 36	S	10	255,00 blank
M 39	S	5	495,00 blank
M 42	S	5	670,00 blank
M 45	S	1	860,00 blank
M 48	S	1	1270,00 blank
M 52	S	1	1490,00 blank
M 56	S	1	2850,00 blank
M 60	S	1	3250,00 blank
M 64	S	1	4000,00 blank

DIN 00934.810 RAZ 412

934 8* zinc plated



Hexagon nuts

*≤ M 5: property class = 6

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 2	S	1000	2,15 ZP
M 2	K	100	4,50 ZP
M 2,5	S	1000	2,20 ZP
M 2,5	K	100	4,50 ZP
M 3	S	1000	1,45 ZP
M 3	K	100	3,80 ZP
M 4	S	1000	1,75 ZP
M 4	K	100	4,05 ZP
M 5	S	1000	2,25 ZP
M 5	K	100	4,60 ZP
M 6	S	1000	2,85 ZP
M 6	K	100	4,90 ZP
M 7	S	1000	4,30 ZP
M 7	K	100	6,40 ZP
M 8	S	1000	4,50 ZP
M 8	K	100	6,30 ZP
M 10	S	500	9,40 ZP
M 10	K	100	12,10 ZP
M 12	S	500	13,50 ZP
M 12	K	100	16,70 ZP
M 14	S	250	18,90 ZP
M 14	K	100	23,40 ZP
M 16	S	200	27,00 ZP
M 16	K	50	31,50 ZP
M 18	S	100	40,00 ZP
M 20	S	100	47,50 ZP
M 20	K	25	61,00 ZP
M 22	S	50	69,00 ZP
M 24	S	50	81,00 ZP
M 27	S	50	148,00 ZP
M 30	S	25	187,00 ZP
M 33	S	1	247,00 ZP
M 36	S	1	310,00 ZP
M 39	S	1	560,00 ZP
M 42	S	1	750,00 ZP
M 45	S	1	950,00 ZP
M 48	S	1	1420,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 52	S	1	1660,00 ZP
M 56	S	1	3100,00 ZP
M 60	S	1	4200,00 ZP
M 64	S	1	4350,00 ZP
M 68	S	1	5500,00 ZP

Article 82934.810 RAZ 5001

82934 Assortments DIN 934 6/8 zinc plated

Hexagon nut assortments DIN 934

Content: 12 frequent dimensions
M 3 – M 24, approx. 645 pieces (metal box)

Your own selection on request

DIN 934 8	S	1	8943,00

Article 82935.810 RAZ 5001

82935 Assortm. DIN 934 C/F 6/8 zinc plated

Nut assortments, coarse/fine pitch thread

Content: 8 dim. coarse thread M 4 – M 16
4 dim. fine pitch thread M 10 x 1 – M 16 x 1,5
approx. 640 units, (metal box)

Your own selection on request

DIN 934 8	S	1	10786,00

DIN 00934.337 RAZ 412

934 8* zinc plated 8 TLP

Hexagon nuts

*≤ M 5: property class = 6

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 2,5	S	1000	2,90 ZP TLP
M 3	S	1000	1,90 ZP TLP
M 3	K	100	4,90 ZP TLP
M 4	S	1000	2,35 ZP TLP
M 4	K	100	5,50 ZP TLP
M 5	S	1000	2,95 ZP TLP
M 5	K	100	6,40 ZP TLP
M 6	S	1000	3,85 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
M 6	K	100	7,50 ZP TLP
M 8	S	1000	6,15 ZP TLP
M 8	K	100	9,80 ZP TLP
M 10	S	500	12,70 ZP TLP
M 10	K	100	19,30 ZP TLP
M 12	S	500	18,30 ZP TLP
M 12	K	100	26,50 ZP TLP
M 14	S	100	32,00 ZP TLP
M 16	S	200	37,00 ZP TLP
M 16	K	50	51,00 ZP TLP
M 20	S	100	64,00 ZP TLP
M 20	K	25	99,00 ZP TLP
M 24	S	50	107,00 ZP TLP
M 30	S	25	258,00 ZP TLP
M 36	S	10	425,00 ZP TLP

DIN 00934.(**) RAZ 412

934 8* zinc plated yellow**

Hexagon nuts

*≤ M 5: property class = 6
**< M 6 min. coating thickness 5µm = (860)
**from M 6 min. coating thickness 8µm = (362)

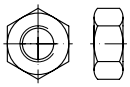
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 2,5	S	1000	2,30 YZP
M 3	S	1000	1,50 YZP
M 3	K	100	3,90 YZP
M 4	S	1000	1,85 YZP
M 4	K	100	4,40 YZP
M 5	S	1000	2,35 YZP
M 5	K	100	5,10 YZP
M 6	S	1000	3,05 YZP8
M 6	K	100	6,00 YZP8
M 8	S	1000	4,90 YZP8
M 8	K	100	7,80 YZP8
M 10	S	500	10,10 YZP8
M 10	K	100	15,40 YZP8
M 12	S	500	14,60 YZP8
M 12	K	100	21,20 YZP8
M 14	S	100	25,50 YZP8
M 16	S	200	29,50 YZP8
M 16	K	50	40,50 YZP8
M 20	S	100	51,00 YZP8
M 20	K	25	79,00 YZP8
M 24	S	50	85,00 YZP8
M 30	S	25	206,00 YZP8
M 36	S	10	340,00 YZP8

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.820		RAZ 413
934	**8** **hot dip galvanized**		



Hexagon nuts

Thread tolerance 6H

Caution!
Note information about hot dip galvanizing.

Dimensions → TI-61 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

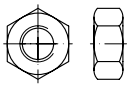
DIN 934 → replaced by ISO 4032

M 6	S	1000	5,20 HDG
M 6	K	100	7,90 HDG
M 8	S	1000	9,50 HDG
M 8	K	100	12,40 HDG
M 10	S	500	16,70 HDG
M 10	K	100	21,10 HDG
M 12	S	500	22,80 HDG
M 12	K	100	28,00 HDG
M 14	S	250	39,50 HDG
M 16	S	200	44,00 HDG
M 16	K	50	49,50 HDG
M 18	S	50	85,00 HDG
M 20	S	100	79,00 HDG
M 20	K	25	87,00 HDG
M 22	S	50	149,00 HDG
M 24	S	50	132,00 HDG
M 27	S	25	242,00 HDG
M 30	S	25	300,00 HDG
M 33	S	10	405,00 HDG
M 36	S	10	520,00 HDG
M 39	S	5	940,00 HDG
M 42	S	5	1300,00 HDG
M 45	S	1	1690,00 HDG
M 48	S	1	1990,00 HDG
M 52	S	1	3000,00 HDG
M 56	S	1	4600,00 HDG
M 64	S	1	5900,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.830		RAZ 412
934	**8*** **nickel plated**		



Hexagon nuts

*≤ M 5: property class = 6

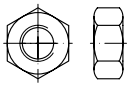
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 3	S	1000	1,85 NP
M 4	S	1000	2,25 NP
M 5	S	1000	3,00 NP
M 6	S	1000	4,00 NP
M 8	S	1000	7,80 NP
M 10	S	500	16,00 NP

DIN	00934.835	RAZ 412
934	**8** **black***	**fine**



Hexagon nuts with metric fine pitch thread

*≥ M 22 x 1,5 = grey-black

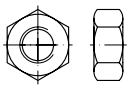
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	S	100	12,60 black
M 10	x	1	S	100	19,40 black
M 12	x	1	S	100	52,00 black
M 12	x	1,25	S	100	27,50 black
M 12	x	1,5	S	100	24,80 black
M 14	x	1,5	S	100	43,00 black
M 16	x	1,5	S	100	54,00 black
M 18	x	1,5	S	100	76,00 black
M 18	x	2	S	100	83,00 black
M 20	x	1,5	S	50	88,00 black
M 20	x	2	S	50	88,00 black
M 22	x	1,5	S	50	93,00 black
M 22	x	2	S	50	93,00 black
M 24	x	1,5	S	50	112,00 black
M 24	x	2	S	50	112,00 black
M 27	x	1,5	S	50	192,00 black
M 27	x	2	S	50	192,00 black
M 30	x	1,5	S	1	260,00 black
M 30	x	2	S	1	260,00 black
M 33	x	2	S	1	310,00 black
M 36	x	1,5	S	1	650,00 black
M 36	x	2	S	1	650,00 black
M 36	x	3	S	1	650,00 black
M 39	x	3	S	1	780,00 black
M 42	x	1,5	S	1	1120,00 black
M 42	x	3	S	1	1040,00 black
M 45	x	3	S	1	1090,00 black
M 48	x	1,5	S	1	2440,00 black

Dimensions			PU	Pieces	€/100/Mat.
M 48	x	3	S	1	1500,00 black
M 52	x	3	S	1	2350,00 black
M 56	x	4	S	1	3200,00 black
M 60	x	4	S	1	4250,00 black
M 64	x	4	S	1	5000,00 black
M 68	x	4	S	1	6500,00 black
M 72	x	4	S	1	7700,00 black
M 72	x	6	S	1	6800,00 black
M 80	x	4	S	1	11400,00 black
M 80	x	6	S	1	9500,00 black
M 100	x	6	S	1	20800,00 black

DIN	00934.815	RAZ 412
934	**8** **zinc plated**	**fine**



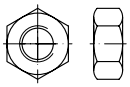
Hexagon nuts with metric fine pitch thread

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	S	1000	8,00 ZP
M 8	x	1	K	100	10,50 ZP
M 10	x	1	S	500	14,10 ZP
M 10	x	1	K	100	16,80 ZP
M 10	x	1,25	S	500	17,50 ZP
M 10	x	1,25	K	100	20,90 ZP
M 12	x	1	S	500	26,00 ZP
M 12	x	1,25	S	100	24,20 ZP
M 12	x	1,5	S	500	19,30 ZP
M 12	x	1,5	K	100	21,70 ZP
M 14	x	1,25	S	100	80,00 ZP
M 14	x	1,5	S	250	34,00 ZP
M 14	x	1,5	K	100	36,50 ZP
M 16	x	1,5	S	100	46,50 ZP
M 18	x	1,5	S	100	67,00 ZP
M 18	x	2	S	100	71,00 ZP
M 20	x	1,5	S	50	78,00 ZP
M 20	x	2	S	50	83,00 ZP
M 22	x	1,5	S	50	100,00 ZP
M 22	x	2	S	50	100,00 ZP
M 24	x	1,5	S	50	126,00 ZP
M 24	x	2	S	50	126,00 ZP
M 27	x	1,5	S	50	300,00 ZP
M 27	x	2	S	50	300,00 ZP
M 30	x	1,5	S	1	285,00 ZP
M 30	x	2	S	1	285,00 ZP
M 33	x	2	S	1	450,00 ZP
M 36	x	1,5	S	1	690,00 ZP
M 36	x	2	S	1	690,00 ZP
M 36	x	3	S	1	690,00 ZP
M 39	x	3	S	1	1100,00 ZP
M 42	x	3	S	1	1100,00 ZP
M 45	x	3	S	1	1800,00 ZP
M 48	x	1,5	S	1	2500,00 ZP
M 48	x	2	S	1	3000,00 ZP
M 48	x	3	S	1	1640,00 ZP
M 52	x	3	S	1	3500,00 ZP
M 72	x	6	S	1	6300,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.804		RAZ 412
934	8		left



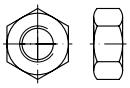
Hexagon nuts
with metric left hand thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

DIN 934 → replaced by ISO 4032

M 6 -LH	S	100	7,60
M 8 -LH	S	100	9,50
M 10 -LH	S	100	15,50
M 12 -LH	S	100	22,80
M 16 -LH	S	50	52,00
M 20 -LH	S	50	75,00
M 24 -LH	S	50	171,00
M 30 -LH	S	25	285,00

DIN	00934.814	RAZ 412
934	8 zinc plated	left



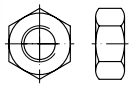
Hexagon nuts
with metric left hand thread

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 934 → replaced by ISO 4032

M 4 -LH	S	100	6,90 ZP
M 5 -LH	S	100	6,90 ZP
M 6 -LH	S	100	8,40 ZP
M 8 -LH	S	100	10,50 ZP
M 10 -LH	S	100	17,30 ZP
M 12 -LH	S	100	26,00 ZP
M 16 -LH	S	50	59,00 ZP
M 20 -LH	S	50	84,00 ZP
M 24 -LH	S	50	190,00 ZP
M 30 -LH	S	25	320,00 ZP
M 36 -LH	S	1	950,00 ZP
M 39 -LH	S	1	1750,00 ZP
M 42 -LH	S	1	2200,00 ZP
M 48 -LH	S	1	3500,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.100		RAZ 411
934	10		



Hexagon nuts

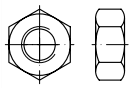
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 4	S	1000	5,10
M 4	K	100	7,20
M 5	S	1000	5,10
M 5	K	100	7,20
M 6	S	1000	5,70
M 6	K	100	7,80
M 8	S	1000	7,80
M 8	K	100	10,00
M 10	S	500	14,20
M 10	K	100	17,60
M 12	S	500	22,70
M 12	K	100	27,00
M 14	S	100	36,50
M 16	S	100	44,50
M 18	S	100	65,00
M 20	S	50	69,00
M 22	S	50	102,00
M 24	S	50	113,00
M 27	S	50	157,00
M 30	S	10	242,00
M 33	S	10	320,00
M 36	S	10	420,00
M 39	S	1	710,00
M 42	S	1	1080,00
M 45	S	1	1330,00
M 48	S	1	1540,00
M 52	S	1	3050,00

DIN	00934.110	RAZ 411
934	10 zinc plated	



Hexagon nuts

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

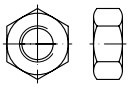
Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 4	S	1000	5,60 ZP
M 4	K	100	7,70 ZP
M 5	S	1000	5,60 ZP
M 5	K	100	7,70 ZP
M 6	S	1000	6,20 ZP
M 6	K	100	8,40 ZP
M 8	S	1000	8,70 ZP
M 8	K	100	11,00 ZP
M 10	S	500	16,30 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 10	K	100	20,00 ZP
M 12	S	500	26,00 ZP
M 12	K	100	31,00 ZP
M 14	S	100	41,50 ZP
M 16	S	100	51,00 ZP
M 18	S	100	71,50 ZP
M 20	S	50	80,00 ZP
M 22	S	50	110,00 ZP
M 24	S	50	134,00 ZP
M 27	S	50	165,00 ZP
M 30	S	10	285,00 ZP
M 33	S	10	410,00 ZP
M 36	S	10	510,00 ZP
M 39	S	1	810,00 ZP
M 42	S	5	1210,00 ZP
M 48	S	1	1210,00 ZP
M 52	S	1	3200,00 ZP

DIN	00934.105	RAZ 411
934	10	fine



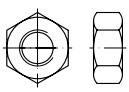
Hexagon nuts
with metric fine pitch thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	S	100	13,50
M 10	x	1	S	100	21,10
M 12	x	1,5	S	100	34,00
M 14	x	1,5	S	100	46,00
M 16	x	1,5	S	100	65,00
M 18	x	1,5	S	100	85,00
M 18	x	2	S	100	85,00
M 20	x	1,5	S	50	100,00
M 20	x	2	S	50	100,00
M 22	x	1,5	S	25	142,00
M 22	x	2	S	25	142,00
M 24	x	1,5	S	25	158,00
M 24	x	2	S	25	158,00
M 30	x	1,5	S	10	350,00
M 30	x	2	S	10	350,00
M 36	x	3	S	1	480,00
M 42	x	3	S	1	1180,00
M 48	x	3	S	1	2160,00

DIN	00934.115	RAZ 411
934	10 zinc plated	fine



Hexagon nuts
with metric fine pitch thread

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	S	100	21,00 ZP
M 10	x	1	S	100	29,00 ZP
M 12	x	1,5	S	100	41,50 ZP

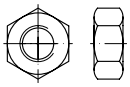
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 14	x	1,5	S	100	51,00 ZP
M 16	x	1,5	S	100	80,00 ZP
M 18	x	1,5	S	100	100,00 ZP
M 18	x	2	S	100	100,00 ZP
M 20	x	1,5	S	50	122,00 ZP
M 20	x	2	S	25	122,00 ZP
M 24	x	1,5	S	50	190,00 ZP
M 24	x	2	S	25	190,00 ZP
M 30	x	1,5	S	10	400,00 ZP
M 30	x	2	S	10	400,00 ZP
M 36	x	3	S	1	540,00 ZP
M 42	x	3	S	1	1300,00 ZP
M 48	x	3	S	1	2250,00 ZP

DIN	00934.200	RAZ 411

934

12



Hexagon nuts

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 466
Brass, copper, aluminium, titanium → S. 578

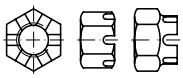
DIN 934 → replaced by ISO 4032

M 6	S	100	13,60
M 8	S	100	19,10
M 10	S	100	34,00
M 12	S	100	48,00
M 16	S	100	71,00
M 20	S	50	142,00
M 24	S	25	248,00
M 27	S	25	465,00
M 30	S	10	710,00
M 36	S	10	1030,00

DIN	00935.300	RAZ 420

935-1

6/6 AU



Hexagon slotted and castle nuts

Dimensions → TI-65 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 468

SW = wrench size

M 4	K	100	64,00
M 5	K	100	64,00
M 6	S	500	43,00
M 6	K	100	48,50
M 8	S	500	43,00
M 8	K	100	49,50
M 10 SW 17	S	500	46,00
M 10 SW 17	K	100	54,00
M 12 SW 19	S	500	72,00
M 12 SW 19	K	100	80,00
M 14 SW 22	K	50	111,00
M 16	S	250	112,00
M 16	K	50	127,00
M 18	K	25	171,00
M 20	K	25	203,00

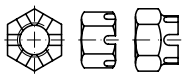
Dimensions	PU	Pieces	€/100/Mat.
M 22 SW 32	S	25	260,00
M 24	S	25	335,00
M 27	S	10	500,00
M 30	S	10	630,00
M 33	S	5	850,00
M 36	S	1	1120,00
M 39	S	1	1400,00
M 42	S	1	1870,00
M 45	S	1	2270,00
M 48	S	1	3100,00
M 52	S	1	3600,00
M 56	S	1	5300,00
M 60	S	1	6100,00
M 64	S	1	7500,00

DIN	00935.305	RAZ 420

935-1

6

fine



Hexagon slotted and castle nuts with metric fine pitch thread

Dimensions → TI-65 Standard conversion → TI-7
Mech. properties → TI-221

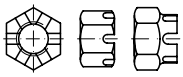
M 8	x	1		S	100	57,00
M 10	x	1	SW 17	S	100	63,00
M 10	x	1,25	SW 17	S	100	63,00
M 12	x	1,25	SW 19	S	100	94,00
M 12	x	1,5	SW 19	S	100	94,00
M 14	x	1,5	SW 22	S	50	129,00
M 16	x	1,5		S	50	149,00
M 18	x	1,5		S	25	200,00
M 20	x	1,5		S	25	238,00
M 20	x	2		S	25	238,00
M 22	x	1,5	SW 32	S	25	305,00
M 22	x	2	SW 32	S	25	305,00
M 24	x	1,5		S	25	395,00
M 24	x	2		S	25	395,00
M 27	x	1,5		S	10	610,00
M 27	x	2		S	10	610,00
M 28	x	1,5		S	10	760,00
M 30	x	1,5		S	1	760,00
M 30	x	2		S	1	760,00
M 32	x	1,5		S	1	1010,00
M 33	x	1,5		S	1	1010,00
M 33	x	2		S	1	1010,00
M 36	x	1,5		S	1	1340,00
M 36	x	3		S	1	1340,00
M 38	x	1,5		S	1	1670,00
M 39	x	3		S	1	1670,00
M 40	x	1,5		S	1	2240,00
M 42	x	1,5		S	1	2240,00
M 42	x	3		S	1	2240,00
M 45	x	1,5		S	1	2750,00
M 45	x	3		S	1	2750,00
M 48	x	1,5		S	1	3650,00
M 48	x	3		S	1	3650,00
M 52	x	3		S	1	4350,00
M 56	x	2		S	1	6400,00
M 56	x	4		S	1	6400,00
M 64	x	2		S	1	8900,00
M 64	x	4		S	1	8900,00
M 68	x	2		S	1	15200,00
M 72	x	4		S	1	16600,00
M 72	x	6		S	1	15800,00
M 76	x	4		S	1	19500,00
M 80	x	4		S	1	22600,00
M 80	x	6		S	1	21600,00

Dimensions	PU	Pieces	€/100/Mat.

DIN	00935.800	RAZ 420

935-1

8



Hexagon slotted and castle nuts

Dimensions → TI-65 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 468

SW = wrench size

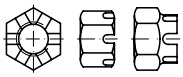
M 12 SW 19	S	100	62,00
M 16	S	50	75,00
M 20	S	25	135,00
M 24	S	25	191,00
M 30	S	10	495,00
M 36	S	1	1180,00
M 39	S	1	1370,00
M 42	S	1	1490,00
M 48	S	1	2850,00

DIN	00935.810	RAZ 420

935-1

8

zinc plated



Hexagon slotted and castle nuts

Dimensions → TI-65 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 468

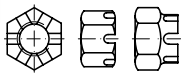
SW = wrench size

M 8	S	100	57,00 ZP
M 10 SW 17	S	100	62,00 ZP
M 12 SW 19	S	100	75,00 ZP
M 14 SW 22	S	50	200,00 ZP
M 16	S	50	87,00 ZP
M 20	S	25	138,00 ZP
M 24	S	25	200,00 ZP
M 30	S	10	510,00 ZP
M 36	S	1	1500,00 ZP
M 39	S	1	2000,00 ZP
M 42	S	1	2200,00 ZP
M 48	S	1	3700,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00935.100	RAZ 420

935-1

10



Hexagon slotted and castle nuts

Dimensions → TI-65 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 468

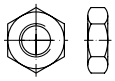
SW = wrench size

M 12 SW 19	S	100	112,00
M 16	S	50	138,00
M 20	S	25	215,00
M 24	S	25	500,00

DIN	00936.000	RAZ 420

936

14 H



Hexagon thin nuts

Dimensions → TI-62 Mech. properties → TI-221

Stainless → S. 468
Brass → S. 579

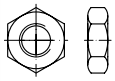
Nuts acc. to ISO → ISO 4035 (DIN 439)

M 33	S	10	590,00
M 36	S	10	620,00
M 39	S	10	760,00
M 42	S	1	970,00
M 48	S	1	1480,00
M 52	S	1	1710,00

DIN	00936.800	RAZ 420

936

17 H



Hexagon thin nuts

Dimensions → TI-62 Mech. properties → TI-221

Stainless → S. 468
Brass → S. 579

Nuts acc. to ISO → ISO 4035 (DIN 439)

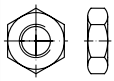
M 8	S	1000	6,10
M 8	K	100	9,40
M 10	S	500	11,60
M 10	K	100	15,70
M 12	S	500	16,50
M 12	K	100	20,60
M 14	S	100	34,50
M 16	S	100	39,50
M 18	S	100	69,00
M 20	S	50	85,00

Dimensions	PU Pieces	€/100/Mat.
M 22	S 50	121,00
M 24	S 50	143,00
M 27	S 25	198,00
M 30	S 25	265,00
M 36	S 10	340,00

DIN	00936.810	RAZ 420

936

17 H
zinc plated



Hexagon thin nuts

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 468
Brass → S. 579

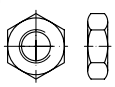
Nuts acc. to ISO → ISO 4035 (DIN 439)

M 8	S	1000	6,90 ZP
M 8	K	100	10,20 ZP
M 10	S	500	13,20 ZP
M 10	K	100	17,40 ZP
M 12	S	500	18,70 ZP
M 12	K	100	22,80 ZP
M 14	S	100	38,00 ZP
M 16	S	100	43,50 ZP
M 18	S	100	75,00 ZP
M 20	S	50	92,00 ZP
M 22	S	50	130,00 ZP
M 24	S	50	157,00 ZP
M 27	S	25	214,00 ZP
M 30	S	25	285,00 ZP
M 36	S	10	360,00 ZP

DIN	00936.352	RAZ 1520

936

17 H
zinc flake coated



Hexagon thin nuts

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-62 Corrosion protection → TI-218
Mech. properties → TI-221

Stainless → S. 468
Brass → S. 579

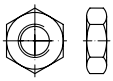
Nuts acc. to ISO → ISO 4035 (DIN 439)

M 8	S	1000	9,00 flZn
M 10	S	500	17,30 flZn
M 12	S	500	24,50 flZn
M 16	S	100	57,00 flZn
M 20	S	50	120,00 flZn
M 24	S	50	205,00 flZn

Dimensions	PU Pieces	€/100/Mat.
DIN	00936.005	RAZ 420

936

14 H **fine**



Hexagon thin nuts with metric fine pitch thread

Dimensions → TI-62 Mech. properties → TI-221

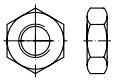
Stainless → S. 468
Brass → S. 580

Nuts acc. to ISO → ISO 8675 (DIN 439)

M 8	x 1	S	100	20,50
M 10	x 1	S	100	31,50
M 10	x 1,25	S	100	31,50
M 12	x 1,25	S	100	42,00
M 12	x 1,5	S	100	42,00
M 14	x 1,5	S	100	56,00
M 16	x 1,5	S	50	77,00
M 18	x 1,5	S	50	100,00
M 20	x 1,5	S	50	120,00
M 20	x 2	S	50	120,00
M 22	x 1,5	S	50	142,00
M 24	x 1,5	S	25	194,00
M 24	x 2	S	25	194,00
M 26	x 1,5	S	25	325,00
M 27	x 1,5	S	25	325,00
M 27	x 2	S	25	325,00
M 28	x 1,5	S	25	430,00
M 30	x 1,5	S	25	430,00
M 30	x 2	S	25	430,00
M 32	x 1,5	S	1	600,00
M 33	x 1,5	S	1	600,00
M 33	x 2	S	1	600,00
M 35	x 1,5	S	1	640,00
M 36	x 1,5	S	1	640,00
M 36	x 2	S	1	640,00
M 36	x 3	S	1	640,00
M 38	x 1,5	S	1	910,00
M 39	x 3	S	1	910,00
M 40	x 1,5	S	1	1160,00
M 42	x 1,5	S	1	1160,00
M 42	x 3	S	1	1160,00
M 45	x 1,5	S	1	1380,00
M 45	x 3	S	1	1380,00
M 48	x 1,5	S	1	1770,00
M 48	x 3	S	1	1770,00
M 50	x 1,5	S	1	2060,00
M 52	x 3	S	1	2060,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 00936.004			RAZ 420

936 **14 H** **left**



Hexagon thin nuts with metric left hand thread

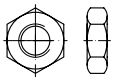
Dimensions ➔ TI-62 Mech. properties ➔ TI-221

Nuts acc. to ISO ➔ ISO 4035 (DIN 439)

M 8 -LH	S	100	24,90
M 10 -LH	S	100	38,50
M 12 -LH	S	100	47,00
M 14 -LH	S	100	69,00
M 16 -LH	S	50	88,00
M 20 -LH	S	50	144,00
M 24 -LH	S	25	225,00
M 30 -LH	S	10	405,00

DIN	00936.014	RAZ 420

936 **14 H** **left**
zinc plated



Hexagon thin nuts with metric left hand thread

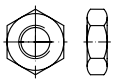
Dimensions ➔ TI-62 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-221

Nuts acc. to ISO ➔ ISO 4035 (DIN 439)

M 10 -LH	S	100	100,00 ZP
M 12 -LH	S	100	120,00 ZP
M 16 -LH	S	50	150,00 ZP
M 20 -LH	S	50	200,00 ZP
M 24 -LH	S	25	380,00 ZP
M 27 -LH	S	25	450,00 ZP
M 30 -LH	S	10	600,00 ZP

DIN	00936.006	RAZ 420

936 **14 H** **left fine**



Hexagon thin nuts with metric left hand fine pitch thread

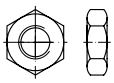
Dimensions ➔ TI-62 Mech. properties ➔ TI-221

Nuts acc. to ISO ➔ ISO 8675 (DIN 439)

M 8	x	1 -LH	S	100	29,50
M 10	x	1 -LH	S	100	44,50
M 12	x	1,5 -LH	S	100	55,00
M 14	x	1,5 -LH	S	100	81,00
M 16	x	1,5 -LH	S	50	104,00
M 18	x	1,5 -LH	S	50	136,00
M 20	x	1,5 -LH	S	50	171,00
M 22	x	1,5 -LH	S	25	216,00
M 24	x	1,5 -LH	S	25	270,00
M 24	x	2 -LH	S	25	270,00
M 27	x	2 -LH	S	25	395,00
M 30	x	1,5 -LH	S	10	480,00

DIN	00936.805	RAZ 420

936 **17 H** **fine**



Hexagon thin nuts with metric fine pitch thread

Dimensions ➔ TI-62 Mech. properties ➔ TI-221

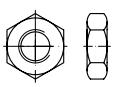
Stainless ➔ S. 468
Brass ➔ S. 580

Nuts acc. to ISO ➔ ISO 8675 (DIN 439)

M 8	x	1	S	100	11,00
M 10	x	1	S	100	15,70
M 12	x	1,5	S	100	22,80
M 14	x	1,5	S	100	36,00
M 16	x	1,5	S	100	41,50
M 18	x	1,5	S	100	70,00
M 20	x	1,5	S	50	88,00
M 22	x	1,5	S	50	121,00
M 24	x	1,5	S	50	143,00
M 24	x	2	S	50	158,00
M 30	x	1,5	S	25	315,00
M 30	x	2	S	25	320,00
M 36	x	1,5	S	10	340,00

DIN	00936.815	RAZ 420

936 **17 H** **fine**
zinc plated



Hexagon thin nuts with metric fine pitch thread

Dimensions ➔ TI-62 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-221

Stainless ➔ S. 468
Brass ➔ S. 580

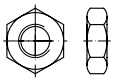
Nuts acc. to ISO ➔ ISO 8675 (DIN 439)

M 8	x	1	S	100	11,80 ZP
M 10	x	1	S	100	17,40 ZP
M 12	x	1,5	S	100	25,50 ZP
M 14	x	1,5	S	100	39,50 ZP
M 16	x	1,5	S	100	45,50 ZP
M 18	x	1,5	S	100	77,00 ZP
M 20	x	1,5	S	50	95,00 ZP
M 22	x	1,5	S	50	129,00 ZP
M 24	x	1,5	S	50	154,00 ZP
M 24	x	2	S	50	169,00 ZP
M 27	x	1,5	S	25	246,00 ZP
M 27	x	2	S	25	255,00 ZP
M 30	x	1,5	S	25	340,00 ZP
M 30	x	2	S	25	380,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 33 x 1,5	S	25	690,00 ZP
M 36 x 1,5	S	10	920,00 ZP

DIN	00936.100	RAZ 420

936 **22 H**



Hexagon thin nuts

Dimensions ➔ TI-62 Mech. properties ➔ TI-221

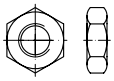
Stainless ➔ S. 468
Brass ➔ S. 579

Nuts acc. to ISO ➔ ISO 4035 (DIN 439)

M 8	S	100	14,50
M 10	S	100	23,00
M 12	S	100	32,50
M 14	S	100	47,00
M 16	S	100	64,00
M 20	S	50	129,00
M 24	S	50	207,00

DIN	00936.105	RAZ 420

936 **22 H** **fine**



Hexagon thin nuts with metric fine pitch thread

Dimensions ➔ TI-62 Mech. properties ➔ TI-221

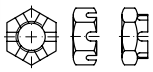
Stainless ➔ S. 468
Brass ➔ S. 580

Nuts acc. to ISO ➔ ISO 8675 (DIN 439)

M 14	x	1,5	S	100	52,00
M 16	x	1,5	S	100	67,00
M 18	x	1,5	S	100	108,00
M 20	x	1,5	S	50	140,00
M 22	x	1,5	S	50	178,00
M 24	x	1,5	S	50	233,00

Dimensions	PU Pieces	€/100/Mat.
~DIN	00937.800	RAZ 420

937 **17 H**



Hexagon thin slotted and castle nuts

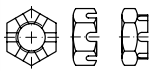
Dimensions → TI-65 Mech. properties → TI-221

Wrench sizes acc. to ISO → DIN 979

M 6	S	100	46,50
M 8	S	100	48,00
M 10	S	100	51,00
M 12	S	100	72,00
M 14	S	50	104,00
M 16	S	50	108,00
M 18	S	50	127,00
M 20	S	50	158,00
M 24	S	25	265,00
M 27	S	10	480,00
M 30	S	10	500,00

Dimensions	PU Pieces	€/100/Mat.
~DIN	00937.805	RAZ 420

937 **17 H** **fine**



Hexagon thin slotted and castle nuts with metric fine pitch thread

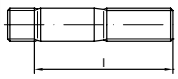
Dimensions → TI-65 Mech. properties → TI-221

Wrench sizes acc. to ISO → DIN 979

M 8	x	1	S	100	56,00
M 10	x	1	S	100	60,00
M 12	x	1,5	S	100	85,00
M 14	x	1,5	S	50	121,00
M 16	x	1,5	S	50	126,00
M 18	x	1,5	S	50	149,00
M 20	x	1,5	S	25	203,00
M 22	x	1,5	S	25	248,00
M 24	x	1,5	S	25	315,00
M 24	x	2	S	25	315,00
M 26	x	1,5	S	25	510,00
M 27	x	1,5	S	25	560,00
M 27	x	2	S	25	560,00
M 28	x	1,5	S	10	610,00
M 30	x	1,5	S	10	610,00
M 30	x	2	S	10	610,00
M 32	x	1,5	S	1	790,00
M 33	x	1,5	S	1	790,00
M 35	x	1,5	S	1	910,00
M 36	x	1,5	S	1	910,00
M 36	x	3	S	1	910,00
M 39	x	1,5	S	1	1200,00
M 39	x	3	S	1	1200,00
M 40	x	1,5	S	1	1590,00
M 42	x	1,5	S	1	1590,00
M 42	x	3	S	1	1590,00
M 48	x	1,5	S	1	2700,00
M 48	x	3	S	1	2700,00
M 52	x	3	S	1	3250,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00938.504	RAZ 432

938 **5.6** **AD W7**



Studs, metal end ≈ 1 d

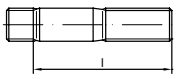
For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate

Dimensions → TI-18 Tightening torque → TI-230
Mech. properties → TI-220

M 8	x	20	S	100	132,00
M 8	x	25	S	100	138,00
M 8	x	30	S	100	153,00
M 8	x	40	S	100	164,00
M 10	x	25	S	100	93,00
M 10	x	30	S	100	105,00
M 10	x	35	S	100	114,00
M 10	x	40	S	100	120,00
M 10	x	45	S	100	132,00
M 10	x	50	S	100	164,00
M 10	x	60	S	100	179,00
M 12	x	25	S	100	127,00
M 12	x	30	S	100	136,00
M 12	x	35	S	100	142,00
M 12	x	40	S	100	151,00
M 12	x	45	S	50	164,00
M 12	x	50	S	50	179,00
M 12	x	55	S	50	192,00
M 12	x	60	S	50	190,00
M 12	x	65	S	50	199,00
M 12	x	70	S	50	315,00
M 12	x	80	S	50	340,00
M 16	x	30	S	50	151,00
M 16	x	35	S	50	164,00
M 16	x	40	S	50	170,00
M 16	x	45	S	50	179,00
M 16	x	50	S	50	190,00
M 16	x	55	S	50	199,00
M 16	x	60	S	25	221,00
M 16	x	65	S	25	223,00
M 16	x	70	S	25	227,00
M 16	x	80	S	25	265,00
M 16	x	90	S	25	295,00
M 16	x	100	S	25	315,00
M 16	x	110	S	25	650,00
M 16	x	120	S	25	680,00
M 16	x	140	S	25	780,00
M 20	x	40	S	25	445,00
M 20	x	45	S	25	470,00
M 20	x	50	S	25	500,00
M 20	x	60	S	25	520,00
M 20	x	70	S	25	550,00
M 20	x	80	S	10	750,00
M 20	x	90	S	10	800,00
M 24	x	50	S	10	930,00
M 24	x	55	S	10	990,00
M 24	x	60	S	10	1050,00
M 24	x	65	S	10	1110,00
M 24	x	70	S	10	1180,00
M 24	x	80	S	10	1260,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00938.514	RAZ 432

938 **5.6 zinc plated** **AD W7**



Studs, metal end ≈ 1 d

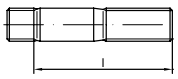
For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate

Dimensions → TI-18 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

M 10	x	20	S	100	180,00 ZP
M 10	x	25	S	100	103,00 ZP
M 10	x	30	S	100	118,00 ZP
M 10	x	35	S	100	129,00 ZP
M 10	x	40	S	100	140,00 ZP
M 10	x	45	S	100	162,00 ZP
M 10	x	50	S	100	199,00 ZP
M 10	x	60	S	100	210,00 ZP
M 12	x	25	S	100	142,00 ZP
M 12	x	30	S	100	152,00 ZP
M 12	x	35	S	100	158,00 ZP
M 12	x	40	S	100	170,00 ZP
M 12	x	45	S	50	184,00 ZP
M 12	x	50	S	50	210,00 ZP
M 12	x	60	S	50	220,00 ZP
M 12	x	65	S	50	240,00 ZP
M 12	x	70	S	50	350,00 ZP
M 16	x	30	S	50	177,00 ZP
M 16	x	35	S	50	190,00 ZP
M 16	x	40	S	50	195,00 ZP
M 16	x	45	S	50	207,00 ZP
M 16	x	50	S	50	219,00 ZP
M 16	x	60	S	25	260,00 ZP
M 16	x	65	S	25	262,00 ZP
M 16	x	70	S	25	268,00 ZP
M 16	x	75	S	25	305,00 ZP
M 16	x	80	S	25	310,00 ZP
M 16	x	90	S	25	340,00 ZP
M 16	x	100	S	25	365,00 ZP
M 16	x	110	S	25	700,00 ZP
M 16	x	120	S	25	730,00 ZP
M 20	x	40	S	25	495,00 ZP
M 20	x	45	S	25	520,00 ZP
M 20	x	50	S	25	550,00 ZP
M 20	x	60	S	25	590,00 ZP
M 20	x	70	S	25	620,00 ZP
M 20	x	80	S	10	830,00 ZP
M 20	x	90	S	10	880,00 ZP
M 24	x	50	S	10	1020,00 ZP
M 24	x	55	S	10	1080,00 ZP
M 24	x	60	S	10	1145,00 ZP
M 24	x	65	S	10	1205,00 ZP
M 24	x	70	S	10	1275,00 ZP
M 24	x	80	S	10	1355,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00938.500	RAZ 430

938 **5.8**



Studs, metal end ≈ 1 d

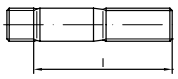
Dimensions → TI-18 Mech. properties → TI-220

Stainless → S. 469

M 5	x	16	S	100	60,00
M 5	x	20	S	100	60,00
M 5	x	25	S	100	61,00
M 5	x	30	S	100	63,00
M 5	x	35	S	100	65,00
M 5	x	50	S	100	70,00
M 6	x	16	S	100	34,00
M 6	x	18	S	100	38,00
M 6	x	20	S	100	39,50
M 6	x	25	S	100	55,00
M 6	x	30	S	100	42,50
M 6	x	35	S	100	44,50
M 6	x	40	S	100	47,50
M 6	x	45	S	100	48,50
M 6	x	50	S	100	51,00
M 6	x	60	S	100	54,00
M 6	x	70	S	100	63,00
M 8	x	16	S	100	47,50
M 8	x	20	S	100	29,50
M 8	x	22	S	100	34,00
M 8	x	25	S	100	32,50
M 8	x	30	S	100	35,50
M 8	x	35	S	100	36,00
M 8	x	40	S	100	42,50
M 8	x	45	S	100	43,00
M 8	x	50	S	100	40,50
M 8	x	55	S	100	44,50
M 8	x	60	S	100	46,00
M 8	x	80	S	100	118,00
M 8	x	90	S	100	128,00
M 8	x	100	S	100	142,00
M 10	x	20	S	100	65,00
M 10	x	25	S	100	38,50
M 10	x	30	S	100	42,50
M 10	x	35	S	100	51,00
M 10	x	40	S	100	54,00
M 10	x	45	S	100	55,00
M 10	x	50	S	100	57,00
M 10	x	55	S	100	60,00
M 10	x	60	S	100	64,00
M 10	x	65	S	50	103,00
M 10	x	70	S	50	107,00
M 10	x	80	S	50	158,00
M 10	x	90	S	50	168,00
M 10	x	110	S	50	260,00
M 12	x	20	S	100	72,00
M 12	x	25	S	100	50,00
M 12	x	30	S	100	52,00
M 12	x	35	S	100	54,00
M 12	x	40	S	100	56,00
M 12	x	45	S	50	59,00
M 12	x	50	S	50	61,00
M 12	x	55	S	50	77,00
M 12	x	60	S	50	79,00
M 12	x	65	S	50	105,00
M 12	x	70	S	50	107,00
M 12	x	75	S	50	110,00
M 12	x	80	S	50	113,00
M 12	x	85	S	50	205,00
M 12	x	90	S	50	213,00
M 12	x	100	S	25	224,00
M 12	x	110	S	25	280,00
M 12	x	120	S	25	305,00
M 14	x	30	S	50	194,00
M 14	x	35	S	50	170,00
M 14	x	40	S	50	182,00
M 14	x	45	S	50	192,00
M 14	x	50	S	50	203,00
M 14	x	60	S	25	227,00
M 16	x	25	S	50	138,00
M 16	x	30	S	50	89,00
M 16	x	35	S	50	92,00
M 16	x	40	S	50	97,00
M 16	x	45	S	50	102,00
M 16	x	50	S	50	109,00
M 16	x	55	S	50	113,00
M 16	x	60	S	25	120,00
M 16	x	65	S	25	156,00
M 16	x	70	S	25	161,00
M 16	x	75	S	25	168,00
M 16	x	80	S	25	174,00
M 16	x	90	S	25	260,00
M 16	x	100	S	25	280,00
M 16	x	110	S	25	540,00
M 16	x	120	S	25	570,00
M 16	x	130	S	25	590,00
M 16	x	140	S	25	590,00
M 16	x	160	S	10	620,00
M 20	x	35	S	25	232,00
M 20	x	40	S	25	198,00
M 20	x	45	S	25	208,00
M 20	x	50	S	25	223,00
M 20	x	55	S	25	232,00
M 20	x	60	S	25	243,00
M 20	x	65	S	25	275,00
M 20	x	70	S	25	285,00
M 20	x	75	S	25	300,00
M 20	x	80	S	10	310,00
M 20	x	85	S	10	390,00
M 20	x	90	S	10	400,00
M 20	x	100	S	10	430,00
M 20	x	110	S	10	590,00
M 20	x	120	S	10	600,00
M 20	x	130	S	10	620,00
M 20	x	140	S	10	670,00
M 20	x	150	S	10	700,00
M 20	x	180	S	10	760,00
M 24	x	50	S	10	335,00
M 24	x	55	S	10	350,00
M 24	x	60	S	10	365,00
M 24	x	65	S	10	385,00
M 24	x	70	S	10	395,00
M 24	x	75	S	10	415,00
M 24	x	80	S	10	430,00
M 24	x	90	S	10	465,00
M 24	x	100	S	10	500,00
M 24	x	120	S	10	600,00
M 24	x	180	S	10	870,00
M 30	x	65	S	10	880,00
M 30	x	70	S	10	890,00
M 30	x	80	S	5	930,00
M 30	x	90	S	1	960,00
M 30	x	100	S	1	1040,00
M 30	x	110	S	1	1070,00

Dimensions	PU Pieces	€/100/Mat.
DIN	00938.510	RAZ 430

938 **5.8 zinc plated**



Studs, metal end ≈ 1 d

Dimensions → TI-18 Corrosion protection → TI-217

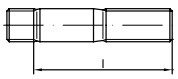
Mech. properties → TI-220

Stainless → S. 469

M 8	x	20	S	100	32,50 ZP
M 8	x	25	S	100	36,50 ZP
M 8	x	30	S	100	40,50 ZP
M 8	x	40	S	100	49,50 ZP
M 10	x	20	S	100	80,00 ZP
M 10	x	25	S	100	46,50 ZP
M 10	x	30	S	100	54,00 ZP
M 10	x	35	S	100	62,00 ZP
M 10	x	40	S	100	65,00 ZP
M 10	x	50	S	100	72,00 ZP
M 12	x	25	S	100	63,00 ZP
M 12	x	30	S	100	67,00 ZP
M 12	x	35	S	100	70,00 ZP
M 12	x	40	S	100	75,00 ZP
M 12	x	50	S	50	83,00 ZP
M 16	x	35	S	50	118,00 ZP
M 16	x	40	S	50	127,00 ZP
M 16	x	45	S	50	136,00 ZP
M 16	x	50	S	50	144,00 ZP
M 16	x	55	S	50	152,00 ZP
M 16	x	60	S	25	161,00 ZP
M 20	x	50	S	25	275,00 ZP
M 20	x	55	S	25	285,00 ZP
M 20	x	60	S	25	305,00 ZP
M 20	x	65	S	25	335,00 ZP
M 20	x	70	S	25	350,00 ZP
M 20	x	80	S	10	385,00 ZP

DIN	00938.800	RAZ 430

938 **8.8**



Studs, metal end ≈ 1 d

Dimensions → TI-18 Mech. properties → TI-220

Tightening torque → TI-230

Stainless → S. 469

M 8	x	20	S	50	45,50
M 8	x	25	S	50	50,00
M 8	x	30	S	50	54,00
M 8	x	35	S	50	55,00
M 8	x	40	S	50	59,00
M 8	x	45	S	50	60,00
M 8	x	50	S	50	61,00
M 8	x	55	S	50	62,00
M 8	x	60	S	50	64,00
M 8	x	65	S	50	65,00
M 8	x	70	S	50	68,00

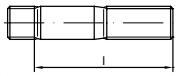
Dimensions			PU	Pieces	€/100/Mat.
M 8	x	80	S	50	75,00
M 10	x	20	S	50	136,00
M 10	x	25	S	50	55,00
M 10	x	30	S	50	57,00
M 10	x	35	S	50	59,00
M 10	x	40	S	50	64,00
M 10	x	45	S	50	67,00
M 10	x	50	S	50	69,00
M 10	x	55	S	50	71,00
M 10	x	60	S	50	73,00
M 10	x	65	S	50	208,00
M 10	x	70	S	50	211,00
M 10	x	75	S	50	219,00
M 10	x	80	S	25	223,00
M 10	x	100	S	25	305,00
M 12	x	25	S	50	73,00
M 12	x	30	S	50	78,00
M 12	x	35	S	50	81,00
M 12	x	40	S	50	86,00
M 12	x	45	S	50	89,00
M 12	x	50	S	50	92,00
M 12	x	55	S	25	99,00
M 12	x	60	S	25	102,00
M 12	x	65	S	25	105,00
M 12	x	70	S	25	108,00
M 12	x	75	S	25	111,00
M 12	x	80	S	25	114,00
M 12	x	85	S	25	315,00
M 12	x	90	S	25	325,00
M 12	x	100	S	10	345,00
M 16	x	30	S	25	315,00
M 16	x	35	S	25	174,00
M 16	x	40	S	25	185,00
M 16	x	45	S	25	206,00
M 16	x	50	S	25	211,00
M 16	x	55	S	25	222,00
M 16	x	60	S	10	260,00
M 16	x	65	S	10	270,00
M 16	x	70	S	10	275,00
M 16	x	75	S	10	445,00
M 16	x	80	S	10	480,00
M 16	x	85	S	10	485,00
M 16	x	90	S	10	500,00
M 16	x	100	S	10	590,00
M 16	x	120	S	10	670,00
M 16	x	140	S	10	750,00
M 20	x	35	S	10	560,00
M 20	x	40	S	10	590,00
M 20	x	45	S	10	590,00
M 20	x	50	S	10	600,00
M 20	x	55	S	10	600,00
M 20	x	60	S	10	620,00
M 20	x	65	S	10	650,00
M 20	x	70	S	10	690,00
M 20	x	75	S	10	720,00
M 20	x	80	S	10	750,00
M 20	x	85	S	10	780,00
M 20	x	90	S	10	810,00
M 20	x	100	S	10	890,00
M 20	x	110	S	10	930,00
M 20	x	120	S	10	1000,00
M 20	x	130	S	10	1050,00
M 20	x	140	S	1	1110,00
M 24	x	50	S	10	850,00
M 24	x	55	S	10	880,00
M 24	x	60	S	10	910,00
M 24	x	65	S	10	940,00
M 24	x	70	S	10	990,00
M 24	x	75	S	1	1010,00
M 24	x	80	S	1	1050,00
M 24	x	85	S	1	1090,00
M 24	x	90	S	1	1120,00
M 24	x	100	S	1	1190,00
M 24	x	110	S	1	1290,00
M 24	x	120	S	1	1380,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	130	S	1	1460,00
M 24	x	150	S	1	1600,00

DIN	00938.810	RAZ 430

938

8.8
zinc plated



Studs, metal end ≈ 1 d

Dimensions → TI-18 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

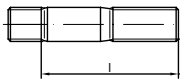
Stainless → S. 469

M 8	x	20	S	50	50,00 ZP
M 8	x	25	S	50	55,00 ZP
M 8	x	30	S	50	81,00 ZP
M 8	x	40	S	50	111,00 ZP
M 10	x	20	S	50	145,00 ZP
M 10	x	25	S	50	64,00 ZP
M 10	x	30	S	50	70,00 ZP
M 10	x	35	S	50	104,00 ZP
M 10	x	40	S	50	119,00 ZP
M 10	x	45	S	50	122,00 ZP
M 10	x	50	S	50	124,00 ZP
M 10	x	60	S	50	128,00 ZP
M 10	x	70	S	50	266,00 ZP
M 12	x	25	S	50	87,00 ZP
M 12	x	30	S	50	94,00 ZP
M 12	x	35	S	50	99,00 ZP
M 12	x	40	S	50	105,00 ZP
M 12	x	50	S	50	166,00 ZP
M 12	x	55	S	25	173,00 ZP
M 12	x	60	S	25	176,00 ZP
M 16	x	30	S	25	345,00 ZP
M 16	x	35	S	25	208,00 ZP
M 16	x	40	S	25	223,00 ZP
M 16	x	45	S	25	248,00 ZP
M 16	x	50	S	25	260,00 ZP
M 16	x	55	S	25	285,00 ZP
M 16	x	60	S	10	315,00 ZP
M 16	x	65	S	10	325,00 ZP
M 16	x	70	S	10	340,00 ZP
M 20	x	40	S	10	640,00 ZP
M 20	x	45	S	10	640,00 ZP
M 20	x	50	S	10	650,00 ZP
M 20	x	60	S	10	690,00 ZP
M 20	x	65	S	10	720,00 ZP
M 20	x	70	S	10	760,00 ZP
M 20	x	80	S	10	810,00 ZP
M 20	x	90	S	10	870,00 ZP
M 20	x	100	S	10	950,00 ZP
M 24	x	60	S	10	1000,00 ZP
M 24	x	65	S	10	1030,00 ZP
M 24	x	70	S	10	1090,00 ZP
M 24	x	75	S	1	1100,00 ZP
M 24	x	80	S	1	1140,00 ZP
M 24	x	90	S	1	1210,00 ZP
M 24	x	100	S	1	1280,00 ZP
M 24	x	110	S	1	1380,00 ZP
M 24	x	120	S	1	1470,00 ZP
M 24	x	130	S	1	1550,00 ZP
M 24	x	140	S	1	1620,00 ZP
M 24	x	150	S	1	1700,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	00939.504				RAZ 432

939

5.6
AD W7



Studs, metal end ≈ 1,25 d

For pressure vessel const. as per AD regulations, products with renunciation of an inspection certificate

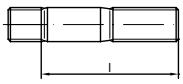
Dimensions → TI-18 Mech. properties → TI-220
Tightening torque → TI-230

M 12	x	30	S	100	150,00
M 12	x	35	S	100	157,00
M 12	x	40	S	100	166,00
M 12	x	50	S	100	197,00
M 16	x	35	S	50	181,00
M 16	x	40	S	50	187,00
M 16	x	50	S	50	209,00
M 16	x	60	S	25	235,00
M 16	x	70	S	25	265,00
M 20	x	45	S	25	520,00

DIN	00939.500	RAZ 430

939

5.8



Studs, metal end ≈ 1,25 d

Dimensions → TI-18 Mech. properties → TI-220

Stainless → S. 470

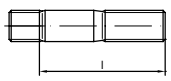
M 5	x	16	S	100	61,00
M 5	x	20	S	100	62,00
M 5	x	40	S	100	68,00
M 6	x	16	S	100	28,50
M 6	x	18	S	100	28,50
M 6	x	20	S	100	29,50
M 6	x	25	S	100	31,00
M 6	x	28	S	100	70,00
M 6	x	30	S	100	35,50
M 6	x	35	S	100	40,00
M 6	x	40	S	100	41,50
M 6	x	45	S	100	43,50
M 6	x	50	S	100	44,50
M 6	x	60	S	100	54,00
M 6	x	80	S	100	87,00
M 8	x	16	S	100	43,00
M 8	x	18	S	100	87,00
M 8	x	20	S	100	25,50
M 8	x	22	S	100	26,50
M 8	x	25	S	100	30,50
M 8	x	30	S	100	36,00
M 8	x	35	S	100	38,00
M 8	x	40	S	100	39,00
M 8	x	45	S	100	40,00
M 8	x	50	S	100	41,50
M 8	x	55	S	100	45,50
M 8	x	60	S	100	43,50
M 8	x	65	S	100	48,50

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	70	S	100	50,00
M 8	x	80	S	100	80,00
M 8	x	90	S	100	128,00
M 8	x	100	S	100	136,00
M 10	x	20	S	100	38,00
M 10	x	22	S	100	39,50
M 10	x	25	S	100	31,00
M 10	x	30	S	100	32,00
M 10	x	35	S	100	34,00
M 10	x	40	S	100	35,00
M 10	x	45	S	100	47,50
M 10	x	50	S	100	49,50
M 10	x	55	S	100	55,00
M 10	x	60	S	100	57,00
M 10	x	65	S	50	59,00
M 10	x	70	S	50	62,00
M 10	x	75	S	50	63,00
M 10	x	80	S	50	77,00
M 10	x	90	S	50	83,00
M 10	x	100	S	50	89,00
M 10	x	110	S	50	250,00
M 10	x	120	S	50	285,00
M 10	x	130	S	50	300,00
M 10	x	140	S	50	440,00
M 10	x	160	S	50	520,00
M 10	x	190	S	50	570,00
M 12	x	20	S	100	105,00
M 12	x	25	S	100	44,50
M 12	x	28	S	100	65,00
M 12	x	30	S	100	46,50
M 12	x	35	S	100	48,00
M 12	x	40	S	100	65,00
M 12	x	45	S	50	68,00
M 12	x	50	S	50	70,00
M 12	x	55	S	50	78,00
M 12	x	60	S	50	80,00
M 12	x	65	S	50	77,00
M 12	x	70	S	50	85,00
M 12	x	75	S	50	88,00
M 12	x	80	S	50	85,00
M 12	x	85	S	50	168,00
M 12	x	90	S	50	97,00
M 12	x	95	S	50	185,00
M 12	x	100	S	25	103,00
M 12	x	105	S	25	285,00
M 12	x	110	S	25	305,00
M 12	x	120	S	25	315,00
M 12	x	130	S	25	325,00
M 12	x	140	S	25	520,00
M 12	x	150	S	25	540,00
M 12	x	200	S	25	640,00
M 14	x	30	S	50	168,00
M 14	x	35	S	50	179,00
M 14	x	40	S	50	191,00
M 16	x	25	S	50	149,00
M 16	x	30	S	50	101,00
M 16	x	35	S	50	102,00
M 16	x	40	S	50	109,00
M 16	x	45	S	50	114,00
M 16	x	50	S	50	122,00
M 16	x	55	S	50	153,00
M 16	x	60	S	25	161,00
M 16	x	65	S	25	168,00
M 16	x	70	S	25	203,00
M 16	x	75	S	25	210,00
M 16	x	80	S	25	217,00
M 16	x	85	S	25	295,00
M 16	x	90	S	25	233,00
M 16	x	100	S	25	250,00
M 16	x	105	S	25	550,00
M 16	x	110	S	25	540,00
M 16	x	120	S	25	560,00
M 16	x	130	S	25	620,00
M 16	x	140	S	25	620,00
M 16	x	150	S	25	630,00

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	160	S	10	650,00
M 16	x	180	S	10	690,00
M 16	x	190	S	10	700,00
M 16	x	200	S	10	710,00
M 20	x	30	S	25	244,00
M 20	x	40	S	25	235,00
M 20	x	45	S	25	200,00
M 20	x	50	S	25	208,00
M 20	x	55	S	25	221,00
M 20	x	60	S	25	233,00
M 20	x	65	S	25	275,00
M 20	x	70	S	25	285,00
M 20	x	75	S	25	300,00
M 20	x	80	S	10	310,00
M 20	x	85	S	10	325,00
M 20	x	90	S	10	340,00
M 20	x	95	S	10	350,00
M 20	x	100	S	10	360,00
M 20	x	110	S	10	620,00
M 20	x	120	S	10	630,00
M 20	x	130	S	10	630,00
M 20	x	140	S	10	680,00
M 20	x	150	S	10	720,00
M 20	x	160	S	10	730,00
M 20	x	180	S	10	770,00
M 24	x	50	S	10	395,00
M 24	x	55	S	10	350,00
M 24	x	60	S	10	365,00
M 24	x	65	S	10	385,00
M 24	x	70	S	10	395,00
M 24	x	75	S	10	415,00
M 24	x	80	S	10	430,00
M 24	x	85	S	10	445,00
M 24	x	90	S	10	465,00
M 24	x	100	S	10	500,00
M 24	x	110	S	10	570,00
M 24	x	120	S	10	610,00
M 24	x	130	S	10	650,00
M 24	x	160	S	10	840,00
M 24	x	170	S	10	870,00
M 24	x	180	S	10	890,00
M 24	x	200	S	10	960,00
M 27	x	65	S	10	680,00
M 27	x	70	S	10	690,00
M 27	x	80	S	10	710,00
M 27	x	100	S	10	810,00
M 27	x	110	S	10	840,00
M 30	x	65	S	10	920,00
M 30	x	70	S	10	940,00
M 30	x	80	S	1	960,00
M 30	x	90	S	1	990,00
M 30	x	100	S	1	1070,00
M 30	x	120	S	1	1180,00
M 30	x	130	S	1	1220,00
M 30	x	140	S	1	1300,00
M 30	x	150	S	1	1330,00
M 30	x	180	S	1	1570,00
M 30	x	200	S	1	1740,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 939	00939.510		RAZ 430

5.8
zinc plated



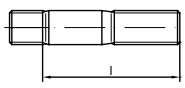
Studs, metal end ≈ 1,25 d

Dimensions → TI-18 Corrosion protection → TI-217
Mech. properties → TI-220

Stainless → S. 470

M 8	x	20	S	100	34,00 ZP
M 8	x	25	S	100	35,50 ZP
M 8	x	30	S	100	37,00 ZP
M 10	x	25	S	100	38,50 ZP
M 10	x	30	S	100	40,00 ZP
M 10	x	35	S	100	43,50 ZP
M 10	x	40	S	100	46,00 ZP
M 12	x	30	S	100	60,00 ZP
M 12	x	35	S	100	63,00 ZP
M 12	x	40	S	100	80,00 ZP
M 12	x	45	S	50	83,00 ZP
M 12	x	50	S	50	85,00 ZP
M 16	x	35	S	50	134,00 ZP
M 16	x	40	S	50	144,00 ZP
M 16	x	45	S	50	153,00 ZP
M 16	x	50	S	50	165,00 ZP
M 16	x	60	S	25	210,00 ZP
M 16	x	90	S	25	285,00 ZP
M 20	x	45	S	25	260,00 ZP
M 20	x	50	S	25	275,00 ZP
M 20	x	60	S	25	310,00 ZP
M 20	x	70	S	25	355,00 ZP
M 20	x	80	S	25	390,00 ZP

DIN	00939.800	RAZ 430
939	8.8	



Studs, metal end ≈ 1,25 d

Dimensions → TI-18 Mech. properties → TI-220
Tightening torque → TI-230

Stainless → S. 470

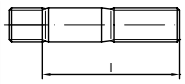
M 6	x	16	S	100	38,00
M 6	x	20	S	100	39,00
M 6	x	25	S	100	39,50
M 6	x	30	S	100	42,00
M 6	x	35	S	100	43,00
M 8	x	16	S	50	44,50
M 8	x	20	S	50	46,00
M 8	x	25	S	50	47,00
M 8	x	30	S	50	51,00
M 8	x	35	S	50	52,00
M 8	x	40	S	50	54,00
M 8	x	45	S	50	55,00
M 8	x	50	S	50	57,00
M 8	x	55	S	50	59,00
M 8	x	60	S	50	60,00

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	65	S	50	62,00
M 8	x	70	S	50	63,00
M 8	x	80	S	50	67,00
M 8	x	90	S	50	70,00
M 10	x	20	S	50	56,00
M 10	x	25	S	50	57,00
M 10	x	30	S	50	60,00
M 10	x	35	S	50	64,00
M 10	x	40	S	50	67,00
M 10	x	45	S	50	69,00
M 10	x	50	S	50	71,00
M 10	x	55	S	50	73,00
M 10	x	60	S	50	77,00
M 10	x	65	S	50	202,00
M 10	x	70	S	50	216,00
M 10	x	75	S	50	223,00
M 10	x	80	S	25	227,00
M 10	x	90	S	25	270,00
M 10	x	100	S	25	305,00
M 10	x	110	S	25	345,00
M 10	x	120	S	25	360,00
M 12	x	25	S	50	126,00
M 12	x	30	S	50	100,00
M 12	x	35	S	50	81,00
M 12	x	40	S	50	86,00
M 12	x	45	S	50	89,00
M 12	x	50	S	50	92,00
M 12	x	55	S	25	99,00
M 12	x	60	S	25	102,00
M 12	x	65	S	25	104,00
M 12	x	70	S	25	108,00
M 12	x	75	S	25	295,00
M 12	x	80	S	25	285,00
M 12	x	85	S	25	300,00
M 12	x	90	S	25	310,00
M 12	x	100	S	10	340,00
M 12	x	110	S	25	360,00
M 12	x	120	S	25	380,00
M 12	x	130	S	25	405,00
M 12	x	140	S	25	475,00
M 16	x	30	S	25	193,00
M 16	x	35	S	25	208,00
M 16	x	40	S	25	222,00
M 16	x	45	S	25	240,00
M 16	x	50	S	25	255,00
M 16	x	55	S	25	270,00
M 16	x	60	S	10	315,00
M 16	x	65	S	10	325,00
M 16	x	70	S	10	335,00
M 16	x	75	S	10	350,00
M 16	x	80	S	10	355,00
M 16	x	85	S	10	840,00
M 16	x	90	S	10	375,00
M 16	x	95	S	10	850,00
M 16	x	100	S	10	380,00
M 16	x	110	S	10	610,00
M 16	x	120	S	10	640,00
M 16	x	130	S	10	690,00
M 16	x	140	S	10	730,00
M 20	x	40	S	10	540,00
M 20	x	45	S	10	510,00
M 20	x	50	S	10	560,00
M 20	x	55	S	10	570,00
M 20	x	60	S	10	610,00
M 20	x	65	S	10	640,00
M 20	x	70	S	10	680,00
M 20	x	75	S	10	700,00
M 20	x	80	S	10	720,00
M 20	x	85	S	10	770,00
M 20	x	90	S	10	790,00
M 20	x	100	S	10	870,00
M 20	x	110	S	10	880,00
M 20	x	120	S	10	950,00
M 20	x	130	S	10	1010,00
M 20	x	140	S	1	1070,00

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	150	S	1	1120,00
M 24	x	50	S	10	850,00
M 24	x	55	S	10	880,00
M 24	x	60	S	10	910,00
M 24	x	65	S	10	950,00
M 24	x	70	S	1	990,00
M 24	x	75	S	1	1010,00
M 24	x	80	S	1	1040,00
M 24	x	90	S	1	1140,00
M 24	x	100	S	1	1240,00
M 24	x	110	S	1	1350,00
M 24	x	120	S	1	1370,00
M 24	x	130	S	1	1450,00
M 24	x	140	S	1	1540,00
M 24	x	150	S	1	1660,00

DIN	00939.810	RAZ 430

939 **8.8**
zinc plated



Studs,
metal end ≈ 1,25 d

Dimensions → TI-18 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

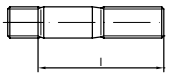
Stainless → S. 470

M 6	x	16	S	100	43,00 ZP
M 6	x	20	S	100	44,00 ZP
M 6	x	25	S	100	44,50 ZP
M 6	x	30	S	100	47,00 ZP
M 8	x	16	S	50	10,40 ZP
M 8	x	20	S	50	23,50 ZP
M 8	x	25	S	50	52,00 ZP
M 8	x	30	S	50	57,00 ZP
M 8	x	35	S	50	58,00 ZP
M 8	x	40	S	50	61,00 ZP
M 8	x	45	S	50	258,00 ZP
M 8	x	50	S	50	70,56 ZP
M 8	x	55	S	50	67,00 ZP
M 8	x	60	S	50	69,00 ZP
M 8	x	70	S	50	71,07 ZP
M 8	x	80	S	50	235,00 ZP
M 8	x	90	S	50	129,00 ZP
M 10	x	20	S	50	63,00 ZP
M 10	x	25	S	50	67,00 ZP
M 10	x	30	S	50	70,00 ZP
M 10	x	35	S	50	76,00 ZP
M 10	x	40	S	50	80,00 ZP
M 10	x	45	S	50	84,00 ZP
M 10	x	50	S	50	86,00 ZP
M 10	x	55	S	50	88,00 ZP
M 10	x	60	S	50	92,00 ZP
M 10	x	65	S	50	217,00 ZP
M 10	x	80	S	25	242,00 ZP
M 10	x	90	S	25	290,00 ZP
M 10	x	100	S	25	325,00 ZP
M 10	x	110	S	25	369,00 ZP
M 10	x	120	S	25	384,00 ZP
M 12	x	25	S	50	140,00 ZP
M 12	x	30	S	50	116,00 ZP
M 12	x	35	S	50	99,00 ZP
M 12	x	40	S	50	107,00 ZP
M 12	x	45	S	50	111,00 ZP
M 12	x	50	S	50	116,00 ZP
M 12	x	60	S	25	126,00 ZP
M 12	x	70	S	25	136,00 ZP
M 12	x	75	S	25	320,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	80	S	25	340,00 ZP
M 12	x	90	S	25	365,00 ZP
M 12	x	100	S	10	395,00 ZP
M 12	x	110	S	25	415,00 ZP
M 12	x	120	S	25	435,00 ZP
M 16	x	30	S	25	240,00 ZP
M 16	x	35	S	25	256,00 ZP
M 16	x	40	S	25	270,00 ZP
M 16	x	45	S	25	295,00 ZP
M 16	x	50	S	25	315,00 ZP
M 16	x	55	S	25	335,00 ZP
M 16	x	60	S	10	380,00 ZP
M 16	x	70	S	10	405,00 ZP
M 16	x	80	S	10	440,00 ZP
M 16	x	100	S	10	480,00 ZP
M 16	x	110	S	10	710,00 ZP
M 16	x	120	S	10	740,00 ZP
M 20	x	40	S	10	830,00 ZP
M 20	x	45	S	10	800,00 ZP
M 20	x	50	S	10	850,00 ZP
M 20	x	55	S	10	870,00 ZP
M 20	x	60	S	10	870,00 ZP
M 20	x	70	S	10	880,00 ZP
M 20	x	80	S	10	880,00 ZP
M 20	x	90	S	10	910,00 ZP
M 20	x	100	S	10	1160,00 ZP
M 20	x	110	S	10	1170,00 ZP
M 20	x	120	S	10	1240,00 ZP
M 20	x	130	S	10	1300,00 ZP
M 24	x	50	S	10	940,00 ZP
M 24	x	60	S	10	1000,00 ZP
M 24	x	70	S	1	1080,00 ZP
M 24	x	80	S	1	1130,00 ZP
M 24	x	90	S	1	1240,00 ZP
M 24	x	100	S	1	1330,00 ZP
M 24	x	110	S	1	1440,00 ZP
M 24	x	120	S	1	1560,00 ZP
M 24	x	130	S	1	1640,00 ZP
M 24	x	140	S	1	1740,00 ZP
M 24	x	150	S	1	1860,00 ZP
M 30	x	90	S	1	4900,00 ZP
M 30	x	100	S	1	5000,00 ZP

DIN	00939.100	RAZ 430

939 **10.9**



Studs,
metal end ≈ 1,25 d

Dimensions → TI-18 Mech. properties → TI-220
Tightening torque → TI-230

Stainless → S. 470

M 10	x	25	S	50	171,00
M 10	x	30	S	50	180,00
M 10	x	35	S	50	192,00
M 10	x	40	S	50	201,00
M 10	x	45	S	50	207,00
M 10	x	50	S	50	213,00
M 10	x	55	S	100	147,00
M 10	x	65	S	50	606,00
M 10	x	70	S	50	648,00
M 10	x	80	S	50	681,00
M 10	x	100	S	25	915,00
M 12	x	25	S	50	148,00
M 12	x	30	S	50	300,00
M 12	x	35	S	50	80,78

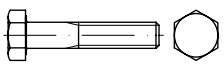
€/100 = price in € plus VAT when ordering full package unit

Dimensions					PU	Pieces	€/100/Mat.
M 12	x	40			S	50	69,70
M 12	x	45			S	50	267,00
M 12	x	50			S	50	276,00
M 12	x	60			S	25	306,00
M 12	x	65			S	25	297,00
M 12	x	70			S	25	324,00
M 12	x	80			S	25	855,00
M 16	x	35			S	25	938,00
M 16	x	40			S	25	666,00
M 16	x	45			S	25	720,00
M 16	x	50			S	25	765,00
M 16	x	60			S	10	945,00
M 16	x	65			S	10	975,00
M 16	x	70			S	10	1005,00
M 16	x	80			S	10	1065,00
M 16	x	90			S	10	1125,00
M 16	x	100			S	10	1140,00
M 16	x	110			S	10	1830,00
M 16	x	120			S	10	1920,00
M 16	x	125			S	10	1990,00
M 16	x	130			S	10	2070,00
M 16	x	140			S	10	2190,00
M 16	x	150			S	10	2310,00
M 16	x	160			S	10	2430,00
M 16	x	180			S	50	368,00
M 16	x	190			S	10	2670,00
M 16	x	200			S	10	2790,00
M 20	x	50			S	10	1680,00
M 20	x	55			S	10	1710,00
M 20	x	60			S	10	1830,00
M 20	x	65			S	10	1920,00
M 20	x	80			S	10	2160,00
M 20	x	90			S	10	2370,00
M 20	x	100			S	10	2610,00
M 20	x	110			S	10	2640,00
M 20	x	120			S	10	2850,00
M 20	x	140			S	10	3210,00
M 20	x	150			S	1	3360,00
M 20	x	160			S	1	3510,00
M 20	x	200			S	1	3660,00
M 20	x	220			S	1	3810,00
M 20	x	250			S	1	3960,00
M 20	x	270			S	1	4410,00
M 20	x	280			S	1	4110,00
M 20	x	290			S	1	4560,00

DIN	00960.800	RAZ 440

960

8.8



Hexagon head bolts with shank, with fine pitch thread

Short dim. in part thread up to head

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

DIN 960 → replaced by ISO 8765

M 8	x	1	x	35	S	200	23,50
M 8	x	1	x	40	S	200	26,25
M 10	x	1	x	40	S	200	40,95
M 10	x	1,25	x	40	S	100	43,10
M 10	x	1,25	x	45	S	100	45,05
M 10	x	1	x	50	S	200	48,25
M 10	x	1,25	x	50	S	100	47,95
M 10	x	1,25	x	55	S	100	51,30
M 10	x	1	x	60	S	100	51,60
M 10	x	1,25	x	60	S	100	52,25

Dimensions						PU	Pieces	€/100/Mat.
M 10	x	1	x	65		S	100	57,35
M 10	x	1	x	70		S	100	57,35
M 10	x	1,25	x	70		S	100	57,35
M 10	x	1	x	80		S	100	64,90
M 10	x	1,25	x	80		S	100	64,30
M 10	x	1,25	x	90		S	100	74,10
M 10	x	1,25	x	100		S	100	85,85
M 10	x	1,25	x	110		S	50	118,00
M 10	x	1,25	x	120		S	50	130,00
M 10	x	1,25	x	130		S	50	165,00
M 12	x	1,25	x	45		S	100	67,05
M 12	x	1,5	x	45		S	100	60,80
M 12	x	1,25	x	50		S	100	68,60
M 12	x	1,5	x	50		S	100	60,80
M 12	x	1,25	x	60		S	100	76,05
M 12	x	1,5	x	60		S	100	75,35
M 12	x	1,25	x	70		S	50	83,45
M 12	x	1,5	x	70		S	50	83,45
M 12	x	1,25	x	80		S	50	92,10
M 12	x	1,5	x	80		S	50	88,95
M 12	x	1,25	x	90		S	50	107,00
M 12	x	1,5	x	90		S	50	104,00
M 12	x	1,25	x	100		S	50	117,00
M 12	x	1,5	x	100		S	50	113,00
M 12	x	1,25	x	110		S	50	158,00
M 12	x	1,5	x	110		S	50	129,00
M 12	x	1,25	x	120		S	50	173,00
M 12	x	1,5	x	120		S	50	145,00
M 12	x	1,25	x	130		S	50	192,00
M 12	x	1,5	x	130		S	50	186,00
M 12	x	1,5	x	140		S	50	214,00
M 14	x	1,5	x	50		S	50	118,00
M 14	x	1,5	x	55		S	50	126,00
M 14	x	1,5	x	60		S	50	126,00
M 14	x	1,5	x	65		S	50	138,00
M 14	x	1,5	x	70		S	50	138,00
M 14	x	1,5	x	75		S	50	158,00
M 14	x	1,5	x	80		S	50	158,00
M 14	x	1,5	x	90		S	50	177,00
M 14	x	1,5	x	100		S	50	198,00
M 14	x	1,5	x	110		S	50	233,00
M 14	x	1,5	x	120		S	50	266,00
M 14	x	1,5	x	130		S	50	305,00
M 14	x	1,5	x	140		S	25	335,00
M 16	x	1,5	x	55		S	50	134,00
M 16	x	1,5	x	60		S	50	143,00
M 16	x	1,5	x	65		S	25	168,00
M 16	x	1,5	x	70		S	25	168,00
M 16	x	1,5	x	75		S	25	172,00
M 16	x	1,5	x	80		S	25	172,00
M 16	x	1,5	x	85		S	25	191,00
M 16	x	1,5	x	90		S	25	191,00
M 16	x	1,5	x	100		S	25	208,00
M 16	x	1,5	x	110		S	25	272,00
M 16	x	1,5	x	120		S	25	272,00
M 16	x	1,5	x	130		S	25	337,00
M 16	x	1,5	x	140		S	25	366,00
M 16	x	1,5	x	150		S	25	371,00
M 16	x	1,5	x	160		S	25	550,00
M 18	x	1,5	x	60		S	25	362,00
M 18	x	1,5	x	65		S	25	362,00
M 18	x	1,5	x	70		S	25	325,00
M 18	x	1,5	x	80		S	25	335,00
M 18	x	1,5	x	90		S	25	368,00
M 18	x	1,5	x	100		S	25	396,00
M 20	x	1,5	x	65		S	25	380,00
M 20	x	1,5	x	70		S	25	333,00
M 20	x	2	x	70		S	25	606,00
M 20	x	1,5	x	75		S	25	340,00
M 20	x	1,5	x	80		S	25	340,00
M 20	x	2	x	80		S	25	616,00
M 20	x	1,5	x	90		S	25	371,00
M 20	x	1,5	x	100		S	25	400,00
M 20	x	2	x	100		S	25	685,00
M 20	x	1,5	x	110		S	25	444,00

Dimensions						PU	Pieces	€/100/Mat.
M 20	x	1,5	x	120		S	25	474,00
M 20	x	2	x	120		S	25	815,00
M 20	x	1,5	x	140		S	25	582,00
M 20	x	1,5	x	150		S	25	593,00
M 20	x	1,5	x	160		S	10	1153,00
M 20	x	1,5	x	180		S	10	1220,00
M 20	x	1,5	x	200		S	10	1392,00
M 24	x	1,5	x	80		S	25	375,00
M 24	x	2	x	80		S	25	533,00
M 24	x	1,5	x	90		S	25	405,00
M 24	x	1,5	x	90		S	25	405,00
M 24	x	1,5	x	100		S	10	445,00
M 24	x	2	x	100		S	10	613,00
M 24	x	1,5	x	120		S	10	505,00
M 24	x	2	x	120		S	10	707,00
M 24	x	1,5	x	130		S	10	535,00
M 24	x	2	x	130		S	10	843,00
M 24	x	1,5	x	140		S	10	565,00
M 24	x	2	x	140		S	10	925,00
M 24	x	1,5	x	150		S	10	600,00
M 24	x	2	x	150		S	10	942,00
M 30	x	2	x	100		S	1	1276,00
M 30	x	2	x	120		S	1	1441,00
M 30	x	2	x	130		S	1	1518,00
M 30	x	2	x	140		S	1	1606,00
M 30	x	2	x	150		S	1	1694,00
M 30	x	2	x	160		S	1	1804,00
M 36	x	3	x	120		S	1	2200,00
M 36	x	3	x	130		S	1	2310,00
M 36	x	3	x	140		S	1	2409,00
M 36	x	3	x	150		S	1	2541,00
M 36	x	3	x	160		S	1	2706,00
M 42	x	3	x	140		S	1	3674,00
M 42	x	3	x	160		S	1	3982,00
M 42	x	3	x	180		S	1	4356,00
M 42	x	3	x	200		S	1	4730,00

DIN	00960.810	RAZ 440

960

8.8
zinc plated

Hexagon head bolts with shank, with fine pitch thread

Short dim. in part thread up to head

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

DIN 960 → replaced by ISO 8765

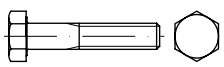
M 12	x	1,5	x	45	S	100	80,50 ZP
M 12	x	1,25	x	50	S	100	83,50 ZP
M 12	x	1,5	x	50	S	100	83,50 ZP
M 12	x	1,25	x	60	S	100	93,00 ZP
M 12	x	1,5	x	60	S	100	93,00 ZP
M 12	x	1,5	x	65	S	50	101,00 ZP
M 12	x	1,25	x	70	S	50	103,00 ZP
M 12	x	1,5	x	70	S	50	103,00 ZP
M 12	x	1,25	x	80	S	50	115,00 ZP
M 12	x	1,5	x	80	S	50	115,00 ZP
M 12	x	1,25	x	90	S	50	130,00 ZP
M 12	x	1,5	x	90	S	50	130,00 ZP
M 12	x	1,25	x	100	S	50	145,00 ZP
M 12	x	1,5	x	100	S	50	143,00 ZP
M 12	x	1,25	x	110	S	50	186,50 ZP
M 12	x	1,5	x	110	S	50	186,50 ZP
M 12	x	1,25	x	120	S	50	205,00 ZP
M 12	x	1,5	x	120	S	50	205,00 ZP

Dimensions						PU	Pieces	€/100/Mat.
M 12	x	1,25	x	130		S	50	225,00 ZP
M 12	x	1,5	x	130		S	50	225,00 ZP
M 12	x	1,5	x	140		S	50	250,00 ZP
M 14	x	1,5	x	50		S	50	140,00 ZP
M 14	x	1,5	x	60		S	50	150,00 ZP
M 14	x	1,5	x	65		S	50	163,00 ZP
M 14	x	1,5	x	70		S	50	164,75 ZP
M 14	x	1,5	x	75		S	50	186,00 ZP
M 14	x	1,5	x	80		S	50	187,50 ZP
M 14	x	1,5	x	90		S	50	209,25 ZP
M 14	x	1,5	x	100		S	50	233,00 ZP
M 16	x	1,5	x	55		S	50	165,00 ZP
M 16	x	1,5	x	60		S	50	175,00 ZP
M 16	x	1,5	x	65		S	25	205,00 ZP
M 16	x	1,5	x	70		S	25	207,00 ZP
M 16	x	1,5	x	75		S	25	210,00 ZP
M 16	x	1,5	x	80		S	25	215,00 ZP
M 16	x	1,5	x	85		S	25	235,00 ZP
M 16	x	1,5	x	90		S	25	236,00 ZP
M 16	x	1,5	x	100		S	25	260,00 ZP
M 16	x	1,5	x	110		S	25	325,00 ZP
M 16	x	1,5	x	120		S	25	330,00 ZP
M 16	x	1,5	x	130		S	25	400,00 ZP
M 16	x	1,5	x	140		S	25	435,00 ZP
M 16	x	1,5	x	150		S	25	445,00 ZP
M 16	x	1,5	x	160		S	25	620,00 ZP
M 20	x	1,5	x	65		S	25	390,00 ZP
M 20	x	1,5	x	70		S	25	393,00 ZP
M 20	x	1,5	x	75		S	25	405,00 ZP
M 20	x	1,5	x	80		S	25	407,00 ZP
M 20	x	1,5	x	90		S	25	445,00 ZP
M 20	x	1,5	x	100		S	25	475,00 ZP
M 20	x	1,5	x	110		S	25	530,00 ZP
M 20	x	1,5	x	120		S	25	565,00 ZP
M 20	x	1,5	x	140		S	25	685,00 ZP
M 20	x	1,5	x	150		S	25	705,00 ZP
M 20	x	1,5	x	160		S	10	1270,00 ZP
M 20	x	1,5	x	180		S	10	1350,00 ZP
M 20	x	1,5	x	200		S	10	1550,00 ZP
M 24	x	2	x	80		S	25	690,00 ZP
M 24	x	2	x	90		S	25	745,00 ZP
M 24	x	2	x	100		S	10	795,00 ZP
M 24	x	2	x	120		S	10	915,00 ZP
M 24	x	2	x	130		S	10	1065,00 ZP
M 24	x	2	x	140		S	10	1160,00 ZP
M 24	x	2	x	150		S	10	1260,00 ZP
M 24	x	2	x	160		S	10	1390,00 ZP
M 24	x	2	x	170		S	10	1500,00 ZP

DIN	00960.100	RAZ 440

960

10.9



Hexagon head bolts with shank, with fine pitch thread

Short dim. in part thread up to head

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

DIN 960 → replaced by ISO 8765

M 10	x	1	x	45		S	100	95,80
M 10	x	1,25	x	45		S	100	95,80
M 10	x	1	x	50		S	100	60,55
M 10	x	1,25	x	50		S	100	61,20
M 10	x	1	x	55		S	100	62,40
M 10	x	1	x	60		S	100	64,90
M 10	x	1,25	x	60		S	100	64,90

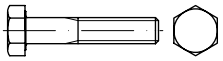
Dimensions						PU	Pieces	€/100/Mat.
M 10	x	1	x	70		S	100	102,00
M 10	x	1,25	x	70		S	100	102,00
M 10	x	1,25	x	100		S	100	165,00
M 10	x	1,25	x	110		S	100	178,00
M 12	x	1,5	x	45		S	100	79,70
M 12	x	1,5	x	50		S	100	85,85
M 12	x	1,5	x	55		S	100	88,35
M 12	x	1,5	x	60		S	100	93,95
M 12	x	1,5	x	65		S	50	95,80
M 12	x	1,25	x	70		S	50	101,00
M 12	x	1,5	x	70		S	50	101,00
M 12	x	1,5	x	75		S	50	118,00
M 12	x	1,5	x	80		S	50	119,00
M 12	x	1,5	x	90		S	50	174,00
M 12	x	1,5	x	100		S	50	192,00
M 12	x	1,5	x	120		S	25	240,00
M 14	x	1,5	x	50		S	50	119,00
M 14	x	1,5	x	55		S	50	125,00
M 14	x	1,5	x	60		S	50	129,00
M 14	x	1,5	x	65		S	50	151,00
M 14	x	1,5	x	70		S	50	151,00
M 14	x	1,5	x	75		S	50	166,00
M 14	x	1,5	x	80		S	50	166,00
M 14	x	1,5	x	90		S	50	240,00
M 14	x	1,5	x	100		S	25	252,00
M 14	x	1,5	x	110		S	25	279,00
M 14	x	1,5	x	120		S	25	305,00
M 14	x	1,5	x	130		S	25	335,00
M 14	x	1,5	x	140		S	25	348,00
M 14	x	1,5	x	160		S	25	386,00
M 16	x	1,5	x	50		S	25	168,00
M 16	x	1,5	x	55		S	50	175,00
M 16	x	1,5	x	60		S	50	187,00
M 16	x	1,5	x	65		S	25	203,00
M 16	x	1,5	x	70		S	25	213,00
M 16	x	1,5	x	75		S	25	232,00
M 16	x	1,5	x	80		S	25	232,00
M 16	x	1,5	x	90		S	25	235,00
M 16	x	1,5	x	100		S	25	252,00
M 16	x	1,5	x	110		S	25	321,00
M 16	x	1,5	x	115		S	25	331,00
M 16	x	1,5	x	120		S	25	331,00
M 16	x	1,5	x	130		S	25	365,00
M 16	x	1,5	x	140		S	25	387,00
M 16	x	1,5	x	150		S	25	407,00
M 16	x	1,5	x	160		S	25	453,00
M 18	x	1,5	x	60		S	25	415,00
M 18	x	1,5	x	65		S	25	419,00
M 18	x	1,5	x	70		S	25	419,00
M 18	x	1,5	x	80		S	25	419,00
M 18	x	1,5	x	90		S	25	480,00
M 18	x	1,5	x	100		S	25	507,00
M 18	x	1,5	x	120		S	10	593,00
M 18	x	1,5	x	140		S	10	680,00
M 18	x	1,5	x	150		S	10	792,00
M 20	x	1,5	x	65		S	25	421,00
M 20	x	1,5	x	70		S	25	421,00
M 20	x	1,5	x	75		S	25	464,00
M 20	x	1,5	x	80		S	25	455,00
M 20	x	1,5	x	85		S	25	521,00
M 20	x	1,5	x	90		S	25	507,00
M 20	x	1,5	x	100		S	25	529,00
M 20	x	1,5	x	110		S	10	551,00
M 20	x	1,5	x	120		S	10	572,00
M 20	x	1,5	x	130		S	10	692,00
M 20	x	1,5	x	140		S	10	768,00
M 20	x	1,5	x	160		S	10	1367,00
M 20	x	1,5	x	170		S	10	1480,00
M 20	x	1,5	x	180		S	10	1513,00
M 20	x	1,5	x	200		S	10	1926,00
M 22	x	1,5	x	70		S	25	663,00
M 22	x	2	x	70		S	25	884,00
M 22	x	1,5	x	80		S	25	675,00
M 22	x	1,5	x	90		S	10	742,00
M 22	x	1,5	x	100		S	10	762,00

Dimensions						PU	Pieces	€/100/Mat.
M 22	x	1,5	x	110		S	10	827,00
M 22	x	1,5	x	120		S	10	885,00
M 22	x	1,5	x	130		S	10	919,00
M 22	x	1,5	x	140		S	10	933,00
M 24	x	1,5	x	80		S	25	673,00
M 24	x	2	x	80		S	25	1275,00
M 24	x	1,5	x	90		S	10	742,00
M 24	x	2	x	90		S	25	1483,00
M 24	x	1,5	x	100		S	10	763,00
M 24	x	2	x	100		S	10	1528,00
M 24	x	1,5	x	110		S	10	830,00
M 24	x	2	x	110		S	10	1625,00
M 24	x	1,5	x	120		S	10	1030,00
M 24	x	2	x	120		S	10	1757,00
M 24	x	1,5	x	130		S	10	1850,00
M 24	x	2	x	130		S	10	1850,00
M 30	x	2	x	100		S	1	1900,00
M 30	x	2	x	120		S	1	2195,00
M 30	x	2	x	130		S	1	2315,00
M 30	x	2	x	140		S	1	2495,00
M 30	x	2	x	150		S	1	2675,00
M 30	x	2	x	160		S	1	2850,00
M 36	x	3	x	120		S	1	2650,00
M 36	x	3	x	130		S	1	2890,00
M 36	x	3	x	140		S	1	3115,00
M 36	x	3	x	150		S	1	3350,00
M 36	x	3	x	160		S	1	3575,00
M 42	x	3	x	140		S	1	3650,00
M 42	x	3	x	160		S	1	4200,00
M 42	x	3	x	180		S	1	4725,00
M 42	x	3	x	200		S	1	5250,00

DIN	00960.110	RAZ 440

960

10.9
zinc plated



Hexagon head bolts with shank, with fine pitch thread

Short dim. in part thread up to head
baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

DIN 960 → replaced by ISO 8765

M 10	x	1	x	45		S	100	110,00 ZP
M 12	x	1,5	x	45		S	100	100,50 ZP
M 12	x	1,5	x	50		S	100	112,00 ZP
M 12	x	1,5	x	60		S	100	122,00 ZP
M 12	x	1,5	x	65		S	50	123,00 ZP
M 12	x	1,5	x	70		S	50	138,00 ZP
M 14	x	1,5	x	50		S	50	169,00 ZP
M 14	x	1,5	x	55		S	50	173,00 ZP
M 14	x	1,5	x	60		S	50	178,00 ZP
M 14	x	1,5	x	65		S	50	188,50 ZP
M 14	x	1,5	x	70		S	50	206,00 ZP
M 14	x	1,5	x	75		S	25	208,00 ZP
M 14	x	1,5	x	80		S	50	223,00 ZP
M 14	x	1,5	x	90		S	50	288,00 ZP
M 14	x	1,5	x	100		S	50	304,00 ZP
M 14	x	1,5	x	110		S	25	336,00 ZP
M 16	x	1,5	x	60		S	50	235,00 ZP
M 16	x	1,5	x	70		S	25	128,00 ZP
M 16	x	1,5	x	75		S	25	288,00 ZP
M 16	x	1,5	x	80		S	25	296,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions							PU	Pieces	€/100/Mat.
M 16	x	1,5	x	90			S	25	307,00 ZP
M 16	x	1,5	x	100			S	25	329,00 ZP
M 16	x	1,5	x	110			S	25	411,00 ZP
M 16	x	1,5	x	120			S	25	418,00 ZP
M 16	x	1,5	x	130			S	25	455,00 ZP
M 20	x	1,5	x	80			S	25	568,00 ZP
M 20	x	1,5	x	90			S	25	629,00 ZP
M 20	x	1,5	x	100			S	25	658,00 ZP
M 20	x	1,5	x	120			S	10	721,00 ZP

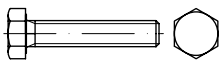
Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

DIN 00961.800 RAZ 440

961

8.8



Hexagon head screws with thread up to head, with fine pitch thread

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

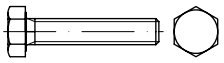
DIN 961 → replaced by ISO 8676

M 8	x	1	x	20			S	200	16,00
M 8	x	1	x	25			S	200	18,90
M 8	x	1	x	30			S	200	19,95
M 8	x	1	x	35			S	200	21,80
M 8	x	1	x	40			S	200	23,50
M 8	x	1	x	45			S	200	26,45
M 8	x	1	x	50			S	200	28,75
M 8	x	1	x	60			S	100	50,75
M 8	x	1	x	70			S	100	66,70
M 8	x	1	x	80			S	100	79,70
M 8	x	1	x	90			S	50	107,00
M 8	x	1	x	100			S	50	121,00
M 10	x	1	x	16			S	200	29,65
M 10	x	1,25	x	16			S	200	29,75
M 10	x	1	x	20			S	200	27,95
M 10	x	1,25	x	20			S	200	27,95
M 10	x	1	x	25			S	200	29,50
M 10	x	1,25	x	25			S	200	29,90
M 10	x	1	x	30			S	200	31,70
M 10	x	1,25	x	30			S	200	31,85
M 10	x	1	x	35			S	100	33,40
M 10	x	1,25	x	35			S	100	35,45
M 10	x	1	x	40			S	100	36,90
M 10	x	1,25	x	40			S	100	39,10
M 10	x	1	x	45			S	100	40,95
M 10	x	1,25	x	45			S	100	42,05
M 10	x	1	x	50			S	100	44,50
M 10	x	1,25	x	50			S	100	44,70
M 10	x	1	x	60			S	100	80,35
M 10	x	1	x	70			S	100	112,00
M 10	x	1	x	80			S	100	121,00
M 10	x	1	x	90			S	50	150,00
M 10	x	1	x	100			S	50	160,00
M 12	x	1,25	x	20			S	100	45,75
M 12	x	1,5	x	20			S	100	44,15
M 12	x	1,25	x	25			S	100	45,75
M 12	x	1,5	x	25			S	100	44,15
M 12	x	1,25	x	30			S	100	47,00
M 12	x	1,5	x	30			S	100	44,80
M 12	x	1,25	x	35			S	100	49,25
M 12	x	1,5	x	35			S	100	48,25
M 12	x	1,25	x	40			S	100	54,15
M 12	x	1,5	x	40			S	100	51,45
M 12	x	1,25	x	45			S	100	59,75
M 12	x	1,5	x	45			S	100	56,45
M 12	x	1,25	x	50			S	100	62,40
M 12	x	1,5	x	50			S	100	60,85
M 12	x	1,25	x	60			S	100	93,95
M 12	x	1,5	x	60			S	100	92,70
M 12	x	1,25	x	65			S	50	177,00
M 12	x	1,25	x	70			S	50	125,00
M 12	x	1,5	x	70			S	50	127,00
M 12	x	1,25	x	80			S	50	152,00
M 12	x	1,5	x	80			S	50	152,00
M 12	x	1,25	x	100			S	50	235,00
M 12	x	1,5	x	100			S	50	234,00
M 14	x	1,5	x	20			S	100	83,45
M 14	x	1,5	x	25			S	100	83,45
M 14	x	1,5	x	30			S	100	83,45
M 14	x	1,5	x	35			S	100	91,45
M 14	x	1,5	x	40			S	100	101,00
M 14	x	1,5	x	45			S	50	104,00
M 14	x	1,5	x	50			S	50	110,00
M 14	x	1,5	x	55			S	50	127,00
M 14	x	1,5	x	60			S	50	127,00
M 14	x	1,5	x	70			S	50	161,00
M 14	x	1,5	x	80			S	50	225,00
M 14	x	1,5	x	90			S	50	272,00
M 14	x	1,5	x	100			S	50	329,00
M 16	x	1,5	x	20			S	50	115,00
M 16	x	1,5	x	25			S	100	101,00
M 16	x	1,5	x	30			S	50	101,00
M 16	x	1,5	x	35			S	50	105,00
M 16	x	1,5	x	40			S	50	105,00
M 16	x	1,5	x	45			S	50	119,00
M 16	x	1,5	x	50			S	50	120,00
M 16	x	1,5	x	55			S	50	136,00
M 16	x	1,5	x	60			S	50	136,00
M 16	x	1,5	x	65			S	50	158,00
M 16	x	1,5	x	70			S	50	172,00
M 16	x	1,5	x	80			S	25	241,00
M 16	x	1,5	x	90			S	25	369,00
M 16	x	1,5	x	100			S	25	401,00
M 18	x	1,5	x	30			S	50	248,00
M 18	x	1,5	x	40			S	50	256,00
M 18	x	1,5	x	45			S	50	260,00
M 18	x	1,5	x	50			S	50	263,00
M 18	x	1,5	x	55			S	25	282,00
M 18	x	1,5	x	60			S	25	284,00
M 18	x	1,5	x	70			S	25	306,00
M 18	x	1,5	x	75			S	25	330,00
M 18	x	1,5	x	80			S	25	350,00
M 18	x	1,5	x	100			S	25	596,00
M 20	x	1,5	x	30			S	25	238,00
M 20	x	1,5	x	35			S	25	238,00
M 20	x	1,5	x	40			S	25	238,00
M 20	x	1,5	x	45			S	25	238,00
M 20	x	1,5	x	50			S	25	246,00
M 20	x	2	x	50			S	25	337,00
M 20	x	1,5	x	55			S	25	265,00
M 20	x	2	x	55			S	25	433,00
M 20	x	1,5	x	60			S	25	267,00
M 20	x	2	x	60			S	25	433,00
M 20	x	1,5	x	65			S	25	296,00
M 20	x	2	x	65			S	25	482,00
M 20	x	1,5	x	70			S	25	289,00
M 20	x	1,5	x	80			S	25	333,00
M 20	x	1,5	x	90			S	25	433,00
M 20	x	1,5	x	100			S	25	533,00
M 22	x	1,5	x	50			S	25	542,00
M 22	x	1,5	x	60			S	25	576,00
M 22	x	1,5	x	70			S	25	630,00
M 24	x	1,5	x	50			S	25	568,00
M 24	x	2	x	50			S	25	568,00
M 24	x	1,5	x	55			S	25	744,00
M 24	x	1,5	x	60			S	25	811,00
M 24	x	2	x	60			S	25	811,00
M 24	x	1,5	x	70			S	25	900,00
M 24	x	2	x	70			S	25	900,00
M 24	x	1,5	x	80			S	25	964,00
M 24	x	2	x	80			S	25	964,00
M 24	x	1,5	x	90			S	10	1006,00
M 24	x	2	x	90			S	10	1006,00
M 24	x	1,5	x	100			S	10	1076,00
M 24	x	2	x	100			S	10	1076,00
M 30	x	2	x	60			S	1	1082,00
M 30	x	2	x	70			S	1	1175,00
M 30	x	2	x	80			S	1	1267,00
M 30	x	2	x	90			S	1	1346,00
M 30	x	2	x	100			S	1	1439,00
M 30	x	2	x	110			S	1	1544,00
M 30	x	2	x	120			S	1	1637,00
M 30	x	2	x	130			S	1	1756,00
M 30	x	2	x	140			S	1	1874,00
M 30	x	2	x	150			S	1	1967,00
M 36	x	3	x	80			S	1	1967,00
M 36	x	3	x	90			S	1	2112,00
M 36	x	3	x	100			S	1	2244,00
M 36	x	3	x	110			S	1	2376,00
M 36	x	3	x	120			S	1	2508,00
M 36	x	3	x	140			S	1	2851,00
M 36	x	3	x	150			S	1	3049,00

DIN 00961.810 RAZ 440

961

8.8
zinc plated



Hexagon head screws with thread up to head, with fine pitch thread

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

DIN 961 → replaced by ISO 8676

M 8	x	1	x	20			S	200	23,95 ZP
M 10	x	1	x	16			S	200	34,95 ZP
M 10	x	1	x	20			S	200	34,95 ZP
M 10	x	1,25	x	20			S	200	34,95 ZP
M 10	x	1	x	25			S	200	35,95 ZP
M 10	x	1,25	x	25			S	200	35,25 ZP
M 10	x	1	x	30			S	200	38,75 ZP
M 10	x	1,25	x	30			S	200	38,30 ZP
M 10	x	1,25	x	35			S	100	42,65 ZP
M 10	x	1	x	40			S	100	48,25 ZP
M 10	x	1,25	x	40			S	100	48,15 ZP
M 10	x	1,25	x	45			S	100	51,80 ZP
M 10	x	1	x	50			S	100	55,20 ZP
M 10	x	1,25	x	50			S	100	55,20 ZP

Dimensions						PU	Pieces	€/100/Mat.
M 12	x	1,25	x	20		S	100	54,50 ZP
M 12	x	1,5	x	20		S	100	53,10 ZP
M 12	x	1,25	x	25		S	100	54,95 ZP
M 12	x	1,5	x	25		S	100	53,15 ZP
M 12	x	1,25	x	30		S	100	54,95 ZP
M 12	x	1,5	x	30		S	100	53,75 ZP
M 12	x	1,25	x	35		S	100	59,30 ZP
M 12	x	1,5	x	35		S	100	58,75 ZP
M 12	x	1,25	x	40		S	100	65,45 ZP
M 12	x	1,5	x	40		S	100	61,80 ZP
M 12	x	1,25	x	45		S	100	72,50 ZP
M 12	x	1,5	x	45		S	100	70,45 ZP
M 12	x	1,5	x	50		S	100	75,35 ZP
M 12	x	1,5	x	55		S	100	107,50 ZP
M 12	x	1,5	x	60		S	100	109,00 ZP
M 12	x	1,25	x	65		S	50	195,00 ZP
M 12	x	1,25	x	70		S	50	143,00 ZP
M 12	x	1,5	x	80		S	50	172,00 ZP
M 14	x	1,5	x	25		S	100	96,65 ZP
M 14	x	1,5	x	30		S	100	101,00 ZP
M 14	x	1,5	x	35		S	100	114,00 ZP
M 14	x	1,5	x	40		S	100	119,00 ZP
M 14	x	1,5	x	45		S	50	122,00 ZP
M 14	x	1,5	x	50		S	50	130,00 ZP
M 14	x	1,5	x	60		S	50	150,00 ZP
M 14	x	1,5	x	70		S	50	187,00 ZP
M 14	x	1,5	x	80		S	50	253,00 ZP
M 14	x	1,5	x	90		S	50	360,00 ZP
M 14	x	1,5	x	100		S	50	365,00 ZP
M 16	x	1,5	x	30		S	50	120,00 ZP
M 16	x	1,5	x	35		S	50	127,00 ZP
M 16	x	1,5	x	40		S	50	126,00 ZP
M 16	x	1,5	x	45		S	50	142,00 ZP
M 16	x	1,5	x	50		S	50	144,00 ZP
M 16	x	1,5	x	60		S	50	160,00 ZP
M 16	x	1,5	x	70		S	50	205,00 ZP
M 16	x	1,5	x	80		S	25	241,00 ZP
M 16	x	1,5	x	90		S	25	410,00 ZP
M 16	x	1,5	x	100		S	25	445,00 ZP
M 18	x	1,5	x	40		S	50	290,00 ZP
M 18	x	1,5	x	50		S	50	300,00 ZP
M 18	x	1,5	x	55		S	25	320,00 ZP
M 18	x	1,5	x	60		S	25	300,00 ZP
M 18	x	1,5	x	70		S	25	350,00 ZP
M 18	x	1,5	x	80		S	25	400,00 ZP
M 20	x	1,5	x	30		S	50	270,00 ZP
M 20	x	1,5	x	35		S	50	275,00 ZP
M 20	x	1,5	x	40		S	50	280,00 ZP
M 20	x	1,5	x	45		S	50	285,00 ZP
M 20	x	1,5	x	50		S	25	307,00 ZP
M 20	x	1,5	x	55		S	25	310,00 ZP
M 20	x	1,5	x	60		S	25	336,00 ZP
M 20	x	1,5	x	70		S	25	360,00 ZP
M 20	x	1,5	x	80		S	25	413,00 ZP
M 20	x	1,5	x	90		S	25	500,00 ZP
M 20	x	1,5	x	100		S	25	605,00 ZP
M 20	x	1,5	x	110		S	10	700,00 ZP
M 24	x	1,5	x	50		S	25	675,00 ZP
M 24	x	1,5	x	60		S	25	930,00 ZP
M 24	x	1,5	x	80		S	25	1100,00 ZP
M 24	x	1,5	x	90		S	25	1150,00 ZP
M 24	x	1,5	x	100		S	25	1250,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00961.100		RAZ 440

961

10.9

Hexagon head screws with thread up to head, with fine pitch thread

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

DIN 961 → replaced by ISO 8676

M 8	x	1	x	20		S	200	23,95
M 8	x	1	x	25		S	200	24,85
M 8	x	1	x	30		S	200	25,65
M 8	x	1	x	35		S	200	30,70
M 8	x	1	x	40		S	200	32,75
M 10	x	1	x	20		S	200	36,95
M 10	x	1	x	25		S	200	39,25
M 10	x	1	x	30		S	200	41,30
M 10	x	1,25	x	30		S	200	90,90
M 10	x	1	x	35		S	100	44,60
M 10	x	1,25	x	35		S	100	94,55
M 10	x	1	x	40		S	100	47,00
M 10	x	1,25	x	40		S	100	102,00
M 10	x	1	x	45		S	100	66,15
M 10	x	1,25	x	45		S	100	115,00
M 10	x	1	x	50		S	100	84,60
M 10	x	1,25	x	50		S	100	130,00
M 12	x	1,25	x	20		S	100	68,60
M 12	x	1,5	x	20		S	100	67,15
M 12	x	1,25	x	25		S	100	64,30
M 12	x	1,5	x	25		S	100	62,25
M 12	x	1,25	x	30		S	100	66,70
M 12	x	1,5	x	30		S	100	66,95
M 12	x	1,25	x	35		S	100	70,45
M 12	x	1,5	x	35		S	100	69,55
M 12	x	1,25	x	40		S	100	74,10
M 12	x	1,5	x	40		S	100	74,10
M 12	x	1,25	x	45		S	100	84,60
M 12	x	1,5	x	45		S	100	82,20
M 12	x	1,25	x	50		S	100	88,35
M 12	x	1,5	x	50		S	100	87,75
M 12	x	1,5	x	55		S	100	80,25
M 12	x	1,25	x	60		S	100	96,35
M 12	x	1,5	x	60		S	100	95,80
M 12	x	1,25	x	70		S	50	108,00
M 14	x	1,5	x	25		S	100	126,00
M 14	x	1,5	x	30		S	100	114,00
M 14	x	1,5	x	35		S	100	119,00
M 14	x	1,5	x	40		S	100	122,00
M 14	x	1,5	x	45		S	50	127,00
M 14	x	1,5	x	50		S	50	132,00
M 14	x	1,5	x	55		S	50	172,00
M 14	x	1,5	x	60		S	50	172,00
M 14	x	1,5	x	70		S	50	370,00
M 14	x	1,5	x	80		S	50	426,00
M 16	x	1,5	x	30		S	50	135,00
M 16	x	1,5	x	35		S	50	136,00
M 16	x	1,5	x	40		S	50	143,00
M 16	x	1,5	x	45		S	50	150,00
M 16	x	1,5	x	50		S	50	158,00
M 16	x	1,5	x	55		S	50	175,00
M 16	x	1,5	x	60		S	50	175,00
M 16	x	1,5	x	65		S	50	246,00
M 16	x	1,5	x	70		S	50	246,00
M 16	x	1,5	x	80		S	25	355,00
M 16	x	1,5	x	90		S	25	387,00

Dimensions						PU	Pieces	€/100/Mat.
M 16	x	1,5	x	100		S	25	414,00
M 16	x	1,5	x	120		S	25	468,00
M 18	x	1,5	x	30		S	50	388,00
M 18	x	1,5	x	35		S	50	395,00
M 18	x	1,5	x	40		S	50	400,00
M 18	x	1,5	x	50		S	50	431,00
M 18	x	1,5	x	60		S	25	463,00
M 20	x	1,5	x	30		S	50	324,00
M 20	x	1,5	x	40		S	50	336,00
M 20	x	1,5	x	45		S	25	357,00
M 20	x	1,5	x	50		S	25	364,00
M 20	x	1,5	x	55		S	25	378,00
M 20	x	1,5	x	60		S	25	400,00
M 20	x	1,5	x	65		S	25	504,00
M 20	x	1,5	x	70		S	25	521,00
M 20	x	1,5	x	80		S	25	622,00
M 20	x	1,5	x	90		S	25	667,00
M 20	x	1,5	x	100		S	25	729,00
M 24	x	1,5	x	50		S	25	700,00
M 24	x	2	x	50		S	25	825,00
M 24	x	1,5	x	60		S	25	750,00
M 24	x	2	x	60		S	25	950,00
M 24	x	1,5	x	70		S	25	800,00
M 24	x	2	x	70		S	25	1075,00
M 24	x	1,5	x	80		S	25	875,00
M 24	x	2	x	80		S	25	1200,00
M 24	x	1,5	x	90		S	10	950,00
M 24	x	2	x	90		S	10	1325,00
M 24	x	1,5	x	100		S	10	1050,00
M 24	x	2	x	100		S	10	1450,00
M 30	x	2	x	60		S	1	1299,00
M 30	x	2	x	70		S	1	1410,00
M 30	x	2	x	80		S	1	1521,00
M 30	x	2	x	90		S	1	1616,00
M 30	x	2	x	100		S	1	1727,00
M 30	x	2	x	110		S	1	1853,00
M 30	x	2	x	120		S	1	1964,00
M 30	x	2	x	130		S	1	2107,00
M 30	x	2	x	140		S	1	2249,00
M 30	x	2	x	150		S	1	2360,00
M 36	x	3	x	80		S	1	2360,00
M 36	x	3	x	90		S	1	2534,00
M 36	x	3	x	100		S	1	2693,00
M 36	x	3	x	110		S	1	2851,00
M 36	x	3	x	120		S	1	3010,00
M 36	x	3	x	140		S	1	3421,00
M 36	x	3	x	150		S	1	3659,00

DIN	00961.110	RAZ 440

961

10.9
zinc plated

Hexagon head screws with thread up to head, with fine pitch thread

baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

DIN 961 → replaced by ISO 8676

M 8	x	1	x	20		S	200	51,50 ZP
M 8	x	1	x	25		S	200	53,75 ZP
M 8	x	1	x	30		S	200	55,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions					PU	Pieces	€/100/Mat.
M 8	x	1	x	35	S	200	57,50 ZP
M 10	x	1	x	20	S	200	47,50 ZP
M 10	x	1	x	30	S	200	50,10 ZP
M 10	x	1,25	x	30	S	200	102,00 ZP
M 10	x	1	x	35	S	100	53,75 ZP
M 10	x	1	x	40	S	100	61,00 ZP
M 10	x	1	x	45	S	100	66,50 ZP
M 12	x	1,5	x	30	S	100	82,20 ZP
M 12	x	1,25	x	35	S	200	85,85 ZP
M 12	x	1,5	x	35	S	100	85,85 ZP
M 12	x	1,25	x	40	S	100	90,90 ZP
M 12	x	1,5	x	40	S	100	90,90 ZP
M 12	x	1,5	x	45	S	100	108,00 ZP
M 12	x	1,5	x	50	S	100	117,00 ZP
M 12	x	1,5	x	55	S	100	128,00 ZP
M 12	x	1,5	x	60	S	100	140,00 ZP
M 12	x	1,5	x	70	S	100	160,00 ZP
M 12	x	1,5	x	80	S	200	200,00 ZP
M 14	x	1,5	x	25	S	100	145,00 ZP
M 14	x	1,5	x	30	S	100	146,00 ZP
M 14	x	1,5	x	35	S	100	146,00 ZP
M 14	x	1,5	x	40	S	100	152,00 ZP
M 14	x	1,5	x	45	S	50	167,00 ZP
M 14	x	1,5	x	50	S	50	174,00 ZP
M 14	x	1,5	x	55	S	50	226,00 ZP
M 14	x	1,5	x	60	S	50	205,50 ZP
M 14	x	1,5	x	65	S	50	407,50 ZP
M 14	x	1,5	x	70	S	50	407,50 ZP
M 14	x	1,5	x	80	S	50	470,00 ZP
M 16	x	1,5	x	25	S	50	164,00 ZP
M 16	x	1,5	x	30	S	50	164,00 ZP
M 16	x	1,5	x	35	S	50	166,00 ZP
M 16	x	1,5	x	40	S	50	178,00 ZP
M 16	x	1,5	x	45	S	50	187,00 ZP
M 16	x	1,5	x	50	S	50	197,00 ZP
M 16	x	1,5	x	55	S	50	223,00 ZP
M 16	x	1,5	x	60	S	50	225,00 ZP
M 16	x	1,5	x	70	S	25	303,00 ZP
M 16	x	1,5	x	80	S	25	405,00 ZP
M 16	x	1,5	x	90	S	25	450,00 ZP
M 20	x	1,5	x	40	S	50	400,00 ZP
M 20	x	1,5	x	45	S	25	425,00 ZP
M 20	x	1,5	x	50	S	25	450,00 ZP
M 20	x	1,5	x	55	S	25	470,00 ZP
M 20	x	1,5	x	60	S	25	490,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions					PU	Pieces	€/100/Mat.
DIN			00963.004				RAZ 450
963			Steel				turned bare
M 1,4	x	3			S	100	13,00 turned
M 1,4	x	5			S	100	13,70 turned
M 1,4	x	6			S	100	14,00 turned
M 1,4	x	8			S	100	14,60 turned
M 1,4	x	10			S	100	16,20 turned
M 1,6	x	3			S	100	11,90 turned
M 1,6	x	4			S	100	12,00 turned
M 1,6	x	5			S	100	12,50 turned
M 1,6	x	6			S	100	13,50 turned
M 1,6	x	8			S	100	14,60 turned
M 1,6	x	10			S	100	16,20 turned
M 1,6	x	12			S	100	17,40 turned
M 1,6	x	16			S	100	19,80 turned

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Stainless → S. 471
Brass → S. 580

DIN 963 → replaced by ISO 2009

DIN			00963.400				RAZ 450
963			4.8				
M 2	x	4			S	2000	4,85
M 2	x	5			S	2000	3,35
M 2	x	6			S	2000	2,35
M 2	x	8			S	2000	2,05
M 2	x	10			S	2000	2,20
M 2	x	12			S	2000	2,65
M 2	x	16			S	2000	3,80
M 2	x	20			S	2000	4,10
M 2,5	x	4			S	2000	4,45
M 2,5	x	5			S	2000	3,85
M 2,5	x	6			S	2000	2,35
M 2,5	x	8			S	2000	2,35
M 2,5	x	10			S	2000	2,45
M 2,5	x	12			S	2000	2,60
M 2,5	x	16			S	2000	3,00
M 3	x	4			S	2000	5,20
M 3	x	5			S	2000	3,80
M 3	x	6			S	2000	2,25
M 3	x	8			S	2000	1,10
M 3	x	10			S	2000	1,15
M 3	x	12			S	2000	1,15
M 3	x	16			S	2000	1,35
M 3	x	20			S	2000	1,65
M 3	x	25			S	2000	1,95
M 3	x	30			S	2000	2,30

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Stainless → S. 471
Brass, plastic → S. 580

DIN 963 → replaced by ISO 2009

Dimensions					PU	Pieces	€/100/Mat.
M 3	x	40			S	1000	4,35
M 4	x	5			S	2000	6,30
M 4	x	6			S	2000	3,45
M 4	x	8			S	2000	1,60
M 4	x	10			S	2000	1,55
M 4	x	12			S	2000	1,60
M 4	x	16			S	2000	1,90
M 4	x	18			S	2000	2,85
M 4	x	20			S	2000	2,20
M 4	x	22			S	1000	3,65
M 4	x	25			S	1000	2,55
M 4	x	30			S	1000	3,05
M 4	x	35			S	1000	3,55
M 4	x	40			S	1000	4,10
M 4	x	45			S	1000	6,30
M 4	x	50			S	1000	6,50
M 4	x	60			S	500	9,70
M 5	x	6			S	2000	16,70
M 5	x	8			S	2000	6,50
M 5	x	10			S	2000	2,60
M 5	x	12			S	1000	2,60
M 5	x	16			S	1000	2,95
M 5	x	20			S	1000	3,20
M 5	x	25			S	1000	3,40
M 5	x	30			S	1000	4,50
M 5	x	35			S	500	5,10
M 5	x	40			S	500	5,50
M 5	x	45			S	500	6,40
M 5	x	50			S	500	7,30
M 6	x	10			S	1000	8,30
M 6	x	12			S	1000	3,75
M 6	x	16			S	1000	4,20
M 6	x	20			S	1000	4,60
M 6	x	25			S	500	5,20
M 6	x	30			S	500	6,00
M 6	x	35			S	500	7,00
M 6	x	40			S	500	7,80
M 6	x	45			S	500	9,10
M 6	x	50			S	200	10,40
M 6	x	55			S	200	11,60
M 6	x	60			S	200	12,40
M 6	x	65			S	200	15,80
M 6	x	70			S	200	15,80
M 6	x	80			S	200	22,00
M 6	x	100			S	200	30,00
M 8	x	10			S	500	37,50
M 8	x	12			S	500	33,00
M 8	x	16			S	500	9,60
M 8	x	18			S	500	15,80
M 8	x	20			S	500	10,60
M 8	x	25			S	500	11,20
M 8	x	30			S	200	12,80
M 8	x	35			S	200	14,40
M 8	x	40			S	200	20,20
M 8	x	45			S	200	21,10
M 8	x	50			S	200	22,00
M 8	x	55			S	200	33,00
M 8	x	60			S	200	29,50
M 8	x	70			S	200	33,50
M 8	x	80			S	100	38,00
M 8	x	100			S	100	54,00
M 10	x	16			S	200	22,90
M 10	x	20			S	200	18,30
M 10	x	25			S	200	19,80
M 10	x	30			S	200	21,10
M 10	x	35			S	200	23,20
M 10	x	40			S	200	24,40
M 10	x	45			S	100	28,50
M 10	x	50			S	100	32,50
M 10	x	55			S	100	36,00
M 10	x	60			S	100	38,50
M 10	x	70			S	100	49,50
M 10	x	80			S	100	59,00
M 10	x	90			S	100	67,00
M 10	x	100			S	100	75,00

DIN 963

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 20	S	200	217,00
M 12 x 25	S	200	202,00
M 12 x 30	S	200	168,00
M 12 x 35	S	100	177,00
M 12 x 40	S	100	183,00
M 12 x 45	S	100	199,00
M 12 x 50	S	100	217,00
M 12 x 60	S	50	310,00
M 12 x 70	S	50	365,00
M 12 x 80	S	50	405,00
M 12 x 90	S	50	440,00
M 16 x 30	S	50	310,00
M 16 x 35	S	50	325,00
M 16 x 40	S	50	345,00
M 16 x 45	S	50	355,00
M 16 x 50	S	50	375,00
M 16 x 55	S	50	435,00
M 16 x 60	S	50	400,00
M 16 x 70	S	25	435,00
M 16 x 80	S	25	480,00
M 16 x 90	S	25	530,00
M 20 x 35	S	25	1320,00
M 20 x 40	S	25	1370,00
M 20 x 50	S	25	1440,00
M 20 x 60	S	25	1610,00
M 20 x 70	S	25	1700,00
M 20 x 80	S	25	1800,00

DIN	00963.410	RAZ 450
963	**4.8 zinc plated**	

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 471
Brass, plastic → S. 580

DIN 963 → replaced by ISO 2009

Dimensions	PU	Pieces	€/100/Mat.
M 2 x 4	S	2000	5,40 ZP
M 2 x 4	K	200	7,80 ZP
M 2 x 5	S	2000	3,60 ZP
M 2 x 5	K	200	6,00 ZP
M 2 x 6	S	2000	2,70 ZP
M 2 x 6	K	200	5,10 ZP
M 2 x 8	S	2000	2,30 ZP
M 2 x 8	K	200	4,70 ZP
M 2 x 10	S	2000	2,40 ZP
M 2 x 10	K	200	4,80 ZP
M 2 x 12	S	2000	2,90 ZP
M 2 x 12	K	200	5,30 ZP
M 2 x 16	S	2000	4,30 ZP
M 2 x 16	K	200	6,70 ZP
M 2 x 20	S	2000	4,60 ZP
M 2 x 20	K	200	7,00 ZP
M 2,5 x 4	S	2000	3,94 ZP
M 2,5 x 4	K	200	7,50 ZP
M 2,5 x 5	S	2000	4,30 ZP
M 2,5 x 5	K	200	6,70 ZP
M 2,5 x 6	S	2000	2,20 ZP
M 2,5 x 6	K	200	4,60 ZP
M 2,5 x 8	S	2000	2,70 ZP
M 2,5 x 8	K	200	5,10 ZP
M 2,5 x 10	S	2000	2,70 ZP
M 2,5 x 10	K	200	5,10 ZP
M 2,5 x 12	S	2000	2,90 ZP
M 2,5 x 12	K	200	5,30 ZP
M 2,5 x 16	S	2000	3,30 ZP
M 2,5 x 16	K	200	5,70 ZP
M 2,5 x 20	S	2000	4,00 ZP
M 2,5 x 20	K	200	6,40 ZP
M 2,5 x 25	K	200	7,20 ZP
M 2,5 x 30	K	200	10,60 ZP
M 3 x 4	S	2000	5,80 ZP
M 3 x 4	K	200	8,20 ZP
M 3 x 5	S	2000	4,20 ZP
M 3 x 5	K	200	6,70 ZP
M 3 x 6	S	2000	2,45 ZP
M 3 x 6	K	200	4,85 ZP
M 3 x 8	S	2000	1,20 ZP
M 3 x 8	K	200	3,65 ZP
M 3 x 10	S	2000	1,25 ZP
M 3 x 10	K	200	3,65 ZP
M 3 x 12	S	2000	1,25 ZP
M 3 x 12	K	200	3,75 ZP
M 3 x 14	S	2000	1,40 ZP
M 3 x 14	K	200	3,80 ZP
M 3 x 16	S	2000	1,50 ZP
M 3 x 16	K	200	3,90 ZP
M 3 x 18	S	2000	2,75 ZP
M 3 x 18	K	200	5,20 ZP
M 3 x 20	S	2000	1,85 ZP
M 3 x 20	K	200	4,25 ZP
M 3 x 25	S	2000	2,20 ZP
M 3 x 25	K	200	4,60 ZP
M 3 x 30	S	2000	2,55 ZP
M 3 x 30	K	200	2,55 ZP
M 3 x 35	S	2000	4,30 ZP
M 3 x 35	K	200	6,70 ZP
M 3 x 40	K	200	7,20 ZP
M 3 x 45	K	200	10,40 ZP
M 3 x 50	K	200	11,40 ZP
M 3 x 55	S	1000	17,50 ZP
M 3 x 60	K	200	16,90 ZP
M 4 x 5	S	2000	6,90 ZP
M 4 x 5	K	200	9,30 ZP
M 4 x 6	S	2000	3,80 ZP
M 4 x 6	K	200	6,30 ZP
M 4 x 8	S	2000	1,80 ZP
M 4 x 8	K	200	4,20 ZP
M 4 x 10	S	2000	1,75 ZP
M 4 x 10	K	200	4,10 ZP
M 4 x 12	S	2000	1,80 ZP
M 4 x 12	K	200	4,20 ZP
M 4 x 16	S	2000	2,05 ZP
M 4 x 16	K	200	4,45 ZP
M 4 x 18	K	200	5,60 ZP
M 4 x 20	S	2000	2,40 ZP
M 4 x 20	K	200	4,80 ZP
M 4 x 22	S	1000	4,05 ZP
M 4 x 22	K	200	6,50 ZP
M 4 x 25	S	1000	2,80 ZP
M 4 x 25	K	200	5,20 ZP
M 4 x 30	S	1000	3,40 ZP
M 4 x 30	K	200	5,90 ZP
M 4 x 35	S	1000	3,95 ZP
M 4 x 35	K	200	6,40 ZP
M 4 x 40	S	1000	4,50 ZP
M 4 x 40	K	200	7,00 ZP
M 4 x 45	S	1000	6,90 ZP
M 4 x 45	K	200	9,30 ZP
M 4 x 50	S	1000	7,20 ZP
M 4 x 50	K	200	9,60 ZP
M 4 x 55	K	200	14,10 ZP
M 4 x 60	S	500	10,80 ZP
M 4 x 60	K	200	13,20 ZP
M 4 x 65	S	200	21,00 ZP
M 4 x 70	K	100	22,20 ZP
M 4 x 80	K	100	28,00 ZP
M 4 x 90	K	100	46,00 ZP
M 4 x 100	K	100	49,50 ZP
M 5 x 6	S	2000	18,30 ZP
M 5 x 6	K	200	20,70 ZP
M 5 x 8	S	2000	7,20 ZP
M 5 x 8	K	200	9,60 ZP
M 5 x 10	S	2000	2,85 ZP
M 5 x 10	K	200	5,30 ZP
M 5 x 12	S	1000	2,85 ZP
M 5 x 12	K	200	5,30 ZP
M 5 x 14	S	1000	7,00 ZP
M 5 x 16	S	1000	3,20 ZP
M 5 x 16	K	200	5,60 ZP
M 5 x 18	K	200	7,10 ZP
M 5 x 20	S	1000	3,50 ZP
M 5 x 20	K	200	6,00 ZP
M 5 x 22	K	200	8,60 ZP
M 5 x 25	S	1000	3,75 ZP
M 5 x 25	K	200	6,20 ZP
M 5 x 30	S	1000	5,10 ZP
M 5 x 30	K	200	7,50 ZP
M 5 x 35	S	500	5,60 ZP
M 5 x 35	K	200	8,00 ZP
M 5 x 40	S	500	6,00 ZP
M 5 x 40	K	200	8,50 ZP
M 5 x 45	S	500	7,10 ZP
M 5 x 45	K	200	9,50 ZP
M 5 x 50	S	500	8,10 ZP
M 5 x 50	K	200	10,50 ZP
M 5 x 55	K	200	17,30 ZP
M 5 x 60	K	200	17,70 ZP
M 5 x 70	S	200	18,50 ZP
M 5 x 70	K	100	23,30 ZP
M 5 x 80	S	200	20,70 ZP
M 5 x 80	K	100	25,50 ZP
M 5 x 90	K	100	48,00 ZP
M 5 x 100	K	100	53,00 ZP
M 6 x 8	S	1000	12,10 ZP
M 6 x 8	K	200	14,50 ZP
M 6 x 10	S	1000	9,20 ZP
M 6 x 10	K	200	11,60 ZP
M 6 x 12	S	1000	4,10 ZP
M 6 x 12	K	200	6,50 ZP
M 6 x 14	S	1000	7,10 ZP
M 6 x 16	S	1000	4,65 ZP
M 6 x 16	K	200	7,10 ZP
M 6 x 18	K	200	9,90 ZP
M 6 x 20	S	1000	5,10 ZP
M 6 x 20	K	200	7,50 ZP
M 6 x 22	K	200	11,60 ZP
M 6 x 25	S	500	5,80 ZP
M 6 x 25	K	200	8,20 ZP
M 6 x 30	S	500	6,70 ZP
M 6 x 30	K	200	9,10 ZP
M 6 x 35	S	500	7,70 ZP
M 6 x 35	K	200	10,10 ZP
M 6 x 40	S	500	8,60 ZP
M 6 x 40	K	200	11,00 ZP
M 6 x 45	S	500	10,10 ZP
M 6 x 45	K	200	14,90 ZP
M 6 x 50	K	200	16,20 ZP
M 6 x 55	K	100	17,60 ZP
M 6 x 60	S	200	13,70 ZP
M 6 x 60	K	100	18,50 ZP
M 6 x 70	S	200	17,30 ZP
M 6 x 70	K	100	27,00 ZP
M 6 x 80	S	200	24,40 ZP
M 6 x 80	K	100	34,00 ZP
M 6 x 90	S	200	30,50 ZP
M 6 x 90	K	100	40,00 ZP
M 6 x 100	S	200	33,00 ZP
M 6 x 100	K	100	42,50 ZP
M 8 x 10	K	100	44,00 ZP
M 8 x 12	S	500	36,50 ZP
M 8 x 12	K	100	38,50 ZP
M 8 x 16	S	500	10,70 ZP
M 8 x 16	K	100	13,10 ZP
M 8 x 18	S	500	17,30 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	20	S	500	11,70 ZP
M 8	x	20	K	100	14,10 ZP
M 8	x	25	S	500	12,40 ZP
M 8	x	25	K	100	17,30 ZP
M 8	x	30	S	200	14,10 ZP
M 8	x	30	K	100	18,90 ZP
M 8	x	35	S	200	15,90 ZP
M 8	x	35	K	100	20,70 ZP
M 8	x	40	K	100	24,60 ZP
M 8	x	45	K	100	26,00 ZP
M 8	x	50	K	100	27,00 ZP
M 8	x	55	K	100	38,50 ZP
M 8	x	60	K	100	35,00 ZP
M 8	x	70	K	100	39,00 ZP
M 8	x	80	K	100	44,00 ZP
M 8	x	90	K	100	60,00 ZP
M 8	x	100	K	100	62,00 ZP
M 10	x	16	K	100	28,00 ZP
M 10	x	18	K	100	34,00 ZP
M 10	x	20	K	100	22,50 ZP
M 10	x	25	K	100	23,60 ZP
M 10	x	30	K	100	26,00 ZP
M 10	x	35	K	100	28,00 ZP
M 10	x	40	K	100	29,50 ZP
M 10	x	45	K	100	38,00 ZP
M 10	x	50	K	100	34,00 ZP
M 10	x	55	K	100	51,00 ZP
M 10	x	60	K	100	39,50 ZP
M 10	x	70	K	100	52,00 ZP
M 10	x	80	K	100	57,00 ZP
M 10	x	90	K	100	76,00 ZP
M 10	x	100	K	100	85,00 ZP
M 12	x	20	K	100	241,00 ZP
M 12	x	25	K	100	225,00 ZP
M 12	x	30	K	100	187,00 ZP
M 12	x	35	K	100	197,00 ZP
M 12	x	40	K	100	205,00 ZP
M 12	x	45	K	100	222,00 ZP
M 12	x	50	K	100	241,00 ZP
M 12	x	55	K	50	325,00 ZP
M 12	x	60	K	50	350,00 ZP
M 12	x	70	K	50	410,00 ZP
M 12	x	80	K	50	450,00 ZP
M 12	x	90	K	50	495,00 ZP
M 12	x	100	K	50	540,00 ZP
M 16	x	30	K	50	345,00 ZP
M 16	x	35	K	50	355,00 ZP
M 16	x	40	K	50	380,00 ZP
M 16	x	45	K	50	390,00 ZP
M 16	x	50	K	50	410,00 ZP
M 16	x	55	K	50	480,00 ZP
M 16	x	60	K	50	445,00 ZP
M 16	x	70	K	25	480,00 ZP
M 16	x	80	K	25	540,00 ZP
M 16	x	90	K	25	590,00 ZP
M 20	x	40	K	25	1490,00 ZP
M 20	x	45	K	25	1520,00 ZP
M 20	x	50	K	25	1580,00 ZP
M 20	x	60	K	25	1740,00 ZP
M 20	x	70	K	25	1800,00 ZP

DIN 00963.460 RAZ 450

963 4.8 zinc plated yellow

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 471
Brass, plastic → S. 580

DIN 963 → replaced by ISO 2009

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	10	S	2000	2,80 YZP
M 4	x	12	S	2000	3,00 YZP
M 4	x	16	S	2000	3,50 YZP
M 4	x	20	S	2000	4,05 YZP
M 4	x	25	S	1000	4,75 YZP
M 4	x	30	S	1000	5,70 YZP
M 5	x	10	S	2000	4,75 YZP
M 5	x	12	S	1000	4,75 YZP
M 5	x	16	S	1000	5,30 YZP
M 5	x	20	S	1000	5,90 YZP
M 5	x	25	S	1000	6,30 YZP
M 6	x	12	S	1000	6,90 YZP
M 6	x	16	S	1000	7,80 YZP
M 6	x	20	S	1000	8,50 YZP
M 6	x	25	S	500	9,70 YZP
M 6	x	30	S	500	11,00 YZP
M 8	x	16	S	500	18,00 YZP
M 8	x	20	S	500	19,80 YZP
M 8	x	25	S	500	20,70 YZP
M 8	x	30	S	200	23,50 YZP

DIN 00964.400 RAZ 450

964 4.8

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

Stainless → S. 473
Brass → S. 581

DIN 964 → replaced by ISO 2010

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	6	S	2000	2,75
M 2,5	x	8	S	2000	2,75
M 4	x	8	S	2000	1,65
M 4	x	10	S	2000	1,60
M 4	x	12	S	2000	1,65
M 4	x	16	S	2000	1,95
M 4	x	20	S	2000	2,30
M 5	x	25	S	1000	3,95
M 5	x	30	S	1000	5,60
M 5	x	35	S	500	5,30

DIN 00964.410 RAZ 450

964 4.8 zinc plated

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11
Corrosion protection → TI-217

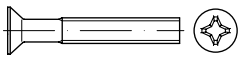
Stainless → S. 473
Brass → S. 581

DIN 964 → replaced by ISO 2010

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	K	200	7,70 ZP
M 3	x	6	K	200	6,10 ZP
M 3	x	8	S	2000	1,75 ZP
M 3	x	8	K	200	4,10 ZP
M 3	x	10	S	2000	1,40 ZP
M 3	x	10	K	200	3,80 ZP
M 3	x	12	K	200	4,05 ZP
M 3	x	16	K	200	4,50 ZP
M 3	x	20	S	2000	2,55 ZP
M 3	x	20	K	200	4,90 ZP
M 3	x	25	S	2000	3,00 ZP
M 3	x	25	K	200	5,40 ZP
M 3	x	30	K	200	6,00 ZP
M 3	x	35	K	200	7,50 ZP
M 3	x	40	K	200	8,10 ZP
M 4	x	8	S	2000	1,85 ZP
M 4	x	8	K	200	4,30 ZP
M 4	x	10	S	2000	1,80 ZP
M 4	x	10	K	200	4,20 ZP
M 4	x	12	S	2000	1,85 ZP
M 4	x	12	K	200	4,30 ZP
M 4	x	16	S	2000	2,20 ZP
M 4	x	16	K	200	4,60 ZP
M 4	x	20	S	2000	2,60 ZP
M 4	x	20	K	200	5,00 ZP
M 4	x	25	K	200	5,50 ZP
M 4	x	30	K	200	6,10 ZP
M 4	x	35	K	200	6,70 ZP
M 4	x	40	K	200	8,30 ZP
M 4	x	45	K	200	9,50 ZP
M 4	x	50	K	200	10,10 ZP
M 4	x	60	K	200	12,10 ZP
M 4	x	70	K	100	19,70 ZP
M 4	x	80	K	100	26,00 ZP
M 5	x	8	K	200	8,10 ZP
M 5	x	10	S	2000	3,45 ZP
M 5	x	10	K	200	5,90 ZP
M 5	x	12	K	200	5,50 ZP
M 5	x	16	S	1000	3,40 ZP
M 5	x	16	K	200	5,80 ZP
M 5	x	20	K	200	6,20 ZP
M 5	x	25	K	200	6,70 ZP
M 5	x	30	S	1000	6,10 ZP
M 5	x	30	K	200	8,50 ZP
M 5	x	35	K	200	8,40 ZP
M 5	x	40	S	500	6,50 ZP
M 5	x	40	K	200	8,90 ZP
M 5	x	45	K	200	11,60 ZP
M 5	x	50	K	200	11,20 ZP
M 5	x	60	K	200	18,30 ZP
M 5	x	80	K	100	23,60 ZP
M 6	x	8	K	200	15,90 ZP
M 6	x	10	K	200	11,70 ZP
M 6	x	12	K	200	7,70 ZP
M 6	x	16	S	1000	5,10 ZP
M 6	x	16	K	200	7,50 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	20	S	1000	5,50 ZP
M 6	x	20	K	200	7,90 ZP
M 6	x	25	S	500	6,30 ZP
M 6	x	25	K	200	8,70 ZP
M 6	x	30	K	200	9,60 ZP
M 6	x	35	K	200	10,80 ZP
M 6	x	40	K	200	11,70 ZP
M 6	x	45	K	200	15,70 ZP
M 6	x	50	K	200	19,70 ZP
M 6	x	55	K	200	22,30 ZP
M 6	x	60	K	100	22,20 ZP
M 6	x	70	K	100	31,50 ZP
M 6	x	80	K	100	36,00 ZP
M 8	x	16	K	100	17,20 ZP
M 8	x	20	K	100	16,60 ZP
M 8	x	25	K	100	20,60 ZP
M 8	x	30	K	100	22,80 ZP
M 8	x	35	K	100	27,00 ZP
M 8	x	40	K	100	36,50 ZP
M 8	x	45	K	100	34,00 ZP
M 8	x	50	K	100	35,00 ZP
M 8	x	60	K	100	35,50 ZP
M 10	x	20	K	100	31,50 ZP
M 10	x	25	K	100	33,00 ZP
M 10	x	30	K	100	36,00 ZP
M 10	x	35	K	100	39,00 ZP
M 10	x	40	K	100	41,00 ZP
M 10	x	50	K	100	47,00 ZP

DIN	00965.404	RAZ 460
965	**4.8**	**H**



Countersunk head screws with Phillips cross recess H

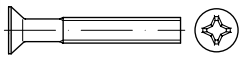
Dimensions → TI-39 Standard conversion → TI-11

Stainless → S. 474

DIN 965 → replaced by ISO 7046

M 2,5	x	6 -H	S	2000	3,75
M 2,5	x	8 -H	S	2000	3,80
M 3	x	5 -H	S	2000	4,45
M 3	x	6 -H	S	2000	3,05
M 3	x	8 -H	S	2000	1,60
M 3	x	10 -H	S	2000	1,75
M 3	x	12 -H	S	2000	1,80
M 3	x	16 -H	S	2000	2,25
M 3	x	20 -H	S	2000	2,30
M 3	x	25 -H	S	2000	3,25
M 4	x	6 -H	S	2000	4,25
M 4	x	8 -H	S	2000	2,30
M 4	x	10 -H	S	2000	2,35
M 4	x	12 -H	S	2000	2,55
M 4	x	16 -H	S	2000	2,75
M 4	x	20 -H	S	2000	3,00
M 4	x	25 -H	S	1000	3,40
M 4	x	30 -H	S	1000	4,40
M 5	x	8 -H	S	2000	6,00
M 5	x	10 -H	S	2000	3,20
M 5	x	12 -H	S	1000	3,35
M 5	x	16 -H	S	1000	3,60
M 5	x	20 -H	S	1000	4,10
M 5	x	25 -H	S	1000	4,60
M 5	x	40 -H	S	500	6,90
M 6	x	10 -H	S	1000	8,00
M 6	x	12 -H	S	1000	4,70
M 6	x	16 -H	S	1000	5,30
M 6	x	20 -H	S	1000	5,90
M 6	x	25 -H	S	500	6,70
M 6	x	30 -H	S	200	7,50
M 6	x	35 -H	S	500	8,80
M 8	x	16 -H	S	500	12,30
M 8	x	20 -H	S	500	12,80
M 8	x	25 -H	S	200	14,10
M 8	x	30 -H	S	200	16,10

DIN	00965.414	RAZ 460
965	**4.8 zinc plated**	**H**



Countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Corrosion protection → TI-217

Stainless → S. 474

DIN 965 → replaced by ISO 7046

M 2	x	5 -H	S	2000	3,80 ZP
M 2	x	6 -H	S	2000	3,80 ZP
M 2	x	6 -H	K	200	6,20 ZP
M 2	x	8 -H	S	2000	3,80 ZP
M 2	x	8 -H	K	200	6,20 ZP
M 2	x	10 -H	S	2000	3,90 ZP
M 2	x	10 -H	K	200	6,30 ZP
M 2	x	12 -H	S	2000	4,00 ZP
M 2	x	12 -H	K	200	6,40 ZP
M 2	x	16 -H	S	2000	4,10 ZP
M 2	x	16 -H	K	200	6,50 ZP
M 2	x	20 -H	S	2000	4,35 ZP
M 2	x	20 -H	K	200	6,75 ZP
M 2,5	x	4 -H	S	2000	9,10 ZP
M 2,5	x	4 -H	K	200	11,50 ZP
M 2,5	x	5 -H	S	2000	5,50 ZP
M 2,5	x	5 -H	K	200	7,90 ZP
M 2,5	x	6 -H	S	2000	4,10 ZP
M 2,5	x	6 -H	K	200	6,60 ZP
M 2,5	x	8 -H	S	2000	3,80 ZP
M 2,5	x	8 -H	K	200	6,60 ZP
M 2,5	x	10 -H	S	2000	4,25 ZP
M 2,5	x	10 -H	K	200	6,70 ZP
M 2,5	x	12 -H	S	2000	4,35 ZP
M 2,5	x	12 -H	K	200	6,80 ZP
M 2,5	x	16 -H	S	2000	4,75 ZP
M 2,5	x	16 -H	K	200	7,20 ZP
M 2,5	x	20 -H	S	2000	6,80 ZP
M 2,5	x	20 -H	K	200	9,20 ZP
M 3	x	4 -H	S	2000	4,20 ZP
M 3	x	4 -H	K	200	6,30 ZP
M 3	x	5 -H	S	2000	4,80 ZP
M 3	x	5 -H	K	200	7,20 ZP
M 3	x	6 -H	S	2000	3,40 ZP
M 3	x	6 -H	K	200	5,80 ZP
M 3	x	8 -H	S	2000	1,80 ZP
M 3	x	8 -H	K	200	4,25 ZP
M 3	x	10 -H	S	2000	1,90 ZP
M 3	x	10 -H	K	200	4,35 ZP
M 3	x	12 -H	S	2000	1,95 ZP
M 3	x	12 -H	K	200	4,40 ZP
M 3	x	14 -H	S	2000	2,30 ZP
M 3	x	14 -H	K	200	4,75 ZP
M 3	x	16 -H	S	2000	2,45 ZP
M 3	x	16 -H	K	200	4,90 ZP
M 3	x	18 -H	S	2000	2,80 ZP
M 3	x	18 -H	K	200	5,20 ZP
M 3	x	20 -H	S	2000	2,60 ZP
M 3	x	20 -H	K	200	5,00 ZP
M 3	x	22 -H	S	2000	3,00 ZP
M 3	x	22 -H	K	200	5,40 ZP
M 3	x	25 -H	S	2000	3,60 ZP
M 3	x	25 -H	K	200	6,00 ZP
M 3	x	30 -H	S	2000	4,40 ZP
M 3	x	30 -H	K	200	7,10 ZP
M 3	x	35 -H	S	2000	6,50 ZP
M 3	x	40 -H	S	1000	7,50 ZP
M 3	x	45 -H	S	1000	8,50 ZP
M 3	x	50 -H	S	1000	9,30 ZP
M 4	x	5 -H	S	2000	4,70 ZP
M 4	x	5 -H	K	200	7,10 ZP
M 4	x	6 -H	S	2000	4,70 ZP
M 4	x	6 -H	K	200	7,10 ZP
M 4	x	8 -H	S	2000	2,55 ZP
M 4	x	8 -H	K	200	5,00 ZP
M 4	x	10 -H	S	2000	2,65 ZP
M 4	x	10 -H	K	200	5,10 ZP
M 4	x	12 -H	S	2000	2,75 ZP
M 4	x	12 -H	K	200	5,20 ZP
M 4	x	14 -H	S	2000	3,00 ZP
M 4	x	14 -H	K	200	5,50 ZP
M 4	x	16 -H	S	2000	3,05 ZP
M 4	x	16 -H	K	200	5,50 ZP
M 4	x	18 -H	S	2000	3,65 ZP
M 4	x	20 -H	S	2000	3,25 ZP
M 4	x	20 -H	K	200	5,70 ZP
M 4	x	25 -H	S	1000	3,75 ZP
M 4	x	25 -H	K	200	6,20 ZP
M 4	x	28 -H	S	1000	10,50 ZP
M 4	x	30 -H	S	1000	4,85 ZP
M 4	x	30 -H	K	200	7,30 ZP
M 4	x	35 -H	S	1000	6,10 ZP
M 4	x	35 -H	K	200	8,60 ZP
M 4	x	40 -H	S	1000	7,10 ZP
M 4	x	40 -H	K	200	9,50 ZP
M 4	x	45 -H	S	1000	8,70 ZP
M 4	x	45 -H	K	200	11,00 ZP
M 4	x	50 -H	S	1000	10,40 ZP
M 4	x	50 -H	K	200	12,90 ZP
M 4	x	60 -H	S	500	14,80 ZP
M 4	x	60 -H	K	200	17,30 ZP
M 4	x	70 -H	S	500	19,90 ZP
M 4	x	80 -H	S	500	25,50 ZP
M 4	x	90 -H	S	200	68,00 ZP
M 5	x	6 -H	S	2000	6,70 ZP
M 5	x	6 -H	K	200	9,50 ZP
M 5	x	8 -H	S	2000	6,70 ZP
M 5	x	8 -H	K	200	9,10 ZP
M 5	x	10 -H	S	2000	3,50 ZP
M 5	x	10 -H	K	200	5,90 ZP
M 5	x	12 -H	S	1000	3,60 ZP
M 5	x	12 -H	K	200	6,00 ZP
M 5	x	14 -H	S	1000	6,50 ZP
M 5	x	14 -H	K	200	8,95 ZP
M 5	x	16 -H	S	1000	4,00 ZP
M 5	x	16 -H	K	200	6,50 ZP
M 5	x	20 -H	S	1000	4,50 ZP
M 5	x	20 -H	K	200	7,00 ZP
M 5	x	25 -H	S	1000	5,10 ZP
M 5	x	25 -H	K	200	7,50 ZP
M 5	x	30 -H	S	1000	6,40 ZP
M 5	x	30 -H	K	200	8,90 ZP
M 5	x	35 -H	S	500	7,10 ZP
M 5	x	35 -H	K	200	9,60 ZP
M 5	x	40 -H	S	500	7,70 ZP
M 5	x	40 -H	K	200	10,10 ZP
M 5	x	45 -H	S	500	9,00 ZP
M 5	x	45 -H	K	200	11,40 ZP
M 5	x	50 -H	S	500	12,50 ZP
M 5	x	50 -H	K	200	14,90 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	55 -H	S	200	29,00 ZP
M 5	x	60 -H	S	200	15,90 ZP
M 5	x	70 -H	S	200	19,30 ZP
M 5	x	80 -H	S	200	29,50 ZP
M 5	x	90 -H	S	100	41,50 ZP
M 6	x	8 -H	S	1000	7,50 ZP
M 6	x	8 -H	K	200	9,90 ZP
M 6	x	10 -H	S	1000	8,90 ZP
M 6	x	10 -H	K	200	11,30 ZP
M 6	x	12 -H	S	1000	5,20 ZP
M 6	x	12 -H	K	200	7,60 ZP
M 6	x	14 -H	S	1000	7,10 ZP
M 6	x	16 -H	S	1000	5,90 ZP
M 6	x	16 -H	K	200	8,40 ZP
M 6	x	18 -H	S	1000	12,00 ZP
M 6	x	18 -H	K	200	15,00 ZP
M 6	x	20 -H	S	1000	6,50 ZP
M 6	x	20 -H	K	200	8,90 ZP
M 6	x	25 -H	S	500	7,30 ZP
M 6	x	25 -H	K	200	9,70 ZP
M 6	x	30 -H	S	500	8,40 ZP
M 6	x	30 -H	K	200	10,80 ZP
M 6	x	35 -H	S	500	9,70 ZP
M 6	x	35 -H	K	200	12,10 ZP
M 6	x	40 -H	S	500	10,90 ZP
M 6	x	40 -H	K	200	13,30 ZP
M 6	x	45 -H	S	200	12,80 ZP
M 6	x	50 -H	S	200	14,50 ZP
M 6	x	55 -H	S	200	21,10 ZP
M 6	x	60 -H	S	200	17,40 ZP
M 6	x	70 -H	S	200	21,90 ZP
M 6	x	80 -H	S	200	32,50 ZP
M 8	x	12 -H	S	500	36,50 ZP
M 8	x	16 -H	S	500	13,70 ZP
M 8	x	16 -H	K	200	16,10 ZP
M 8	x	20 -H	S	500	14,10 ZP
M 8	x	20 -H	K	200	16,60 ZP
M 8	x	25 -H	S	200	15,70 ZP
M 8	x	30 -H	S	200	17,80 ZP
M 8	x	35 -H	S	200	21,40 ZP
M 8	x	40 -H	S	100	25,00 ZP
M 8	x	45 -H	S	100	27,00 ZP
M 8	x	50 -H	S	100	28,00 ZP
M 8	x	55 -H	S	100	36,00 ZP
M 8	x	60 -H	S	100	32,00 ZP
M 8	x	70 -H	S	100	38,50 ZP
M 8	x	80 -H	S	100	47,00 ZP
M 8	x	90 -H	S	100	55,50 ZP
M 8	x	100 -H	S	100	64,00 ZP
M 10	x	16 -H	S	100	54,00 ZP
M 10	x	20 -H	S	100	31,50 ZP
M 10	x	25 -H	S	100	33,00 ZP
M 10	x	30 -H	S	100	36,00 ZP
M 10	x	40 -H	S	100	41,00 ZP
M 10	x	45 -H	S	100	44,00 ZP
M 10	x	50 -H	S	100	47,00 ZP
M 10	x	60 -H	S	100	59,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00965.301		RAZ 460
965	**4.8**		**Z**
	zinc plated		

Countersunk head screws with Pozidriv cross recess Z

Dimensions ➔ TI-39 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217

Stainless ➔ S. 475

DIN 965 ➔ replaced by ISO 7046

M 2,5	x	4 -Z	S	2000	9,10 ZP
M 2,5	x	5 -Z	S	2000	5,50 ZP
M 2,5	x	6 -Z	S	2000	4,10 ZP
M 2,5	x	8 -Z	S	2000	3,80 ZP
M 2,5	x	10 -Z	S	2000	4,25 ZP
M 2,5	x	12 -Z	S	2000	4,35 ZP
M 3	x	4 -Z	S	2000	4,70 ZP
M 3	x	5 -Z	S	2000	5,10 ZP
M 3	x	6 -Z	S	2000	3,40 ZP
M 3	x	8 -Z	S	2000	1,80 ZP
M 3	x	10 -Z	S	2000	1,90 ZP
M 3	x	12 -Z	S	2000	1,95 ZP
M 3	x	16 -Z	S	2000	2,45 ZP
M 3	x	20 -Z	S	2000	2,60 ZP
M 3	x	25 -Z	S	2000	3,60 ZP
M 4	x	6 -Z	S	2000	4,70 ZP
M 4	x	8 -Z	S	2000	2,55 ZP
M 4	x	10 -Z	S	2000	2,65 ZP
M 4	x	12 -Z	S	2000	2,75 ZP
M 4	x	16 -Z	S	2000	3,05 ZP
M 4	x	20 -Z	S	2000	3,25 ZP
M 4	x	25 -Z	S	1000	3,75 ZP
M 4	x	30 -Z	S	1000	4,85 ZP
M 4	x	35 -Z	S	1000	6,10 ZP
M 4	x	40 -Z	S	1000	7,10 ZP
M 4	x	45 -Z	S	500	8,70 ZP
M 4	x	50 -Z	S	500	10,40 ZP
M 5	x	8 -Z	S	2000	6,70 ZP
M 5	x	10 -Z	S	2000	3,50 ZP
M 5	x	12 -Z	S	1000	3,60 ZP
M 5	x	16 -Z	S	1000	4,00 ZP
M 5	x	20 -Z	S	1000	4,50 ZP
M 5	x	25 -Z	S	1000	5,10 ZP
M 5	x	30 -Z	S	1000	6,40 ZP
M 5	x	35 -Z	S	500	7,10 ZP
M 5	x	40 -Z	S	500	7,70 ZP
M 5	x	45 -Z	S	500	9,00 ZP
M 5	x	50 -Z	S	500	12,50 ZP
M 5	x	60 -Z	S	200	15,90 ZP
M 5	x	70 -Z	S	200	19,30 ZP
M 5	x	80 -Z	S	200	29,50 ZP
M 6	x	10 -Z	S	1000	8,90 ZP
M 6	x	12 -Z	S	1000	5,20 ZP
M 6	x	16 -Z	S	1000	5,90 ZP
M 6	x	20 -Z	S	1000	6,50 ZP
M 6	x	25 -Z	S	500	7,30 ZP
M 6	x	30 -Z	S	500	7,40 ZP
M 6	x	35 -Z	S	500	9,70 ZP
M 6	x	40 -Z	S	500	10,90 ZP
M 6	x	45 -Z	S	200	12,80 ZP
M 6	x	50 -Z	S	200	14,50 ZP
M 6	x	60 -Z	S	200	17,40 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00965.415		RAZ 460
965	**4.8**		**ISR**
	zinc plated		

Countersunk head screws, ISR = hexalobular socket

~ ISO 14581

Dimensions ➔ TI-39 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217

Stainless ➔ S. 476

M 3	x	4 -T10	S	2000	6,20 ZP
M 3	x	5 -T10	S	2000	6,20 ZP
M 3	x	6 -T10	S	2000	4,10 ZP
M 3	x	8 -T10	S	2000	2,16 ZP
M 3	x	10 -T10	S	2000	2,30 ZP
M 3	x	12 -T10	S	2000	2,34 ZP
M 3	x	16 -T10	S	2000	2,94 ZP
M 3	x	20 -T10	S	2000	3,12 ZP
M 3	x	25 -T10	S	2000	3,30 ZP
M 4	x	6 -T20	S	2000	5,64 ZP
M 4	x	8 -T20	S	2000	3,10 ZP
M 4	x	10 -T20	S	2000	3,20 ZP
M 4	x	12 -T20	S	2000	3,30 ZP
M 4	x	16 -T20	S	2000	3,66 ZP
M 4	x	20 -T20	S	2000	3,90 ZP
M 4	x	25 -T20	S	1000	4,50 ZP
M 4	x	30 -T20	S	1000	5,82 ZP
M 4	x	35 -T20	S	1000	7,30 ZP
M 4	x	40 -T20	S	1000	8,50 ZP
M 5	x	8 -T25	S	2000	8,05 ZP
M 5	x	10 -T25	S	2000	4,20 ZP
M 5	x	12 -T25	S	1000	4,32 ZP
M 5	x	16 -T25	S	1000	4,80 ZP
M 5	x	20 -T25	S	1000	5,40 ZP
M 5	x	25 -T25	S	1000	6,10 ZP
M 5	x	30 -T25	S	1000	7,70 ZP
M 5	x	35 -T25	S	500	8,55 ZP
M 5	x	40 -T25	S	500	9,25 ZP
M 5	x	45 -T25	S	500	10,80 ZP
M 5	x	50 -T25	S	500	15,00 ZP
M 6	x	10 -T30	S	1000	10,70 ZP
M 6	x	12 -T30	S	1000	6,24 ZP
M 6	x	16 -T30	S	1000	7,10 ZP
M 6	x	20 -T30	S	1000	7,80 ZP
M 6	x	25 -T30	S	500	8,76 ZP
M 6	x	30 -T30	S	500	10,00 ZP
M 6	x	35 -T30	S	500	11,65 ZP
M 6	x	40 -T30	S	500	13,00 ZP
M 6	x	50 -T30	S	200	17,40 ZP
M 6	x	60 -T30	S	200	20,90 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00966.414	RAZ 460
966	**4.8 zinc plated**	**H**

Raised countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 477

DIN 966 → replaced by ISO 7047

M 2,5	x	5 -H	S	2000	6,90 ZP
M 2,5	x	6 -H	S	2000	4,90 ZP
M 2,5	x	6 -H	K	200	7,30 ZP
M 2,5	x	8 -H	S	2000	5,10 ZP
M 2,5	x	8 -H	K	200	7,50 ZP
M 2,5	x	10 -H	S	2000	5,10 ZP
M 2,5	x	10 -H	K	200	7,50 ZP
M 3	x	5 -H	S	2000	4,90 ZP
M 3	x	5 -H	K	200	7,30 ZP
M 3	x	6 -H	S	2000	3,75 ZP
M 3	x	6 -H	K	200	6,20 ZP
M 3	x	8 -H	S	2000	1,95 ZP
M 3	x	8 -H	K	200	4,35 ZP
M 3	x	10 -H	S	2000	2,00 ZP
M 3	x	10 -H	K	200	4,40 ZP
M 3	x	12 -H	S	2000	2,45 ZP
M 3	x	12 -H	K	200	4,85 ZP
M 3	x	16 -H	S	2000	3,05 ZP
M 3	x	16 -H	K	200	5,45 ZP
M 3	x	20 -H	S	2000	3,20 ZP
M 3	x	20 -H	K	200	5,60 ZP
M 3	x	25 -H	S	2000	4,10 ZP
M 3	x	25 -H	K	200	7,30 ZP
M 3	x	30 -H	S	2000	5,20 ZP
M 3	x	30 -H	K	200	7,60 ZP
M 3	x	35 -H	S	2000	7,60 ZP
M 3	x	40 -H	S	1000	8,60 ZP
M 4	x	6 -H	S	2000	5,50 ZP
M 4	x	6 -H	K	200	7,90 ZP
M 4	x	8 -H	S	2000	2,70 ZP
M 4	x	8 -H	K	200	5,10 ZP
M 4	x	10 -H	S	2000	2,80 ZP
M 4	x	10 -H	K	200	5,20 ZP
M 4	x	12 -H	S	2000	2,95 ZP
M 4	x	12 -H	K	200	5,35 ZP
M 4	x	16 -H	S	2000	3,25 ZP
M 4	x	16 -H	K	200	5,65 ZP
M 4	x	20 -H	S	2000	3,50 ZP
M 4	x	20 -H	K	200	5,90 ZP
M 4	x	25 -H	S	1000	4,00 ZP
M 4	x	25 -H	K	200	6,40 ZP
M 4	x	30 -H	S	1000	5,60 ZP
M 4	x	30 -H	K	200	8,00 ZP
M 4	x	35 -H	S	1000	7,10 ZP
M 4	x	35 -H	K	200	9,50 ZP
M 4	x	40 -H	S	1000	8,10 ZP
M 4	x	40 -H	K	200	10,50 ZP
M 4	x	45 -H	S	1000	9,40 ZP
M 4	x	45 -H	K	200	11,80 ZP
M 4	x	50 -H	S	1000	13,00 ZP
M 4	x	50 -H	K	200	15,40 ZP
M 4	x	60 -H	S	500	18,70 ZP
M 5	x	8 -H	S	2000	7,70 ZP
M 5	x	8 -H	K	200	10,10 ZP
M 5	x	10 -H	S	2000	3,80 ZP
M 5	x	10 -H	K	200	6,20 ZP
M 5	x	12 -H	S	1000	3,85 ZP
M 5	x	12 -H	K	200	6,25 ZP
M 5	x	16 -H	S	1000	4,35 ZP
M 5	x	16 -H	K	200	6,75 ZP
M 5	x	20 -H	S	1000	5,50 ZP
M 5	x	20 -H	K	200	7,90 ZP
M 5	x	25 -H	S	1000	5,50 ZP
M 5	x	25 -H	K	200	7,90 ZP
M 5	x	30 -H	S	1000	7,00 ZP
M 5	x	30 -H	K	200	9,40 ZP
M 5	x	35 -H	S	500	7,70 ZP
M 5	x	40 -H	S	500	8,30 ZP
M 5	x	45 -H	S	500	10,40 ZP
M 5	x	50 -H	S	500	13,60 ZP
M 5	x	60 -H	S	200	18,50 ZP
M 5	x	70 -H	S	200	27,00 ZP
M 5	x	80 -H	S	200	34,50 ZP
M 6	x	10 -H	S	1000	9,50 ZP
M 6	x	10 -H	K	200	11,90 ZP
M 6	x	12 -H	S	1000	5,70 ZP
M 6	x	12 -H	K	200	8,10 ZP
M 6	x	16 -H	S	1000	6,40 ZP
M 6	x	16 -H	K	200	8,80 ZP
M 6	x	20 -H	S	1000	7,10 ZP
M 6	x	20 -H	K	200	9,50 ZP
M 6	x	25 -H	S	500	8,00 ZP
M 6	x	30 -H	S	500	9,10 ZP
M 6	x	35 -H	S	500	10,50 ZP
M 6	x	40 -H	S	500	11,80 ZP
M 6	x	45 -H	S	500	14,70 ZP
M 6	x	50 -H	S	200	15,60 ZP
M 6	x	60 -H	S	200	19,60 ZP
M 6	x	70 -H	S	200	27,00 ZP
M 6	x	80 -H	S	200	38,50 ZP
M 8	x	16 -H	S	500	26,00 ZP
M 8	x	20 -H	S	500	16,00 ZP
M 8	x	25 -H	S	200	19,30 ZP
M 8	x	30 -H	S	200	21,90 ZP
M 8	x	35 -H	S	200	24,70 ZP
M 8	x	40 -H	S	100	31,00 ZP
M 8	x	45 -H	S	100	33,00 ZP
M 8	x	50 -H	S	100	34,00 ZP
M 8	x	60 -H	S	100	40,00 ZP
M 8	x	70 -H	S	100	49,00 ZP
M 8	x	80 -H	S	100	59,00 ZP

~DIN	00975.000	RAZ 470
975*	**Steel**	

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) information box

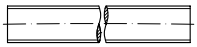
M 2	S	1	340,00
M 2,5	S	1	510,00
M 3	S	1	127,00
M 3,5	S	1	550,00
M 4	S	1	92,00
M 5	S	1	103,00
M 6	S	1	113,00
M 8	S	1	179,00
M 10	S	1	285,00
M 12	S	1	405,00
M 14	S	1	560,00
M 16	S	1	710,00
M 18	S	1	950,00
M 20	S	1	1140,00
M 22	S	1	1420,00
M 24	S	1	1620,00
M 27	S	1	2180,00
M 30	S	1	2850,00
M 33	S	1	4350,00
M 36	S	1	5200,00
M 39	S	1	6700,00
M 42	S	1	8500,00
M 45	S	1	10000,00
M 48	S	1	12200,00
M 52	S	1	14400,00
M 56	S	1	17400,00

Colour marking for threaded rods

Property class/Material	Colour	~ Ral No.
St/4.6/4.8/5.8/MS/Kst.	none	–
5.6	brown	8015
5.8	blue	5010
8.8	yellow	1023
10.9	white	1013
12.9	black	9017

Colour instead of stamping according to DIN 976-1

~DIN	00975.010	RAZ 470
975*	**Steel zinc plated**	



Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478
Brass, plastic → S. 582

- Colour codes (as substitute for marking) information box
- Stud bolts (part components) → DIN 976

M 2	S	1	380,00 ZP
M 2,5	S	1	550,00 ZP
M 3	S	1	174,00 ZP
M 3,5	S	1	790,00 ZP
M 4	S	1	132,00 ZP
M 5	S	1	142,00 ZP
M 6	S	1	167,00 ZP
M 7	S	1	1980,00 ZP
M 8	S	1	255,00 ZP
M 10	S	1	365,00 ZP
M 12	S	1	520,00 ZP
M 14	S	1	760,00 ZP
M 16	S	1	960,00 ZP
M 18	S	1	1200,00 ZP
M 20	S	1	1480,00 ZP
M 22	S	1	1810,00 ZP
M 24	S	1	2030,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 27			S	1	2850,00 ZP
M 30			S	1	3500,00 ZP
M 33			S	1	5600,00 ZP
M 36			S	1	6400,00 ZP
M 39			S	1	8500,00 ZP
M 42			S	1	9500,00 ZP
M 45			S	1	12900,00 ZP
M 48			S	1	14900,00 ZP

~DIN	00975.016	RAZ 470
975*	Steel zinc plated	2000

Threaded rods, length 2000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478

Colour codes (as substitute for marking) → information box

M 6	x	2000	S	1	340,00 ZP
M 8	x	2000	S	1	510,00 ZP
M 10	x	2000	S	1	730,00 ZP
M 12	x	2000	S	1	1040,00 ZP
M 14	x	2000	S	1	1510,00 ZP
M 16	x	2000	S	1	1910,00 ZP
M 18	x	2000	S	1	2400,00 ZP
M 20	x	2000	S	1	3000,00 ZP
M 22	x	2000	S	1	3650,00 ZP
M 24	x	2000	S	1	4050,00 ZP
M 27	x	2000	S	1	5700,00 ZP
M 30	x	2000	S	1	7000,00 ZP
M 36	x	2000	S	1	23900,00 ZP

~DIN	00975.030	RAZ 470
975*	Steel zinc plated 8 TLP	

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 6	S	1	252,00 ZP TLP
M 8	S	1	388,00 ZP TLP
M 10	S	1	550,00 ZP TLP
M 12	S	1	787,00 ZP TLP
M 16	S	1	1450,00 ZP TLP
M 20	S	1	2238,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
~DIN	00975.060				RAZ 470
975*	Steel zinc plated yellow				

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

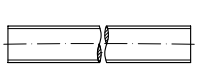
Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 6	S	1	201,00 YZP
M 8	S	1	310,00 YZP
M 10	S	1	440,00 YZP
M 12	S	1	630,00 YZP
M 16	S	1	1160,00 YZP
M 20	S	1	1790,00 YZP

~DIN	00975.005	RAZ 470
975*	Steel	fine



Threaded rods, length 1000 mm, with metric fine pitch thread

(*as per DIN 976-1, type A)

Mech. properties → TI-220

Colour codes (as substitute for marking) → information box

M 8	x	1	S	1	1380,00
M 10	x	1	S	1	1520,00
M 12	x	1,5	S	1	1650,00
M 14	x	1,5	S	1	1780,00
M 16	x	1,5	S	1	2440,00
M 18	x	1,5	S	1	3250,00
M 20	x	1,5	S	1	3350,00
M 24	x	1,5	S	1	6200,00
M 24	x	2	S	1	8900,00
M 30	x	1,5	S	1	10100,00
M 30	x	2	S	1	12100,00
M 36	x	1,5	S	1	19400,00

Dimensions			PU	Pieces	€/100/Mat.
~DIN	00975.015				RAZ 470
975*	Steel zinc plated				fine

Threaded rods, length 1000 mm, with metric fine pitch thread

(*as per DIN 976-1, type A)

Mech. properties → TI-220

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 12	x	1,5	S	1	1860,00 ZP
M 14	x	1,5	S	1	1950,00 ZP
M 16	x	1,5	S	1	2800,00 ZP
M 18	x	1,5	S	1	3500,00 ZP
M 20	x	1,5	S	1	3850,00 ZP
M 24	x	1,5	S	1	6700,00 ZP
M 24	x	2	S	1	9900,00 ZP

~DIN	00975.004	RAZ 470
975*	Steel	left

Threaded rods, length 1000 mm, with metric left hand thread

(*as per DIN 976-1, type A)

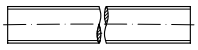
Mech. properties → TI-220

Stainless → S. 478

Colour codes (as substitute for marking) → information box

M 8 -LH	S	1	430,00
M 10 -LH	S	1	495,00
M 12 -LH	S	1	840,00
M 14 -LH	S	1	1080,00
M 16 -LH	S	1	1580,00
M 18 -LH	S	1	2310,00
M 20 -LH	S	1	2400,00
M 24 -LH	S	1	3750,00
M 30 -LH	S	1	5500,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.014		RAZ 470
975*	Steel zinc plated		left



Threaded rods, length 1000 mm, with metric left hand thread

(*as per DIN 976-1, type A)

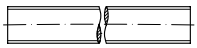
Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478

Colour codes (as substitute for marking) → information box

M 10 -LH	S	1	950,00 ZP
M 12 -LH	S	1	1510,00 ZP
M 16 -LH	S	1	2800,00 ZP
M 20 -LH	S	1	4300,00 ZP
M 24 -LH	S	1	5900,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.007		RAZ 470
975*	Steel		BSW



Threaded rods, length 1000 mm, with Whitworth thread

Mech. properties → TI-220

Colour codes (as substitute for marking) → information box

WW 1/2	S	1	570,00
WW 5/8	S	1	1240,00
WW 3/4	S	1	1730,00
WW 7/8	S	1	2160,00
WW 1	S	1	2650,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.500		RAZ 471
975*	5.6		

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 8	S	1	1520,00
M 10	S	1	1730,00
M 12	S	1	2230,00
M 16	S	1	2950,00
M 20	S	1	5900,00
M 24	S	1	8800,00
M 30	S	1	14600,00
M 36	S	1	23000,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.510		RAZ 471
975*	5.6 zinc plated		

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 8	S	1	1740,00 ZP
M 10	S	1	2050,00 ZP
M 12	S	1	2700,00 ZP
M 16	S	1	3800,00 ZP
M 20	S	1	7100,00 ZP
M 24	S	1	10900,00 ZP
M 27	S	1	14700,00 ZP
M 30	S	1	18700,00 ZP
M 33	S	1	22800,00 ZP
M 36	S	1	26900,00 ZP
M 39	S	1	31400,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.800		RAZ 471
975*	8.8		

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 4	S	1	2000,00
M 5	S	1	690,00
M 6	S	1	690,00
M 8	S	1	960,00
M 10	S	1	1270,00
M 12	S	1	1560,00
M 14	S	1	2090,00
M 16	S	1	2550,00
M 18	S	1	3900,00
M 20	S	1	4150,00
M 22	S	1	5200,00
M 24	S	1	6200,00
M 27	S	1	8700,00
M 30	S	1	10000,00
M 33	S	1	17400,00

Dimensions	PU	Pieces	€/100/Mat.
M 36	S	1	23100,00
M 39	S	1	26300,00
M 42	S	1	30500,00
M 48	S	1	35500,00
M 52	S	1	40500,00
M 56	S	1	45500,00
M 60	S	1	51500,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.810		RAZ 471
975*	8.8 zinc plated		

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478
Brass, plastic → S. 582

Colour codes (as substitute for marking) → information box

M 4	S	1	2070,00 ZP
M 5	S	1	860,00 ZP
M 6	S	1	950,00 ZP
M 8	S	1	1130,00 ZP
M 10	S	1	1510,00 ZP
M 12	S	1	1780,00 ZP
M 14	S	1	2410,00 ZP
M 16	S	1	2950,00 ZP
M 18	S	1	4400,00 ZP
M 20	S	1	5000,00 ZP
M 22	S	1	6200,00 ZP
M 24	S	1	7100,00 ZP
M 27	S	1	10500,00 ZP
M 30	S	1	12400,00 ZP
M 33	S	1	20900,00 ZP
M 36	S	1	25900,00 ZP
M 42	S	1	33100,00 ZP
M 48	S	1	43400,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.816		RAZ 471
975*	8.8 zinc plated		2000

Threaded rods, length 2000 mm

(*as per DIN 976-1, type A)

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 478

Colour codes (as substitute for marking) → information box

M 6	x 2000	S	1	2600,00 ZP
M 8	x 2000	S	1	2600,00 ZP
M 10	x 2000	S	1	3100,00 ZP
M 12	x 2000	S	1	3600,00 ZP
M 16	x 2000	S	1	5900,00 ZP
M 20	x 2000	S	1	10000,00 ZP
M 24	x 2000	S	1	14300,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 27	x	2000	S	1	20000,00 ZP
M 30	x	2000	S	1	24600,00 ZP
M 36	x	2000	S	1	52300,00 ZP
M 42	x	2000	S	1	66800,00 ZP

~DIN	00975.820	RAZ 471
975*	8.8 hot dip galvanized	

Threaded rods, length 1000 mm

Thread tolerance 6 h (6az + HDG = U)
(*as per DIN 976-1, type A)

Mech. properties ➔ TI-220 Corrosion protection ➔ TI-219

Stainless ➔ S. 478
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking)
➔ information box

M 10	S	1	2390,00 HDG
M 12	S	1	3150,00 HDG
M 16	S	1	4800,00 HDG
M 20	S	1	7200,00 HDG
M 24	S	1	10500,00 HDG
M 27	S	1	12600,00 HDG
M 30	S	1	16400,00 HDG
M 33	S	1	22600,00 HDG
M 36	S	1	33800,00 HDG
M 39	S	1	41300,00 HDG
M 42	S	1	49100,00 HDG

Colour marking for threaded rods

Property class/Material	Colour	~ Ral No.
St/4.6/4.8/5.8/MS/Kst.	none	–
5.6	brown	8015
5.8	blue	5010
8.8	yellow	1023
10.9	white	1013
12.9	black	9017

Colour instead of stamping according to DIN 976-1

Dimensions			PU	Pieces	€/100/Mat.
~DIN	00975.805				RAZ 471
975*	8.8				fine

Threaded rods, length 1000 mm, with metric fine pitch thread

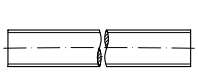
(*as per DIN 976-1, type A)

Mech. properties ➔ TI-220

Colour codes (as substitute for marking)
➔ information box

M 12	x	1,5	S	1	19300,00
M 14	x	1,5	S	1	20300,00
M 16	x	1,5	S	1	6300,00
M 20	x	1,5	S	1	7100,00
M 24	x	1,5	S	1	13000,00
M 27	x	1,5	S	1	18900,00
M 30	x	1,5	S	1	24900,00
M 30	x	2	S	1	24900,00

~DIN	00975.804	RAZ 471
975*	8.8	left



Threaded rods, length 1000 mm, with metric left hand thread

(*as per DIN 976-1, type A)

Mech. properties ➔ TI-220

Stainless ➔ S. 478

Colour codes (as substitute for marking)
➔ information box

M 10 -LH	S	1	1490,00
M 12 -LH	S	1	1950,00
M 16 -LH	S	1	4200,00
M 20 -LH	S	1	7100,00
M 24 -LH	S	1	9900,00
M 30 -LH	S	1	15700,00

Dimensions			PU	Pieces	€/100/Mat.
~DIN	00975.814				RAZ 471
975*	8.8 zinc plated				left

Threaded rods, length 1000 mm, with metric left hand thread

(*as per DIN 976-1, type A)

Mech. properties ➔ TI-220 Corrosion protection ➔ TI-217

Stainless ➔ S. 478

Colour codes (as substitute for marking)
➔ information box

M 6 -LH	S	1	1900,00 ZP
M 8 -LH	S	1	2005,00 ZP
M 10 -LH	S	1	2235,00 ZP
M 12 -LH	S	1	2925,00 ZP
M 16 -LH	S	1	6300,00 ZP
M 20 -LH	S	1	10650,00 ZP
M 24 -LH	S	1	14850,00 ZP
M 27 -LH	S	1	17800,00 ZP
M 30 -LH	S	1	23550,00 ZP
M 36 -LH	S	1	29800,00 ZP

~DIN	00975.100	RAZ 471
975*	10.9	

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

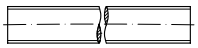
Mech. properties ➔ TI-220

Stainless ➔ S. 478
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking)
➔ information box

M 5	S	1	3450,00
M 6	S	1	5200,00
M 8	S	1	6500,00
M 10	S	1	7000,00
M 12	S	1	8400,00
M 14	S	1	9500,00
M 16	S	1	10200,00
M 18	S	1	12600,00
M 20	S	1	14900,00
M 22	S	1	17700,00
M 24	S	1	21300,00
M 27	S	1	23000,00
M 30	S	1	26600,00
M 36	S	1	35600,00
M 42	S	1	44600,00
M 48	S	1	53600,00

Dimensions	PU Pieces	€/100/Mat.
~DIN	00975.110	RAZ 471
975*	10.9 zinc plated	



Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Caution! Note information about hydrogen embrittlement.

Mech. properties ➔ TI-220 Corrosion protection ➔ TI-217

Stainless ➔ S. 478
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking) ➔ information box

M 5	S	1	8600,00 ZP
M 6	S	1	9300,00 ZP
M 8	S	1	12000,00 ZP
M 10	S	1	12100,00 ZP
M 12	S	1	12400,00 ZP
M 16	S	1	13800,00 ZP
M 20	S	1	17500,00 ZP
M 24	S	1	18300,00 ZP
M 27	S	1	30100,00 ZP
M 30	S	1	30100,00 ZP
M 36	S	1	39100,00 ZP
M 42	S	1	34100,00 ZP

Important Note!

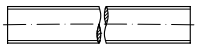
Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Colour marking for threaded rods

Property class/Material	Colour	~ Ral No.
St/4.6/4.8/5.8/MS/Kst.	none	–
5.6	brown	8015
5.8	blue	5010
8.8	yellow	1023
10.9	white	1013
12.9	black	9017

Colour instead of stamping according to DIN 976-1

Dimensions	PU Pieces	€/100/Mat.
~DIN	00975.120	RAZ 471
975*	10.9 hot dip galvanized	



Threaded rods, length 1000 mm

Thread tolerance 6 h (6az + HDG = U)
(*as per DIN 976-1, type A)

Mech. properties ➔ TI-220 Corrosion protection ➔ TI-219

Stainless ➔ S. 478
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking) ➔ information box

M 12	S	1	16400,00 HDG
M 16	S	1	17800,00 HDG
M 20	S	1	21500,00 HDG
M 24	S	1	22300,00 HDG
M 27	S	1	25000,00 HDG
M 30	S	1	28000,00 HDG
M 36	S	1	31000,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

~DIN	00975.200	RAZ 471
975*	12.9	

Threaded rods, length 1000 mm

(*as per DIN 976-1, type A)

Mech. properties ➔ TI-220

Stainless ➔ S. 478
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking) ➔ information box

M 6	S	1	50000,00
M 8	S	1	50000,00
M 10	S	1	54200,00
M 12	S	1	58000,00
M 16	S	1	61300,00
M 20	S	1	69800,00
M 24	S	1	80000,00
M 30	S	1	91800,00

Dimensions	PU Pieces	€/100/Mat.
~DIN	00975.006	RAZ 472
975*	Steel	trapezoid

Threaded rods, length 1000 mm, with normal trapezoidal thread*

*acc. to DIN 103
Thread ends acc. to DIN 78-Ko/ISO 4753-RL

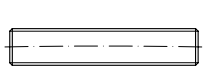
Round nuts with trap. thread ➔ article 88089

Mech. properties ➔ TI-220

Stainless ➔ S. 478

TR 12	x	3	S	1	2380,00
TR 14	x	4	S	1	2600,00
TR 16	x	4	S	1	3400,00
TR 18	x	4	S	1	3550,00
TR 20	x	4	S	1	4000,00
TR 22	x	5	S	1	5200,00
TR 24	x	5	S	1	6000,00
TR 26	x	5	S	1	6500,00
TR 28	x	5	S	1	7100,00
TR 30	x	6	S	1	8500,00
TR 32	x	6	S	1	10800,00
TR 36	x	6	S	1	17100,00
TR 40	x	7	S	1	17900,00
TR 44	x	7	S	1	26000,00

DIN	00976.012	RAZ 472
976-1	Steel zinc plated	type B



Stud bolts, B = with flat point

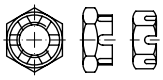
Mech. properties ➔ TI-220 Corrosion protection ➔ TI-217

BM 6	x	40	S	100	124,00 ZP
BM 6	x	50	S	100	126,00 ZP
BM 6	x	60	S	100	127,00 ZP
BM 6	x	70	S	100	129,00 ZP
BM 6	x	80	S	100	132,00 ZP
BM 6	x	90	S	100	151,00 ZP
BM 6	x	100	S	100	152,00 ZP
BM 8	x	30	S	100	126,00 ZP
BM 8	x	40	S	100	129,00 ZP
BM 8	x	50	S	100	133,00 ZP
BM 8	x	60	S	100	135,00 ZP
BM 8	x	70	S	100	138,00 ZP
BM 8	x	80	S	100	142,00 ZP
BM 8	x	90	S	100	167,00 ZP
BM 8	x	100	S	100	186,00 ZP
BM 8	x	120	S	50	199,00 ZP
BM 8	x	130	S	50	202,00 ZP
BM 8	x	150	S	50	220,00 ZP
BM 10	x	30	S	100	140,00 ZP
BM 10	x	35	S	100	145,00 ZP
BM 10	x	40	S	100	143,00 ZP
BM 10	x	45	S	100	145,00 ZP
BM 10	x	50	S	100	148,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
BM 10	x	60	S	100	170,00 ZP
BM 10	x	70	S	100	176,00 ZP
BM 10	x	75	S	100	178,00 ZP
BM 10	x	80	S	100	179,00 ZP
BM 10	x	90	S	100	186,00 ZP
BM 10	x	100	S	100	190,00 ZP
BM 10	x	120	S	100	201,00 ZP
BM 10	x	130	S	100	208,00 ZP
BM 10	x	140	S	100	211,00 ZP
BM 10	x	150	S	100	219,00 ZP
BM 10	x	180	S	25	245,00 ZP
BM 10	x	190	S	25	250,00 ZP
BM 10	x	200	S	10	260,00 ZP
BM 10	x	250	S	10	325,00 ZP
BM 10	x	300	S	10	390,00 ZP
BM 10	x	350	S	10	455,00 ZP
BM 10	x	400	S	10	520,00 ZP
BM 10	x	450	S	10	585,00 ZP
BM 10	x	500	S	10	650,00 ZP
BM 12	x	50	S	100	179,00 ZP
BM 12	x	60	S	100	186,00 ZP
BM 12	x	70	S	50	206,00 ZP
BM 12	x	80	S	50	222,00 ZP
BM 12	x	90	S	50	223,00 ZP
BM 12	x	100	S	50	225,00 ZP
BM 12	x	110	S	50	225,00 ZP
BM 12	x	120	S	50	228,00 ZP
BM 12	x	130	S	50	230,00 ZP
BM 12	x	150	S	50	234,00 ZP
BM 12	x	160	S	25	244,00 ZP
BM 12	x	200	S	25	250,00 ZP
BM 12	x	250	S	10	335,00 ZP
BM 12	x	300	S	10	144,00 ZP
BM 12	x	350	S	10	475,00 ZP
BM 12	x	400	S	10	550,00 ZP
BM 12	x	450	S	10	600,00 ZP
BM 12	x	500	S	10	675,00 ZP
BM 16	x	60	S	25	285,00 ZP
BM 16	x	70	S	25	300,00 ZP
BM 16	x	80	S	25	315,00 ZP
BM 16	x	90	S	25	320,00 ZP
BM 16	x	100	S	25	345,00 ZP
BM 16	x	120	S	25	365,00 ZP
BM 16	x	150	S	10	415,00 ZP
BM 16	x	200	S	10	510,00 ZP
BM 16	x	300	S	10	750,00 ZP
BM 16	x	350	S	5	875,00 ZP
BM 16	x	400	S	5	1000,00 ZP
BM 16	x	450	S	5	1125,00 ZP
BM 16	x	500	S	5	1250,00 ZP

DIN 00979.400 RAZ 420

979 **04**



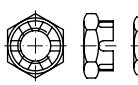
Hexagon thin slotted and castle nuts

Dimensions → TI-66 Mech. properties → TI-221

Substitute for DIN 937
with wrench sizes and height acc. to ISO

M 16	S	50		108,00
M 20	S	50		159,00
M 24	S	25		270,00
M 30	S	10		500,00

Dimensions			PU	Pieces	€/100/Mat.
DIN	00979.405				RAZ 420
979	**04**				**fine**
M 16	x	1,5	S	50	126,00
M 18	x	1,5	S	50	150,00
M 20	x	1,5	S	25	205,00
M 24	x	2	S	25	320,00
M 30	x	2	S	10	610,00
M 36	x	3	S	1	920,00
M 42	x	3	S	1	1610,00
M 48	x	3	S	1	2700,00
M 52	x	3	S	1	3350,00



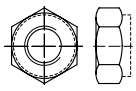
Hexagon thin slotted and castle nuts with metric fine pitch thread

Dimensions → TI-66 Mech. properties → TI-221

Substitute for DIN 937
with wrench sizes and height acc. to ISO

DIN 00980.815 RAZ 480

980 **8** **type V**
zinc plated



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

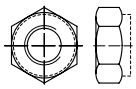
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 479

DIN 980 → replaced by ISO 7042

VM 4	S	100	8,30 ZP
VM 5	S	1000	6,80 ZP
VM 5	K	100	9,70 ZP
VM 6	S	1000	7,00 ZP
VM 6	K	100	10,00 ZP
VM 8	S	500	10,80 ZP
VM 8	K	100	13,50 ZP
VM 10	S	500	17,90 ZP
VM 10	K	100	22,20 ZP
VM 12	S	250	28,00 ZP
VM 12	K	100	32,00 ZP
VM 14	S	100	48,00 ZP
VM 16	S	100	55,00 ZP
VM 18	S	50	104,00 ZP
VM 20	S	50	108,00 ZP
VM 22	S	25	184,00 ZP
VM 24	S	25	190,00 ZP
VM 27	S	25	420,00 ZP
VM 30	S	10	495,00 ZP
VM 33	S	10	950,00 ZP
VM 36	S	10	1000,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00980.864		RAZ 480
980	**8**		**type V**
	zinc plated yellow		



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Dimensions → TI-66 Corrosion protection → TI-217
Standard conversion → TI-7 Standard conversion → TI-7

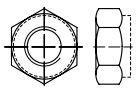
Stainless → S. 479

DIN 980 → replaced by ISO 7042

VM 5	S	1000	6,80 YZP
VM 5	K	100	9,70 YZP
VM 6	S	1000	7,00 YZP
VM 6	K	100	10,00 YZP
VM 8	S	500	10,90 YZP
VM 8	K	100	13,40 YZP
VM 10	S	500	18,10 YZP
VM 10	K	100	22,40 YZP
VM 12	S	250	28,50 YZP
VM 12	K	100	32,50 YZP
VM 16	S	100	56,00 YZP
VM 20	S	50	108,00 YZP

DIN 00980.353 RAZ 1525

980 **8** **type V**
zinc flake coated



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

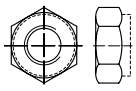
Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 479

DIN 980 → replaced by ISO 7042

VM 6	S	1000	9,10 flZn
VM 8	S	500	14,10 flZn
VM 10	S	500	24,60 flZn
VM 12	S	250	38,00 flZn
VM 16	S	100	72,00 flZn
VM 20	S	50	141,00 flZn
VM 24	S	25	255,00 flZn

Dimensions	PU	Pieces	€/100/Mat.
DIN	00980.818		RAZ 480
980	**8**		**type V fine**
	zinc plated		



Prevailing torque type hexagon nuts, V = all-metal nuts, single component, with metric fine pitch thread

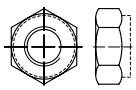
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 479

DIN 980 → replaced by ISO 10513

VM	8	x	1	S 100	24,60 ZP
VM	10	x	1	S 100	28,50 ZP
VM	12	x	1,5	S 100	34,50 ZP
VM	14	x	1,5	S 100	49,50 ZP
VM	16	x	1,5	S 100	65,00 ZP
VM	18	x	1,5	S 50	112,00 ZP
VM	20	x	1,5	S 50	108,00 ZP
VM	22	x	1,5	S 50	189,00 ZP
VM	24	x	1,5	S 25	197,00 ZP
VM	24	x	2	S 25	197,00 ZP
VM	30	x	2	S 10	510,00 ZP

DIN	00980.824	RAZ 3395
980	**8**	**type M**
	hot dip galvanized	



Prevailing torque type hexagon nuts, M = all-metal nuts, two parts

Thread toleranze 6H

→ ISO 4014/4017 8.8 HDG SB

Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

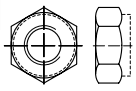
Stainless → S. 479

DIN 980 → replaced by ISO 7042

CE

M	M 5	S	100	146,00 HDG
M	M 6	S	100	58,00 HDG
M	M 8	S	100	60,00 HDG
M	M 10	S	100	78,00 HDG
M	M 12	S	100	95,00 HDG
M	M 16	S	50	160,00 HDG
M	M 20	S	50	560,00 HDG
M	M 24	S	25	770,00 HDG

Dimensions	PU	Pieces	€/100/Mat.
DIN	00980.114		RAZ 480
980	**10**		**type V**
	zinc plated		



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

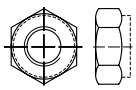
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 479

DIN 980 → replaced by ISO 7042

VM	8	S 100	22,70 ZP
VM	10	S 100	38,00 ZP
VM	12	S 100	48,50 ZP
VM	14	S 100	69,00 ZP
VM	16	S 50	85,00 ZP
VM	18	S 50	129,00 ZP
VM	20	S 50	157,00 ZP
VM	22	S 25	221,00 ZP
VM	24	S 25	238,00 ZP
VM	27	S 10	680,00 ZP
VM	30	S 10	485,00 ZP
VM	36	S 10	2500,00 ZP

DIN	00980.135	RAZ 1525
980	**10**	**type V**
	zinc flake coated	



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Friction coefficient 0,09 – 0,14
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

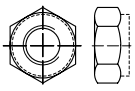
Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 479

DIN 980 → replaced by ISO 7042

VM	8	S 500	65,00 flZn
VM	10	S 500	90,00 flZn
VM	12	S 250	100,00 flZn
VM	16	S 50	120,00 flZn
VM	18	S 50	63,32 flZn
VM	20	S 50	180,00 flZn
VM	24	S 25	330,00 flZn

Dimensions	PU	Pieces	€/100/Mat.
DIN	00980.118		RAZ 480
980	**10**		**type V fine**
	zinc plated		



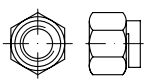
Prevailing torque type hexagon nuts, V = all-metal nuts, single component, with metric fine pitch thread

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 980 fine thread → replaced by ISO 10513

VM	8	x	1	S 100	28,00 ZP
VM	10	x	1	S 100	44,00 ZP
VM	10	x	1,25	S 100	43,00 ZP
VM	12	x	1,25	S 100	53,00 ZP
VM	12	x	1,5	S 100	53,00 ZP
VM	14	x	1,5	S 100	76,00 ZP
VM	16	x	1,5	S 50	92,00 ZP
VM	18	x	1,5	S 50	140,00 ZP
VM	20	x	1,5	S 50	162,00 ZP
VM	22	x	1,5	S 25	260,00 ZP
VM	24	x	1,5	S 25	260,00 ZP
VM	24	x	2	S 25	260,00 ZP

~DIN	88105.030	RAZ 841
980	**Steel**	**article 88105**
	Copper plated	



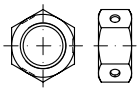
THERMAG nuts, prevailing torque type hexagon nuts, V = all-metal nuts, single component

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-221

M	8 SW 12	S	100	48,50 CuP
M	8 SW 13	S	100	73,00 CuP
M	10 SW 14	S	100	84,00 CuP
M	10 SW 17	S	100	94,00 CuP
M	12 SW 17	S	100	168,00 CuP
M	12 SW 19	S	100	186,00 CuP

Dimensions	PU	Pieces	€/100/Mat.
Article	84032.810		RAZ 480

84032 8 **Biloc** zinc plated



Prevailing torque type hexagon nuts, all-metal nuts

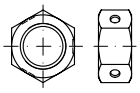
- three squeezing points on the center key area
- both sides screwable
- suitable for automatic feeders
- dimensions acc. ISO 4032

Dimensions → TI-61 Corrosion protection → TI-217

M 5	S	1000	18,00 ZP
M 6	S	1000	21,00 ZP
M 8	S	1000	26,00 ZP
M 10	S	500	27,50 ZP
M 12	S	500	48,00 ZP
M 16	S	200	125,00 ZP
M 20	S	100	225,00 ZP

Article	84032.110	RAZ 480

84032 10 **Biloc** zinc plated



Prevailing torque type hexagon nuts, all-metal nuts

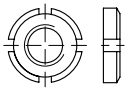
- three squeezing points on the center key area
- both sides screwable
- suitable for automatic feeders
- dimensions acc. ISO 4032

Dimensions → TI-61 Corrosion protection → TI-217

M 5	S	1000	22,00 ZP
M 6	S	1000	28,00 ZP
M 8	S	1000	36,00 ZP
M 10	S	500	42,00 ZP
M 12	S	500	72,00 ZP
M 16	S	100	175,00 ZP
M 20	S	50	315,00 ZP

DIN	00981.000	RAZ 481

981 Steel



Locknuts for rolling bearings

Lockwashers/safety plates → DIN 5406

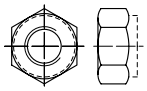
Dimensions → TI-71

Type no./thread diameter x thread pitch					
KM0 M 10	x	0,75	S	10	460,00
KM1 M 12	x	1	S	10	480,00
KM2 M 15	x	1	S	10	495,00

Dimensions	PU	Pieces	€/100/Mat.
KM 3 M 17 x 1	S	10	530,00
KM 4 M 20 x 1	S	10	550,00
KM 5 M 25 x 1,5	S	10	560,00
KM 6 M 30 x 1,5	S	10	630,00
KM 7 M 35 x 1,5	S	1	830,00
KM 8 M 40 x 1,5	S	1	950,00
KM 9 M 45 x 1,5	S	1	1100,00
KM10 M 50 x 1,5	S	1	1290,00
KM11 M 55 x 2	S	1	1400,00
KM12 M 60 x 2	S	1	1500,00
KM13 M 65 x 2	S	1	1790,00
KM14 M 70 x 2	S	1	2070,00
KM15 M 75 x 2	S	1	2550,00
KM16 M 80 x 2	S	1	2950,00
KM17 M 85 x 2	S	1	3500,00
KM18 M 90 x 2	S	1	4150,00
KM19 M 95 x 2	S	1	4550,00
KM20 M 100 x 2	S	1	5100,00
KM22 M 110 x 2	S	1	6800,00
KM23 M 115 x 2	S	1	10200,00
KM24 M 120 x 2	S	1	10300,00
KM25 M 125 x 2	S	1	11200,00
KM26 M 130 x 2	S	1	12600,00
KM27 M 135 x 2	S	1	16100,00
KM28 M 140 x 2	S	1	15700,00
KM29 M 145 x 2	S	1	19300,00
KM30 M 150 x 2	S	1	17700,00
KM31 M 155 x 3	S	1	18000,00
KM32 M 160 x 3	S	1	20900,00
KM34 M 170 x 3	S	1	21200,00

DIN	00982.810	RAZ 480

982 8 (≤ M4 = 6-8) zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use at temperatures from -50 to +120 °C

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

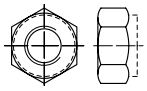
with heat-stabilised ring → ISO 7040 S. 305
Stainless → S. 480

DIN 982 → replaced by ISO 7040

M 4	S	1000	12,70 ZP
M 4	K	100	16,50 ZP
M 5	S	1000	12,70 ZP
M 5	K	100	16,50 ZP
M 6	S	1000	13,00 ZP
M 6	K	100	16,90 ZP
M 8	S	1000	17,80 ZP
M 8	K	100	21,60 ZP
M 10	S	500	30,00 ZP
M 10	K	100	34,00 ZP
M 12	S	500	39,50 ZP
M 12	K	100	43,50 ZP
M 14	S	100	68,00 ZP
M 16	S	200	91,00 ZP
M 16	K	50	97,00 ZP
M 20	S	50	187,00 ZP
M 24	S	25	295,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	00982.110		RAZ 480

982 10 zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use at temperatures from -50 to +120 °C

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

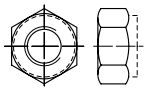
Stainless → S. 480

DIN 982 → replaced by ISO 7040

M 10	S	100	63,00 ZP
M 12	S	100	91,00 ZP
M 16	S	50	162,00 ZP
M 20	S	50	295,00 ZP
M 24	S	25	395,00 ZP

DIN	00982.115	RAZ 480

982 10 **fine** zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, high type with metric fine pitch thread

For use at temperatures from -50 to +120 °C

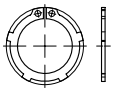
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 982 fine thread → replaced by ISO 10512

M 10	x	1	S	100	69,00 ZP
M 12	x	1,5	S	100	99,00 ZP
M 14	x	1,5	S	100	133,00 ZP
M 16	x	1,5	S	50	178,00 ZP
M 20	x	1,5	S	50	320,00 ZP
M 24	x	2	S	25	470,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	00983.000	RAZ 481

983 Spring steel



Retaining rings with lugs for shafts (retainer rings)

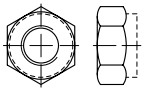
Dimensions → TI-98

for shafts nominal ∅ x ring thickness

20	x 1,2	S	1000	21,00
25	x 1,2	S	500	30,00
30	x 1,5	S	250	39,00
35	x 1,5	S	250	49,50
40	x 1,5	S	100	78,00
45	x 1,75	S	100	84,00
50	x 2	S	100	103,00

DIN	00985.810	RAZ 480

985 8 (≤ M5 = 6 - 8) zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

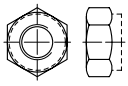
Stainless → S. 480
Brass → S. 582

DIN 985 → replaced by ISO 10511

M 2,5	S	1000	5,70 ZP
M 3	S	1000	6,10 ZP
M 3	K	100	9,40 ZP
M 4	S	1000	6,10 ZP
M 4	K	100	9,40 ZP
M 5	S	1000	6,10 ZP
M 5	K	100	9,40 ZP
M 6	S	1000	7,10 ZP
M 6	K	100	10,30 ZP
M 7	K	100	17,80 ZP
M 8	S	500	11,00 ZP
M 8	K	100	14,30 ZP
M 10	S	500	21,10 ZP
M 10	K	100	25,50 ZP
M 12	S	250	30,00 ZP
M 12	K	100	34,00 ZP
M 14	S	100	50,00 ZP
M 16	S	100	60,00 ZP
M 18	S	50	96,00 ZP
M 20	S	50	116,00 ZP
M 22	S	25	178,00 ZP
M 24	S	25	211,00 ZP
M 27	S	25	355,00 ZP
M 30	S	10	445,00 ZP
M 33	S	10	700,00 ZP
M 36	S	10	830,00 ZP
M 39	S	1	1900,00 ZP
M 42	S	1	2100,00 ZP
M 45	S	1	2550,00 ZP
M 48	S	1	3350,00 ZP

Article	82985.010	RAZ 5001

82985 Assortm. DIN 985 C/F 6/8 zinc plated



Assortments of prevailing torque type hexagon nuts DIN 985

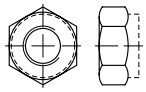
Content: 8 dim. coarse thread M 4-M 16
4 dim. fine pitch thread M 10 x 1 - M 16 x 1,5
approx. 540 pieces, metal box

Your own selection on request

DIN 985	S	1	13604,00

DIN	00985.850	RAZ 480

985 8 (≤M5 = 6) zinc plated 8 TLP



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

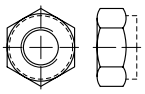
Stainless → S. 480
Brass → S. 582

DIN 985 → replaced by ISO 10511

M 3	S	1000	8,50 ZP TLP
M 4	S	1000	8,65 ZP TLP
M 4	K	100	12,90 ZP TLP
M 5	S	1000	8,65 ZP TLP
M 5	K	100	12,90 ZP TLP
M 6	S	1000	11,40 ZP TLP
M 6	K	100	14,00 ZP TLP
M 8	S	1000	17,20 ZP TLP
M 8	K	100	19,90 ZP TLP
M 10	S	500	29,90 ZP TLP
M 10	K	100	32,50 ZP TLP
M 12	S	250	41,90 ZP TLP
M 14	S	100	72,00 ZP TLP
M 16	S	100	85,00 ZP TLP
M 20	S	50	163,00 ZP TLP
M 24	S	25	300,00 ZP TLP

DIN	00985.(*)	RAZ 480

985 8 (≤ M5 = 6 - 8) zinc plated yellow



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C
*< M 6 min. coating thickness 5µm = (860)
*from M 6 min. coating thickness 8µm = (308)

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

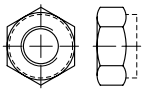
Stainless → S. 480
Brass → S. 582

DIN 985 → replaced by ISO 10511

M 3	S	1000	6,80 YZP
M 3	K	100	10,30 YZP
M 4	S	1000	6,90 YZP
M 4	K	100	10,30 YZP
M 5	S	1000	6,90 YZP
M 5	K	100	10,30 YZP
M 6	S	1000	9,10 YZP8
M 6	K	100	11,20 YZP8
M 8	S	500	13,70 YZP8
M 8	K	100	15,90 YZP8
M 10	S	500	23,90 YZP8
M 10	K	100	26,00 YZP8
M 12	S	250	33,50 YZP8
M 12	K	100	35,00 YZP8
M 14	S	100	57,00 YZP8
M 16	S	100	68,00 YZP8
M 20	S	50	130,00 YZP8
M 24	S	25	240,00 YZP8

DIN	00985.353	RAZ 1525

985 8 zinc flake coated



Prevailing torque type hexagon nuts with non-metallic insert, low type

Friction coefficient 0,09 - 0,14
480h salt spray test, Cr(VI)-free
for use at temperatures from -50 to +150 °C

Dimensions → TI-67 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 480
Brass → S. 582

DIN 985 → replaced by ISO 10511

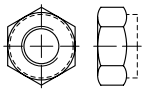
M 6	S	1000	9,50 flZn
M 8	S	500	14,50 flZn
M 10	S	500	25,50 flZn
M 12	S	250	39,50 flZn
M 16	S	50	74,00 flZn
M 20	S	50	145,00 flZn

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 24	S	25	260,00 flZn
M 30	S	25	550,00 flZn
M 33	S	25	850,00 flZn
M 36	S	25	1000,00 flZn

DIN 985 | 00985.815 | RAZ 480

8 (≤ M5 = 6 - 8) fine zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, low type, with metric fine pitch thread

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

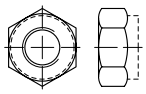
DIN 985 fine thread → replaced by ISO 10512

M 8	x 1	S	500	21,40 ZP
M 8	x 1	K	100	25,00 ZP
M 10	x 1	S	500	36,50 ZP
M 10	x 1	K	100	40,00 ZP
M 10	x 1,25	S	500	36,50 ZP
M 10	x 1,25	K	100	40,00 ZP
M 12	x 1	S	250	48,00 ZP
M 12	x 1	K	100	52,00 ZP
M 12	x 1,25	S	250	48,00 ZP
M 12	x 1,25	K	100	52,00 ZP
M 12	x 1,5	S	250	48,00 ZP
M 12	x 1,5	K	100	52,00 ZP
M 14	x 1,5	S	100	71,00 ZP
M 16	x 1,5	S	100	85,00 ZP
M 18	x 1,5	S	50	142,00 ZP
M 18	x 2	S	50	142,00 ZP
M 20	x 1,5	S	50	171,00 ZP
M 20	x 2	S	25	175,00 ZP
M 22	x 1,5	S	25	235,00 ZP
M 22	x 2	S	25	235,00 ZP
M 24	x 1,5	S	25	275,00 ZP
M 24	x 2	S	25	275,00 ZP
M 27	x 2	S	10	560,00 ZP
M 30	x 1,5	S	10	630,00 ZP
M 30	x 2	S	10	630,00 ZP
M 33	x 2	S	1	990,00 ZP
M 36	x 3	S	1	1180,00 ZP
M 39	x 3	S	1	2270,00 ZP
M 42	x 3	S	1	2550,00 ZP
M 45	x 3	S	1	3100,00 ZP
M 48	x 3	S	1	3950,00 ZP

Dimensions	PU	Pieces	€/100/Mat.

DIN 985 | 00985.110 | RAZ 480

10 zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

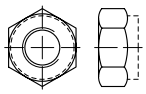
Stainless → S. 480
Brass → S. 582

DIN 985 → replaced by ISO 10511

M 6	S	1000	18,90 ZP
M 6	K	100	21,40 ZP
M 8	S	500	25,00 ZP
M 8	K	100	27,50 ZP
M 10	S	500	42,00 ZP
M 10	K	100	44,00 ZP
M 12	S	250	60,00 ZP
M 12	K	100	62,00 ZP
M 14	S	50	94,00 ZP
M 16	S	50	124,00 ZP
M 18	S	50	169,00 ZP
M 20	S	50	193,00 ZP
M 22	S	25	260,00 ZP
M 24	S	25	325,00 ZP
M 27	S	25	520,00 ZP
M 30	S	1	810,00 ZP
M 36	S	1	1750,00 ZP
M 39	S	1	2450,00 ZP

DIN 985 | 00985.115 | RAZ 480

10 fine zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, low type, with metric fine pitch thread

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

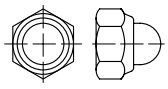
DIN 985 fine thread → replaced by ISO 10512

M 8	x 1	S	100	28,00 ZP
M 10	x 1	S	100	46,50 ZP
M 10	x 1,25	S	100	46,50 ZP
M 12	x 1	S	100	64,00 ZP
M 12	x 1,25	S	100	64,00 ZP
M 12	x 1,5	S	100	64,00 ZP
M 14	x 1,5	S	50	104,00 ZP
M 16	x 1,5	S	50	129,00 ZP
M 18	x 1,5	S	50	169,00 ZP
M 20	x 1,5	S	50	202,00 ZP
M 20	x 2	S	50	202,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 22 x 1,5	S	25	260,00 ZP
M 24 x 1,5	S	25	325,00 ZP
M 24 x 2	S	25	325,00 ZP
M 30 x 2	S	10	1500,00 ZP
M 36 x 3	S	10	2000,00 ZP

DIN 986 | 00986.310 | RAZ 481

6 zinc plated



Prevailing torque type hexagon domed cap nuts with non-metallic insert

For use under temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221

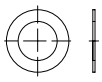
Stainless → S. 480

SW = wrench size

M 4	S	100	63,00 ZP
M 5	S	1000	61,00 ZP
M 5	K	100	63,00 ZP
M 6	S	1000	43,50 ZP
M 6	K	100	46,50 ZP
M 8	S	500	64,00 ZP
M 8	K	100	67,00 ZP
M 10 SW 17	S	500	104,00 ZP
M 10 SW 17	K	100	107,00 ZP
M 12 SW 19	S	250	149,00 ZP
M 12 SW 19	K	50	154,00 ZP
M 16	S	50	193,00 ZP

DIN 988 | 00988.000 | RAZ 481

Steel



Shim rings

Spring steel → S. 193
Stainless → S. 481

Hole ∅ x outside ∅ x thickness

3	x	6	x	0,1	S	100	6,30
3	x	6	x	0,2	S	100	6,70
3	x	6	x	0,3	S	100	7,10
3	x	6	x	0,5	S	100	7,80
4	x	8	x	0,1	S	100	6,90
4	x	8	x	0,2	S	100	7,10
4	x	8	x	0,3	S	100	7,80
4	x	8	x	0,5	S	100	7,80
5	x	10	x	0,1	S	100	7,70
5	x	10	x	0,2	S	100	7,20
5	x	10	x	0,25	S	100	7,70
5	x	10	x	0,3	S	100	7,90
5	x	10	x	0,5	S	100	7,70
5	x	10	x	1	S	100	8,80
6	x	12	x	0,1	S	100	7,50
6	x	12	x	0,2	S	100	7,90
6	x	12	x	0,25	S	100	7,80
6	x	12	x	0,3	S	100	8,30
6	x	12	x	0,5	S	100	7,70

DIN 988

Dimensions						PU	Pieces	€/100/Mat.
6	x	12	x	1		S	100	9,20
7	x	13	x	0,3		S	100	10,30
7	x	13	x	0,5		S	100	11,00
7	x	13	x	1		S	100	11,20
8	x	12	x	0,5		S	100	95,00
8	x	14	x	0,1		S	100	7,70
8	x	14	x	0,2		S	100	7,30
8	x	14	x	0,25		S	100	11,70
8	x	14	x	0,3		S	100	4,10
8	x	14	x	0,5		S	100	7,80
8	x	14	x	1		S	100	9,30
9	x	15	x	0,1		S	100	7,90
9	x	15	x	0,2		S	100	8,40
9	x	15	x	0,5		S	100	8,70
9	x	15	x	1		S	100	9,70
9	x	15	x	1,2		S	100	7,20
10	x	16	x	0,1		S	100	8,30
10	x	16	x	0,2		S	100	8,60
10	x	16	x	0,25		S	100	9,10
10	x	16	x	0,3		S	100	9,70
10	x	16	x	0,5		S	100	8,70
10	x	16	x	1		S	100	10,20
10	x	16	x	1,5		S	100	14,60
11	x	17	x	1		S	100	9,60
12	x	18	x	0,1		S	100	8,60
12	x	18	x	0,2		S	100	9,10
12	x	18	x	0,25		S	100	9,80
12	x	18	x	0,3		S	100	8,70
12	x	18	x	0,5		S	100	8,90
12	x	18	x	1		S	100	11,30
12	x	18	x	2		S	100	16,00
13	x	19	x	0,1		S	100	9,70
13	x	19	x	0,5		S	100	10,40
13	x	19	x	1		S	100	13,30
14	x	20	x	0,1		S	100	9,30
14	x	20	x	0,2		S	100	10,10
14	x	20	x	0,25		S	100	11,40
14	x	20	x	0,5		S	100	9,80
14	x	20	x	1		S	100	12,90
15	x	21	x	0,1		S	100	9,40
15	x	21	x	0,15		S	100	5,60
15	x	21	x	0,2		S	100	13,30
15	x	21	x	0,3		S	100	4,50
15	x	21	x	0,5		S	100	10,90
15	x	21	x	1		S	100	14,40
15	x	21	x	2		S	100	17,40
15	x	22	x	0,5		S	100	8,00
15	x	22	x	1		S	100	14,20
16	x	22	x	0,1		S	100	10,20
16	x	22	x	0,2		S	100	10,50
16	x	22	x	0,25		S	100	11,40
16	x	22	x	0,5		S	100	10,60
16	x	22	x	1		S	100	14,00
17	x	24	x	0,1		S	100	4,00
17	x	24	x	0,15		S	100	4,50
17	x	24	x	0,2		S	100	14,30
17	x	24	x	0,3		S	100	4,00
17	x	24	x	0,5		S	100	12,10
17	x	24	x	1		S	100	16,50
17	x	24	x	2		S	100	16,90
18	x	25	x	0,1		S	100	10,30
18	x	25	x	0,2		S	100	11,00
18	x	25	x	0,25		S	100	12,20
18	x	25	x	0,3		S	100	12,10
18	x	25	x	0,5		S	100	12,90
18	x	25	x	1		S	100	16,20
20	x	28	x	0,1		S	100	11,30
20	x	28	x	0,15		S	100	12,00
20	x	28	x	0,2		S	100	12,80
20	x	28	x	0,25		S	100	17,10
20	x	28	x	0,3		S	100	13,70
20	x	28	x	0,5		S	100	12,50
20	x	28	x	1		S	100	16,20
20	x	28	x	1,5		S	100	42,50
20	x	30	x	0,5		S	100	46,50
20	x	32	x	0,1		S	100	80,00
20	x	32	x	0,5		S	100	80,00
20	x	32	x	1		S	100	80,00
22	x	30	x	0,1		S	100	13,60
22	x	30	x	0,2		S	100	16,50
22	x	30	x	0,5		S	100	16,30
22	x	30	x	1		S	100	24,30
22	x	30	x	1,5		S	100	42,00
22	x	32	x	0,1		S	100	11,30
22	x	32	x	0,2		S	100	8,80
22	x	32	x	0,3		S	100	14,60
22	x	32	x	0,5		S	100	15,40
22	x	32	x	1		S	100	22,40
25	x	35	x	0,1		S	100	10,80
25	x	35	x	0,2		S	100	13,20
25	x	35	x	0,25		S	100	13,80
25	x	35	x	0,3		S	100	14,20
25	x	35	x	0,5		S	100	15,40
25	x	35	x	1		S	100	22,00
25	x	35	x	1,5		S	200	55,00
25	x	36	x	0,5		S	100	19,30
25	x	36	x	1		S	100	30,50
26	x	37	x	0,1		S	100	11,90
26	x	37	x	0,2		S	100	13,70
26	x	37	x	0,25		S	100	15,50
26	x	37	x	0,5		S	100	15,50
26	x	37	x	1		S	100	25,50
28	x	40	x	0,1		S	100	11,70
28	x	40	x	0,2		S	100	12,40
28	x	40	x	0,25		S	100	16,00
28	x	40	x	0,3		S	100	15,40
28	x	40	x	0,5		S	100	18,40
28	x	40	x	1		S	100	29,50
30	x	40	x	1		S	200	60,00
30	x	42	x	0,1		S	100	13,60
30	x	42	x	0,2		S	100	15,90
30	x	42	x	0,25		S	100	18,10
30	x	42	x	0,3		S	100	18,60
30	x	42	x	0,5		S	100	20,30
30	x	42	x	1,0		S	100	28,00
30	x	42	x	1,5		S	100	59,00
30	x	42	x	2		S	100	83,00
32	x	45	x	0,1		S	100	13,70
32	x	45	x	0,25		S	100	18,50
32	x	45	x	0,3		S	100	21,90
32	x	45	x	0,5		S	100	24,30
32	x	45	x	1		S	100	33,50
32	x	45	x	1,5		S	100	43,50
32	x	45	x	2		S	100	107,00
35	x	45	x	0,1		S	100	14,10
35	x	45	x	0,2		S	100	19,10
35	x	45	x	0,30		S	100	8,50
35	x	45	x	0,5		S	100	21,60
35	x	45	x	1		S	100	30,50
35	x	45	x	1,5		S	100	69,00
35	x	45	x	2		S	100	92,00
36	x	45	x	1		S	100	34,00
37	x	47	x	0,1		S	100	12,60
37	x	47	x	0,2		S	100	16,80
37	x	47	x	0,25		S	100	27,00
37	x	47	x	0,3		S	100	18,90
37	x	47	x	0,5		S	100	21,80
37	x	47	x	1		S	100	30,50
37	x	47	x	2		S	100	122,00
40	x	50	x	0,1		S	100	13,70
40	x	50	x	0,2		S	100	20,60
40	x	50	x	0,3		S	100	23,40
40	x	50	x	0,5		S	100	23,50
40	x	50	x	1		S	100	38,00
40	x	50	x	1,5		S	100	104,00
40	x	50	x	2		S	100	118,00
42	x	52	x	0,1		S	100	14,30
42	x	52	x	0,2		S	500	13,50
42	x	52	x	0,3		S	250	22,70
42	x	52	x	0,5		S	100	29,50
42	x	52	x	1		S	100	42,00
42	x	52	x	2		S	100	146,00
45	x	55	x	0,1		S	100	17,40
45	x	55	x	0,2		S	100	19,80
45	x	55	x	0,3		S	100	24,80
45	x	55	x	0,5		S	100	27,50
45	x	55	x	1		S	100	42,00
45	x	55	x	2		S	100	122,00
48	x	60	x	0,5		S	100	38,00
48	x	60	x	1		S	100	55,00
50	x	62	x	0,1		S	100	17,10
50	x	62	x	0,2		S	100	22,70
50	x	62	x	0,3		S	100	30,50
50	x	62	x	0,5		S	100	34,50
50	x	62	x	1		S	100	51,00
50	x	62	x	1,5		S	100	61,00
50	x	62	x	2		S	100	144,00
52	x	65	x	0,1		S	100	26,00
52	x	65	x	0,5		S	100	42,00
52	x	65	x	1		S	100	75,00
52	x	65	x	2		S	100	198,00
55	x	68	x	0,1		S	100	27,00
55	x	68	x	0,2		S	100	13,60
55	x	68	x	0,5		S	100	57,00
55	x	68	x	1		S	100	67,00
55	x	68	x	2		S	100	80,00
56	x	72	x	0,1		S	100	32,50
56	x	72	x	0,5		S	100	54,00
56	x	72	x	1		S	100	87,00
60	x	75	x	0,1		S	50	34,50
60	x	75	x	0,3		S	100	59,00
60	x	75	x	0,5		S	50	59,00
60	x	75	x	1		S	50	78,00
60	x	75	x	1,5		S	50	105,00
60	x	75	x	2		S	50	280,00
63	x	80	x	0,1		S	100	35,50
63	x	80	x	0,2		S	100	42,00
63	x	80	x	0,3		S	100	54,00
63	x	80	x	0,5		S	100	64,00
63	x	80	x	1		S	50	92,00
63	x	80	x	2		S	100	169,00
65	x	85	x	0,1		S	100	41,50
65	x	85	x	0,2		S	100	52,00
65	x	85	x	0,5		S	50	70,00
65	x	85	x	2		S	50	160,00
70	x	90	x	0,1		S	50	48,00
70	x	90	x	0,2		S	50	52,00
70	x	90	x	0,3		S	50	71,00
70	x	90	x	0,5		S	50	68,00
70	x	90	x	1		S	50	109,00
75	x	95	x	0,1		S	50	57,00
75	x	95	x	1		S	50	151,00
80	x	100	x	0,1		S	50	60,00
80	x	100	x	0,2		S	50	67,00
80	x	100	x	0,3		S	50	65,00
80	x	100	x	0,5		S	50	71,00
80	x	100	x	1		S	50	175,00
80	x	100	x	2		S	25	400,00
90	x	110	x	0,5		S	50	104,00
90	x	110	x	1		S	50	169,00
90	x	110	x	2		S	50	510,00
100	x	120	x	1		S	50	193,00
100	x	120	x	2		S	50	174,00

RKP®
REYHER KITTING & PACKAGING

Individual trade packaging

- Packaging design
- Label design
- Packing quantities to match your needs

€/100 = price in € plus VAT when ordering full package unit

Dimensions | PU Pieces | €/100/Mat.

DIN 00988.004 RAZ 481

988 Spring steel

Supporting rings

Dimensions → TI-85

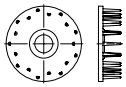
Steel → S. 191
Stainless → S. 481

Hole ∅		outside ∅		thickness			
3	x	6	x	1	S	100	9,10
4	x	8	x	1	S	100	8,90
6	x	12	x	1,2	S	100	12,20
8	x	14	x	1,2	S	100	13,80
10	x	16	x	1,2	S	100	14,80
12	x	18	x	1,2	S	100	19,50
14	x	20	x	1,5	S	100	23,20
15	x	21	x	1,5	S	100	24,00
16	x	22	x	1,5	S	100	21,10
17	x	24	x	1,5	S	100	22,40
18	x	25	x	1,5	S	100	24,20
20	x	28	x	2	S	100	47,00
22	x	30	x	2	S	100	51,00
22	x	32	x	2	S	100	55,00
25	x	35	x	2	S	100	59,00
25	x	36	x	2	S	100	76,00
26	x	37	x	2	S	100	76,00
28	x	40	x	2	S	100	81,00
30	x	42	x	2,5	S	100	81,00
35	x	45	x	2,5	S	100	132,00
37	x	47	x	2,5	S	50	149,00
40	x	50	x	2,5	S	100	138,00
45	x	55	x	3	S	100	146,00
50	x	62	x	3	S	100	181,00
50	x	63	x	3	S	100	181,00
55	x	68	x	3	S	100	275,00
60	x	75	x	3	S	50	260,00
63	x	80	x	3	S	100	290,00
65	x	85	x	3,5	S	50	570,00
70	x	90	x	3,5	S	50	405,00
75	x	95	x	3,5	S	25	590,00
80	x	100	x	3,5	S	25	620,00
85	x	105	x	3,5	S	25	630,00
90	x	110	x	3,5	S	25	600,00
100	x	120	x	3,5	S	25	960,00
100	x	125	x	3,5	S	25	1100,00

Dimensions | PU Pieces | €/100/Mat.

DIN 01052.015 RAZ 485

1052 Temp. cast iron zinc plated



Timber connectors, spikes one sided

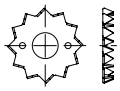
(= press in rawlplug type D system Geka ~DIN EN 912 type C11)

Corrosion protection → TI-217

Outside ∅		inside ∅		for screws			• ÜH products
50	x	13	x	M 12	S	50	105,00 ZP
65	x	17	x	M 16	S	50	232,00 ZP
80	x	21	x	M 20	S	50	260,00 ZP
95	x	25	x	M 24	S	50	340,00 ZP
115	x	25	x	M 24	S	50	560,00 ZP

DIN 01052.024 RAZ 485

1052 Steel plate hot dip galvanized



Timber connectors, spikes one sided

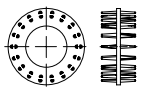
(= press in rawlplug type C system Bulldog ~DIN EN 912 type C2)

Corrosion protection → TI-219

Outside ∅	for screws			• ÜH products
48 M 12	S	300	77,00 HDG
62 M 12	S	150	124,00 HDG
75 M 16	S	100	162,00 HDG
95 M 16	S	50	300,00 HDG

DIN 01052.016 RAZ 485

1052 Temp. cast iron zinc plated



Timber connectors, spikes two sided

(= press in rawlplug type D system Geka ~DIN EN 912 type C10)

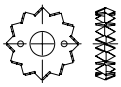
Corrosion protection → TI-217

Outside ∅		hole ∅		for screws			• ÜH products
50	x	29	x	M 12	S	50	104,00 ZP
65	x	35	x	M 16	S	50	185,00 ZP
80	x	50	x	M 20	S	25	248,00 ZP
95	x	64	x	M 24	S	25	365,00 ZP
115	x	84	x	M 24	S	25	465,00 ZP

Dimensions | PU Pieces | €/100/Mat.

DIN 01052.025 RAZ 485

1052 Steel plate hot dip galvanized



Timber connectors, spikes two sided

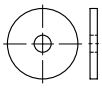
(= press in rawlplug type C system Bulldog ~DIN EN 912 type C1)

Corrosion protection → TI-219

Outside ∅	for screws			• ÜH products
48 M 12-M 16	S	200	83,00 HDG
62 M 12-M 20	S	100	143,00 HDG
75 M 16-M 24	S	100	185,00 HDG

DIN 01052.004 RAZ 485

1052 Steel



Washers for timber connectors, heavy, round type

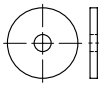
Dimensions → TI-85

Stainless → S. 481

Hole ∅		outside ∅		thickness			• ÜH products
14	x	58	x	6	S	50	59,00
18	x	68	x	6	S	50	79,00
23	x	80	x	8	S	50	181,00
25	x	92	x	8	S	25	335,00
27	x	105	x	8	S	25	400,00

DIN 01052.014 RAZ 485

1052 Steel zinc plated



Washers for timber connectors, heavy, round type

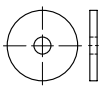
Dimensions → TI-85 Corrosion protection → TI-217

Stainless → S. 481

Hole ∅		outside ∅		thickness			• ÜH products
14	x	58	x	6	S	50	91,00 ZP
18	x	68	x	6	S	50	121,00 ZP
23	x	80	x	8	S	50	244,00 ZP
25	x	92	x	8	S	25	440,00 ZP
27	x	105	x	8	S	25	530,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	01052.026	RAZ 485

1052 Steel hot dip galvanized



Washers for timber connectors, heavy, round type

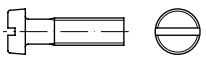
Dimensions ➔ TI-85 Corrosion protection ➔ TI-219

Stainless ➔ S. 481

Hole ∅ x outside ∅ x thickness							• ÜH products
14	x	58	x	6	S	50	126,00 HDG
18	x	68	x	6	S	50	170,00 HDG
23	x	80	x	8	S	50	320,00 HDG
25	x	92	x	8	S	25	570,00 HDG
27	x	105	x	8	S	25	680,00 HDG

ISO	01207.004	RAZ 30

1207 Steel turned bare



Slotted cheese head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-6

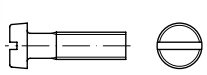
Stainless ➔ S. 481
Brass/plastic ➔ S. 582

ISO 1207 ➔ replaces DIN 84 (compatible)

M 1	x	2	S	100	13,50 turned
M 1	x	3	S	100	13,60 turned
M 1	x	5	S	100	14,20 turned
M 1	x	6	S	100	14,50 turned
M 1	x	8	S	100	15,20 turned
M 1	x	10	S	100	17,40 turned
M 1,2	x	2	S	100	13,40 turned
M 1,2	x	3	S	100	13,40 turned
M 1,2	x	4	S	100	13,60 turned
M 1,2	x	6	S	100	14,30 turned
M 1,2	x	8	S	100	15,10 turned
M 1,2	x	10	S	100	16,20 turned
M 1,4	x	2	S	100	13,30 turned
M 1,4	x	3	S	100	13,20 turned
M 1,4	x	4	S	100	13,40 turned
M 1,4	x	5	S	100	13,70 turned
M 1,4	x	6	S	100	14,20 turned
M 1,4	x	8	S	100	14,90 turned
M 1,4	x	10	S	100	16,20 turned
M 1,4	x	16	S	100	20,20 turned
M 1,6	x	3	S	100	12,00 turned
M 1,6	x	4	S	100	12,10 turned
M 1,6	x	5	S	100	12,60 turned
M 1,6	x	6	S	100	13,60 turned
M 1,6	x	8	S	100	14,60 turned
M 1,6	x	10	S	100	16,10 turned
M 1,6	x	16	S	100	19,80 turned

Dimensions	PU Pieces	€/100/Mat.
ISO	01207.400	RAZ 30

1207 4.8



Slotted cheese head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-6

Stainless ➔ S. 481
Brass/plastic ➔ S. 582

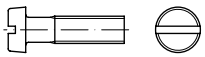
ISO 1207 ➔ replaces DIN 84 (compatible)

M 2	x	3	S	2000	3,75
M 2	x	4	S	2000	3,00
M 2	x	5	S	2000	2,95
M 2	x	6	S	2000	2,60
M 2	x	8	S	2000	2,60
M 2	x	10	S	2000	2,30
M 2	x	12	S	2000	2,85
M 2	x	16	S	2000	2,75
M 2	x	20	S	2000	4,10
M 2,5	x	4	S	2000	4,20
M 2,5	x	5	S	2000	3,95
M 2,5	x	6	S	2000	2,45
M 2,5	x	8	S	2000	2,55
M 2,5	x	10	S	2000	2,25
M 2,5	x	12	S	2000	2,25
M 2,5	x	16	S	2000	3,40
M 2,5	x	18	S	2000	4,90
M 2,5	x	20	S	2000	4,00
M 2,5	x	25	S	2000	4,50
M 2,5	x	30	S	2000	5,90
M 3	x	3	S	2000	7,20
M 3	x	4	S	2000	4,35
M 3	x	5	S	2000	4,20
M 3	x	6	S	2000	1,10
M 3	x	8	S	2000	1,10
M 3	x	10	S	2000	1,15
M 3	x	12	S	2000	1,25
M 3	x	16	S	2000	1,45
M 3	x	18	S	2000	2,70
M 3	x	20	S	2000	1,80
M 3	x	22	S	2000	3,35
M 3	x	25	S	2000	1,95
M 3	x	30	S	2000	2,55
M 3	x	35	S	2000	4,00
M 3	x	40	S	1000	4,40
M 3	x	45	S	1000	6,40
M 3	x	50	S	1000	7,20
M 4	x	4	S	2000	7,90
M 4	x	5	S	2000	5,30
M 4	x	6	S	2000	1,75
M 4	x	8	S	2000	1,75
M 4	x	10	S	2000	1,85
M 4	x	12	S	2000	1,90
M 4	x	16	S	2000	2,25
M 4	x	20	S	2000	2,55
M 4	x	22	S	1000	4,10
M 4	x	25	S	1000	2,95
M 4	x	30	S	1000	3,45
M 4	x	35	S	1000	3,95
M 4	x	40	S	1000	4,30
M 4	x	45	S	1000	5,50
M 4	x	50	S	1000	6,70
M 4	x	55	S	500	10,10
M 4	x	60	S	500	8,20
M 4	x	65	S	500	12,40
M 4	x	70	S	500	17,40
M 5	x	6	S	2000	7,90

Dimensions	PU Pieces	€/100/Mat.
M 5	x 8	S 2000	2,65
M 5	x 10	S 2000	2,80
M 5	x 12	S 1000	3,00
M 5	x 16	S 1000	3,40
M 5	x 18	S 1000	4,70
M 5	x 20	S 1000	3,60
M 5	x 22	S 1000	6,00
M 5	x 25	S 1000	4,10
M 5	x 30	S 1000	4,90
M 5	x 35	S 500	6,70
M 5	x 40	S 500	6,00
M 5	x 45	S 500	8,00
M 5	x 50	S 500	7,70
M 5	x 55	S 500	10,60
M 5	x 60	S 200	10,20
M 5	x 70	S 200	10,70
M 5	x 75	S 200	22,60
M 5	x 80	S 200	19,20
M 6	x 8	S 1000	5,30
M 6	x 10	S 1000	4,35
M 6	x 12	S 1000	4,40
M 6	x 16	S 1000	4,85
M 6	x 20	S 1000	5,50
M 6	x 25	S 500	6,00
M 6	x 30	S 500	6,80
M 6	x 35	S 500	7,50
M 6	x 40	S 500	8,30
M 6	x 45	S 500	11,20
M 6	x 50	S 200	12,80
M 6	x 55	S 200	14,60
M 6	x 60	S 200	13,00
M 6	x 65	S 200	19,20
M 6	x 70	S 200	20,20
M 6	x 75	S 200	29,50
M 6	x 80	S 200	22,00
M 6	x 100	S 200	37,50
M 8	x 10	S 500	30,00
M 8	x 12	S 500	11,80
M 8	x 16	S 500	12,20
M 8	x 20	S 500	11,50
M 8	x 25	S 500	12,10
M 8	x 30	S 200	13,40
M 8	x 35	S 200	17,70
M 8	x 40	S 200	19,50
M 8	x 45	S 200	25,50
M 8	x 50	S 200	22,00
M 8	x 55	S 200	33,50
M 8	x 60	S 200	30,00
M 8	x 70	S 200	33,50
M 10	x 12	S 200	76,00
M 10	x 16	S 200	25,50
M 10	x 20	S 200	23,50
M 10	x 25	S 200	24,40
M 10	x 30	S 200	23,20
M 10	x 40	S 200	31,00
M 10	x 45	S 100	37,50

Dimensions	PU Pieces	€/100/Mat.
ISO	01207.410	RAZ 30

1207 **4.8 zinc plated**



Slotted cheese head screws

Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 481
Brass/plastic → S. 582

ISO 1207 → replaces DIN 84 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	3	S	2000	4,10 ZP
M 2	x	3	K	200	6,60 ZP
M 2	x	4	S	2000	3,35 ZP
M 2	x	4	K	200	5,70 ZP
M 2	x	5	S	2000	3,20 ZP
M 2	x	5	K	200	5,60 ZP
M 2	x	6	S	2000	2,85 ZP
M 2	x	6	K	200	5,30 ZP
M 2	x	8	S	2000	2,85 ZP
M 2	x	8	K	200	5,30 ZP
M 2	x	10	S	2000	2,55 ZP
M 2	x	10	K	200	4,90 ZP
M 2	x	12	S	2000	3,15 ZP
M 2	x	12	K	200	5,60 ZP
M 2	x	16	S	2000	3,10 ZP
M 2	x	16	K	200	5,50 ZP
M 2	x	18	K	200	8,80 ZP
M 2	x	20	S	2000	4,50 ZP
M 2	x	20	K	200	7,00 ZP
M 2	x	30	S	2000	8,90 ZP
M 2	x	30	K	200	12,00 ZP
M 2,5	x	3	K	200	10,40 ZP
M 2,5	x	4	S	2000	4,60 ZP
M 2,5	x	4	K	200	7,10 ZP
M 2,5	x	5	S	2000	4,30 ZP
M 2,5	x	5	K	200	6,70 ZP
M 2,5	x	6	S	2000	2,70 ZP
M 2,5	x	6	K	200	5,20 ZP
M 2,5	x	8	S	2000	2,75 ZP
M 2,5	x	8	K	200	5,20 ZP
M 2,5	x	10	S	2000	2,45 ZP
M 2,5	x	10	K	200	4,85 ZP
M 2,5	x	12	S	2000	2,55 ZP
M 2,5	x	12	K	200	4,90 ZP
M 2,5	x	16	S	2000	3,65 ZP
M 2,5	x	16	K	200	6,10 ZP
M 2,5	x	18	K	200	7,90 ZP
M 2,5	x	20	S	2000	4,40 ZP
M 2,5	x	20	K	200	6,90 ZP
M 2,5	x	25	S	2000	5,10 ZP
M 2,5	x	25	K	200	7,50 ZP
M 2,5	x	30	S	2000	6,60 ZP
M 2,5	x	30	K	200	9,00 ZP
M 3	x	3	S	2000	8,00 ZP
M 3	x	3	K	200	10,40 ZP
M 3	x	4	S	2000	4,80 ZP
M 3	x	4	K	200	7,20 ZP
M 3	x	5	S	2000	4,60 ZP
M 3	x	5	K	200	7,10 ZP
M 3	x	6	S	2000	1,20 ZP
M 3	x	6	K	200	3,60 ZP
M 3	x	8	S	2000	1,20 ZP
M 3	x	8	K	200	3,65 ZP
M 3	x	10	S	2000	1,25 ZP
M 3	x	10	K	200	3,75 ZP
M 3	x	12	S	2000	1,40 ZP
M 3	x	12	K	200	3,80 ZP
M 3	x	14	S	2000	2,30 ZP
M 3,0	x	14	K	200	4,70 ZP
M 3	x	16	S	2000	1,60 ZP
M 3	x	16	K	200	4,00 ZP
M 3	x	18	S	2000	3,00 ZP
M 3	x	18	K	200	5,50 ZP
M 3	x	20	S	2000	1,95 ZP
M 3	x	20	K	200	4,40 ZP
M 3	x	22	S	2000	3,65 ZP
M 3	x	22	K	200	6,10 ZP
M 3	x	25	S	2000	2,20 ZP
M 3	x	25	K	200	4,60 ZP
M 3	x	28	S	2000	5,50 ZP
M 3	x	28	K	200	7,90 ZP
M 3	x	30	S	2000	2,75 ZP
M 3	x	30	K	200	5,20 ZP
M 3	x	35	S	2000	4,40 ZP
M 3	x	35	K	200	6,80 ZP
M 3	x	40	S	1000	4,85 ZP
M 3	x	40	K	200	7,30 ZP
M 3	x	45	S	1000	7,10 ZP
M 3	x	45	K	200	9,50 ZP
M 3	x	50	S	1000	7,90 ZP
M 3	x	50	K	200	10,40 ZP
M 3	x	55	S	200	14,00 ZP
M 3	x	60	K	200	14,00 ZP
M 3,5	x	5	K	200	9,10 ZP
M 3,5	x	6	S	2000	4,50 ZP
M 3,5	x	6	K	200	7,00 ZP
M 3,5	x	8	K	200	5,50 ZP
M 3,5	x	10	S	2000	3,20 ZP
M 3,5	x	10	K	200	5,60 ZP
M 3,5	x	12	S	2000	3,25 ZP
M 3,5	x	12	K	200	5,70 ZP
M 3,5	x	16	S	2000	3,95 ZP
M 3,5	x	16	K	200	6,40 ZP
M 3,5	x	18	K	200	7,60 ZP
M 3,5	x	20	S	2000	4,40 ZP
M 3,5	x	20	K	200	6,90 ZP
M 3,5	x	25	K	200	7,30 ZP
M 3,5	x	30	K	200	8,60 ZP
M 3,5	x	35	K	200	10,00 ZP
M 3,5	x	40	K	200	10,70 ZP
M 3,5	x	45	K	200	13,20 ZP
M 3,5	x	50	K	200	15,90 ZP
M 4	x	4	S	2000	8,70 ZP
M 4	x	4	K	200	11,00 ZP
M 4	x	5	S	2000	5,90 ZP
M 4	x	5	K	200	8,40 ZP
M 4	x	6	S	2000	1,90 ZP
M 4	x	6	K	200	4,30 ZP
M 4	x	8	S	2000	1,90 ZP
M 4	x	8	K	200	4,35 ZP
M 4	x	10	S	2000	2,00 ZP
M 4	x	10	K	200	4,40 ZP
M 4	x	12	S	2000	2,05 ZP
M 4	x	12	K	200	4,45 ZP
M 4	x	14	S	2000	3,10 ZP
M 4	x	14	K	200	5,50 ZP
M 4	x	16	S	2000	2,45 ZP
M 4	x	16	K	200	4,85 ZP
M 4	x	18	S	2000	3,60 ZP
M 4	x	18	K	200	6,00 ZP
M 4	x	20	S	2000	2,80 ZP
M 4	x	20	K	200	5,20 ZP
M 4	x	22	S	1000	4,50 ZP
M 4	x	22	K	200	7,00 ZP
M 4	x	25	S	1000	3,20 ZP
M 4	x	25	K	200	5,60 ZP
M 4	x	28	S	1000	6,50 ZP
M 4	x	28	K	200	8,90 ZP
M 4	x	30	S	1000	3,80 ZP
M 4	x	30	K	200	6,20 ZP
M 4	x	35	S	1000	4,35 ZP
M 4	x	35	K	200	6,80 ZP
M 4	x	40	S	1000	30,00 ZP
M 4	x	40	K	200	7,20 ZP
M 4	x	45	S	1000	6,00 ZP
M 4	x	45	K	200	8,50 ZP
M 4	x	50	S	1000	7,30 ZP
M 4	x	50	K	200	9,70 ZP
M 4	x	55	S	500	11,10 ZP
M 4	x	55	K	200	13,60 ZP
M 4	x	60	S	500	9,10 ZP
M 4	x	60	K	200	11,50 ZP
M 4	x	65	K	100	16,60 ZP
M 4	x	70	S	500	19,00 ZP
M 4	x	70	K	100	23,80 ZP
M 4	x	80	K	100	27,50 ZP
M 4	x	90	K	100	41,00 ZP
M 4	x	100	K	100	44,50 ZP
M 5	x	6	S	2000	8,80 ZP
M 5	x	6	K	200	11,20 ZP
M 5	x	8	S	2000	2,95 ZP
M 5	x	8	K	200	5,30 ZP
M 5	x	10	S	1000	30,00 ZP
M 5	x	10	K	200	5,50 ZP
M 5	x	12	S	1000	31,00 ZP
M 5	x	12	K	200	5,70 ZP
M 5	x	14	S	1000	4,95 ZP
M 5	x	14	K	200	7,40 ZP
M 5	x	16	S	1000	31,80 ZP
M 5	x	16	K	200	6,20 ZP
M 5	x	18	S	1000	5,20 ZP
M 5	x	18	K	200	7,60 ZP
M 5	x	20	S	1000	4,00 ZP
M 5	x	20	K	200	6,40 ZP
M 5	x	22	S	1000	6,70 ZP
M 5	x	22	K	200	9,10 ZP
M 5	x	25	S	1000	4,50 ZP
M 5	x	25	K	200	6,90 ZP
M 5	x	30	S	1000	5,50 ZP
M 5	x	30	K	200	7,90 ZP
M 5	x	35	S	500	7,40 ZP
M 5	x	35	K	200	9,80 ZP
M 5	x	40	S	500	6,70 ZP
M 5	x	40	K	200	9,10 ZP
M 5	x	45	S	500	8,80 ZP
M 5	x	45	K	200	11,20 ZP
M 5	x	50	S	500	8,50 ZP
M 5	x	50	K	200	10,90 ZP
M 5	x	55	S	500	11,80 ZP
M 5	x	55	K	200	13,30 ZP
M 5	x	60	K	200	15,90 ZP
M 5	x	65	K	100	18,10 ZP
M 5	x	70	S	200	11,80 ZP
M 5	x	70	K	100	16,70 ZP
M 5	x	80	S	200	21,10 ZP
M 5	x	80	K	100	26,00 ZP
M 5	x	90	S	200	40,50 ZP
M 5	x	90	K	100	45,00 ZP
M 5	x	100	S	200	45,50 ZP
M 5	x	100	K	100	55,00 ZP
M 6	x	6	S	1000	17,30 ZP
M 6	x	6	K	200	19,70 ZP
M 6	x	8	S	1000	5,90 ZP
M 6	x	8	K	200	8,30 ZP
M 6	x	10	S	1000	39,30 ZP
M 6	x	10	K	200	7,20 ZP
M 6	x	12	S	1000	4,85 ZP
M 6	x	12	K	200	7,30 ZP
M 6	x	14	S	1000	5,90 ZP
M 6	x	14	K	200	8,35 ZP
M 6	x	16	S	1000	5,40 ZP
M 6	x	16	K	200	7,80 ZP
M 6	x	18	S	1000	8,40 ZP
M 6	x	18	K	200	10,80 ZP
M 6	x	20	S	1000	6,00 ZP
M 6	x	20	K	200	8,50 ZP

ISO 1207

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	22	K	200	12,90 ZP
M 6	x	25	S	500	6,70 ZP
M 6	x	25	K	200	9,10 ZP
M 6	x	30	S	500	7,50 ZP
M 6	x	30	K	200	10,00 ZP
M 6	x	35	S	500	8,40 ZP
M 6	x	35	K	200	10,20 ZP
M 6	x	40	S	500	9,20 ZP
M 6	x	40	K	200	11,60 ZP
M 6	x	45	S	500	12,40 ZP
M 6	x	45	K	200	17,20 ZP
M 6	x	50	K	200	16,50 ZP
M 6	x	55	K	100	21,00 ZP
M 6	x	60	S	200	14,50 ZP
M 6	x	60	K	100	19,30 ZP
M 6	x	65	S	200	17,30 ZP
M 6	x	70	S	200	22,20 ZP
M 6	x	70	K	100	32,00 ZP
M 6	x	80	K	100	34,00 ZP
M 6	x	90	K	100	47,50 ZP
M 6	x	100	S	200	41,00 ZP
M 6	x	100	K	100	51,00 ZP
M 8	x	10	K	100	33,00 ZP
M 8	x	12	K	100	15,50 ZP
M 8	x	16	S	500	13,60 ZP
M 8	x	16	K	100	15,90 ZP
M 8	x	18	K	100	21,50 ZP
M 8	x	20	S	500	12,80 ZP
M 8	x	20	K	100	15,20 ZP
M 8	x	25	S	500	13,40 ZP
M 8	x	25	K	100	18,20 ZP
M 8	x	30	S	200	14,90 ZP
M 8	x	30	K	100	19,70 ZP
M 8	x	35	K	100	24,20 ZP
M 8	x	40	K	100	23,90 ZP
M 8	x	45	K	100	30,00 ZP
M 8	x	50	K	100	27,00 ZP
M 8	x	55	K	100	39,50 ZP
M 8	x	60	K	100	35,50 ZP
M 8	x	70	K	100	39,50 ZP
M 8	x	80	K	100	52,00 ZP
M 8	x	90	K	100	57,00 ZP
M 8	x	100	K	100	66,00 ZP
M 10	x	12	K	100	80,50 ZP
M 10	x	16	K	100	30,00 ZP
M 10	x	20	K	100	28,50 ZP
M 10	x	25	K	100	29,50 ZP
M 10	x	30	K	100	28,50 ZP
M 10	x	35	K	100	39,00 ZP
M 10	x	40	K	100	37,00 ZP
M 10	x	50	K	100	43,00 ZP
M 10	x	60	K	100	49,50 ZP
M 10	x	70	K	100	60,00 ZP
M 10	x	80	K	50	71,00 ZP
M 10	x	100	K	50	97,00 ZP

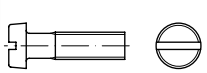
RKP® REYHER KITTING & PACKAGING

Customized sets and assembly kits

- From the smallest sets to complex assembly kits
- Gathering together individual articles
- Customized packaging

Dimensions	PU	Pieces	€/100/Mat.
ISO	01207.460		RAZ 30

1207 — 4.8 zinc plated yellow



Slotted cheese head screws

Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

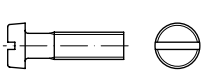
Stainless → S. 481
Brass/plastic → S. 582

ISO 1207 → replaces DIN 84 (compatible)

M 3	x	4	S	2000	6,20 YZP
M 3	x	5	S	2000	6,20 YZP
M 3	x	6	S	2000	1,40 YZP
M 3	x	8	S	2000	1,80 YZP
M 3	x	10	S	2000	1,85 YZP
M 3	x	12	S	2000	1,90 YZP
M 3	x	16	S	2000	2,30 YZP
M 3	x	18	S	2000	3,60 YZP
M 3	x	20	S	2000	2,60 YZP
M 3	x	25	S	2000	2,75 YZP
M 4	x	6	S	2000	2,65 YZP
M 4	x	8	S	2000	3,25 YZP
M 4	x	10	S	2000	3,40 YZP
M 4	x	12	S	2000	3,50 YZP
M 4	x	16	S	2000	4,10 YZP
M 4	x	20	S	2000	4,75 YZP
M 4	x	25	S	1000	5,30 YZP
M 4	x	30	S	1000	5,70 YZP
M 4	x	35	S	1000	6,30 YZP
M 4	x	40	S	1000	4,90 YZP
M 4	x	45	S	1000	7,41 YZP
M 5	x	8	S	2000	4,85 YZP
M 5	x	10	S	2000	5,20 YZP
M 5	x	12	S	1000	5,50 YZP
M 5	x	16	S	1000	6,30 YZP
M 5	x	20	S	1000	6,70 YZP
M 5	x	25	S	1000	7,50 YZP
M 5	x	30	S	1000	8,00 YZP
M 5	x	35	S	500	9,50 YZP
M 5	x	40	S	500	10,00 YZP
M 5	x	45	S	500	10,10 YZP
M 6	x	10	S	1000	8,10 YZP
M 6	x	12	S	1000	8,10 YZP
M 6	x	16	S	1000	9,00 YZP
M 6	x	20	S	1000	10,10 YZP
M 6	x	25	S	500	10,20 YZP
M 6	x	30	S	500	10,70 YZP
M 6	x	35	S	500	10,90 YZP
M 6	x	40	S	500	13,00 YZP
M 6	x	50	S	200	17,00 YZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	01207.430		RAZ 30

1207 — 4.8 nickel plated



Slotted cheese head screws

Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

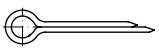
Stainless → S. 481
Brass/plastic → S. 582

ISO 1207 → replaces DIN 84 (compatible)

M 3	x	6	S	2000	2,05 NP
M 3	x	8	S	1000	17,20 NP
M 3	x	10	S	2000	2,25 NP
M 3	x	12	S	2000	2,40 NP
M 3	x	16	S	2000	2,80 NP
M 4	x	8	S	2000	3,35 NP
M 4	x	10	S	2000	3,50 NP
M 4	x	12	S	2000	3,60 NP
M 4	x	16	S	2000	4,30 NP
M 5	x	8	S	2000	5,10 NP
M 5	x	10	S	2000	5,50 NP
M 5	x	12	S	1000	5,70 NP
M 5	x	16	S	1000	6,50 NP

ISO	01234.010	RAZ 40

1234 — Steel zinc plated



Split pins

Dimensions → TI-120 Standard conversion → TI-10
Corrosion protection → TI-217

Stainless → S. 483
Copper → S. 584

ISO 1234 → replaces DIN 94 (compatible)

Nominal ∅ = drilling ∅ x length

1	x	6	S	1000	1,40 ZP
1	x	8	S	1000	1,40 ZP
1	x	10	S	1000	1,40 ZP
1	x	12	S	1000	1,40 ZP
1	x	16	S	1000	1,40 ZP
1	x	18	S	1000	1,40 ZP
1	x	20	S	1000	1,55 ZP
1	x	22	S	1000	1,80 ZP
1	x	25	S	1000	2,00 ZP
1	x	32	S	1000	2,45 ZP
1	x	40	S	1000	3,10 ZP
1,2	x	8	S	1000	1,50 ZP
1,2	x	10	S	1000	1,50 ZP
1,2	x	12	S	1000	1,50 ZP
1,2	x	14	S	1000	1,50 ZP
1,2	x	16	S	1000	1,50 ZP
1,2	x	20	S	1000	1,65 ZP
1,2	x	25	S	1000	2,05 ZP
1,2	x	32	S	1000	2,45 ZP
1,2	x	36	S	1000	2,95 ZP
1,2	x	40	S	1000	3,10 ZP
1,6	x	8	S	1000	1,80 ZP
1,6	x	10	S	1000	1,80 ZP

Dimensions			PU	Pieces	€/100/Mat.
1,6	x	12	S	1000	1,80 ZP
1,6	x	14	S	1000	1,80 ZP
1,6	x	16	S	1000	1,80 ZP
1,6	x	18	S	1000	1,80 ZP
1,6	x	20	S	1000	2,00 ZP
1,6	x	22	S	1000	2,05 ZP
1,6	x	25	S	1000	2,20 ZP
1,6	x	28	S	1000	2,25 ZP
1,6	x	32	S	1000	2,55 ZP
1,6	x	36	S	1000	2,95 ZP
1,6	x	40	S	1000	3,15 ZP
1,6	x	50	S	1000	4,30 ZP
2	x	8	S	1000	2,30 ZP
2	x	10	S	1000	2,30 ZP
2	x	12	S	1000	2,30 ZP
2	x	14	S	1000	2,30 ZP
2	x	16	S	1000	2,30 ZP
2	x	18	S	1000	2,35 ZP
2	x	20	S	1000	2,35 ZP
2	x	22	S	1000	2,55 ZP
2	x	25	S	1000	2,70 ZP
2	x	28	S	1000	2,80 ZP
2	x	32	S	1000	2,95 ZP
2	x	36	S	1000	3,15 ZP
2	x	40	S	1000	3,40 ZP
2	x	45	S	1000	4,40 ZP
2	x	50	S	1000	4,65 ZP
2,5	x	10	S	500	2,75 ZP
2,5	x	12	S	500	2,75 ZP
2,5	x	14	S	500	2,75 ZP
2,5	x	16	S	500	2,75 ZP
2,5	x	18	S	500	2,75 ZP
2,5	x	20	S	500	2,95 ZP
2,5	x	22	S	500	3,10 ZP
2,5	x	25	S	500	3,25 ZP
2,5	x	28	S	500	3,50 ZP
2,5	x	32	S	500	3,65 ZP
2,5	x	36	S	500	3,90 ZP
2,5	x	40	S	500	4,20 ZP
2,5	x	45	S	500	4,50 ZP
2,5	x	50	S	500	4,75 ZP
2,5	x	56	S	500	6,40 ZP
2,5	x	63	S	500	7,20 ZP
3,2	x	10	S	500	3,40 ZP
3,2	x	12	S	500	3,40 ZP
3,2	x	14	S	500	3,40 ZP
3,2	x	16	S	500	3,40 ZP
3,2	x	18	S	500	3,45 ZP
3,2	x	20	S	500	3,65 ZP
3,2	x	22	S	500	3,80 ZP
3,2	x	25	S	500	4,05 ZP
3,2	x	28	S	500	4,30 ZP
3,2	x	32	S	500	4,60 ZP
3,2	x	36	S	500	4,90 ZP
3,2	x	40	S	500	5,30 ZP
3,2	x	45	S	500	5,90 ZP
3,2	x	50	S	500	6,30 ZP
3,2	x	56	S	500	6,70 ZP
3,2	x	63	S	500	7,60 ZP
3,2	x	71	S	500	8,50 ZP
4	x	15	S	500	4,80 ZP
4	x	18	S	500	4,85 ZP
4	x	20	S	500	5,10 ZP
4	x	22	S	500	5,30 ZP
4	x	25	S	500	5,60 ZP
4	x	28	S	500	6,00 ZP
4	x	32	S	500	6,50 ZP
4	x	36	S	500	6,90 ZP
4	x	40	S	500	7,50 ZP
4	x	45	S	500	8,00 ZP
4	x	50	S	500	8,70 ZP
4	x	56	S	500	9,40 ZP
4	x	63	S	500	10,30 ZP
4	x	71	S	500	11,30 ZP
4	x	80	S	500	12,60 ZP

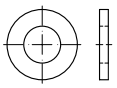
Dimensions			PU	Pieces	€/100/Mat.
4	x	90	S	500	21,10 ZP
4	x	100	S	500	23,80 ZP
4	x	112	S	250	27,30 ZP
4	x	125	S	250	30,80 ZP
5	x	20	S	250	7,50 ZP
5	x	22	S	250	7,70 ZP
5	x	25	S	250	8,00 ZP
5	x	28	S	250	9,10 ZP
5	x	32	S	250	10,10 ZP
5	x	36	S	250	11,00 ZP
5	x	40	S	250	11,80 ZP
5	x	45	S	250	12,80 ZP
5	x	50	S	250	13,70 ZP
5	x	56	S	250	15,00 ZP
5	x	63	S	250	16,70 ZP
5	x	71	S	250	18,40 ZP
5	x	80	S	250	19,90 ZP
5	x	90	S	250	22,00 ZP
5	x	100	S	250	24,60 ZP
5	x	112	S	250	42,00 ZP
5	x	125	S	250	47,50 ZP
5	x	210	S	50	700,00 ZP
5,5	x	50	S	250	20,30 ZP
6,3	x	25	S	250	15,10 ZP
6,3	x	32	S	250	15,20 ZP
6,3	x	36	S	250	16,60 ZP
6,3	x	40	S	250	17,60 ZP
6,3	x	45	S	250	19,00 ZP
6,3	x	50	S	250	20,60 ZP
6,3	x	56	S	250	22,80 ZP
6,3	x	63	S	250	26,00 ZP
6,3	x	71	S	250	28,00 ZP
6,3	x	80	S	250	31,00 ZP
6,3	x	90	S	250	34,50 ZP
6,3	x	100	S	250	38,50 ZP
6,3	x	112	S	250	43,50 ZP
6,3	x	112	S	250	49,50 ZP
6,3	x	112	S	250	92,00 ZP
8	x	40	S	100	38,00 ZP
8	x	45	S	100	40,00 ZP
8	x	50	S	100	42,50 ZP
8	x	56	S	100	46,50 ZP
8	x	63	S	100	49,50 ZP
8	x	71	S	100	53,00 ZP
8	x	80	S	100	59,00 ZP
8	x	90	S	100	63,00 ZP
8	x	100	S	100	68,00 ZP
8	x	112	S	100	76,00 ZP
8	x	125	S	100	87,00 ZP
8	x	140	S	100	97,00 ZP
10	x	50	S	100	70,00 ZP
10	x	63	S	100	75,00 ZP
10	x	71	S	100	85,00 ZP
10	x	80	S	100	94,00 ZP
10	x	90	S	100	102,00 ZP
10	x	100	S	100	113,00 ZP
10	x	112	S	100	120,00 ZP
10	x	125	S	100	132,00 ZP
10	x	140	S	100	145,00 ZP
10	x	160	S	100	181,00 ZP
10	x	180	S	100	249,00 ZP
10	x	200	S	100	270,00 ZP
13	x	71	S	25	193,00 ZP
13	x	80	S	25	194,00 ZP
13	x	90	S	25	195,00 ZP
13	x	100	S	25	209,00 ZP
13	x	112	S	25	230,00 ZP
13	x	125	S	25	250,00 ZP
13	x	140	S	25	275,00 ZP
13	x	160	S	25	830,00 ZP
13	x	180	S	25	860,00 ZP
13	x	200	S	25	960,00 ZP
13	x	250	S	25	1110,00 ZP
16	x	125	S	25	2010,00 ZP
16	x	140	S	25	2030,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
16	x	160	S	25	2090,00 ZP
16	x	180	S	25	2160,00 ZP
16	x	200	S	25	2190,00 ZP
16	x	250	S	25	2340,00 ZP

DIN	01440.000	RAZ 490

1440

Steel



Washers for clevis pins, product grade A (m)

Dimensions → TI-85 Standard conversion → TI-10

Stainless → S. 484

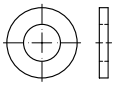
DIN 1440 → replaced by ISO 8738

Inside ∅ min. = pin ∅ x outside ∅ x thickness

3	x	6	x	0,8	S	1000	2,30
4	x	8	x	0,8	S	1000	2,30
4	x	8	x	0,8	K	250	3,20
5	x	10	x	0,8	S	1000	2,65
5	x	10	x	0,8	K	250	3,60
6	x	12	x	1,6	S	1000	3,95
6	x	12	x	1,6	K	100	6,50
7	x	14	x	1,6	S	1000	5,60
7	x	14	x	1,6	K	100	8,00
8	x	16	x	2	S	1000	7,50
8	x	16	x	2	K	100	10,00
10	x	20	x	2,5	S	1000	9,60
10	x	20	x	2,5	K	100	13,40
12	x	25	x	3	S	500	14,20
12	x	25	x	3	K	100	18,30
13	x	25	x	3	S	500	14,20
13	x	25	x	3	K	100	18,30
14	x	28	x	3	S	500	17,30
14	x	28	x	3	K	100	21,20
16	x	28	x	3	S	500	17,30
16	x	28	x	3	K	100	21,20
18	x	30	x	4	S	200	28,50
18	x	30	x	4	K	100	32,50
20	x	32	x	4	S	200	34,00
20	x	32	x	4	K	100	38,00
22	x	34	x	4	S	200	39,00
22	x	34	x	4	K	100	43,00
23	x	36	x	4	S	200	40,50
23	x	36	x	4	K	100	44,50
25	x	40	x	4	S	200	55,00
25	x	40	x	4	K	100	60,00
26	x	40	x	5	S	100	78,00
28	x	42	x	5	S	100	86,00
30	x	45	x	5	S	100	103,00
32	x	50	x	5	S	100	134,00
33	x	50	x	5	S	100	125,00
35	x	52	x	6	S	100	159,00
36	x	52	x	6	S	100	159,00
40	x	58	x	6	S	50	184,00
45	x	62	x	7	S	50	223,00
50	x	68	x	8	S	50	340,00
55	x	75	x	9	S	10	720,00
60	x	80	x	9	S	10	830,00
65	x	90	x	9	S	1	1810,00
70	x	95	x	10	S	1	2280,00
75	x	100	x	10	S	1	2750,00
80	x	110	x	12	S	1	4200,00
90	x	115	x	12	S	1	4200,00
100	x	125	x	14	S	1	5400,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	01440.010		RAZ 490

1440 Steel, zinc plated



Washers for clevis pins, product grade A (m)

Dimensions → TI-85 Standard conversion → TI-10
Corrosion protection → TI-217

Stainless → S. 484

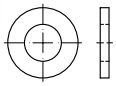
DIN 1440 → replaced by ISO 8738

Inside ∅ min. = pin ∅ x outside ∅ x thickness

3	x	6	x	0,8	S	1000	2,35 ZP
3	x	6	x	0,8	K	250	3,25 ZP
4	x	8	x	0,8	S	1000	2,35 ZP
4	x	8	x	0,8	K	250	3,25 ZP
5	x	10	x	0,8	S	1000	2,75 ZP
5	x	10	x	0,8	K	250	3,75 ZP
6	x	12	x	1,6	S	1000	4,35 ZP
6	x	12	x	1,6	K	100	6,90 ZP
7	x	14	x	1,6	S	1000	6,10 ZP
7	x	14	x	1,6	K	100	8,60 ZP
8	x	16	x	2	S	1000	8,10 ZP
8	x	16	x	2	K	100	10,60 ZP
10	x	20	x	2,5	S	1000	11,10 ZP
10	x	20	x	2,5	K	100	15,00 ZP
12	x	25	x	3	S	500	17,30 ZP
12	x	25	x	3	K	100	21,40 ZP
13	x	25	x	3	S	500	17,00 ZP
13	x	25	x	3	K	100	21,10 ZP
14	x	28	x	3	S	500	20,90 ZP
14	x	28	x	3	K	100	25,00 ZP
16	x	28	x	3	S	500	20,60 ZP
16	x	28	x	3	K	100	24,60 ZP
18	x	30	x	4	S	200	33,50 ZP
18	x	30	x	4	K	100	38,00 ZP
20	x	32	x	4	S	200	39,00 ZP
20	x	32	x	4	K	100	43,00 ZP
22	x	34	x	4	S	200	44,50 ZP
22	x	34	x	4	K	100	48,50 ZP
23	x	36	x	4	S	200	47,00 ZP
25	x	40	x	4	S	200	63,00 ZP
25	x	40	x	4	K	100	68,00 ZP
26	x	40	x	5	S	100	88,00 ZP
28	x	42	x	5	S	100	95,00 ZP
30	x	45	x	5	S	100	116,00 ZP
32	x	50	x	5	S	100	135,00 ZP
33	x	50	x	5	S	100	135,00 ZP
35	x	52	x	6	S	100	171,00 ZP
36	x	52	x	6	S	100	170,00 ZP
40	x	58	x	6	S	50	200,00 ZP
45	x	62	x	7	S	50	242,00 ZP
50	x	68	x	8	S	50	360,00 ZP
55	x	75	x	9	S	10	760,00 ZP
60	x	80	x	9	S	10	860,00 ZP
65	x	90	x	9	S	1	1850,00 ZP
70	x	95	x	10	S	1	2350,00 ZP
80	x	110	x	12	S	1	4250,00 ZP
100	x	125	x	14	S	1	5500,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	01440.060		RAZ 490

1440 Steel, zinc plated yellow



Washers for clevis pins, product grade A (m)

Dimensions → TI-85 Standard conversion → TI-10
Corrosion protection → TI-217

Stainless → S. 484

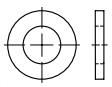
DIN 1440 → replaced by ISO 8738

Inside ∅ min. = pin ∅ x outside ∅ x thickness

8	x	16	x	2	S	100	11,70 YZP
10	x	20	x	2,5	S	100	16,10 YZP
12	x	25	x	3	S	100	21,10 YZP
16	x	28	x	3	S	100	25,50 YZP
18	x	30	x	4	S	100	38,50 YZP
20	x	32	x	4	S	100	46,50 YZP
25	x	40	x	4	S	100	72,00 YZP
30	x	45	x	5	S	100	176,00 YZP
35	x	52	x	6	S	100	170,00 YZP
40	x	58	x	6	S	50	214,00 YZP
45	x	62	x	7	S	50	285,00 YZP
50	x	68	x	8	S	50	380,00 YZP

DIN	01441.000	RAZ 490

1441 Steel



Washers for clevis pins, product grade C (g)

Dimensions → TI-85

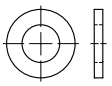
Inside ∅ x outside ∅ x thickness

5,5	x	10	x	0,8	K	250	4,90
7	x	12	x	1,6	K	250	5,30
8	x	14	x	1,6	S	1000	3,25
8	x	14	x	1,6	K	250	6,10
9	x	16	x	2	S	1000	4,35
9	x	16	x	2	K	250	7,10
11	x	20	x	2,5	S	500	6,90
11	x	20	x	2,5	K	250	10,40
13	x	25	x	3	S	500	10,40
13	x	25	x	3	K	100	19,20
15	x	28	x	3	S	500	12,60
15	x	28	x	3	K	100	21,10
17	x	28	x	3	S	500	13,70
17	x	28	x	3	K	100	22,40
19	x	30	x	4	S	200	18,60
19	x	30	x	4	K	100	28,00
21	x	32	x	4	S	200	22,20
21	x	32	x	4	K	100	31,50
23	x	34	x	4	S	200	25,50
23	x	34	x	4	K	100	35,00
24	x	36	x	4	S	200	28,00
25	x	38	x	4	S	200	34,50
25	x	38	x	4	K	100	45,50
26	x	40	x	4	S	200	39,50
26	x	40	x	4	K	100	51,00
27	x	40	x	5	S	100	48,00

Dimensions	PU	Pieces	€/100/Mat.
28 x 40 x 5	S	100	50,00
29 x 42 x 5	S	100	54,00
31 x 45 x 5	S	100	62,00
34 x 50 x 5	S	100	80,00
37 x 52 x 6	S	100	96,00
41 x 58 x 6	S	50	128,00
46 x 62 x 7	S	50	164,00
51 x 68 x 8	S	50	234,00
56 x 75 x 9	S	10	520,00
62 x 80 x 9	S	10	680,00
72 x 95 x 10	S	10	1110,00
78 x 100 x 10	S	10	1210,00
82 x 110 x 12	S	1	1830,00
86 x 110 x 12	S	1	1900,00
92 x 115 x 12	S	1	1980,00
102 x 125 x 14	S	1	2750,00

DIN	01441.010	RAZ 490

1441 Steel, zinc plated



Washers for clevis pins, product grade C (g)

Dimensions → TI-85 Corrosion protection → TI-217

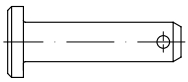
Inside ∅ x outside ∅ x thickness

5,5	x	10	x	0,8	S	1000	2,25 ZP
5,5	x	10	x	0,8	K	250	5,10 ZP
7	x	12	x	1,6	S	1000	2,85 ZP
7	x	12	x	1,6	K	250	5,60 ZP
8	x	14	x	1,6	S	1000	3,80 ZP
8	x	14	x	1,6	K	250	6,50 ZP
9	x	16	x	2	S	1000	5,20 ZP
9	x	16	x	2	K	250	7,90 ZP
11	x	20	x	2,5	S	500	8,50 ZP
11	x	20	x	2,5	K	250	12,00 ZP
13	x	25	x	3	S	500	13,50 ZP
13	x	25	x	3	K	100	22,30 ZP
14	x	25	x	3	K	100	22,40 ZP
15	x	28	x	3	S	500	16,30 ZP
15	x	28	x	3	K	100	25,00 ZP
17	x	28	x	3	S	500	17,10 ZP
17	x	28	x	3	K	100	26,00 ZP
19	x	30	x	4	S	200	23,60 ZP
19	x	30	x	4	K	100	33,50 ZP
21	x	32	x	4	S	200	27,50 ZP
21	x	32	x	4	K	100	37,50 ZP
23	x	34	x	4	S	200	31,00 ZP
23	x	34	x	4	K	100	40,50 ZP
24	x	36	x	4	S	200	35,00 ZP
25	x	38	x	4	S	200	42,00 ZP
25	x	38	x	4	K	100	53,00 ZP
26	x	40	x	4	S	200	48,00 ZP
26	x	40	x	4	K	100	60,00 ZP
28	x	40	x	5	S	100	60,00 ZP
29	x	42	x	5	S	100	65,00 ZP
31	x	45	x	5	S	100	75,00 ZP
34	x	50	x	5	S	100	96,00 ZP
37	x	52	x	6	S	100	116,00 ZP
41	x	58	x	6	S	50	151,00 ZP
46	x	62	x	7	S	50	190,00 ZP
51	x	68	x	8	S	50	270,00 ZP
56	x	75	x	9	S	10	570,00 ZP
62	x	80	x	9	S	10	730,00 ZP
68	x	90	x	9	S	10	990,00 ZP
72	x	95	x	10	S	10	1200,00 ZP
78	x	100	x	10	S	10	1300,00 ZP
82	x	110	x	12	S	1	1980,00 ZP

Dimensions					PU	Pieces	€/100/Mat.
92	x	115	x	12	S	1	2100,00 ZP
102	x	125	x	14	S	1	2950,00 ZP

DIN	01444.014	RAZ 490

1444 Steel zinc plated type B



Clevis pins with head, B = with pin hole, tolerance h11 for pin ∅

Dimensions ➔ TI-120 Standard conversion ➔ TI-10
Corrosion protection ➔ TI-217

DIN 1444 ➔ replaced by ISO 2341 (compatible)

Pin ∅ x overall length x length to middle of pin hole

B 8	x	20/16,5	S	100	1090,00 ZP
B 8	x	24/20,5	S	100	1100,00 ZP
B 8	x	25/21,5	S	100	1100,00 ZP
B 8	x	30/26,5	S	100	1110,00 ZP
B 8	x	35/31,5	S	100	1120,00 ZP
B 8	x	50/45,5	S	100	1140,00 ZP
B 10	x	25/20,5	S	10	1580,00 ZP
B 10	x	30/25,5	S	10	1590,00 ZP
B 10	x	35/30,5	S	10	1610,00 ZP
B 10	x	40/35,5	S	10	1620,00 ZP
B 10	x	45/40,5	S	10	1650,00 ZP
B 10	x	50/46,5	S	10	1670,00 ZP
B 10	x	60/55,5	S	10	1680,00 ZP
B 10	x	70/65,5	S	10	1700,00 ZP
B 12	x	30/24,5	S	10	1580,00 ZP
B 12	x	35/29,5	S	10	1590,00 ZP
B 12	x	40/34,5	S	10	1610,00 ZP
B 12	x	45/39,5	S	10	1620,00 ZP
B 12	x	50/44,5	S	10	1650,00 ZP
B 12	x	60/54,5	S	10	1680,00 ZP
B 16	x	40/34	S	1	1730,00 ZP
B 16	x	45/39	S	1	1760,00 ZP
B 16	x	50/44	S	1	1780,00 ZP
B 16	x	55/49	S	1	1810,00 ZP
B 16	x	60/54	S	1	1840,00 ZP
B 16	x	65/59	S	1	1860,00 ZP
B 18	x	65/58	S	1	1890,00 ZP
B 20	x	40/32	S	1	1850,00 ZP
B 20	x	50/42	S	1	1900,00 ZP
B 20	x	55/47	S	1	1950,00 ZP
B 20	x	60/52	S	1	2020,00 ZP
B 20	x	65/57	S	1	2070,00 ZP

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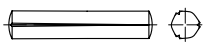
Dimensions			PU	Pieces	€/100/Mat.
DIN	01471.000				RAZ 500

1471 Steel



Grooved pins, full-length taper grooved

Dimensions ➔ TI-117 Standard conversion ➔ TI-10

Stainless ➔ S. 484

DIN 1471 ➔ replaced by ISO 8744

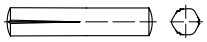
1,5	x	6	S	250	7,30
1,5	x	8	S	250	7,30
1,5	x	16	S	250	7,90
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	16	S	250	8,10
2	x	20	S	250	9,10
2	x	24	S	250	9,80
2	x	30	S	250	9,80
2,5	x	6	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
2,5	x	20	S	250	9,40
2,5	x	30	S	250	9,70
3	x	6	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	18	S	250	9,50
3	x	20	S	250	10,10
3	x	24	S	250	10,10
3	x	26	S	250	10,40
3	x	30	S	100	11,90
3	x	40	S	100	12,60
4	x	6	S	100	11,70
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	8	S	100	13,30
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	18	S	100	14,10
5	x	20	S	100	14,10
5	x	24	S	100	14,50
5	x	26	S	100	15,10
5	x	30	S	100	15,40
5	x	32	S	100	15,80

Dimensions			PU	Pieces	€/100/Mat.
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	45	S	100	18,20
5	x	50	S	100	19,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	12	S	100	17,50
6	x	16	S	100	17,70
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	45	S	100	23,90
6	x	50	S	100	24,70
6	x	55	S	100	26,00
6	x	60	S	100	28,00
6	x	70	S	100	76,00
6	x	80	S	100	79,00
8	x	12	S	100	26,00
8	x	16	S	100	26,50
8	x	20	S	100	26,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	28	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
8	x	55	S	100	40,50
8	x	60	S	100	43,00
8	x	70	S	100	49,50
8	x	80	S	100	76,00
8	x	100	S	25	132,00
10	x	20	S	25	178,00
10	x	30	S	25	189,00
10	x	32	S	25	190,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	60	S	25	215,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
10	x	90	S	25	244,00
10	x	100	S	25	246,00
12	x	26	S	25	205,00
12	x	60	S	25	247,00
12	x	70	S	25	260,00
12	x	90	S	25	285,00
12	x	100	S	25	300,00

Dimensions	PU Pieces	€/100/Mat.
DIN	01472.000	RAZ 500

1472

Steel



Grooved pins, half length taper grooved

Dimensions ➔ TI-118 Standard conversion ➔ TI-10

Stainless ➔ S. 485

DIN 1472 ➔ replaced by ISO 8745

Dimensions			PU	Pieces	€/100/Mat.
1,5	x	6	S	250	7,30
1,5	x	8	S	250	7,30
1,5	x	10	S	250	7,30
1,5	x	12	S	250	7,50
1,5	x	16	S	250	7,50
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	14	S	250	8,10
2	x	16	S	250	8,10
2	x	20	S	250	9,10
2	x	30	S	250	9,80
2,5	x	6	S	250	9,10
2,5	x	8	S	250	9,10
2,5	x	10	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
2,5	x	18	S	250	9,20
2,5	x	20	S	250	9,40
3	x	6	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	18	S	250	9,50
3	x	20	S	250	10,10
3	x	22	S	250	10,10
3	x	24	S	250	10,10
3	x	26	S	250	10,40
3	x	28	S	100	11,90
3	x	30	S	100	11,90
3	x	32	S	100	12,20
3	x	40	S	100	12,60
4	x	6	S	100	11,70
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	8	S	100	13,30
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	18	S	100	14,10
5	x	20	S	100	14,10
5	x	22	S	100	14,20
5	x	24	S	100	14,50
5	x	26	S	100	15,10
5	x	28	S	100	15,10
5	x	30	S	100	15,40
5	x	32	S	100	15,80
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	50	S	100	19,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	12	S	100	17,50
6	x	14	S	100	17,50
6	x	16	S	100	17,70
6	x	18	S	100	17,80
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	45	S	100	23,90
6	x	50	S	100	24,70
6	x	60	S	100	28,00
6	x	80	S	100	79,00
8	x	12	S	100	26,00
8	x	14	S	100	26,00
8	x	16	S	100	26,50
8	x	18	S	100	26,50
8	x	20	S	100	26,50
8	x	22	S	100	27,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	28	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
8	x	55	S	100	40,50
8	x	60	S	100	43,00
8	x	70	S	100	49,50
8	x	80	S	100	76,00
8	x	100	S	25	132,00
10	x	16	S	25	176,00
10	x	20	S	25	178,00
10	x	24	S	25	183,00
10	x	26	S	25	185,00
10	x	30	S	25	189,00
10	x	32	S	25	190,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	55	S	25	210,00
10	x	60	S	25	215,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
10	x	90	S	25	244,00
12	x	20	S	25	197,00
12	x	30	S	25	209,00
12	x	32	S	25	213,00
12	x	36	S	25	217,00
12	x	40	S	25	222,00
12	x	45	S	25	227,00
12	x	50	S	25	233,00
12	x	55	S	25	240,00
12	x	60	S	25	247,00
12	x	70	S	25	260,00
12	x	80	S	25	275,00

Dimensions	PU Pieces	€/100/Mat.
DIN	01473.000	RAZ 500

1473

Steel

Grooved pins, full length parallel grooved

Dimensions ➔ TI-117 Standard conversion ➔ TI-10

Stainless ➔ S. 485

DIN 1473 ➔ replaced by ISO 8740

Dimensions			PU	Pieces	€/100/Mat.
1,5	x	6	S	250	7,30
1,5	x	8	S	250	7,30
1,5	x	10	S	250	7,30
1,5	x	12	S	250	7,50
1,5	x	16	S	250	7,50
1,5	x	20	S	250	7,50
2	x	4	S	250	7,90
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	14	S	250	8,10
2	x	16	S	250	8,10
2	x	18	S	250	8,10
2	x	20	S	250	9,10
2	x	24	S	250	9,80
2	x	30	S	250	9,80
2,5	x	6	S	250	9,10
2,5	x	8	S	250	9,10
2,5	x	10	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	14	S	250	9,20
2,5	x	16	S	250	9,20
2,5	x	20	S	250	9,40
2,5	x	24	S	250	9,40
2,5	x	30	S	250	9,70
3	x	6	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	18	S	250	9,50
3	x	20	S	250	10,10
3	x	22	S	250	10,10
3	x	24	S	250	10,10
3	x	26	S	250	10,40
3	x	28	S	100	11,90
3	x	30	S	100	11,90
3	x	32	S	100	12,20
3	x	36	S	100	12,50
3	x	40	S	100	12,60
4	x	6	S	100	11,70
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50

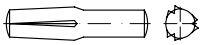
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	45	S	100	15,10
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	8	S	100	13,30
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	18	S	100	14,10
5	x	20	S	100	14,10
5	x	22	S	100	14,20
5	x	24	S	100	14,50
5	x	26	S	100	15,10
5	x	28	S	100	15,10
5	x	30	S	100	15,40
5	x	32	S	100	15,80
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	45	S	100	18,20
5	x	50	S	100	19,00
5	x	55	S	100	35,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	12	S	100	17,50
6	x	14	S	100	17,50
6	x	16	S	100	17,70
6	x	18	S	100	17,80
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	45	S	100	23,90
6	x	50	S	100	24,70
6	x	55	S	100	26,00
6	x	60	S	100	28,00
6	x	65	S	100	73,00
6	x	70	S	100	76,00
6	x	80	S	100	79,00
8	x	12	S	100	26,00
8	x	14	S	100	26,00
8	x	16	S	100	26,50
8	x	20	S	100	26,50
8	x	22	S	100	27,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	28	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
8	x	55	S	100	40,50
8	x	60	S	100	43,00
8	x	70	S	100	49,50
8	x	80	S	100	76,00
8	x	90	S	25	120,00
8	x	100	S	25	132,00
10	x	16	S	25	176,00
10	x	20	S	25	178,00
10	x	24	S	25	183,00
10	x	26	S	25	185,00
10	x	30	S	25	189,00
10	x	32	S	25	190,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	60	S	25	215,00
10	x	65	S	25	219,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
10	x	90	S	25	244,00
10	x	100	S	25	246,00
10	x	120	S	25	305,00
12	x	20	S	25	197,00
12	x	24	S	25	202,00
12	x	26	S	25	205,00
12	x	28	S	25	207,00
12	x	30	S	25	209,00
12	x	32	S	25	213,00
12	x	36	S	25	217,00
12	x	40	S	25	222,00
12	x	45	S	25	227,00
12	x	50	S	25	233,00
12	x	55	S	25	240,00
12	x	60	S	25	247,00
12	x	70	S	25	260,00
12	x	80	S	25	275,00
12	x	90	S	25	285,00
12	x	100	S	25	300,00
12	x	120	S	25	355,00

DIN	01474.000	RAZ 500

1474

Steel



Grooved pins, half length reverse grooved

Dimensions → TI-117 Standard conversion → TI-10

DIN 1474 → replaced by ISO 8741

1,5	x	6	S	250	7,30
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	16	S	250	8,10
2	x	20	S	250	9,10
2,5	x	10	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	16	S	250	9,50
3	x	20	S	250	10,10
3	x	30	S	100	11,90
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	24	S	100	12,20
4	x	30	S	100	12,50
4	x	40	S	100	13,60
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	20	S	100	14,10
5	x	24	S	100	14,50
5	x	28	S	100	15,10
5	x	36	S	100	16,30
5	x	40	S	100	17,10
6	x	12	S	100	17,50
6	x	14	S	100	17,50
6	x	16	S	100	17,70
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	40	S	100	24,70
6	x	45	S	100	24,70
6	x	50	S	100	24,70
6	x	60	S	100	24,70
8	x	12	S	100	24,70
8	x	16	S	100	24,70
8	x	20	S	100	24,70
8	x	24	S	100	24,70
8	x	30	S	100	24,70
8	x	40	S	100	24,70
8	x	50	S	100	24,70
8	x	60	S	100	24,70
10	x	20	S	100	24,70
10	x	30	S	100	24,70
10	x	40	S	100	24,70
10	x	50	S	100	24,70
10	x	60	S	100	24,70
12	x	30	S	100	24,70
12	x	40	S	100	24,70
12	x	50	S	100	24,70
12	x	60	S	100	24,70

DIN	01475.000	RAZ 500

1475

Steel

Grooved pins,third length centre grooved

Dimensions → TI-117 Standard conversion → TI-10

DIN 1475 → replaced by ISO 8742

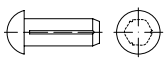
1,5	x	8	S	250	7,30
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	24	S	250	9,80
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
3	x	6	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	20	S	250	10,10
3	x	28	S	100	11,90
3	x	30	S	100	11,90
3	x	40	S	100	12,60
4	x	10	S	100	11,70
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20

Dimensions			PU	Pieces	€/100/Mat.
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	12	S	100	13,30
5	x	20	S	100	14,10
5	x	22	S	100	14,20
5	x	24	S	100	14,50
5	x	30	S	100	15,40
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	50	S	100	19,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	20	S	100	17,80
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	50	S	100	24,70
6	x	60	S	100	28,00
6	x	70	S	100	76,00
8	x	16	S	100	26,50
8	x	24	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	50	S	100	38,50
8	x	55	S	100	40,50
8	x	60	S	100	43,00
8	x	80	S	100	76,00
8	x	100	S	25	132,00
10	x	36	S	25	194,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	55	S	25	210,00
10	x	60	S	25	215,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
12	x	40	S	25	222,00
12	x	45	S	25	227,00
12	x	60	S	25	247,00
12	x	100	S	25	300,00

DIN	01476.000	RAZ 500

1476

Steel



Grooved pins with round head

Dimensions → TI-118 Standard conversion → TI-10

Stainless → S. 485
Brass, aluminium → S. 584

DIN 1476 → replaced by ISO 8746 (compatible)

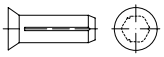
1,4	x	3	K	500	3,50
1,4	x	4	K	500	3,50
1,4	x	5	K	500	5,30
1,4	x	6	K	500	3,90
1,6	x	3	K	500	3,60

Dimensions			PU	Pieces	€/100/Mat.
1,6	x	4	K	500	3,60
1,6	x	6	K	500	3,75
2	x	3	S	5000	2,80
2	x	3	K	500	3,60
2	x	4	S	5000	2,80
2	x	4	K	500	3,60
2	x	5	S	5000	2,80
2	x	5	K	500	3,60
2	x	6	S	5000	3,75
2	x	6	K	500	3,75
2	x	8	S	5000	2,85
2	x	8	K	500	3,75
2	x	10	K	500	3,85
2,3	x	4	K	500	3,75
2,3	x	5	K	500	3,75
2,3	x	6	K	500	3,75
2,3	x	8	K	500	3,85
2,3	x	10	K	500	4,00
2,5	x	3	K	500	3,85
2,5	x	4	K	500	3,85
2,5	x	5	K	500	3,85
2,5	x	6	S	5000	3,00
2,5	x	6	K	500	3,85
2,5	x	7	K	500	4,00
2,5	x	8	K	500	4,00
2,5	x	10	K	500	4,10
3	x	4	S	5000	3,25
3	x	4	K	500	4,10
3	x	5	S	5000	3,25
3	x	5	K	500	4,10
3	x	6	S	5000	3,25
3	x	6	K	500	4,10
3	x	7	K	500	4,25
3	x	8	S	5000	3,45
3	x	8	K	500	4,25
3	x	10	S	5000	3,45
3	x	10	K	500	4,25
3	x	12	S	2000	3,80
3	x	12	K	500	4,50
3	x	15	S	2000	3,80
3	x	15	K	500	4,50
3	x	18	K	500	5,40
4	x	6	S	2000	4,70
4	x	6	K	500	5,40
4	x	8	S	2000	4,70
4	x	8	K	500	5,40
4	x	10	S	2000	4,75
4	x	10	K	500	5,50
4	x	12	K	500	5,90
4	x	15	S	2000	5,40
4	x	15	K	500	6,20
4	x	20	K	500	6,40
5	x	8	K	250	7,60
5	x	10	S	1000	6,80
5	x	10	K	250	7,90
5	x	12	S	1000	7,50
5	x	12	K	250	8,60
5	x	15	S	1000	8,00
5	x	15	K	250	8,90
5	x	18	K	250	9,10
5	x	20	K	250	9,60
5	x	25	K	250	10,10
6	x	8	K	250	9,70
6	x	10	K	250	10,00
6	x	12	K	250	10,90
6	x	15	K	250	11,90
6	x	20	K	250	12,90
6	x	25	K	250	14,00
6	x	30	K	250	16,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	01477.000		RAZ 500

1477

Steel



Grooved pins with countersunk head

Dimensions → TI-118 Standard conversion → TI-10

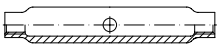
DIN 1477 → replaced by ISO 8747 (compatible)

2	x	6	K	500	4,10
2	x	8	K	500	4,10
2	x	10	K	500	4,30
3	x	6	K	500	4,60
3	x	8	K	500	4,70
3	x	10	K	500	4,70
3	x	12	K	500	5,10
3	x	18	K	500	6,00
4	x	10	K	500	6,20
4	x	12	K	500	6,40
4	x	15	K	500	7,00
5	x	10	K	250	8,80
5	x	15	K	250	10,00
5	x	20	K	250	10,60
6	x	15	K	250	13,30
6	x	20	K	250	14,40

DIN	01478.010	RAZ 510

1478

Steel zinc plated **SP**



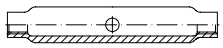
Turnbuckles made from tubes, closed type

Dimensions → TI-80 Corrosion protection → TI-217

SP M 6	S	10	780,00 ZP
SP M 8	S	10	810,00 ZP
SP M 10	S	1	1040,00 ZP
SP M 12	S	1	1210,00 ZP
SP M 16	S	1	1760,00 ZP
SP M 20	S	1	2700,00 ZP
SP M 24	S	1	4150,00 ZP
SP M 30	S	1	4800,00 ZP
SP M 36	S	1	7700,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
DIN	01478.310	RAZ 510
1478	**Steel zinc plated**	**SP**



Turnbuckles made from tubes, closed type

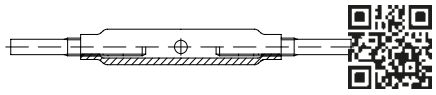
Steel = S235

Dimensions ➔ TI-80 Corrosion protection ➔ TI-217

Loadability ➔ TI-dimension pages

SP M 6	S	10	1053,00 ZP
SP M 8	S	10	1093,50 ZP
SP M 10	S	1	1404,00 ZP
SP M 12	S	1	1633,50 ZP
SP M 16	S	1	2376,00 ZP
SP M 20	S	1	3645,00 ZP
SP M 24	S	1	5602,50 ZP
SP M 30	S	1	6480,00 ZP
SP M 36	S	1	10395,00 ZP

DIN	01478.014	RAZ 510
1478	**Steel zinc plated**	**SP-AE**



Turnbuckles made from tubes, closed type, AE = with 2 welding studs acc. to DIN 34828

Dimensions ➔ TI-80 Corrosion protection ➔ TI-217

SP-AE M 6	S	1	990,00 ZP
SP-AE M 8	S	1	1080,00 ZP
SP-AE M 10	S	1	1380,00 ZP
SP-AE M 12	S	1	1710,00 ZP
SP-AE M 16	S	1	2700,00 ZP
SP-AE M 20	S	1	4150,00 ZP
SP-AE M 24	S	1	6400,00 ZP
SP-AE M 30	S	1	8900,00 ZP
SP-AE M 36	S	1	14200,00 ZP

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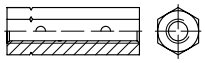
Dimensions	PU Pieces	€/100/Mat.
DIN	01479.010	RAZ 510
1479	**Steel zinc plated**	



Hexagon turnbuckles

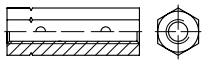
Connection collars ➔ article 88087/88088

Dimensions ➔ TI-80 Corrosion protection ➔ TI-217

Wrench sizes acc. to ISO for M 10, M 12, M 14, M 22 on request

M 6	S	25	222,00 ZP
M 8	S	25	325,00 ZP
M 10	S	10	470,00 ZP
M 12	S	10	610,00 ZP
M 16	S	1	1370,00 ZP
M 20	S	1	2350,00 ZP
M 24	S	1	3600,00 ZP
M 30	S	1	5700,00 ZP
M 36	S	1	17300,00 ZP

DIN	01479.310	RAZ 510
1479	**Steel zinc plated**	



Hexagon turnbuckles

Steel = S235

Dimensions ➔ TI-80

- Wrench sizes acc. to ISO for M 10, M 12, M 14, M 22 on request
- Loadability ➔ TI-dimension pages

M 6	S	25	299,70 ZP
M 8	S	25	438,75 ZP
M 10 SW 17	S	10	634,50 ZP
M 12 SW 19	S	10	823,50 ZP
M 16	S	1	1849,50 ZP
M 20	S	1	3172,50 ZP
M 24	S	1	4860,00 ZP
M 30	S	1	7695,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	91479.013	RAZ 660
1479	**Steel, hard. zinc plated**	**type C**

Hexagon head tapping screws, C = with cone end

Dimensions ➔ TI-46 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217 Mounting instructions ➔ TI-237

Stainless ➔ S. 486

type with collar = DIN 6928 on request

C 2,9	x	6,5	S 2000	4,40 ZP
C 2,9	x	9,5	S 2000	4,10 ZP
C 2,9	x	13	S 2000	4,30 ZP
C 2,9	x	16	S 2000	5,20 ZP
C 2,9	x	19	S 2000	5,30 ZP
C 3,5	x	6,5	S 1000	4,75 ZP
C 3,5	x	9,5	S 1000	2,75 ZP
C 3,5	x	13	S 1000	3,25 ZP
C 3,5	x	16	S 1000	3,45 ZP
C 3,5	x	19	S 1000	3,80 ZP
C 3,5	x	22	S 1000	4,05 ZP
C 3,5	x	25	S 1000	4,25 ZP
C 3,9	x	6,5	S 1000	5,30 ZP
C 3,9	x	9,5	S 1000	4,10 ZP
C 3,9	x	13	S 1000	4,35 ZP
C 3,9	x	16	S 1000	5,60 ZP
C 3,9	x	19	S 1000	4,05 ZP
C 3,9	x	22	S 500	4,70 ZP
C 3,9	x	25	S 500	5,10 ZP
C 3,9	x	32	S 500	7,50 ZP
C 4,2	x	9,5	S 1000	4,45 ZP
C 4,2	x	13	S 1000	4,70 ZP
C 4,2	x	16	S 1000	5,70 ZP
C 4,2	x	19	S 500	5,90 ZP
C 4,2	x	22	S 500	6,30 ZP
C 4,2	x	25	S 500	7,30 ZP
C 4,2	x	32	S 500	7,50 ZP
C 4,2	x	38	S 500	8,70 ZP
C 4,2	x	45	S 500	12,75 ZP
C 4,2	x	50	S 500	16,85 ZP
C 4,8	x	9,5	S 500	5,90 ZP
C 4,8	x	13	S 500	4,80 ZP
C 4,8	x	16	S 500	5,90 ZP
C 4,8	x	19	S 500	6,20 ZP
C 4,8	x	22	S 500	9,00 ZP
C 4,8	x	25	S 500	9,30 ZP
C 4,8	x	32	S 250	11,80 ZP
C 4,8	x	38	S 250	13,60 ZP
C 4,8	x	45	S 250	24,20 ZP
C 4,8	x	50	S 250	27,50 ZP
C 5,5	x	13	S 500	7,50 ZP
C 5,5	x	16	S 500	8,10 ZP
C 5,5	x	19	S 500	8,70 ZP
C 5,5	x	22	S 500	10,00 ZP
C 5,5	x	25	S 250	12,40 ZP
C 5,5	x	32	S 250	13,70 ZP
C 5,5	x	38	S 250	15,30 ZP
C 5,5	x	45	S 250	30,10 ZP
C 5,5	x	50	S 250	35,00 ZP
C 5,5	x	60	S 250	43,00 ZP
C 6,3	x	13	S 250	8,70 ZP
C 6,3	x	16	S 250	9,00 ZP
C 6,3	x	19	S 250	10,00 ZP
C 6,3	x	22	S 250	10,70 ZP
C 6,3	x	25	S 250	13,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
C 6,3 x 32	S	250	14,80 ZP
C 6,3 x 38	S	250	16,20 ZP
C 6,3 x 45	S	250	23,10 ZP
C 6,3 x 50	S	250	26,50 ZP
C 6,3 x 60	S	250	77,20 ZP
C 6,3 x 70	S	250	95,00 ZP
C 6,3 x 80	S	250	118,00 ZP
C 8 x 16	S	250	23,90 ZP
C 8 x 19	S	250	24,10 ZP
C 8 x 22	S	250	33,50 ZP
C 8 x 25	S	250	32,50 ZP
C 8 x 32	S	250	35,50 ZP
C 8 x 38	S	250	36,00 ZP
C 8 x 45	S	250	49,50 ZP
C 8 x 50	S	250	54,00 ZP
C 8 x 60	S	200	69,00 ZP
C 8 x 80	S	200	98,00 ZP

ISO | 91479.015 | RAZ 660

1479 Steel, hard. zinc plated — type F

Hexagon head tapping screws, F = with flat end

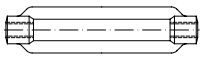
Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

type with collar = DIN 6928 on request

4,2 x 9,5 -F	S	500	8,00 ZP
4,2 x 13 -F	S	500	8,20 ZP
4,2 x 16 -F	S	500	8,25 ZP
4,2 x 19 -F	S	500	8,25 ZP
4,2 x 25 -F	S	500	8,50 ZP
4,8 x 9,5 -F	S	500	8,00 ZP
4,8 x 13 -F	S	500	7,00 ZP
4,8 x 16 -F	S	500	8,00 ZP
4,8 x 19 -F	S	250	8,25 ZP
4,8 x 22 -F	S	250	8,40 ZP
4,8 x 25 -F	S	500	8,50 ZP
6,3 x 16 -F	S	250	12,70 ZP
6,3 x 19 -F	S	250	14,00 ZP
6,3 x 22 -F	S	250	16,80 ZP
6,3 x 25 -F	S	250	17,90 ZP

DIN | 01480.010 | RAZ 510

1480 Steel zinc plated — SP



Turnbuckles, forged, open type

Steel = S235

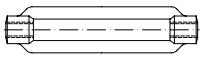
Dimensions → TI-81 Corrosion protection → TI-217

Internal thread (R/L) x overall length

SP M 10 / 125	S	1	540,00 ZP
SP M 12 / 125	S	1	620,00 ZP
SP M 16 / 170	S	1	1030,00 ZP
SP M 20 / 200	S	1	1760,00 ZP
SP M 24 / 255	S	1	3200,00 ZP

DIN | 01480.310 | RAZ 510

1480 Steel zinc plated — SP



Turnbuckles, forged, open type steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

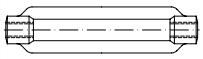
Loadability → TI-dimension pages

Internal thread (R/L) x overall length

SP M 10 / 125	S	1	729,00 ZP
SP M 12 / 125	S	1	837,00 ZP
SP M 16 / 170	S	1	1390,50 ZP
SP M 20 / 200	S	1	2376,00 ZP
SP M 24 / 255	S	1	4320,00 ZP

DIN | 01480.020 | RAZ 510

1480 Steel hot dip galvanized — SP



Turnbuckles, forged, open type

Steel = S235
Thread tolerance 6H

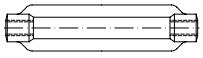
Dimensions → TI-81 Corrosion protection → TI-219

internal thread (R/L) x overall length

SP M 12 / 125	S	1	1240,00 HDG
SP M 16 / 170	S	1	1710,00 HDG
SP M 20 / 200	S	1	2900,00 HDG
SP M 24 / 255	S	1	5100,00 HDG

DIN | 01480.320 | RAZ 510

1480 Steel hot dip galvanized — SP



Turnbuckles, forged, open type

Steel = S235
Thread tolerance 6H

Dimensions → TI-81 Corrosion protection → TI-219

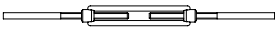
Loadability → TI-dimension pages

Internal thread (R/L) x overall length

SP M 12 / 125	S	1	1674,00 HDG
SP M 16 / 170	S	1	2308,50 HDG
SP M 20 / 200	S	1	3915,00 HDG
SP M 24 / 255	S	1	6885,00 HDG

DIN | 01480.014 | RAZ 510

1480 Steel zinc plated — SP-AE



Turnbuckles, forged, open type, AE = with 2 welding studs acc. to DIN 34828

Steel = S235

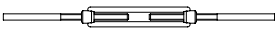
Dimensions → TI-81 Corrosion protection → TI-217

Stainless → S. 486

SP-AE M 6	S	1	640,00 ZP
SP-AE M 8	S	1	710,00 ZP
SP-AE M 10	S	1	910,00 ZP
SP-AE M 12	S	1	1070,00 ZP
SP-AE M 14	S	1	1300,00 ZP
SP-AE M 16	S	1	1840,00 ZP
SP-AE M 20	S	1	3000,00 ZP
SP-AE M 22	S	1	3950,00 ZP
SP-AE M 24	S	1	5700,00 ZP
SP-AE M 27	S	1	7100,00 ZP
SP-AE M 30	S	1	7600,00 ZP
SP-AE M 36	S	1	14600,00 ZP
SP-AE M 42	S	1	23800,00 ZP
SP-AE M 48	S	1	37800,00 ZP

DIN | 01480.311 | RAZ 510

1480 Steel zinc plated — SP-AE



Turnbuckles, forged, open type, AE = with 2 welding studs acc. to DIN 34828

Steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

Stainless → S. 486

Loadability → TI-dimension pages

SP-AE M 6	S	1	864,00 ZP
SP-AE M 8	S	1	958,50 ZP
SP-AE M 10	S	1	1228,50 ZP
SP-AE M 12	S	1	1444,50 ZP
SP-AE M 16	S	1	2484,00 ZP
SP-AE M 20	S	1	4050,00 ZP
SP-AE M 24	S	1	7695,00 ZP
SP-AE M 30	S	1	10260,00 ZP
SP-AE M 36	S	1	19710,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	01480.016		RAZ 510
1480	**Steel zinc plated**		**SP-RR**

Turnbuckles, forged, open type, RR = with 2 eye bolts

Steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

Stainless → S. 486

SP-RR M 6	S	1	790,00 ZP
SP-RR M 8	S	1	870,00 ZP
SP-RR M 10	S	1	1080,00 ZP
SP-RR M 12	S	1	1280,00 ZP
SP-RR M 14	S	1	1480,00 ZP
SP-RR M 16	S	1	2030,00 ZP
SP-RR M 20	S	1	3450,00 ZP
SP-RR M 24	S	1	6800,00 ZP

DIN	01480.015	RAZ 510
1480	**Steel zinc plated**	**SP-RH**

Turnbuckles, forged, open type, RH = with eye bolt and hook bolt

Steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

SP-RH M 6	S	1	790,00 ZP
SP-RH M 8	S	1	870,00 ZP
SP-RH M 10	S	1	1080,00 ZP
SP-RH M 12	S	1	1280,00 ZP
SP-RH M 14	S	1	1480,00 ZP
SP-RH M 16	S	1	2030,00 ZP
SP-RH M 20	S	1	3450,00 ZP
SP-RH M 24	S	1	6800,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	01480.018		RAZ 510
1480	**Steel zinc plated**		**SP-HH**

Turnbuckles, forged, open type, HH = with 2 hook bolts

Steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

SP HH M 6	S	1	790,00 ZP
SP HH M 8	S	1	870,00 ZP
SP HH M 10	S	1	1080,00 ZP
SP HH M 12	S	1	1280,00 ZP
SP HH M 16	S	1	2030,00 ZP
SP HH M 20	S	1	3450,00 ZP

DIN	01480.301	RAZ 510
1480	**Steel zinc plated**	**SP-BS**

Turnbuckles, forged, open type, BS = with 2 flat leaf screws

Steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

SP BS M 12	S	1	1750,00 ZP
SP BS M 16	S	1	5500,00 ZP
SP BS M 20	S	1	9500,00 ZP
SP BS M 24	S	1	13500,00 ZP

DIN	01480.312	RAZ 510
1480	**Steel zinc plated**	**SP-BS**

Turnbuckles, forged, open type, BS = with 2 flat leaf screws

Steel = S235

Dimensions → TI-81 Corrosion protection → TI-217

Loadability → TI-dimension pages

SP BS M 12	S	1	2362,50 ZP
SP BS M 16	S	1	7425,00 ZP
SP BS M 20	S	1	12825,00 ZP
SP BS M 24	S	1	18225,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	01481.000		RAZ 520
1481	**Spring steel**		

Spring type straight pins (clamping sleeves), slotted, heavy duty

Dimensions → TI-119 Standard conversion → TI-10

Stainless → S. 486

DIN 1481 → replaced by ISO 8752

1	x	4	K	200	8,30
1	x	5	K	200	8,60
1	x	6	K	200	8,60
1	x	8	K	200	8,70
1	x	10	K	200	8,80
1	x	12	K	200	8,80
1	x	14	K	200	9,10
1	x	16	K	200	9,40
1	x	18	K	200	9,60
1	x	20	K	200	7,00
1,5	x	4	K	200	7,10
1,5	x	5	S	1000	6,40
1,5	x	5	K	200	7,10
1,5	x	6	K	200	7,20
1,5	x	8	S	1000	6,80
1,5	x	8	K	200	7,50
1,5	x	10	S	1000	6,90
1,5	x	10	K	200	7,50
1,5	x	12	S	1000	6,90
1,5	x	12	K	200	7,60
1,5	x	14	S	1000	7,00
1,5	x	14	K	200	7,70
1,5	x	16	K	200	7,90
1,5	x	18	K	200	8,60
1,5	x	20	K	200	8,80
2	x	4	S	1000	6,40
2	x	4	K	200	7,10
2	x	5	S	1000	6,90
2	x	5	K	200	7,60
2	x	6	S	1000	7,00
2	x	6	K	200	7,70
2	x	8	S	1000	7,20
2	x	8	K	200	7,80
2	x	10	S	1000	7,20
2	x	10	K	200	7,90
2	x	12	S	1000	7,20
2	x	12	K	200	7,90
2	x	14	S	1000	7,30
2	x	14	K	200	8,00
2	x	16	S	1000	7,30
2	x	16	K	200	8,10
2	x	18	S	1000	7,30
2	x	18	K	200	8,10
2	x	20	S	1000	8,10
2	x	20	K	200	8,70
2	x	22	K	200	8,90
2	x	24	S	1000	8,50
2	x	24	K	200	9,20
2	x	26	S	1000	8,90
2	x	26	K	200	9,60
2	x	28	K	200	10,20
2	x	30	S	1000	9,80
2	x	30	K	200	10,60
2,5	x	4	S	1000	7,20
2,5	x	4	K	200	7,90
2,5	x	5	S	1000	7,30

Dimensions	PU	Pieces	€/100/Mat.
2,5 x 5	K	200	8,00
2,5 x 6	S	1000	7,40
2,5 x 6	K	200	8,10
2,5 x 8	S	1000	7,60
2,5 x 8	K	200	8,30
2,5 x 10	S	1000	7,80
2,5 x 10	K	200	8,50
2,5 x 12	S	1000	7,80
2,5 x 12	K	200	8,50
2,5 x 14	S	1000	7,90
2,5 x 14	K	200	8,60
2,5 x 16	S	1000	8,10
2,5 x 16	K	200	8,80
2,5 x 18	S	1000	8,20
2,5 x 18	K	200	8,80
2,5 x 20	S	1000	8,30
2,5 x 20	K	200	8,90
2,5 x 22	K	200	9,10
2,5 x 24	K	200	9,60
2,5 x 26	K	200	10,10
2,5 x 28	K	200	10,60
2,5 x 30	S	1000	10,70
2,5 x 30	K	200	11,30
3 x 4	K	200	6,40
3 x 5	S	1000	5,10
3 x 5	K	200	6,40
3 x 6	S	1000	5,30
3 x 6	K	200	6,70
3 x 8	S	1000	5,30
3 x 8	K	200	6,70
3 x 10	S	1000	5,40
3 x 10	K	200	6,80
3 x 12	S	1000	5,40
3 x 12	K	200	6,80
3 x 14	S	1000	5,50
3 x 14	K	200	6,90
3 x 16	S	1000	5,70
3 x 16	K	200	7,10
3 x 18	S	1000	5,90
3 x 18	K	200	7,20
3 x 20	S	1000	6,10
3 x 20	K	200	7,50
3 x 22	S	1000	4,80
3 x 22	K	200	6,20
3 x 24	S	1000	6,30
3 x 24	K	200	7,70
3 x 26	S	1000	6,40
3 x 26	K	200	7,80
3 x 28	S	1000	6,90
3 x 28	K	200	8,30
3 x 30	S	1000	7,20
3 x 30	K	200	8,60
3 x 32	S	1000	7,50
3 x 32	K	100	10,30
3 x 36	S	1000	8,50
3 x 36	K	100	11,30
3 x 40	S	1000	9,10
3 x 40	K	100	11,80
3 x 50	S	1000	11,70
3 x 50	K	100	14,40
3,5 x 4	K	200	7,50
3,5 x 5	K	200	7,50
3,5 x 6	K	200	7,60
3,5 x 8	K	200	7,80
3,5 x 10	K	200	7,80
3,5 x 12	K	200	8,00
3,5 x 14	K	200	8,30
3,5 x 16	S	1000	7,10
3,5 x 16	K	200	8,30
3,5 x 18	K	200	8,50
3,5 x 20	S	1000	7,50
3,5 x 20	K	200	8,70
3,5 x 22	K	200	8,70
3,5 x 24	K	200	8,80
3,5 x 26	K	200	9,40
3,5 x 28	K	200	10,00
3,5 x 30	K	200	10,40
3,5 x 32	K	100	11,90
3,5 x 36	K	100	12,20
3,5 x 40	K	100	13,30
4 x 4	S	500	6,20
4 x 4	K	200	7,30
4 x 5	K	200	7,50
4 x 6	S	500	6,40
4 x 6	K	200	7,60
4 x 8	S	500	6,50
4 x 8	K	200	7,20
4 x 10	S	500	6,70
4 x 10	K	200	7,70
4 x 12	S	500	6,80
4 x 12	K	200	7,90
4 x 14	S	500	7,00
4 x 14	K	200	8,10
4 x 16	S	500	7,10
4 x 16	K	200	8,30
4 x 18	S	500	7,20
4 x 18	K	200	8,30
4 x 20	S	500	7,30
4 x 20	K	200	8,40
4 x 22	S	500	7,60
4 x 22	K	200	8,70
4 x 24	S	500	7,70
4 x 24	K	200	8,80
4 x 26	S	500	7,80
4 x 26	K	200	8,90
4 x 28	S	500	8,40
4 x 28	K	200	9,50
4 x 30	S	500	8,90
4 x 30	K	200	9,80
4 x 32	S	500	9,30
4 x 32	K	200	10,30
4 x 36	S	500	9,70
4 x 36	K	200	10,80
4 x 40	S	500	10,60
4 x 40	K	200	11,80
4 x 45	S	500	12,40
4 x 45	K	100	13,50
4 x 50	S	500	12,70
4 x 50	K	100	14,60
4 x 55	S	500	18,40
4 x 55	K	100	20,40
4 x 60	S	500	18,30
4 x 60	K	100	20,20
4,5 x 5	K	100	9,60
4,5 x 6	K	100	9,70
4,5 x 8	K	100	9,70
4,5 x 10	K	100	9,70
4,5 x 12	K	100	10,20
4,5 x 14	K	100	10,50
4,5 x 16	K	100	11,00
4,5 x 18	K	100	11,60
4,5 x 20	S	500	10,00
4,5 x 20	K	100	11,90
4,5 x 22	K	100	12,10
4,5 x 24	K	100	12,60
4,5 x 26	K	100	13,00
4,5 x 28	K	100	13,50
4,5 x 30	S	500	11,90
4,5 x 30	K	100	13,80
4,5 x 32	K	100	14,20
4,5 x 36	K	100	15,10
4,5 x 40	S	500	14,00
4,5 x 40	K	100	15,90
4,5 x 45	K	100	17,10
4,5 x 50	K	100	18,10
4,5 x 55	K	100	20,20
4,5 x 60	K	100	21,50
5 x 5	K	100	9,60
5 x 6	S	500	7,80
5 x 6	K	100	9,70
5 x 8	S	500	7,80
5 x 8	K	100	9,70
5 x 10	S	500	7,80
5 x 10	K	100	9,70
5 x 12	S	500	8,30
5 x 12	K	100	10,20
5 x 14	S	500	8,60
5 x 14	K	100	10,50
5 x 16	S	500	9,10
5 x 16	K	100	11,00
5 x 18	S	500	9,60
5 x 18	K	100	11,60
5 x 20	S	500	9,80
5 x 20	K	100	11,80
5 x 22	S	500	10,60
5 x 22	K	100	12,60
5 x 24	S	500	10,60
5 x 24	K	100	12,60
5 x 26	S	500	11,10
5 x 26	K	100	13,00
5 x 28	S	500	11,60
5 x 28	K	100	13,50
5 x 30	S	500	11,90
5 x 30	K	100	13,80
5 x 32	S	500	12,20
5 x 32	K	100	15,20
5 x 36	S	500	13,20
5 x 36	K	100	15,10
5 x 40	S	500	14,00
5 x 40	K	100	15,90
5 x 45	S	500	15,20
5 x 45	K	100	17,10
5 x 50	S	250	16,00
5 x 50	K	100	18,10
5 x 55	K	100	20,20
5 x 60	S	250	19,70
5 x 60	K	100	21,70
5 x 65	K	100	23,30
5 x 70	S	250	23,90
5 x 70	K	100	26,00
5 x 75	K	100	28,50
5 x 80	K	100	31,50
6 x 10	S	500	9,20
6 x 10	K	100	11,10
6 x 12	S	500	9,40
6 x 12	K	100	11,30
6 x 14	S	500	9,60
6 x 14	K	100	11,60
6 x 16	S	500	10,30
6 x 16	K	100	12,20
6 x 18	S	500	10,90
6 x 18	K	100	12,90
6 x 20	S	500	11,80
6 x 20	K	100	13,80
6 x 22	S	500	12,60
6 x 22	K	100	14,50
6 x 24	S	500	13,30
6 x 24	K	100	15,30
6 x 26	S	500	14,30
6 x 26	K	100	16,20
6 x 28	S	500	15,20
6 x 28	K	100	17,10
6 x 30	K	100	17,90
6 x 32	S	500	16,90
6 x 32	K	100	18,90
6 x 36	S	500	17,80
6 x 36	K	100	19,90
6 x 40	S	250	18,90
6 x 40	K	100	20,90
6 x 45	S	250	21,10
6 x 45	K	100	23,20
6 x 50	S	250	22,70
6 x 50	K	100	24,80
6 x 55	S	250	24,60
6 x 55	K	100	27,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
6 x 60	S	250	27,00
6 x 60	K	100	29,50
6 x 65	K	100	31,50
6 x 70	S	250	32,00
6 x 70	K	100	34,50
6 x 75	K	100	36,50
6 x 80	S	250	37,50
6 x 80	K	100	39,50
6 x 85	K	100	44,00
6 x 90	K	50	52,00
6 x 95	K	50	59,00
6 x 100	K	50	60,00
7 x 10	K	100	17,30
7 x 12	K	100	17,30
7 x 14	K	100	17,50
7 x 16	K	100	17,70
7 x 18	K	100	18,70
7 x 20	K	100	19,70
7 x 22	K	100	20,90
7 x 24	K	100	22,30
7 x 26	K	100	24,00
7 x 28	K	100	25,50
7 x 30	K	100	27,00
7 x 32	K	100	28,50
7 x 36	K	100	30,50
7 x 40	K	100	32,50
7 x 45	K	100	35,00
7 x 50	K	100	38,00
7 x 55	K	100	42,50
7 x 60	K	50	49,50
7 x 65	K	50	54,00
7 x 70	K	50	57,00
7 x 75	K	50	65,00
7 x 80	K	50	72,00
7 x 85	K	50	77,00
7 x 90	K	50	79,00
7 x 95	K	50	84,00
7 x 100	K	50	91,00
9 x 10	K	100	63,00
9 x 12	K	100	63,00
9 x 14	K	100	22,70
9 x 16	K	100	24,30
9 x 18	K	100	27,50
9 x 20	K	100	28,50
9 x 22	K	100	30,50
9 x 26	K	100	34,50
9 x 28	K	100	36,50
9 x 30	K	100	38,50
9 x 32	K	100	42,50
9 x 36	K	100	45,50
9 x 40	K	100	48,00
9 x 45	K	100	54,00
9 x 50	K	100	61,00
9 x 55	K	100	65,00
9 x 60	K	50	72,00
9 x 65	K	50	80,00
9 x 70	K	50	87,00
9 x 75	K	50	87,00
9 x 80	K	50	97,00
9 x 90	K	50	110,00
10 x 10	K	100	63,00
10 x 12	K	100	63,00
10 x 14	S	500	22,00
10 x 14	K	100	24,30
10 x 16	S	500	22,00
10 x 16	K	100	24,30
10 x 18	K	100	28,50
10 x 20	S	500	26,00
10 x 20	K	100	28,50
10 x 22	K	100	30,50
10 x 24	S	500	30,50
10 x 24	K	100	32,50
10 x 26	S	500	32,00
10 x 26	K	100	34,50
10 x 28	S	500	34,00
10 x 28	K	100	36,50
10 x 30	S	500	36,50
10 x 30	K	100	38,50
10 x 32	S	500	40,50
10 x 32	K	100	42,50
10 x 36	S	250	43,50
10 x 36	K	100	45,50
10 x 40	S	250	46,50
10 x 40	K	100	48,00
10 x 45	S	250	52,00
10 x 45	K	100	54,00
10 x 50	S	250	57,00
10 x 50	K	100	60,00
10 x 55	S	250	62,00
10 x 55	K	100	63,00
10 x 60	S	200	69,00
10 x 60	K	50	72,00
10 x 65	S	200	77,00
10 x 65	K	50	80,00
10 x 70	S	100	83,00
10 x 70	K	50	87,00
10 x 75	S	100	88,00
10 x 75	K	50	92,00
10 x 80	S	100	93,00
10 x 80	K	50	97,00
10 x 85	S	100	98,00
10 x 85	K	50	102,00
10 x 90	S	100	105,00
10 x 90	K	50	110,00
10 x 95	K	50	116,00
10 x 100	S	100	119,00
10 x 100	K	50	124,00
10 x 110	K	50	480,00
10 x 120	S	50	480,00
10 x 120	K	25	485,00
10 x 140	S	50	615,00
10 x 140	K	25	620,00
10 x 160	S	50	665,00
10 x 160	K	25	670,00
12 x 10	S	25	255,00
12 x 12	S	25	244,00
12 x 14	S	25	238,00
12 x 16	S	25	230,00
12 x 18	S	25	223,00
12 x 20	S	25	119,00
12 x 22	S	25	122,00
12 x 24	S	25	126,00
12 x 26	S	25	128,00
12 x 28	S	25	132,00
12 x 30	S	25	126,00
12 x 32	S	25	148,00
12 x 36	S	25	140,00
12 x 40	S	25	145,00
12 x 45	S	25	149,00
12 x 50	S	25	152,00
12 x 55	S	25	159,00
12 x 60	S	25	165,00
12 x 65	S	25	175,00
12 x 70	S	25	181,00
12 x 75	S	25	189,00
12 x 80	S	25	193,00
12 x 85	S	25	270,00
12 x 90	S	25	340,00
12 x 95	S	25	400,00
12 x 100	S	25	470,00
12 x 120	S	10	590,00
12 x 130	S	10	690,00
12 x 140	S	10	690,00
12 x 160	S	10	790,00
12 x 180	S	10	880,00
13 x 10	S	25	239,00
13 x 12	S	25	232,00
13 x 14	S	25	225,00
13 x 16	S	25	219,00
13 x 18	S	25	213,00
13 x 20	S	25	126,00
13 x 22	S	25	128,00
13 x 24	S	25	132,00
13 x 26	S	25	136,00
13 x 28	S	25	137,00
13 x 30	S	25	143,00
13 x 32	S	25	145,00
13 x 36	S	25	149,00
13 x 40	S	25	152,00
13 x 45	S	25	154,00
13 x 50	S	25	159,00
13 x 55	S	25	165,00
13 x 60	S	25	171,00
13 x 65	S	25	181,00
13 x 70	S	25	189,00
13 x 75	S	25	195,00
13 x 80	S	25	224,00
13 x 85	S	25	295,00
13 x 90	S	25	375,00
13 x 95	S	25	440,00
13 x 100	S	10	510,00
13 x 120	S	10	700,00
13 x 130	S	10	810,00
13 x 140	S	10	810,00
13 x 160	S	10	940,00
13 x 180	S	10	1090,00
14 x 10	S	25	270,00
14 x 12	S	25	260,00
14 x 14	S	25	250,00
14 x 16	S	25	247,00
14 x 18	S	25	241,00
14 x 20	S	25	151,00
14 x 22	S	25	153,00
14 x 24	S	25	157,00
14 x 26	S	25	164,00
14 x 28	S	25	166,00
14 x 30	S	25	169,00
14 x 32	S	25	171,00
14 x 36	S	25	175,00
14 x 40	S	25	177,00
14 x 45	S	25	181,00
14 x 50	S	25	186,00
14 x 55	S	25	190,00
14 x 60	S	25	195,00
14 x 65	S	25	208,00
14 x 70	S	25	214,00
14 x 75	S	25	219,00
14 x 80	S	25	235,00
14 x 85	S	25	380,00
14 x 90	S	25	445,00
14 x 95	S	10	510,00
14 x 100	S	10	590,00
14 x 120	S	10	770,00
14 x 130	S	10	910,00
14 x 140	S	10	910,00
14 x 160	S	10	1030,00
14 x 180	S	10	1160,00
14 x 200	S	10	1210,00
16 x 10	S	25	295,00
16 x 12	S	25	280,00
16 x 14	S	25	275,00
16 x 16	S	25	260,00
16 x 18	S	25	255,00
16 x 20	S	25	173,00
16 x 22	S	25	176,00
16 x 24	S	25	179,00
16 x 26	S	25	183,00
16 x 28	S	25	185,00
16 x 30	S	25	191,00
16 x 32	S	25	194,00
16 x 36	S	25	198,00
16 x 40	S	25	201,00
16 x 45	S	25	203,00
16 x 50	S	25	207,00
16 x 55	S	25	210,00

Dimensions			PU	Pieces	€/100/Mat.
16	x	60	S	25	216,00
16	x	65	S	25	225,00
16	x	70	S	25	249,00
16	x	75	S	25	270,00
16	x	80	S	25	285,00
16	x	85	S	25	420,00
16	x	90	S	25	495,00
16	x	95	S	10	560,00
16	x	100	S	10	620,00
16	x	110	S	10	840,00
16	x	120	S	10	840,00
16	x	130	S	10	970,00
16	x	140	S	10	970,00
16	x	150	S	10	1120,00
16	x	160	S	10	1120,00
16	x	180	S	10	1260,00
16	x	200	S	10	1400,00
18	x	10	S	25	325,00
18	x	12	S	25	320,00
18	x	14	S	25	320,00
18	x	16	S	25	320,00
18	x	18	S	25	320,00
18	x	20	S	25	183,00
18	x	22	S	25	185,00
18	x	24	S	25	189,00
18	x	26	S	25	191,00
18	x	28	S	25	194,00
18	x	30	S	25	198,00
18	x	32	S	25	200,00
18	x	36	S	25	203,00
18	x	40	S	25	206,00
18	x	45	S	25	209,00
18	x	50	S	25	213,00
18	x	55	S	25	226,00
18	x	60	S	25	247,00
18	x	65	S	25	275,00
18	x	70	S	25	295,00
18	x	75	S	25	320,00
18	x	80	S	25	340,00
18	x	85	S	25	470,00
18	x	90	S	10	530,00
18	x	95	S	10	600,00
18	x	100	S	10	670,00
18	x	120	S	10	950,00
18	x	130	S	10	1120,00
18	x	140	S	10	1120,00
18	x	160	S	10	1270,00
18	x	180	S	10	1360,00
18	x	200	S	10	1440,00
20	x	10	S	25	500,00
20	x	12	S	25	485,00
20	x	14	S	25	465,00
20	x	16	S	25	460,00
20	x	18	S	25	440,00
20	x	20	S	25	203,00
20	x	22	S	25	207,00
20	x	24	S	25	216,00
20	x	28	S	25	227,00
20	x	30	S	25	240,00
20	x	32	S	25	244,00
20	x	36	S	25	255,00
20	x	40	S	25	270,00
20	x	45	S	25	295,00
20	x	50	S	25	310,00
20	x	55	S	25	335,00
20	x	60	S	25	350,00
20	x	65	S	25	375,00
20	x	70	S	25	395,00
20	x	75	S	25	420,00
20	x	80	S	25	440,00
20	x	85	S	10	540,00
20	x	90	S	10	610,00
20	x	95	S	10	680,00
20	x	100	S	10	750,00
20	x	120	S	10	1090,00

Dimensions			PU	Pieces	€/100/Mat.
20	x	130	S	10	1270,00
20	x	140	S	10	1270,00
20	x	160	S	10	1450,00
20	x	180	S	10	1890,00
20	x	200	S	10	2330,00
21	x	14	S	25	590,00
21	x	16	S	25	560,00
21	x	18	S	25	530,00
21	x	20	S	25	305,00
21	x	22	S	25	320,00
21	x	24	S	25	335,00
21	x	26	S	25	345,00
21	x	28	S	25	355,00
21	x	30	S	25	375,00
21	x	32	S	25	380,00
21	x	36	S	25	400,00
21	x	40	S	25	425,00
21	x	45	S	25	435,00
21	x	50	S	25	460,00
21	x	55	S	25	480,00
21	x	60	S	25	500,00
21	x	65	S	10	530,00
21	x	70	S	10	550,00
21	x	75	S	10	570,00
21	x	80	S	10	600,00
21	x	85	S	10	650,00
21	x	90	S	10	720,00
21	x	95	S	10	790,00
21	x	100	S	10	800,00
21	x	120	S	10	1120,00
21	x	130	S	10	1270,00
21	x	140	S	10	1270,00
21	x	160	S	10	1410,00
21	x	180	S	10	1890,00
21	x	200	S	10	2280,00
25	x	14	S	10	1480,00
25	x	16	S	10	1430,00
25	x	18	S	10	1350,00
25	x	20	S	10	880,00
25	x	22	S	10	910,00
25	x	24	S	10	860,00
25	x	26	S	10	920,00
25	x	28	S	10	930,00
25	x	30	S	10	960,00
25	x	32	S	10	970,00
25	x	36	S	10	990,00
25	x	40	S	10	1000,00
25	x	45	S	10	1020,00
25	x	50	S	10	1050,00
25	x	55	S	10	1070,00
25	x	60	S	10	1090,00
25	x	65	S	10	1120,00
25	x	70	S	10	1160,00
25	x	75	S	10	1190,00
25	x	80	S	10	1220,00
25	x	85	S	10	1380,00
25	x	90	S	10	1560,00
25	x	95	S	10	1710,00
25	x	100	S	10	1870,00
25	x	120	S	1	2080,00
25	x	130	S	1	2280,00
25	x	140	S	1	2280,00
25	x	160	S	1	2500,00
25	x	180	S	1	3000,00
25	x	200	S	1	3400,00
28	x	14	S	10	1540,00
28	x	16	S	10	1490,00
28	x	18	S	10	1380,00
28	x	20	S	10	970,00
28	x	22	S	10	990,00
28	x	24	S	10	1030,00
28	x	26	S	10	1040,00
28	x	28	S	10	1140,00
28	x	30	S	10	1100,00
28	x	32	S	10	1120,00

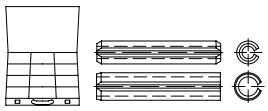
Dimensions			PU	Pieces	€/100/Mat.
28	x	36	S	10	1160,00
28	x	40	S	10	1180,00
28	x	45	S	10	1220,00
28	x	50	S	10	1260,00
28	x	55	S	10	1290,00
28	x	60	S	10	1340,00
28	x	65	S	10	1440,00
28	x	70	S	10	1540,00
28	x	75	S	10	1640,00
28	x	80	S	10	1740,00
28	x	85	S	10	1950,00
28	x	90	S	10	2180,00
28	x	95	S	1	2410,00
28	x	100	S	1	2650,00
28	x	120	S	1	2950,00
28	x	130	S	1	3250,00
28	x	140	S	1	3250,00
28	x	160	S	1	3550,00
28	x	180	S	1	4050,00
28	x	200	S	1	4650,00
30	x	14	S	10	1780,00
30	x	16	S	10	1730,00
30	x	18	S	10	1660,00
30	x	20	S	10	1110,00
30	x	22	S	10	1130,00
30	x	24	S	10	1160,00
30	x	26	S	10	1180,00
30	x	28	S	10	1210,00
30	x	30	S	10	1240,00
30	x	32	S	10	1250,00
30	x	36	S	10	1300,00
30	x	40	S	10	1350,00
30	x	45	S	10	1420,00
30	x	50	S	10	1460,00
30	x	55	S	10	1530,00
30	x	60	S	10	1680,00
30	x	65	S	10	1700,00
30	x	70	S	10	1830,00
30	x	75	S	10	2070,00
30	x	80	S	10	2080,00
30	x	85	S	10	2310,00
30	x	90	S	1	2550,00
30	x	95	S	1	2800,00
30	x	100	S	1	3050,00
30	x	120	S	1	3550,00
30	x	130	S	1	4050,00
30	x	140	S	1	4050,00
30	x	160	S	1	4600,00
30	x	180	S	1	5200,00
30	x	200	S	1	5700,00
35	x	50	S	1	1710,00
35	x	60	S	1	1870,00
35	x	80	S	1	3200,00
35	x	90	S	1	3600,00
35	x	100	S	1	4000,00
40	x	50	S	1	1980,00
40	x	55	S	1	2170,00
40	x	60	S	1	2170,00
40	x	70	S	1	2430,00
40	x	80	S	1	2650,00
40	x	90	S	1	2950,00
40	x	100	S	1	3250,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
Article	82481.000	RAZ 5001

82481

Assortments spring steel **DIN 1481**



Spring type straight pin assortments DIN 1481

Content: 12 frequently used dimensions of 1,5 x 10 – 8 x 80, approx. 710 pieces (metal box)

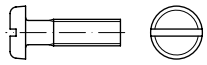
Your own selection on request

DIN 1481	S	1	8800,00

ISO	01580.400	RAZ 30

1580

4.8



Slotted pan head screws

Dimensions → TI-37 Standard conversion → TI-6

Stainless → S. 487
Brass, plastic → S. 585

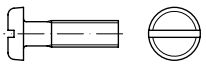
ISO 1580 → replaces DIN 85 (compatible)

M 3	x	5	S 2000	5,10
M 3	x	6	S 2000	2,65
M 3	x	8	S 2000	1,15
M 3	x	10	S 2000	1,55
M 3	x	12	S 2000	1,75
M 3	x	16	S 2000	1,90
M 3	x	25	S 2000	2,75
M 4	x	6	S 2000	4,05
M 4	x	8	S 2000	1,95
M 4	x	10	S 2000	1,95
M 4	x	12	S 2000	2,00
M 4	x	16	S 2000	2,35
M 4	x	20	S 2000	2,70
M 4	x	25	S 1000	3,95
M 4	x	30	S 1000	4,30
M 4	x	35	S 1000	5,20
M 4	x	40	S 1000	5,50
M 5	x	8	S 2000	3,00
M 5	x	10	S 2000	3,05
M 5	x	12	S 1000	3,20
M 5	x	16	S 1000	3,65
M 5	x	20	S 1000	4,00
M 5	x	35	S 500	6,00
M 5	x	40	S 500	7,90
M 5	x	50	S 500	9,80
M 6	x	8	S 1000	10,90
M 6	x	10	S 1000	4,60
M 6	x	12	S 1000	4,75
M 6	x	16	S 1000	5,30
M 6	x	20	S 1000	5,80
M 6	x	25	S 500	6,60
M 6	x	30	S 500	7,30
M 6	x	35	S 500	8,20
M 6	x	50	S 200	13,40

Dimensions	PU Pieces	€/100/Mat.
ISO	01580.410	RAZ 30

1580

4.8 zinc plated



Slotted pan head screws

Dimensions → TI-37 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 487
Brass, plastic → S. 585

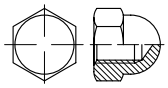
ISO 1580 → replaces DIN 85 (compatible)

M 3	x	4	S 2000	5,95 ZP
M 3	x	4	K 200	8,40 ZP
M 3	x	5	S 2000	5,55 ZP
M 3	x	5	K 200	8,00 ZP
M 3	x	6	S 2000	2,60 ZP
M 3	x	6	K 200	5,30 ZP
M 3	x	8	S 2000	1,25 ZP
M 3	x	8	K 200	3,75 ZP
M 3	x	10	S 2000	1,40 ZP
M 3	x	10	K 200	4,10 ZP
M 3	x	12	S 2000	1,60 ZP
M 3	x	12	K 200	4,35 ZP
M 3	x	16	S 2000	1,75 ZP
M 3	x	16	K 200	4,45 ZP
M 3	x	20	S 2000	2,40 ZP
M 3	x	20	K 200	5,20 ZP
M 3	x	25	S 2000	2,75 ZP
M 3	x	25	K 200	5,50 ZP
M 3	x	30	K 200	6,30 ZP
M 3	x	35	K 200	7,50 ZP
M 3	x	40	K 200	8,10 ZP
M 3	x	45	K 200	11,30 ZP
M 3	x	50	K 200	12,80 ZP
M 3	x	60	K 200	15,90 ZP
M 4	x	5	S 2000	8,60 ZP
M 4	x	5	K 200	11,50 ZP
M 4	x	6	S 2000	4,00 ZP
M 4	x	6	K 200	6,90 ZP
M 4	x	8	S 2000	2,05 ZP
M 4	x	8	K 200	4,50 ZP
M 4	x	10	S 2000	2,15 ZP
M 4	x	10	K 200	4,60 ZP
M 4	x	12	S 2000	2,20 ZP
M 4	x	12	K 200	4,65 ZP
M 4	x	16	S 2000	2,60 ZP
M 4	x	16	K 200	5,10 ZP
M 4	x	20	S 2000	2,85 ZP
M 4	x	20	K 200	5,50 ZP
M 4	x	25	S 1000	3,45 ZP
M 4	x	25	K 200	6,80 ZP
M 4	x	30	S 1000	4,40 ZP
M 4	x	30	K 200	7,20 ZP
M 4	x	35	K 200	8,10 ZP
M 4	x	40	K 200	8,50 ZP
M 4	x	45	K 200	11,20 ZP
M 4	x	50	K 200	11,80 ZP
M 4	x	60	K 200	15,90 ZP
M 5	x	6	S 2000	10,50 ZP
M 5	x	6	K 200	14,60 ZP
M 5	x	8	S 2000	3,20 ZP
M 5	x	8	K 200	5,70 ZP
M 5	x	10	S 2000	3,35 ZP
M 5	x	10	K 200	5,80 ZP
M 5	x	12	S 1000	3,45 ZP
M 5	x	12	K 200	6,00 ZP
M 5	x	16	S 1000	4,00 ZP
M 5	x	16	K 200	6,50 ZP
M 5	x	20	S 1000	4,35 ZP
M 5	x	20	K 200	6,90 ZP
M 5	x	25	S 1000	4,75 ZP
M 5	x	25	K 200	7,20 ZP
M 5	x	30	S 1000	5,65 ZP
M 5	x	30	K 200	8,10 ZP
M 5	x	35	S 2000	6,55 ZP
M 5	x	35	K 200	9,00 ZP
M 5	x	40	S 2000	8,65 ZP
M 5	x	40	K 200	11,10 ZP
M 5	x	45	S 500	9,55 ZP
M 5	x	45	K 200	12,00 ZP
M 5	x	50	K 200	13,30 ZP
M 5	x	60	K 200	18,10 ZP
M 6	x	8	S 1000	11,60 ZP
M 6	x	8	K 200	14,50 ZP
M 6	x	10	S 1000	5,00 ZP
M 6	x	10	K 200	7,50 ZP
M 6	x	12	S 1000	5,20 ZP
M 6	x	12	K 200	7,70 ZP
M 6	x	16	S 1000	5,70 ZP
M 6	x	16	K 200	8,30 ZP
M 6	x	20	S 1000	6,40 ZP
M 6	x	20	K 200	8,80 ZP
M 6	x	25	S 500	7,20 ZP
M 6	x	25	K 200	9,70 ZP
M 6	x	30	S 500	7,90 ZP
M 6	x	30	K 200	10,50 ZP
M 6	x	35	K 200	11,50 ZP
M 6	x	40	K 200	14,30 ZP
M 6	x	45	K 200	15,90 ZP
M 6	x	50	K 200	17,30 ZP
M 6	x	55	K 100	28,00 ZP
M 6	x	60	K 100	21,30 ZP
M 8	x	10	K 100	36,00 ZP
M 8	x	12	K 100	18,50 ZP
M 8	x	16	K 100	19,20 ZP
M 8	x	20	K 100	20,20 ZP
M 8	x	25	K 100	22,40 ZP
M 8	x	30	K 100	21,80 ZP
M 8	x	40	K 100	22,50 ZP
M 8	x	50	K 100	32,50 ZP

DIN	01587.300	RAZ 530

1587

6



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 488
Brass, plastic → S. 585

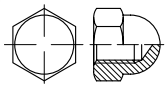
SW = wrench size

M 3		S 1000	14,00
M 3		K 100	18,50
M 4		S 1000	14,00
M 4		K 100	18,50
M 5		S 1000	15,10
M 5		K 100	19,70
M 6		S 1000	20,70
M 6		K 100	25,50
M 8		S 500	34,50
M 8		K 100	40,00
M 10	SW 17	S 500	54,00

Dimensions		PU	Pieces	€/100/Mat.
M 10	SW 17	K	100	61,00
M 12	SW 19	S	200	99,00
M 12	SW 19	K	50	111,00
M 14	SW 22	S	50	160,00
M 16		S	50	170,00
M 18		S	25	275,00
M 20		S	25	285,00
M 22	SW 32	S	10	530,00
M 24		S	10	570,00
M 30		S	10	1910,00

DIN 01587.310 RAZ 530

1587 6 zinc plated



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

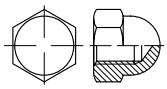
Stainless → S. 488
Brass, plastic → S. 585

SW = wrench size

M 3		S	100	18,70 ZP
M 4		S	1000	14,30 ZP
M 4		K	100	19,00 ZP
M 5		S	1000	15,80 ZP
M 5		K	100	20,30 ZP
M 6		S	1000	21,90 ZP
M 6		K	100	27,00 ZP
M 8		S	500	37,50 ZP
M 8		K	100	43,00 ZP
M 10	SW 17	S	500	60,00 ZP
M 10	SW 17	K	100	67,00 ZP
M 12	SW 19	S	200	107,00 ZP
M 12	SW 19	K	50	119,00 ZP
M 14	SW 22	S	50	171,00 ZP
M 16		S	25	185,00 ZP
M 18		S	1	305,00 ZP
M 20		S	25	315,00 ZP
M 24		S	10	630,00 ZP
M 30		S	10	2020,00 ZP

DIN 01587.330 RAZ 530

1587 6 chrome plated



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 488
Brass, plastic → S. 585

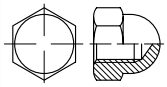
SW = wrench size

M 3		S	100	35,50 Cr
M 4		S	100	34,00 Cr
M 5		S	100	38,50 Cr
M 6		S	100	47,00 Cr

Dimensions		PU	Pieces	€/100/Mat.
M 8		S	50	78,00 Cr
M 10	SW 17	S	50	137,00 Cr
M 12	SW 19	S	25	217,00 Cr
M 16		S	25	345,00 Cr
M 20		S	10	640,00 Cr

DIN 01587.305 RAZ 530

1587 6 fine



Hexagon domed cap nuts, high type, with metric fine pitch thread

From M 12 with groove or appropriate screwing in depth t min.

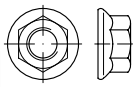
Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

SW = wrench size

M 8	x	1	S	100	46,50
M 10	x	1 SW 17	S	100	71,00
M 12	x	1,5 SW 19	S	50	130,00
M 14	x	1,5 SW 22	S	25	203,00
M 16	x	1,5	S	25	217,00
M 18	x	1,5	S	25	325,00
M 20	x	1,5	S	25	345,00
M 24	x	2	S	10	670,00

EN 01661.810 RAZ 615

1661 8 zinc plated



Hexagon flange nuts

Dimensions → TI-63 Corrosion protection → TI-217
Mech. properties → TI-221

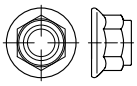
Stainless → S. 488

EN 1661 → replaces DIN 6923

M 4	S	1000	10,30 ZP
M 5	S	1000	11,80 ZP
M 6	S	1000	13,00 ZP
M 8	S	1000	18,70 ZP
M 10	S	500	34,00 ZP
M 12	S	250	46,50 ZP
M 16	S	50	146,00 ZP
M 20	S	50	242,00 ZP

Dimensions		PU	Pieces	€/100/Mat.
EN	01663.810			RAZ 615

1663 8 zinc plated



Prevailing torque type hexagon nuts with flange, with non metallic insert

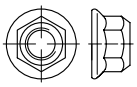
For use under temperature from –50 to +120 °C

Dimensions → TI-68 Corrosion protection → TI-217
Mech. properties → TI-221

M 5	S	100	12,00 ZP
M 6	S	100	14,90 ZP
M 8	S	100	18,30 ZP
M 16	S	100	69,00 ZP

EN 01664.810 RAZ 615

1664 8 zinc plated



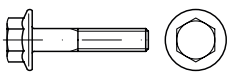
Prevailing torque type hexagon nuts with flange (all- metal nuts)

Dimensions → TI-68 Corrosion protection → TI-217
Mech. properties → TI-221

M 5	S	100	12,00 ZP
M 6	S	100	14,90 ZP
M 8	S	100	18,30 ZP
M 10	S	100	21,10 ZP
M 12	S	100	30,00 ZP
M 16	S	100	69,00 ZP

EN 01665.800 RAZ 615

1665 8.8



Hexagon flange bolts, heavy series

Dimensions → TI-17 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 489

EN 1665 → replaces DIN 6921

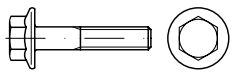
M 6	x	12	S	500	22,90
M 6	x	16	S	500	15,50
M 6	x	20	S	500	14,90
M 6	x	25	S	500	14,90
M 6	x	30	S	500	16,70
M 8	x	12	S	200	47,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	16	S	200	41,50
M 8	x	20	S	200	29,50
M 8	x	25	S	200	30,00
M 8	x	30	S	200	32,50
M 8	x	35	S	200	35,50
M 8	x	40	S	200	38,00
M 8	x	50	S	200	43,50
M 10	x	16	S	200	68,00
M 10	x	20	S	200	41,50
M 10	x	25	S	200	44,00
M 10	x	30	S	200	47,00
M 10	x	35	S	100	52,00
M 10	x	40	S	100	56,00
M 10	x	45	S	100	62,00
M 10	x	50	S	100	66,00
M 10	x	60	S	100	73,00
M 12	x	20	S	100	126,00
M 12	x	25	S	100	117,00
M 12	x	30	S	100	126,00
M 12	x	35	S	100	138,00
M 12	x	40	S	100	143,00
M 12	x	45	S	100	157,00
M 12	x	50	S	100	166,00
M 12	x	60	S	100	187,00
M 12	x	70	S	50	214,00
M 12	x	80	S	50	236,00
M 12	x	90	S	50	270,00
M 12	x	100	S	50	290,00
M 16	x	30	S	50	192,00
M 16	x	35	S	50	205,00
M 16	x	40	S	50	216,00
M 16	x	45	S	50	228,00
M 16	x	50	S	50	240,00
M 16	x	60	S	50	285,00
M 16	x	65	S	25	300,00
M 16	x	70	S	25	300,00

EN	01665.810	RAZ 615

1665 **8.8 zinc plated**



Hexagon flange bolts, heavy series

Dimensions → TI-17 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

Stainless → S. 489

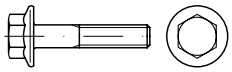
EN 1665 → replaces DIN 6921

M 6	x	12	S	500	24,80 ZP
M 6	x	16	S	500	17,40 ZP
M 6	x	20	S	500	17,40 ZP
M 6	x	25	S	500	18,50 ZP
M 8	x	12	S	200	51,00 ZP
M 8	x	16	S	200	45,50 ZP
M 8	x	20	S	200	33,50 ZP
M 8	x	25	S	200	35,00 ZP
M 8	x	30	S	200	37,50 ZP
M 8	x	35	S	200	40,50 ZP
M 8	x	40	S	200	41,00 ZP
M 8	x	50	S	200	50,00 ZP
M 8	x	60	S	200	57,00 ZP
M 10	x	20	S	200	48,00 ZP
M 10	x	25	S	200	460,00 ZP
M 10	x	30	S	200	61,00 ZP
M 12	x	20	S	100	136,00 ZP
M 12	x	25	S	100	128,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	30	S	100	137,00 ZP
M 12	x	35	S	100	149,00 ZP
M 12	x	40	S	100	155,00 ZP
M 12	x	45	S	100	170,00 ZP
M 12	x	50	S	100	180,00 ZP
M 12	x	60	S	100	202,00 ZP
M 12	x	70	S	50	230,00 ZP
M 12	x	80	S	50	254,00 ZP
M 12	x	90	S	50	290,00 ZP
M 16	x	30	S	50	212,00 ZP
M 16	x	35	S	50	225,00 ZP
M 16	x	40	S	50	238,00 ZP
M 16	x	50	S	50	260,00 ZP
M 16	x	60	S	50	310,00 ZP
M 16	x	70	S	25	350,00 ZP

EN	01665.100	RAZ 615

1665 **10.9**



Hexagon flange bolts, heavy series

Dimensions → TI-17 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 489

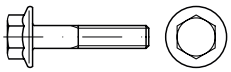
EN 1665 → replaces DIN 6921

M 5	x	10	S	500	23,50
M 5	x	12	S	500	24,20
M 5	x	16	S	500	24,80
M 5	x	20	S	500	25,50
M 6	x	12	S	500	29,50
M 6	x	16	S	500	19,20
M 6	x	20	S	500	19,80
M 6	x	25	S	500	20,50
M 6	x	30	S	500	21,10
M 8	x	10	S	200	46,00
M 8	x	12	S	200	45,00
M 8	x	16	S	200	43,50
M 8	x	20	S	200	36,50
M 8	x	25	S	200	38,00
M 8	x	30	S	200	40,50
M 8	x	35	S	200	44,00
M 8	x	40	S	200	47,00
M 8	x	50	S	200	54,00
M 10	x	16	S	200	76,00
M 10	x	20	S	200	52,00
M 10	x	25	S	200	56,00
M 10	x	30	S	200	60,00
M 10	x	35	S	100	66,00
M 10	x	40	S	100	70,00
M 10	x	50	S	100	83,00
M 10	x	60	S	100	93,00
M 12	x	25	S	100	112,00
M 12	x	30	S	100	116,00
M 12	x	35	S	100	120,00
M 12	x	40	S	100	126,00
M 12	x	45	S	100	156,00
M 12	x	50	S	100	156,00
M 12	x	60	S	100	186,00
M 12	x	70	S	50	240,00
M 12	x	80	S	50	295,00
M 16	x	30	S	50	270,00
M 16	x	35	S	50	285,00
M 16	x	40	S	50	300,00
M 16	x	50	S	50	335,00

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	60	S	50	395,00
M 16	x	70	S	25	14,17

EN	01665.110	RAZ 615

1665 **10.9 zinc plated**



Hexagon flange bolts, heavy series

baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-17 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

Stainless → S. 489

EN 1665 → replaces DIN 6921

M 5	x	10	S	500	30,50 ZP
M 5	x	12	S	500	31,20 ZP
M 5	x	16	S	500	32,80 ZP
M 5	x	20	S	500	33,00 ZP
M 6	x	12	S	500	37,50 ZP
M 6	x	16	S	500	27,20 ZP
M 6	x	20	S	500	27,80 ZP
M 6	x	25	S	500	28,50 ZP
M 6	x	30	S	500	29,10 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

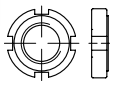
M 8	x	10	S	200	54,00 ZP
M 8	x	16	S	200	54,00 ZP
M 8	x	20	S	200	46,50 ZP
M 8	x	25	S	200	48,00 ZP
M 8	x	30	S	200	50,50 ZP
M 8	x	35	S	200	57,00 ZP
M 8	x	40	S	200	57,00 ZP
M 8	x	50	S	200	64,00 ZP
M 10	x	16	S	200	89,00 ZP
M 10	x	20	S	200	67,00 ZP
M 10	x	25	S	200	72,00 ZP
M 10	x	30	S	200	75,00 ZP
M 10	x	40	S	200	85,00 ZP
M 10	x	50	S	100	99,00 ZP
M 10	x	60	S	100	110,00 ZP
M 12	x	25	S	100	132,00 ZP
M 12	x	30	S	100	136,00 ZP
M 12	x	35	S	100	145,00 ZP
M 12	x	40	S	100	151,00 ZP
M 12	x	45	S	100	186,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	50	S	100	186,00 ZP
M 12	x	60	S	100	216,00 ZP
M 12	x	70	S	50	325,00 ZP
M 12	x	80	S	50	325,00 ZP
M 16	x	35	S	50	320,00 ZP
M 16	x	40	S	50	335,00 ZP
M 16	x	50	S	50	370,00 ZP
M 16	x	60	S	50	435,00 ZP
M 16	x	70	S	25	455,00 ZP

DIN | 01804.(*) | RAZ 530

1804

04 AU/14 H* **type w**



Slotted round nuts, w = untempered, unpolished

*<M 16 = 04 AU = 400; ≥M 16 = 14 H = 000

Dimensions → TI-72

Stainless → S. 489

M 8	x	1	S	10	485,00
M 10	x	1	S	10	520,00
M 12	x	1,5	S	10	540,00
M 14	x	1,5	S	10	600,00
M 16	x	1,5	S	10	620,00
M 18	x	1,5	S	10	650,00
M 20	x	1,5	S	10	680,00
M 22	x	1,5	S	10	730,00
M 24	x	1,5	S	10	780,00
M 26	x	1,5	S	10	920,00
M 28	x	1,5	S	10	1050,00
M 30	x	1,5	S	10	1050,00
M 32	x	1,5	S	1	1220,00
M 35	x	1,5	S	1	1300,00
M 38	x	1,5	S	1	1400,00
M 40	x	1,5	S	1	1560,00
M 42	x	1,5	S	1	1560,00
M 45	x	1,5	S	1	1730,00
M 48	x	1,5	S	1	2110,00
M 50	x	1,5	S	1	2110,00
M 52	x	1,5	S	1	2430,00
M 55	x	1,5	S	1	2430,00
M 58	x	1,5	S	1	3350,00
M 60	x	1,5	S	1	3350,00
M 62	x	1,5	S	1	3800,00
M 65	x	1,5	S	1	3800,00
M 68	x	1,5	S	1	3850,00
M 70	x	1,5	S	1	3900,00
M 72	x	1,5	S	1	4550,00
M 75	x	1,5	S	1	4550,00
M 80	x	2	S	1	5200,00
M 85	x	2	S	1	5900,00
M 90	x	2	S	1	6500,00
M 95	x	2	S	1	6500,00
M 100	x	2	S	1	7700,00
M 110	x	2	S	1	8500,00
M 120	x	2	S	1	9500,00

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	1,5	S	10	540,00
M 16	x	1,5	S	10	620,00
M 18	x	1,5	S	10	650,00
M 20	x	1,5	S	10	680,00
M 22	x	1,5	S	10	730,00
M 24	x	1,5	S	10	780,00
M 26	x	1,5	S	10	920,00
M 28	x	1,5	S	10	1050,00
M 30	x	1,5	S	10	1050,00
M 35	x	1,5	S	1	1300,00
M 40	x	1,5	S	1	1560,00
M 42	x	1,5	S	1	1560,00
M 45	x	1,5	S	1	1730,00
M 48	x	1,5	S	1	2110,00
M 50	x	1,5	S	1	2110,00
M 55	x	1,5	S	1	2430,00
M 60	x	1,5	S	1	3350,00
M 70	x	1,5	S	1	3900,00
M 75	x	1,5	S	1	4550,00
M 80	x	2	S	1	5200,00

ISO | 02009.004 | RAZ 450

2009

Steel **turned bare**

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Stainless → S. 489
Brass, plastic → S. 586

ISO 2009 → replaces DIN 963

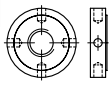
M 1,4	x	3	S	100	13,00 turned
M 1,4	x	5	S	100	13,70 turned
M 1,4	x	6	S	100	14,00 turned
M 1,4	x	8	S	100	14,60 turned
M 1,4	x	10	S	100	16,20 turned
M 1,6	x	3	S	100	11,90 turned
M 1,6	x	4	S	100	12,00 turned
M 1,6	x	5	S	100	12,50 turned
M 1,6	x	6	S	100	13,50 turned
M 1,6	x	8	S	100	14,60 turned
M 1,6	x	10	S	100	16,20 turned
M 1,6	x	12	S	100	17,40 turned
M 1,6	x	16	S	100	19,80 turned

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	4	S	2000	4,85
M 2	x	5	S	2000	3,35
M 2	x	6	S	2000	2,35
M 2	x	8	S	2000	2,05
M 2	x	10	S	2000	2,20
M 2	x	12	S	2000	2,65
M 2	x	16	S	2000	3,80
M 2	x	20	S	2000	4,10
M 2,5	x	4	S	2000	4,45
M 2,5	x	5	S	2000	3,85
M 2,5	x	6	S	2000	2,35
M 2,5	x	8	S	2000	2,35
M 2,5	x	10	S	2000	2,45
M 2,5	x	12	S	2000	2,60
M 2,5	x	16	S	2000	3,00
M 3	x	4	S	2000	5,20
M 3	x	5	S	2000	3,80
M 3	x	6	S	2000	2,25
M 3	x	8	S	2000	1,10
M 3	x	10	S	2000	1,15
M 3	x	12	S	2000	1,15
M 3	x	16	S	2000	1,35
M 3	x	20	S	2000	1,65
M 3	x	25	S	2000	1,95
M 3	x	30	S	2000	2,30
M 3	x	40	S	1000	4,35
M 4	x	5	S	2000	6,30
M 4	x	6	S	2000	3,45
M 4	x	8	S	2000	1,60
M 4	x	10	S	2000	1,55
M 4	x	12	S	2000	1,60
M 4	x	16	S	2000	1,90
M 4	x	18	S	2000	2,85
M 4	x	20	S	2000	2,20
M 4	x	22	S	1000	3,65
M 4	x	25	S	1000	2,55
M 4	x	30	S	1000	3,05
M 4	x	35	S	1000	3,55
M 4	x	40	S	1000	4,10
M 4	x	45	S	1000	6,30
M 4	x	50	S	1000	6,50
M 4	x	60	S	500	9,70
M 5	x	6	S	2000	16,70
M 5	x	8	S	2000	6,50
M 5	x	10	S	2000	2,60
M 5	x	12	S	1000	2,60
M 5	x	16	S	1000	2,95
M 5	x	20	S	1000	3,20
M 5	x	25	S	1000	3,40
M 5	x	30	S	1000	4,50
M 5	x	35	S	500	5,10
M 5	x	40	S	500	5,50
M 5	x	45	S	500	6,40
M 5	x	50	S	500	7,30
M 6	x	10	S	1000	8,30
M 6	x	12	S	1000	3,75
M 6	x	16	S	1000	4,20

DIN | 01816.(*) | RAZ 530

1816

04 AU/14 H* **type w**



Round nuts with set pin holes inside, w = untempered, unpolished

*<M 16 = 04 AU = 400; ≥M 16 = 14 H = 000

Dimensions → TI-73

ISO | 02009.400 | RAZ 450

2009

4.8

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Stainless → S. 489
Brass, plastic → S. 586

ISO 2009 → replaces DIN 963

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	20	S	1000	4,60
M 6	x	25	S	500	5,20
M 6	x	30	S	500	6,00
M 6	x	35	S	500	7,00
M 6	x	40	S	500	7,80
M 6	x	45	S	500	9,10
M 6	x	50	S	200	10,40
M 6	x	55	S	200	11,60
M 6	x	60	S	200	12,40
M 6	x	65	S	200	15,80
M 6	x	70	S	200	15,80
M 6	x	80	S	200	22,00
M 6	x	100	S	200	30,00
M 8	x	10	S	500	37,50
M 8	x	12	S	500	33,00
M 8	x	16	S	500	9,60
M 8	x	18	S	500	15,80
M 8	x	20	S	500	10,60
M 8	x	25	S	500	11,20
M 8	x	30	S	200	12,80
M 8	x	35	S	200	14,40
M 8	x	40	S	200	20,20
M 8	x	45	S	200	21,10
M 8	x	50	S	200	22,00
M 8	x	55	S	200	33,00
M 8	x	60	S	200	29,50
M 8	x	70	S	200	33,50
M 8	x	80	S	100	38,00
M 8	x	100	S	100	54,00
M 10	x	16	S	200	22,90
M 10	x	20	S	200	18,30
M 10	x	25	S	200	19,80
M 10	x	30	S	200	21,10
M 10	x	35	S	200	23,20
M 10	x	40	S	200	24,40
M 10	x	45	S	100	28,50
M 10	x	50	S	100	32,50
M 10	x	55	S	100	36,00
M 10	x	60	S	100	38,50
M 10	x	70	S	100	49,50
M 10	x	80	S	100	59,00
M 10	x	90	S	100	67,00
M 10	x	100	S	100	75,00
M 12	x	20	S	200	217,00
M 12	x	25	S	200	202,00
M 12	x	30	S	200	168,00
M 12	x	35	S	100	177,00
M 12	x	40	S	100	183,00
M 12	x	45	S	100	199,00
M 12	x	50	S	100	217,00
M 12	x	60	S	50	310,00
M 12	x	70	S	50	365,00
M 12	x	80	S	50	405,00
M 12	x	90	S	50	440,00
M 16	x	30	S	50	310,00
M 16	x	35	S	50	325,00
M 16	x	40	S	50	345,00
M 16	x	45	S	50	355,00
M 16	x	50	S	50	375,00
M 16	x	55	S	50	435,00
M 16	x	60	S	50	400,00
M 16	x	70	S	25	435,00
M 16	x	80	S	25	480,00
M 16	x	90	S	25	530,00
M 20	x	35	S	25	1320,00
M 20	x	40	S	25	1370,00
M 20	x	50	S	25	1440,00
M 20	x	60	S	25	1610,00
M 20	x	70	S	25	1700,00
M 20	x	80	S	25	1800,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	02009.410		RAZ 450

2009 **4.8 zinc plated**

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 489
Brass, plastic → S. 586

ISO 2009 → replaces DIN 963

M 2	x	4	S	2000	5,40 ZP
M 2	x	4	K	200	7,80 ZP
M 2	x	5	S	2000	3,60 ZP
M 2	x	5	K	200	6,00 ZP
M 2	x	6	S	2000	2,70 ZP
M 2	x	6	K	200	5,10 ZP
M 2	x	8	S	2000	2,30 ZP
M 2	x	8	K	200	4,70 ZP
M 2	x	10	S	2000	2,40 ZP
M 2	x	10	K	200	4,80 ZP
M 2	x	12	S	2000	2,90 ZP
M 2	x	12	K	200	5,30 ZP
M 2	x	16	S	2000	4,30 ZP
M 2	x	16	K	200	6,70 ZP
M 2	x	20	S	2000	4,60 ZP
M 2	x	20	K	200	7,00 ZP
M 2,5	x	4	S	2000	3,94 ZP
M 2,5	x	4	K	200	7,50 ZP
M 2,5	x	5	S	2000	4,30 ZP
M 2,5	x	5	K	200	6,70 ZP
M 2,5	x	6	S	2000	2,20 ZP
M 2,5	x	6	K	200	4,60 ZP
M 2,5	x	8	S	2000	2,70 ZP
M 2,5	x	8	K	200	5,10 ZP
M 2,5	x	10	S	2000	2,70 ZP
M 2,5	x	10	K	200	5,10 ZP
M 2,5	x	12	S	2000	2,90 ZP
M 2,5	x	12	K	200	5,30 ZP
M 2,5	x	16	S	2000	3,30 ZP
M 2,5	x	16	K	200	5,70 ZP
M 2,5	x	20	S	2000	4,00 ZP
M 2,5	x	20	K	200	6,40 ZP
M 2,5	x	25	K	200	7,20 ZP
M 2,5	x	30	K	200	10,60 ZP
M 3	x	4	S	2000	5,80 ZP
M 3	x	4	K	200	8,20 ZP
M 3	x	5	S	2000	4,20 ZP
M 3	x	5	K	200	6,70 ZP
M 3	x	6	S	1000	14,70 ZP
M 3	x	6	K	200	4,85 ZP
M 3	x	8	S	2000	1,20 ZP
M 3	x	8	K	200	3,65 ZP
M 3	x	10	S	1000	9,70 ZP
M 3	x	10	K	200	3,65 ZP
M 3	x	12	S	2000	1,25 ZP
M 3	x	12	K	200	3,75 ZP
M 3	x	14	S	2000	1,40 ZP
M 3	x	14	K	200	3,80 ZP
M 3	x	16	S	2000	1,50 ZP
M 3	x	16	K	200	3,90 ZP
M 3	x	18	S	2000	2,75 ZP
M 3	x	18	K	200	5,20 ZP
M 3	x	20	S	2000	1,85 ZP
M 3	x	20	K	200	4,25 ZP
M 3	x	25	S	2000	2,20 ZP
M 3	x	25	K	200	4,60 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	30	S	2000	2,55 ZP
M 3	x	30	K	200	2,55 ZP
M 3	x	35	S	2000	4,30 ZP
M 3	x	35	K	200	6,70 ZP
M 3	x	40	K	200	7,20 ZP
M 3	x	45	K	200	10,40 ZP
M 3	x	50	K	200	11,40 ZP
M 3	x	55	S	1000	17,50 ZP
M 3	x	60	K	200	16,90 ZP
M 4	x	5	S	2000	6,90 ZP
M 4	x	5	K	200	9,30 ZP
M 4	x	6	S	2000	3,80 ZP
M 4	x	6	K	200	6,30 ZP
M 4	x	8	S	2000	1,80 ZP
M 4	x	8	K	200	4,20 ZP
M 4	x	10	S	2000	1,75 ZP
M 4	x	10	K	200	4,10 ZP
M 4	x	12	S	2000	1,80 ZP
M 4	x	12	K	200	4,20 ZP
M 4	x	16	S	2000	2,05 ZP
M 4	x	16	K	200	4,45 ZP
M 4	x	18	K	200	5,60 ZP
M 4	x	20	S	2000	2,40 ZP
M 4	x	20	K	200	4,80 ZP
M 4	x	22	S	1000	4,05 ZP
M 4	x	22	K	200	6,50 ZP
M 4	x	25	S	1000	2,80 ZP
M 4	x	25	K	200	5,20 ZP
M 4	x	30	S	1000	3,40 ZP
M 4	x	30	K	200	5,90 ZP
M 4	x	35	S	1000	3,95 ZP
M 4	x	35	K	200	6,40 ZP
M 4	x	40	S	1000	4,50 ZP
M 4	x	40	K	200	7,00 ZP
M 4	x	45	S	1000	6,90 ZP
M 4	x	45	K	200	9,30 ZP
M 4	x	50	S	1000	7,20 ZP
M 4	x	50	K	200	9,60 ZP
M 4	x	55	K	200	14,10 ZP
M 4	x	60	S	500	10,80 ZP
M 4	x	60	K	200	13,20 ZP
M 4	x	65	S	200	21,00 ZP
M 4	x	70	K	100	22,20 ZP
M 4	x	80	K	100	28,00 ZP
M 4	x	90	K	100	46,00 ZP
M 4	x	100	K	100	49,50 ZP
M 5	x	6	S	2000	18,30 ZP
M 5	x	6	K	200	20,70 ZP
M 5	x	8	S	2000	7,20 ZP
M 5	x	8	K	200	9,60 ZP
M 5	x	10	S	2000	2,85 ZP
M 5	x	10	K	200	5,30 ZP
M 5	x	12	S	1000	2,85 ZP
M 5	x	12	K	200	5,30 ZP
M 5	x	14	S	1000	7,00 ZP
M 5	x	16	S	1000	3,20 ZP
M 5	x	16	K	200	5,60 ZP
M 5	x	18	K	200	7,10 ZP
M 5	x	20	K	200	6,00 ZP
M 5	x	22	K	200	8,60 ZP
M 5	x	25	S	1000	3,75 ZP
M 5	x	25	K	200	6,20 ZP
M 5	x	30	S	1000	5,10 ZP
M 5	x	30	K	200	7,50 ZP
M 5	x	35	S	500	5,60 ZP
M 5	x	35	K	200	8,00 ZP
M 5	x	40	S	500	6,00 ZP
M 5	x	40	K	200	8,50 ZP
M 5	x	45	S	500	7,10 ZP
M 5	x	45	K	200	9,50 ZP
M 5	x	50	S	500	8,10 ZP
M 5	x	50	K	200	10,50 ZP
M 5	x	55	K	200	17,30 ZP
M 5	x	60	K	200	17,70 ZP
M 5	x	70	S	200	18,50 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	70	K	100	23,30 ZP
M 5	x	80	S	200	20,70 ZP
M 5	x	80	K	100	25,50 ZP
M 5	x	90	K	100	48,00 ZP
M 5	x	100	K	100	53,00 ZP
M 6	x	8	S	1000	12,10 ZP
M 6	x	8	K	200	14,50 ZP
M 6	x	10	S	1000	36,80 ZP
M 6	x	10	K	200	11,60 ZP
M 6	x	12	S	1000	4,10 ZP
M 6	x	12	K	200	6,50 ZP
M 6	x	14	S	1000	7,10 ZP
M 6	x	16	S	1000	4,65 ZP
M 6	x	16	K	200	7,10 ZP
M 6	x	18	K	200	9,90 ZP
M 6	x	20	S	1000	5,10 ZP
M 6	x	20	K	200	7,50 ZP
M 6	x	22	K	200	11,60 ZP
M 6	x	25	S	500	5,80 ZP
M 6	x	25	K	200	8,20 ZP
M 6	x	30	S	500	6,70 ZP
M 6	x	30	K	200	9,10 ZP
M 6	x	35	S	500	7,70 ZP
M 6	x	35	K	200	10,10 ZP
M 6	x	40	S	500	8,60 ZP
M 6	x	40	K	200	11,00 ZP
M 6	x	45	S	500	10,10 ZP
M 6	x	45	K	200	14,90 ZP
M 6	x	50	K	200	16,20 ZP
M 6	x	55	K	100	17,60 ZP
M 6	x	60	S	200	13,70 ZP
M 6	x	60	K	100	18,50 ZP
M 6	x	70	S	200	17,30 ZP
M 6	x	70	K	100	27,00 ZP
M 6	x	80	S	200	24,40 ZP
M 6	x	80	K	100	34,00 ZP
M 6	x	90	S	200	30,50 ZP
M 6	x	90	K	100	40,00 ZP
M 6	x	100	S	200	33,00 ZP
M 6	x	100	K	100	42,50 ZP
M 8	x	10	K	100	44,00 ZP
M 8	x	12	S	500	36,50 ZP
M 8	x	12	K	100	38,50 ZP
M 8	x	16	S	500	10,70 ZP
M 8	x	16	K	100	13,10 ZP
M 8	x	18	S	500	17,30 ZP
M 8	x	20	S	500	11,70 ZP
M 8	x	20	K	100	14,10 ZP
M 8	x	25	S	500	12,40 ZP
M 8	x	25	K	100	17,30 ZP
M 8	x	30	S	200	14,10 ZP
M 8	x	30	K	100	18,90 ZP
M 8	x	35	S	200	15,90 ZP
M 8	x	35	K	100	20,70 ZP
M 8	x	40	K	100	24,60 ZP
M 8	x	45	K	100	26,00 ZP
M 8	x	50	K	100	27,00 ZP
M 8	x	55	K	100	38,50 ZP
M 8	x	60	K	100	35,00 ZP
M 8	x	70	K	100	39,00 ZP
M 8	x	80	K	100	44,00 ZP
M 8	x	90	K	100	60,00 ZP
M 8	x	100	K	100	62,00 ZP
M 10	x	16	K	100	28,00 ZP
M 10	x	18	K	100	34,00 ZP
M 10	x	20	K	100	22,50 ZP
M 10	x	25	K	100	23,60 ZP
M 10	x	30	K	100	26,00 ZP
M 10	x	35	K	100	28,00 ZP
M 10	x	40	K	100	29,50 ZP
M 10	x	45	K	100	38,00 ZP
M 10	x	50	K	100	34,00 ZP
M 10	x	55	K	100	51,00 ZP
M 10	x	60	K	100	39,50 ZP
M 10	x	70	K	100	52,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	80	K	100	57,00 ZP
M 10	x	90	K	100	76,00 ZP
M 10	x	100	K	100	85,00 ZP
M 12	x	20	K	100	241,00 ZP
M 12	x	25	K	100	225,00 ZP
M 12	x	30	K	100	187,00 ZP
M 12	x	35	K	100	197,00 ZP
M 12	x	40	K	100	205,00 ZP
M 12	x	45	K	100	222,00 ZP
M 12	x	50	K	100	241,00 ZP
M 12	x	55	K	50	325,00 ZP
M 12	x	60	K	50	350,00 ZP
M 12	x	70	K	50	410,00 ZP
M 12	x	80	K	50	450,00 ZP
M 12	x	90	K	50	495,00 ZP
M 12	x	100	K	50	540,00 ZP
M 16	x	30	K	50	345,00 ZP
M 16	x	35	K	50	355,00 ZP
M 16	x	40	K	50	380,00 ZP
M 16	x	45	K	50	390,00 ZP
M 16	x	50	K	50	410,00 ZP
M 16	x	55	K	50	480,00 ZP
M 16	x	60	K	50	445,00 ZP
M 16	x	70	K	25	480,00 ZP
M 16	x	80	K	25	540,00 ZP
M 16	x	90	K	25	590,00 ZP
M 20	x	40	K	25	1490,00 ZP
M 20	x	45	K	25	1520,00 ZP
M 20	x	50	K	25	1580,00 ZP
M 20	x	60	K	25	1740,00 ZP
M 20	x	70	K	25	1800,00 ZP

ISO	02009.460	RAZ 450

2009

4.8
zinc plated yellow

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 489
Brass, plastic → S. 586

ISO 2009 → replaces DIN 963

M 4	x	10	S	2000	2,80 YZP
M 4	x	12	S	2000	3,00 YZP
M 4	x	16	S	2000	3,50 YZP
M 4	x	20	S	2000	4,05 YZP
M 4	x	25	S	1000	4,75 YZP
M 4	x	30	S	1000	5,70 YZP
M 5	x	10	S	2000	4,75 YZP
M 5	x	12	S	1000	4,75 YZP
M 5	x	16	S	1000	5,30 YZP
M 5	x	20	S	1000	5,90 YZP
M 5	x	25	S	1000	6,30 YZP
M 6	x	12	S	1000	6,90 YZP
M 6	x	16	S	1000	7,80 YZP
M 6	x	20	S	1000	8,50 YZP
M 6	x	25	S	500	9,70 YZP
M 6	x	30	S	500	11,00 YZP
M 8	x	16	S	500	18,00 YZP
M 8	x	20	S	500	19,80 YZP
M 8	x	25	S	500	20,70 YZP
M 8	x	30	S	200	23,50 YZP

Dimensions			PU	Pieces	€/100/Mat.
ISO			02010.400		RAZ 450

2010

4.8

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

Stainless → S. 491
Brass → S. 587

ISO 2010 → replaces DIN 964

M 2,5	x	6	S	2000	2,75
M 2,5	x	8	S	2000	2,75
M 4	x	8	S	2000	1,65
M 4	x	10	S	2000	1,60
M 4	x	12	S	2000	1,65
M 4	x	16	S	2000	1,95
M 4	x	20	S	2000	2,30
M 5	x	25	S	1000	3,95
M 5	x	30	S	1000	5,60
M 5	x	35	S	500	5,30

ISO	02010.410	RAZ 450

2010

4.8
zinc plated

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 491
Brass → S. 587

ISO 2010 → replaces DIN 964

M 3	x	5	K	200	7,70 ZP
M 3	x	6	K	200	6,10 ZP
M 3	x	8	S	2000	1,75 ZP
M 3	x	8	K	200	4,10 ZP
M 3	x	10	S	2000	1,40 ZP
M 3	x	10	K	200	3,80 ZP
M 3	x	12	K	200	4,05 ZP
M 3	x	16	K	200	4,50 ZP
M 3	x	20	S	2000	2,55 ZP
M 3	x	20	K	200	4,90 ZP
M 3	x	25	S	2000	3,00 ZP
M 3	x	25	K	200	5,40 ZP
M 3	x	30	K	200	6,00 ZP
M 3	x	35	K	200	7,50 ZP
M 3	x	40	K	200	8,10 ZP
M 4	x	8	S	2000	1,85 ZP
M 4	x	8	K	200	4,30 ZP
M 4	x	10	S	2000	1,80 ZP
M 4	x	10	K	200	4,20 ZP
M 4	x	12	S	2000	1,85 ZP
M 4	x	12	K	200	4,30 ZP
M 4	x	16	S	2000	2,20 ZP
M 4	x	16	K	200	4,60 ZP
M 4	x	20	S	2000	2,60 ZP
M 4	x	20	K	200	5,00 ZP
M 4	x	25	K	200	5,50 ZP
M 4	x	30	K	200	6,10 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 35	K	200	6,70 ZP
M 4 x 40	K	200	8,30 ZP
M 4 x 45	K	200	9,50 ZP
M 4 x 50	K	200	10,10 ZP
M 4 x 60	K	200	12,10 ZP
M 4 x 70	K	100	19,70 ZP
M 4 x 80	K	100	26,00 ZP
M 5 x 8	K	200	8,10 ZP
M 5 x 10	S	2000	3,45 ZP
M 5 x 10	K	200	5,90 ZP
M 5 x 12	K	200	5,50 ZP
M 5 x 16	S	1000	3,40 ZP
M 5 x 16	K	200	5,80 ZP
M 5 x 20	K	200	6,20 ZP
M 5 x 25	K	200	6,70 ZP
M 5 x 30	S	1000	6,10 ZP
M 5 x 30	K	200	8,50 ZP
M 5 x 35	K	200	8,40 ZP
M 5 x 40	S	500	6,50 ZP
M 5 x 40	K	200	8,90 ZP
M 5 x 45	K	200	11,60 ZP
M 5 x 50	K	200	11,20 ZP
M 5 x 60	K	200	18,30 ZP
M 5 x 80	K	100	23,60 ZP
M 6 x 8	K	200	15,90 ZP
M 6 x 10	K	200	11,70 ZP
M 6 x 12	K	200	7,70 ZP
M 6 x 16	S	1000	5,10 ZP
M 6 x 16	K	200	7,50 ZP
M 6 x 20	S	1000	5,50 ZP
M 6 x 20	K	200	7,90 ZP
M 6 x 25	S	500	6,30 ZP
M 6 x 25	K	200	8,70 ZP
M 6 x 30	K	200	9,60 ZP
M 6 x 35	K	200	10,80 ZP
M 6 x 40	K	200	11,70 ZP
M 6 x 45	K	200	15,70 ZP
M 6 x 50	K	200	19,70 ZP
M 6 x 55	K	200	22,30 ZP
M 6 x 60	K	100	22,20 ZP
M 6 x 70	K	100	31,50 ZP
M 6 x 80	K	100	36,00 ZP
M 8 x 16	K	100	17,20 ZP
M 8 x 20	K	100	16,60 ZP
M 8 x 25	K	100	20,60 ZP
M 8 x 30	K	100	22,80 ZP
M 8 x 35	K	100	27,00 ZP
M 8 x 40	K	100	36,50 ZP
M 8 x 45	K	100	34,00 ZP
M 8 x 50	K	100	35,00 ZP
M 8 x 60	K	100	35,50 ZP
M 10 x 20	K	100	31,50 ZP
M 10 x 25	K	100	33,00 ZP
M 10 x 30	K	100	36,00 ZP
M 10 x 35	K	100	39,00 ZP
M 10 x 40	K	100	41,00 ZP
M 10 x 50	K	100	47,00 ZP

E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions	PU	Pieces	€/100/Mat.
DIN	02093.000		RAZ 540

2093

Spring steel

Disc springs

Dimensions ➔ TI-142

Stainless ➔ S. 492

Outside ∅ x inside ∅ x thickness

8	x	3,2	x	0,3	S	200	10,60
8	x	3,2	x	0,4	S	200	10,90
8	x	3,2	x	0,5	S	200	11,20
8	x	4,2	x	0,2	S	200	9,10
8	x	4,2	x	0,3	S	200	10,60
8	x	4,2	x	0,4	S	200	10,90
10	x	3,2	x	0,3	S	200	11,30
10	x	3,2	x	0,4	S	200	11,70
10	x	3,2	x	0,5	S	200	11,80
10	x	4,2	x	0,4	S	200	11,70
10	x	4,2	x	0,5	S	200	11,80
10	x	4,2	x	0,6	S	200	11,80
10	x	5,2	x	0,25	S	200	11,20
10	x	5,2	x	0,4	S	200	11,70
10	x	5,2	x	0,5	S	200	11,80
12	x	4,2	x	0,4	S	200	12,70
12	x	4,2	x	0,5	S	200	12,80
12	x	4,2	x	0,6	S	200	12,90
12	x	5,2	x	0,5	S	200	12,80
12	x	5,2	x	0,6	S	200	12,90
12	x	6,2	x	0,5	S	200	12,80
12	x	6,2	x	0,6	S	200	12,90
12,5	x	6,2	x	0,35	S	200	12,60
12,5	x	6,2	x	0,5	S	200	12,80
12,5	x	6,2	x	0,7	S	200	13,40
14	x	7,2	x	0,35	S	200	13,20
14	x	7,2	x	0,5	S	200	13,30
14	x	7,2	x	0,8	S	200	14,40
15	x	5,2	x	0,4	S	200	13,30
15	x	5,2	x	0,5	S	200	13,70
15	x	5,2	x	0,6	S	200	14,00
15	x	5,2	x	0,7	S	200	14,10
15	x	6,2	x	0,5	S	200	13,70
15	x	6,2	x	0,6	S	200	14,00
15	x	6,2	x	0,7	S	200	14,10
15	x	8,2	x	0,7	S	200	14,10
15	x	8,2	x	0,8	S	200	14,60
16	x	8,2	x	0,4	S	200	13,70
16	x	8,2	x	0,6	S	200	14,20
16	x	8,2	x	0,9	S	200	15,40
18	x	6,2	x	0,4	S	200	14,30
18	x	6,2	x	0,5	S	200	14,50
18	x	6,2	x	0,6	S	200	14,80
18	x	6,2	x	0,7	S	200	14,90
18	x	6,2	x	0,8	S	200	15,40
18	x	8,2	x	0,7	S	200	14,90
18	x	8,2	x	0,8	S	200	15,40
18	x	8,2	x	1,0	S	200	17,00
18	x	9,2	x	0,45	S	200	14,30
18	x	9,2	x	0,7	S	200	14,90
18	x	9,2	x	1,0	S	200	17,00
20	x	8,2	x	0,5	S	200	15,30
20	x	8,2	x	0,6	S	200	15,50
20	x	8,2	x	0,7	S	200	15,90
20	x	8,2	x	0,8	S	200	16,20
20	x	8,2	x	0,9	S	200	16,50
20	x	8,2	x	1,0	S	200	18,20
20	x	10,2	x	0,4	S	200	15,00
20	x	10,2	x	0,5	S	200	15,30

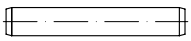
Dimensions	PU	Pieces	€/100/Mat.
20 x 10,2 x 0,8	S	200	16,20
20 x 10,2 x 0,9	S	200	16,50
20 x 10,2 x 1,0	S	200	18,20
20 x 10,2 x 1,1	S	200	19,10
22,5 x 11,2 x 0,6	S	200	16,00
22,5 x 11,2 x 0,8	S	200	17,50
22,5 x 11,2 x 1,25	S	200	42,50
23 x 8,2 x 0,7	S	200	16,50
23 x 8,2 x 0,8	S	200	17,80
23 x 8,2 x 0,9	S	200	18,20
23 x 10,2 x 0,9	S	200	18,20
23 x 10,2 x 1,0	S	200	21,40
23 x 12,2 x 1,0	S	200	21,40
23 x 12,2 x 1,25	S	200	42,50
23 x 12,2 x 1,5	S	200	45,50
25 x 12,2 x 0,7	S	200	18,20
25 x 12,2 x 0,9	S	200	19,80
25 x 12,2 x 1,25	S	200	42,00
25 x 12,2 x 1,5	S	200	48,00
28 x 10,2 x 0,8	S	200	22,60
28 x 10,2 x 1,0	S	200	23,80
28 x 10,2 x 1,25	S	200	49,50
28 x 10,2 x 1,5	S	200	53,00
28 x 12,2 x 1,0	S	200	23,80
28 x 12,2 x 1,25	S	200	49,50
28 x 12,2 x 1,5	S	200	53,00
28 x 14,2 x 0,8	S	200	22,60
28 x 14,2 x 1,0	S	200	23,80
28 x 14,2 x 1,25	S	200	49,50
28 x 14,2 x 1,5	S	200	53,00
31,5 x 16,3 x 0,8	S	100	25,50
31,5 x 16,3 x 1,25	S	100	55,00
31,5 x 16,3 x 1,5	S	100	59,00
31,5 x 16,3 x 1,75	S	100	63,00
31,5 x 16,3 x 2,0	S	100	70,00
31,7 x 20,4 x 0,4	S	100	73,00
34 x 12,3 x 1,0	S	100	28,00
34 x 12,3 x 1,25	S	100	60,00
34 x 12,3 x 1,5	S	100	68,00
34 x 14,3 x 1,25	S	100	60,00
34 x 14,3 x 1,5	S	100	68,00
34 x 16,3 x 1,5	S	100	68,00
34 x 16,3 x 2,0	S	100	75,00
35,5 x 18,3 x 0,9	S	100	30,00
35,5 x 18,3 x 1,25	S	100	59,00
35,5 x 18,3 x 2,0	S	100	81,00
40 x 14,3 x 1,25	S	100	84,00
40 x 14,3 x 1,5	S	100	91,00
40 x 14,3 x 1,75	S	100	95,00
40 x 14,3 x 2,0	S	100	96,00
40 x 16,3 x 1,5	S	100	91,00
40 x 16,3 x 1,75	S	100	95,00
40 x 16,3 x 2,0	S	100	96,00
40 x 18,3 x 2,0	S	100	96,00
40 x 20,4 x 1,0	S	100	43,00
40 x 20,4 x 1,5	S	100	91,00
40 x 20,4 x 2,0	S	100	96,00
40 x 20,4 x 2,25	S	100	107,00
40 x 20,4 x 2,5	S	100	116,00
45 x 22,4 x 1,25	S	200	112,00
45 x 22,4 x 1,75	S	200	125,00
45 x 22,4 x 2,5	S	200	137,00
46,5 x 30,5 x 0,6	S	100	105,00
48 x 16,3 x 1,5	S	100	121,00
50 x 18,4 x 1,25	S	100	119,00
50 x 18,4 x 1,5	S	100	124,00
50 x 18,4 x 2,0	S	100	149,00
50 x 18,4 x 2,5	S	100	173,00
50 x 18,4 x 3,0	S	100	201,00
50 x 20,4 x 2,0	S	100	149,00
50 x 20,4 x 2,5	S	100	173,00
50 x 22,4 x 2,0	S	100	149,00
50 x 22,4 x 2,5	S	100	173,00
50 x 25,4 x 1,25	S	100	119,00
50 x 25,4 x 1,5	S	100	111,00

Dimensions						PU	Pieces	€/100/Mat.
50	x	25,4	x	2,0		S	100	149,00
50	x	25,4	x	2,25		S	100	160,00
50	x	25,4	x	2,5		S	100	173,00
50	x	25,4	x	3,0		S	100	201,00
56	x	28,5	x	1,5		S	100	151,00
56	x	28,5	x	2,0		S	100	175,00
56	x	28,5	x	2,5		S	100	213,00
56	x	28,5	x	3,0		S	100	244,00
60	x	20,5	x	2,0		S	100	199,00
60	x	20,5	x	2,5		S	100	228,00
60	x	20,5	x	3,0		S	100	270,00
60	x	25,5	x	2,5		S	100	228,00
60	x	25,5	x	3,0		S	100	270,00
60	x	30,5	x	2,5		S	100	228,00
60	x	30,5	x	2,75		S	100	248,00
60	x	30,5	x	3,0		S	100	270,00
60	x	30,5	x	3,5		S	100	305,00
63	x	31,0	x	1,8		S	100	224,00
63	x	31,0	x	2,5		S	100	243,00
63	x	31,0	x	3,0		S	100	300,00
63	x	31,0	x	3,5		S	100	325,00
70	x	24,5	x	3,0		S	100	385,00
70	x	24,5	x	3,5		S	100	440,00
70	x	25,5	x	2,0		S	100	305,00
70	x	30,5	x	2,5		S	100	325,00
70	x	30,5	x	3,0		S	100	380,00
70	x	35,5	x	3,0		S	100	380,00
70	x	35,5	x	3,5		S	100	440,00
70	x	35,5	x	4,0		S	100	550,00
70	x	40,5	x	4,0		S	100	550,00
70	x	40,5	x	5,0		S	100	690,00
71	x	36,0	x	2,0		S	100	310,00
71	x	36,0	x	2,5		S	100	345,00
71	x	36,0	x	4,0		S	100	560,00
80	x	30,5	x	2,5		S	100	420,00
80	x	31,0	x	3,0		S	100	465,00
80	x	31,0	x	4,0		S	100	690,00
80	x	36,0	x	3,0		S	100	465,00
80	x	41,0	x	3,0		S	100	465,00
80	x	41,0	x	4,0		S	50	690,00
80	x	41,0	x	5,0		S	50	830,00
90	x	46,0	x	2,5		S	10	550,00
90	x	46,0	x	3,5		S	10	650,00
90	x	46,0	x	5,0		S	10	970,00
100	x	41,0	x	4,0		S	10	970,00
100	x	41,0	x	5,0		S	10	1220,00
100	x	51,0	x	2,7		S	10	700,00
100	x	51,0	x	3,5		S	10	780,00
100	x	51,0	x	4,0		S	10	970,00
100	x	51,0	x	5,0		S	10	1220,00
100	x	51,0	x	6,0		S	1	1570,00
100	x	51,0	x	7,0		S	1	2220,00
112	x	57,0	x	3,0		S	1	1090,00
112	x	57,0	x	4,0		S	1	1250,00
112	x	57,0	x	6,0		S	1	1730,00
125	x	51,0	x	4,0		S	1	1480,00
125	x	51,0	x	5,0		S	1	1710,00
125	x	51,0	x	6,0		S	1	2390,00
125	x	61,0	x	5,0		S	1	1710,00
125	x	61,0	x	6,0		S	1	2390,00
125	x	61,0	x	8,0		S	1	3350,00
125	x	64,0	x	3,5		S	1	1270,00
125	x	64,0	x	5,0		S	1	1710,00
125	x	64,0	x	6,0		S	1	2390,00
125	x	64,0	x	7,0		S	1	3100,00
125	x	64,0	x	8,0		S	1	3350,00
125	x	71,0	x	6,0		S	1	2390,00
125	x	71,0	x	8,0		S	1	3350,00
125	x	71,0	x	10,0		S	1	3850,00
140	x	72,0	x	3,8		S	1	1870,00
140	x	72,0	x	5,0		S	1	2420,00
140	x	72,0	x	8,0		S	1	4200,00
150	x	61,0	x	5,0		S	1	2650,00
150	x	61,0	x	6,0		S	1	3550,00
150	x	61,0	x	7,0		S	1	4250,00
150	x	71,0	x	6,0		S	1	3550,00
150	x	71,0	x	8,0		S	1	4750,00
150	x	81,0	x	8,0		S	1	4750,00
150	x	81,0	x	10,0		S	1	5300,00
160	x	82,0	x	4,3		S	1	3250,00
160	x	82,0	x	6,0		S	1	3900,00
160	x	82,0	x	10,0		S	5	5600,00
160	x	82,0	x	11,0		S	1	5600,00
180	x	92,0	x	4,8		S	1	4450,00
180	x	92,0	x	6,0		S	1	4700,00
180	x	92,0	x	10,0		S	1	7100,00
180	x	92,0	x	13,0		S	1	8600,00
200	x	82,0	x	8,0		S	1	7700,00
200	x	82,0	x	10,0		S	1	8600,00
200	x	82,0	x	12,0		S	1	9700,00
200	x	92,0	x	10,0		S	1	8600,00
200	x	92,0	x	12,0		S	1	9700,00
200	x	92,0	x	14,0		S	1	10500,00
200	x	102	x	5,5		S	1	6300,00
200	x	102	x	8,0		S	1	7700,00
200	x	102	x	10,0		S	1	8600,00
200	x	102	x	12,0		S	1	9700,00
200	x	102	x	14,0		S	1	10500,00
200	x	112	x	12,0		S	1	9700,00
200	x	112	x	14,0		S	1	10500,00
200	x	112	x	16,0		S	1	11400,00
225	x	112	x	6,5		S	1	9600,00
225	x	112	x	8,0		S	1	9900,00
225	x	112	x	12,0		S	1	12500,00
250	x	127	x	10,0		S	1	13800,00
250	x	127	x	14,0		S	1	16600,00

ISO	02338.000	RAZ 3100

2338

Steel **m6**



Parallel pins, tolerance m6 conform to EN 22338

Dimensions ➔ TI-114

Stainless ➔ S. 492

ISO 2338 ➔ replaces DIN 7

∅ - tol. x length (with cone)

					PU	Pieces	
1	m6	x	3		S	200	7,70
1	m6	x	4		S	200	7,70
1	m6	x	5		S	200	7,70
1	m6	x	6		S	200	7,70
1	m6	x	8		S	200	7,70
1,5	m6	x	10		S	200	7,70
1,5	m6	x	12		S	200	7,80
1,5	m6	x	3		S	200	7,70
1,5	m6	x	4		S	200	7,70
1,5	m6	x	5		S	200	7,70
1,5	m6	x	6		S	200	7,70
1,5	m6	x	8		S	200	7,80
1,5	m6	x	10		S	200	7,80
1,5	m6	x	12		S	200	8,00
1,5	m6	x	14		S	200	8,00
1,5	m6	x	16		S	200	8,30
1,5	m6	x	18		S	200	8,40
1,5	m6	x	20		S	200	8,60
2	m6	x	4		S	200	7,50
2	m6	x	5		S	200	7,80
2	m6	x	6		S	200	8,00
2	m6	x	8		S	200	8,00
2	m6	x	10		S	200	8,00
2	m6	x	12		S	200	8,30
2	m6	x	14		S	200	8,30
2	m6	x	16		S	200	8,40
2	m6	x	18		S	200	8,60
2	m6	x	20		S	200	9,10
2	m6	x	24		S	200	9,60
2	m6	x	28		S	100	10,80
2	m6	x	30		S	100	11,00
2,5	m6	x	5		S	200	8,00
2,5	m6	x	6		S	200	8,00
2,5	m6	x	8		S	200	8,30
2,5	m6	x	10		S	200	8,30
2,5	m6	x	12		S	100	8,40
2,5	m6	x	14		S	100	8,60
2,5	m6	x	16		S	100	8,80
2,5	m6	x	18		S	100	9,10
2,5	m6	x	20		S	100	9,30
2,5	m6	x	24		S	100	9,70
2,5	m6	x	28		S	100	10,80
2,5	m6	x	30		S	100	11,10
2,5	m6	x	32		S	100	11,20
3	m6	x	5		S	200	5,50
3	m6	x	6		S	200	5,50
3	m6	x	8		S	200	5,60
3	m6	x	10		S	200	5,90
3	m6	x	12		S	100	6,20
3	m6	x	14		S	100	6,40
3	m6	x	16		S	100	6,50
3	m6	x	18		S	100	8,40
3	m6	x	20		S	100	8,70
3	m6	x	24		S	100	10,00
3	m6	x	28		S	100	10,80
3	m6	x	30		S	100	11,00
3	m6	x	32		S	100	11,20
3	m6	x	36		S	100	15,20
3	m6	x	40		S	100	16,60
3	m6	x	45		S	100	21,40
3	m6	x	50		S	100	22,50
4	m6	x	5		S	100	8,90
4	m6	x	6		S	100	8,90
4	m6	x	8		S	100	9,30
4	m6	x	10		S	100	9,60
4	m6	x	12		S	100	10,00
4	m6	x	14		S	100	10,50
4	m6	x	16		S	100	11,00
4	m6	x	18		S	100	11,40
4	m6	x	20		S	100	12,10
4	m6	x	24		S	100	13,00
4	m6	x	26		S	100	13,30
4	m6	x	28		S	100	13,50
4	m6	x	30		S	100	14,00
4	m6	x	32		S	100	14,40
4	m6	x	36		S	100	15,20
4	m6	x	40		S	100	16,80
4	m6	x	45		S	100	21,40
4	m6	x	50		S	100	22,50
5	m6	x	5		S	100	9,60
5	m6	x	6		S	100	9,60
5	m6	x	8		S	100	10,00
5	m6	x	10		S	100	11,10
5	m6	x	12		S	200	11,60
5	m6	x	14		S	100	12,40
5	m6	x	16		S	100	12,70
5	m6	x	18		S	100	13,20
5	m6	x	20		S	100	14,10
5	m6	x	22		S	100	14,50
5	m6	x	24		S	100	14,80
5	m6	x	28		S	100	15,80
5	m6	x	30		S	100	17,00
5	m6	x	32		S	100	17,50
5	m6	x	36		S	100	17,80
5	m6	x	40		S	100	20,00
5	m6	x	45		S	100	21,40
5	m6	x	50		S	100	22,50
5	m6	x	55		S	100	30,00
5	m6	x	60		S	100	33,50

Dimensions	PU	Pieces	€/100/Mat.
6 m6 x 6	S	100	11,60
6 m6 x 8	S	100	12,10
6 m6 x 10	S	100	12,90
6 m6 x 12	S	100	14,00
6 m6 x 14	S	100	14,80
6 m6 x 16	S	100	15,50
6 m6 x 18	S	100	16,30
6 m6 x 20	S	100	16,80
6 m6 x 22	S	100	17,20
6 m6 x 24	S	100	18,50
6 m6 x 26	S	100	18,80
6 m6 x 28	S	100	19,00
6 m6 x 30	S	100	20,00
6 m6 x 32	S	100	20,90
6 m6 x 40	S	100	24,10
6 m6 x 45	S	100	26,50
6 m6 x 50	S	100	28,00
6 m6 x 55	S	100	30,00
6 m6 x 60	S	100	33,50
6 m6 x 70	S	50	63,00
6 m6 x 80	S	50	73,00
6 m6 x 90	S	50	126,00
6 m6 x 100	S	50	146,00
8 m6 x 8	S	100	17,60
8 m6 x 10	S	100	18,50
8 m6 x 12	S	100	18,90
8 m6 x 14	S	100	20,60
8 m6 x 16	S	100	21,90
8 m6 x 18	S	100	24,10
8 m6 x 20	S	100	25,00
8 m6 x 22	S	100	34,26
8 m6 x 24	S	100	26,50
8 m6 x 26	S	50	32,00
8 m6 x 28	S	50	33,50
8 m6 x 30	S	50	36,00
8 m6 x 32	S	50	37,50
8 m6 x 36	S	50	38,50
8 m6 x 40	S	50	42,50
8 m6 x 45	S	50	46,00
8 m6 x 50	S	50	48,00
8 m6 x 55	S	50	52,00
8 m6 x 60	S	50	56,00
8 m6 x 70	S	50	63,00
8 m6 x 80	S	50	73,00
8 m6 x 90	S	50	126,00
8 m6 x 100	S	50	161,00
10 m6 x 10	S	50	30,00
10 m6 x 12	S	1500	31,00
10 m6 x 14	S	50	32,50
10 m6 x 16	S	50	35,00
10 m6 x 18	S	50	36,50
10 m6 x 20	S	50	38,50
10 m6 x 24	S	50	42,50
10 m6 x 28	S	50	46,50
10 m6 x 30	S	50	48,50
10 m6 x 32	S	50	51,00
10 m6 x 36	S	50	55,00
10 m6 x 40	S	50	61,00
10 m6 x 45	S	50	64,00
10 m6 x 50	S	50	70,00
10 m6 x 55	S	50	75,00
10 m6 x 60	S	50	80,00
10 m6 x 65	S	50	93,00
10 m6 x 70	S	50	93,00
10 m6 x 80	S	50	108,00
10 m6 x 90	S	50	126,00
10 m6 x 100	S	50	146,00
10 m6 x 120	S	50	184,00
12 m6 x 12	S	50	48,00
12 m6 x 14	S	50	48,00
12 m6 x 16	S	50	49,50
12 m6 x 18	S	50	51,00
12 m6 x 20	S	50	54,00
12 m6 x 24	S	50	57,00
12 m6 x 28	S	50	67,00

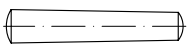
Dimensions	PU	Pieces	€/100/Mat.
12 m6 x 30	S	50	71,00
12 m6 x 32	S	50	77,00
12 m6 x 36	S	50	85,00
12 m6 x 40	S	50	91,00
12 m6 x 45	S	25	105,00
12 m6 x 50	S	25	113,00
12 m6 x 55	S	25	121,00
12 m6 x 60	S	25	127,00
12 m6 x 70	S	25	138,00
12 m6 x 80	S	25	151,00
12 m6 x 90	S	25	165,00
12 m6 x 100	S	25	185,00
12 m6 x 120	S	25	210,00
13 m6 x 14	S	50	75,00
13 m6 x 16	S	50	75,00
13 m6 x 18	S	50	75,00
13 m6 x 20	S	50	75,00
13 m6 x 24	S	50	87,00
13 m6 x 28	S	50	95,00
13 m6 x 30	S	50	103,00
13 m6 x 32	S	50	110,00
13 m6 x 36	S	50	116,00
13 m6 x 40	S	50	128,00
13 m6 x 45	S	25	144,00
13 m6 x 50	S	25	159,00
13 m6 x 55	S	25	166,00
13 m6 x 60	S	25	181,00
13 m6 x 70	S	25	201,00
13 m6 x 80	S	25	234,00
13 m6 x 90	S	25	260,00
13 m6 x 100	S	25	275,00
13 m6 x 120	S	25	295,00
14 m6 x 20	S	25	81,00
14 m6 x 24	S	25	95,00
14 m6 x 28	S	25	100,00
14 m6 x 30	S	25	110,00
14 m6 x 32	S	25	118,00
14 m6 x 36	S	25	125,00
14 m6 x 40	S	25	136,00
14 m6 x 45	S	25	144,00
14 m6 x 50	S	25	165,00
14 m6 x 55	S	25	169,00
14 m6 x 60	S	25	181,00
14 m6 x 70	S	25	210,00
14 m6 x 80	S	25	234,00
14 m6 x 90	S	25	260,00
14 m6 x 100	S	25	275,00
14 m6 x 120	S	25	295,00
16 m6 x 20	S	25	111,00
16 m6 x 24	S	25	126,00
16 m6 x 28	S	25	136,00
16 m6 x 30	S	25	145,00
16 m6 x 32	S	25	154,00
16 m6 x 36	S	25	166,00
16 m6 x 40	S	25	179,00
16 m6 x 45	S	25	197,00
16 m6 x 50	S	25	207,00
16 m6 x 55	S	25	219,00
16 m6 x 60	S	25	242,00
16 m6 x 70	S	25	275,00
16 m6 x 80	S	25	310,00
16 m6 x 90	S	10	340,00
16 m6 x 100	S	10	375,00
16 m6 x 120	S	10	440,00
20 m6 x 24	S	10	224,00
20 m6 x 28	S	10	226,00
20 m6 x 30	S	10	246,00
20 m6 x 32	S	10	255,00
20 m6 x 36	S	10	275,00
20 m6 x 40	S	10	295,00
20 m6 x 45	S	10	315,00
20 m6 x 50	S	10	340,00
20 m6 x 55	S	10	355,00
20 m6 x 60	S	10	385,00
20 m6 x 70	S	10	420,00

Dimensions	PU	Pieces	€/100/Mat.
20 m6 x 80	S	10	445,00
20 m6 x 90	S	10	510,00
20 m6 x 100	S	10	560,00
20 m6 x 120	S	10	650,00
25 m6 x 40	S	1	880,00
25 m6 x 45	S	1	880,00
25 m6 x 50	S	1	950,00
25 m6 x 55	S	1	1160,00
25 m6 x 60	S	1	1160,00
25 m6 x 70	S	1	1300,00
25 m6 x 80	S	1	1480,00
25 m6 x 90	S	1	1590,00
25 m6 x 100	S	1	1730,00
25 m6 x 120	S	1	2010,00
30 m6 x 40	S	1	1590,00
30 m6 x 45	S	1	1780,00
30 m6 x 50	S	1	1780,00
30 m6 x 55	S	1	2010,00
30 m6 x 60	S	1	2010,00
30 m6 x 70	S	1	2160,00
30 m6 x 80	S	1	2310,00
30 m6 x 90	S	1	2600,00
30 m6 x 100	S	1	2950,00
30 m6 x 120	S	1	3500,00

ISO	02339.002	RAZ 3100

2339

Steel **type B**



Taper pins, taper 1:50,B = turned

Confirm to EN 22339

Dimensions ➔ TI-115

Stainless ➔ S. 494

ISO 2339 ➔ replaces DIN 1

∅ x length (with cone)

B 1	x	12	S	200	10,00
B 1	x	14	S	200	10,20
B 1	x	16	S	200	10,80
B 1	x	18	S	200	11,00
B 1,5	x	10	S	200	9,40
B 1,5	x	12	S	200	10,00
B 1,5	x	14	S	200	10,20
B 1,5	x	16	S	200	10,80
B 1,5	x	18	S	200	11,00
B 1,5	x	20	S	200	11,30
B 1,5	x	22	S	100	12,80
B 1,5	x	24	S	100	13,00
B 1,5	x	26	S	100	13,70
B 1,5	x	28	S	100	14,30
B 1,5	x	30	S	100	14,60
B 2	x	10	S	100	10,20
B 2	x	12	S	100	10,80
B 2	x	14	S	100	11,00
B 2	x	16	S	100	11,40
B 2	x	18	S	100	11,80
B 2	x	20	S	100	12,10
B 2	x	22	S	100	12,80
B 2	x	24	S	100	13,00
B 2	x	26	S	100	13,50
B 2	x	28	S	100	14,30
B 2	x	30	S	100	14,60
B 2	x	32	S	100	15,20
B 2	x	36	S	100	16,10
B 2	x	40	S	100	17,00
B 2	x	45	S	100	18,40
B 2	x	50	S	100	19,80

Dimensions			PU	Pieces	€/100/Mat.
B 2,5	x	10	S	100	11,60
B 2,5	x	12	S	100	11,70
B 2,5	x	14	S	100	12,50
B 2,5	x	16	S	100	12,70
B 2,5	x	18	S	100	13,60
B 2,5	x	20	S	100	14,00
B 2,5	x	22	S	100	14,20
B 2,5	x	24	S	100	14,40
B 2,5	x	26	S	100	15,70
B 2,5	x	28	S	100	16,30
B 2,5	x	30	S	100	16,80
B 2,5	x	32	S	100	18,10
B 2,5	x	36	S	100	19,20
B 2,5	x	40	S	100	20,60
B 2,5	x	45	S	100	21,20
B 2,5	x	50	S	100	21,90
B 2,5	x	55	S	100	30,50
B 2,5	x	60	S	100	31,50
B 3	x	10	S	100	11,70
B 3	x	12	S	100	12,00
B 3	x	14	S	100	12,70
B 3	x	16	S	100	13,30
B 3	x	18	S	100	14,00
B 3	x	20	S	100	14,40
B 3	x	22	S	100	15,30
B 3	x	24	S	100	15,70
B 3	x	26	S	100	17,10
B 3	x	28	S	100	17,70
B 3	x	30	S	100	18,30
B 3	x	32	S	100	19,20
B 3	x	36	S	100	20,10
B 3	x	40	S	100	21,20
B 3	x	45	S	100	23,60
B 3	x	50	S	100	26,00
B 3	x	55	S	100	31,50
B 3	x	60	S	100	32,50
B 4	x	10	S	100	13,30
B 4	x	12	S	100	13,80
B 4	x	14	S	100	14,40
B 4	x	16	S	100	15,40
B 4	x	18	S	100	16,00
B 4	x	20	S	100	16,60
B 4	x	22	S	100	17,90
B 4	x	24	S	100	19,10
B 4	x	26	S	100	19,50
B 4	x	28	S	100	20,30
B 4	x	30	S	100	21,50
B 4	x	32	S	100	22,60
B 4	x	36	S	100	24,20
B 4	x	40	S	100	26,00
B 4	x	45	S	100	29,50
B 4	x	50	S	100	32,00
B 4	x	55	S	100	35,50
B 4	x	60	S	100	38,00
B 4	x	70	S	100	46,00
B 4	x	80	S	100	48,00
B 4	x	90	S	100	59,00
B 4	x	100	S	100	65,00
B 5	x	14	S	100	15,10
B 5	x	16	S	100	16,00
B 5	x	18	S	100	17,00
B 5	x	20	S	100	18,10
B 5	x	22	S	100	19,20
B 5	x	24	S	100	20,30
B 5	x	26	S	100	21,70
B 5	x	28	S	100	22,60
B 5	x	30	S	100	24,20
B 5	x	32	S	100	26,00
B 5	x	36	S	100	28,00
B 5	x	40	S	100	31,00
B 5	x	45	S	100	33,50
B 5	x	50	S	100	36,50
B 5	x	55	S	100	40,00
B 5	x	60	S	100	45,50
B 5	x	65	S	50	51,00
B 5	x	70	S	50	54,00
B 5	x	80	S	50	59,00
B 5	x	90	S	50	64,00
B 5	x	100	S	50	71,00
B 6	x	20	S	100	21,50
B 6	x	22	S	100	22,80
B 6	x	24	S	100	25,50
B 6	x	26	S	100	27,00
B 6	x	28	S	100	29,50
B 6	x	30	S	100	31,50
B 6	x	32	S	100	33,50
B 6	x	36	S	100	35,50
B 6	x	40	S	100	38,00
B 6	x	45	S	100	40,50
B 6	x	50	S	100	44,00
B 6	x	55	S	50	51,00
B 6	x	60	S	50	56,00
B 6	x	70	S	50	64,00
B 6	x	80	S	50	71,00
B 6	x	90	S	50	80,00
B 6	x	100	S	50	92,00
B 6	x	110	S	50	158,00
B 6	x	120	S	50	171,00
B 6	x	130	S	50	224,00
B 6,5	x	20	S	100	30,50
B 6,5	x	22	S	100	34,00
B 6,5	x	24	S	100	36,00
B 6,5	x	26	S	100	39,00
B 6,5	x	28	S	100	41,50
B 6,5	x	30	S	100	43,50
B 6,5	x	32	S	100	46,50
B 6,5	x	36	S	100	48,50
B 6,5	x	40	S	100	52,00
B 6,5	x	45	S	100	57,00
B 6,5	x	50	S	100	63,00
B 6,5	x	55	S	50	72,00
B 6,5	x	60	S	50	79,00
B 6,5	x	70	S	50	89,00
B 6,5	x	80	S	50	101,00
B 6,5	x	90	S	50	112,00
B 6,5	x	100	S	50	134,00
B 6,5	x	110	S	50	177,00
B 6,5	x	120	S	50	193,00
B 6,5	x	130	S	50	255,00
B 7	x	24	S	50	52,00
B 7	x	26	S	50	59,00
B 7	x	28	S	50	64,00
B 7	x	30	S	50	67,00
B 7	x	32	S	50	70,00
B 7	x	36	S	50	76,00
B 7	x	40	S	50	81,00
B 7	x	45	S	50	87,00
B 7	x	50	S	50	99,00
B 7	x	55	S	50	110,00
B 7	x	60	S	50	121,00
B 7	x	70	S	50	142,00
B 7	x	80	S	50	156,00
B 7	x	90	S	50	190,00
B 7	x	100	S	50	225,00
B 7	x	110	S	50	250,00
B 7	x	120	S	50	275,00
B 7	x	130	S	50	305,00
B 7	x	140	S	50	350,00
B 7	x	150	S	50	405,00
B 8	x	24	S	50	39,00
B 8	x	26	S	50	42,00
B 8	x	28	S	50	44,00
B 8	x	30	S	50	47,00
B 8	x	32	S	50	50,00
B 8	x	36	S	50	53,00
B 8	x	40	S	50	55,00
B 8	x	45	S	50	56,00
B 8	x	50	S	50	69,00
B 8	x	55	S	50	78,00
B 8	x	60	S	50	85,00
B 8	x	70	S	50	97,00
B 8	x	80	S	50	107,00
B 8	x	90	S	50	129,00
B 8	x	100	S	50	152,00
B 8	x	110	S	50	169,00
B 8	x	120	S	50	185,00
B 8	x	130	S	50	240,00
B 8	x	140	S	50	260,00
B 8	x	150	S	50	315,00
B 10	x	28	S	50	69,00
B 10	x	30	S	50	75,00
B 10	x	32	S	50	78,00
B 10	x	36	S	50	79,00
B 10	x	40	S	50	91,00
B 10	x	45	S	50	97,00
B 10	x	50	S	50	101,00
B 10	x	55	S	25	124,00
B 10	x	60	S	25	135,00
B 10	x	65	S	25	158,00
B 10	x	70	S	25	156,00
B 10	x	80	S	25	173,00
B 10	x	90	S	25	184,00
B 10	x	100	S	25	210,00
B 10	x	110	S	25	227,00
B 10	x	120	S	25	240,00
B 10	x	130	S	25	285,00
B 10	x	140	S	25	285,00
B 10	x	150	S	25	315,00
B 12	x	30	S	25	100,00
B 12	x	32	S	25	100,00
B 12	x	36	S	25	100,00
B 12	x	40	S	25	117,00
B 12	x	45	S	25	132,00
B 12	x	50	S	25	136,00
B 12	x	55	S	25	150,00
B 12	x	60	S	25	162,00
B 12	x	70	S	25	190,00
B 12	x	80	S	25	210,00
B 12	x	90	S	25	226,00
B 12	x	100	S	25	265,00
B 12	x	110	S	10	315,00
B 12	x	120	S	10	375,00
B 12	x	130	S	10	445,00
B 12	x	140	S	10	445,00
B 12	x	150	S	10	500,00
B 13	x	30	S	25	138,00
B 13	x	32	S	25	138,00
B 13	x	36	S	25	138,00
B 13	x	40	S	25	153,00
B 13	x	45	S	25	170,00
B 13	x	50	S	25	182,00
B 13	x	55	S	25	197,00
B 13	x	60	S	25	209,00
B 13	x	70	S	25	260,00
B 13	x	80	S	25	285,00
B 13	x	90	S	25	320,00
B 13	x	100	S	25	355,00
B 13	x	110	S	10	415,00
B 13	x	120	S	10	440,00
B 13	x	130	S	10	540,00
B 13	x	140	S	10	570,00
B 13	x	150	S	10	570,00
B 14	x	40	S	25	168,00
B 14	x	45	S	25	189,00
B 14	x	50	S	25	202,00
B 14	x	55	S	25	217,00
B 14	x	60	S	25	233,00
B 14	x	70	S	25	270,00
B 14	x	80	S	25	305,00
B 14	x	90	S	25	345,00
B 14	x	100	S	25	405,00
B 14	x	110	S	10	465,00
B 14	x	120	S	10	510,00
B 14	x	130	S	10	600,00
B 14	x	140	S	10	630,00

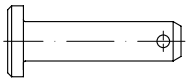
€/100 = price in € plus VAT when ordering full package unit

Dimensions					PU	Pieces	€/100/Mat.
B 14	x	150			S	10	730,00
B 16	x	40			S	10	236,00
B 16	x	45			S	10	260,00
B 16	x	50			S	10	275,00
B 16	x	55			S	10	295,00
B 16	x	60			S	10	310,00
B 16	x	70			S	10	360,00
B 16	x	80			S	10	395,00
B 16	x	90			S	10	435,00
B 16	x	100			S	10	495,00
B 16	x	110			S	10	540,00
B 16	x	120			S	10	590,00
B 16	x	130			S	10	690,00
B 16	x	140			S	10	730,00
B 16	x	150			S	1	870,00
B 16	x	165			S	1	1300,00
B 16	x	180			S	1	1300,00
B 20	x	50			S	10	770,00
B 20	x	55			S	10	850,00
B 20	x	60			S	10	870,00
B 20	x	70			S	10	950,00
B 20	x	80			S	10	1000,00
B 20	x	90			S	10	1030,00
B 20	x	100			S	10	1210,00
B 20	x	110			S	1	1300,00
B 20	x	120			S	1	1380,00
B 20	x	130			S	1	1570,00
B 20	x	140			S	1	1690,00
B 20	x	150			S	1	1900,00
B 20	x	165			S	1	2100,00

ISO	02341.012	RAZ 490

2341

Steel zinc plated — **type B**



Clevis pins with head, B = with pin hole, pin ∅ with tolerance h11

Conform to EN 22341

Dimensions → TI-120 Standard conversion → TI-10
Corrosion protection → TI-217

ISO 2341 → replaces DIN 1444 (compatible)

pin ∅ x overall length x length to middle of pin hole

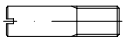
B 8	x	20	x	16,5	S	100	1090,00 ZP
B 8	x	30	x	24	S	100	1100,00 ZP
B 8	x	25	x	21,5	S	100	1100,00 ZP
B 8	x	30	x	26,5	S	100	1110,00 ZP
B 8	x	35	x	31,5	S	100	1120,00 ZP
B 8	x	50	x	45,5	S	100	1140,00 ZP
B 10	x	25	x	20,5	S	10	1580,00 ZP
B 10	x	30	x	25,5	S	10	1590,00 ZP
B 10	x	35	x	30,5	S	10	1610,00 ZP
B 10	x	40	x	33	S	10	1620,00 ZP
B 10	x	45	x	40,5	S	10	1650,00 ZP
B 10	x	50	x	45,5	S	10	1670,00 ZP
B 10	x	60	x	56	S	10	1680,00 ZP
B 10	x	70	x	65,5	S	10	1700,00 ZP
B 12	x	30	x	24,5	S	10	1580,00 ZP
B 12	x	35	x	29,5	S	10	1590,00 ZP
B 12	x	40	x	36	S	10	1610,00 ZP
B 12	x	45	x	39,5	S	10	1620,00 ZP
B 12	x	50	x	44,5	S	10	1650,00 ZP
B 12	x	60	x	54,5	S	10	1680,00 ZP
B 16	x	40	x	34	S	1	1730,00 ZP
B 16	x	45	x	39	S	1	1760,00 ZP
B 16	x	50	x	44	S	1	1780,00 ZP

Dimensions					PU	Pieces	€/100/Mat.
B 16	x	55	x	49	S	1	1810,00 ZP
B 16	x	60	x	54	S	1	1840,00 ZP
B 16	x	65	x	59	S	1	1860,00 ZP
B 18	x	65	x	58	S	1	1890,00 ZP
B 20	x	40	x	32	S	1	1850,00 ZP
B 20	x	50	x	42	S	1	1900,00 ZP
B 20	x	55	x	47	S	1	1950,00 ZP
B 20	x	60	x	52	S	1	2020,00 ZP
B 20	x	65	x	57	S	1	2070,00 ZP

ISO	02342.000	RAZ 140

2342

14 H



Slotted headless screws with chamfered end

Dimensions → TI-19
Stainless → S. 495
ISO 2342 → replaces DIN 427 (compatible)

M 3	x	6	S	100	5,70
M 3	x	8	S	100	5,90
M 3	x	10	S	100	5,90
M 3	x	12	S	100	7,80
M 4	x	8	S	100	6,10
M 4	x	10	S	100	6,20
M 4	x	12	S	100	6,70
M 4	x	16	S	100	8,40
M 4	x	20	S	100	9,70
M 4	x	25	S	100	10,80
M 5	x	10	S	100	7,50
M 5	x	12	S	100	7,90
M 5	x	16	S	100	9,50
M 5	x	18	S	100	9,80
M 5	x	20	S	100	9,80
M 5	x	25	S	100	12,90
M 5	x	30	S	100	14,80
M 5	x	35	S	100	21,70
M 5	x	40	S	100	29,50
M 6	x	12	S	100	8,70
M 6	x	16	S	100	9,70
M 6	x	18	S	100	10,60
M 6	x	20	S	100	10,60
M 6	x	25	S	100	12,00
M 6	x	30	S	100	16,60
M 6	x	35	S	100	31,00
M 6	x	40	S	100	47,00
M 6	x	45	S	100	48,50
M 6	x	50	S	100	51,00
M 8	x	16	S	100	11,80
M 8	x	18	S	100	14,10
M 8	x	20	S	100	14,10
M 8	x	25	S	100	15,40
M 8	x	30	S	100	19,00
M 8	x	35	S	100	21,60
M 8	x	40	S	100	29,50
M 8	x	45	S	100	56,00
M 8	x	50	S	100	46,50
M 8	x	60	S	100	64,00
M 10	x	20	S	50	34,50
M 10	x	25	S	50	37,50
M 10	x	30	S	50	40,00
M 10	x	35	S	50	43,00
M 10	x	40	S	50	46,00
M 10	x	45	S	50	57,00
M 10	x	50	S	50	60,00

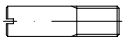
Dimensions			PU	Pieces	€/100/Mat.
M 12	x	20	S	50	86,00
M 12	x	25	S	50	92,00
M 12	x	30	S	50	105,00
M 12	x	35	S	50	117,00
M 12	x	40	S	50	134,00
M 12	x	50	S	50	169,00

ISO	02342.010	RAZ 140

2342

14 H

zinc plated



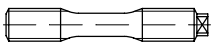
Slotted headless screws with chamfered end

Dimensions → TI-19 Corrosion protection → TI-217
Stainless → S. 495
ISO 2342 → replaces DIN 427 (compatible)

M 3	x	6	S	100	17,70 ZP
M 3	x	8	S	100	17,90 ZP
M 3	x	10	S	100	17,90 ZP
M 3	x	12	S	100	19,80 ZP
M 3	x	16	S	100	20,40 ZP
M 4	x	8	S	100	18,10 ZP
M 4	x	10	S	100	18,20 ZP
M 4	x	12	S	100	18,70 ZP
M 4	x	16	S	100	20,40 ZP
M 4	x	20	S	100	21,70 ZP
M 4	x	25	S	100	22,80 ZP
M 4	x	30	S	100	29,10 ZP
M 5	x	10	S	100	19,50 ZP
M 5	x	12	S	100	19,90 ZP
M 5	x	16	S	100	21,50 ZP
M 5	x	20	S	100	21,80 ZP
M 5	x	25	S	100	24,90 ZP
M 5	x	30	S	100	26,80 ZP
M 5	x	40	S	100	41,50 ZP
M 6	x	12	S	100	20,70 ZP
M 6	x	16	S	100	21,70 ZP
M 6	x	20	S	100	22,60 ZP
M 6	x	25	S	100	24,00 ZP
M 6	x	30	S	100	28,60 ZP
M 6	x	50	S	100	63,00 ZP
M 8	x	16	S	100	23,80 ZP
M 8	x	20	S	100	26,10 ZP
M 8	x	25	S	100	27,40 ZP
M 8	x	30	S	100	31,00 ZP
M 8	x	35	S	100	33,60 ZP
M 8	x	40	S	100	41,50 ZP
M 10	x	20	S	50	46,50 ZP
M 10	x	25	S	50	49,50 ZP
M 10	x	30	S	50	52,00 ZP
M 10	x	35	S	50	55,00 ZP
M 10	x	40	S	50	58,00 ZP
M 10	x	50	S	50	72,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	02510.304		RAZ 550

2510 Mu 1.7709 AD W7 type L



Bolts with waisted shank, L = with long thread, Mu = with 2 nuts mat. 1.7218

Bolts with inspection certificate 3.2,
nuts with inspection certificate 3.1,
TÜV accepted products,
prices are plus certificate costs

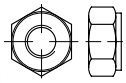
Dimensions → TI-18,60 Tightening torque → TI-231

1.7709 = 21CrMoV 5-7 = GA
1.7218 = 25CrMo4 = KG

LM 12	x	65	S	1	1010,00
LM 12	x	70	S	1	1020,00
LM 12	x	75	S	1	1050,00
LM 12	x	80	S	1	1070,00
LM 12	x	85	S	1	1100,00
LM 12	x	90	S	1	1110,00
LM 12	x	100	S	1	1160,00
LM 12	x	110	S	1	1210,00
LM 16	x	75	S	1	1370,00
LM 16	x	80	S	1	1370,00
LM 16	x	85	S	1	1420,00
LM 16	x	90	S	1	1430,00
LM 16	x	95	S	1	1490,00
LM 16	x	100	S	1	1500,00
LM 16	x	110	S	1	1600,00
LM 16	x	120	S	1	1640,00
LM 16	x	130	S	1	1690,00
LM 16	x	140	S	1	1760,00
LM 16	x	150	S	1	1840,00
LM 20	x	80	S	1	1980,00
LM 20	x	85	S	1	2000,00
LM 20	x	95	S	1	2030,00
LM 20	x	100	S	1	2060,00
LM 20	x	105	S	1	2100,00
LM 20	x	110	S	1	2110,00
LM 20	x	115	S	1	2160,00
LM 20	x	120	S	1	2170,00
LM 20	x	130	S	1	2300,00
LM 20	x	140	S	1	2390,00
LM 20	x	150	S	1	2600,00
LM 20	x	160	S	1	2600,00
LM 20	x	170	S	1	2750,00
LM 20	x	180	S	1	2800,00
LM 22	x	140	S	1	4450,00
LM 24	x	95	S	1	2800,00
LM 24	x	100	S	1	2850,00
LM 24	x	110	S	1	2850,00
LM 24	x	115	S	1	3000,00
LM 24	x	120	S	1	3050,00
LM 24	x	125	S	1	3100,00
LM 24	x	130	S	1	3100,00
LM 24	x	140	S	1	3200,00
LM 24	x	145	S	1	3200,00
LM 24	x	150	S	1	3350,00
LM 24	x	160	S	1	3450,00
LM 24	x	170	S	1	4550,00
LM 24	x	180	S	1	4650,00
LM 24	x	200	S	1	5500,00
LM 27	x	110	S	1	4050,00
LM 27	x	120	S	1	4150,00
LM 27	x	130	S	1	4200,00
LM 27	x	140	S	1	4200,00
LM 27	x	150	S	1	4350,00
LM 27	x	160	S	1	4550,00
LM 27	x	190	S	1	6000,00
LM 27	x	205	S	1	6800,00
LM 27	x	210	S	1	7000,00
LM 27	x	220	S	1	7000,00
LM 30	x	140	S	1	5300,00
LM 30	x	150	S	1	5400,00
LM 30	x	160	S	1	5600,00
LM 30	x	170	S	1	6500,00
LM 30	x	180	S	1	6700,00
LM 30	x	200	S	1	7200,00
LM 30	x	220	S	1	7000,00
LM 30	x	235	S	1	7700,00
LM 33	x	160	S	1	7200,00
LM 33	x	180	S	1	7500,00
LM 33	x	200	S	1	7500,00
LM 33	x	235	S	1	9300,00
LM 33	x	240	S	1	9300,00
LM 33	x	260	S	1	9500,00
LM 39	x	220	S	1	13200,00
LM 39	x	240	S	1	13700,00

DIN	02510.305	RAZ 550

2510 1.7218 AD W7 type NF



Hexagon nuts for bolts with waisted shank, NF = standard type

With inspection certificate 3.1,
TÜV accepted products,
prices are plus certificate costs

Dimensions → TI-18, 60

1.7218 = 25CrMo4 = KG
alternativ 1.7258 = 24CrMo5 = G

NF M 12	S	1	156,00
NF M 14	S	1	248,00
NF M 16	S	1	168,00
NF M 20	S	1	285,00
NF M 24	S	1	365,00
NF M 27	S	1	520,00
NF M 30	S	1	670,00
NF M 33	S	1	800,00
NF M 36	S	1	1100,00
NF M 39	S	1	1790,00
NF M 42	S	1	1975,00
NF M 45	S	1	2475,00
NF M 48	S	1	3450,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	02936.200		RAZ 350

2936 Steel QT blackened

Hexagon socket screw keys (hexagon socket wrenchs)

(QT = quenched and tempered)

ISO 2936 → replaces DIN 911

SW 0,7	S	100	77,00
SW 0,7	K	10	110,00
SW 0,9	S	100	72,00
SW 0,9	K	10	114,00
SW 1,3	S	100	51,00
SW 1,3	K	10	85,00
SW 1,5	S	100	30,00
SW 1,5	K	10	54,00
SW 2	S	100	31,50
SW 2	K	10	65,00
SW 2,5	S	100	36,00
SW 2,5	K	10	70,00
SW 3	S	100	42,00
SW 3	K	10	85,00
SW 4	S	100	46,50
SW 4	K	10	86,00
SW 5	S	100	57,00
SW 5	K	10	100,00
SW 6	S	50	78,00
SW 6	K	10	120,00
SW 7	S	10	125,00
SW 8	S	10	133,00
SW 10	S	10	192,00
SW 12	S	5	315,00
SW 14	S	5	445,00
SW 17	S	5	790,00
SW 19	S	5	1130,00
SW 22	S	1	1670,00
SW 27	S	1	3200,00

ISO	02936.210	RAZ 350

2936 Steel QT zinc plated

Hexagon socket screw keys (hexagon socket wrenchs)

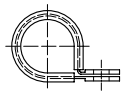
(QT = quenched and tempered)

Corrosion protection → TI-217

ISO 2936 → replaces DIN 911

SW 4	S	100	56,00 ZP
SW 5	S	100	68,00 ZP
SW 6	S	50	90,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	03016.014				RAZ 555
3016	**Steel (W1) zinc plated**				**type D 1**

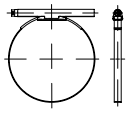


Fastening clamps, type D 1, with rubber profile

Dimensions → TI-128 Corrosion protection → TI-217

Nominal ∅ x band width					
5	x	12 - W1	S	100	221,39 W1 ZP
5	x	15 - W1	S	100	105,00 W1 ZP
6	x	9 - W1	S	100	170,00 W1 ZP
6	x	15 - W1	S	100	97,00 W1 ZP
8	x	15 - W1	S	100	97,00 W1 ZP
10	x	15 - W1	S	100	97,00 W1 ZP
10	x	20 - W1	S	50	145,00 W1 ZP
12	x	15 - W1	S	50	97,00 W1 ZP
12	x	20 - W1	S	50	145,00 W1 ZP
13	x	15 - W1	S	100	97,00 W1 ZP
13	x	20 - W1	S	50	145,00 W1 ZP
14	x	15 - W1	S	100	97,00 W1 ZP
14	x	20 - W1	S	50	145,00 W1 ZP
15	x	15 - W1	S	100	97,00 W1 ZP
15	x	20 - W1	S	50	145,00 W1 ZP
16	x	15 - W1	S	100	97,00 W1 ZP
16	x	20 - W1	S	50	145,00 W1 ZP
18	x	15 - W1	S	100	97,00 W1 ZP
18	x	20 - W1	S	50	145,00 W1 ZP
19	x	15 - W1	S	100	97,00 W1 ZP
19	x	20 - W1	S	50	145,00 W1 ZP
20	x	15 - W1	S	100	97,00 W1 ZP
20	x	20 - W1	S	50	145,00 W1 ZP
21	x	15 - W1	S	100	112,00 W1 ZP
22	x	15 - W1	S	100	112,00 W1 ZP
22	x	20 - W1	S	50	179,00 W1 ZP
23	x	15 - W1	S	100	112,00 W1 ZP
23	x	20 - W1	S	50	179,00 W1 ZP
24	x	20 - W1	S	50	179,00 W1 ZP
25	x	15 - W1	S	100	112,00 W1 ZP
25	x	20 - W1	S	50	179,00 W1 ZP
26	x	15 - W1	S	100	112,00 W1 ZP
28	x	15 - W1	S	100	112,00 W1 ZP
28	x	20 - W1	S	50	179,00 W1 ZP
30	x	15 - W1	S	100	112,00 W1 ZP
30	x	20 - W1	S	50	179,00 W1 ZP
32	x	15 - W1	S	100	138,00 W1 ZP
32	x	20 - W1	S	50	217,00 W1 ZP
34	x	15 - W1	S	100	138,00 W1 ZP
34	x	20 - W1	S	50	217,00 W1 ZP
35	x	15 - W1	S	100	138,00 W1 ZP
35	x	20 - W1	S	50	217,00 W1 ZP
36	x	20 - W1	S	50	217,00 W1 ZP
38	x	20 - W1	S	50	217,00 W1 ZP
40	x	20 - W1	S	50	217,00 W1 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	03017.011				RAZ 555
3017	**Steel (W1) zinc plated**				**type A**



Hose clamps, A = with worm gear drive

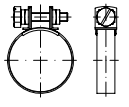
Dimensions → TI-81 Corrosion protection → TI-217

Stainless → S. 496

Screw drive: slotted, hexagon and cross recess (H2)

Clamping range/band width x wrench size				
8- 12/ 9	C7	S	100	65,00 ZP
10- 16/ 9	C7	S	100	65,00 ZP
12- 22/ 9	C7	S	100	69,00 ZP
16- 27/ 9	C7	S	100	71,00 ZP
16- 27/12	C7	S	50	91,00 ZP
20- 32/ 9	C7	S	100	71,00 ZP
20- 32/12	C7	S	50	93,00 ZP
25- 40/ 9	C7	S	100	79,00 ZP
25- 40/12	C7	S	50	99,00 ZP
30- 45/ 9	C7	S	100	83,00 ZP
30- 45/12	C7	S	50	101,00 ZP
35- 50/ 9	C7	S	50	84,00 ZP
35- 50/12	C7	S	50	102,00 ZP
40- 60/ 9	C7	S	50	88,00 ZP
40- 60/12	C7	S	25	120,00 ZP
50- 70/ 9	C7	S	50	89,00 ZP
50- 70/12	C7	S	25	125,00 ZP
60- 80/ 9	C7	S	25	97,00 ZP
60- 80/12	C7	S	25	137,00 ZP
70- 90/ 9	C7	S	25	113,00 ZP
70- 90/12	C7	S	25	143,00 ZP
80-100/ 9	C7	S	25	117,00 ZP
80-100/12	C7	S	1	148,00 ZP
90-110/ 9	C7	S	25	122,00 ZP
90-110/12	C7	S	1	151,00 ZP
100-120/12	C7	S	1	160,00 ZP
110-130/12	C7	S	1	167,00 ZP
120-140/12	C7	S	1	169,00 ZP
130-150/12	C7	S	1	176,00 ZP
140-160/12	C7	S	1	189,00 ZP
150-170/12	C7	S	1	197,00 ZP
160-180/12	C7	S	1	203,00 ZP
170-190/12	C7	S	1	208,00 ZP

DIN	03017.012	RAZ 555
3017	**Steel (W1) zinc plated**	**type B1**



Hose clamps, B1 = with fastening lugs, one-piece

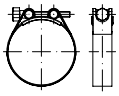
Slotted hexagon clamping screw

Dimensions → TI-81 Corrosion protection → TI-217

Clamping range/band width			
9/ 9	S	100	465,00 ZP
10/ 9	S	100	465,00 ZP
11/ 9	S	100	465,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
12/ 9	S	100	465,00 ZP
13/ 9	S	100	465,00 ZP
14/ 9	S	100	465,00 ZP
15/ 9	S	100	465,00 ZP
15/12	S	100	560,00 ZP
16/ 9	S	100	465,00 ZP
16/12	S	100	560,00 ZP
17/ 9	S	100	465,00 ZP
17/12	S	100	560,00 ZP
18/ 9	S	100	465,00 ZP
18/12	S	100	560,00 ZP
19/ 9	S	100	465,00 ZP
19/12	S	100	560,00 ZP
20/ 9	S	100	465,00 ZP
20/12	S	100	560,00 ZP
20/15	S	100	620,00 ZP
21/12	S	100	610,00 ZP
21/15	S	100	620,00 ZP
22/12	S	100	610,00 ZP
22/15	S	100	620,00 ZP
23/12	S	100	610,00 ZP
23/15	S	100	620,00 ZP
24/12	S	100	610,00 ZP
24/15	S	100	620,00 ZP
25/12	S	100	610,00 ZP
25/15	S	100	620,00 ZP
26/12	S	100	610,00 ZP
26/15	S	100	620,00 ZP
27/12	S	100	610,00 ZP
27/15	S	100	620,00 ZP
28/12	S	100	610,00 ZP
28/15	S	100	620,00 ZP
29/12	S	100	610,00 ZP
29/15	S	100	620,00 ZP
30/15	S	100	620,00 ZP
31/15	S	100	790,00 ZP
32/15	S	100	790,00 ZP
33/15	S	100	790,00 ZP
34/15	S	100	790,00 ZP
35/15	S	100	790,00 ZP
36/20	S	100	1540,00 ZP
37/20	S	100	1540,00 ZP
38/20	S	100	1540,00 ZP
39/20	S	100	1540,00 ZP
40/20	S	100	1540,00 ZP
41/20	S	100	1390,00 ZP
42/20	S	100	1390,00 ZP
43/20	S	100	1390,00 ZP
44/20	S	100	1390,00 ZP
45/20	S	100	1390,00 ZP
46/20	S	100	1390,00 ZP
47/20	S	100	1390,00 ZP
48/20	S	100	1390,00 ZP
49/20	S	100	1390,00 ZP
50/20	S	100	1390,00 ZP
51/20	S	100	1420,00 ZP
52/20	S	100	1420,00 ZP
53/20	S	100	1420,00 ZP
54/20	S	100	1420,00 ZP
55/20	S	100	1420,00 ZP
56/20	S	100	1420,00 ZP
57/20	S	100	1420,00 ZP
58/20	S	100	1420,00 ZP
59/20	S	100	1420,00 ZP
60/20	S	100	1420,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	03017.013		RAZ 555
3017	**Steel (W1) zinc plated**		**type C1**



Hose clamps, C1 = with hinge bolts, one-piece

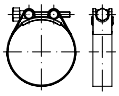
With hexagon clamping screw

Dimensions → TI-81 Corrosion protection → TI-217

Clamping range/band width

17- 19/18	S	50	760,00 ZP
19- 21/18	S	50	770,00 ZP
21- 23/18	S	50	770,00 ZP
23- 25/18	S	50	780,00 ZP
25- 27/18	S	50	790,00 ZP
27- 29/18	S	50	790,00 ZP
29- 31/18	S	50	800,00 ZP
31- 34/18	S	50	810,00 ZP
34- 37/18	S	50	820,00 ZP
37- 40/18	S	50	820,00 ZP
40- 43/18	S	50	830,00 ZP
43- 47/20	S	50	840,00 ZP
47- 51/20	S	50	840,00 ZP
51- 55/20	S	50	850,00 ZP
55- 59/20	S	50	860,00 ZP
59- 63/20	S	50	860,00 ZP
63- 68/20	S	50	870,00 ZP
68- 73/25	S	25	1050,00 ZP
73- 79/25	S	25	1070,00 ZP
79- 85/25	S	25	1100,00 ZP
85- 91/25	S	25	1110,00 ZP
91- 97/25	S	25	1140,00 ZP
97-104/25	S	25	1160,00 ZP
104-112/25	S	25	1190,00 ZP
112-121/25	S	25	1220,00 ZP
121-130/25	S	25	1260,00 ZP
130-140/30	S	10	2090,00 ZP
140-150/30	S	10	2110,00 ZP
150-162/30	S	10	2160,00 ZP
162-174/30	S	10	2300,00 ZP
174-187/30	S	10	2360,00 ZP
187-200/30	S	10	2380,00 ZP
200-213/30	S	10	2600,00 ZP
213-226/30	S	10	2650,00 ZP
226-239/30	S	10	2700,00 ZP
239-252/30	S	10	2750,00 ZP

DIN	03017.018	RAZ 555
3017	**Steel (W1) zinc plated**	**type C1-Cy**



Hose clamps, C1 = with hinge bolts, one-piece

Cy = with hexagon socket head cap screw

Dimensions → TI-81 Corrosion protection → TI-217

Clamping range/band width

17- 19/18	S	50	830,00 ZP
19- 21/18	S	50	840,00 ZP
21- 23/18	S	50	840,00 ZP
23- 25/18	S	50	850,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
25- 27/18	S	50	860,00 ZP
27- 29/18	S	50	870,00 ZP
29- 31/18	S	50	880,00 ZP
31- 34/18	S	50	880,00 ZP
34- 37/18	S	50	890,00 ZP
37- 40/18	S	50	900,00 ZP
40- 43/18	S	50	910,00 ZP
43- 47/20	S	50	920,00 ZP
47- 51/20	S	50	920,00 ZP
51- 55/20	S	50	930,00 ZP
55- 59/20	S	50	950,00 ZP
59- 63/20	S	50	960,00 ZP
63- 68/20	S	50	970,00 ZP

DIN	03404.510	RAZ 556
3404	**5.8 zinc plated**	**MF**

Lubricating nipples, button head, with round head, hexagon drive, MF = with metric fine pitch thread

Dimensions → TI-25 Corrosion protection → TI-217

Brass → S. 588

Tapered lubrication nipple → DIN 71412

Thread M x thread pitch - wrench size

M 6	x	1	SW 11	S	100	225,00 ZP
M 6	x	1	SW 17	S	100	225,00 ZP
M 8	x	1	SW 11	S	100	205,00 ZP
M 8	x	1	SW 17	S	100	205,00 ZP
M 10	x	1	SW 17	S	100	205,00 ZP
M 16	x	1,5	SW 22	S	25	630,00 ZP

DIN	03404.514	RAZ 556
3404	**5.8 zinc plated**	**G**

Lubricating nipples, button head, with round head, hexagon drive, G = with inch pipe thread

Dimensions → TI-25 Corrosion protection → TI-217

Tapered lubrication nipple → DIN 71412

Pipe thread G-wrench size

G 1/4-16 SW 17	S	50	207,00 ZP
G 1/4-22 SW 22	S	25	600,00 ZP
G 3/8-22 SW 22	S	25	600,00 ZP

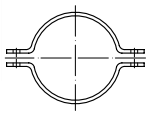
Dimensions	PU	Pieces	€/100/Mat.
DIN	03405.011		RAZ 556
3405	**Steel zinc plated**		**type A**

Lubricating nipples, cupped type

Dimensions → TI-25 Corrosion protection → TI-217

AM 6	x	1		S	100	86,00 ZP
AM 8	x	1		S	100	93,00 ZP

DIN	03567.001	RAZ 560
3567	**Steel with primer**	**type A**



Pipe clamps, A = equal sided

Dimensions → TI-129

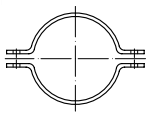
A 5 → S. 496

Prices are valid for pipe clamps halves

Inside ∅/for pipe nominal width

A 22 / NW 15	S	100	134,00
A 27 / NW 20	S	100	141,00
A 34 / NW 25	S	50	145,00
A 43 / NW 32	S	50	157,00
A 49 / NW 40	S	50	186,00
A 61 / NW 50	S	50	285,00
A 77 / NW 65	S	50	325,00
A 89 / NW 80	S	20	355,00
A 115 / NW 100	S	20	730,00
A 140 / NW 125	S	10	830,00
A 169 / NW 150	S	10	920,00
A 220 / NW 200	S	1	1110,00

DIN	03567.021	RAZ 560
3567	**Steel hot dip galvanized**	**type A**



Pipe clamps, A = equal sided

Dimensions → TI-129 Corrosion protection → TI-219

A 5 → S. 496

Prices are valid for pipe clamps halves

Inside ∅/for pipe nominal width

A 22 / NW 15	S	50	152,00 HDG
A 27 / NW 20	S	50	165,00 HDG
A 34 / NW 25	S	50	170,00 HDG
A 43 / NW 32	S	50	186,00 HDG

€/100 = price in € plus VAT when ordering full package unit

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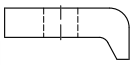
10-2I-99-140519-DE

Dimensions	PU	Pieces	€/100/Mat.
A 45 / NW 40	S	50	189,00 HDG
A 49 / NW 40	S	50	219,00 HDG
A 57 / NW 50	S	50	361,00 HDG
A 61 / NW 50	S	50	372,00 HDG
A 77 / NW 65	S	50	429,00 HDG
A 89 / NW 80	S	20	480,00 HDG
A 108 / NW 100	S	10	1026,00 HDG
A 115 / NW 100	S	10	1057,00 HDG
A 140 / NW 125	S	10	1217,00 HDG
A 169 / NW 150	S	10	1357,00 HDG
A 220 / NW 200	S	1	1643,00 HDG
A 273 / NW 250	S	1	2830,00 HDG
A 305 / NW 300	S	1	3065,00 HDG

DIN 03568.020 RAZ 561

3568 Steel hot dip galvanized



Clamping plates for pipe fixings for double-T-carriers

Further clipping elements
➔ LINDAPTER-Program (orange pages)

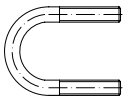
Dimensions ➔ TI-129 Corrosion protection ➔ TI-219
Product information ➔ TI-154

Width b/clipping height h = for screws M

60 / 10 - M 16	S	1	1330,00 HDG
60 / 12 - M 16	S	1	1370,00 HDG
60 / 14 - M 16	S	1	1400,00 HDG
60 / 16 - M 16	S	1	1430,00 HDG
60 / 18 - M 16	S	1	1480,00 HDG
60 / 20 - M 16	S	1	1540,00 HDG

DIN 03570.011 RAZ 560

3570 Steel zinc plated type A



Stirrup bolts without nuts, A = double-sided fixing thread

Nuts ➔ DIN 934 / ISO 4032

Dimensions ➔ TI-128 Corrosion protection ➔ TI-217

Stainless ➔ S. 496

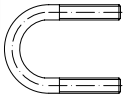
Hanger height for sheet thickness 10 mm

Nominal width/~ pipe outside ∅

A 23 / NW 15	S	100	168,00 ZP
A 30 / NW 20	S	100	174,00 ZP
A 38 / NW 25	S	100	192,00 ZP
A 46 / NW 32	S	100	214,00 ZP
A 52 / NW 40	S	100	238,00 ZP
A 64 / NW 50	S	50	395,00 ZP
A 82 / NW 65	S	50	465,00 ZP
A 94 / NW 80	S	50	600,00 ZP
A 120 / NW 100	S	10	840,00 ZP
A 148 / NW 125	S	10	880,00 ZP
A 176 / NW 150	S	10	1020,00 ZP
A 228 / NW 200	S	5	2080,00 ZP
A 282 / NW 250	S	5	2550,00 ZP
A 332 / NW 300	S	1	3050,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 03570.021 RAZ 560			

3570 Steel hot dip galvanized type A



Stirrup bolts without nuts, A = double-sided fixing thread

Thread tolerance 6h (6az + HDG = U)

Nuts ➔ DIN 934 / ISO 4032

Dimensions ➔ TI-128 Corrosion protection ➔ TI-219

Stainless ➔ S. 496

Hanger height for sheet thickness 10 mm

Nominal width/~ pipe outside ∅

A 30 / NW 20	S	100	255,00 HDG
A 38 / NW 25	S	100	280,00 HDG
A 46 / NW 32	S	100	320,00 HDG
A 52 / NW 40	S	100	345,00 HDG
A 64 / NW 50	S	50	570,00 HDG
A 82 / NW 65	S	50	650,00 HDG
A 94 / NW 80	S	50	780,00 HDG
A 120 / NW 100	S	10	1250,00 HDG
A 148 / NW 125	S	10	1350,00 HDG
A 176 / NW 150	S	10	1490,00 HDG
A 228 / NW 200	S	5	3750,00 HDG
A 332 / NW 300	S	1	4600,00 HDG

ISO 04014.504 *

4014 5.6 AD W7

Hexagon head bolts with shank

Short dimensions in part thread up to head, M 6 - M 39 for pressure vessel const. as per AD regulations, products with renunciation of inspection certificate,
*M 10/12/14/22 = RAZ 3210 other ∅ = RAZ 400

Dimensions ➔ TI-15 Tightening torque ➔ TI-230
Mech. properties ➔ TI-220 Standard conversion ➔ TI-6

Stainless ➔ S. 496

ISO 4014 ➔ replaces DIN 931

M 6	x	30	S	500	23,35
M 6	x	35	S	200	23,35
M 6	x	40	S	200	24,75
M 6	x	45	S	200	26,20
M 6	x	50	S	200	29,10
M 6	x	55	S	200	38,00
M 6	x	60	S	200	39,40
M 6	x	70	S	200	48,10
M 8	x	35	S	200	35,10
M 8	x	40	S	200	36,55
M 8	x	45	S	200	38,00
M 8	x	50	S	200	39,65
M 8	x	55	S	200	48,10
M 8	x	60	S	200	50,45
M 8	x	80	S	200	69,65
M 8	x	90	S	100	114,00
M 8	x	100	S	100	158,00
M 10	x	45	S	100	48,10

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	50	S	100	49,50
M 10	x	55	S	100	75,65
M 10	x	60	S	100	91,30
M 10	x	65	S	100	103,00
M 10	x	70	S	100	109,00
M 10	x	80	S	100	111,00
M 10	x	90	S	100	135,00
M 10	x	100	S	100	146,00
M 10	x	110	S	50	219,00
M 12	x	50	S	100	75,10
M 12	x	55	S	100	78,70
M 12	x	60	S	100	84,10
M 12	x	65	S	50	94,30
M 12	x	70	S	50	94,30
M 12	x	75	S	50	110,00
M 12	x	80	S	50	110,00
M 12	x	85	S	50	151,00
M 12	x	90	S	50	121,00
M 12	x	100	S	50	132,00
M 12	x	110	S	50	219,00
M 12	x	120	S	50	289,00
M 12	x	130	S	50	313,00
M 12	x	140	S	50	721,00
M 12	x	150	S	50	764,00
M 12	x	160	S	25	873,00
M 16	x	65	S	25	165,00
M 16	x	70	S	25	172,00
M 16	x	75	S	25	189,00
M 16	x	80	S	25	189,00
M 16	x	85	S	25	246,00
M 16	x	90	S	25	200,00
M 16	x	95	S	25	243,00
M 16	x	100	S	25	219,00
M 16	x	110	S	25	243,00
M 16	x	120	S	25	256,00
M 16	x	130	S	25	291,00
M 16	x	140	S	25	325,00
M 16	x	150	S	25	371,00
M 16	x	160	S	25	502,00
M 16	x	180	S	1	1031,00
M 16	x	200	S	1	1086,00
M 20	x	80	S	25	308,00
M 20	x	85	S	25	378,00
M 20	x	90	S	25	343,00
M 20	x	95	S	25	395,00
M 20	x	100	S	25	363,00
M 20	x	110	S	25	395,00
M 20	x	120	S	25	422,00
M 20	x	130	S	25	496,00
M 20	x	140	S	25	540,00
M 20	x	150	S	25	606,00
M 20	x	160	S	10	648,00
M 20	x	170	S	10	913,00
M 20	x	180	S	10	913,00
M 20	x	190	S	1	1274,00
M 20	x	200	S	1	1274,00
M 20	x	210	S	1	1459,00
M 20	x	220	S	1	1724,00
M 20	x	240	S	1	2131,00
M 20	x	250	S	1	2226,00
M 20	x	260	S	1	2375,00
M 20	x	280	S	1	2596,00
M 22	x	100	S	10	1428,00
M 24	x	90	S	10	601,00
M 24	x	95	S	10	696,00
M 24	x	100	S	10	633,00
M 24	x	110	S	10	696,00
M 24	x	120	S	10	713,00
M 24	x	130	S	10	795,00
M 24	x	140	S	10	840,00
M 24	x	150	S	10	881,00
M 24	x	160	S	10	932,00
M 24	x	170	S	1	1006,00
M 24	x	180	S	1	1006,00
M 24	x	190	S	1	1317,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	200	S	1	1317,00
M 24	x	210	S	1	2249,00
M 24	x	220	S	1	2353,00
M 24	x	230	S	1	2452,00
M 24	x	240	S	1	2535,00
M 24	x	260	S	1	2931,00
M 24	x	280	S	1	3149,00
M 24	x	300	S	1	3332,00
M 27	x	100	S	1	960,00
M 27	x	110	S	1	1004,00
M 27	x	120	S	1	1031,00
M 27	x	130	S	1	1090,00
M 27	x	140	S	1	1126,00
M 27	x	150	S	1	1178,00
M 27	x	160	S	1	1209,00
M 27	x	170	S	1	1380,00
M 27	x	180	S	1	1262,00
M 27	x	190	S	1	1380,00
M 27	x	200	S	1	1380,00
M 27	x	220	S	1	2213,00
M 27	x	230	S	1	2457,00
M 27	x	240	S	1	2634,00
M 27	x	260	S	1	2926,00
M 27	x	280	S	1	3242,00
M 30	x	110	S	1	1390,00
M 30	x	120	S	1	1440,00
M 30	x	130	S	1	1490,00
M 30	x	140	S	1	1528,00
M 30	x	150	S	1	1595,00
M 30	x	160	S	1	1659,00
M 30	x	170	S	1	1777,00
M 30	x	180	S	1	1777,00
M 30	x	190	S	1	1886,00
M 30	x	200	S	1	1886,00
M 30	x	210	S	1	2002,00
M 30	x	220	S	1	2002,00
M 30	x	230	S	1	2122,00
M 30	x	240	S	1	2122,00
M 30	x	250	S	1	2241,00
M 30	x	260	S	1	2241,00
M 30	x	280	S	1	2356,00
M 30	x	300	S	1	2480,00
M 30	x	320	S	1	3650,00
M 33	x	130	S	1	1842,00
M 33	x	140	S	1	1924,00
M 33	x	150	S	1	1997,00
M 33	x	160	S	1	2245,00
M 33	x	165	S	1	2760,00
M 33	x	170	S	1	2314,00
M 33	x	180	S	1	2314,00
M 33	x	190	S	1	2381,00
M 33	x	200	S	1	2381,00
M 33	x	210	S	1	2467,00
M 33	x	220	S	1	2467,00
M 36	x	120	S	1	2123,00
M 36	x	140	S	1	2421,00
M 36	x	150	S	1	2501,00
M 36	x	160	S	1	2646,00
M 36	x	165	S	1	2760,00
M 36	x	170	S	1	2760,00
M 36	x	180	S	1	2760,00
M 36	x	200	S	1	2934,00
M 36	x	220	S	1	3065,00
M 36	x	240	S	1	3389,00
M 36	x	260	S	1	3481,00
M 36	x	300	S	1	3768,00
M 39	x	150	S	1	4714,00
M 39	x	160	S	1	5026,00
M 39	x	180	S	1	5419,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	04014.514		*
4014	**5.6 zinc plated**		**AD W7**

Hexagon head bolts with shank

Short dimensions in part thread up to head,
M 6 – M 39 for pressure vessel const.
as per AD regulations,
products with renunciation of inspection certificate,*M 10/12/14/22 = RAZ 3210 other ∅ = RAZ 400

Dimensions ➔ TI-15 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-220 Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

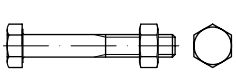
Stainless ➔ S. 496

ISO 4014 ➔ replaces DIN 931

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	45	S	100	61,85 ZP
M 10	x	50	S	100	64,25 ZP
M 10	x	55	S	100	91,30 ZP
M 10	x	60	S	100	109,00 ZP
M 10	x	65	S	100	121,00 ZP
M 10	x	70	S	100	128,00 ZP
M 10	x	80	S	100	133,00 ZP
M 10	x	90	S	100	159,00 ZP
M 10	x	100	S	100	172,00 ZP
M 10	x	110	S	50	247,00 ZP
M 12	x	50	S	100	89,50 ZP
M 12	x	55	S	100	94,30 ZP
M 12	x	60	S	100	101,00 ZP
M 12	x	65	S	50	112,00 ZP
M 12	x	70	S	50	113,00 ZP
M 12	x	75	S	50	130,00 ZP
M 12	x	80	S	50	132,00 ZP
M 12	x	85	S	50	190,00 ZP
M 12	x	90	S	50	144,00 ZP
M 12	x	100	S	50	157,00 ZP
M 12	x	110	S	50	276,00 ZP
M 12	x	120	S	50	352,00 ZP
M 12	x	130	S	50	735,00 ZP
M 12	x	140	S	50	793,00 ZP
M 12	x	150	S	50	841,00 ZP
M 12	x	160	S	25	954,00 ZP
M 16	x	65	S	25	198,00 ZP
M 16	x	70	S	25	207,00 ZP
M 16	x	75	S	25	225,00 ZP
M 16	x	80	S	25	227,00 ZP
M 16	x	85	S	25	286,00 ZP
M 16	x	90	S	25	243,00 ZP
M 16	x	95	S	25	288,00 ZP
M 16	x	100	S	25	265,00 ZP
M 16	x	110	S	25	293,00 ZP
M 16	x	120	S	25	309,00 ZP
M 16	x	130	S	25	348,00 ZP
M 16	x	140	S	25	387,00 ZP
M 16	x	150	S	25	436,00 ZP
M 16	x	160	S	25	571,00 ZP
M 16	x	180	S	1	1221,00 ZP
M 20	x	80	S	25	371,00 ZP
M 20	x	85	S	25	444,00 ZP
M 20	x	90	S	25	412,00 ZP
M 20	x	100	S	25	438,00 ZP
M 20	x	110	S	25	476,00 ZP
M 20	x	120	S	25	510,00 ZP
M 20	x	130	S	25	590,00 ZP
M 20	x	140	S	25	640,00 ZP
M 20	x	150	S	25	711,00 ZP
M 20	x	160	S	10	759,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	170	S	10	1030,00 ZP
M 20	x	180	S	10	1036,00 ZP
M 20	x	190	S	1	1428,00 ZP
M 20	x	200	S	1	1435,00 ZP
M 20	x	220	S	1	1897,00 ZP
M 20	x	240	S	1	2322,00 ZP
M 24	x	90	S	10	707,00 ZP
M 24	x	100	S	10	749,00 ZP
M 24	x	110	S	10	820,00 ZP
M 24	x	120	S	10	846,00 ZP
M 24	x	130	S	10	934,00 ZP
M 24	x	140	S	10	988,00 ZP
M 24	x	150	S	10	1037,00 ZP
M 24	x	160	S	10	1098,00 ZP
M 24	x	170	S	1	1179,00 ZP
M 24	x	180	S	1	1188,00 ZP
M 24	x	190	S	1	1509,00 ZP
M 24	x	200	S	1	1518,00 ZP
M 24	x	220	S	1	2735,00 ZP
M 24	x	240	S	1	2945,00 ZP
M 27	x	100	S	1	1111,00 ZP
M 27	x	110	S	1	1166,00 ZP
M 27	x	120	S	1	1204,00 ZP
M 27	x	130	S	1	1270,00 ZP
M 27	x	140	S	1	1316,00 ZP
M 27	x	150	S	1	1380,00 ZP
M 27	x	160	S	1	1412,00 ZP
M 27	x	170	S	1	1607,00 ZP
M 27	x	180	S	1	1498,00 ZP
M 27	x	190	S	1	1750,00 ZP
M 27	x	200	S	1	1800,00 ZP
M 27	x	220	S	1	2550,00 ZP
M 27	x	230	S	1	2810,00 ZP
M 27	x	240	S	1	3000,00 ZP
M 27	x	260	S	1	3660,00 ZP
M 30	x	110	S	1	1595,00 ZP
M 30	x	120	S	1	1659,00 ZP
M 30	x	130	S	1	1720,00 ZP
M 30	x	140	S	1	1771,00 ZP
M 30	x	150	S	1	1853,00 ZP
M 30	x	160	S	1	1929,00 ZP
M 30	x	180	S	1	2130,00 ZP
M 30	x	190	S	1	2260,00 ZP
M 30	x	200	S	1	2280,00 ZP
M 30	x	210	S	1	2415,00 ZP
M 30	x	220	S	1	2430,00 ZP
M 30	x	230	S	1	2650,00 ZP
M 30	x	240	S	1	2575,00 ZP
M 30	x	250	S	1	2900,00 ZP
M 30	x	260	S	1	2735,00 ZP
M 33	x	130	S	1	2129,00 ZP
M 33	x	140	S	1	2450,00 ZP
M 33	x	150	S	1	2550,00 ZP
M 33	x	160	S	1	2800,00 ZP
M 33	x	170	S	1	2900,00 ZP
M 33	x	180	S	1	3000,00 ZP
M 33	x	190	S	1	3100,00 ZP
M 36	x	120	S	1	2700,00 ZP
M 36	x	130	S	1	3000,00 ZP
M 36	x	140	S	1	2862,00 ZP
M 36	x	150	S	1	3150,00 ZP
M 36	x	160	S	1	3300,00 ZP
M 36	x	165	S	1	3400,00 ZP
M 36	x	170	S	1	3450,00 ZP
M 36	x	180	S	1	3550,00 ZP
M 36	x	200	S	1	3800,00 ZP
M 36	x	220	S	1	4000,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO 04014.524			RAZ 3200
4014	**Mu 5.6 hot dip galvanized**		**AD W7**



Hexagon head bolts with shank, Mu=with hexagon nuts ISO 4032/5-2

Short dimensions in part thread up to head,
M 6 – M 39 for pressure vessel const.
as per AD regulations,
products with renunciation of inspection certificate

Caution! Note information about hot dip galvanizing.

Dimensions → TI-15 Corrosion protection → TI-219
Mech. properties → TI-220 Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 496

ISO 4014 → replaces DIN 931

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	50	S	100	144,00 HDG
M 12	x	55	S	100	151,00 HDG
M 12	x	60	S	100	160,00 HDG
M 12	x	70	S	50	157,00 HDG
M 12	x	80	S	50	175,00 HDG
M 12	x	90	S	50	199,00 HDG
M 16	x	65	S	25	313,00 HDG
M 16	x	70	S	25	320,00 HDG
M 16	x	75	S	25	344,00 HDG
M 16	x	80	S	25	349,00 HDG
M 16	x	85	S	25	386,00 HDG
M 16	x	90	S	25	368,00 HDG
M 16	x	100	S	25	392,00 HDG
M 16	x	110	S	25	427,00 HDG
M 16	x	120	S	25	451,00 HDG
M 16	x	130	S	25	445,00 HDG
M 16	x	140	S	25	469,00 HDG
M 16	x	150	S	25	535,00 HDG
M 16	x	160	S	25	673,00 HDG
M 16	x	170	S	25	914,00 HDG
M 16	x	180	S	25	914,00 HDG
M 16	x	190	S	25	1166,00 HDG
M 16	x	200	S	25	1166,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	80	S	25	572,00 HDG
M 20	x	90	S	25	620,00 HDG
M 20	x	100	S	25	625,00 HDG
M 20	x	110	S	25	649,00 HDG
M 20	x	120	S	25	662,00 HDG
M 20	x	130	S	25	805,00 HDG
M 20	x	140	S	25	805,00 HDG
M 20	x	150	S	25	919,00 HDG
M 20	x	160	S	10	926,00 HDG
M 20	x	170	S	10	1076,00 HDG
M 20	x	180	S	10	1136,00 HDG
M 20	x	200	S	10	1424,00 HDG
M 24	x	90	S	10	1046,00 HDG
M 24	x	100	S	10	1094,00 HDG
M 24	x	110	S	10	1154,00 HDG
M 24	x	120	S	10	1213,00 HDG
M 24	x	130	S	10	1351,00 HDG
M 24	x	140	S	10	1450,00 HDG
M 24	x	150	S	10	1658,00 HDG
M 24	x	160	S	10	1750,00 HDG
M 24	x	170	S	10	1985,00 HDG
M 24	x	180	S	10	2100,00 HDG
M 24	x	200	S	10	2450,00 HDG

ISO	04014.352	RAZ 400
4014	**1.7218 +QT (25CrMo4)**	

Hexagon head bolts with shank

Approved for use acc. to pressure equipment directive → cert. 3.1 on request

Dimensions → TI-15 Tightening torque → TI-231
Properties → TI-232 Standard conversion → TI-6

ISO 4014 → replaces DIN 931

DGRL Zulassung

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	55	S	100	138,00
M 12	x	60	S	100	148,00
M 12	x	65	S	50	165,00
M 12	x	70	S	50	165,00
M 12	x	75	S	50	193,00
M 12	x	80	S	50	193,00
M 12	x	85	S	50	265,00
M 12	x	90	S	50	213,00
M 12	x	100	S	50	231,00
M 12	x	110	S	50	382,00
M 12	x	120	S	50	505,00
M 12	x	140	S	50	1250,00
M 12	x	150	S	50	1337,00
M 12	x	160	S	25	1528,00
M 16	x	65	S	25	289,00
M 16	x	70	S	25	301,00
M 16	x	75	S	25	331,00
M 16	x	80	S	25	331,00
M 16	x	85	S	25	431,00
M 16	x	90	S	25	350,00
M 16	x	95	S	25	426,00
M 16	x	100	S	25	384,00
M 16	x	110	S	25	426,00
M 16	x	120	S	25	448,00
M 16	x	130	S	25	510,00
M 16	x	140	S	25	569,00
M 16	x	150	S	25	650,00
M 16	x	160	S	25	879,00
M 16	x	180	S	1	1805,00
M 16	x	200	S	1	200,00
M 20	x	80	S	25	539,00
M 20	x	85	S	25	662,00
M 20	x	90	S	25	601,00
M 20	x	95	S	25	692,00
M 20	x	100	S	25	636,00
M 20	x	110	S	25	692,00
M 20	x	120	S	25	739,00
M 20	x	130	S	25	868,00
M 20	x	140	S	25	945,00
M 20	x	150	S	25	1061,00
M 20	x	160	S	10	1134,00
M 20	x	170	S	10	1598,00
M 20	x	180	S	10	1598,00
M 20	x	190	S	1	2230,00
M 20	x	200	S	1	2230,00
M 20	x	210	S	1	2554,00
M 20	x	220	S	1	3017,00
M 20	x	230	S	1	3375,00
M 20	x	240	S	1	3730,00
M 20	x	250	S	1	3896,00
M 20	x	260	S	1	4157,00
M 20	x	280	S	1	4543,00
M 24	x	90	S	10	1052,00
M 24	x	95	S	10	1218,00
M 24	x	100	S	10	1108,00
M 24	x	110	S	10	1218,00
M 24	x	120	S	10	1248,00
M 24	x	130	S	10	1392,00
M 24	x	140	S	10	1470,00
M 24	x	150	S	10	1542,00
M 24	x	160	S	10	1631,00
M 24	x	170	S	1	1761,00
M 24	x	180	S	1	1761,00
M 24	x	190	S	1	2305,00
M 24	x	200	S	1	2305,00
M 24	x	210	S	1	3936,00
M 24	x	220	S	1	4118,00
M 24	x	230	S	1	4291,00
M 24	x	240	S	1	4437,00
M 24	x	260	S	1	5130,00
M 24	x	280	S	1	5511,00
M 24	x	300	S	1	5831,00
M 27	x	110	S	1	1757,00
M 27	x	120	S	1	1805,00
M 27	x	130	S	1	1908,00
M 27	x	140	S	1	1971,00
M 27	x	150	S	1	2062,00
M 27	x	160	S	1	2116,00
M 27	x	170	S	1	2415,00
M 27	x	180	S	1	2209,00
M 27	x	190	S	1	2415,00
M 27	x	200	S	1	2415,00
M 27	x	220	S	1	3873,00
M 27	x	230	S	1	4300,00
M 27	x	240	S	1	4610,00
M 27	x	260	S	1	5121,00
M 27	x	280	S	1	5674,00
M 30	x	130	S	1	2608,00
M 30	x	140	S	1	2674,00
M 30	x	150	S	1	2792,00
M 30	x	160	S	1	2904,00
M 30	x	170	S	1	3110,00
M 30	x	180	S	1	3110,00
M 30	x	190	S	1	3301,00
M 30	x	200	S	1	3301,00
M 30	x	210	S	1	3504,00
M 30	x	220	S	1	3504,00
M 30	x	230	S	1	3714,00
M 30	x	240	S	1	3714,00
M 30	x	250	S	1	3922,00
M 30	x	260	S	1	3922,00
M 30	x	280	S	1	4123,00
M 30	x	300	S	1	4340,00
M 30	x	320	S	1	6230,00
M 33	x	130	S	1	3224,00
M 33	x	140	S	1	3367,00
M 33	x	150	S	1	3495,00
M 33	x	160	S	1	3929,00
M 33	x	165	S	1	4830,00
M 33	x	170	S	1	4050,00
M 33	x	180	S	1	4050,00
M 33	x	190	S	1	4167,00
M 33	x	200	S	1	4167,00
M 33	x	210	S	1	4318,00

Dimensions			PU	Pieces	€/100/Mat.
M 33	x	220	S	1	4318,00
M 36	x	120	S	1	3716,00
M 36	x	140	S	1	4237,00
M 36	x	150	S	1	4377,00
M 36	x	160	S	1	4631,00
M 36	x	170	S	1	4830,00
M 36	x	180	S	1	4830,00
M 36	x	200	S	1	5135,00
M 36	x	220	S	1	5364,00
M 36	x	240	S	1	5931,00
M 36	x	260	S	1	6092,00
M 36	x	300	S	1	6594,00
M 39	x	150	S	1	8250,00
M 39	x	160	S	1	8796,00
M 39	x	180	S	1	9484,00

ISO	04014.355	RAZ 400

4014

1.7218 +QT (25CrMo4)

Hexagon head bolts with shank

Approved for use acc. to pressure equipment directive ➔ cert. 3.1 on request

Dimensions ➔ TI-15 Tightening torque ➔ TI-231
Properties ➔ TI-232 Corrosion protection ➔ TI-217
Standard conversion ➔ TI-6

ISO 4014 ➔ replaces DIN 931

DGRL Zulassung

M 12	x	55	S	100	165,00 ZP
M 12	x	60	S	100	177,00 ZP
M 12	x	65	S	50	196,00 ZP
M 12	x	70	S	50	198,00 ZP
M 12	x	75	S	50	228,00 ZP
M 12	x	80	S	50	231,00 ZP
M 12	x	85	S	50	333,00 ZP
M 12	x	90	S	50	252,00 ZP
M 12	x	100	S	50	275,00 ZP
M 12	x	110	S	50	483,00 ZP
M 12	x	120	S	50	616,00 ZP
M 12	x	130	S	50	1287,00 ZP
M 12	x	140	S	50	1388,00 ZP
M 12	x	150	S	50	1472,00 ZP
M 12	x	160	S	25	1670,00 ZP
M 16	x	65	S	25	347,00 ZP
M 16	x	70	S	25	363,00 ZP
M 16	x	75	S	25	394,00 ZP
M 16	x	80	S	25	398,00 ZP
M 16	x	85	S	25	501,00 ZP
M 16	x	90	S	25	426,00 ZP
M 16	x	95	S	25	504,00 ZP
M 16	x	100	S	25	464,00 ZP
M 16	x	110	S	25	513,00 ZP
M 16	x	120	S	25	541,00 ZP
M 16	x	130	S	25	609,00 ZP
M 16	x	140	S	25	678,00 ZP
M 16	x	150	S	25	763,00 ZP
M 16	x	160	S	25	1000,00 ZP
M 16	x	180	S	1	2137,00 ZP
M 20	x	80	S	25	650,00 ZP
M 20	x	85	S	25	777,00 ZP
M 20	x	90	S	25	721,00 ZP
M 20	x	100	S	25	767,00 ZP
M 20	x	110	S	25	833,00 ZP
M 20	x	120	S	25	893,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	130	S	25	1033,00 ZP
M 20	x	140	S	25	1120,00 ZP
M 20	x	150	S	25	1245,00 ZP
M 20	x	160	S	10	1329,00 ZP
M 20	x	170	S	10	1803,00 ZP
M 20	x	180	S	10	1813,00 ZP
M 20	x	190	S	1	2499,00 ZP
M 20	x	200	S	1	2512,00 ZP
M 20	x	220	S	1	3320,00 ZP
M 20	x	240	S	1	4064,00 ZP
M 24	x	90	S	10	1238,00 ZP
M 24	x	100	S	10	1311,00 ZP
M 24	x	110	S	10	1435,00 ZP
M 24	x	120	S	10	1481,00 ZP
M 24	x	130	S	10	1635,00 ZP
M 24	x	140	S	10	1729,00 ZP
M 24	x	150	S	10	1815,00 ZP
M 24	x	160	S	10	1922,00 ZP
M 24	x	170	S	1	2064,00 ZP
M 24	x	180	S	1	2079,00 ZP
M 24	x	190	S	1	2641,00 ZP
M 24	x	200	S	1	2657,00 ZP
M 24	x	220	S	1	4787,00 ZP
M 24	x	240	S	1	5154,00 ZP
M 27	x	110	S	1	2041,00 ZP
M 27	x	120	S	1	2107,00 ZP
M 27	x	130	S	1	2223,00 ZP
M 27	x	140	S	1	2303,00 ZP
M 27	x	150	S	1	2415,00 ZP
M 27	x	160	S	1	2471,00 ZP
M 27	x	170	S	1	2813,00 ZP
M 27	x	180	S	1	2622,00 ZP
M 27	x	190	S	1	3063,00 ZP
M 27	x	200	S	1	3150,00 ZP
M 27	x	220	S	1	4463,00 ZP
M 27	x	230	S	1	4918,00 ZP
M 27	x	240	S	1	5250,00 ZP
M 27	x	260	S	1	6405,00 ZP
M 30	x	130	S	1	3010,00 ZP
M 30	x	140	S	1	3100,00 ZP
M 30	x	150	S	1	3243,00 ZP
M 30	x	160	S	1	3376,00 ZP
M 30	x	180	S	1	3728,00 ZP
M 30	x	190	S	1	3955,00 ZP
M 30	x	200	S	1	3990,00 ZP
M 30	x	210	S	1	4227,00 ZP
M 30	x	220	S	1	4253,00 ZP
M 30	x	230	S	1	4638,00 ZP
M 30	x	240	S	1	4507,00 ZP
M 30	x	250	S	1	5075,00 ZP
M 30	x	260	S	1	4787,00 ZP
M 33	x	130	S	1	3726,00 ZP
M 33	x	140	S	1	4288,00 ZP
M 33	x	150	S	1	4463,00 ZP
M 33	x	160	S	1	4900,00 ZP
M 33	x	170	S	1	5075,00 ZP
M 33	x	180	S	1	5250,00 ZP
M 33	x	190	S	1	5425,00 ZP
M 36	x	120	S	1	4725,00 ZP
M 36	x	130	S	1	5250,00 ZP
M 36	x	140	S	1	5009,00 ZP
M 36	x	150	S	1	5513,00 ZP
M 36	x	160	S	1	5775,00 ZP
M 36	x	165	S	1	5950,00 ZP
M 36	x	170	S	1	6038,00 ZP
M 36	x	180	S	1	6213,00 ZP
M 36	x	200	S	1	6650,00 ZP
M 36	x	220	S	1	7000,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	04014.800		*

4014

8.8

Hexagon head bolts with shank

Short dimensions in part thread up to head,
*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions ➔ TI-15 Tightening torque ➔ TI-230
Mech. properties ➔ TI-220 Standard conversion ➔ TI-6

Stainless ➔ S. 496
Brass ➔ S. 588

ISO 4014 ➔ replaces DIN 931

M 3	x	30	S	500	11,75
M 3	x	30	K	100	14,75
M 3	x	35	S	500	12,05
M 3	x	35	K	100	15,10
M 3	x	40	S	500	12,60
M 3	x	40	K	100	15,65
M 4	x	25	S	500	10,15
M 4	x	25	K	100	13,20
M 4	x	30	S	500	10,15
M 4	x	30	K	100	13,20
M 4	x	35	S	500	11,30
M 4	x	40	S	500	12,00
M 4	x	40	K	100	14,95
M 4	x	45	S	500	12,20
M 4	x	50	S	500	13,55
M 4	x	50	K	100	16,55
M 4	x	55	S	200	42,30
M 4	x	60	S	200	47,55
M 4	x	65	S	200	61,30
M 4	x	70	S	200	61,30
M 4	x	75	S	200	77,50
M 4	x	80	S	200	84,65
M 4	x	100	S	200	257,00
M 5	x	25	S	500	10,15
M 5	x	30	S	500	10,15
M 5	x	30	K	100	13,20
M 5	x	35	S	200	11,30
M 5	x	40	S	200	12,00
M 5	x	45	S	200	12,20
M 5	x	50	S	200	13,55
M 5	x	55	S	200	14,45
M 5	x	60	S	200	15,60
M 5	x	65	S	200	20,75
M 5	x	70	S	200	21,45
M 5	x	75	S	200	27,05
M 5	x	80	S	200	25,95
M 5	x	85	S	200	57,40
M 5	x	90	S	200	61,30
M 5	x	95	S	200	67,30
M 5	x	100	S	200	70,30
M 5	x	110	S	200	101,00
M 5	x	120	S	200	118,00
M 5	x	130	S	200	207,00
M 6	x	30	S	500	5,40
M 6	x	30	K	100	8,40
M 6	x	35	S	200	6,05
M 6	x	40	S	200	6,80
M 6	x	45	S	200	7,60
M 6	x	50	S	200	9,10
M 6	x	55	S	200	11,60
M 6	x	60	S	200	12,35
M 6	x	65	S	200	19,70
M 6	x	70	S	200	19,70
M 6	x	75	S	200	21,45

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	80	S	200	26,80
M 6	x	85	S	100	35,80
M 6	x	90	S	100	36,05
M 6	x	95	S	100	45,30
M 6	x	100	S	100	45,55
M 6	x	105	S	100	116,00
M 6	x	110	S	100	46,20
M 6	x	115	S	100	130,00
M 6	x	120	S	100	57,50
M 6	x	125	S	100	136,00
M 6	x	130	S	100	74,45
M 6	x	135	S	100	151,00
M 6	x	140	S	100	86,50
M 6	x	145	S	100	177,00
M 6	x	150	S	100	236,00
M 6	x	160	S	100	236,00
M 6	x	170	S	100	254,00
M 6	x	180	S	100	284,00
M 6	x	200	S	100	363,00
M 7	x	30	S	500	18,05
M 7	x	35	S	200	18,05
M 7	x	40	S	200	19,85
M 7	x	45	S	200	21,60
M 7	x	50	S	200	23,45
M 7	x	55	S	200	25,25
M 7	x	60	S	200	32,45
M 7	x	80	S	200	36,05
M 8	x	35	S	200	9,35
M 8	x	40	S	200	10,55
M 8	x	45	S	200	11,95
M 8	x	50	S	200	12,60
M 8	x	55	S	200	12,95
M 8	x	60	S	200	13,70
M 8	x	65	S	200	15,60
M 8	x	70	S	200	15,85
M 8	x	75	S	200	19,95
M 8	x	80	S	200	21,00
M 8	x	85	S	100	32,95
M 8	x	90	S	100	33,90
M 8	x	95	S	100	38,05
M 8	x	100	S	100	47,55
M 8	x	105	S	100	77,55
M 8	x	110	S	100	55,20
M 8	x	115	S	100	103,00
M 8	x	120	S	100	65,45
M 8	x	125	S	100	112,00
M 8	x	130	S	100	71,50
M 8	x	135	S	100	151,00
M 8	x	140	S	100	80,50
M 8	x	145	S	100	168,00
M 8	x	150	S	100	105,00
M 8	x	160	S	100	111,00
M 8	x	170	S	100	121,00
M 8	x	180	S	100	145,00
M 8	x	190	S	100	168,00
M 8	x	200	S	100	179,00
M 8	x	210	S	100	210,00
M 8	x	220	S	100	270,00
M 8	x	230	S	100	316,00
M 8	x	240	S	100	316,00
M 8	x	250	S	100	382,00
M 8	x	260	S	100	382,00
M 8	x	280	S	100	447,00
M 8	x	300	S	100	495,00
M 10	x	40	S	100	17,50
M 10	x	45	S	100	18,25
M 10	x	50	S	100	19,05
M 10	x	55	S	100	20,85
M 10	x	60	S	100	21,20
M 10	x	65	S	100	22,90
M 10	x	70	S	100	23,20
M 10	x	75	S	100	25,85
M 10	x	80	S	100	25,85
M 10	x	85	S	100	34,90
M 10	x	90	S	100	34,90
M 10	x	95	S	100	40,10
M 10	x	100	S	100	40,10
M 10	x	105	S	50	90,10
M 10	x	110	S	50	61,30
M 10	x	115	S	50	116,00
M 10	x	120	S	50	69,65
M 10	x	125	S	50	145,00
M 10	x	130	S	50	78,70
M 10	x	135	S	50	175,00
M 10	x	140	S	50	117,00
M 10	x	145	S	50	226,00
M 10	x	150	S	50	141,00
M 10	x	160	S	50	176,00
M 10	x	170	S	50	176,00
M 10	x	180	S	50	195,00
M 10	x	190	S	50	244,00
M 10	x	200	S	50	244,00
M 10	x	210	S	50	255,00
M 10	x	220	S	50	493,00
M 10	x	230	S	50	662,00
M 10	x	240	S	50	529,00
M 10	x	250	S	50	721,00
M 10	x	260	S	50	577,00
M 10	x	270	S	50	769,00
M 10	x	280	S	50	614,00
M 10	x	290	S	50	911,00
M 10	x	300	S	50	648,00
M 10	x	320	S	50	771,00
M 10	x	340	S	50	889,00
M 10	x	360	S	50	938,00
M 10	x	380	S	50	1500,00
M 10	x	400	S	50	1562,00
M 12	x	45	S	100	27,25
M 12	x	50	S	100	27,95
M 12	x	55	S	100	28,70
M 12	x	60	S	100	30,75
M 12	x	65	S	50	33,15
M 12	x	70	S	50	33,80
M 12	x	75	S	50	36,00
M 12	x	80	S	50	37,40
M 12	x	85	S	50	49,60
M 12	x	90	S	50	43,25
M 12	x	95	S	50	54,35
M 12	x	100	S	50	54,35
M 12	x	105	S	50	151,00
M 12	x	110	S	50	81,10
M 12	x	115	S	50	157,00
M 12	x	120	S	50	88,30
M 12	x	130	S	50	99,10
M 12	x	140	S	50	144,00
M 12	x	150	S	50	165,00
M 12	x	160	S	25	219,00
M 12	x	170	S	25	246,00
M 12	x	180	S	25	275,00
M 12	x	190	S	25	293,00
M 12	x	200	S	25	319,00
M 12	x	210	S	25	360,00
M 12	x	220	S	25	360,00
M 12	x	230	S	25	499,00
M 12	x	240	S	25	499,00
M 12	x	250	S	25	549,00
M 12	x	260	S	25	549,00
M 12	x	270	S	25	599,00
M 12	x	280	S	25	599,00
M 12	x	290	S	25	654,00
M 12	x	300	S	25	654,00
M 12	x	310	S	25	1033,00
M 12	x	320	S	25	944,00
M 12	x	330	S	25	1198,00
M 12	x	340	S	25	1040,00
M 12	x	350	S	25	1259,00
M 12	x	360	S	25	1166,00
M 12	x	380	S	25	1259,00
M 12	x	400	S	25	1574,00
M 12	x	420	S	25	1952,00
M 12	x	440	S	25	2172,00
M 12	x	460	S	25	2580,00
M 12	x	480	S	25	2832,00
M 12	x	500	S	25	3116,00
M 14	x	50	S	100	72,70
M 14	x	55	S	50	77,50
M 14	x	60	S	50	77,50
M 14	x	65	S	50	84,65
M 14	x	70	S	50	84,65
M 14	x	75	S	50	106,00
M 14	x	80	S	50	110,00
M 14	x	85	S	50	124,00
M 14	x	90	S	50	124,00
M 14	x	95	S	50	140,00
M 14	x	100	S	50	140,00
M 14	x	110	S	50	161,00
M 14	x	120	S	50	184,00
M 14	x	130	S	50	210,00
M 14	x	140	S	25	231,00
M 14	x	150	S	25	252,00
M 14	x	160	S	25	281,00
M 14	x	170	S	25	324,00
M 14	x	180	S	25	324,00
M 14	x	190	S	25	387,00
M 14	x	200	S	25	387,00
M 14	x	210	S	25	499,00
M 14	x	220	S	25	499,00
M 14	x	230	S	25	553,00
M 14	x	240	S	25	553,00
M 14	x	250	S	25	772,00
M 14	x	260	S	25	772,00
M 14	x	270	S	25	816,00
M 14	x	280	S	25	816,00
M 14	x	290	S	25	876,00
M 14	x	300	S	25	876,00
M 14	x	310	S	25	1123,00
M 14	x	320	S	25	1332,00
M 16	x	55	S	50	51,20
M 16	x	60	S	50	52,40
M 16	x	65	S	25	55,75
M 16	x	70	S	25	59,25
M 16	x	75	S	25	62,50
M 16	x	80	S	25	66,10
M 16	x	85	S	25	84,65
M 16	x	90	S	25	73,90
M 16	x	95	S	25	91,30
M 16	x	100	S	25	91,30
M 16	x	110	S	25	138,00
M 16	x	120	S	25	153,00
M 16	x	130	S	25	164,00
M 16	x	140	S	25	222,00
M 16	x	150	S	25	250,00
M 16	x	160	S	25	281,00
M 16	x	170	S	25	350,00
M 16	x	180	S	25	350,00
M 16	x	190	S	25	411,00
M 16	x	200	S	25	411,00
M 16	x	210	S	25	531,00
M 16	x	220	S	25	531,00
M 16	x	230	S	25	596,00
M 16	x	240	S	25	596,00
M 16	x	250	S	25	673,00
M 16	x	260	S	25	673,00
M 16	x	270	S	25	927,00
M 16	x	280	S	1	927,00
M 16	x	290	S	1	1042,00
M 16	x	300	S	1	1042,00
M 16	x	310	S	1	1220,00
M 16	x	320	S	1	1109,00
M 16	x	330	S	1	1301,00
M 16	x	340	S	1	1183,00
M 16	x	350	S	1	1463,00
M 16	x	360	S	1	1330,00
M 16	x	370	S	1	1788,00
M 16	x	380	S	1	1626,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	390	S	1	2032,00
M 16	x	400	S	1	1847,00
M 16	x	410	S	1	2252,00
M 16	x	420	S	1	2070,00
M 16	x	430	S	1	2586,00
M 16	x	440	S	1	2364,00
M 16	x	450	S	1	2658,00
M 16	x	460	S	1	2955,00
M 16	x	480	S	1	3250,00
M 16	x	500	S	1	3544,00
M 18	x	60	S	25	218,00
M 18	x	65	S	25	218,00
M 18	x	70	S	25	227,00
M 18	x	75	S	25	234,00
M 18	x	80	S	25	234,00
M 18	x	85	S	25	254,00
M 18	x	90	S	25	254,00
M 18	x	95	S	25	275,00
M 18	x	100	S	25	275,00
M 18	x	110	S	25	315,00
M 18	x	120	S	25	315,00
M 18	x	130	S	25	344,00
M 18	x	140	S	25	423,00
M 18	x	150	S	25	423,00
M 18	x	160	S	25	476,00
M 18	x	170	S	25	650,00
M 18	x	180	S	25	650,00
M 18	x	190	S	1	913,00
M 18	x	200	S	1	913,00
M 18	x	210	S	1	1060,00
M 18	x	220	S	1	1060,00
M 18	x	230	S	1	1184,00
M 18	x	240	S	1	1184,00
M 18	x	250	S	1	1302,00
M 18	x	260	S	1	1302,00
M 18	x	270	S	1	1481,00
M 18	x	280	S	1	1481,00
M 18	x	290	S	1	1700,00
M 18	x	300	S	1	1700,00
M 20	x	65	S	25	99,70
M 20	x	70	S	25	102,00
M 20	x	75	S	25	106,00
M 20	x	80	S	25	110,00
M 20	x	85	S	25	122,00
M 20	x	90	S	25	122,00
M 20	x	95	S	25	150,00
M 20	x	100	S	25	150,00
M 20	x	110	S	25	234,00
M 20	x	120	S	25	243,00
M 20	x	130	S	25	246,00
M 20	x	140	S	25	337,00
M 20	x	150	S	25	376,00
M 20	x	160	S	10	422,00
M 20	x	170	S	10	545,00
M 20	x	180	S	10	545,00
M 20	x	190	S	1	851,00
M 20	x	200	S	1	851,00
M 20	x	210	S	1	1060,00
M 20	x	220	S	1	1060,00
M 20	x	230	S	1	1184,00
M 20	x	240	S	1	1184,00
M 20	x	250	S	1	1302,00
M 20	x	260	S	1	1302,00
M 20	x	270	S	1	1481,00
M 20	x	280	S	1	1481,00
M 20	x	290	S	1	1700,00
M 20	x	300	S	1	1700,00
M 20	x	310	S	1	1804,00
M 20	x	320	S	1	1804,00
M 20	x	330	S	1	1931,00
M 20	x	340	S	1	1931,00
M 20	x	350	S	1	2054,00
M 20	x	360	S	1	2054,00
M 20	x	370	S	1	2203,00
M 20	x	380	S	1	2203,00

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	390	S	1	2306,00
M 20	x	400	S	1	2306,00
M 20	x	410	S	1	2372,00
M 20	x	420	S	1	2372,00
M 20	x	430	S	1	2936,00
M 20	x	440	S	1	2936,00
M 20	x	450	S	1	2967,00
M 20	x	460	S	1	2967,00
M 20	x	480	S	1	2996,00
M 20	x	500	S	1	3027,00
M 22	x	70	S	25	417,00
M 22	x	75	S	25	433,00
M 22	x	80	S	25	433,00
M 22	x	90	S	25	451,00
M 22	x	100	S	10	488,00
M 22	x	110	S	10	527,00
M 22	x	120	S	10	565,00
M 22	x	130	S	10	602,00
M 22	x	140	S	10	602,00
M 22	x	150	S	10	713,00
M 22	x	160	S	10	802,00
M 22	x	170	S	10	1008,00
M 22	x	180	S	10	1008,00
M 22	x	190	S	10	1273,00
M 22	x	200	S	10	1273,00
M 22	x	210	S	10	1436,00
M 22	x	220	S	10	1436,00
M 22	x	230	S	1	1600,00
M 22	x	240	S	1	1600,00
M 22	x	250	S	1	1966,00
M 22	x	260	S	1	1966,00
M 22	x	270	S	1	2193,00
M 22	x	280	S	1	2193,00
M 22	x	300	S	1	2422,00
M 22	x	320	S	1	2925,00
M 24	x	75	S	25	181,00
M 24	x	80	S	25	181,00
M 24	x	85	S	10	236,00
M 24	x	90	S	10	222,00
M 24	x	95	S	10	241,00
M 24	x	100	S	10	241,00
M 24	x	110	S	10	364,00
M 24	x	120	S	10	390,00
M 24	x	130	S	10	400,00
M 24	x	140	S	10	551,00
M 24	x	150	S	10	601,00
M 24	x	160	S	10	664,00
M 24	x	170	S	1	849,00
M 24	x	180	S	1	849,00
M 24	x	190	S	1	1205,00
M 24	x	200	S	1	1205,00
M 24	x	210	S	1	1423,00
M 24	x	220	S	1	1544,00
M 24	x	230	S	1	1583,00
M 24	x	240	S	1	1660,00
M 24	x	250	S	1	1706,00
M 24	x	260	S	1	1706,00
M 24	x	270	S	1	2009,00
M 24	x	280	S	1	2009,00
M 24	x	290	S	1	2220,00
M 24	x	300	S	1	2220,00
M 24	x	310	S	1	2251,00
M 24	x	320	S	1	2251,00
M 24	x	330	S	1	2291,00
M 24	x	340	S	1	2291,00
M 24	x	350	S	1	2389,00
M 24	x	360	S	1	2389,00
M 24	x	370	S	1	2538,00
M 24	x	380	S	1	2538,00
M 24	x	390	S	1	2730,00
M 24	x	400	S	1	2730,00
M 24	x	410	S	1	2929,00
M 24	x	420	S	1	2929,00
M 24	x	430	S	1	3143,00
M 24	x	440	S	1	3143,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	450	S	1	3348,00
M 24	x	460	S	1	3348,00
M 24	x	480	S	1	3562,00
M 24	x	500	S	1	3799,00
M 24	x	560	S	1	8069,00
M 24	x	600	S	1	8449,00
M 24	x	640	S	1	8814,00
M 27	x	75	S	10	493,00
M 27	x	80	S	10	493,00
M 27	x	85	S	10	616,00
M 27	x	90	S	10	616,00
M 27	x	100	S	10	731,00
M 27	x	110	S	1	848,00
M 27	x	120	S	1	848,00
M 27	x	130	S	1	910,00
M 27	x	140	S	1	910,00
M 27	x	150	S	1	942,00
M 27	x	160	S	1	942,00
M 27	x	170	S	1	985,00
M 27	x	180	S	1	985,00
M 27	x	190	S	1	1179,00
M 27	x	200	S	1	1179,00
M 27	x	210	S	1	1736,00
M 27	x	220	S	1	1736,00
M 27	x	230	S	1	1879,00
M 27	x	240	S	1	1879,00
M 27	x	250	S	1	2029,00
M 27	x	260	S	1	2029,00
M 27	x	270	S	1	2178,00
M 27	x	280	S	1	2178,00
M 27	x	290	S	1	2497,00
M 27	x	300	S	1	2497,00
M 27	x	320	S	1	3166,00
M 27	x	340	S	1	3488,00
M 27	x	360	S	1	3809,00
M 27	x	380	S	1	4132,00
M 27	x	400	S	1	4364,00
M 27	x	420	S	1	4633,00
M 27	x	440	S	1	4917,00
M 27	x	460	S	1	5200,00
M 27	x	480	S	1	5510,00
M 27	x	500	S	1	5793,00
M 27	x	520	S	1	8045,00
M 27	x	540	S	1	8752,00
M 27	x	560	S	1	9269,00
M 30	x	80	S	1	1291,00
M 30	x	90	S	1	1291,00
M 30	x	100	S	1	1291,00
M 30	x	110	S	1	1535,00
M 30	x	120	S	1	1535,00
M 30	x	130	S	1	1700,00
M 30	x	140	S	1	1700,00
M 30	x	150	S	1	1763,00
M 30	x	160	S	1	1763,00
M 30	x	170	S	1	1944,00
M 30	x	180	S	1	1944,00
M 30	x	190	S	1	2073,00
M 30	x	200	S	1	2073,00
M 30	x	210	S	1	2141,00
M 30	x	220	S	1	2141,00
M 30	x	240	S	1	2303,00
M 30	x	250	S	1	2553,00
M 30	x	260	S	1	2553,00
M 30	x	270	S	1	2553,00
M 30	x	280	S	1	2553,00
M 30	x	290	S	1	2665,00
M 30	x	300	S	1	2665,00
M 30	x	310	S	1	3086,00
M 30	x	320	S	1	3086,00
M 30	x	330	S	1	3156,00
M 30	x	340	S	1	3156,00
M 30	x	350	S	1	3375,00
M 30	x	360	S	1	3375,00
M 30	x	370	S	1	3598,00
M 30	x	380	S	1	3598,00

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	390	S	1	3965,00
M 30	x	400	S	1	3965,00
M 30	x	420	S	1	4117,00
M 30	x	440	S	1	4850,00
M 30	x	450	S	1	5491,00
M 30	x	460	S	1	5491,00
M 30	x	480	S	1	6497,00
M 30	x	500	S	1	7016,00
M 30	x	520	S	1	12042,00
M 30	x	560	S	1	12648,00
M 30	x	580	S	1	12942,00
M 30	x	600	S	1	13239,00
M 33	x	90	S	1	1473,00
M 33	x	100	S	1	1473,00
M 33	x	110	S	1	1562,00
M 33	x	120	S	1	1640,00
M 33	x	130	S	1	1716,00
M 33	x	140	S	1	1797,00
M 33	x	150	S	1	1862,00
M 33	x	160	S	1	2203,00
M 33	x	170	S	1	2268,00
M 33	x	180	S	1	2268,00
M 33	x	190	S	1	2331,00
M 33	x	200	S	1	2331,00
M 33	x	210	S	1	2399,00
M 33	x	220	S	1	2399,00
M 33	x	230	S	1	2555,00
M 33	x	240	S	1	2555,00
M 33	x	250	S	1	2982,00
M 33	x	260	S	1	2982,00
M 33	x	270	S	1	3128,00
M 33	x	280	S	1	3128,00
M 33	x	300	S	1	3275,00
M 33	x	400	S	1	10200,00
M 36	x	100	S	1	1864,00
M 36	x	110	S	1	1864,00
M 36	x	120	S	1	1966,00
M 36	x	130	S	1	2076,00
M 36	x	140	S	1	2185,00
M 36	x	150	S	1	2261,00
M 36	x	160	S	1	2522,00
M 36	x	170	S	1	2686,00
M 36	x	180	S	1	2686,00
M 36	x	190	S	1	2851,00
M 36	x	200	S	1	2851,00
M 36	x	210	S	1	2967,00
M 36	x	220	S	1	2967,00
M 36	x	230	S	1	3262,00
M 36	x	240	S	1	3262,00
M 36	x	250	S	1	3435,00
M 36	x	260	S	1	3435,00
M 36	x	270	S	1	3606,00
M 36	x	280	S	1	3606,00
M 36	x	290	S	1	3768,00
M 36	x	300	S	1	3768,00
M 36	x	310	S	1	4351,00
M 36	x	320	S	1	4351,00
M 36	x	330	S	1	4501,00
M 36	x	340	S	1	4501,00
M 36	x	350	S	1	4663,00
M 36	x	360	S	1	4663,00
M 36	x	380	S	1	4807,00
M 36	x	400	S	1	4843,00
M 36	x	420	S	1	4930,00
M 36	x	440	S	1	5257,00
M 36	x	460	S	1	5674,00
M 36	x	480	S	1	5917,00
M 36	x	500	S	1	6187,00
M 36	x	540	S	1	14827,00
M 36	x	580	S	1	15289,00
M 39	x	110	S	1	3027,00
M 39	x	120	S	1	3027,00
M 39	x	130	S	1	3216,00
M 39	x	140	S	1	3324,00
M 39	x	150	S	1	3513,00

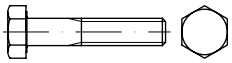
Dimensions			PU	Pieces	€/100/Mat.
M 39	x	160	S	1	3621,00
M 39	x	170	S	1	3757,00
M 39	x	180	S	1	3945,00
M 39	x	190	S	1	4134,00
M 39	x	200	S	1	4323,00
M 39	x	220	S	1	4621,00
M 39	x	240	S	1	4945,00
M 39	x	250	S	1	12721,00
M 39	x	260	S	1	12876,00
M 39	x	280	S	1	13175,00
M 39	x	300	S	1	13480,00
M 42	x	120	S	1	3216,00
M 42	x	130	S	1	3378,00
M 42	x	140	S	1	3513,00
M 42	x	150	S	1	3729,00
M 42	x	160	S	1	3810,00
M 42	x	170	S	1	4000,00
M 42	x	180	S	1	4215,00
M 42	x	190	S	1	4513,00
M 42	x	200	S	1	4513,00
M 42	x	210	S	5	4846,00
M 42	x	220	S	1	5161,00
M 42	x	240	S	1	5500,00
M 42	x	250	S	1	5917,00
M 42	x	260	S	1	5917,00
M 42	x	280	S	1	6620,00
M 42	x	300	S	1	6972,00
M 42	x	320	S	1	7676,00
M 42	x	340	S	1	8169,00
M 42	x	360	S	1	8847,00
M 42	x	380	S	1	9565,00
M 42	x	400	S	1	10025,00
M 42	x	420	S	1	10808,00
M 45	x	120	S	1	4242,00
M 45	x	130	S	1	4507,00
M 45	x	140	S	1	4675,00
M 45	x	150	S	1	4852,00
M 45	x	160	S	1	5194,00
M 45	x	170	S	1	5371,00
M 45	x	180	S	1	5540,00
M 45	x	190	S	1	5803,00
M 45	x	200	S	1	6058,00
M 45	x	220	S	1	14100,00
M 48	x	130	S	1	5452,00
M 48	x	140	S	1	5626,00
M 48	x	150	S	1	6062,00
M 48	x	160	S	1	6323,00
M 48	x	170	S	1	6494,00
M 48	x	180	S	1	6494,00
M 48	x	190	S	1	6924,00
M 48	x	200	S	1	6924,00
M 48	x	220	S	1	7268,00
M 48	x	240	S	1	7619,00
M 48	x	250	S	1	8052,00
M 48	x	260	S	1	8052,00
M 48	x	280	S	1	8659,00
M 48	x	290	S	1	9523,00
M 48	x	300	S	1	9523,00
M 48	x	320	S	1	10795,00
M 48	x	340	S	1	11390,00
M 48	x	360	S	1	11984,00
M 48	x	380	S	1	12525,00
M 48	x	400	S	1	13173,00
M 48	x	420	S	1	18035,00
M 48	x	480	S	1	23591,00
M 52	x	150	S	1	16339,00
M 52	x	200	S	1	17934,00
M 56	x	130	S	1	9565,00
M 56	x	140	S	1	9958,00
M 56	x	150	S	1	10082,00
M 56	x	160	S	1	10499,00
M 56	x	170	S	1	10808,00
M 56	x	180	S	1	11255,00
M 56	x	190	S	1	11429,00
M 56	x	200	S	1	11903,00

Dimensions			PU	Pieces	€/100/Mat.
M 56	x	220	S	1	11942,00
M 56	x	240	S	1	12888,00
M 56	x	250	S	1	13714,00
M 56	x	260	S	1	13714,00
M 56	x	280	S	1	14548,00
M 56	x	300	S	1	15265,00
M 56	x	380	S	1	24868,00
M 64	x	300	S	1	28586,00

ISO	04014.810 *

4014

8.8
zinc plated



Hexagon head bolts with shank

Short dimensions in part thread up to head,
*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions → TI-15
Mech. properties → TI-220
Standard conversion → TI-6
Corrosion protection → TI-217
Tightening torque → TI-230

Stainless → S. 496
Brass → S. 588

ISO 4014 → replaces DIN 931

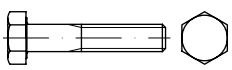
M 3	x	30	S	500	12,45 ZP
M 3	x	35	S	500	12,85 ZP
M 3	x	40	S	500	13,55 ZP
M 4	x	25	S	500	10,95 ZP
M 4	x	30	S	500	11,10 ZP
M 4	x	35	S	500	12,35 ZP
M 4	x	40	S	500	13,15 ZP
M 4	x	40	K	100	16,10 ZP
M 4	x	45	S	500	13,45 ZP
M 4	x	50	S	500	14,90 ZP
M 4	x	55	S	200	44,60 ZP
M 4	x	60	S	200	50,10 ZP
M 4	x	70	S	200	63,70 ZP
M 4	x	80	S	200	88,30 ZP
M 5	x	30	S	500	11,55 ZP
M 5	x	30	K	100	14,55 ZP
M 5	x	35	S	200	12,90 ZP
M 5	x	40	S	200	13,75 ZP
M 5	x	45	S	200	14,20 ZP
M 5	x	50	S	200	15,75 ZP
M 5	x	55	S	200	16,85 ZP
M 5	x	60	S	200	18,15 ZP
M 5	x	65	S	200	23,55 ZP
M 5	x	70	S	200	24,40 ZP
M 5	x	80	S	200	29,30 ZP
M 5	x	85	S	200	65,00 ZP
M 5	x	90	S	200	65,45 ZP
M 5	x	95	S	200	72,30 ZP
M 5	x	100	S	200	75,10 ZP
M 5	x	120	S	200	124,00 ZP
M 5	x	130	S	200	214,00 ZP
M 6	x	30	S	500	6,90 ZP
M 6	x	30	K	100	9,95 ZP
M 6	x	35	S	200	7,75 ZP
M 6	x	40	S	200	8,75 ZP
M 6	x	45	S	200	9,70 ZP
M 6	x	50	S	200	11,40 ZP
M 6	x	55	S	200	14,10 ZP
M 6	x	60	S	200	15,10 ZP
M 6	x	65	S	200	23,55 ZP
M 6	x	70	S	200	23,80 ZP
M 6	x	75	S	200	25,85 ZP
M 6	x	80	S	200	31,50 ZP
M 6	x	85	S	100	40,70 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 90	S	100	41,25 ZP
M 6 x 95	S	100	50,75 ZP
M 6 x 100	S	100	51,25 ZP
M 6 x 105	S	100	124,00 ZP
M 6 x 110	S	100	52,45 ZP
M 6 x 120	S	100	64,25 ZP
M 6 x 130	S	100	83,45 ZP
M 6 x 140	S	100	95,50 ZP
M 6 x 150	S	100	247,00 ZP
M 6 x 160	S	100	248,00 ZP
M 6 x 170	S	100	265,00 ZP
M 6 x 180	S	100	297,00 ZP
M 6 x 190	S	100	329,00 ZP
M 6 x 200	S	100	377,00 ZP
M 7 x 40	S	200	26,70 ZP
M 7 x 50	S	200	28,85 ZP
M 7 x 60	S	200	42,05 ZP
M 8 x 35	S	200	12,80 ZP
M 8 x 40	S	200	14,40 ZP
M 8 x 45	S	200	16,15 ZP
M 8 x 50	S	200	17,20 ZP
M 8 x 55	S	200	17,80 ZP
M 8 x 60	S	200	18,95 ZP
M 8 x 65	S	200	21,15 ZP
M 8 x 70	S	200	21,90 ZP
M 8 x 75	S	200	26,35 ZP
M 8 x 80	S	200	27,70 ZP
M 8 x 85	S	100	42,35 ZP
M 8 x 90	S	100	43,80 ZP
M 8 x 95	S	100	48,40 ZP
M 8 x 100	S	100	58,45 ZP
M 8 x 110	S	100	67,30 ZP
M 8 x 115	S	100	121,00 ZP
M 8 x 120	S	100	78,10 ZP
M 8 x 125	S	100	133,00 ZP
M 8 x 130	S	100	85,30 ZP
M 8 x 135	S	100	166,00 ZP
M 8 x 140	S	100	95,50 ZP
M 8 x 145	S	100	191,00 ZP
M 8 x 150	S	100	121,00 ZP
M 8 x 160	S	100	128,00 ZP
M 8 x 170	S	100	143,00 ZP
M 8 x 180	S	100	168,00 ZP
M 8 x 190	S	100	192,00 ZP
M 8 x 200	S	100	206,00 ZP
M 8 x 210	S	100	237,00 ZP
M 8 x 220	S	100	304,00 ZP
M 10 x 40	S	100	24,15 ZP
M 10 x 45	S	100	25,50 ZP
M 10 x 50	S	100	26,80 ZP
M 10 x 55	S	100	29,10 ZP
M 10 x 60	S	100	30,10 ZP
M 10 x 65	S	100	32,35 ZP
M 10 x 70	S	100	33,25 ZP
M 10 x 75	S	100	36,50 ZP
M 10 x 80	S	100	37,10 ZP
M 10 x 85	S	100	46,70 ZP
M 10 x 90	S	100	47,35 ZP
M 10 x 95	S	100	53,05 ZP
M 10 x 100	S	100	53,65 ZP
M 10 x 105	S	50	107,00 ZP
M 10 x 110	S	50	80,50 ZP
M 10 x 115	S	50	145,00 ZP
M 10 x 120	S	50	90,70 ZP
M 10 x 130	S	50	102,00 ZP
M 10 x 140	S	50	141,00 ZP
M 10 x 150	S	50	167,00 ZP
M 10 x 160	S	50	203,00 ZP
M 10 x 170	S	50	206,00 ZP
M 10 x 180	S	50	225,00 ZP
M 10 x 190	S	50	275,00 ZP
M 10 x 200	S	50	199,40 ZP
M 10 x 210	S	50	291,00 ZP
M 10 x 220	S	50	533,00 ZP
M 10 x 230	S	50	703,00 ZP
M 10 x 240	S	50	572,00 ZP
M 10 x 250	S	50	764,00 ZP
M 10 x 260	S	50	623,00 ZP
M 10 x 270	S	50	816,00 ZP
M 10 x 280	S	50	663,00 ZP
M 10 x 290	S	50	963,00 ZP
M 10 x 300	S	50	699,00 ZP
M 12 x 45	S	100	37,35 ZP
M 12 x 50	S	100	38,90 ZP
M 12 x 55	S	100	40,55 ZP
M 12 x 60	S	100	43,45 ZP
M 12 x 65	S	50	46,40 ZP
M 12 x 70	S	50	47,95 ZP
M 12 x 75	S	50	50,90 ZP
M 12 x 80	S	50	53,20 ZP
M 12 x 85	S	50	66,65 ZP
M 12 x 90	S	50	60,65 ZP
M 12 x 95	S	50	72,70 ZP
M 12 x 100	S	50	73,90 ZP
M 12 x 110	S	50	109,00 ZP
M 12 x 115	S	50	192,00 ZP
M 12 x 120	S	50	119,00 ZP
M 12 x 130	S	50	132,00 ZP
M 12 x 140	S	50	178,00 ZP
M 12 x 150	S	50	172,00 ZP
M 12 x 160	S	25	379,00 ZP
M 12 x 170	S	25	286,00 ZP
M 12 x 180	S	25	207,70 ZP
M 12 x 190	S	25	338,00 ZP
M 12 x 200	S	25	365,00 ZP
M 12 x 210	S	25	410,00 ZP
M 12 x 220	S	25	412,00 ZP
M 12 x 230	S	25	553,00 ZP
M 12 x 240	S	25	555,00 ZP
M 12 x 250	S	25	620,00 ZP
M 12 x 260	S	25	609,00 ZP
M 12 x 270	S	25	675,00 ZP
M 12 x 280	S	25	664,00 ZP
M 12 x 290	S	25	694,00 ZP
M 12 x 300	S	25	724,00 ZP
M 12 x 310	S	25	1120,00 ZP
M 12 x 320	S	25	1034,00 ZP
M 12 x 330	S	1	1466,00 ZP
M 14 x 50	S	100	93,10 ZP
M 14 x 55	S	50	99,10 ZP
M 14 x 60	S	50	101,00 ZP
M 14 x 65	S	50	110,00 ZP
M 14 x 70	S	50	112,00 ZP
M 14 x 75	S	50	134,00 ZP
M 14 x 80	S	50	140,00 ZP
M 14 x 85	S	50	154,00 ZP
M 14 x 90	S	50	156,00 ZP
M 14 x 95	S	50	173,00 ZP
M 14 x 100	S	50	174,00 ZP
M 14 x 110	S	50	199,00 ZP
M 14 x 120	S	50	225,00 ZP
M 14 x 130	S	50	254,00 ZP
M 14 x 140	S	25	276,00 ZP
M 14 x 150	S	25	301,00 ZP
M 14 x 160	S	25	333,00 ZP
M 14 x 170	S	25	379,00 ZP
M 14 x 180	S	25	381,00 ZP
M 14 x 190	S	25	447,00 ZP
M 14 x 200	S	25	450,00 ZP
M 14 x 220	S	25	566,00 ZP
M 14 x 240	S	25	628,00 ZP
M 16 x 55	S	50	73,25 ZP
M 16 x 60	S	50	75,65 ZP
M 16 x 65	S	25	81,10 ZP
M 16 x 70	S	25	85,85 ZP
M 16 x 75	S	25	90,10 ZP
M 16 x 80	S	25	95,50 ZP
M 16 x 85	S	25	117,00 ZP
M 16 x 90	S	25	107,00 ZP
M 16 x 95	S	25	127,00 ZP
M 16 x 100	S	25	128,00 ZP
M 16 x 110	S	25	189,00 ZP
M 16 x 120	S	25	208,00 ZP
M 16 x 130	S	25	221,00 ZP
M 16 x 140	S	25	282,00 ZP
M 16 x 150	S	25	315,00 ZP
M 16 x 160	S	25	352,00 ZP
M 16 x 170	S	25	423,00 ZP
M 16 x 180	S	25	427,00 ZP
M 16 x 190	S	25	492,00 ZP
M 16 x 200	S	25	496,00 ZP
M 16 x 210	S	25	620,00 ZP
M 16 x 220	S	1	624,00 ZP
M 16 x 230	S	1	692,00 ZP
M 16 x 240	S	1	696,00 ZP
M 16 x 250	S	1	778,00 ZP
M 16 x 260	S	1	781,00 ZP
M 16 x 270	S	1	1040,00 ZP
M 16 x 280	S	1	1044,00 ZP
M 16 x 290	S	1	1164,00 ZP
M 16 x 300	S	1	1168,00 ZP
M 16 x 310	S	1	1376,00 ZP
M 16 x 320	S	1	1307,00 ZP
M 16 x 330	S	1	1466,00 ZP
M 16 x 340	S	1	1324,00 ZP
M 16 x 350	S	1	1638,00 ZP
M 16 x 360	S	1	1479,00 ZP
M 16 x 370	S	1	1973,00 ZP
M 16 x 380	S	1	1815,00 ZP
M 16 x 390	S	1	2226,00 ZP
M 16 x 400	S	1	2046,00 ZP
M 16 x 420	S	1	2279,00 ZP
M 16 x 430	S	1	2799,00 ZP
M 16 x 440	S	1	2582,00 ZP
M 18 x 65	S	25	262,00 ZP
M 18 x 70	S	25	273,00 ZP
M 18 x 75	S	25	281,00 ZP
M 18 x 80	S	25	284,00 ZP
M 18 x 90	S	25	308,00 ZP
M 18 x 95	S	25	332,00 ZP
M 18 x 100	S	25	336,00 ZP
M 18 x 110	S	25	380,00 ZP
M 18 x 120	S	25	386,00 ZP
M 18 x 130	S	25	417,00 ZP
M 18 x 140	S	25	502,00 ZP
M 18 x 150	S	25	507,00 ZP
M 18 x 160	S	25	564,00 ZP
M 18 x 170	S	25	744,00 ZP
M 18 x 180	S	25	749,00 ZP
M 18 x 190	S	1	1016,00 ZP
M 18 x 200	S	1	1021,00 ZP
M 18 x 220	S	1	1204,00 ZP
M 18 x 230	S	1	1334,00 ZP
M 18 x 240	S	1	1340,00 ZP
M 20 x 65	S	25	142,00 ZP
M 20 x 70	S	25	146,00 ZP
M 20 x 75	S	25	153,00 ZP
M 20 x 80	S	25	159,00 ZP
M 20 x 85	S	25	173,00 ZP
M 20 x 90	S	25	175,00 ZP
M 20 x 95	S	25	206,00 ZP
M 20 x 100	S	25	207,00 ZP
M 20 x 110	S	25	315,00 ZP
M 20 x 120	S	25	331,00 ZP
M 20 x 130	S	25	338,00 ZP
M 20 x 140	S	25	436,00 ZP
M 20 x 150	S	25	480,00 ZP
M 20 x 160	S	10	533,00 ZP
M 20 x 170	S	10	663,00 ZP
M 20 x 180	S	10	669,00 ZP
M 20 x 190	S	1	980,00 ZP
M 20 x 200	S	1	987,00 ZP
M 20 x 210	S	1	1202,00 ZP
M 20 x 220	S	1	1209,00 ZP
M 20 x 230	S	1	1338,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	240	S	1	1345,00 ZP
M 20	x	250	S	1	1469,00 ZP
M 20	x	260	S	1	1476,00 ZP
M 20	x	270	S	1	1541,00 ZP
M 20	x	280	S	1	1667,00 ZP
M 20	x	290	S	10	1770,00 ZP
M 20	x	300	S	1	1899,00 ZP
M 20	x	310	S	1	2050,00 ZP
M 20	x	320	S	1	2014,00 ZP
M 20	x	330	S	1	2084,00 ZP
M 20	x	340	S	1	2153,00 ZP
M 20	x	350	S	1	2330,00 ZP
M 20	x	360	S	1	2337,00 ZP
M 20	x	380	S	1	2501,00 ZP
M 20	x	390	S	1	2612,00 ZP
M 20	x	400	S	1	2619,00 ZP
M 20	x	420	S	1	2684,00 ZP
M 20	x	430	S	1	3272,00 ZP
M 20	x	440	S	1	3279,00 ZP
M 20	x	450	S	1	3318,00 ZP
M 20	x	460	S	1	3325,00 ZP
M 20	x	480	S	1	3369,00 ZP
M 20	x	500	S	1	3415,00 ZP
M 22	x	70	S	25	487,00 ZP
M 22	x	75	S	25	506,00 ZP
M 22	x	80	S	25	510,00 ZP
M 22	x	90	S	25	536,00 ZP
M 22	x	100	S	10	580,00 ZP
M 22	x	110	S	10	628,00 ZP
M 22	x	120	S	10	672,00 ZP
M 22	x	130	S	10	714,00 ZP
M 22	x	140	S	10	721,00 ZP
M 22	x	150	S	10	840,00 ZP
M 22	x	160	S	10	936,00 ZP
M 22	x	180	S	10	1158,00 ZP
M 22	x	200	S	10	1437,00 ZP
M 22	x	240	S	1	1795,00 ZP
M 22	x	260	S	1	2174,00 ZP
M 22	x	280	S	1	2417,00 ZP
M 22	x	300	S	1	2661,00 ZP
M 24	x	75	S	25	250,00 ZP
M 24	x	80	S	25	256,00 ZP
M 24	x	85	S	10	315,00 ZP
M 24	x	90	S	10	303,00 ZP
M 24	x	95	S	10	324,00 ZP
M 24	x	100	S	10	329,00 ZP
M 24	x	110	S	10	488,00 ZP
M 24	x	120	S	10	524,00 ZP
M 24	x	130	S	10	539,00 ZP
M 24	x	140	S	10	699,00 ZP
M 24	x	150	S	10	757,00 ZP
M 24	x	160	S	10	829,00 ZP
M 24	x	170	S	1	1022,00 ZP
M 24	x	180	S	1	1031,00 ZP
M 24	x	190	S	1	1397,00 ZP
M 24	x	200	S	1	1406,00 ZP
M 24	x	210	S	1	1632,00 ZP
M 24	x	220	S	1	1762,00 ZP
M 24	x	230	S	1	1807,00 ZP
M 24	x	240	S	1	1893,00 ZP
M 24	x	250	S	1	1999,00 ZP
M 24	x	260	S	1	1958,00 ZP
M 24	x	270	S	1	2323,00 ZP
M 24	x	280	S	1	2277,00 ZP
M 24	x	300	S	1	2507,00 ZP
M 24	x	310	S	1	2607,00 ZP
M 24	x	320	S	1	2553,00 ZP
M 24	x	330	S	1	2668,00 ZP
M 24	x	340	S	1	2613,00 ZP
M 24	x	350	S	1	2787,00 ZP
M 24	x	360	S	1	2729,00 ZP
M 24	x	380	S	1	2931,00 ZP
M 24	x	390	S	1	3170,00 ZP
M 24	x	400	S	1	3182,00 ZP
M 24	x	410	S	1	3391,00 ZP
M 24	x	420	S	1	3400,00 ZP
M 24	x	430	S	1	3625,00 ZP
M 24	x	440	S	1	3635,00 ZP
M 24	x	450	S	1	3851,00 ZP
M 27	x	80	S	10	621,00 ZP
M 27	x	90	S	10	755,00 ZP
M 27	x	100	S	10	882,00 ZP
M 27	x	110	S	1	1009,00 ZP
M 27	x	120	S	1	1021,00 ZP
M 27	x	130	S	1	1090,00 ZP
M 27	x	140	S	1	1101,00 ZP
M 27	x	150	S	1	1144,00 ZP
M 27	x	160	S	1	1155,00 ZP
M 27	x	170	S	1	1210,00 ZP
M 27	x	180	S	1	1221,00 ZP
M 27	x	190	S	1	1426,00 ZP
M 27	x	200	S	1	1436,00 ZP
M 27	x	220	S	1	2017,00 ZP
M 27	x	230	S	1	2099,00 ZP
M 27	x	240	S	1	2181,00 ZP
M 27	x	260	S	1	2352,00 ZP
M 27	x	270	S	1	2487,00 ZP
M 27	x	280	S	1	2523,00 ZP
M 27	x	300	S	1	2866,00 ZP
M 27	x	320	S	1	3637,00 ZP
M 30	x	80	S	1	1489,00 ZP
M 30	x	90	S	1	1469,00 ZP
M 30	x	100	S	1	1483,00 ZP
M 30	x	110	S	1	1740,00 ZP
M 30	x	120	S	1	1754,00 ZP
M 30	x	130	S	1	1931,00 ZP
M 30	x	140	S	1	1944,00 ZP
M 30	x	150	S	1	2018,00 ZP
M 30	x	160	S	1	2033,00 ZP
M 30	x	170	S	1	2228,00 ZP
M 30	x	180	S	1	2243,00 ZP
M 30	x	190	S	1	2384,00 ZP
M 30	x	200	S	1	2399,00 ZP
M 30	x	210	S	1	2482,00 ZP
M 30	x	220	S	1	2496,00 ZP
M 30	x	230	S	1	2547,00 ZP
M 30	x	240	S	1	2685,00 ZP
M 30	x	250	S	10	2879,00 ZP
M 30	x	260	S	1	2961,00 ZP
M 30	x	280	S	1	2990,00 ZP
M 30	x	290	S	1	2695,00 ZP
M 30	x	300	S	1	3128,00 ZP
M 30	x	310	S	1	3353,00 ZP
M 30	x	320	S	1	3577,00 ZP
M 30	x	330	S	1	3765,00 ZP
M 30	x	340	S	1	3780,00 ZP
M 30	x	350	S	1	4017,00 ZP
M 30	x	360	S	1	4032,00 ZP
M 30	x	380	S	1	4288,00 ZP
M 33	x	100	S	1	1711,00 ZP
M 33	x	110	S	1	1817,00 ZP
M 33	x	120	S	1	1912,00 ZP
M 33	x	130	S	1	2002,00 ZP
M 33	x	140	S	1	2100,00 ZP
M 33	x	150	S	1	2184,00 ZP
M 33	x	160	S	1	2539,00 ZP
M 33	x	170	S	1	2619,00 ZP
M 33	x	180	S	1	2636,00 ZP
M 33	x	190	S	1	2715,00 ZP
M 33	x	200	S	1	2732,00 ZP
M 33	x	210	S	1	2817,00 ZP
M 33	x	220	S	1	2836,00 ZP
M 33	x	240	S	1	3024,00 ZP
M 33	x	260	S	1	3485,00 ZP
M 33	x	280	S	1	3666,00 ZP
M 33	x	300	S	1	3845,00 ZP
M 36	x	110	S	1	2173,00 ZP
M 36	x	120	S	1	2294,00 ZP
M 36	x	130	S	1	2423,00 ZP
M 36	x	140	S	1	2552,00 ZP
M 36	x	150	S	1	2646,00 ZP
M 36	x	160	S	1	2929,00 ZP
M 36	x	170	S	1	3113,00 ZP
M 36	x	180	S	1	3132,00 ZP
M 36	x	190	S	1	3317,00 ZP
M 36	x	200	S	1	3336,00 ZP
M 36	x	210	S	1	3472,00 ZP
M 36	x	220	S	1	3492,00 ZP
M 36	x	230	S	1	3807,00 ZP
M 36	x	240	S	1	3827,00 ZP
M 36	x	250	S	1	4023,00 ZP
M 36	x	260	S	1	4041,00 ZP
M 36	x	270	S	1	4359,00 ZP
M 36	x	280	S	1	4253,00 ZP
M 36	x	300	S	1	4453,00 ZP
M 36	x	320	S	1	5433,00 ZP
M 36	x	360	S	1	5865,00 ZP
M 36	x	400	S	1	6163,00 ZP
M 39	x	140	S	1	3822,00 ZP
M 39	x	150	S	1	4035,00 ZP
M 39	x	160	S	1	4170,00 ZP
M 39	x	170	S	1	4333,00 ZP
M 39	x	180	S	1	4548,00 ZP
M 39	x	190	S	1	4764,00 ZP
M 39	x	200	S	1	4983,00 ZP
M 42	x	120	S	1	3777,00 ZP
M 42	x	130	S	1	4115,00 ZP
M 42	x	140	S	1	4290,00 ZP
M 42	x	150	S	1	4548,00 ZP
M 42	x	160	S	1	4670,00 ZP
M 42	x	170	S	1	4896,00 ZP
M 42	x	180	S	1	5153,00 ZP
M 42	x	190	S	1	5302,00 ZP
M 42	x	200	S	1	5532,00 ZP
M 42	x	220	S	1	6049,00 ZP
M 42	x	240	S	1	6454,00 ZP
M 42	x	250	S	1	6904,00 ZP
M 42	x	260	S	1	6937,00 ZP
M 42	x	280	S	1	7676,00 ZP
M 48	x	140	S	1	6690,00 ZP
M 48	x	150	S	1	7181,00 ZP
M 48	x	160	S	1	7498,00 ZP
M 48	x	170	S	1	7722,00 ZP
M 48	x	180	S	1	7774,00 ZP
M 48	x	200	S	1	8307,00 ZP
M 48	x	220	S	1	8842,00 ZP
M 48	x	240	S	1	9383,00 ZP

ISO	04014.(**)	*
4014	**8.8** **zinc plated yellow****	



Hexagon head bolts with shank

Short dimensions in part thread up to head,
*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401,
**< M 6 min. coating thickness 5µm = (860)
** from M 6 min. coating thickness 8µm = (311)

Dimensions → TI-15
Mech. properties → TI-220
Standard conversion → TI-6
Corrosion protection → TI-217
Tightening torque → TI-230

Stainless → S. 496
Brass → S. 588

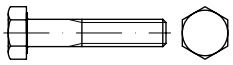
ISO 4014 → replaces DIN 931

M 5	x	45	S	200	14,20 YZP
M 5	x	50	S	200	15,75 YZP
M 6	x	30	S	500	6,90 YZP8

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	35	S	200	7,75 YZP8
M 6	x	40	S	200	8,75 YZP8
M 6	x	45	S	200	9,70 YZP8
M 6	x	50	S	200	11,40 YZP8
M 6	x	55	S	200	14,10 YZP8
M 6	x	60	S	200	15,10 YZP8
M 6	x	65	S	200	23,55 YZP8
M 6	x	70	S	200	23,80 YZP8
M 6	x	75	S	200	25,85 YZP8
M 6	x	80	S	200	31,50 YZP8
M 6	x	90	S	100	41,25 YZP8
M 6	x	100	S	100	51,25 YZP8
M 6	x	110	S	100	52,45 YZP8
M 6	x	120	S	100	64,25 YZP8
M 8	x	35	S	200	12,80 YZP8
M 8	x	40	S	200	14,40 YZP8
M 8	x	45	S	200	16,15 YZP8
M 8	x	50	S	200	17,20 YZP8
M 8	x	55	S	200	17,80 YZP8
M 8	x	60	S	200	18,95 YZP8
M 8	x	65	S	200	21,15 YZP8
M 8	x	70	S	200	21,90 YZP8
M 8	x	75	S	200	26,35 YZP8
M 8	x	80	S	200	27,70 YZP
M 8	x	85	S	100	42,35 YZP8
M 8	x	90	S	100	43,80 YZP8
M 8	x	95	S	100	58,00 YZP8
M 8	x	100	S	100	58,45 YZP8
M 8	x	110	S	100	67,30 YZP8
M 8	x	115	S	100	121,00 YZP8
M 8	x	120	S	100	78,10 YZP8
M 8	x	130	S	100	85,30 YZP8
M 8	x	140	S	50	61,30 YZP8
M 8	x	150	S	100	121,00 YZP8
M 10	x	40	S	100	24,15 YZP8
M 10	x	45	S	100	25,50 YZP8
M 10	x	50	S	100	26,80 YZP8
M 10	x	55	S	100	29,10 YZP8
M 10	x	60	S	100	30,10 YZP8
M 10	x	65	S	100	32,35 YZP8
M 10	x	70	S	100	33,25 YZP8
M 10	x	75	S	100	36,50 YZP8
M 10	x	80	S	100	37,10 YZP8
M 10	x	85	S	100	46,70 YZP8
M 10	x	90	S	100	47,35 YZP8
M 10	x	95	S	100	53,05 YZP8
M 10	x	100	S	100	53,65 YZP8
M 10	x	110	S	50	80,50 YZP8
M 10	x	120	S	50	90,70 YZP8
M 10	x	130	S	50	86,41 YZP8
M 10	x	140	S	50	133,00 YZP8
M 10	x	150	S	50	141,12 YZP8
M 12	x	45	S	100	37,35 YZP8
M 12	x	50	S	100	38,90 YZP8
M 12	x	55	S	100	40,55 YZP8
M 12	x	60	S	100	43,45 YZP8
M 12	x	65	S	50	46,40 YZP8
M 12	x	70	S	50	47,95 YZP8
M 12	x	75	S	50	50,90 YZP8
M 12	x	80	S	50	53,20 YZP8
M 12	x	85	S	50	66,65 YZP8
M 12	x	90	S	50	60,65 YZP8
M 12	x	100	S	50	73,90 YZP8
M 12	x	110	S	50	109,00 YZP8
M 12	x	120	S	50	119,00 YZP8
M 12	x	130	S	50	112,48 YZP8
M 12	x	140	S	50	153,39 YZP8
M 12	x	150	S	50	173,84 YZP8
M 12	x	160	S	50	192,25 YZP8
M 12	x	180	S	25	269,45 YZP8
M 16	x	55	S	50	73,25 YZP8
M 16	x	60	S	50	75,65 YZP8
M 16	x	65	S	25	81,10 YZP8
M 16	x	70	S	25	85,85 YZP8
M 16	x	75	S	25	90,10 YZP
M 16	x	80	S	25	95,50 YZP
M 16	x	90	S	25	107,00 YZP8
M 16	x	100	S	25	128,00 YZP8
M 16	x	110	S	25	189,00 YZP8
M 16	x	120	S	25	208,00 YZP8
M 16	x	130	S	25	221,00 YZP8
M 16	x	140	S	25	282,00 YZP8
M 16	x	150	S	25	315,00 YZP
M 16	x	160	S	25	352,00 YZP8
M 16	x	180	S	25	427,00 YZP8
M 16	x	190	S	25	492,00 YZP8
M 16	x	200	S	25	496,00 YZP8
M 20	x	65	S	25	142,00 YZP8
M 20	x	70	S	25	146,00 YZP8
M 20	x	75	S	25	153,00 YZP8
M 20	x	80	S	25	159,00 YZP8
M 20	x	90	S	25	175,00 YZP8
M 20	x	100	S	25	207,00 YZP8
M 20	x	110	S	25	315,00 YZP8
M 20	x	120	S	25	331,00 YZP8
M 20	x	130	S	25	338,00 YZP8
M 20	x	140	S	25	436,00 YZP8
M 20	x	160	S	10	533,00 YZP8
M 20	x	240	S	1	1345,00 YZP8
M 24	x	75	S	25	250,00 YZP8
M 24	x	80	S	25	256,00 YZP8
M 24	x	90	S	10	303,00 YZP8
M 24	x	100	S	10	329,00 YZP8
M 24	x	110	S	10	488,00 YZP8
M 24	x	120	S	10	524,00 YZP8
M 24	x	130	S	10	539,00 YZP8
M 24	x	140	S	10	699,00 YZP8
M 24	x	150	S	10	757,00 YZP8
M 24	x	180	S	1	1031,00 YZP8
M 24	x	200	S	1	1406,00 YZP8

ISO	04014.870	*

4014 **8.8**
zinc plated 8 TLP



Hexagon head bolts with shank

Short dimensions in part thread up to head,
*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions ➔ TI-15 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-220 Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

Stainless ➔ S. 496
Brass ➔ S. 588

ISO 4014 ➔ replaces DIN 931

M 5	x	40	S	200	17,20 ZP TLP
M 5	x	45	S	200	17,80 ZP TLP
M 5	x	50	S	200	19,70 ZP TLP
M 6	x	25	S	500	7,25 ZP TLP
M 6	x	30	S	500	8,65 ZP TLP
M 6	x	35	S	200	9,70 ZP TLP
M 6	x	40	S	200	10,95 ZP TLP
M 6	x	45	S	200	12,15 ZP TLP
M 6	x	50	S	200	14,25 ZP TLP
M 6	x	55	S	200	17,65 ZP TLP
M 6	x	60	S	200	18,90 ZP TLP
M 6	x	65	S	200	10,80 ZP TLP
M 6	x	70	S	200	29,80 ZP TLP
M 6	x	75	S	200	32,40 ZP TLP
M 6	x	80	S	200	39,40 ZP TLP
M 6	x	90	S	100	51,60 ZP TLP
M 6	x	100	S	100	64,10 ZP TLP
M 6	x	110	S	100	65,60 ZP TLP
M 6	x	120	S	100	80,40 ZP TLP
M 8	x	35	S	200	16,00 ZP TLP
M 8	x	40	S	200	18,00 ZP TLP
M 8	x	45	S	200	20,20 ZP TLP
M 8	x	50	S	200	21,50 ZP TLP
M 8	x	55	S	200	22,30 ZP TLP
M 8	x	60	S	200	23,70 ZP TLP
M 8	x	35	S	200	26,50 ZP TLP
M 8	x	70	S	200	27,40 ZP TLP
M 8	x	75	S	200	33,00 ZP TLP
M 8	x	80	S	200	34,70 ZP TLP
M 8	x	85	S	100	53,00 ZP TLP
M 8	x	90	S	100	54,80 ZP TLP
M 8	x	100	S	100	73,10 ZP TLP
M 8	x	110	S	100	84,20 ZP TLP
M 8	x	120	S	100	97,70 ZP TLP
M 8	x	130	S	100	107,00 ZP TLP
M 8	x	140	S	50	76,70 ZP TLP
M 8	x	150	S	100	152,00 ZP TLP
M 10	x	40	S	100	30,20 ZP TLP
M 10	x	45	S	100	31,90 ZP TLP
M 10	x	50	S	100	33,50 ZP TLP
M 10	x	55	S	100	36,40 ZP TLP
M 10	x	60	S	100	37,70 ZP TLP
M 10	x	65	S	100	40,50 ZP TLP
M 10	x	70	S	100	41,60 ZP TLP
M 10	x	75	S	100	45,60 ZP TLP
M 10	x	80	S	100	46,40 ZP TLP
M 10	x	85	S	100	58,40 ZP TLP
M 10	x	90	S	100	59,20 ZP TLP
M 10	x	95	S	100	66,40 ZP TLP
M 10	x	100	S	100	67,10 ZP TLP
M 10	x	110	S	50	101,00 ZP TLP
M 10	x	120	S	50	114,00 ZP TLP
M 10	x	130	S	50	128,00 ZP TLP
M 10	x	140	S	50	177,00 ZP TLP
M 10	x	150	S	50	209,00 ZP TLP
M 12	x	45	S	100	46,70 ZP TLP
M 12	x	50	S	100	48,70 ZP TLP
M 12	x	55	S	100	50,70 ZP TLP
M 12	x	60	S	100	54,40 ZP TLP
M 12	x	65	S	50	58,00 ZP TLP
M 12	x	70	S	50	60,00 ZP TLP
M 12	x	75	S	50	63,70 ZP TLP
M 12	x	80	S	50	66,50 ZP TLP
M 12	x	85	S	50	83,40 ZP TLP
M 12	x	90	S	50	75,90 ZP TLP
M 12	x	100	S	50	92,40 ZP TLP
M 12	x	110	S	50	137,00 ZP TLP
M 12	x	120	S	50	149,00 ZP TLP
M 12	x	130	S	50	165,00 ZP TLP
M 12	x	140	S	50	223,00 ZP TLP
M 12	x	150	S	50	250,00 ZP TLP
M 12	x	160	S	25	322,00 ZP TLP
M 12	x	180	S	25	397,00 ZP TLP
M 16	x	55	S	50	91,60 ZP TLP
M 16	x	60	S	50	94,60 ZP TLP
M 16	x	65	S	25	102,00 ZP TLP
M 16	x	70	S	25	108,00 ZP TLP
M 16	x	75	S	25	113,00 ZP TLP
M 16	x	80	S	25	120,00 ZP TLP
M 16	x	90	S	25	134,00 ZP TLP
M 16	x	100	S	25	160,00 ZP TLP
M 16	x	110	S	25	237,00 ZP TLP
M 16	x	120	S	25	260,00 ZP TLP
M 16	x	130	S	25	277,00 ZP TLP
M 16	x	140	S	25	353,00 ZP TLP
M 16	x	150	S	25	394,00 ZP TLP
M 16	x	160	S	25	440,00 ZP TLP
M 16	x	180	S	25	534,00 ZP TLP
M 16	x	190	S	25	615,00 ZP TLP
M 16	x	200	S	25	620,00 ZP TLP
M 20	x	70	S	25	183,00 ZP TLP
M 20	x	75	S	25	192,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	80	S	25	199,00 ZP TLP
M 20	x	100	S	25	259,00 ZP TLP
M 20	x	110	S	25	394,00 ZP TLP
M 20	x	120	S	25	414,00 ZP TLP
M 20	x	130	S	25	423,00 ZP TLP
M 20	x	140	S	25	545,00 ZP TLP
M 20	x	160	S	10	667,00 ZP TLP
M 20	x	240	S	1	1682,00 ZP TLP
M 24	x	75	S	25	313,00 ZP TLP
M 24	x	80	S	25	320,00 ZP TLP
M 24	x	90	S	10	379,00 ZP TLP
M 24	x	100	S	10	412,00 ZP TLP
M 24	x	110	S	10	610,00 ZP TLP
M 24	x	120	S	10	655,00 ZP TLP
M 24	x	130	S	10	674,00 ZP TLP
M 24	x	140	S	10	874,00 ZP TLP
M 24	x	150	S	10	947,00 ZP TLP
M 24	x	180	S	1	1289,00 ZP TLP
M 24	x	200	S	1	1758,00 ZP TLP

ISO	04014.353	RAZ 1530

4014 8.8 zinc flake coated

Hexagon head bolts with shank

Short dimensions in part thread up to head,
friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-15 Corrosion protection → TI-218
Mech. properties → TI-220 Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 496
Brass → S. 588

ISO 4014 → replaces DIN 931

M 6	x	30	S	500	9,00 flZn
M 6	x	35	S	200	10,10 flZn
M 6	x	40	S	200	11,40 flZn
M 6	x	45	S	200	12,65 flZn
M 6	x	50	S	200	14,85 flZn
M 6	x	55	S	200	18,35 flZn
M 6	x	60	S	200	19,65 flZn
M 6	x	65	S	200	30,65 flZn
M 6	x	70	S	200	30,95 flZn
M 6	x	75	S	200	33,65 flZn
M 6	x	80	S	200	40,95 flZn
M 8	x	35	S	200	16,65 flZn
M 8	x	40	S	200	18,75 flZn
M 8	x	45	S	200	21,00 flZn
M 8	x	50	S	200	22,40 flZn
M 8	x	55	S	200	23,15 flZn
M 8	x	60	S	200	24,65 flZn
M 8	x	65	S	200	27,50 flZn
M 8	x	70	S	200	28,50 flZn
M 8	x	75	S	200	34,30 flZn
M 8	x	80	S	200	36,05 flZn
M 8	x	90	S	100	56,95 flZn
M 8	x	100	S	100	76,00 flZn
M 10	x	40	S	100	31,40 flZn
M 10	x	45	S	100	33,15 flZn
M 10	x	50	S	100	34,85 flZn
M 10	x	55	S	100	37,85 flZn
M 10	x	60	S	100	39,15 flZn
M 10	x	65	S	100	42,10 flZn
M 10	x	70	S	100	43,25 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	75	S	100	47,45 flZn
M 10	x	80	S	100	48,25 flZn
M 10	x	90	S	100	60,75 flZn
M 10	x	100	S	100	69,75 flZn
M 10	x	110	S	50	105,00 flZn
M 10	x	120	S	50	118,00 flZn
M 12	x	45	S	100	48,60 flZn
M 12	x	50	S	100	50,60 flZn
M 12	x	55	S	100	52,75 flZn
M 12	x	60	S	100	56,50 flZn
M 12	x	65	S	50	60,35 flZn
M 12	x	70	S	50	62,35 flZn
M 12	x	75	S	50	66,20 flZn
M 12	x	80	S	50	69,20 flZn
M 12	x	90	S	50	78,85 flZn
M 12	x	100	S	50	96,10 flZn
M 12	x	110	S	50	142,00 flZn
M 12	x	120	S	50	155,00 flZn
M 16	x	55	S	50	95,25 flZn
M 16	x	60	S	50	98,35 flZn
M 16	x	65	S	25	106,00 flZn
M 16	x	70	S	25	112,00 flZn
M 16	x	75	S	25	118,00 flZn
M 16	x	80	S	25	125,00 flZn
M 16	x	90	S	25	140,00 flZn
M 16	x	100	S	25	167,00 flZn
M 16	x	110	S	25	246,00 flZn
M 16	x	120	S	25	271,00 flZn
M 16	x	130	S	25	288,00 flZn
M 16	x	140	S	25	367,00 flZn
M 20	x	65	S	25	185,00 flZn
M 20	x	70	S	25	190,00 flZn
M 20	x	75	S	25	199,00 flZn
M 20	x	80	S	25	207,00 flZn
M 20	x	90	S	25	228,00 flZn
M 20	x	100	S	25	270,00 flZn
M 20	x	110	S	25	410,00 flZn
M 20	x	120	S	25	431,00 flZn
M 20	x	130	S	25	440,00 flZn
M 20	x	140	S	25	567,00 flZn
M 20	x	150	S	25	624,00 flZn
M 20	x	160	S	10	693,00 flZn
M 20	x	170	S	10	862,00 flZn
M 20	x	180	S	10	870,00 flZn
M 24	x	75	S	25	325,00 flZn
M 24	x	80	S	25	333,00 flZn
M 24	x	90	S	10	394,00 flZn
M 24	x	110	S	10	635,00 flZn
M 24	x	120	S	10	682,00 flZn
M 24	x	130	S	10	701,00 flZn
M 24	x	140	S	10	909,00 flZn
M 24	x	150	S	10	985,00 flZn
M 24	x	160	S	10	1078,00 flZn
M 24	x	170	S	1	1329,00 flZn
M 24	x	180	S	1	1341,00 flZn

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions	PU	Pieces	€/100/Mat.
ISO	04014.820		*

4014 8.8 hot dip galvanized

Hexagon head bolts with shank

Short dimensions in part thread up to head,
Thread tolerance 6h (6az + HDG = U),
*M 10/12/14/22= RAZ 3230 other ∅ = RAZ 403

Dimensions → TI-15 Corrosion protection → TI-219
Mech. properties → TI-220 Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 496
Brass → S. 588

ISO 4014 → replaces DIN 931

M 8	x	35	S	200	94,60 HDG
M 8	x	40	S	200	104,00 HDG
M 8	x	45	S	200	109,00 HDG
M 8	x	50	S	200	124,00 HDG
M 8	x	60	S	200	138,00 HDG
M 8	x	65	S	200	152,00 HDG
M 8	x	70	S	200	161,00 HDG
M 8	x	80	S	200	257,00 HDG
M 8	x	100	S	200	286,00 HDG
M 10	x	40	S	100	64,30 HDG
M 10	x	45	S	100	68,60 HDG
M 10	x	50	S	100	72,35 HDG
M 10	x	55	S	100	78,50 HDG
M 10	x	60	S	100	81,60 HDG
M 10	x	65	S	100	87,75 HDG
M 10	x	70	S	100	90,90 HDG
M 10	x	75	S	100	98,30 HDG
M 10	x	80	S	100	101,00 HDG
M 10	x	90	S	100	126,00 HDG
M 10	x	100	S	100	142,00 HDG
M 10	x	110	S	50	214,00 HDG
M 10	x	120	S	50	176,40 HDG
M 12	x	45	S	100	99,50 HDG
M 12	x	50	S	100	105,00 HDG
M 12	x	55	S	100	114,00 HDG
M 12	x	60	S	100	118,00 HDG
M 12	x	65	S	50	126,00 HDG
M 12	x	70	S	50	130,00 HDG
M 12	x	75	S	50	138,00 HDG
M 12	x	80	S	50	145,00 HDG
M 12	x	90	S	50	165,00 HDG
M 12	x	100	S	50	195,00 HDG
M 12	x	110	S	50	257,00 HDG
M 12	x	120	S	50	279,00 HDG
M 12	x	130	S	50	92,50 HDG
M 12	x	140	S	50	409,00 HDG
M 12	x	150	S	50	459,00 HDG
M 12	x	160	S	25	576,00 HDG
M 12	x	180	S	25	203,28 HDG
M 12	x	200	S	25	810,00 HDG
M 16	x	55	S	50	199,00 HDG
M 16	x	60	S	50	208,00 HDG
M 16	x	65	S	25	224,00 HDG
M 16	x	70	S	25	235,00 HDG
M 16	x	75	S	25	248,00 HDG
M 16	x	80	S	25	264,00 HDG
M 16	x	90	S	25	316,00 HDG
M 16	x	100	S	25	341,00 HDG
M 16	x	110	S	25	452,00 HDG
M 16	x	120	S	25	490,00 HDG
M 16	x	130	S	25	520,00 HDG
M 16	x	140	S	25	656,00 HDG

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	150	S	25	724,00 HDG
M 16	x	160	S	25	804,00 HDG
M 16	x	180	S	25	971,00 HDG
M 16	x	200	S	25	1119,00 HDG
M 16	x	220	S	1	1397,00 HDG
M 16	x	240	S	1	1577,00 HDG
M 16	x	260	S	1	1762,00 HDG
M 16	x	300	S	1	2566,00 HDG
M 20	x	65	S	25	385,00 HDG
M 20	x	70	S	25	396,00 HDG
M 20	x	75	S	25	415,00 HDG
M 20	x	80	S	25	434,00 HDG
M 20	x	85	S	25	860,00 HDG
M 20	x	90	S	25	477,00 HDG
M 20	x	100	S	25	551,00 HDG
M 20	x	110	S	25	748,00 HDG
M 20	x	120	S	25	786,00 HDG
M 20	x	130	S	25	804,00 HDG
M 20	x	140	S	25	1014,00 HDG
M 20	x	150	S	25	1113,00 HDG
M 20	x	160	S	10	1231,00 HDG
M 20	x	180	S	10	1521,00 HDG
M 20	x	200	S	10	2194,00 HDG
M 20	x	210	S	1	2569,00 HDG
M 20	x	220	S	1	2658,00 HDG
M 20	x	240	S	1	2967,00 HDG
M 20	x	260	S	1	3276,00 HDG
M 20	x	300	S	1	4141,00 HDG
M 24	x	75	S	25	669,00 HDG
M 24	x	80	S	25	687,00 HDG
M 24	x	85	S	10	2071,00 HDG
M 24	x	90	S	10	804,00 HDG
M 24	x	95	S	10	2102,00 HDG
M 24	x	100	S	10	866,00 HDG
M 24	x	110	S	10	1151,00 HDG
M 24	x	120	S	10	1236,00 HDG
M 24	x	130	S	10	1274,00 HDG
M 24	x	140	S	10	1639,00 HDG
M 24	x	150	S	10	1762,00 HDG
M 24	x	160	S	10	1917,00 HDG
M 24	x	180	S	1	2349,00 HDG
M 24	x	200	S	1	3153,00 HDG
M 24	x	220	S	1	3894,00 HDG
M 24	x	240	S	1	4203,00 HDG
M 24	x	260	S	1	4326,00 HDG
M 24	x	300	S	1	5500,00 HDG
M 27	x	90	S	10	1718,00 HDG
M 27	x	100	S	10	2040,00 HDG
M 27	x	110	S	1	2367,00 HDG
M 27	x	120	S	1	2448,00 HDG
M 27	x	130	S	1	2466,00 HDG
M 27	x	140	S	1	2540,00 HDG
M 27	x	150	S	1	2589,00 HDG
M 27	x	160	S	1	2633,00 HDG
M 27	x	180	S	1	2967,00 HDG
M 27	x	200	S	1	3770,00 HDG
M 30	x	90	S	1	3276,00 HDG
M 30	x	100	S	1	3276,00 HDG
M 30	x	110	S	1	3832,00 HDG
M 30	x	120	S	1	3894,00 HDG
M 30	x	130	S	1	4264,00 HDG
M 30	x	140	S	1	4326,00 HDG
M 30	x	150	S	1	4511,00 HDG
M 30	x	160	S	1	4511,00 HDG
M 30	x	180	S	1	5005,00 HDG
M 30	x	200	S	1	5377,00 HDG
M 30	x	220	S	1	6179,00 HDG
M 30	x	240	S	1	7168,00 HDG
M 33	x	120	S	1	4573,00 HDG
M 33	x	130	S	1	4944,00 HDG
M 33	x	140	S	1	5005,00 HDG
M 33	x	180	S	1	5809,00 HDG
M 33	x	200	S	1	6118,00 HDG
M 36	x	120	S	1	5068,00 HDG
M 36	x	130	S	1	5377,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 36	x	140	S	1	5623,00 HDG
M 36	x	150	S	1	5870,00 HDG
M 36	x	160	S	1	6488,00 HDG
M 36	x	180	S	1	6921,00 HDG
M 36	x	190	S	1	7195,00 HDG
M 36	x	200	S	1	7354,00 HDG
M 36	x	220	S	1	7559,00 HDG

ISO	04014.809	RAZ 1400
4014	**8.8**	**AD W7**
	-50 up to +300 °C	

Hexagon head bolts with shank, applicable from -50 up to +300 °C

With inspection certificate 3.1,
prices are plus certificate costs

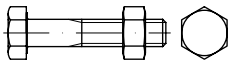
Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

ISO 4014 → replaces DIN 931

M 8	x	35	S	200	14,05
M 8	x	40	S	200	15,85
M 10	x	45	S	100	27,40
M 10	x	50	S	100	28,60
M 10	x	55	S	100	31,25
M 10	x	60	S	100	31,85
M 10	x	65	S	100	34,30
M 10	x	70	S	100	34,80
M 10	x	75	S	100	38,75
M 10	x	80	S	100	38,75
M 10	x	90	S	100	52,35
M 10	x	100	S	100	60,15
M 10	x	120	S	50	105,00
M 12	x	50	S	100	41,90
M 12	x	55	S	100	43,05
M 12	x	60	S	100	46,10
M 12	x	65	S	50	49,70
M 12	x	70	S	50	50,75
M 12	x	75	S	50	54,00
M 12	x	80	S	50	56,10
M 12	x	90	S	50	64,85
M 12	x	100	S	50	81,50
M 12	x	120	S	50	133,00
M 16	x	55	S	50	76,80
M 16	x	60	S	50	78,60
M 16	x	65	S	25	83,65
M 16	x	70	S	25	88,65
M 16	x	75	S	25	93,75
M 16	x	80	S	25	99,10
M 16	x	90	S	25	111,00
M 16	x	100	S	25	137,00
M 16	x	110	S	25	207,00
M 16	x	120	S	25	230,00
M 16	x	130	S	25	245,00
M 16	x	140	S	25	332,00
M 20	x	65	S	25	150,00
M 20	x	70	S	25	153,00
M 20	x	75	S	25	159,00
M 20	x	80	S	25	165,00
M 20	x	90	S	25	183,00
M 20	x	100	S	25	225,00
M 20	x	110	S	25	351,00
M 20	x	120	S	25	365,00

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	130	S	25	368,00
M 20	x	140	S	25	505,00
M 20	x	150	S	25	563,00
M 20	x	160	S	10	633,00
M 20	x	180	S	10	818,00
M 24	x	75	S	25	271,00
M 24	x	80	S	25	271,00
M 24	x	90	S	10	332,00
M 24	x	100	S	10	361,00
M 24	x	110	S	10	546,00
M 24	x	120	S	10	585,00
M 24	x	140	S	10	826,00
M 24	x	160	S	10	996,00
M 24	x	180	S	1	1273,00
M 27	x	90	S	10	924,00
M 27	x	100	S	10	1097,00
M 27	x	110	S	1	1271,00
M 27	x	120	S	1	1271,00
M 27	x	130	S	1	1365,00
M 27	x	150	S	1	1413,00

ISO	04014.813	RAZ 401
4014	**Mu 8.8**	**SB**
	zinc plated	



Hexagon head bolts with shank, Mu = with hexagon nuts ISO 4032, SB = acc. to EN 15048

For bolted fastenings by steel structures that are not preloaded with inspection certificate 3.1, prices are plus certificate costs

Dimensions → TI-15 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-234
Standard conversion → TI-6

Declaration of performance → www.reyher.de

M 10	x	45	S	100	74,00 ZP
M 10	x	50	S	100	78,00 ZP
M 10	x	55	S	100	82,00 ZP
M 10	x	60	S	100	87,00 ZP
M 10	x	65	S	100	91,00 ZP
M 10	x	70	S	100	96,00 ZP
M 10	x	75	S	100	100,00 ZP
M 10	x	80	S	100	104,00 ZP
M 10	x	90	S	100	113,00 ZP
M 10	x	100	S	100	122,00 ZP
M 10	x	110	S	50	135,00 ZP
M 10	x	120	S	50	140,00 ZP
M 12	x	50	S	100	114,00 ZP
M 12	x	55	S	100	120,00 ZP
M 12	x	60	S	100	126,00 ZP
M 12	x	65	S	50	131,00 ZP
M 12	x	70	S	50	137,00 ZP
M 12	x	75	S	50	143,00 ZP
M 12	x	80	S	50	150,00 ZP
M 12	x	90	S	50	162,00 ZP
M 12	x	100	S	50	174,00 ZP
M 12	x	110	S	50	187,00 ZP
M 12	x	120	S	50	200,00 ZP
M 16	x	55	S	50	232,00 ZP
M 16	x	60	S	50	243,00 ZP

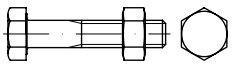
Dimensions			PU	Pieces	€/100/Mat.
M 16	x	65	S	25	254,00 ZP
M 16	x	70	S	25	265,00 ZP
M 16	x	75	S	25	276,00 ZP
M 16	x	80	S	25	287,00 ZP
M 16	x	90	S	25	309,00 ZP
M 16	x	100	S	25	329,00 ZP
M 16	x	110	S	25	358,00 ZP
M 16	x	120	S	25	380,00 ZP
M 16	x	130	S	25	397,00 ZP
M 16	x	140	S	25	419,00 ZP
M 16	x	150	S	25	442,00 ZP
M 16	x	160	S	25	465,00 ZP
M 20	x	65	S	25	446,00 ZP
M 20	x	70	S	25	463,00 ZP
M 20	x	75	S	25	479,00 ZP
M 20	x	80	S	25	496,00 ZP
M 20	x	90	S	25	529,00 ZP
M 20	x	100	S	25	563,00 ZP
M 20	x	110	S	25	601,00 ZP
M 20	x	120	S	25	635,00 ZP
M 20	x	130	S	25	667,00 ZP
M 20	x	140	S	25	701,00 ZP
M 20	x	150	S	25	735,00 ZP
M 20	x	160	S	10	776,00 ZP
M 20	x	170	S	10	810,00 ZP
M 20	x	180	S	10	844,00 ZP
M 24	x	75	S	25	765,00 ZP
M 24	x	80	S	25	801,00 ZP
M 24	x	90	S	10	851,00 ZP
M 24	x	100	S	10	901,00 ZP
M 24	x	110	S	10	959,00 ZP
M 24	x	120	S	10	1008,00 ZP
M 24	x	130	S	10	1044,00 ZP
M 24	x	140	S	10	1093,00 ZP
M 24	x	150	S	10	1142,00 ZP
M 24	x	160	S	10	1202,00 ZP
M 24	x	180	S	1	1301,00 ZP
M 27	x	90	S	10	1323,00 ZP
M 27	x	100	S	10	1401,00 ZP
M 27	x	110	S	1	1460,00 ZP
M 27	x	120	S	1	1537,00 ZP
M 27	x	130	S	1	1578,00 ZP
M 27	x	140	S	1	1653,00 ZP
M 27	x	150	S	1	1729,00 ZP

ISO	04014.825	RAZ 403

4014

Mu 8.8
hot dip galvanized

SB



Hexagon head bolts with shank, Mu = with hexagon nuts ISO 4032, SB = acc. to EN 15048

For bolted fastenings by steel structures that are not preloaded with inspection certificate 3.1, prices are plus certificate costs

washers ➔ ISO 7090 300HV HDG

Dimensions ➔ TI-15 Corrosion protection ➔ TI-219
Mech. properties ➔ TI-220 Tightening torque ➔ TI-234
Standard conversion ➔ TI-6

Declaration of performance ➔ www.reyher.de

M 10	x	40	S	100	149,00 HDG
M 10	x	45	S	100	114,00 HDG
M 10	x	50	S	100	121,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	55	S	100	127,00 HDG
M 10	x	60	S	100	136,00 HDG
M 10	x	65	S	100	142,00 HDG
M 10	x	70	S	100	147,00 HDG
M 10	x	75	S	100	156,00 HDG
M 10	x	80	S	100	164,00 HDG
M 10	x	90	S	100	202,00 HDG
M 10	x	100	S	100	218,00 HDG
M 10	x	110	S	50	285,00 HDG
M 10	x	120	S	50	316,00 HDG
M 12	x	45	S	100	237,00 HDG
M 12	x	50	S	100	186,00 HDG
M 12	x	55	S	100	198,00 HDG
M 12	x	60	S	100	205,00 HDG
M 12	x	65	S	50	217,00 HDG
M 12	x	70	S	50	225,00 HDG
M 12	x	75	S	50	235,00 HDG
M 12	x	80	S	50	244,00 HDG
M 12	x	90	S	50	268,00 HDG
M 12	x	100	S	50	324,00 HDG
M 12	x	110	S	50	401,00 HDG
M 12	x	120	S	50	443,00 HDG
M 12	x	130	S	50	405,00 HDG
M 12	x	140	S	50	420,00 HDG
M 12	x	150	S	50	440,00 HDG
M 12	x	160	S	25	460,00 HDG
M 12	x	180	S	25	495,00 HDG
M 12	x	200	S	25	540,00 HDG
M 16	x	55	S	50	390,00 HDG
M 16	x	60	S	50	409,00 HDG
M 16	x	65	S	25	427,00 HDG
M 16	x	70	S	25	443,00 HDG
M 16	x	75	S	25	465,00 HDG
M 16	x	80	S	25	478,00 HDG
M 16	x	90	S	25	565,00 HDG
M 16	x	100	S	25	605,00 HDG
M 16	x	110	S	25	770,00 HDG
M 16	x	120	S	25	781,00 HDG
M 16	x	130	S	25	813,00 HDG
M 16	x	140	S	25	1007,00 HDG
M 16	x	150	S	25	1159,00 HDG
M 16	x	160	S	25	1202,00 HDG
M 16	x	180	S	25	830,00 HDG
M 16	x	200	S	25	890,00 HDG
M 16	x	220	S	1	1010,00 HDG
M 16	x	240	S	1	1080,00 HDG
M 16	x	260	S	1	1330,00 HDG
M 16	x	300	S	1	1500,00 HDG
M 20	x	65	S	25	691,00 HDG
M 20	x	70	S	25	696,00 HDG
M 20	x	75	S	25	739,00 HDG
M 20	x	80	S	25	763,00 HDG
M 20	x	85	S	25	830,00 HDG
M 20	x	90	S	25	835,00 HDG
M 20	x	100	S	25	886,00 HDG
M 20	x	110	S	25	1143,00 HDG
M 20	x	120	S	25	1207,00 HDG
M 20	x	130	S	25	1291,00 HDG
M 20	x	140	S	25	1583,00 HDG
M 20	x	150	S	25	1709,00 HDG
M 20	x	160	S	10	1866,00 HDG
M 20	x	170	S	10	2015,00 HDG
M 20	x	180	S	10	2197,00 HDG
M 20	x	200	S	10	1420,00 HDG
M 20	x	220	S	1	1930,00 HDG
M 20	x	240	S	1	2050,00 HDG
M 20	x	260	S	1	2410,00 HDG
M 20	x	300	S	1	2700,00 HDG
M 24	x	75	S	25	1225,00 HDG
M 24	x	80	S	25	1268,00 HDG
M 24	x	85	S	10	1320,00 HDG
M 24	x	90	S	10	1346,00 HDG
M 24	x	100	S	10	1431,00 HDG
M 24	x	110	S	10	1835,00 HDG
M 24	x	120	S	10	1972,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	130	S	10	2057,00 HDG
M 24	x	140	S	10	2684,00 HDG
M 24	x	150	S	10	2840,00 HDG
M 24	x	160	S	10	2959,00 HDG
M 24	x	180	S	1	3458,00 HDG
M 24	x	200	S	1	2140,00 HDG
M 24	x	220	S	1	3250,00 HDG
M 24	x	240	S	1	3500,00 HDG
M 24	x	260	S	1	3900,00 HDG
M 24	x	300	S	1	4500,00 HDG
M 27	x	90	S	10	3404,00 HDG
M 27	x	100	S	10	3591,00 HDG
M 27	x	110	S	1	3757,00 HDG
M 27	x	120	S	1	3931,00 HDG
M 27	x	130	S	1	4109,00 HDG
M 27	x	140	S	1	4112,00 HDG
M 27	x	150	S	1	4514,00 HDG
M 27	x	160	S	1	3400,00 HDG
M 27	x	180	S	1	3650,00 HDG
M 27	x	200	S	1	3900,00 HDG
M 30	x	90	S	1	3150,00 HDG
M 30	x	100	S	1	3300,00 HDG
M 30	x	110	S	1	3450,00 HDG
M 30	x	120	S	1	3600,00 HDG
M 30	x	130	S	1	3750,00 HDG
M 30	x	130	S	1	3950,00 HDG
M 30	x	150	S	1	4100,00 HDG
M 30	x	160	S	1	4250,00 HDG
M 30	x	180	S	1	4550,00 HDG
M 30	x	200	S	1	4850,00 HDG
M 30	x	220	S	1	5200,00 HDG
M 30	x	240	S	1	5500,00 HDG
M 30	x	260	S	1	6200,00 HDG
M 30	x	280	S	1	6600,00 HDG
M 30	x	300	S	1	6900,00 HDG
M 36	x	120	S	1	5600,00 HDG
M 36	x	130	S	1	5800,00 HDG
M 36	x	140	S	1	6000,00 HDG
M 36	x	150	S	1	6300,00 HDG
M 36	x	160	S	1	6600,00 HDG
M 36	x	180	S	1	7500,00 HDG
M 36	x	190	S	1	7700,00 HDG
M 36	x	200	S	1	8000,00 HDG
M 36	x	220	S	1	8500,00 HDG
M 36	x	240	S	1	9000,00 HDG
M 36	x	260	S	1	9600,00 HDG
M 36	x	280	S	1	10100,00 HDG
M 36	x	300	S	1	10600,00 HDG

ISO	04014.100	*

4014

10.9

Hexagon head bolts with shank

Short dimensions in part thread up to head,
*M 10/12/14/22= RAZ 3250 other ∅ = RAZ 405

Dimensions ➔ TI-15 Tightening torque ➔ TI-230
Mech. properties ➔ TI-220 Standard conversion ➔ TI-6

Stainless ➔ S. 496
Brass ➔ S. 588

ISO 4014 ➔ replaces DIN 931

M 6	x	30	S	500	12,30
M 6	x	35	S	200	12,95
M 6	x	40	S	200	13,80
M 6	x	45	S	200	16,25
M 6	x	50	S	200	18,10

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	55	S	200	19,95
M 6	x	60	S	200	21,50
M 6	x	65	S	200	26,10
M 6	x	70	S	200	26,10
M 6	x	80	S	200	57,65
M 6	x	90	S	200	98,50
M 6	x	100	S	100	106,00
M 6	x	110	S	100	114,00
M 6	x	120	S	100	125,00
M 6	x	130	S	100	156,00
M 6	x	140	S	100	172,00
M 8	x	35	S	200	22,30
M 8	x	40	S	200	24,15
M 8	x	45	S	200	27,10
M 8	x	50	S	200	27,60
M 8	x	55	S	200	27,60
M 8	x	60	S	200	28,85
M 8	x	65	S	200	32,50
M 8	x	70	S	200	35,10
M 8	x	75	S	200	43,85
M 8	x	80	S	200	43,85
M 8	x	90	S	100	48,70
M 8	x	100	S	100	56,05
M 8	x	110	S	100	68,50
M 8	x	120	S	100	75,65
M 8	x	130	S	100	122,00
M 8	x	140	S	100	145,00
M 8	x	150	S	100	164,00
M 8	x	160	S	100	185,00
M 8	x	170	S	100	224,00
M 8	x	180	S	100	203,00
M 8	x	190	S	100	263,00
M 8	x	200	S	100	243,00
M 8	x	220	S	100	325,00
M 8	x	240	S	100	384,00
M 8	x	260	S	100	461,00
M 10	x	35	S	100	34,55
M 10	x	40	S	100	34,55
M 10	x	45	S	100	36,85
M 10	x	50	S	100	40,00
M 10	x	55	S	100	41,00
M 10	x	60	S	100	43,05
M 10	x	65	S	100	43,55
M 10	x	70	S	100	47,75
M 10	x	75	S	100	52,35
M 10	x	80	S	100	52,85
M 10	x	90	S	100	63,70
M 10	x	100	S	100	72,70
M 10	x	110	S	50	90,10
M 10	x	120	S	50	101,00
M 10	x	130	S	50	133,00
M 10	x	140	S	50	143,00
M 10	x	150	S	50	162,00
M 10	x	160	S	50	388,00
M 10	x	170	S	50	413,00
M 10	x	180	S	50	436,00
M 10	x	190	S	50	447,00
M 10	x	200	S	50	461,00
M 10	x	210	S	25	616,00
M 10	x	220	S	50	495,00
M 10	x	240	S	50	532,00
M 10	x	260	S	50	580,00
M 10	x	280	S	50	616,00
M 10	x	300	S	50	650,00
M 12	x	40	S	100	52,05
M 12	x	45	S	100	52,05
M 12	x	50	S	100	58,25
M 12	x	55	S	100	58,25
M 12	x	60	S	100	61,85
M 12	x	65	S	50	63,70
M 12	x	70	S	50	70,30
M 12	x	75	S	50	78,10
M 12	x	80	S	50	78,10
M 12	x	85	S	50	88,90
M 12	x	90	S	50	88,90

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	95	S	50	97,90
M 12	x	100	S	50	97,90
M 12	x	110	S	50	117,00
M 12	x	120	S	50	130,00
M 12	x	130	S	50	154,00
M 12	x	140	S	50	176,00
M 12	x	150	S	50	195,00
M 12	x	160	S	25	388,00
M 12	x	170	S	25	413,00
M 12	x	180	S	25	436,00
M 12	x	190	S	25	447,00
M 12	x	200	S	25	461,00
M 12	x	210	S	25	616,00
M 12	x	220	S	25	495,00
M 12	x	240	S	25	532,00
M 12	x	260	S	25	580,00
M 12	x	280	S	25	616,00
M 12	x	300	S	25	650,00
M 12	x	320	S	25	775,00
M 14	x	45	S	100	88,90
M 14	x	50	S	100	88,90
M 14	x	55	S	50	88,90
M 14	x	60	S	50	91,90
M 14	x	65	S	50	107,00
M 14	x	70	S	50	107,00
M 14	x	75	S	50	118,00
M 14	x	80	S	50	118,00
M 14	x	90	S	50	133,00
M 14	x	100	S	50	140,00
M 14	x	110	S	50	164,00
M 14	x	120	S	50	186,00
M 14	x	130	S	50	231,00
M 14	x	140	S	25	247,00
M 14	x	150	S	25	268,00
M 14	x	160	S	25	515,00
M 14	x	170	S	25	563,00
M 14	x	180	S	25	589,00
M 14	x	190	S	25	600,00
M 14	x	200	S	25	622,00
M 14	x	220	S	25	667,00
M 16	x	55	S	50	118,00
M 16	x	60	S	50	124,00
M 16	x	65	S	25	137,00
M 16	x	70	S	25	143,00
M 16	x	75	S	25	154,00
M 16	x	80	S	25	156,00
M 16	x	85	S	25	161,00
M 16	x	90	S	25	161,00
M 16	x	95	S	25	172,00
M 16	x	100	S	25	172,00
M 16	x	110	S	25	208,00
M 16	x	120	S	25	208,00
M 16	x	130	S	25	234,00
M 16	x	140	S	25	250,00
M 16	x	150	S	25	445,00
M 16	x	160	S	25	515,00
M 16	x	170	S	25	563,00
M 16	x	180	S	25	589,00
M 16	x	190	S	25	600,00
M 16	x	200	S	25	622,00
M 16	x	210	S	25	788,00
M 16	x	220	S	25	667,00
M 16	x	230	S	25	840,00
M 16	x	240	S	25	713,00
M 16	x	250	S	25	907,00
M 16	x	260	S	25	754,00
M 16	x	270	S	25	1019,00
M 16	x	280	S	25	958,00
M 16	x	290	S	1	1180,00
M 16	x	300	S	1	1314,00
M 16	x	310	S	1	1397,00
M 16	x	320	S	1	1381,00
M 16	x	330	S	1	1469,00
M 16	x	340	S	1	1604,00
M 16	x	350	S	1	1706,00

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	360	S	1	1595,00
M 16	x	380	S	1	2037,00
M 16	x	400	S	1	2235,00
M 16	x	420	S	1	2851,00
M 18	x	65	S	25	279,00
M 18	x	70	S	25	286,00
M 18	x	75	S	25	305,00
M 18	x	80	S	25	309,00
M 18	x	90	S	25	345,00
M 18	x	100	S	25	360,00
M 18	x	110	S	25	376,00
M 18	x	120	S	25	388,00
M 18	x	130	S	25	455,00
M 18	x	140	S	25	503,00
M 18	x	150	S	25	555,00
M 18	x	160	S	25	788,00
M 18	x	170	S	25	809,00
M 18	x	180	S	25	851,00
M 18	x	190	S	1	893,00
M 18	x	200	S	1	916,00
M 18	x	220	S	1	952,00
M 18	x	240	S	1	1453,00
M 18	x	260	S	1	1506,00
M 18	x	280	S	1	1604,00
M 18	x	300	S	1	1752,00
M 18	x	320	S	1	2000,00
M 20	x	65	S	25	279,00
M 20	x	70	S	25	286,00
M 20	x	75	S	25	305,00
M 20	x	80	S	25	309,00
M 20	x	85	S	25	345,00
M 20	x	90	S	25	345,00
M 20	x	95	S	25	360,00
M 20	x	100	S	25	360,00
M 20	x	110	S	25	376,00
M 20	x	120	S	25	388,00
M 20	x	130	S	25	455,00
M 20	x	140	S	25	503,00
M 20	x	150	S	25	555,00
M 20	x	160	S	10	788,00
M 20	x	170	S	10	809,00
M 20	x	180	S	10	851,00
M 20	x	190	S	1	893,00
M 20	x	200	S	1	916,00
M 20	x	210	S	1	1111,00
M 20	x	220	S	1	952,00
M 20	x	230	S	1	1198,00
M 20	x	240	S	1	1017,00
M 20	x	250	S	1	1299,00
M 20	x	260	S	1	1099,00
M 20	x	270	S	1	1383,00
M 20	x	280	S	1	1153,00
M 20	x	290	S	1	1604,00
M 20	x	300	S	1	1234,00
M 20	x	310	S	1	1853,00
M 20	x	320	S	1	1427,00
M 20	x	330	S	1	1962,00
M 20	x	340	S	1	1553,00
M 20	x	350	S	1	2205,00
M 20	x	360	S	1	1691,00
M 20	x	370	S	1	2767,00
M 20	x	380	S	1	2767,00
M 20	x	390	S	1	3066,00
M 20	x	400	S	1	3066,00
M 22	x	70	S	25	959,00
M 22	x	75	S	25	959,00
M 22	x	80	S	25	702,00
M 22	x	90	S	25	800,00
M 22	x	100	S	10	851,00
M 22	x	110	S	10	916,00
M 22	x	120	S	10	935,00
M 22	x	130	S	10	977,00
M 22	x	140	S	10	1020,00
M 22	x	150	S	10	1063,00
M 22	x	160	S	10	1107,00

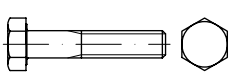
Dimensions			PU	Pieces	€/100/Mat.
M 22	x	170	S	10	1136,00
M 22	x	180	S	10	1169,00
M 22	x	200	S	10	1234,00
M 22	x	220	S	10	1310,00
M 22	x	230	S	1	1553,00
M 22	x	240	S	1	1381,00
M 22	x	260	S	1	1452,00
M 22	x	280	S	1	1536,00
M 22	x	300	S	1	2440,00
M 22	x	320	S	1	2796,00
M 24	x	75	S	25	702,00
M 24	x	80	S	25	702,00
M 24	x	85	S	10	800,00
M 24	x	90	S	10	800,00
M 24	x	100	S	10	851,00
M 24	x	110	S	10	916,00
M 24	x	120	S	10	935,00
M 24	x	130	S	10	977,00
M 24	x	140	S	10	1020,00
M 24	x	150	S	10	1063,00
M 24	x	160	S	10	1107,00
M 24	x	170	S	1	1136,00
M 24	x	180	S	1	1169,00
M 24	x	190	S	1	1201,00
M 24	x	200	S	1	1234,00
M 24	x	210	S	1	1457,00
M 24	x	220	S	1	1310,00
M 24	x	230	S	1	1553,00
M 24	x	240	S	1	1381,00
M 24	x	250	S	1	1672,00
M 24	x	260	S	1	1452,00
M 24	x	270	S	1	1765,00
M 24	x	280	S	1	1536,00
M 24	x	290	S	1	1966,00
M 24	x	300	S	1	1638,00
M 24	x	310	S	1	2324,00
M 24	x	320	S	1	1915,00
M 24	x	330	S	1	2445,00
M 24	x	340	S	1	2127,00
M 24	x	350	S	1	2668,00
M 24	x	360	S	1	2276,00
M 24	x	370	S	1	3560,00
M 24	x	380	S	1	3560,00
M 24	x	390	S	1	3833,00
M 24	x	400	S	1	3833,00
M 27	x	80	S	10	987,00
M 27	x	90	S	10	1012,00
M 27	x	100	S	10	1063,00
M 27	x	110	S	10	1107,00
M 27	x	120	S	10	1150,00
M 27	x	130	S	10	1201,00
M 27	x	140	S	1	1262,00
M 27	x	150	S	1	1318,00
M 27	x	160	S	1	1395,00
M 27	x	170	S	1	1469,00
M 27	x	180	S	1	1536,00
M 27	x	190	S	1	1607,00
M 27	x	200	S	1	1680,00
M 27	x	210	S	1	2225,00
M 27	x	220	S	1	1807,00
M 27	x	230	S	1	2445,00
M 27	x	240	S	1	1966,00
M 27	x	250	S	1	2617,00
M 27	x	260	S	1	2104,00
M 27	x	270	S	1	2804,00
M 27	x	280	S	1	2250,00
M 27	x	290	S	1	3250,00
M 27	x	300	S	1	2406,00
M 27	x	320	S	1	2680,00
M 30	x	80	S	1	1167,00
M 30	x	90	S	1	1209,00
M 30	x	100	S	1	1237,00
M 30	x	110	S	1	1268,00
M 30	x	120	S	1	1364,00
M 30	x	130	S	1	1438,00

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	140	S	1	1522,00
M 30	x	150	S	1	1578,00
M 30	x	160	S	1	1641,00
M 30	x	170	S	1	1722,00
M 30	x	180	S	1	1807,00
M 30	x	190	S	1	1892,00
M 30	x	200	S	1	1951,00
M 30	x	210	S	1	2225,00
M 30	x	220	S	1	2018,00
M 30	x	230	S	1	2445,00
M 30	x	240	S	1	2219,00
M 30	x	250	S	1	2617,00
M 30	x	260	S	1	2377,00
M 30	x	270	S	1	2804,00
M 30	x	280	S	1	2546,00
M 30	x	290	S	1	3250,00
M 30	x	300	S	1	2705,00
M 30	x	320	S	1	3116,00
M 30	x	330	S	1	4000,00
M 30	x	340	S	1	3334,00
M 30	x	350	S	1	4205,00
M 30	x	360	S	1	3633,00
M 30	x	380	S	1	3841,00
M 30	x	400	S	1	4030,00
M 33	x	100	S	1	1480,00
M 33	x	110	S	1	1578,00
M 33	x	120	S	1	1691,00
M 33	x	130	S	1	1779,00
M 33	x	140	S	1	1892,00
M 33	x	150	S	1	1993,00
M 33	x	160	S	1	2104,00
M 33	x	170	S	1	2194,00
M 33	x	180	S	1	2304,00
M 33	x	190	S	1	2406,00
M 33	x	200	S	1	2504,00
M 33	x	220	S	1	2607,00
M 33	x	240	S	1	2806,00
M 33	x	250	S	1	3918,00
M 33	x	260	S	1	3001,00
M 33	x	280	S	1	3200,00
M 33	x	300	S	1	3401,00
M 33	x	320	S	1	3915,00
M 36	x	110	S	1	1880,00
M 36	x	120	S	1	2007,00
M 36	x	130	S	1	2120,00
M 36	x	140	S	1	2250,00
M 36	x	150	S	1	2363,00
M 36	x	160	S	1	2479,00
M 36	x	170	S	1	2588,00
M 36	x	180	S	1	2722,00
M 36	x	190	S	1	2848,00
M 36	x	200	S	1	2959,00
M 36	x	210	S	1	3385,00
M 36	x	220	S	1	3074,00
M 36	x	230	S	1	3636,00
M 36	x	240	S	1	3302,00
M 36	x	250	S	1	3918,00
M 36	x	260	S	1	3560,00
M 36	x	270	S	1	4166,00
M 36	x	280	S	1	3788,00
M 36	x	290	S	1	4818,00
M 36	x	300	S	1	4013,00
M 36	x	320	S	1	4627,00
M 36	x	340	S	1	4883,00
M 36	x	360	S	1	5140,00
M 36	x	380	S	1	5526,00
M 36	x	400	S	1	6006,00
M 39	x	110	S	1	2680,00
M 39	x	120	S	1	2680,00
M 39	x	130	S	1	2832,00
M 39	x	140	S	1	2975,00
M 39	x	150	S	1	3133,00
M 39	x	160	S	1	3187,00
M 39	x	170	S	1	3334,00
M 39	x	180	S	1	3487,00

Dimensions			PU	Pieces	€/100/Mat.
M 39	x	200	S	1	3788,00
M 39	x	220	S	1	4055,00
M 39	x	240	S	1	4358,00
M 39	x	260	S	1	4654,00
M 39	x	280	S	1	4939,00
M 39	x	300	S	1	5235,00
M 39	x	320	S	1	5805,00
M 42	x	120	S	1	3145,00
M 42	x	130	S	1	3317,00
M 42	x	140	S	1	3487,00
M 42	x	150	S	1	3672,00
M 42	x	160	S	1	3745,00
M 42	x	170	S	1	3898,00
M 42	x	180	S	1	4084,00
M 42	x	190	S	1	4256,00
M 42	x	200	S	1	4426,00
M 42	x	220	S	1	4755,00
M 42	x	240	S	1	5097,00
M 42	x	260	S	1	5436,00
M 42	x	280	S	1	5783,00
M 42	x	300	S	1	6121,00
M 42	x	320	S	1	6793,00
M 45	x	130	S	1	8006,00
M 45	x	140	S	1	8308,00
M 45	x	150	S	1	8618,00
M 45	x	160	S	1	9237,00
M 45	x	180	S	1	9849,00
M 45	x	200	S	1	10771,00
M 45	x	220	S	1	11542,00
M 45	x	240	S	1	12314,00
M 45	x	260	S	1	13081,00
M 45	x	280	S	1	13852,00
M 45	x	300	S	1	14619,00
M 45	x	320	S	1	17616,00
M 48	x	140	S	1	10001,00
M 48	x	150	S	1	10771,00
M 48	x	160	S	1	11240,00
M 48	x	180	S	1	11542,00
M 48	x	200	S	1	12911,00
M 48	x	220	S	1	13545,00
M 48	x	240	S	1	14315,00
M 48	x	260	S	1	15389,00
M 48	x	280	S	1	16931,00
M 48	x	300	S	1	19092,00
M 48	x	320	S	1	21542,00

ISO	04014.110	*

4014 **10.9**
zinc plated



Hexagon head bolts with shank

Short dimensions in part thread up to head, baked,
*M 10/12/14/22= RAZ 3250 other ∅ = RAZ 405

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 496
Brass → S. 588

ISO 4014 → replaces DIN 931

M 6	x	30	S	500	16,50 ZP
M 6	x	35	S	200	17,15 ZP
M 6	x	40	S	200	18,00 ZP
M 6	x	45	S	200	21,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	50	S	200	23,00 ZP
M 6	x	55	S	200	25,50 ZP
M 6	x	60	S	200	27,50 ZP
M 6	x	65	S	200	32,50 ZP
M 6	x	70	S	200	34,00 ZP
M 6	x	80	S	200	65,00 ZP
M 6	x	90	S	200	110,00 ZP
M 6	x	100	S	100	115,00 ZP
M 8	x	35	S	200	29,90 ZP
M 8	x	40	S	200	32,50 ZP
M 8	x	45	S	200	36,20 ZP
M 8	x	50	S	200	37,65 ZP
M 8	x	55	S	200	38,30 ZP
M 8	x	60	S	200	39,65 ZP
M 8	x	65	S	200	44,10 ZP
M 8	x	70	S	200	47,45 ZP
M 8	x	75	S	200	56,90 ZP
M 8	x	80	S	200	57,75 ZP
M 8	x	100	S	100	72,90 ZP
M 8	x	110	S	100	87,40 ZP
M 8	x	120	S	100	96,50 ZP
M 8	x	130	S	100	145,00 ZP
M 8	x	140	S	100	170,00 ZP
M 8	x	150	S	100	190,00 ZP
M 10	x	40	S	100	48,95 ZP
M 10	x	45	S	100	52,55 ZP
M 10	x	50	S	100	55,75 ZP
M 10	x	55	S	100	59,00 ZP
M 10	x	60	S	100	61,10 ZP
M 10	x	65	S	100	63,05 ZP
M 10	x	70	S	100	68,15 ZP
M 10	x	75	S	100	75,15 ZP
M 10	x	80	S	100	75,60 ZP
M 10	x	90	S	100	89,50 ZP
M 10	x	100	S	100	101,00 ZP
M 10	x	110	S	50	121,00 ZP
M 10	x	120	S	50	134,00 ZP
M 10	x	130	S	50	169,00 ZP
M 10	x	140	S	100	185,00 ZP
M 10	x	150	S	50	205,00 ZP
M 10	x	160	S	50	430,00 ZP
M 10	x	170	S	50	460,00 ZP
M 10	x	180	S	50	485,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	45	S	100	72,70 ZP
M 12	x	50	S	100	76,30 ZP
M 12	x	55	S	100	82,65 ZP
M 12	x	60	S	100	82,90 ZP
M 12	x	65	S	50	85,85 ZP
M 12	x	70	S	50	93,10 ZP
M 12	x	75	S	50	104,00 ZP
M 12	x	80	S	50	106,00 ZP
M 12	x	85	S	50	118,00 ZP
M 12	x	90	S	50	121,00 ZP
M 12	x	95	S	50	135,65 ZP
M 12	x	100	S	50	133,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	110	S	50	153,00 ZP
M 12	x	120	S	50	169,00 ZP
M 12	x	130	S	50	198,00 ZP
M 12	x	140	S	50	230,00 ZP
M 12	x	150	S	50	251,50 ZP
M 12	x	160	S	25	448,00 ZP
M 12	x	170	S	25	480,00 ZP
M 12	x	180	S	25	505,00 ZP
M 12	x	190	S	25	520,00 ZP
M 12	x	200	S	25	535,00 ZP
M 14	x	45	S	100	115,00 ZP
M 14	x	50	S	50	119,00 ZP
M 14	x	55	S	50	122,00 ZP
M 14	x	60	S	50	127,00 ZP
M 14	x	70	S	50	146,00 ZP
M 14	x	75	S	50	162,00 ZP
M 14	x	80	S	50	161,00 ZP
M 14	x	90	S	50	179,00 ZP
M 14	x	100	S	50	190,00 ZP
M 14	x	110	S	50	223,00 ZP
M 14	x	120	S	50	250,00 ZP
M 14	x	130	S	50	300,00 ZP
M 14	x	140	S	25	320,00 ZP
M 14	x	150	S	25	345,00 ZP
M 16	x	55	S	50	162,00 ZP
M 16	x	60	S	50	165,00 ZP
M 16	x	65	S	25	187,00 ZP
M 16	x	70	S	25	183,00 ZP
M 16	x	75	S	25	203,00 ZP
M 16	x	80	S	25	211,00 ZP
M 16	x	85	S	25	220,00 ZP
M 16	x	90	S	25	223,00 ZP
M 16	x	100	S	25	239,00 ZP
M 16	x	110	S	25	281,00 ZP
M 16	x	120	S	25	287,00 ZP
M 16	x	130	S	25	335,00 ZP
M 16	x	140	S	25	344,00 ZP
M 16	x	150	S	25	545,00 ZP
M 16	x	160	S	25	625,00 ZP
M 16	x	170	S	25	678,00 ZP
M 16	x	180	S	25	710,00 ZP
M 16	x	190	S	25	730,00 ZP
M 16	x	200	S	25	765,00 ZP
M 16	x	210	S	25	935,00 ZP
M 16	x	230	S	25	995,00 ZP
M 16	x	240	S	25	875,00 ZP
M 16	x	250	S	25	1083,00 ZP
M 16	x	260	S	25	930,00 ZP
M 16	x	270	S	25	1200,00 ZP
M 16	x	280	S	25	1150,00 ZP
M 18	x	65	S	25	346,00 ZP
M 18	x	70	S	25	366,00 ZP
M 18	x	80	S	25	387,00 ZP
M 18	x	90	S	25	431,00 ZP
M 18	x	100	S	25	454,00 ZP
M 18	x	110	S	25	480,00 ZP
M 18	x	120	S	25	510,00 ZP
M 18	x	130	S	25	570,00 ZP
M 18	x	140	S	25	628,00 ZP
M 18	x	160	S	25	930,00 ZP
M 20	x	65	S	25	364,00 ZP
M 20	x	70	S	25	361,00 ZP
M 20	x	75	S	25	379,00 ZP
M 20	x	80	S	25	392,00 ZP
M 20	x	85	S	25	450,00 ZP
M 20	x	90	S	25	434,00 ZP
M 20	x	100	S	25	458,00 ZP
M 20	x	110	S	25	502,00 ZP
M 20	x	115	S	25	520,00 ZP
M 20	x	120	S	25	526,00 ZP
M 20	x	130	S	25	605,00 ZP
M 20	x	140	S	25	647,00 ZP
M 20	x	150	S	25	719,00 ZP
M 20	x	160	S	10	1042,00 ZP
M 20	x	170	S	10	995,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	180	S	10	1118,00 ZP
M 20	x	200	S	10	1127,00 ZP
M 20	x	220	S	1	1185,00 ZP
M 20	x	230	S	1	1440,00 ZP
M 20	x	240	S	1	1270,00 ZP
M 20	x	250	S	1	1560,00 ZP
M 20	x	260	S	1	1375,00 ZP
M 20	x	270	S	1	1675,00 ZP
M 20	x	280	S	1	1450,00 ZP
M 20	x	290	S	1	1925,00 ZP
M 20	x	300	S	1	1550,00 ZP
M 20	x	310	S	1	2175,00 ZP
M 20	x	320	S	1	1760,00 ZP
M 20	x	340	S	1	1800,00 ZP
M 24	x	75	S	25	834,00 ZP
M 24	x	80	S	25	843,00 ZP
M 24	x	90	S	10	959,00 ZP
M 24	x	100	S	10	1019,00 ZP
M 24	x	110	S	10	1110,00 ZP
M 24	x	120	S	10	1142,00 ZP
M 24	x	130	S	10	1194,00 ZP
M 24	x	140	S	10	1237,00 ZP
M 24	x	145	S	10	1307,00 ZP
M 24	x	150	S	10	1307,00 ZP
M 24	x	160	S	10	1365,00 ZP
M 24	x	170	S	1	1421,00 ZP
M 24	x	180	S	1	1454,00 ZP
M 24	x	190	S	1	1488,00 ZP
M 24	x	200	S	1	1546,00 ZP
M 24	x	220	S	1	1757,00 ZP
M 24	x	240	S	1	1861,00 ZP
M 24	x	250	S	1	1952,00 ZP
M 24	x	260	S	1	1961,00 ZP
M 24	x	270	S	1	2041,00 ZP
M 24	x	280	S	1	2082,00 ZP
M 24	x	290	S	1	2120,00 ZP
M 24	x	300	S	1	2080,00 ZP
M 27	x	80	S	10	1190,00 ZP
M 27	x	90	S	10	1230,00 ZP
M 27	x	100	S	10	1300,00 ZP
M 27	x	110	S	10	1360,00 ZP
M 27	x	120	S	10	1430,00 ZP
M 27	x	130	S	10	1475,00 ZP
M 27	x	140	S	1	1560,00 ZP
M 30	x	80	S	1	1425,00 ZP
M 30	x	90	S	1	1490,00 ZP
M 30	x	100	S	1	1537,00 ZP
M 30	x	110	S	1	1590,00 ZP
M 30	x	120	S	1	1710,00 ZP
M 30	x	130	S	1	1800,00 ZP
M 30	x	140	S	1	1900,00 ZP
M 30	x	150	S	1	1980,00 ZP
M 30	x	160	S	1	2065,00 ZP
M 30	x	170	S	1	2165,00 ZP
M 30	x	180	S	1	2275,00 ZP
M 30	x	190	S	1	2380,00 ZP
M 30	x	200	S	1	2465,00 ZP
M 30	x	210	S	1	2760,00 ZP
M 30	x	220	S	1	2575,00 ZP
M 30	x	230	S	1	3030,00 ZP
M 30	x	240	S	1	2820,00 ZP
M 30	x	250	S	1	3240,00 ZP
M 30	x	260	S	1	3010,00 ZP
M 30	x	270	S	1	3475,00 ZP
M 30	x	280	S	1	3230,00 ZP
M 30	x	300	S	1	3430,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	04014.354		RAZ 1540
4014	**10.9 zinc flake coated**		

Hexagon head bolts with shank

Short dimensions In part thread up to head,
friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

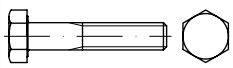
Dimensions → TI-15 Corrosion protection → TI-218
Mech. properties → TI-220 Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 496
Brass → S. 588

ISO 4014 → replaces DIN 931

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	30	S	500	19,00 flZn
M 6	x	35	S	200	19,75 flZn
M 6	x	40	S	200	20,70 flZn
M 6	x	45	S	200	24,15 flZn
M 6	x	50	S	200	26,45 flZn
M 6	x	55	S	200	29,35 flZn
M 6	x	60	S	200	31,65 flZn
M 6	x	65	S	200	37,40 flZn
M 6	x	70	S	200	39,10 flZn
M 6	x	80	S	200	74,75 flZn
M 8	x	35	S	200	34,40 flZn
M 8	x	40	S	200	37,40 flZn
M 8	x	45	S	200	41,65 flZn
M 8	x	50	S	200	43,30 flZn
M 8	x	55	S	200	44,05 flZn
M 8	x	60	S	200	45,60 flZn
M 8	x	65	S	200	50,75 flZn
M 8	x	70	S	200	54,60 flZn
M 8	x	75	S	200	65,45 flZn
M 8	x	80	S	200	66,45 flZn
M 8	x	100	S	100	83,85 flZn
M 10	x	40	S	100	56,30 flZn
M 10	x	45	S	100	60,45 flZn
M 10	x	50	S	100	64,15 flZn
M 10	x	55	S	100	67,85 flZn
M 10	x	60	S	100	70,30 flZn
M 10	x	65	S	100	72,55 flZn
M 10	x	70	S	100	78,40 flZn
M 10	x	75	S	100	86,45 flZn
M 10	x	80	S	100	86,95 flZn
M 10	x	90	S	100	103,00 flZn
M 10	x	100	S	100	117,00 flZn
M 10	x	110	S	50	140,00 flZn
M 10	x	120	S	50	155,00 flZn
M 12	x	45	S	100	83,65 flZn
M 12	x	50	S	100	87,75 flZn
M 12	x	55	S	100	95,05 flZn
M 12	x	60	S	100	95,35 flZn
M 12	x	65	S	50	98,75 flZn
M 12	x	70	S	50	108,00 flZn
M 12	x	75	S	50	120,00 flZn
M 12	x	80	S	50	122,00 flZn
M 12	x	90	S	50	140,00 flZn
M 12	x	100	S	50	153,00 flZn
M 12	x	110	S	50	176,00 flZn
M 12	x	120	S	50	195,00 flZn
M 16	x	55	S	50	187,00 flZn
M 16	x	60	S	50	190,00 flZn
M 16	x	65	S	25	216,00 flZn
M 16	x	70	S	25	211,00 flZn
M 16	x	75	S	25	234,00 flZn
M 16	x	80	S	25	243,00 flZn
M 16	x	90	S	25	257,00 flZn
M 16	x	100	S	25	275,00 flZn
M 16	x	110	S	25	324,00 flZn
M 16	x	120	S	25	331,00 flZn
M 16	x	130	S	25	386,00 flZn
M 16	x	140	S	25	396,00 flZn
M 20	x	65	S	25	419,00 flZn
M 20	x	70	S	25	416,00 flZn
M 20	x	75	S	25	436,00 flZn
M 20	x	80	S	25	451,00 flZn
M 20	x	90	S	25	500,00 flZn
M 20	x	100	S	25	527,00 flZn
M 20	x	110	S	25	578,00 flZn
M 20	x	120	S	25	605,00 flZn
M 20	x	130	S	25	696,00 flZn
M 20	x	140	S	25	745,00 flZn
M 20	x	150	S	25	827,00 flZn
M 20	x	160	S	10	1199,00 flZn
M 20	x	170	S	10	1145,00 flZn
M 20	x	180	S	10	1286,00 flZn
M 24	x	75	S	25	960,00 flZn
M 24	x	80	S	25	970,00 flZn
M 24	x	90	S	10	1103,00 flZn
M 24	x	100	S	10	1172,00 flZn
M 24	x	110	S	10	1277,00 flZn
M 24	x	120	S	10	1314,00 flZn
M 24	x	130	S	10	1374,00 flZn
M 24	x	140	S	10	1423,00 flZn
M 24	x	150	S	10	1504,00 flZn
M 24	x	160	S	10	1570,00 flZn
M 24	x	170	S	1	1635,00 flZn
M 24	x	180	S	1	1673,00 flZn
M 24	x	200	S	1	1753,00 flZn
M 24	x	230	S	1	1800,00 flZn

ISO	04014.200	*
4014	**12.9**	



Hexagon head bolts with shank

Short dimensions in part thread up to head,
*M 10/12/14/22= RAZ 3260 other ∅ = RAZ 406

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 496
Brass → S. 588

ISO 4014 → replaces DIN 931

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	40	S	100	148,00
M 10	x	45	S	100	148,00
M 10	x	50	S	100	176,00
M 10	x	60	S	100	234,00
M 10	x	70	S	100	295,00
M 10	x	80	S	100	325,00
M 10	x	90	S	100	395,00
M 10	x	100	S	100	415,00
M 12	x	45	S	100	164,00
M 12	x	50	S	100	195,00
M 12	x	55	S	100	214,00
M 12	x	60	S	100	260,00
M 12	x	65	S	50	300,00
M 12	x	70	S	50	325,00
M 12	x	80	S	50	395,00
M 12	x	90	S	50	520,00
M 12	x	100	S	50	590,00
M 12	x	120	S	50	690,00
M 12	x	140	S	50	710,00
M 14	x	60	S	50	760,00
M 14	x	80	S	50	790,00
M 14	x	100	S	50	830,00
M 16	x	55	S	50	460,00
M 16	x	60	S	50	460,00
M 16	x	70	S	25	495,00
M 16	x	80	S	25	640,00
M 16	x	90	S	25	790,00
M 16	x	100	S	25	840,00
M 16	x	120	S	25	950,00
M 16	x	120	S	25	1020,00
M 16	x	140	S	25	1100,00
M 16	x	150	S	25	1270,00
M 20	x	65	S	25	495,00
M 20	x	70	S	25	650,00
M 20	x	80	S	25	690,00
M 20	x	90	S	25	720,00
M 20	x	100	S	25	850,00
M 20	x	110	S	25	990,00
M 20	x	120	S	25	1020,00
M 20	x	130	S	25	1180,00
M 20	x	140	S	25	1240,00
M 20	x	150	S	25	1570,00
M 20	x	160	S	25	1680,00
M 24	x	80	S	25	1240,00
M 24	x	90	S	10	1300,00
M 24	x	100	S	10	1570,00
M 24	x	110	S	10	1660,00
M 24	x	120	S	10	1730,00
M 24	x	130	S	10	1950,00
M 24	x	140	S	10	2020,00
M 24	x	150	S	10	2080,00
M 24	x	160	S	10	2150,00
M 24	x	180	S	10	2220,00
M 24	x	200	S	10	2440,00
M 24	x	220	S	10	2470,00
M 24	x	240	S	10	2500,00
M 30	x	90	S	5	2600,00
M 30	x	100	S	5	2700,00
M 30	x	110	S	5	2800,00
M 30	x	120	S	5	2950,00
M 30	x	130	S	5	3250,00
M 30	x	140	S	5	3450,00
M 30	x	150	S	5	3600,00
M 30	x	160	S	5	3800,00
M 30	x	180	S	5	3950,00
M 30	x	200	S	5	4600,00

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€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
ISO	04017.(*)		**
4017	**5.6**		**AD W7**

Hexagon head screws with thread up to head

M 6 – M 39 for pressure vessel const. as per AD reguations, products with renunciation of inspection certificate,
*≤ M 39 = (504), > M 36 = (500)**M 10/12/14/22= RAZ 3210 other ∅ = RAZ 400

Dimensions ➔ TI-15 Tightening torque ➔ TI-230
Mech. properties ➔ TI-220 Standard conversion ➔ TI-6

Stainless ➔ S. 502
Brass ➔ S. 588

ISO 4017 ➔ replaces DIN 933

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	10	S	500	20,75
M 6	x	12	S	500	28,10
M 6	x	16	S	500	17,75
M 6	x	20	S	500	19,55
M 6	x	25	S	500	20,10
M 6	x	30	S	500	24,10
M 6	x	35	S	200	66,10
M 6	x	40	S	200	70,30
M 6	x	50	S	200	104,00
M 8	x	10	S	200	40,00
M 8	x	12	S	200	29,10
M 8	x	16	S	200	23,20
M 8	x	20	S	200	23,20
M 8	x	25	S	200	23,20
M 8	x	30	S	200	24,60
M 8	x	35	S	200	30,55
M 8	x	40	S	200	34,80
M 8	x	50	S	200	75,10
M 8	x	65	S	200	235,00
M 8	x	70	S	200	133,00
M 8	x	80	S	200	165,00
M 10	x	16	S	200	47,45
M 10	x	20	S	200	42,45
M 10	x	25	S	200	42,45
M 10	x	30	S	200	44,30
M 10	x	35	S	100	46,95
M 10	x	40	S	100	50,30
M 10	x	45	S	100	53,30
M 10	x	50	S	100	96,10
M 10	x	55	S	100	124,00
M 10	x	60	S	100	132,00
M 10	x	70	S	100	150,00
M 10	x	80	S	100	175,00
M 12	x	20	S	100	54,30
M 12	x	25	S	100	52,10
M 12	x	30	S	100	54,30
M 12	x	35	S	100	58,45
M 12	x	40	S	100	62,50
M 12	x	45	S	100	69,65
M 12	x	50	S	100	74,45
M 12	x	55	S	100	81,70
M 12	x	60	S	100	88,30
M 12	x	65	S	100	168,00
M 12	x	70	S	50	181,00
M 12	x	80	S	50	249,00
M 12	x	90	S	50	496,00
M 12	x	100	S	50	596,00
M 12	x	110	S	50	879,00
M 14	x	50	S	100	358,00
M 16	x	25	S	50	143,00
M 16	x	30	S	50	117,00
M 16	x	35	S	50	118,00
M 16	x	40	S	50	120,00
M 16	x	45	S	50	125,00
M 16	x	50	S	50	130,00
M 16	x	55	S	50	144,00
M 16	x	60	S	50	151,00
M 16	x	65	S	25	170,00
M 16	x	70	S	25	177,00
M 16	x	80	S	25	218,00
M 16	x	90	S	25	600,00
M 16	x	100	S	25	830,00
M 16	x	110	S	25	890,00
M 16	x	120	S	25	950,00
M 20	x	30	S	25	260,00
M 20	x	35	S	25	260,00
M 20	x	40	S	25	231,00
M 20	x	45	S	25	242,00
M 20	x	50	S	25	247,00
M 20	x	55	S	25	260,00
M 20	x	60	S	25	270,00
M 20	x	65	S	25	280,00
M 20	x	70	S	25	290,00
M 20	x	75	S	25	325,00
M 20	x	80	S	25	415,00
M 20	x	90	S	25	570,00
M 20	x	100	S	25	600,00
M 20	x	110	S	25	720,00
M 20	x	120	S	25	830,00
M 20	x	130	S	25	960,00
M 20	x	140	S	25	1050,00
M 20	x	150	S	25	1200,00
M 20	x	160	S	10	1240,00
M 20	x	180	S	1	1310,00
M 20	x	200	S	1	1390,00
M 22	x	50	S	25	870,00
M 24	x	30	S	25	650,00
M 24	x	35	S	25	650,00
M 24	x	40	S	25	650,00
M 24	x	50	S	25	440,00
M 24	x	55	S	25	470,00
M 24	x	60	S	25	470,00
M 24	x	65	S	25	510,00
M 24	x	70	S	25	540,00
M 24	x	75	S	25	590,00
M 24	x	80	S	25	590,00
M 24	x	85	S	10	760,00
M 24	x	90	S	10	760,00
M 24	x	100	S	10	830,00
M 24	x	110	S	10	1110,00
M 24	x	120	S	10	1160,00
M 24	x	130	S	1	1440,00
M 24	x	140	S	1	1540,00
M 24	x	150	S	1	1640,00
M 24	x	160	S	1	1730,00
M 24	x	180	S	1	1900,00
M 24	x	200	S	1	2150,00
M 27	x	50	S	1	990,00
M 27	x	60	S	1	990,00
M 27	x	65	S	1	990,00
M 27	x	70	S	1	990,00
M 27	x	75	S	1	990,00
M 27	x	80	S	1	880,00
M 27	x	90	S	1	930,00
M 27	x	100	S	1	1120,00
M 27	x	110	S	1	1160,00
M 27	x	120	S	1	1240,00
M 27	x	140	S	1	1920,00
M 30	x	40	S	1	890,00
M 30	x	50	S	1	1010,00
M 30	x	55	S	1	1060,00
M 30	x	60	S	1	1080,00
M 30	x	65	S	1	1140,00
M 30	x	70	S	1	1140,00
M 30	x	75	S	1	1220,00
M 30	x	80	S	1	1220,00
M 30	x	90	S	1	1280,00
M 30	x	100	S	1	1300,00
M 30	x	110	S	1	1380,00
M 30	x	120	S	1	1410,00
M 30	x	130	S	1	1500,00
M 30	x	140	S	1	1580,00
M 30	x	150	S	1	1650,00
M 30	x	180	S	1	3050,00
M 30	x	200	S	1	3250,00
M 33	x	90	S	1	1650,00
M 33	x	100	S	1	1830,00
M 33	x	110	S	1	1900,00
M 33	x	120	S	1	1920,00
M 33	x	130	S	1	1960,00
M 36	x	50	S	1	2000,00
M 36	x	55	S	1	2110,00
M 36	x	70	S	1	1760,00
M 36	x	80	S	1	1860,00
M 36	x	90	S	1	1950,00
M 36	x	100	S	1	2070,00
M 36	x	110	S	1	2180,00
M 36	x	120	S	1	2250,00
M 36	x	130	S	1	2280,00
M 42	x	90	S	1	5040,00

ISO	04017.514	*
4017	**5.6 zinc plated**	**AD W7**

Hexagon head screws with thread up to head

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate, *M 10/12/14/22= RAZ 3210 other ∅ = RAZ 400

Dimensions ➔ TI-15 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-220 Tightening torque ➔ TI-230

Stainless ➔ S. 502
Brass ➔ S. 588

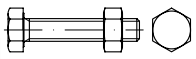
ISO 4017 ➔ replaces DIN 933

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	12	S	500	29,70 ZP
M 6	x	16	S	500	19,00 ZP
M 6	x	20	S	500	21,00 ZP
M 6	x	25	S	500	21,75 ZP
M 6	x	30	S	500	25,95 ZP
M 6	x	35	S	200	70,85 ZP
M 6	x	40	S	200	75,65 ZP
M 6	x	50	S	200	110,00 ZP
M 8	x	10	S	200	43,90 ZP
M 8	x	12	S	200	31,55 ZP
M 8	x	16	S	200	26,00 ZP
M 8	x	20	S	200	26,35 ZP
M 8	x	25	S	200	26,70 ZP
M 8	x	30	S	200	28,40 ZP
M 8	x	35	S	200	34,85 ZP
M 8	x	40	S	200	39,40 ZP
M 8	x	45	S	200	82,25 ZP
M 8	x	50	S	200	87,70 ZP
M 8	x	60	S	200	94,30 ZP
M 8	x	80	S	200	183,00 ZP
M 10	x	16	S	200	52,25 ZP
M 10	x	20	S	200	47,75 ZP
M 10	x	25	S	200	48,35 ZP
M 10	x	30	S	200	50,80 ZP
M 10	x	35	S	100	54,10 ZP
M 10	x	40	S	100	58,05 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	45	S	100	61,85 ZP
M 10	x	50	S	100	117,00 ZP
M 10	x	55	S	100	144,00 ZP
M 10	x	60	S	100	153,00 ZP
M 10	x	70	S	100	174,00 ZP
M 10	x	80	S	100	290,00 ZP
M 12	x	20	S	100	62,50 ZP
M 12	x	25	S	100	60,65 ZP
M 12	x	30	S	100	63,70 ZP
M 12	x	35	S	100	69,10 ZP
M 12	x	40	S	100	73,90 ZP
M 12	x	45	S	100	82,25 ZP
M 12	x	50	S	100	87,70 ZP
M 12	x	55	S	100	96,10 ZP
M 12	x	60	S	100	103,00 ZP
M 12	x	65	S	50	284,00 ZP
M 12	x	70	S	50	217,00 ZP
M 12	x	80	S	50	288,00 ZP
M 12	x	90	S	50	539,00 ZP
M 12	x	100	S	50	642,00 ZP
M 12	x	110	S	50	715,00 ZP
M 14	x	50	S	100	464,00 ZP
M 16	x	25	S	50	161,00 ZP
M 16	x	30	S	50	135,00 ZP
M 16	x	35	S	50	138,00 ZP
M 16	x	40	S	50	142,00 ZP
M 16	x	45	S	50	150,00 ZP
M 16	x	50	S	50	156,00 ZP
M 16	x	55	S	50	172,00 ZP
M 16	x	60	S	50	179,00 ZP
M 16	x	65	S	25	201,00 ZP
M 16	x	70	S	25	209,00 ZP
M 16	x	80	S	25	255,00 ZP
M 16	x	90	S	25	710,00 ZP
M 16	x	100	S	25	940,00 ZP
M 16	x	110	S	25	1020,00 ZP
M 16	x	120	S	25	1087,00 ZP
M 20	x	35	S	25	296,00 ZP
M 20	x	40	S	25	270,00 ZP
M 20	x	45	S	25	284,00 ZP
M 20	x	50	S	25	291,00 ZP
M 20	x	55	S	25	305,00 ZP
M 20	x	60	S	25	317,00 ZP
M 20	x	65	S	25	330,00 ZP
M 20	x	70	S	25	344,00 ZP
M 20	x	75	S	25	370,00 ZP
M 20	x	80	S	25	475,00 ZP
M 20	x	90	S	25	626,00 ZP
M 20	x	100	S	25	663,00 ZP
M 20	x	130	S	25	1100,00 ZP
M 20	x	140	S	25	1200,00 ZP
M 20	x	150	S	25	1350,00 ZP
M 20	x	160	S	10	1400,00 ZP
M 20	x	180	S	1	1500,00 ZP
M 20	x	200	S	1	1600,00 ZP
M 24	x	40	S	25	750,00 ZP
M 24	x	50	S	25	508,00 ZP
M 24	x	55	S	25	540,00 ZP
M 24	x	60	S	25	544,00 ZP
M 24	x	65	S	25	586,00 ZP
M 24	x	70	S	25	618,00 ZP
M 24	x	75	S	25	673,00 ZP
M 24	x	80	S	25	677,00 ZP
M 24	x	85	S	10	867,00 ZP
M 24	x	90	S	10	853,00 ZP
M 24	x	100	S	10	947,00 ZP
M 24	x	110	S	10	1300,00 ZP
M 24	x	120	S	10	1350,00 ZP
M 24	x	130	S	1	1650,00 ZP
M 24	x	150	S	1	1870,00 ZP
M 24	x	160	S	1	1970,00 ZP
M 24	x	180	S	1	2170,00 ZP
M 24	x	220	S	1	2400,00 ZP
M 27	x	60	S	1	1100,00 ZP
M 27	x	65	S	1	1120,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 27	x	70	S	1	1120,00 ZP
M 27	x	75	S	1	1180,00 ZP
M 27	x	80	S	1	998,00 ZP
M 27	x	90	S	1	1080,00 ZP
M 27	x	95	S	1	1278,00 ZP
M 27	x	100	S	1	1150,00 ZP
M 27	x	110	S	1	1400,00 ZP
M 27	x	120	S	1	1500,00 ZP
M 27	x	140	S	1	2225,00 ZP
M 30	x	60	S	1	1250,00 ZP
M 30	x	65	S	1	1280,00 ZP
M 30	x	70	S	1	1316,00 ZP
M 30	x	75	S	1	1430,00 ZP
M 30	x	80	S	1	1481,00 ZP
M 30	x	90	S	1	1510,00 ZP
M 30	x	100	S	1	1510,00 ZP
M 30	x	110	S	1	1700,00 ZP
M 30	x	120	S	1	1750,00 ZP
M 33	x	90	S	1	2000,00 ZP
M 33	x	100	S	1	2200,00 ZP
M 33	x	110	S	1	2182,00 ZP
M 33	x	120	S	1	2225,00 ZP
M 33	x	130	S	1	2400,00 ZP

ISO	04017.524	RAZ 3200
4017	**Mu 5.6**	**AD W7**
	hot dip galvanized	



Hexagon head screws with thread up to head
Mu = with hexagon nuts ISO 4032/5-2

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate

Caution! Note information about hot dip galvanizing.

Dimensions → TI-15 Corrosion protection → TI-219
Mech. properties → TI-220 Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	30	S	100	93,65 HDG
M 12	x	35	S	100	99,10 HDG
M 12	x	40	S	100	104,00 HDG
M 12	x	45	S	100	112,00 HDG
M 16	x	35	S	50	193,00 HDG
M 16	x	40	S	50	199,00 HDG
M 16	x	45	S	50	208,00 HDG
M 16	x	50	S	50	214,00 HDG
M 16	x	55	S	50	278,00 HDG
M 16	x	60	S	50	289,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	40	S	25	410,00 HDG
M 20	x	45	S	25	421,00 HDG
M 20	x	50	S	25	427,00 HDG
M 20	x	55	S	25	439,00 HDG
M 20	x	60	S	25	451,00 HDG
M 20	x	65	S	25	476,00 HDG
M 20	x	70	S	25	541,00 HDG
M 20	x	75	S	25	590,00 HDG
M 24	x	50	S	25	775,00 HDG
M 24	x	55	S	25	850,00 HDG
M 24	x	60	S	25	932,00 HDG
M 24	x	65	S	25	975,00 HDG
M 24	x	70	S	25	1025,00 HDG
M 24	x	75	S	25	1075,00 HDG
M 24	x	80	S	25	1125,00 HDG

ISO	04017.398	RAZ 400
4017	**1.7218 +QT (25CrMo4)**	

Hexagon head screws with thread up to head

Approved for use acc. to pressure equipment directive → cert. 3.1 on request

Dimensions → TI-15 Tightening torque → TI-231
Properties → TI-232 Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

DGRL Zulassung

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	20	S	100	91,00
M 12	x	25	S	100	95,00
M 12	x	30	S	100	98,00
M 12	x	35	S	100	102,00
M 12	x	40	S	100	109,00
M 12	x	45	S	100	122,00
M 12	x	50	S	100	130,00
M 12	x	55	S	100	143,00
M 12	x	60	S	100	155,00
M 12	x	70	S	50	317,00
M 12	x	80	S	50	436,00
M 12	x	90	S	50	868,00
M 12	x	100	S	50	1043,00
M 12	x	110	S	50	1539,00
M 12	x	120	S	50	1555,00
M 16	x	25	S	50	201,00
M 16	x	30	S	50	205,00
M 16	x	35	S	50	207,00
M 16	x	40	S	50	210,00
M 16	x	45	S	50	219,00
M 16	x	50	S	50	228,00
M 16	x	55	S	50	252,00
M 16	x	60	S	50	263,00
M 16	x	65	S	25	298,00
M 16	x	70	S	25	310,00
M 16	x	80	S	25	382,00
M 16	x	90	S	25	1050,00
M 16	x	100	S	25	1453,00
M 16	x	110	S	25	1558,00
M 16	x	120	S	25	1663,00
M 20	x	30	S	25	435,00
M 20	x	35	S	25	445,00
M 20	x	40	S	25	455,00
M 20	x	45	S	25	459,00

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	50	S	25	464,00
M 20	x	55	S	25	469,00
M 20	x	60	S	25	473,00
M 20	x	65	S	25	490,00
M 20	x	70	S	25	508,00
M 20	x	75	S	25	569,00
M 20	x	80	S	25	727,00
M 20	x	90	S	25	998,00
M 20	x	100	S	25	1050,00
M 20	x	110	S	25	1260,00
M 20	x	120	S	25	1453,00
M 20	x	130	S	25	1680,00
M 20	x	140	S	25	1838,00
M 20	x	150	S	25	2100,00
M 20	x	160	S	10	2170,00
M 20	x	180	S	1	2293,00
M 20	x	200	S	1	2433,00
M 24	x	30	S	25	670,00
M 24	x	35	S	25	690,00
M 24	x	40	S	25	732,00
M 24	x	45	S	25	750,00
M 24	x	50	S	25	770,00
M 24	x	55	S	25	823,00
M 24	x	60	S	25	823,00
M 24	x	65	S	25	893,00
M 24	x	70	S	25	945,00
M 24	x	75	S	25	1033,00
M 24	x	80	S	25	1033,00
M 24	x	85	S	10	1330,00
M 24	x	90	S	10	1330,00
M 24	x	100	S	10	1453,00
M 24	x	110	S	10	1943,00
M 24	x	120	S	10	2030,00
M 24	x	130	S	1	2520,00
M 24	x	140	S	1	2695,00
M 24	x	150	S	1	2870,00
M 24	x	160	S	1	3028,00
M 24	x	180	S	1	3325,00
M 24	x	200	S	1	3763,00
M 27	x	60	S	1	1733,00
M 27	x	65	S	1	1733,00
M 27	x	70	S	1	1733,00
M 27	x	75	S	1	1733,00
M 27	x	80	S	1	1740,00
M 27	x	90	S	1	1830,00
M 27	x	100	S	1	1960,00
M 27	x	110	S	1	2030,00
M 27	x	120	S	1	2170,00
M 27	x	140	S	1	3360,00
M 30	x	50	S	1	1768,00
M 30	x	55	S	1	1855,00
M 30	x	60	S	1	1890,00
M 30	x	65	S	1	1995,00
M 30	x	70	S	1	1995,00
M 30	x	75	S	1	2135,00
M 30	x	80	S	1	2135,00
M 30	x	90	S	1	2240,00
M 30	x	100	S	1	2275,00
M 30	x	110	S	1	2415,00
M 30	x	120	S	1	2415,00
M 30	x	130	S	1	2625,00
M 30	x	140	S	1	2765,00
M 30	x	150	S	1	2888,00
M 30	x	180	S	1	5338,00
M 30	x	200	S	1	5688,00
M 33	x	90	S	1	2888,00
M 33	x	100	S	1	3203,00
M 33	x	110	S	1	3325,00
M 33	x	120	S	1	3360,00
M 33	x	130	S	1	3430,00
M 36	x	55	S	1	3693,00
M 36	x	60	S	1	3693,00
M 36	x	70	S	1	3080,00
M 36	x	80	S	1	3255,00
M 36	x	90	S	1	3413,00

Dimensions			PU	Pieces	€/100/Mat.
M 36	x	100	S	1	3623,00
M 36	x	110	S	1	3815,00
M 36	x	120	S	1	3938,00
M 36	x	130	S	1	3990,00

ISO	04017.397	RAZ 400

4017 **1.7218 +QT (25CrMo4)**

Hexagon head screws with thread up to head

Approved for use acc. to pressure equipment directive ➔ cert. 3.1 on request

Dimensions ➔ TI-15
Properties ➔ TI-232
Tightening torque ➔ TI-231
Corrosion protection ➔ TI-217
Standard conversion ➔ TI-6

Stainless ➔ S. 502
Brass ➔ S. 588

ISO 4017 ➔ replaces DIN 933

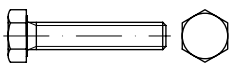
DGRL Zulassung

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	20	S	100	109,00 ZP
M 12	x	25	S	100	112,00 ZP
M 12	x	30	S	100	118,00 ZP
M 12	x	35	S	100	121,00 ZP
M 12	x	40	S	100	129,00 ZP
M 12	x	45	S	100	144,00 ZP
M 12	x	50	S	100	153,00 ZP
M 12	x	55	S	100	169,00 ZP
M 12	x	60	S	100	181,00 ZP
M 12	x	65	S	50	497,00 ZP
M 12	x	70	S	50	380,00 ZP
M 12	x	80	S	50	504,00 ZP
M 12	x	90	S	50	944,00 ZP
M 12	x	100	S	50	1124,00 ZP
M 16	x	25	S	50	234,00 ZP
M 16	x	30	S	50	236,00 ZP
M 16	x	35	S	50	242,00 ZP
M 16	x	40	S	50	249,00 ZP
M 16	x	45	S	50	263,00 ZP
M 16	x	50	S	50	273,00 ZP
M 16	x	55	S	50	301,00 ZP
M 16	x	60	S	50	314,00 ZP
M 16	x	65	S	25	352,00 ZP
M 16	x	70	S	25	366,00 ZP
M 16	x	80	S	25	447,00 ZP
M 16	x	90	S	25	1243,00 ZP
M 16	x	100	S	25	1645,00 ZP
M 16	x	110	S	25	1785,00 ZP
M 16	x	120	S	25	1903,00 ZP
M 20	x	30	S	25	460,00 ZP
M 20	x	35	S	25	470,00 ZP
M 20	x	40	S	25	473,00 ZP
M 20	x	45	S	25	497,00 ZP
M 20	x	50	S	25	509,00 ZP
M 20	x	55	S	25	534,00 ZP
M 20	x	60	S	25	555,00 ZP
M 20	x	65	S	25	578,00 ZP
M 20	x	70	S	25	602,00 ZP
M 20	x	75	S	25	648,00 ZP
M 20	x	80	S	25	832,00 ZP
M 20	x	90	S	25	1096,00 ZP
M 20	x	100	S	25	1161,00 ZP
M 20	x	130	S	25	1925,00 ZP
M 20	x	140	S	25	2100,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	150	S	25	2363,00 ZP
M 20	x	160	S	10	2450,00 ZP
M 20	x	180	S	1	2625,00 ZP
M 20	x	200	S	1	2800,00 ZP
M 24	x	35	S	25	860,00 ZP
M 24	x	40	S	25	875,00 ZP
M 24	x	45	S	25	881,00 ZP
M 24	x	50	S	25	889,00 ZP
M 24	x	55	S	25	945,00 ZP
M 24	x	60	S	25	952,00 ZP
M 24	x	65	S	25	1026,00 ZP
M 24	x	70	S	25	1082,00 ZP
M 24	x	75	S	25	1178,00 ZP
M 24	x	80	S	25	1185,00 ZP
M 24	x	85	S	10	1518,00 ZP
M 24	x	90	S	10	1590,00 ZP
M 24	x	100	S	10	1658,00 ZP
M 24	x	110	S	10	2275,00 ZP
M 24	x	120	S	10	2363,00 ZP
M 24	x	130	S	1	2888,00 ZP
M 24	x	150	S	1	3726,00 ZP
M 24	x	160	S	1	3760,00 ZP
M 24	x	180	S	1	3798,00 ZP
M 24	x	220	S	1	4200,00 ZP
M 27	x	60	S	1	1925,00 ZP
M 27	x	65	S	1	1960,00 ZP
M 27	x	70	S	1	1980,00 ZP
M 27	x	75	S	1	2065,00 ZP
M 27	x	80	S	1	2120,00 ZP
M 27	x	90	S	1	2210,00 ZP
M 27	x	95	S	1	2237,00 ZP
M 27	x	100	S	1	2340,00 ZP
M 27	x	110	S	1	2450,00 ZP
M 27	x	120	S	1	2625,00 ZP
M 27	x	140	S	1	3890,00 ZP
M 30	x	50	S	1	2165,00 ZP
M 30	x	60	S	1	2187,00 ZP
M 30	x	65	S	1	2240,00 ZP
M 30	x	70	S	1	2303,00 ZP
M 30	x	75	S	1	2503,00 ZP
M 30	x	80	S	1	2503,00 ZP
M 30	x	90	S	1	2643,00 ZP
M 30	x	100	S	1	2643,00 ZP
M 30	x	110	S	1	2975,00 ZP
M 30	x	120	S	1	3063,00 ZP
M 33	x	90	S	1	3500,00 ZP
M 33	x	100	S	1	3850,00 ZP
M 33	x	110	S	1	3860,00 ZP
M 33	x	120	S	1	3894,00 ZP
M 33	x	130	S	1	4200,00 ZP

ISO	04017.800	*

4017 **8.8**



Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions ➔ TI-15
Mech. properties ➔ TI-220
Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

Stainless ➔ S. 502
Brass ➔ S. 588

ISO 4017 ➔ replaces DIN 933

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	S	500	9,65
M 3	x	5	K	100	12,65
M 3	x	6	S	500	4,75

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 6	K	100	7,75
M 3 x 8	S	500	4,75
M 3 x 8	K	100	7,75
M 3 x 10	S	500	4,75
M 3 x 10	K	100	7,75
M 3 x 12	S	500	5,20
M 3 x 12	K	100	8,25
M 3 x 16	S	500	5,20
M 3 x 16	K	100	8,25
M 3 x 18	S	500	5,90
M 3 x 20	S	500	5,45
M 3 x 20	K	100	8,45
M 3 x 22	S	500	6,60
M 3 x 25	S	500	6,10
M 3 x 25	K	100	9,15
M 3 x 30	S	500	16,85
M 3 x 35	S	500	36,05
M 3 x 40	S	500	45,05
M 3 x 50	S	500	69,10
M 3 x 60	S	500	74,45
M 4 x 6	S	500	4,75
M 4 x 6	K	100	7,75
M 4 x 8	S	500	4,75
M 4 x 8	K	100	7,75
M 4 x 10	S	500	4,75
M 4 x 10	K	100	7,75
M 4 x 12	S	500	5,20
M 4 x 12	K	100	8,25
M 4 x 14	S	500	5,65
M 4 x 16	S	500	5,20
M 4 x 16	K	100	8,25
M 4 x 18	S	500	5,90
M 4 x 20	S	500	5,45
M 4 x 20	K	100	8,45
M 4 x 22	S	500	6,60
M 4 x 25	S	500	6,10
M 4 x 25	K	100	9,15
M 4 x 30	S	500	7,05
M 4 x 30	K	100	10,05
M 4 x 35	S	500	7,50
M 4 x 35	K	100	10,50
M 4 x 40	S	500	8,10
M 4 x 40	K	100	11,15
M 4 x 45	S	500	9,65
M 4 x 50	S	500	10,45
M 4 x 50	K	100	13,45
M 4 x 55	S	100	47,90
M 4 x 60	S	100	72,70
M 4 x 65	S	200	103,00
M 4 x 70	S	100	103,00
M 5 x 6	S	500	12,60
M 5 x 6	K	100	15,65
M 5 x 8	S	500	3,35
M 5 x 8	K	100	6,35
M 5 x 10	S	500	3,35
M 5 x 10	K	100	6,35
M 5 x 12	S	500	3,45
M 5 x 12	K	100	6,40
M 5 x 14	S	500	3,60
M 5 x 16	S	500	3,45
M 5 x 16	K	100	6,40
M 5 x 18	S	500	3,80
M 5 x 18	K	100	6,75
M 5 x 20	S	500	3,60
M 5 x 20	K	100	6,70
M 5 x 22	S	500	9,45
M 5 x 25	S	500	4,10
M 5 x 25	K	100	7,10
M 5 x 30	S	500	4,75
M 5 x 30	K	100	7,75
M 5 x 35	S	200	5,40
M 5 x 40	S	200	7,35
M 5 x 45	S	200	8,55
M 5 x 50	S	200	9,50
M 5 x 55	S	200	14,10
M 5 x 60	S	200	14,25
M 5 x 65	S	200	45,70
M 5 x 70	S	200	45,70
M 5 x 80	S	200	69,10
M 5 x 90	S	200	111,00
M 5 x 100	S	200	130,00
M 6 x 6	S	500	18,05
M 6 x 6	K	100	21,05
M 6 x 8	S	500	5,00
M 6 x 8	K	100	7,95
M 6 x 10	S	500	4,50
M 6 x 10	K	100	7,55
M 6 x 12	S	500	4,50
M 6 x 12	K	100	7,55
M 6 x 14	S	500	4,00
M 6 x 16	S	500	4,00
M 6 x 16	K	100	6,95
M 6 x 18	S	500	4,20
M 6 x 18	K	100	7,20
M 6 x 20	S	500	4,20
M 6 x 20	K	100	7,20
M 6 x 22	S	500	4,50
M 6 x 22	K	100	7,55
M 6 x 25	S	500	4,50
M 6 x 25	K	100	7,55
M 6 x 28	S	500	9,95
M 6 x 28	K	100	12,95
M 6 x 30	S	500	4,85
M 6 x 30	K	100	7,90
M 6 x 35	S	200	5,40
M 6 x 40	S	200	5,95
M 6 x 45	S	200	8,70
M 6 x 50	S	200	8,85
M 6 x 55	S	200	15,35
M 6 x 60	S	200	17,35
M 6 x 65	S	200	22,35
M 6 x 70	S	200	27,95
M 6 x 75	S	200	33,15
M 6 x 80	S	200	33,15
M 6 x 85	S	200	59,70
M 6 x 90	S	200	59,10
M 6 x 100	S	100	91,30
M 6 x 110	S	100	106,00
M 6 x 120	S	100	113,00
M 6 x 130	S	100	178,00
M 6 x 140	S	100	191,00
M 6 x 150	S	100	229,00
M 7 x 12	S	500	15,60
M 7 x 16	S	500	12,00
M 7 x 20	S	500	12,60
M 7 x 25	S	500	14,65
M 7 x 30	S	500	15,80
M 7 x 35	S	200	17,65
M 7 x 40	S	200	19,15
M 7 x 45	S	200	20,55
M 8 x 8	S	200	25,05
M 8 x 10	S	200	8,55
M 8 x 12	S	200	7,60
M 8 x 14	S	200	7,60
M 8 x 16	S	200	5,85
M 8 x 18	S	200	6,20
M 8 x 20	S	200	6,20
M 8 x 22	S	200	7,15
M 8 x 25	S	200	7,15
M 8 x 28	S	200	7,70
M 8 x 30	S	200	7,70
M 8 x 35	S	200	8,55
M 8 x 40	S	200	9,35
M 8 x 45	S	200	11,50
M 8 x 50	S	200	13,35
M 8 x 55	S	200	18,75
M 8 x 60	S	200	20,05
M 8 x 65	S	200	27,60
M 8 x 70	S	200	34,50
M 8 x 75	S	200	41,45
M 8 x 80	S	200	41,45
M 8 x 85	S	200	52,30
M 8 x 90	S	100	48,95
M 8 x 100	S	100	56,35
M 8 x 110	S	100	72,70
M 8 x 120	S	100	75,65
M 8 x 130	S	100	122,00
M 8 x 140	S	100	152,00
M 8 x 150	S	100	186,00
M 8 x 160	S	100	236,00
M 8 x 170	S	100	271,00
M 8 x 180	S	100	291,00
M 8 x 200	S	100	380,00
M 10 x 10	S	200	48,75
M 10 x 12	S	200	17,75
M 10 x 16	S	200	11,30
M 10 x 18	S	200	10,55
M 10 x 20	S	200	10,55
M 10 x 22	S	200	11,30
M 10 x 25	S	200	11,30
M 10 x 28	S	200	13,60
M 10 x 30	S	200	12,05
M 10 x 35	S	100	13,35
M 10 x 40	S	100	14,25
M 10 x 45	S	100	17,05
M 10 x 50	S	100	17,85
M 10 x 55	S	100	24,65
M 10 x 60	S	100	26,65
M 10 x 65	S	100	40,95
M 10 x 70	S	100	40,95
M 10 x 75	S	100	46,15
M 10 x 80	S	100	57,65
M 10 x 85	S	100	69,10
M 10 x 90	S	100	69,10
M 10 x 100	S	100	81,70
M 10 x 110	S	50	112,00
M 10 x 120	S	50	116,00
M 10 x 130	S	50	153,00
M 10 x 140	S	50	159,00
M 10 x 150	S	50	175,00
M 10 x 160	S	50	267,00
M 10 x 170	S	50	532,00
M 10 x 180	S	50	521,00
M 10 x 190	S	50	541,00
M 10 x 200	S	50	566,00
M 10 x 220	S	50	842,00
M 10 x 240	S	50	1595,00
M 10 x 280	S	50	1789,00
M 10 x 300	S	50	1889,00
M 12 x 10	S	100	174,00
M 12 x 12	S	100	109,00
M 12 x 16	S	100	20,85
M 12 x 18	S	100	20,85
M 12 x 20	S	100	18,55
M 12 x 22	S	100	18,55
M 12 x 25	S	100	18,55
M 12 x 28	S	100	19,90
M 12 x 30	S	100	17,50
M 12 x 35	S	100	19,05
M 12 x 40	S	100	20,85
M 12 x 45	S	100	23,00
M 12 x 50	S	100	24,55
M 12 x 55	S	100	30,90
M 12 x 60	S	100	33,10
M 12 x 65	S	50	49,70
M 12 x 70	S	50	49,70
M 12 x 75	S	50	56,80
M 12 x 80	S	50	71,50
M 12 x 85	S	50	85,85
M 12 x 90	S	50	85,85
M 12 x 100	S	50	95,50
M 12 x 110	S	50	148,00
M 12 x 120	S	50	150,00
M 12 x 130	S	50	179,00
M 12 x 140	S	50	186,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 150	S	50	201,00
M 12 x 160	S	25	389,00
M 12 x 170	S	25	476,00
M 12 x 180	S	25	476,00
M 12 x 190	S	25	574,00
M 12 x 200	S	25	574,00
M 12 x 220	S	25	677,00
M 12 x 240	S	25	738,00
M 12 x 300	S	25	2355,00
M 14 x 16	S	100	206,00
M 14 x 20	S	100	52,05
M 14 x 25	S	100	52,05
M 14 x 30	S	100	58,25
M 14 x 35	S	100	65,45
M 14 x 40	S	100	65,45
M 14 x 45	S	100	71,50
M 14 x 50	S	100	75,10
M 14 x 55	S	100	87,10
M 14 x 60	S	50	87,10
M 14 x 65	S	50	96,70
M 14 x 70	S	50	96,70
M 14 x 75	S	50	121,00
M 14 x 80	S	50	121,00
M 14 x 90	S	50	172,00
M 14 x 100	S	50	197,00
M 14 x 110	S	50	357,00
M 14 x 120	S	50	257,00
M 14 x 130	S	50	420,00
M 14 x 140	S	50	447,00
M 14 x 150	S	50	470,00
M 14 x 160	S	25	584,00
M 14 x 170	S	25	620,00
M 14 x 180	S	25	654,00
M 14 x 200	S	25	715,00
M 14 x 220	S	25	3156,00
M 16 x 12	S	50	166,00
M 16 x 16	S	50	169,00
M 16 x 20	S	50	39,20
M 16 x 25	S	50	39,20
M 16 x 30	S	50	37,00
M 16 x 35	S	50	39,20
M 16 x 40	S	50	40,60
M 16 x 45	S	50	43,05
M 16 x 50	S	50	46,55
M 16 x 55	S	50	56,30
M 16 x 60	S	50	59,00
M 16 x 65	S	25	84,10
M 16 x 70	S	25	84,10
M 16 x 75	S	25	99,70
M 16 x 80	S	25	126,00
M 16 x 85	S	25	164,00
M 16 x 90	S	25	164,00
M 16 x 95	S	25	186,00
M 16 x 100	S	25	186,00
M 16 x 110	S	25	246,00
M 16 x 120	S	25	265,00
M 16 x 130	S	25	275,00
M 16 x 140	S	25	291,00
M 16 x 150	S	25	328,00
M 16 x 160	S	25	541,00
M 16 x 170	S	25	612,00
M 16 x 180	S	25	612,00
M 16 x 190	S	25	736,00
M 16 x 200	S	25	736,00
M 16 x 210	S	25	770,00
M 16 x 220	S	1	799,00
M 16 x 230	S	1	830,00
M 16 x 240	S	1	862,00
M 16 x 250	S	1	1087,00
M 16 x 260	S	1	1168,00
M 16 x 280	S	1	1264,00
M 16 x 300	S	1	1469,00
M 16 x 320	S	1	1655,00
M 16 x 340	S	1	1799,00
M 16 x 400	S	1	2758,00

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 500	S	1	3531,00
M 18 x 20	S	50	232,00
M 18 x 25	S	50	232,00
M 18 x 30	S	50	172,00
M 18 x 35	S	50	177,00
M 18 x 40	S	50	177,00
M 18 x 45	S	50	177,00
M 18 x 50	S	50	183,00
M 18 x 55	S	25	197,00
M 18 x 60	S	25	197,00
M 18 x 65	S	25	210,00
M 18 x 70	S	25	210,00
M 18 x 75	S	25	244,00
M 18 x 80	S	25	244,00
M 18 x 85	S	25	315,00
M 18 x 90	S	25	315,00
M 18 x 100	S	25	315,00
M 18 x 110	S	25	412,00
M 18 x 120	S	25	412,00
M 18 x 130	S	25	715,00
M 18 x 140	S	25	772,00
M 18 x 150	S	25	830,00
M 18 x 160	S	25	891,00
M 18 x 170	S	25	940,00
M 18 x 180	S	25	989,00
M 18 x 190	S	25	1034,00
M 18 x 200	S	25	1081,00
M 20 x 20	S	25	199,00
M 20 x 25	S	25	150,00
M 20 x 30	S	25	87,10
M 20 x 35	S	25	87,10
M 20 x 40	S	25	81,10
M 20 x 45	S	25	82,25
M 20 x 50	S	25	83,45
M 20 x 55	S	25	87,70
M 20 x 60	S	25	88,90
M 20 x 65	S	25	104,00
M 20 x 70	S	25	107,00
M 20 x 75	S	25	137,00
M 20 x 80	S	25	133,00
M 20 x 85	S	25	198,00
M 20 x 90	S	25	198,00
M 20 x 100	S	25	281,00
M 20 x 110	S	25	312,00
M 20 x 120	S	25	345,00
M 20 x 130	S	25	446,00
M 20 x 140	S	25	516,00
M 20 x 150	S	25	590,00
M 20 x 160	S	10	641,00
M 20 x 170	S	1	939,00
M 20 x 180	S	1	984,00
M 20 x 190	S	1	1031,00
M 20 x 200	S	1	1073,00
M 20 x 210	S	1	1305,00
M 20 x 220	S	1	1381,00
M 20 x 230	S	1	1456,00
M 20 x 240	S	1	1532,00
M 20 x 250	S	1	1546,00
M 20 x 260	S	1	1634,00
M 20 x 280	S	1	1730,00
M 20 x 300	S	1	1875,00
M 20 x 320	S	1	3027,00
M 20 x 360	S	1	4000,00
M 22 x 30	S	25	496,00
M 22 x 35	S	25	496,00
M 22 x 40	S	25	430,00
M 22 x 45	S	25	324,00
M 22 x 50	S	25	324,00
M 22 x 55	S	25	362,00
M 22 x 60	S	25	362,00
M 22 x 65	S	25	442,00
M 22 x 70	S	25	442,00
M 22 x 75	S	25	482,00
M 22 x 80	S	25	482,00
M 22 x 90	S	10	482,00

Dimensions	PU	Pieces	€/100/Mat.
M 22 x 100	S	10	601,00
M 22 x 110	S	10	726,00
M 22 x 120	S	10	726,00
M 22 x 130	S	10	926,00
M 22 x 140	S	10	989,00
M 22 x 150	S	10	1050,00
M 22 x 160	S	10	1183,00
M 22 x 170	S	10	1240,00
M 22 x 180	S	10	1298,00
M 22 x 190	S	10	1356,00
M 22 x 200	S	10	1416,00
M 24 x 25	S	25	434,00
M 24 x 30	S	25	434,00
M 24 x 35	S	25	270,00
M 24 x 40	S	25	151,00
M 24 x 45	S	25	151,00
M 24 x 50	S	25	141,00
M 24 x 55	S	25	149,00
M 24 x 60	S	25	153,00
M 24 x 65	S	25	175,00
M 24 x 70	S	25	175,00
M 24 x 75	S	25	240,00
M 24 x 80	S	25	223,00
M 24 x 85	S	10	340,00
M 24 x 90	S	10	340,00
M 24 x 100	S	10	458,00
M 24 x 110	S	10	534,00
M 24 x 120	S	10	555,00
M 24 x 130	S	1	947,00
M 24 x 140	S	1	1005,00
M 24 x 150	S	1	1057,00
M 24 x 160	S	1	1115,00
M 24 x 170	S	1	1240,00
M 24 x 180	S	1	1240,00
M 24 x 190	S	1	1441,00
M 24 x 200	S	1	1441,00
M 24 x 210	S	1	1598,00
M 24 x 220	S	1	1659,00
M 24 x 230	S	1	1722,00
M 24 x 240	S	1	1783,00
M 24 x 250	S	1	1844,00
M 24 x 260	S	1	2210,00
M 24 x 280	S	1	2402,00
M 24 x 300	S	1	2522,00
M 24 x 320	S	1	2882,00
M 24 x 500	S	1	7173,00
M 27 x 30	S	10	794,00
M 27 x 40	S	10	794,00
M 27 x 45	S	10	794,00
M 27 x 50	S	10	683,00
M 27 x 55	S	10	683,00
M 27 x 60	S	10	683,00
M 27 x 65	S	10	727,00
M 27 x 70	S	10	727,00
M 27 x 75	S	10	751,00
M 27 x 80	S	10	751,00
M 27 x 85	S	10	789,00
M 27 x 90	S	1	789,00
M 27 x 100	S	1	841,00
M 27 x 110	S	1	1078,00
M 27 x 120	S	1	1078,00
M 27 x 130	S	1	1088,00
M 27 x 140	S	1	1356,00
M 27 x 150	S	1	1428,00
M 27 x 160	S	1	1590,00
M 27 x 170	S	1	1671,00
M 27 x 180	S	1	1752,00
M 27 x 190	S	1	1823,00
M 27 x 200	S	1	1896,00
M 27 x 300	S	1	3668,00
M 30 x 35	S	1	899,00
M 30 x 40	S	1	899,00
M 30 x 45	S	1	899,00
M 30 x 50	S	1	899,00
M 30 x 55	S	1	899,00

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	60	S	1	899,00
M 30	x	65	S	1	965,00
M 30	x	70	S	1	965,00
M 30	x	75	S	1	1030,00
M 30	x	80	S	1	1030,00
M 30	x	85	S	1	1082,00
M 30	x	90	S	1	1082,00
M 30	x	100	S	1	1119,00
M 30	x	110	S	1	1184,00
M 30	x	120	S	1	1252,00
M 30	x	130	S	1	1356,00
M 30	x	140	S	1	1408,00
M 30	x	150	S	1	1461,00
M 30	x	160	S	1	1630,00
M 30	x	170	S	1	1722,00
M 30	x	180	S	1	1783,00
M 30	x	190	S	1	1844,00
M 30	x	200	S	1	1904,00
M 30	x	210	S	1	2153,00
M 30	x	220	S	1	2213,00
M 30	x	230	S	1	2274,00
M 30	x	240	S	1	2335,00
M 30	x	250	S	1	2742,00
M 30	x	260	S	1	2812,00
M 30	x	280	S	1	3092,00
M 30	x	300	S	1	3373,00
M 30	x	320	S	1	3796,00
M 30	x	340	S	1	4076,00
M 30	x	360	S	1	4456,00
M 30	x	380	S	1	4779,00
M 30	x	400	S	1	5271,00
M 30	x	500	S	1	8316,00
M 30	x	600	S	1	9292,00
M 33	x	40	S	1	1184,00
M 33	x	50	S	1	1184,00
M 33	x	60	S	1	1184,00
M 33	x	65	S	1	1305,00
M 33	x	70	S	1	1305,00
M 33	x	75	S	1	1338,00
M 33	x	80	S	1	1338,00
M 33	x	90	S	1	1406,00
M 33	x	100	S	1	1484,00
M 33	x	110	S	1	1623,00
M 33	x	120	S	1	1623,00
M 33	x	130	S	1	1939,00
M 33	x	140	S	1	2098,00
M 33	x	150	S	1	2217,00
M 33	x	160	S	1	2464,00
M 33	x	170	S	1	2571,00
M 33	x	180	S	1	2681,00
M 33	x	190	S	1	2799,00
M 33	x	200	S	1	2918,00
M 33	x	300	S	1	4204,00
M 36	x	40	S	1	1436,00
M 36	x	45	S	1	1436,00
M 36	x	50	S	1	1436,00
M 36	x	55	S	1	1436,00
M 36	x	60	S	1	1436,00
M 36	x	65	S	1	1488,00
M 36	x	70	S	1	1488,00
M 36	x	75	S	1	1565,00
M 36	x	80	S	1	1565,00
M 36	x	85	S	1	1677,00
M 36	x	90	S	1	1677,00
M 36	x	100	S	1	1781,00
M 36	x	110	S	1	1870,00
M 36	x	120	S	1	1923,00
M 36	x	130	S	1	2060,00
M 36	x	140	S	1	2121,00
M 36	x	150	S	1	2242,00
M 36	x	160	S	1	2335,00
M 36	x	170	S	1	2459,00
M 36	x	180	S	1	2584,00
M 36	x	190	S	1	2705,00
M 36	x	200	S	1	2828,00

Dimensions			PU	Pieces	€/100/Mat.
M 36	x	220	S	1	3626,00
M 36	x	260	S	1	4364,00
M 36	x	280	S	1	4792,00
M 36	x	300	S	1	5101,00
M 36	x	320	S	1	9078,00
M 36	x	340	S	1	9349,00
M 36	x	400	S	1	10123,00
M 36	x	600	S	1	12709,00
M 39	x	80	S	1	3313,00
M 39	x	90	S	1	3508,00
M 39	x	100	S	1	3732,00
M 39	x	110	S	1	3930,00
M 39	x	120	S	1	4360,00
M 39	x	130	S	1	4459,00
M 39	x	140	S	1	4755,00
M 39	x	150	S	1	5086,00
M 39	x	160	S	1	5614,00
M 39	x	180	S	1	6473,00
M 39	x	190	S	1	7266,00
M 39	x	200	S	1	7266,00
M 42	x	50	S	1	3369,00
M 42	x	55	S	1	3369,00
M 42	x	60	S	1	3369,00
M 42	x	70	S	1	3369,00
M 42	x	75	S	1	3468,00
M 42	x	80	S	1	3468,00
M 42	x	85	S	1	3601,00
M 42	x	90	S	1	3601,00
M 42	x	100	S	1	3765,00
M 42	x	110	S	1	4162,00
M 42	x	120	S	1	4393,00
M 42	x	130	S	1	4591,00
M 42	x	140	S	1	4789,00
M 42	x	150	S	1	5086,00
M 42	x	160	S	1	5202,00
M 42	x	170	S	1	5944,00
M 42	x	180	S	1	6143,00
M 42	x	190	S	1	6374,00
M 42	x	200	S	1	6803,00
M 42	x	220	S	1	8106,00
M 42	x	250	S	1	9475,00
M 42	x	260	S	1	10159,00
M 42	x	300	S	1	11528,00
M 42	x	360	S	1	13149,00
M 42	x	400	S	1	13761,00
M 45	x	90	S	1	6348,00
M 45	x	100	S	1	6493,00
M 45	x	110	S	1	6823,00
M 45	x	120	S	1	6770,00
M 45	x	130	S	1	7196,00
M 45	x	140	S	1	7473,00
M 45	x	150	S	1	7760,00
M 48	x	60	S	1	7760,00
M 48	x	70	S	1	7760,00
M 48	x	80	S	1	7760,00
M 48	x	90	S	1	7760,00
M 48	x	100	S	1	7903,00
M 48	x	110	S	1	8183,00
M 48	x	120	S	1	8467,00
M 48	x	130	S	1	8685,00
M 48	x	140	S	1	8824,00
M 48	x	150	S	1	9028,00
M 48	x	160	S	1	9174,00
M 48	x	170	S	1	9874,00
M 48	x	180	S	1	10581,00
M 48	x	190	S	1	11168,00
M 48	x	200	S	1	11993,00
M 48	x	420	S	1	16859,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	04017.810		*

4017 **8.8 zinc plated**

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 3	x	5	S	500	10,00 ZP
M 3	x	6	S	500	4,90 ZP
M 3	x	8	S	500	4,90 ZP
M 3	x	8	K	100	7,95 ZP
M 3	x	10	S	500	5,00 ZP
M 3	x	10	K	100	7,95 ZP
M 3	x	12	S	500	5,45 ZP
M 3	x	12	K	100	8,45 ZP
M 3	x	16	S	500	5,50 ZP
M 3	x	16	K	100	8,45 ZP
M 3	x	20	S	500	5,70 ZP
M 3	x	20	K	100	8,75 ZP
M 3	x	25	S	500	6,45 ZP
M 3	x	30	S	500	17,35 ZP
M 3	x	35	S	500	40,05 ZP
M 3	x	40	S	500	45,70 ZP
M 3	x	50	S	500	70,30 ZP
M 4	x	6	S	500	5,10 ZP
M 4	x	8	S	500	5,15 ZP
M 4	x	8	K	100	8,10 ZP
M 4	x	10	S	500	5,20 ZP
M 4	x	10	K	100	8,15 ZP
M 4	x	12	S	500	5,65 ZP
M 4	x	12	K	100	8,70 ZP
M 4	x	14	S	500	6,10 ZP
M 4	x	16	S	500	5,70 ZP
M 4	x	16	K	100	8,75 ZP
M 4	x	18	S	500	6,45 ZP
M 4	x	20	S	500	6,05 ZP
M 4	x	20	K	100	9,05 ZP
M 4	x	22	S	500	7,20 ZP
M 4	x	25	S	500	6,80 ZP
M 4	x	25	K	100	9,80 ZP
M 4	x	30	S	500	7,85 ZP
M 4	x	30	K	100	10,80 ZP
M 4	x	35	S	500	8,70 ZP
M 4	x	35	K	100	11,70 ZP
M 4	x	40	S	500	9,50 ZP
M 4	x	40	K	100	12,45 ZP
M 4	x	45	S	500	11,10 ZP
M 4	x	50	S	500	12,05 ZP
M 4	x	55	S	100	53,50 ZP
M 4	x	60	S	100	75,10 ZP
M 4	x	70	S	100	106,00 ZP
M 5	x	6	S	500	13,20 ZP
M 5	x	8	S	500	3,80 ZP
M 5	x	8	K	100	6,80 ZP
M 5	x	10	S	500	3,85 ZP
M 5	x	10	K	100	6,80 ZP
M 5	x	12	S	500	4,00 ZP
M 5	x	12	K	100	6,95 ZP
M 5	x	14	S	500	4,25 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 5 x 16	S	500	4,10 ZP
M 5 x 16	K	100	7,10 ZP
M 5 x 18	S	500	4,45 ZP
M 5 x 20	S	500	4,40 ZP
M 5 x 20	K	100	7,35 ZP
M 5 x 22	S	500	10,40 ZP
M 5 x 25	S	500	5,00 ZP
M 5 x 25	K	100	7,95 ZP
M 5 x 30	S	500	5,70 ZP
M 5 x 30	K	100	8,70 ZP
M 5 x 35	S	200	6,50 ZP
M 5 x 40	S	200	8,55 ZP
M 5 x 45	S	200	9,90 ZP
M 5 x 50	S	200	10,90 ZP
M 5 x 55	S	200	16,15 ZP
M 5 x 60	S	200	16,50 ZP
M 5 x 65	S	200	48,45 ZP
M 5 x 70	S	200	48,65 ZP
M 5 x 75	S	200	132,00 ZP
M 5 x 80	S	200	72,10 ZP
M 5 x 90	S	200	116,00 ZP
M 5 x 100	S	200	135,00 ZP
M 6 x 6	S	500	18,95 ZP
M 6 x 6	K	100	22,00 ZP
M 6 x 8	S	500	5,65 ZP
M 6 x 8	K	100	8,70 ZP
M 6 x 10	S	500	5,30 ZP
M 6 x 10	K	100	8,35 ZP
M 6 x 12	S	500	5,40 ZP
M 6 x 12	K	100	8,40 ZP
M 6 x 14	S	500	4,85 ZP
M 6 x 16	S	500	5,00 ZP
M 6 x 16	K	100	7,95 ZP
M 6 x 18	S	500	5,20 ZP
M 6 x 18	K	100	8,25 ZP
M 6 x 20	S	500	5,25 ZP
M 6 x 20	K	100	8,30 ZP
M 6 x 22	S	500	5,65 ZP
M 6 x 22	K	100	8,70 ZP
M 6 x 25	S	500	5,80 ZP
M 6 x 25	K	100	8,80 ZP
M 6 x 28	S	500	11,75 ZP
M 6 x 30	S	500	6,30 ZP
M 6 x 30	K	100	9,25 ZP
M 6 x 35	S	200	6,95 ZP
M 6 x 40	S	200	7,70 ZP
M 6 x 45	S	200	10,60 ZP
M 6 x 50	S	200	10,90 ZP
M 6 x 55	S	200	18,30 ZP
M 6 x 60	S	200	20,50 ZP
M 6 x 65	S	200	25,80 ZP
M 6 x 70	S	200	31,55 ZP
M 6 x 75	S	200	36,95 ZP
M 6 x 80	S	200	37,20 ZP
M 6 x 85	S	200	64,25 ZP
M 6 x 90	S	200	63,70 ZP
M 6 x 100	S	200	96,70 ZP
M 6 x 110	S	100	113,00 ZP
M 6 x 120	S	100	121,00 ZP
M 6 x 130	S	100	186,00 ZP
M 6 x 140	S	100	199,00 ZP
M 6 x 150	S	100	236,00 ZP
M 7 x 12	S	500	18,35 ZP
M 7 x 16	S	500	13,95 ZP
M 7 x 20	S	500	14,85 ZP
M 7 x 25	S	500	17,20 ZP
M 7 x 30	S	500	18,60 ZP
M 7 x 40	S	500	22,65 ZP
M 7 x 45	S	200	24,50 ZP
M 8 x 8	S	200	27,15 ZP
M 8 x 10	S	200	10,30 ZP
M 8 x 12	S	200	9,50 ZP
M 8 x 14	S	200	9,60 ZP
M 8 x 16	S	200	7,95 ZP
M 8 x 18	S	200	8,40 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 20	S	200	8,50 ZP
M 8 x 22	S	200	9,60 ZP
M 8 x 25	S	200	9,75 ZP
M 8 x 28	S	200	14,20 ZP
M 8 x 30	S	200	10,60 ZP
M 8 x 35	S	200	11,80 ZP
M 8 x 40	S	200	12,90 ZP
M 8 x 45	S	200	15,30 ZP
M 8 x 50	S	200	17,45 ZP
M 8 x 55	S	200	24,65 ZP
M 8 x 60	S	200	26,30 ZP
M 8 x 65	S	200	34,20 ZP
M 8 x 70	S	200	41,50 ZP
M 8 x 75	S	200	48,95 ZP
M 8 x 80	S	200	49,35 ZP
M 8 x 85	S	200	60,65 ZP
M 8 x 90	S	100	57,55 ZP
M 8 x 95	S	100	65,45 ZP
M 8 x 100	S	100	66,10 ZP
M 8 x 110	S	100	82,90 ZP
M 8 x 120	S	100	86,50 ZP
M 8 x 130	S	100	135,00 ZP
M 8 x 140	S	100	166,00 ZP
M 8 x 150	S	100	200,00 ZP
M 8 x 160	S	100	252,00 ZP
M 8 x 170	S	100	288,00 ZP
M 8 x 180	S	100	308,00 ZP
M 8 x 190	S	100	442,00 ZP
M 8 x 200	S	100	402,00 ZP
M 10 x 10	S	200	53,60 ZP
M 10 x 12	S	200	21,00 ZP
M 10 x 16	S	200	14,90 ZP
M 10 x 18	S	200	14,35 ZP
M 10 x 20	S	200	14,55 ZP
M 10 x 22	S	200	15,45 ZP
M 10 x 25	S	200	15,75 ZP
M 10 x 28	S	200	18,30 ZP
M 10 x 30	S	200	17,00 ZP
M 10 x 35	S	100	18,75 ZP
M 10 x 40	S	100	20,15 ZP
M 10 x 45	S	100	23,45 ZP
M 10 x 50	S	100	24,70 ZP
M 10 x 55	S	100	31,95 ZP
M 10 x 60	S	100	34,45 ZP
M 10 x 65	S	100	51,85 ZP
M 10 x 70	S	100	52,45 ZP
M 10 x 75	S	100	58,35 ZP
M 10 x 80	S	100	70,85 ZP
M 10 x 85	S	100	82,25 ZP
M 10 x 90	S	100	82,90 ZP
M 10 x 95	S	100	145,00 ZP
M 10 x 100	S	100	97,30 ZP
M 10 x 110	S	50	129,00 ZP
M 10 x 120	S	50	133,00 ZP
M 10 x 130	S	50	173,00 ZP
M 10 x 140	S	50	178,00 ZP
M 10 x 150	S	50	197,00 ZP
M 10 x 160	S	50	296,00 ZP
M 10 x 170	S	50	560,00 ZP
M 10 x 180	S	50	551,00 ZP
M 10 x 190	S	50	573,00 ZP
M 10 x 200	S	50	599,00 ZP
M 10 x 220	S	50	878,00 ZP
M 12 x 12	S	100	117,00 ZP
M 12 x 16	S	100	26,00 ZP
M 12 x 18	S	100	26,35 ZP
M 12 x 20	S	100	24,35 ZP
M 12 x 22	S	100	24,75 ZP
M 12 x 25	S	100	24,95 ZP
M 12 x 28	S	100	31,00 ZP
M 12 x 30	S	100	24,65 ZP
M 12 x 35	S	100	26,85 ZP
M 12 x 40	S	100	29,30 ZP
M 12 x 45	S	100	32,15 ZP
M 12 x 50	S	100	34,35 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 55	S	100	41,40 ZP
M 12 x 60	S	100	44,00 ZP
M 12 x 65	S	50	65,45 ZP
M 12 x 70	S	50	66,65 ZP
M 12 x 75	S	50	74,45 ZP
M 12 x 80	S	50	89,50 ZP
M 12 x 85	S	50	106,00 ZP
M 12 x 90	S	50	106,00 ZP
M 12 x 95	S	50	164,00 ZP
M 12 x 100	S	50	119,00 ZP
M 12 x 110	S	50	172,00 ZP
M 12 x 120	S	50	176,00 ZP
M 12 x 130	S	50	207,00 ZP
M 12 x 140	S	50	215,00 ZP
M 12 x 150	S	100	232,00 ZP
M 12 x 160	S	25	422,00 ZP
M 12 x 170	S	25	510,00 ZP
M 12 x 180	S	25	511,00 ZP
M 12 x 190	S	25	612,00 ZP
M 12 x 200	S	25	616,00 ZP
M 12 x 220	S	25	720,00 ZP
M 12 x 240	S	25	784,00 ZP
M 12 x 260	S	25	2179,00 ZP
M 14 x 20	S	100	64,25 ZP
M 14 x 25	S	100	65,45 ZP
M 14 x 30	S	100	73,25 ZP
M 14 x 35	S	100	81,10 ZP
M 14 x 40	S	100	82,25 ZP
M 14 x 45	S	100	90,10 ZP
M 14 x 50	S	100	94,85 ZP
M 14 x 55	S	100	108,00 ZP
M 14 x 60	S	50	109,00 ZP
M 14 x 65	S	50	120,00 ZP
M 14 x 70	S	50	121,00 ZP
M 14 x 75	S	50	146,00 ZP
M 14 x 80	S	50	148,00 ZP
M 14 x 90	S	50	200,00 ZP
M 14 x 100	S	50	229,00 ZP
M 14 x 110	S	50	391,00 ZP
M 14 x 120	S	50	293,00 ZP
M 14 x 130	S	50	468,00 ZP
M 14 x 140	S	50	487,00 ZP
M 14 x 200	S	25	773,00 ZP
M 8 x 200	S	50	181,00 ZP
M 16 x 20	S	50	51,20 ZP
M 16 x 25	S	50	52,45 ZP
M 16 x 30	S	50	51,50 ZP
M 16 x 35	S	50	54,95 ZP
M 16 x 40	S	50	57,65 ZP
M 16 x 45	S	50	61,85 ZP
M 16 x 50	S	50	66,10 ZP
M 16 x 55	S	50	77,50 ZP
M 16 x 60	S	50	81,70 ZP
M 16 x 65	S	25	116,00 ZP
M 16 x 70	S	25	118,00 ZP
M 16 x 75	S	50	135,00 ZP
M 16 x 80	S	25	161,00 ZP
M 16 x 85	S	25	201,00 ZP
M 16 x 90	S	25	202,00 ZP
M 16 x 95	S	25	229,00 ZP
M 16 x 100	S	25	230,00 ZP
M 16 x 110	S	25	292,00 ZP
M 16 x 120	S	25	314,00 ZP
M 16 x 130	S	25	328,00 ZP
M 16 x 140	S	25	347,00 ZP
M 16 x 150	S	25	387,00 ZP
M 16 x 160	S	25	604,00 ZP
M 16 x 170	S	25	677,00 ZP
M 16 x 180	S	25	680,00 ZP
M 16 x 180	S	25	804,00 ZP
M 16 x 200	S	25	810,00 ZP
M 16 x 210	S	25	865,00 ZP
M 16 x 220	S	1	879,00 ZP
M 16 x 230	S	1	913,00 ZP
M 16 x 240	S	1	947,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 250	S	1	1177,00 ZP
M 16 x 260	S	1	1274,00 ZP
M 16 x 280	S	1	1386,00 ZP
M 16 x 300	S	1	1599,00 ZP
M 16 x 220	S	1	1790,00 ZP
M 16 x 340	S	1	1944,00 ZP
M 18 x 20	S	50	257,00 ZP
M 18 x 25	S	50	258,00 ZP
M 18 x 30	S	50	198,00 ZP
M 18 x 35	S	50	205,00 ZP
M 18 x 40	S	50	207,00 ZP
M 18 x 45	S	50	209,00 ZP
M 18 x 50	S	50	217,00 ZP
M 18 x 55	S	25	233,00 ZP
M 18 x 60	S	25	234,00 ZP
M 18 x 65	S	25	251,00 ZP
M 18 x 70	S	25	252,00 ZP
M 18 x 75	S	25	289,00 ZP
M 18 x 80	S	25	291,00 ZP
M 18 x 90	S	25	366,00 ZP
M 18 x 100	S	25	370,00 ZP
M 20 x 20	S	25	250,00 ZP
M 20 x 25	S	25	181,00 ZP
M 20 x 30	S	25	113,00 ZP
M 20 x 35	S	25	116,00 ZP
M 20 x 40	S	25	111,00 ZP
M 20 x 45	S	25	114,00 ZP
M 20 x 50	S	25	118,00 ZP
M 20 x 55	S	25	124,00 ZP
M 20 x 60	S	25	127,00 ZP
M 20 x 65	S	25	143,00 ZP
M 20 x 70	S	25	149,00 ZP
M 20 x 75	S	25	179,00 ZP
M 20 x 80	S	25	177,00 ZP
M 20 x 85	S	25	259,00 ZP
M 20 x 90	S	25	263,00 ZP
M 20 x 100	S	25	352,00 ZP
M 20 x 110	S	25	387,00 ZP
M 20 x 120	S	25	425,00 ZP
M 20 x 130	S	25	532,00 ZP
M 20 x 140	S	25	606,00 ZP
M 20 x 150	S	25	685,00 ZP
M 20 x 160	S	10	742,00 ZP
M 20 x 170	S	10	1061,00 ZP
M 20 x 180	S	1	1215,00 ZP
M 20 x 190	S	1	1270,00 ZP
M 20 x 200	S	1	1325,00 ZP
M 20 x 210	S	1	1471,00 ZP
M 20 x 220	S	1	1616,00 ZP
M 20 x 230	S	1	1621,00 ZP
M 20 x 240	S	1	1786,00 ZP
M 20 x 240	S	1	1802,00 ZP
M 20 x 260	S	1	1861,00 ZP
M 20 x 280	S	1	1973,00 ZP
M 20 x 300	S	1	2132,00 ZP
M 20 x 320	S	1	3356,00 ZP
M 20 x 340	S	1	3519,00 ZP
M 20 x 360	S	1	4246,00 ZP
M 20 x 460	S	1	6505,00 ZP
M 22 x 40	S	25	510,00 ZP
M 22 x 50	S	25	379,00 ZP
M 22 x 55	S	25	420,00 ZP
M 22 x 60	S	25	422,00 ZP
M 22 x 65	S	25	506,00 ZP
M 22 x 70	S	25	508,00 ZP
M 22 x 75	S	25	552,00 ZP
M 22 x 80	S	25	556,00 ZP
M 22 x 90	S	25	561,00 ZP
M 22 x 100	S	10	688,00 ZP
M 22 x 110	S	10	818,00 ZP
M 22 x 120	S	10	825,00 ZP
M 24 x 25	S	25	494,00 ZP
M 24 x 30	S	25	498,00 ZP
M 24 x 35	S	25	327,00 ZP
M 24 x 40	S	25	197,00 ZP
M 24 x 45	S	25	200,00 ZP
M 24 x 50	S	25	192,00 ZP
M 24 x 55	S	25	202,00 ZP
M 24 x 60	S	25	211,00 ZP
M 24 x 65	S	25	235,00 ZP
M 24 x 70	S	25	239,00 ZP
M 24 x 75	S	25	306,00 ZP
M 24 x 80	S	25	292,00 ZP
M 24 x 85	S	25	434,00 ZP
M 24 x 90	S	10	438,00 ZP
M 24 x 95	S	10	729,00 ZP
M 24 x 100	S	10	563,00 ZP
M 24 x 110	S	10	648,00 ZP
M 24 x 120	S	10	674,00 ZP
M 24 x 130	S	1	1074,00 ZP
M 24 x 140	S	1	1141,00 ZP
M 24 x 150	S	1	1201,00 ZP
M 24 x 160	S	1	1266,00 ZP
M 24 x 170	S	1	1430,00 ZP
M 24 x 180	S	1	1404,00 ZP
M 24 x 190	S	1	1649,00 ZP
M 24 x 200	S	1	1620,00 ZP
M 24 x 210	S	1	1785,00 ZP
M 24 x 220	S	1	1620,00 ZP
M 24 x 240	S	1	2036,00 ZP
M 24 x 250	S	1	2106,00 ZP
M 24 x 260	S	1	2481,00 ZP
M 24 x 280	S	1	2690,00 ZP
M 24 x 300	S	1	2827,00 ZP
M 24 x 320	S	1	3206,00 ZP
M 27 x 40	S	10	986,00 ZP
M 27 x 45	S	10	1204,00 ZP
M 27 x 50	S	10	1097,00 ZP
M 27 x 55	S	10	1102,00 ZP
M 27 x 60	S	10	787,00 ZP
M 27 x 65	S	10	777,00 ZP
M 27 x 70	S	10	840,00 ZP
M 27 x 75	S	10	920,00 ZP
M 27 x 80	S	10	874,00 ZP
M 27 x 90	S	1	922,00 ZP
M 27 x 100	S	1	983,00 ZP
M 27 x 110	S	1	1230,00 ZP
M 27 x 120	S	1	1239,00 ZP
M 27 x 130	S	1	1259,00 ZP
M 27 x 140	S	1	1536,00 ZP
M 27 x 150	S	1	1618,00 ZP
M 27 x 160	S	1	1789,00 ZP
M 27 x 180	S	1	1969,00 ZP
M 27 x 200	S	1	2132,00 ZP
M 30 x 35	S	1	1027,00 ZP
M 30 x 40	S	1	1011,00 ZP
M 30 x 45	S	1	1015,00 ZP
M 30 x 50	S	1	1022,00 ZP
M 30 x 55	S	1	1029,00 ZP
M 30 x 60	S	1	1034,00 ZP
M 30 x 65	S	1	1105,00 ZP
M 30 x 70	S	1	1112,00 ZP
M 30 x 75	S	1	1183,00 ZP
M 30 x 80	S	1	1188,00 ZP
M 30 x 85	S	1	1248,00 ZP
M 30 x 90	S	1	1255,00 ZP
M 30 x 100	S	1	1301,00 ZP
M 30 x 110	S	1	1379,00 ZP
M 30 x 120	S	1	1459,00 ZP
M 30 x 130	S	1	1574,00 ZP
M 30 x 140	S	1	1638,00 ZP
M 30 x 150	S	1	1703,00 ZP
M 30 x 160	S	1	1882,00 ZP
M 30 x 160	S	1	1941,00 ZP
M 30 x 180	S	1	2059,00 ZP
M 30 x 190	S	1	2192,00 ZP
M 30 x 200	S	1	2206,00 ZP
M 30 x 210	S	1	2378,00 ZP
M 30 x 220	S	1	2540,00 ZP
M 30 x 240	S	1	2686,00 ZP
M 30 x 260	S	1	3430,00 ZP
M 30 x 280	S	1	3751,00 ZP
M 30 x 300	S	1	4073,00 ZP
M 30 x 320	S	1	4339,00 ZP
M 33 x 60	S	1	1356,00 ZP
M 33 x 70	S	1	1490,00 ZP
M 33 x 75	S	1	1571,00 ZP
M 33 x 80	S	1	1538,00 ZP
M 33 x 90	S	1	1622,00 ZP
M 33 x 100	S	1	1713,00 ZP
M 33 x 110	S	1	1867,00 ZP
M 33 x 120	S	1	1882,00 ZP
M 33 x 130	S	1	2210,00 ZP
M 33 x 140	S	1	2384,00 ZP
M 33 x 150	S	1	2518,00 ZP
M 33 x 160	S	1	2781,00 ZP
M 33 x 170	S	1	2904,00 ZP
M 33 x 180	S	1	3029,00 ZP
M 33 x 190	S	1	3159,00 ZP
M 33 x 200	S	1	3293,00 ZP
M 36 x 50	S	1	1631,00 ZP
M 36 x 55	S	1	1642,00 ZP
M 36 x 60	S	1	1648,00 ZP
M 36 x 70	S	1	1716,00 ZP
M 36 x 75	S	1	1803,00 ZP
M 36 x 80	S	1	1811,00 ZP
M 36 x 85	S	1	1932,00 ZP
M 36 x 90	S	1	1942,00 ZP
M 36 x 100	S	1	2066,00 ZP
M 36 x 110	S	1	2169,00 ZP
M 36 x 120	S	1	2237,00 ZP
M 36 x 130	S	1	2392,00 ZP
M 36 x 140	S	1	2470,00 ZP
M 36 x 150	S	1	2609,00 ZP
M 36 x 160	S	1	2718,00 ZP
M 36 x 170	S	1	2860,00 ZP
M 36 x 180	S	1	3002,00 ZP
M 36 x 190	S	1	3138,00 ZP
M 36 x 200	S	1	3279,00 ZP
M 36 x 220	S	1	4111,00 ZP
M 36 x 280	S	1	4222,00 ZP
M 39 x 80	S	1	3685,00 ZP
M 39 x 90	S	1	3685,00 ZP
M 39 x 100	S	1	4152,00 ZP
M 39 x 110	S	1	4374,00 ZP
M 39 x 120	S	1	4828,00 ZP
M 39 x 130	S	1	4954,00 ZP
M 39 x 140	S	1	5277,00 ZP
M 39 x 150	S	1	5629,00 ZP
M 39 x 160	S	1	6181,00 ZP
M 39 x 180	S	1	7088,00 ZP
M 39 x 200	S	1	7926,00 ZP
M 42 x 50	S	1	3723,00 ZP
M 42 x 60	S	1	3750,00 ZP
M 42 x 70	S	1	3780,00 ZP
M 42 x 75	S	1	3891,00 ZP
M 42 x 80	S	1	3906,00 ZP
M 42 x 90	S	1	4066,00 ZP
M 42 x 100	S	1	4260,00 ZP
M 42 x 110	S	1	4684,00 ZP
M 42 x 120	S	1	4945,00 ZP
M 42 x 130	S	1	5170,00 ZP
M 42 x 140	S	1	5396,00 ZP
M 42 x 150	S	1	5722,00 ZP
M 42 x 160	S	1	5865,00 ZP
M 42 x 170	S	1	6634,00 ZP
M 42 x 180	S	1	6863,00 ZP
M 42 x 190	S	1	7124,00 ZP
M 42 x 200	S	1	7580,00 ZP
M 42 x 220	S	1	8940,00 ZP
M 48 x 60	S	1	8309,00 ZP
M 48 x 70	S	1	8345,00 ZP
M 48 x 80	S	1	8384,00 ZP
M 48 x 90	S	1	8420,00 ZP
M 48 x 100	S	1	8599,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 48	x	110	S	1	8918,00 ZP
M 48	x	120	S	1	9238,00 ZP
M 48	x	130	S	1	9492,00 ZP
M 48	x	140	S	1	9670,00 ZP
M 48	x	150	S	1	9910,00 ZP
M 48	x	200	S	1	16061,00 ZP

ISO	04017.(**)	*

4017 8.8 zinc plated yellow**

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401,
**> M 6 min. coating thickness 5µm = (860),
**from M 6 min. coating thickness 8µm = (309)

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 3	x	8	S	500	4,90 YZP
M 3	x	10	S	500	5,00 YZP
M 3	x	12	S	500	5,45 YZP
M 3	x	16	S	500	5,45 YZP
M 3	x	20	S	500	5,70 YZP
M 3	x	25	S	500	6,45 YZP
M 4	x	6	S	500	5,10 YZP
M 4	x	8	S	500	5,15 YZP
M 4	x	10	S	500	5,20 YZP
M 4	x	12	S	500	5,65 YZP
M 4	x	16	S	500	5,70 YZP
M 4	x	20	S	500	6,05 YZP
M 4	x	25	S	500	6,80 YZP
M 4	x	30	S	500	7,85 YZP
M 4	x	30	S	500	8,70 YZP
M 4	x	40	S	500	9,50 YZP
M 5	x	8	S	500	3,80 YZP
M 5	x	10	S	500	3,85 YZP
M 5	x	12	S	500	4,00 YZP
M 5	x	16	S	500	4,10 YZP
M 5	x	20	S	500	4,40 YZP
M 5	x	25	S	500	5,00 YZP
M 5	x	30	S	500	5,70 YZP
M 5	x	35	S	200	6,50 YZP
M 5	x	40	S	200	8,55 YZP
M 5	x	50	S	200	11,10 YZP
M 6	x	8	S	500	5,65 YZP8
M 6	x	10	S	500	5,30 YZP8
M 6	x	12	S	500	5,40 YZP8
M 6	x	16	S	500	5,00 YZP8
M 6	x	18	S	500	5,20 YZP8
M 6	x	20	S	500	5,25 YZP8
M 6	x	25	S	500	5,80 YZP8
M 6	x	30	S	500	6,30 YZP8
M 6	x	35	S	200	6,95 YZP8
M 6	x	40	S	200	7,70 YZP8
M 6	x	45	S	200	10,60 YZP8
M 6	x	50	S	200	10,90 YZP8
M 6	x	55	S	200	18,30 YZP8
M 6	x	60	S	200	20,50 YZP8
M 6	x	65	S	200	25,80 YZP8
M 6	x	70	S	200	31,55 YZP8
M 6	x	75	S	200	36,95 YZP8
M 6	x	80	S	200	37,20 YZP8

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	10	S	200	10,30 YZP8
M 8	x	12	S	200	9,50 YZP8
M 8	x	16	S	200	7,95 YZP8
M 8	x	18	S	200	8,40 YZP8
M 8	x	20	S	200	8,50 YZP8
M 8	x	22	S	200	9,60 YZP8
M 8	x	25	S	200	9,75 YZP8
M 8	x	30	S	200	10,60 YZP8
M 8	x	35	S	200	11,80 YZP8
M 8	x	40	S	200	12,90 YZP8
M 8	x	45	S	200	15,30 YZP8
M 8	x	50	S	200	17,45 YZP8
M 8	x	55	S	200	24,65 YZP8
M 8	x	60	S	200	26,30 YZP8
M 8	x	65	S	200	34,20 YZP8
M 8	x	70	S	200	41,50 YZP8
M 8	x	75	S	200	48,95 YZP8
M 8	x	80	S	200	49,35 YZP8
M 8	x	90	S	100	57,55 YZP8
M 8	x	100	S	100	66,10 YZP8
M 8	x	110	S	100	82,90 YZP8
M 10	x	12	S	200	21,00 YZP8
M 10	x	16	S	200	14,90 YZP8
M 10	x	20	S	200	14,55 YZP8
M 10	x	25	S	200	15,75 YZP8
M 10	x	30	S	200	17,00 YZP8
M 10	x	35	S	100	18,75 YZP8
M 10	x	40	S	100	20,15 YZP8
M 10	x	45	S	100	23,45 YZP8
M 10	x	50	S	100	24,70 YZP8
M 10	x	55	S	100	31,95 YZP8
M 10	x	60	S	100	34,45 YZP8
M 10	x	65	S	100	51,85 YZP8
M 10	x	70	S	100	52,45 YZP8
M 10	x	80	S	100	70,85 YZP8
M 10	x	90	S	100	82,90 YZP8
M 10	x	100	S	100	97,30 YZP8
M 10	x	110	S	50	129,00 YZP8
M 10	x	120	S	50	133,00 YZP8
M 10	x	130	S	50	173,00 YZP8
M 12	x	16	S	100	26,00 YZP8
M 12	x	20	S	100	24,35 YZP8
M 12	x	25	S	100	24,95 YZP8
M 12	x	30	S	100	24,65 YZP8
M 12	x	35	S	100	26,85 YZP8
M 12	x	40	S	100	29,30 YZP8
M 12	x	45	S	100	32,15 YZP8
M 12	x	50	S	100	34,35 YZP8
M 12	x	55	S	100	41,40 YZP8
M 12	x	60	S	100	44,00 YZP8
M 12	x	65	S	50	65,45 YZP8
M 12	x	70	S	50	66,65 YZP8
M 12	x	75	S	50	74,45 YZP8
M 12	x	80	S	50	89,50 YZP8
M 12	x	90	S	50	106,00 YZP8
M 12	x	100	S	50	119,00 YZP8
M 12	x	110	S	50	172,00 YZP8
M 12	x	120	S	50	176,00 YZP8
M 14	x	30	S	100	73,25 YZP8
M 14	x	35	S	100	81,10 YZP8
M 14	x	40	S	100	82,25 YZP8
M 14	x	45	S	100	90,10 YZP8
M 14	x	50	S	100	94,85 YZP8
M 16	x	20	S	50	51,20 YZP8
M 16	x	25	S	50	52,45 YZP8
M 16	x	30	S	50	51,50 YZP8
M 16	x	35	S	50	54,95 YZP8
M 16	x	40	S	50	57,65 YZP8
M 16	x	45	S	50	61,85 YZP8
M 16	x	50	S	50	66,10 YZP8
M 16	x	55	S	50	77,50 YZP8
M 16	x	60	S	50	81,70 YZP8
M 16	x	65	S	25	116,00 YZP8
M 16	x	70	S	25	118,00 YZP8
M 16	x	75	S	25	135,00 YZP8

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	80	S	25	161,00 YZP8
M 16	x	85	S	25	201,00 YZP8
M 16	x	90	S	25	202,00 YZP8
M 16	x	100	S	25	230,00 YZP8
M 16	x	110	S	25	292,00 YZP8
M 16	x	120	S	25	314,00 YZP8
M 16	x	130	S	25	328,00 YZP8
M 16	x	140	S	25	347,00 YZP8
M 16	x	150	S	25	387,00 YZP8
M 20	x	30	S	25	113,00 YZP8
M 20	x	35	S	25	116,00 YZP8
M 20	x	40	S	25	111,00 YZP8
M 20	x	45	S	25	114,00 YZP8
M 20	x	50	S	25	118,00 YZP8
M 20	x	55	S	25	124,00 YZP8
M 20	x	60	S	25	127,00 YZP8
M 20	x	65	S	25	143,00 YZP8
M 20	x	70	S	25	149,00 YZP8
M 20	x	75	S	25	179,00 YZP8
M 20	x	80	S	25	177,00 YZP8
M 20	x	90	S	25	263,00 YZP8
M 20	x	100	S	25	352,00 YZP8
M 20	x	110	S	25	387,00 YZP8
M 20	x	120	S	25	425,00 YZP8
M 24	x	50	S	25	192,00 YZP8
M 24	x	55	S	25	202,00 YZP8
M 24	x	60	S	25	211,00 YZP8
M 24	x	65	S	25	235,00 YZP8
M 24	x	70	S	25	239,00 YZP8
M 24	x	75	S	25	306,00 YZP8
M 24	x	80	S	25	292,00 YZP8
M 24	x	90	S	10	438,00 YZP8
M 24	x	100	S	10	563,00 YZP8
M 24	x	110	S	10	648,00 YZP8
M 30	x	100	S	1	1301,00 YZP8
M 30	x	120	S	1	1459,00 YZP8

ISO	04017.317	*

4017 8.8 zinc plated 8 TLP

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 3	x	8	S	500	6,15 ZP TLP
M 3	x	10	S	500	6,25 ZP TLP
M 3	x	12	S	500	6,85 ZP TLP
M 3	x	16	S	500	6,85 ZP TLP
M 3	x	20	S	500	7,15 ZP TLP
M 3	x	25	S	500	8,10 ZP TLP
M 4	x	6	S	500	6,40 ZP TLP
M 4	x	10	S	500	6,50 ZP TLP
M 4	x	12	S	500	7,10 ZP TLP
M 4	x	16	S	500	7,15 ZP TLP
M 4	x	20	S	500	7,60 ZP TLP
M 4	x	25	S	500	8,50 ZP TLP
M 4	x	30	S	500	9,85 ZP TLP
M 4	x	35	S	500	10,90 ZP TLP
M 4	x	40	S	500	11,90 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
M 5 x 8	S	500	4,75 ZP TLP
M 5 x 10	S	500	4,85 ZP TLP
M 5 x 12	S	500	5,00 ZP TLP
M 5 x 16	S	500	5,15 ZP TLP
M 5 x 20	S	500	5,50 ZP TLP
M 5 x 25	S	500	6,25 ZP TLP
M 5 x 30	S	500	7,15 ZP TLP
M 5 x 35	S	200	8,15 ZP TLP
M 5 x 40	S	200	10,70 ZP TLP
M 5 x 50	S	200	13,90 ZP TLP
M 6 x 8	S	500	7,10 ZP TLP
M 6 x 10	S	500	6,65 ZP TLP
M 6 x 12	S	500	6,75 ZP TLP
M 6 x 16	S	500	6,25 ZP TLP
M 6 x 18	S	500	6,50 ZP TLP
M 6 x 20	S	500	6,60 ZP TLP
M 6 x 30	S	100	7,90 ZP TLP
M 6 x 35	S	200	8,70 ZP TLP
M 6 x 40	S	200	9,65 ZP TLP
M 6 x 45	S	200	13,25 ZP TLP
M 6 x 50	S	200	13,65 ZP TLP
M 6 x 55	S	200	22,90 ZP TLP
M 6 x 60	S	200	25,70 ZP TLP
M 6 x 65	S	200	32,30 ZP TLP
M 6 x 70	S	200	39,50 ZP TLP
M 6 x 75	S	200	46,20 ZP TLP
M 6 x 80	S	200	46,50 ZP TLP
M 8 x 10	S	200	12,90 ZP TLP
M 8 x 12	S	200	11,90 ZP TLP
M 8 x 16	S	200	9,95 ZP TLP
M 8 x 18	S	200	10,50 ZP TLP
M 8 x 20	S	200	10,65 ZP TLP
M 8 x 22	S	200	12,00 ZP TLP
M 8 x 25	S	200	12,20 ZP TLP
M 8 x 30	S	200	13,25 ZP TLP
M 8 x 35	S	200	14,75 ZP TLP
M 8 x 40	S	200	16,15 ZP TLP
M 8 x 45	S	200	19,15 ZP TLP
M 8 x 50	S	200	21,90 ZP TLP
M 8 x 55	S	200	30,90 ZP TLP
M 8 x 60	S	200	32,90 ZP TLP
M 8 x 65	S	200	42,80 ZP TLP
M 8 x 70	S	200	51,90 ZP TLP
M 8 x 75	S	200	61,20 ZP TLP
M 8 x 80	S	200	61,70 ZP TLP
M 8 x 90	S	100	72,00 ZP TLP
M 8 x 100	S	100	82,70 ZP TLP
M 8 x 110	S	100	104,00 ZP TLP
M 10 x 12	S	200	26,30 ZP TLP
M 10 x 16	S	200	18,65 ZP TLP
M 10 x 20	S	200	18,20 ZP TLP
M 10 x 25	S	200	19,70 ZP TLP
M 10 x 30	S	200	21,30 ZP TLP
M 10 x 35	S	100	23,50 ZP TLP
M 10 x 40	S	100	25,20 ZP TLP
M 10 x 45	S	100	29,40 ZP TLP
M 10 x 50	S	100	30,90 ZP TLP
M 10 x 55	S	100	40,00 ZP TLP
M 10 x 60	S	100	43,10 ZP TLP
M 10 x 65	S	100	64,90 ZP TLP
M 10 x 70	S	100	65,60 ZP TLP
M 10 x 80	S	100	88,60 ZP TLP
M 10 x 90	S	100	104,00 ZP TLP
M 10 x 100	S	100	122,00 ZP TLP
M 10 x 110	S	50	162,00 ZP TLP
M 10 x 120	S	50	167,00 ZP TLP
M 10 x 130	S	50	217,00 ZP TLP
M 12 x 16	S	100	32,50 ZP TLP
M 12 x 20	S	100	30,50 ZP TLP
M 12 x 25	S	100	31,20 ZP TLP
M 12 x 30	S	100	30,90 ZP TLP
M 12 x 35	S	100	33,70 ZP TLP
M 12 x 40	S	100	36,70 ZP TLP
M 12 x 45	S	100	40,20 ZP TLP
M 12 x 50	S	100	43,00 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 55	S	100	51,80 ZP TLP
M 12 x 60	S	100	55,00 ZP TLP
M 12 x 65	S	50	81,90 ZP TLP
M 12 x 70	S	50	83,40 ZP TLP
M 12 x 75	S	50	93,10 ZP TLP
M 12 x 80	S	50	112,00 ZP TLP
M 12 x 90	S	50	133,00 ZP TLP
M 12 x 100	S	50	149,00 ZP TLP
M 12 x 120	S	50	220,00 ZP TLP
M 14 x 30	S	100	91,60 ZP TLP
M 14 x 35	S	100	102,00 ZP TLP
M 14 x 40	S	100	103,00 ZP TLP
M 14 x 45	S	100	113,00 ZP TLP
M 14 x 50	S	100	119,00 ZP TLP
M 16 x 20	S	50	64,00 ZP TLP
M 16 x 25	S	50	65,60 ZP TLP
M 16 x 30	S	50	64,40 ZP TLP
M 16 x 35	S	50	68,70 ZP TLP
M 16 x 40	S	50	72,10 ZP TLP
M 16 x 45	S	50	77,40 ZP TLP
M 16 x 50	S	50	82,70 ZP TLP
M 16 x 55	S	50	96,90 ZP TLP
M 16 x 60	S	50	103,00 ZP TLP
M 16 x 65	S	25	145,00 ZP TLP
M 16 x 70	S	25	148,00 ZP TLP
M 16 x 75	S	25	169,00 ZP TLP
M 16 x 80	S	25	202,00 ZP TLP
M 16 x 85	S	25	252,00 ZP TLP
M 16 x 90	S	25	253,00 ZP TLP
M 16 x 100	S	25	288,00 ZP TLP
M 16 x 120	S	25	393,00 ZP TLP
M 16 x 130	S	25	410,00 ZP TLP
M 16 x 150	S	25	484,00 ZP TLP
M 20 x 30	S	25	142,00 ZP TLP
M 20 x 35	S	25	145,00 ZP TLP
M 20 x 40	S	25	139,00 ZP TLP
M 20 x 45	S	25	143,00 ZP TLP
M 20 x 50	S	25	148,00 ZP TLP
M 20 x 60	S	25	159,00 ZP TLP
M 20 x 65	S	25	179,00 ZP TLP
M 20 x 70	S	25	187,00 ZP TLP
M 20 x 75	S	25	224,00 ZP TLP
M 20 x 80	S	25	222,00 ZP TLP
M 20 x 90	S	25	329,00 ZP TLP
M 20 x 100	S	25	440,00 ZP TLP
M 20 x 110	S	25	484,00 ZP TLP
M 20 x 120	S	25	532,00 ZP TLP
M 24 x 50	S	25	240,00 ZP TLP
M 24 x 55	S	25	253,00 ZP TLP
M 24 x 60	S	25	264,00 ZP TLP
M 24 x 65	S	25	294,00 ZP TLP
M 24 x 70	S	25	299,00 ZP TLP
M 24 x 75	S	25	383,00 ZP TLP
M 24 x 80	S	25	365,00 ZP TLP
M 24 x 90	S	10	548,00 ZP TLP
M 24 x 100	S	10	704,00 ZP TLP
M 24 x 110	S	10	810,00 ZP TLP
M 30 x 100	S	1	1627,00 ZP TLP
M 30 x 120	S	1	1825,00 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
ISO 04017.353			RAZ 1530

4017

8.8
zinc flake coated

Hexagon head screws with thread up to head

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-218
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 6	x	10	S	500	6,90 flZn
M 6	x	12	S	500	7,05 flZn
M 6	x	14	S	500	6,35 flZn
M 6	x	16	S	500	6,50 flZn
M 6	x	18	S	500	6,80 flZn
M 6	x	20	S	500	6,85 flZn
M 6	x	25	S	500	7,55 flZn
M 6	x	30	S	500	8,20 flZn
M 6	x	35	S	200	9,05 flZn
M 6	x	40	S	200	10,05 flZn
M 6	x	45	S	200	13,80 flZn
M 6	x	50	S	200	14,20 flZn
M 6	x	55	S	200	23,80 flZn
M 6	x	60	S	200	26,65 flZn
M 8	x	12	S	200	12,35 flZn
M 8	x	16	S	200	10,35 flZn
M 8	x	20	S	200	11,05 flZn
M 8	x	25	S	200	12,70 flZn
M 8	x	30	S	200	13,80 flZn
M 8	x	35	S	200	15,35 flZn
M 8	x	40	S	200	16,80 flZn
M 8	x	45	S	200	19,90 flZn
M 8	x	50	S	200	22,70 flZn
M 8	x	55	S	200	32,05 flZn
M 8	x	60	S	200	34,20 flZn
M 8	x	65	S	200	44,50 flZn
M 8	x	70	S	200	53,95 flZn
M 10	x	16	S	200	19,40 flZn
M 10	x	20	S	200	18,95 flZn
M 10	x	25	S	200	20,50 flZn
M 10	x	30	S	200	22,10 flZn
M 10	x	35	S	100	24,40 flZn
M 10	x	40	S	100	26,20 flZn
M 10	x	45	S	100	30,50 flZn
M 10	x	50	S	100	32,15 flZn
M 10	x	55	S	100	41,55 flZn
M 10	x	60	S	100	44,80 flZn
M 10	x	65	S	100	67,45 flZn
M 10	x	70	S	100	68,20 flZn
M 10	x	80	S	100	92,15 flZn
M 10	x	90	S	100	108,00 flZn
M 10	x	100	S	100	127,00 flZn
M 12	x	20	S	100	31,70 flZn
M 12	x	25	S	100	32,45 flZn
M 12	x	30	S	100	32,05 flZn
M 12	x	35	S	100	34,95 flZn
M 12	x	40	S	100	38,10 flZn
M 12	x	45	S	100	41,80 flZn
M 12	x	50	S	100	44,70 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	55	S	100	53,85 flZn
M 12	x	60	S	100	57,20 flZn
M 12	x	65	S	50	85,10 flZn
M 12	x	70	S	50	86,65 flZn
M 12	x	75	S	50	96,80 flZn
M 12	x	80	S	50	117,00 flZn
M 12	x	90	S	50	138,00 flZn
M 12	x	100	S	50	155,00 flZn
M 16	x	25	S	50	68,20 flZn
M 16	x	30	S	50	66,95 flZn
M 16	x	35	S	50	71,45 flZn
M 16	x	40	S	50	74,95 flZn
M 16	x	45	S	50	80,45 flZn
M 16	x	50	S	50	85,95 flZn
M 16	x	55	S	50	101,00 flZn
M 16	x	60	S	50	107,00 flZn
M 16	x	65	S	25	151,00 flZn
M 16	x	70	S	25	154,00 flZn
M 16	x	75	S	25	176,00 flZn
M 16	x	80	S	25	210,00 flZn
M 16	x	90	S	25	263,00 flZn
M 16	x	100	S	25	299,00 flZn
M 16	x	110	S	25	380,00 flZn
M 16	x	120	S	25	409,00 flZn
M 20	x	30	S	25	147,00 flZn
M 20	x	35	S	25	151,00 flZn
M 20	x	40	S	25	145,00 flZn
M 20	x	45	S	25	149,00 flZn
M 20	x	50	S	25	154,00 flZn
M 20	x	55	S	25	162,00 flZn
M 20	x	60	S	25	166,00 flZn
M 20	x	65	S	25	186,00 flZn
M 20	x	70	S	25	194,00 flZn
M 20	x	75	S	25	233,00 flZn
M 20	x	80	S	25	231,00 flZn
M 20	x	90	S	25	342,00 flZn
M 20	x	100	S	25	458,00 flZn
M 20	x	110	S	25	504,00 flZn
M 20	x	120	S	25	553,00 flZn
M 24	x	40	S	25	257,00 flZn
M 24	x	45	S	25	260,00 flZn
M 24	x	50	S	25	250,00 flZn
M 24	x	55	S	25	263,00 flZn
M 24	x	60	S	25	275,00 flZn
M 24	x	65	S	25	306,00 flZn
M 24	x	70	S	25	311,00 flZn
M 24	x	75	S	25	398,00 flZn
M 24	x	80	S	25	380,00 flZn
M 24	x	90	S	10	570,00 flZn
M 24	x	100	S	10	732,00 flZn
M 24	x	110	S	10	843,00 flZn
M 24	x	120	S	10	877,00 flZn

Dimensions	PU	Pieces	€/100/Mat.
ISO	04017.820		*

4017 **8.8**
hot dip galvanized

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3230 other ∅ = RAZ 403,
Thread tolerance 6h (6az + HDG = U)

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-219
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	12	S	500	50,10 HDG
M 6	x	16	S	500	49,45 HDG
M 6	x	20	S	500	51,30 HDG
M 6	x	25	S	500	54,40 HDG
M 6	x	30	S	500	61,20 HDG
M 6	x	35	S	200	64,90 HDG
M 6	x	40	S	200	80,95 HDG
M 8	x	10	S	200	75,45 HDG
M 8	x	12	S	200	23,50 HDG
M 8	x	16	S	200	21,05 HDG
M 8	x	18	S	200	62,45 HDG
M 8	x	20	S	200	22,60 HDG
M 8	x	25	S	200	26,00 HDG
M 8	x	30	S	200	28,45 HDG
M 8	x	35	S	200	31,55 HDG
M 8	x	40	S	200	34,60 HDG
M 8	x	45	S	200	40,20 HDG
M 8	x	50	S	200	45,15 HDG
M 8	x	60	S	200	61,80 HDG
M 8	x	70	S	200	93,95 HDG
M 8	x	80	S	200	111,00 HDG
M 8	x	90	S	100	353,00 HDG
M 8	x	100	S	100	370,00 HDG
M 10	x	12	S	200	50,70 HDG
M 10	x	16	S	200	38,95 HDG
M 10	x	18	S	200	117,00 HDG
M 10	x	20	S	200	38,95 HDG
M 10	x	25	S	200	42,65 HDG
M 10	x	30	S	200	46,35 HDG
M 10	x	35	S	100	50,70 HDG
M 10	x	40	S	100	54,40 HDG
M 10	x	45	S	100	62,45 HDG
M 10	x	50	S	100	66,15 HDG
M 10	x	55	S	100	82,20 HDG
M 10	x	60	S	100	88,35 HDG
M 10	x	70	S	100	122,00 HDG
M 10	x	80	S	100	161,00 HDG
M 10	x	90	S	100	193,00 HDG
M 10	x	100	S	100	221,00 HDG
M 12	x	16	S	100	65,50 HDG
M 12	x	20	S	100	63,05 HDG
M 12	x	25	S	100	65,50 HDG
M 12	x	30	S	100	66,75 HDG
M 12	x	35	S	100	72,90 HDG
M 12	x	40	S	100	79,15 HDG
M 12	x	45	S	100	86,55 HDG
M 12	x	50	S	100	92,70 HDG
M 12	x	55	S	100	109,00 HDG
M 12	x	60	S	100	116,00 HDG
M 12	x	65	S	50	146,00 HDG
M 12	x	70	S	50	159,00 HDG
M 12	x	80	S	50	208,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	90	S	50	242,00 HDG
M 12	x	100	S	50	270,00 HDG
M 12	x	120	S	50	390,00 HDG
M 16	x	20	S	50	133,00 HDG
M 16	x	25	S	50	138,00 HDG
M 16	x	30	S	50	138,00 HDG
M 16	x	35	S	50	149,00 HDG
M 16	x	40	S	50	159,00 HDG
M 16	x	45	S	50	168,00 HDG
M 16	x	50	S	50	181,00 HDG
M 16	x	55	S	50	208,00 HDG
M 16	x	60	S	50	217,00 HDG
M 16	x	65	S	25	273,00 HDG
M 16	x	70	S	25	279,00 HDG
M 16	x	80	S	25	378,00 HDG
M 16	x	90	S	25	464,00 HDG
M 16	x	100	S	25	520,00 HDG
M 16	x	110	S	25	656,00 HDG
M 16	x	120	S	25	705,00 HDG
M 16	x	130	S	25	781,00 HDG
M 16	x	120	S	25	793,00 HDG
M 16	x	120	S	25	833,00 HDG
M 16	x	160	S	25	890,00 HDG
M 16	x	170	S	25	937,00 HDG
M 16	x	180	S	25	983,00 HDG
M 16	x	200	S	25	1076,00 HDG
M 16	x	120	S	1	1134,00 HDG
M 16	x	240	S	1	1270,00 HDG
M 16	x	260	S	1	1353,00 HDG
M 16	x	280	S	1	1456,00 HDG
M 16	x	120	S	1	1801,00 HDG
M 20	x	30	S	25	289,00 HDG
M 20	x	35	S	25	298,00 HDG
M 20	x	40	S	25	295,00 HDG
M 20	x	45	S	25	304,00 HDG
M 20	x	50	S	25	316,00 HDG
M 20	x	55	S	25	335,00 HDG
M 20	x	60	S	25	347,00 HDG
M 20	x	65	S	25	385,00 HDG
M 20	x	70	S	25	396,00 HDG
M 20	x	75	S	25	439,00 HDG
M 20	x	80	S	25	464,00 HDG
M 20	x	90	S	25	618,00 HDG
M 20	x	100	S	25	804,00 HDG
M 20	x	110	S	25	830,00 HDG
M 20	x	120	S	25	971,00 HDG
M 20	x	130	S	1	1138,00 HDG
M 20	x	140	S	1	1471,00 HDG
M 20	x	150	S	1	1550,00 HDG
M 20	x	160	S	1	1600,00 HDG
M 20	x	180	S	1	1801,00 HDG
M 24	x	40	S	25	508,00 HDG
M 24	x	45	S	25	520,00 HDG
M 24	x	50	S	25	508,00 HDG
M 24	x	55	S	25	539,00 HDG
M 24	x	60	S	25	564,00 HDG
M 24	x	65	S	25	618,00 HDG
M 24	x	70	S	25	631,00 HDG
M 24	x	80	S	25	755,00 HDG
M 24	x	90	S	10	1014,00 HDG
M 24	x	100	S	10	1286,00 HDG
M 24	x	110	S	10	2380,00 HDG
M 24	x	120	S	10	2905,00 HDG
M 24	x	130	S	10	3462,00 HDG
M 24	x	140	S	10	3708,00 HDG
M 24	x	150	S	1	4083,00 HDG
M 24	x	180	S	1	5208,00 HDG
M 30	x	60	S	1	2287,00 HDG
M 30	x	70	S	1	2472,00 HDG
M 30	x	80	S	1	2658,00 HDG
M 30	x	90	S	1	2839,00 HDG
M 30	x	100	S	1	3020,00 HDG
M 30	x	120	S	1	3150,00 HDG
M 30	x	130	S	1	3260,00 HDG
M 30	x	80	S	1	3310,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	150	S	1	3360,00 HDG
M 30	x	160	S	1	3630,00 HDG
M 30	x	170	S	1	3725,00 HDG
M 30	x	180	S	1	3785,00 HDG
M 30	x	190	S	1	3845,00 HDG
M 30	x	200	S	1	3920,00 HDG

ISO	04017.809	RAZ 1400
4017	**8.8**	**AD W7**
	-50 up to +300 °C	

Hexagon head screws with thread up to head, applicable from -50 up to +300 °C

With inspection certificate 3.1, prices are plus certificate costs

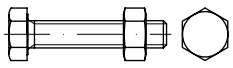
Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

ISO 4017 → replaces DIN 933

M 8	x	12	S	200	11,40
M 8	x	16	S	200	8,75
M 8	x	20	S	200	9,25
M 8	x	25	S	200	10,70
M 8	x	30	S	200	11,55
M 8	x	35	S	200	12,85
M 8	x	40	S	200	14,05
M 8	x	45	S	200	17,20
M 8	x	50	S	200	20,05
M 8	x	70	S	200	51,75
M 10	x	16	S	200	16,95
M 10	x	20	S	200	15,85
M 10	x	25	S	200	16,95
M 10	x	30	S	200	18,05
M 10	x	35	S	100	20,05
M 10	x	40	S	100	21,40
M 10	x	45	S	100	25,60
M 10	x	50	S	100	26,80
M 10	x	60	S	100	39,95
M 10	x	65	S	100	61,40
M 10	x	70	S	100	61,40
M 10	x	80	S	100	86,45
M 10	x	90	S	100	104,00
M 10	x	100	S	100	123,00
M 12	x	20	S	100	27,80
M 12	x	25	S	100	27,80
M 12	x	30	S	100	26,25
M 12	x	35	S	100	28,60
M 12	x	40	S	100	31,25
M 12	x	45	S	100	34,50
M 12	x	50	S	100	36,80
M 12	x	55	S	100	46,35
M 12	x	60	S	100	49,60
M 12	x	65	S	50	74,60
M 12	x	70	S	50	74,60
M 12	x	75	S	50	85,20
M 12	x	80	S	50	108,00
M 12	x	90	S	50	129,00
M 12	x	100	S	50	144,00
M 16	x	25	S	50	58,75
M 16	x	30	S	50	55,50
M 16	x	35	S	50	58,75
M 16	x	40	S	50	60,90
M 16	x	45	S	50	64,60

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	50	S	50	69,80
M 16	x	55	S	50	84,40
M 16	x	60	S	50	88,50
M 16	x	65	S	25	127,00
M 16	x	70	S	25	127,00
M 16	x	75	S	25	150,00
M 16	x	80	S	25	189,00
M 16	x	90	S	25	245,00
M 16	x	100	S	25	279,00
M 20	x	35	S	25	131,00
M 20	x	40	S	25	122,00
M 20	x	45	S	25	124,00
M 20	x	50	S	25	126,00
M 20	x	55	S	25	132,00
M 20	x	60	S	25	134,00
M 20	x	65	S	25	155,00
M 20	x	70	S	25	160,00
M 20	x	75	S	25	206,00
M 20	x	80	S	25	199,00
M 20	x	90	S	25	296,00
M 20	x	100	S	25	421,00
M 20	x	120	S	25	517,00
M 24	x	50	S	25	211,00
M 24	x	55	S	25	223,00
M 24	x	60	S	25	230,00
M 24	x	65	S	25	262,00
M 24	x	70	S	25	262,00
M 24	x	80	S	25	334,00
M 24	x	90	S	10	510,00
M 24	x	100	S	10	686,00
M 24	x	120	S	10	832,00
M 27	x	90	S	1	1184,00
M 27	x	100	S	1	1261,00

ISO	04017.813	RAZ 401
4017	**Mu 8.8**	**SB**
	zinc plated	



Hexagon head screws with thread up to head, Mu = with hexagon nuts ISO 4032, SB = acc. to EN 15048

For bolted fastenings by steel structures that are not preloaded with inspection certificate 3.1,prices are plus certificate costs

Dimensions → TI-15 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-234
Standard conversion → TI-6

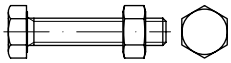
Declaration of performance → www.reyher.de

M 10	x	16	S	200	48,00 ZP
M 10	x	20	S	200	51,00 ZP
M 10	x	25	S	200	54,00 ZP
M 10	x	30	S	200	57,00 ZP
M 10	x	35	S	100	61,00 ZP
M 10	x	40	S	100	64,00 ZP
M 10	x	45	S	100	68,00 ZP
M 10	x	50	S	100	72,00 ZP
M 10	x	55	S	100	75,00 ZP
M 10	x	60	S	100	79,00 ZP
M 10	x	65	S	100	82,00 ZP
M 10	x	70	S	100	86,00 ZP
M 10	x	80	S	100	93,00 ZP
M 10	x	90	S	100	100,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	100	S	100	107,00 ZP
M 12	x	20	S	100	77,00 ZP
M 12	x	25	S	100	82,00 ZP
M 12	x	30	S	100	87,00 ZP
M 12	x	35	S	100	92,00 ZP
M 12	x	40	S	100	95,00 ZP
M 12	x	45	S	100	100,00 ZP
M 12	x	50	S	100	105,00 ZP
M 12	x	55	S	100	110,00 ZP
M 12	x	60	S	100	114,00 ZP
M 12	x	65	S	50	120,00 ZP
M 12	x	70	S	50	125,00 ZP
M 12	x	80	S	50	135,00 ZP
M 12	x	90	S	50	146,00 ZP
M 12	x	100	S	50	156,00 ZP
M 16	x	25	S	50	172,00 ZP
M 16	x	30	S	50	182,00 ZP
M 16	x	35	S	50	191,00 ZP
M 16	x	40	S	50	198,00 ZP
M 16	x	45	S	50	207,00 ZP
M 16	x	50	S	50	215,00 ZP
M 16	x	55	S	50	225,00 ZP
M 16	x	60	S	50	234,00 ZP
M 16	x	65	S	25	243,00 ZP
M 16	x	70	S	25	252,00 ZP
M 16	x	75	S	50	262,00 ZP
M 16	x	80	S	25	271,00 ZP
M 16	x	90	S	25	289,00 ZP
M 16	x	100	S	25	307,00 ZP
M 16	x	110	S	25	332,00 ZP
M 16	x	120	S	25	351,00 ZP
M 20	x	30	S	25	332,00 ZP
M 20	x	35	S	25	348,00 ZP
M 20	x	40	S	25	357,00 ZP
M 20	x	45	S	25	371,00 ZP
M 20	x	50	S	25	386,00 ZP
M 20	x	55	S	25	400,00 ZP
M 20	x	60	S	25	414,00 ZP
M 20	x	65	S	25	429,00 ZP
M 20	x	70	S	25	443,00 ZP
M 20	x	75	S	25	457,00 ZP
M 20	x	80	S	25	472,00 ZP
M 20	x	90	S	25	500,00 ZP
M 20	x	100	S	25	529,00 ZP
M 20	x	110	S	25	563,00 ZP
M 20	x	120	S	25	592,00 ZP
M 24	x	40	S	25	595,00 ZP
M 24	x	45	S	25	616,00 ZP
M 24	x	50	S	25	637,00 ZP
M 24	x	55	S	25	658,00 ZP
M 24	x	60	S	25	679,00 ZP
M 24	x	65	S	25	700,00 ZP
M 24	x	70	S	25	720,00 ZP
M 24	x	80	S	25	761,00 ZP
M 24	x	90	S	10	802,00 ZP
M 24	x	100	S	10	844,00 ZP
M 24	x	110	S	10	893,00 ZP
M 24	x	120	S	10	935,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	04017.827	RAZ 403

4017 **Mu 8.8** **SB**
hot dip galvanized



Hexagon head screws with thread up to head, Mu = with hexagon nuts ISO 4032, SB = acc. to EN 15048

For bolted fastenings by steel structures that are not preloaded with inspection certificate 3.1, prices are plus certificate costs

washers ➔ ISO 7090 300HV HDG

Dimensions ➔ TI-15
Mech. properties ➔ TI-220
Corrosion protection ➔ TI-219
Tightening torque ➔ TI-234
Standard conversion ➔ TI-6

Declaration of performance ➔ www.reyher.de

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	16	S	200	84,00 HDG
M 8	x	20	S	200	88,00 HDG
M 8	x	25	S	200	93,00 HDG
M 8	x	30	S	200	97,00 HDG
M 8	x	35	S	200	102,00 HDG
M 8	x	40	S	200	107,00 HDG
M 8	x	45	S	200	115,00 HDG
M 8	x	50	S	200	120,00 HDG
M 8	x	60	S	200	137,00 HDG
M 8	x	70	S	200	148,00 HDG
M 8	x	80	S	200	166,00 HDG
M 8	x	90	S	100	181,00 HDG
M 8	x	100	S	100	205,00 HDG
M 10	x	16	S	200	74,40 HDG
M 10	x	20	S	200	82,40 HDG
M 10	x	25	S	200	85,55 HDG
M 10	x	30	S	200	91,70 HDG
M 10	x	35	S	100	97,65 HDG
M 10	x	40	S	100	103,00 HDG
M 10	x	45	S	100	110,00 HDG
M 10	x	50	S	100	114,00 HDG
M 10	x	55	S	100	135,00 HDG
M 10	x	60	S	100	154,00 HDG
M 10	x	65	S	100	179,00 HDG
M 10	x	70	S	100	200,00 HDG
M 10	x	80	S	100	265,00 HDG
M 10	x	90	S	100	304,00 HDG
M 10	x	100	S	100	331,00 HDG
M 10	x	110	S	50	290,00 HDG
M 10	x	120	S	50	305,00 HDG
M 12	x	20	S	100	119,00 HDG
M 12	x	25	S	100	125,00 HDG
M 12	x	30	S	100	133,00 HDG
M 12	x	35	S	100	139,00 HDG
M 12	x	40	S	100	145,00 HDG
M 12	x	45	S	100	153,00 HDG
M 12	x	50	S	100	161,00 HDG
M 12	x	55	S	100	188,00 HDG
M 12	x	60	S	100	194,00 HDG
M 12	x	65	S	50	246,00 HDG
M 12	x	70	S	50	274,00 HDG
M 12	x	80	S	50	343,00 HDG
M 12	x	90	S	50	395,00 HDG
M 12	x	100	S	50	425,00 HDG
M 12	x	120	S	50	380,00 HDG
M 16	x	25	S	50	290,00 HDG
M 16	x	30	S	50	288,00 HDG
M 16	x	35	S	50	297,00 HDG
M 16	x	40	S	50	308,00 HDG
M 16	x	45	S	50	320,00 HDG
M 16	x	50	S	50	368,00 HDG
M 16	x	55	S	50	386,00 HDG
M 16	x	60	S	50	399,00 HDG
M 16	x	65	S	25	504,00 HDG
M 16	x	70	S	25	517,00 HDG
M 16	x	75	S	25	599,00 HDG
M 16	x	80	S	25	653,00 HDG
M 16	x	90	S	25	789,00 HDG
M 16	x	100	S	25	897,00 HDG
M 16	x	110	S	25	1072,00 HDG
M 16	x	120	S	25	1161,00 HDG
M 16	x	130	S	25	650,00 HDG
M 16	x	140	S	25	680,00 HDG
M 16	x	150	S	25	710,00 HDG
M 16	x	160	S	25	730,00 HDG
M 16	x	170	S	25	1100,00 HDG
M 16	x	180	S	25	1130,00 HDG
M 16	x	200	S	25	1190,00 HDG
M 20	x	30	S	25	553,00 HDG
M 20	x	35	S	25	555,00 HDG
M 20	x	40	S	25	558,00 HDG
M 20	x	45	S	25	583,00 HDG
M 20	x	50	S	25	602,00 HDG
M 20	x	55	S	25	624,00 HDG
M 20	x	60	S	25	646,00 HDG
M 20	x	65	S	25	676,00 HDG
M 20	x	70	S	25	695,00 HDG
M 20	x	75	S	25	752,00 HDG
M 20	x	80	S	25	810,00 HDG
M 20	x	90	S	25	1030,00 HDG
M 20	x	100	S	25	1336,00 HDG
M 20	x	110	S	25	1449,00 HDG
M 20	x	120	S	25	1504,00 HDG
M 20	x	130	S	1	1010,00 HDG
M 20	x	140	S	1	1050,00 HDG
M 20	x	150	S	1	1090,00 HDG
M 20	x	160	S	1	1380,00 HDG
M 20	x	180	S	1	1470,00 HDG
M 20	x	200	S	1	1560,00 HDG
M 24	x	40	S	25	935,00 HDG
M 24	x	45	S	25	937,00 HDG
M 24	x	50	S	25	1014,00 HDG
M 24	x	55	S	25	1044,00 HDG
M 24	x	60	S	25	1103,00 HDG
M 24	x	65	S	25	1133,00 HDG
M 24	x	70	S	25	1165,00 HDG
M 24	x	80	S	25	1368,00 HDG
M 24	x	90	S	10	1814,00 HDG
M 24	x	100	S	10	2201,00 HDG
M 24	x	110	S	10	3936,00 HDG
M 24	x	120	S	10	4731,00 HDG
M 24	x	130	S	10	1560,00 HDG
M 24	x	140	S	10	1630,00 HDG
M 24	x	150	S	1	1690,00 HDG
M 24	x	160	S	1	2140,00 HDG
M 24	x	180	S	1	2390,00 HDG
M 24	x	200	S	1	2550,00 HDG
M 30	x	60	S	1	2700,00 HDG
M 30	x	70	S	1	2700,00 HDG
M 30	x	80	S	1	2850,00 HDG
M 30	x	90	S	1	3000,00 HDG
M 30	x	100	S	1	3100,00 HDG
M 30	x	120	S	1	3350,00 HDG
M 30	x	130	S	1	3500,00 HDG
M 30	x	140	S	1	3650,00 HDG
M 30	x	150	S	1	3750,00 HDG
M 30	x	160	S	1	3900,00 HDG
M 30	x	170	S	1	4050,00 HDG
M 30	x	180	S	1	4150,00 HDG
M 30	x	190	S	1	4300,00 HDG
M 30	x	200	S	1	4400,00 HDG

Dimensions	PU Pieces	€/100/Mat.
ISO	04017.100	*

4017 **10.9**

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3250 other ∅ = RAZ 405

Dimensions ➔ TI-15
Mech. properties ➔ TI-220
Tightening torque ➔ TI-230
Standard conversion ➔ TI-6

Stainless ➔ S. 502
Brass ➔ S. 588

ISO 4017 ➔ replaces DIN 933

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	10	S	500	18,55
M 6	x	12	S	500	11,35
M 6	x	12	K	100	14,40
M 6	x	16	S	500	9,70
M 6	x	16	K	100	12,75
M 6	x	18	S	500	10,35
M 6	x	20	S	500	10,35
M 6	x	20	K	100	13,35
M 6	x	22	S	500	10,75
M 6	x	25	S	500	10,75
M 6	x	25	K	100	13,75
M 6	x	30	S	500	13,00
M 6	x	30	K	100	16,55
M 6	x	35	S	200	14,85
M 6	x	40	S	200	16,25
M 6	x	45	S	200	63,05
M 6	x	50	S	200	75,65
M 6	x	55	S	200	88,30
M 6	x	60	S	200	101,00
M 6	x	70	S	200	195,00
M 6	x	80	S	200	210,00
M 6	x	100	S	200	235,00
M 8	x	12	S	200	18,95
M 8	x	16	S	200	13,55
M 8	x	18	S	200	14,10
M 8	x	20	S	200	14,60
M 8	x	22	S	200	16,15
M 8	x	25	S	200	17,05
M 8	x	30	S	200	17,05
M 8	x	35	S	200	20,15
M 8	x	40	S	200	21,70
M 8	x	45	S	200	32,15
M 8	x	50	S	200	34,85
M 8	x	55	S	200	45,40
M 8	x	60	S	200	45,40
M 8	x	65	S	200	114,00
M 8	x	70	S	200	114,00
M 8	x	75	S	200	140,00
M 8	x	80	S	200	140,00
M 8	x	90	S	100	183,00
M 8	x	100	S	100	266,00
M 8	x	110	S	100	365,00
M 8	x	120	S	100	412,00
M 8	x	130	S	100	563,00
M 8	x	140	S	100	614,00
M 8	x	150	S	100	642,00
M 8	x	180	S	100	769,00
M 10	x	12	S	200	38,70
M 10	x	16	S	200	27,60
M 10	x	18	S	200	27,60
M 10	x	20	S	200	24,15
M 10	x	22	S	200	25,65
M 10	x	25	S	200	25,65

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	30	S	200	27,10
M 10	x	35	S	100	29,15
M 10	x	40	S	100	30,70
M 10	x	45	S	100	36,75
M 10	x	50	S	100	41,25
M 10	x	55	S	100	67,85
M 10	x	60	S	100	67,85
M 10	x	65	S	100	145,00
M 10	x	70	S	100	160,00
M 10	x	75	S	100	184,00
M 10	x	80	S	100	184,00
M 10	x	90	S	100	275,00
M 10	x	100	S	100	340,00
M 10	x	110	S	50	394,00
M 10	x	120	S	50	545,00
M 10	x	130	S	50	617,00
M 10	x	140	S	50	667,00
M 10	x	150	S	50	707,00
M 10	x	200	S	50	974,00
M 12	x	16	S	100	157,00
M 12	x	20	S	100	45,00
M 12	x	25	S	100	41,50
M 12	x	30	S	100	43,85
M 12	x	35	S	100	46,15
M 12	x	40	S	100	48,45
M 12	x	45	S	100	54,65
M 12	x	50	S	100	57,10
M 12	x	55	S	100	79,90
M 12	x	60	S	100	85,85
M 12	x	65	S	50	140,00
M 12	x	70	S	50	177,00
M 12	x	75	S	50	242,00
M 12	x	80	S	50	242,00
M 12	x	90	S	50	319,00
M 12	x	100	S	50	379,00
M 12	x	110	S	50	430,00
M 12	x	120	S	50	480,00
M 12	x	130	S	50	628,00
M 12	x	140	S	50	679,00
M 12	x	150	S	50	714,00
M 12	x	160	S	25	751,00
M 12	x	170	S	25	769,00
M 12	x	180	S	25	837,00
M 12	x	200	S	25	981,00
M 14	x	25	S	100	82,90
M 14	x	30	S	100	79,30
M 14	x	35	S	100	81,70
M 14	x	40	S	100	85,85
M 14	x	45	S	50	88,90
M 14	x	50	S	50	93,10
M 14	x	55	S	50	114,00
M 14	x	60	S	50	114,00
M 14	x	65	S	50	202,00
M 14	x	70	S	50	202,00
M 14	x	75	S	50	229,00
M 14	x	80	S	50	279,00
M 14	x	90	S	50	404,00
M 14	x	100	S	50	480,00
M 14	x	110	S	50	721,00
M 14	x	120	S	50	757,00
M 14	x	160	S	25	1103,00
M 14	x	200	S	25	1435,00
M 16	x	20	S	50	145,00
M 16	x	25	S	50	90,70
M 16	x	30	S	50	90,70
M 16	x	35	S	50	90,70
M 16	x	40	S	50	98,50
M 16	x	45	S	50	101,00
M 16	x	50	S	50	112,00
M 16	x	55	S	50	121,00
M 16	x	60	S	50	121,00
M 16	x	65	S	25	255,00
M 16	x	70	S	25	255,00
M 16	x	75	S	25	323,00
M 16	x	80	S	25	266,00
M 16	x	90	S	25	380,00
M 16	x	100	S	25	485,00
M 16	x	110	S	25	543,00
M 16	x	120	S	25	593,00
M 16	x	130	S	25	667,00
M 16	x	140	S	25	714,00
M 16	x	150	S	25	747,00
M 16	x	160	S	25	789,00
M 16	x	170	S	25	829,00
M 16	x	180	S	25	873,00
M 16	x	190	S	25	952,00
M 16	x	200	S	25	1028,00
M 16	x	220	S	1	1146,00
M 16	x	240	S	1	1428,00
M 16	x	260	S	1	1558,00
M 16	x	280	S	1	1687,00
M 16	x	300	S	1	1817,00
M 18	x	30	S	50	247,00
M 18	x	35	S	50	247,00
M 18	x	40	S	50	222,00
M 18	x	45	S	50	236,00
M 18	x	50	S	50	242,00
M 18	x	55	S	25	250,00
M 18	x	60	S	25	264,00
M 18	x	65	S	25	596,00
M 18	x	70	S	25	686,00
M 18	x	75	S	25	686,00
M 18	x	80	S	25	848,00
M 18	x	90	S	25	866,00
M 18	x	100	S	25	879,00
M 18	x	120	S	25	996,00
M 18	x	130	S	25	1081,00
M 18	x	160	S	25	1326,00
M 18	x	200	S	25	1633,00
M 20	x	30	S	25	361,00
M 20	x	35	S	25	247,00
M 20	x	40	S	25	222,00
M 20	x	45	S	25	236,00
M 20	x	50	S	25	242,00
M 20	x	55	S	25	250,00
M 20	x	60	S	25	264,00
M 20	x	65	S	25	501,00
M 20	x	70	S	25	512,00
M 20	x	75	S	25	524,00
M 20	x	80	S	25	526,00
M 20	x	90	S	25	528,00
M 20	x	100	S	25	555,00
M 20	x	110	S	25	866,00
M 20	x	120	S	25	873,00
M 20	x	130	S	25	1003,00
M 20	x	140	S	25	1068,00
M 20	x	150	S	25	1146,00
M 20	x	160	S	25	1226,00
M 20	x	170	S	25	1305,00
M 20	x	180	S	25	1384,00
M 20	x	190	S	25	1441,00
M 20	x	200	S	1	1506,00
M 20	x	210	S	1	1758,00
M 20	x	220	S	1	1758,00
M 20	x	240	S	1	1972,00
M 20	x	260	S	1	2184,00
M 20	x	280	S	1	2454,00
M 20	x	300	S	1	2667,00
M 22	x	50	S	25	866,00
M 22	x	55	S	25	1009,00
M 22	x	60	S	25	866,00
M 22	x	65	S	25	1009,00
M 22	x	70	S	25	1064,00
M 22	x	75	S	25	1118,00
M 22	x	80	S	25	1154,00
M 22	x	90	S	25	1261,00
M 22	x	100	S	10	1298,00
M 22	x	110	S	10	1463,00
M 22	x	120	S	10	1571,00
M 22	x	130	S	10	1730,00
M 22	x	140	S	10	1845,00
M 22	x	150	S	10	1946,00
M 22	x	200	S	10	2645,00
M 24	x	30	S	25	516,00
M 24	x	35	S	25	516,00
M 24	x	40	S	25	390,00
M 24	x	45	S	25	390,00
M 24	x	50	S	25	639,00
M 24	x	55	S	25	639,00
M 24	x	60	S	25	639,00
M 24	x	65	S	25	648,00
M 24	x	70	S	25	664,00
M 24	x	75	S	25	675,00
M 24	x	80	S	25	685,00
M 24	x	90	S	10	690,00
M 24	x	100	S	10	721,00
M 24	x	110	S	10	805,00
M 24	x	120	S	10	862,00
M 24	x	130	S	1	1154,00
M 24	x	140	S	1	1228,00
M 24	x	150	S	1	1298,00
M 24	x	160	S	1	1436,00
M 24	x	170	S	1	1544,00
M 24	x	180	S	1	1619,00
M 24	x	190	S	1	1685,00
M 24	x	200	S	1	1766,00
M 24	x	210	S	1	1970,00
M 24	x	220	S	1	1970,00
M 24	x	240	S	1	2307,00
M 24	x	260	S	1	2643,00
M 24	x	280	S	1	3027,00
M 24	x	300	S	1	3267,00
M 27	x	50	S	10	862,00
M 27	x	55	S	10	862,00
M 27	x	60	S	10	862,00
M 27	x	65	S	10	874,00
M 27	x	70	S	10	895,00
M 27	x	75	S	10	913,00
M 27	x	80	S	10	924,00
M 27	x	90	S	10	941,00
M 27	x	100	S	10	983,00
M 27	x	110	S	10	1088,00
M 27	x	120	S	10	1142,00
M 27	x	130	S	1	1205,00
M 27	x	140	S	1	1325,00
M 27	x	150	S	1	1395,00
M 27	x	160	S	1	1553,00
M 27	x	180	S	1	1712,00
M 27	x	200	S	1	1853,00
M 30	x	40	S	1	941,00
M 30	x	50	S	1	941,00
M 30	x	55	S	1	941,00
M 30	x	60	S	1	989,00
M 30	x	65	S	1	1014,00
M 30	x	70	S	1	1031,00
M 30	x	75	S	1	1048,00
M 30	x	80	S	1	1065,00
M 30	x	90	S	1	1107,00
M 30	x	100	S	1	1167,00
M 30	x	110	S	1	1310,00
M 30	x	120	S	1	1395,00
M 30	x	130	S	1	1469,00
M 30	x	140	S	1	1595,00
M 30	x	150	S	1	1680,00
M 30	x	160	S	1	1880,00
M 30	x	170	S	1	2760,00
M 30	x	180	S	1	2616,00
M 30	x	190	S	1	2998,00
M 30	x	200	S	1	2836,00
M 33	x	100	S	1	3214,00
M 33	x	160	S	1	3919,00
M 33	x	200	S	1	4672,00
M 36	x	40	S	1	1680,00
M 36	x	50	S	1	1680,00
M 36	x	55	S	1	1680,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 36	x	60	S	1	1680,00
M 36	x	65	S	1	1680,00
M 36	x	70	S	1	1712,00
M 36	x	75	S	1	1754,00
M 36	x	80	S	1	1788,00
M 36	x	90	S	1	1853,00
M 36	x	100	S	1	1937,00
M 36	x	110	S	1	2108,00
M 36	x	120	S	1	2239,00
M 36	x	130	S	1	2366,00
M 36	x	140	S	1	2567,00
M 36	x	150	S	1	2680,00
M 36	x	160	S	1	2990,00
M 36	x	170	S	1	3726,00
M 36	x	180	S	1	3246,00
M 36	x	190	S	1	4053,00
M 36	x	200	S	1	3503,00
M 42	x	100	S	1	4842,00
M 42	x	110	S	1	5447,00
M 42	x	130	S	1	6009,00
M 42	x	200	S	1	8905,00

ISO	04017.110	*
4017	**10.9 zinc plated**	

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3250 other ∅ = RAZ 405, baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 6	x	10	S	500	20,15 ZP
M 6	x	12	S	500	13,10 ZP
M 6	x	16	S	500	11,70 ZP
M 6	x	20	S	500	12,60 ZP
M 6	x	22	S	500	13,25 ZP
M 6	x	25	S	500	13,35 ZP
M 6	x	30	S	500	15,95 ZP
M 6	x	35	S	500	18,20 ZP
M 6	x	40	S	500	19,90 ZP
M 6	x	45	S	200	66,70 ZP
M 6	x	50	S	200	79,45 ZP
M 6	x	55	S	200	92,15 ZP
M 6	x	60	S	200	104,90 ZP
M 8	x	12	S	200	23,00 ZP
M 8	x	16	S	200	17,65 ZP
M 8	x	18	S	200	18,75 ZP
M 8	x	20	S	200	19,25 ZP
M 8	x	22	S	200	21,50 ZP
M 8	x	25	S	200	22,25 ZP
M 8	x	30	S	200	22,90 ZP
M 8	x	35	S	200	26,60 ZP
M 8	x	40	S	200	28,70 ZP
M 8	x	45	S	200	40,50 ZP
M 8	x	50	S	200	43,50 ZP
M 8	x	55	S	200	54,25 ZP
M 8	x	60	S	200	55,50 ZP
M 8	x	70	S	200	125,00 ZP
M 8	x	75	S	200	151,50 ZP
M 8	x	80	S	200	150,00 ZP
M 8	x	100	S	100	278,00 ZP
M 10	x	12	S	200	45,50 ZP
M 10	x	16	S	200	35,20 ZP
M 10	x	18	S	200	35,20 ZP
M 10	x	20	S	200	32,45 ZP
M 10	x	25	S	200	34,85 ZP
M 10	x	30	S	200	37,25 ZP
M 10	x	35	S	100	39,65 ZP
M 10	x	40	S	100	42,65 ZP
M 10	x	45	S	200	49,65 ZP
M 10	x	50	S	100	55,15 ZP
M 10	x	55	S	100	80,60 ZP
M 10	x	60	S	100	84,00 ZP
M 10	x	70	S	100	178,10 ZP
M 10	x	75	S	100	204,00 ZP
M 10	x	80	S	100	204,00 ZP
M 10	x	90	S	100	297,00 ZP
M 10	x	100	S	100	364,00 ZP
M 10	x	110	S	50	420,00 ZP
M 12	x	20	S	100	56,90 ZP
M 12	x	25	S	100	54,05 ZP
M 12	x	30	S	100	57,65 ZP
M 12	x	35	S	100	61,30 ZP
M 12	x	40	S	100	65,45 ZP
M 12	x	45	S	100	72,70 ZP
M 12	x	50	S	100	72,70 ZP
M 12	x	55	S	100	98,50 ZP
M 12	x	60	S	100	109,00 ZP
M 12	x	65	S	50	164,50 ZP
M 12	x	70	S	50	203,00 ZP
M 12	x	75	S	50	221,77 ZP
M 12	x	80	S	50	255,00 ZP
M 12	x	90	S	50	350,50 ZP
M 12	x	100	S	50	413,50 ZP
M 12	x	110	S	100	468,00 ZP
M 12	x	120	S	100	520,00 ZP
M 12	x	130	S	50	630,00 ZP
M 12	x	140	S	50	725,00 ZP
M 12	x	150	S	50	765,00 ZP
M 12	x	160	S	25	800,00 ZP
M 12	x	180	S	25	895,00 ZP
M 12	x	200	S	25	1045,00 ZP
M 14	x	30	S	100	103,00 ZP
M 14	x	35	S	100	106,00 ZP
M 14	x	40	S	100	112,00 ZP
M 14	x	45	S	50	116,00 ZP
M 14	x	50	S	50	124,00 ZP
M 14	x	60	S	50	149,00 ZP
M 14	x	65	S	50	240,00 ZP
M 14	x	70	S	50	242,00 ZP
M 14	x	80	S	50	325,00 ZP
M 14	x	90	S	50	450,00 ZP
M 16	x	20	S	50	171,30 ZP
M 16	x	25	S	50	117,00 ZP
M 16	x	30	S	50	120,00 ZP
M 16	x	35	S	50	124,00 ZP
M 16	x	40	S	50	133,00 ZP
M 16	x	45	S	50	137,00 ZP
M 16	x	50	S	50	150,00 ZP
M 16	x	55	S	50	162,00 ZP
M 16	x	60	S	50	166,00 ZP
M 16	x	65	S	25	300,00 ZP
M 16	x	70	S	25	300,00 ZP
M 16	x	75	S	25	315,00 ZP
M 16	x	80	S	25	322,00 ZP
M 16	x	90	S	25	441,00 ZP
M 16	x	100	S	25	551,00 ZP
M 16	x	110	S	25	615,00 ZP
M 16	x	120	S	25	670,00 ZP
M 16	x	140	S	25	801,50 ZP
M 16	x	150	S	25	840,00 ZP
M 16	x	160	S	25	886,50 ZP
M 16	x	170	S	25	931,50 ZP
M 16	x	180	S	25	981,00 ZP
M 16	x	190	S	25	1065,00 ZP
M 16	x	200	S	25	1145,00 ZP
M 16	x	220	S	1	1275,00 ZP
M 16	x	240	S	1	1570,00 ZP
M 16	x	260	S	1	1710,00 ZP
M 16	x	280	S	1	1850,00 ZP
M 16	x	300	S	1	1985,00 ZP
M 18	x	40	S	50	272,00 ZP
M 18	x	45	S	50	286,00 ZP
M 18	x	50	S	50	293,00 ZP
M 18	x	55	S	25	302,00 ZP
M 18	x	60	S	25	320,00 ZP
M 18	x	70	S	25	741,00 ZP
M 20	x	30	S	25	415,00 ZP
M 20	x	35	S	25	234,50 ZP
M 20	x	40	S	25	283,00 ZP
M 20	x	45	S	25	298,00 ZP
M 20	x	50	S	25	307,00 ZP
M 20	x	55	S	25	317,00 ZP
M 20	x	60	S	25	336,00 ZP
M 20	x	65	S	25	580,00 ZP
M 20	x	70	S	25	592,00 ZP
M 20	x	75	S	25	614,00 ZP
M 20	x	80	S	25	616,00 ZP
M 20	x	90	S	25	625,00 ZP
M 20	x	100	S	25	663,00 ZP
M 20	x	110	S	25	985,00 ZP
M 20	x	120	S	25	998,00 ZP
M 20	x	130	S	25	1140,00 ZP
M 20	x	140	S	25	1210,00 ZP
M 20	x	150	S	25	1295,00 ZP
M 20	x	160	S	25	1385,00 ZP
M 20	x	170	S	25	1470,00 ZP
M 20	x	180	S	25	1560,00 ZP
M 20	x	190	S	25	1625,00 ZP
M 20	x	200	S	25	1695,00 ZP
M 20	x	210	S	1	1955,00 ZP
M 20	x	220	S	1	1965,00 ZP
M 20	x	240	S	1	2195,00 ZP
M 20	x	260	S	1	2425,00 ZP
M 24	x	30	S	25	599,00 ZP
M 24	x	40	S	25	485,00 ZP
M 20	x	90	S	25	495,00 ZP
M 24	x	50	S	25	739,00 ZP
M 24	x	55	S	25	750,00 ZP
M 24	x	60	S	25	752,00 ZP
M 24	x	65	S	25	775,00 ZP
M 24	x	70	S	25	795,00 ZP
M 24	x	75	S	25	810,00 ZP
M 24	x	80	S	25	816,00 ZP
M 24	x	90	S	10	830,00 ZP
M 24	x	100	S	10	878,00 ZP
M 24	x	110	S	10	981,00 ZP
M 24	x	120	S	10	1049,00 ZP
M 24	x	130	S	1	1355,00 ZP
M 24	x	140	S	1	1440,00 ZP
M 24	x	150	S	1	1521,00 ZP
M 24	x	160	S	1	1671,00 ZP
M 24	x	170	S	1	1790,00 ZP
M 24	x	180	S	1	1880,00 ZP
M 24	x	190	S	1	1955,00 ZP
M 24	x	200	S	1	2050,00 ZP
M 27	x	60	S	10	1025,00 ZP
M 27	x	70	S	10	1075,00 ZP
M 27	x	80	S	10	1115,00 ZP
M 27	x	90	S	10	1150,00 ZP
M 27	x	100	S	10	1205,00 ZP
M 27	x	110	S	10	1325,00 ZP
M 27	x	120	S	10	1395,00 ZP
M 27	x	130	S	1	1475,00 ZP
M 27	x	140	S	1	1610,00 ZP
M 30	x	40	S	1	1115,00 ZP
M 30	x	50	S	1	1135,00 ZP
M 30	x	55	S	1	1200,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	60	S	1	1200,00 ZP
M 30	x	65	S	1	1225,00 ZP
M 30	x	70	S	1	1265,00 ZP
M 30	x	75	S	1	1300,00 ZP
M 30	x	80	S	1	1315,00 ZP
M 24	x	100	S	1	1375,00 ZP
M 30	x	100	S	1	1455,00 ZP
M 30	x	110	S	1	1315,00 ZP
M 30	x	120	S	1	1715,00 ZP
M 30	x	130	S	1	1810,00 ZP
M 30	x	140	S	1	1955,00 ZP
M 30	x	150	S	1	1060,00 ZP
M 30	x	160	S	1	2275,00 ZP
M 30	x	170	S	1	3175,00 ZP
M 30	x	180	S	1	3050,00 ZP
M 30	x	190	S	1	3450,00 ZP
M 30	x	200	S	1	3310,00 ZP
M 36	x	40	S	1	1890,00 ZP
M 36	x	50	S	1	1890,00 ZP
M 36	x	60	S	1	1890,00 ZP
M 36	x	70	S	1	1930,00 ZP
M 36	x	80	S	1	2010,00 ZP
M 36	x	90	S	1	2078,00 ZP
M 36	x	100	S	1	2170,00 ZP
M 36	x	110	S	1	2339,00 ZP
M 36	x	120	S	1	2474,00 ZP
M 36	x	130	S	1	2600,00 ZP
M 36	x	140	S	1	2810,00 ZP
M 36	x	150	S	1	2920,00 ZP
M 36	x	160	S	1	3240,00 ZP
M 36	x	170	S	1	3980,00 ZP
M 36	x	180	S	1	3506,00 ZP
M 36	x	190	S	1	4318,00 ZP
M 36	x	200	S	1	3775,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions	PU	Pieces	€/100/Mat.
ISO	04017.354		RAZ 1540

4017

10.9
zinc flake coated

Hexagon head screws with thread up to head

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-15
Mech. properties → TI-220
Corrosion protection → TI-218
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 6	x	10	S	500	23,20 flZn
M 6	x	12	S	500	15,10 flZn
M 6	x	16	S	500	13,50 flZn
M 6	x	20	S	500	14,50 flZn
M 6	x	22	S	500	15,25 flZn
M 6	x	25	S	500	15,35 flZn
M 6	x	30	S	500	18,35 flZn
M 6	x	35	S	200	20,95 flZn
M 6	x	40	S	200	22,90 flZn
M 6	x	45	S	200	76,75 flZn
M 6	x	50	S	200	91,40 flZn
M 6	x	55	S	200	106,00 flZn
M 6	x	60	S	200	121,00 flZn
M 8	x	12	S	200	26,45 flZn
M 8	x	16	S	200	20,30 flZn
M 8	x	20	S	200	22,15 flZn
M 8	x	25	S	200	25,60 flZn
M 8	x	30	S	200	26,35 flZn
M 8	x	35	S	200	30,60 flZn
M 8	x	40	S	200	33,05 flZn
M 8	x	45	S	200	46,60 flZn
M 8	x	50	S	200	50,05 flZn
M 8	x	55	S	200	62,40 flZn
M 8	x	60	S	200	63,85 flZn
M 8	x	70	S	200	143,75 flZn
M 10	x	16	S	200	40,50 flZn
M 10	x	20	S	200	37,35 flZn
M 10	x	25	S	200	40,10 flZn
M 10	x	30	S	200	42,85 flZn
M 10	x	35	S	100	45,60 flZn
M 10	x	40	S	100	49,05 flZn
M 10	x	45	S	100	57,10 flZn
M 10	x	50	S	100	63,45 flZn
M 10	x	55	S	100	92,70 flZn
M 10	x	60	S	100	96,60 flZn
M 10	x	70	S	100	205,00 flZn
M 10	x	80	S	100	235,00 flZn
M 10	x	90	S	100	342,00 flZn
M 10	x	100	S	100	419,00 flZn
M 12	x	20	S	100	65,45 flZn
M 12	x	25	S	100	62,20 flZn
M 12	x	30	S	100	66,30 flZn
M 12	x	35	S	100	70,50 flZn
M 12	x	40	S	100	75,30 flZn
M 12	x	45	S	100	83,65 flZn
M 12	x	50	S	100	87,75 flZn
M 12	x	55	S	100	114,00 flZn
M 12	x	60	S	100	126,00 flZn
M 12	x	65	S	50	190,00 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	70	S	50	234,00 flZn
M 12	x	80	S	50	312,00 flZn
M 12	x	90	S	50	404,00 flZn
M 12	x	100	S	50	476,00 flZn
M 16	x	25	S	50	135,00 flZn
M 16	x	30	S	50	138,00 flZn
M 16	x	35	S	50	143,00 flZn
M 16	x	40	S	50	153,00 flZn
M 16	x	45	S	50	158,00 flZn
M 16	x	50	S	50	173,00 flZn
M 16	x	55	S	50	187,00 flZn
M 16	x	60	S	50	191,00 flZn
M 16	x	65	S	25	345,00 flZn
M 16	x	70	S	25	345,00 flZn
M 16	x	75	S	25	359,00 flZn
M 16	x	80	S	25	371,00 flZn
M 16	x	90	S	25	508,00 flZn
M 16	x	100	S	25	634,00 flZn
M 16	x	110	S	25	708,00 flZn
M 16	x	120	S	25	771,00 flZn
M 20	x	30	S	25	478,00 flZn
M 20	x	35	S	25	270,00 flZn
M 20	x	40	S	25	326,00 flZn
M 20	x	45	S	25	343,00 flZn
M 20	x	50	S	25	354,00 flZn
M 20	x	55	S	25	365,00 flZn
M 20	x	60	S	25	387,00 flZn
M 20	x	65	S	25	667,00 flZn
M 20	x	70	S	25	681,00 flZn
M 20	x	75	S	25	707,00 flZn
M 20	x	80	S	25	709,00 flZn
M 20	x	90	S	25	719,00 flZn
M 20	x	100	S	25	763,00 flZn
M 20	x	110	S	25	1133,00 flZn
M 20	x	120	S	25	1148,00 flZn
M 24	x	40	S	25	558,00 flZn
M 24	x	45	S	25	570,00 flZn
M 24	x	50	S	25	850,00 flZn
M 24	x	55	S	25	863,00 flZn
M 24	x	60	S	25	865,00 flZn
M 24	x	65	S	25	892,00 flZn
M 24	x	70	S	25	915,00 flZn
M 24	x	75	S	25	932,00 flZn
M 24	x	80	S	25	939,00 flZn
M 24	x	90	S	10	955,00 flZn
M 24	x	100	S	10	1010,00 flZn
M 24	x	110	S	10	1129,00 flZn
M 24	x	120	S	10	1207,00 flZn

ISO	04017.200	*

4017

12.9

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3260 other ∅ = RAZ 406

Dimensions → TI-15
Mech. properties → TI-220
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 502
Brass → S. 588

ISO 4017 → replaces DIN 933

M 6	x	12	S	500	85,00
M 6	x	16	S	500	87,00
M 6	x	20	S	500	89,00
M 6	x	25	S	500	105,00

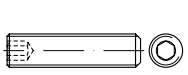
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	30	S	500	112,00
M 8	x	16	S	200	94,00
M 8	x	20	S	200	94,00
M 8	x	25	S	200	111,00
M 8	x	30	S	200	118,00
M 8	x	35	S	200	124,00
M 8	x	40	S	200	142,00
M 8	x	40	S	200	156,00
M 8	x	50	S	200	185,00
M 8	x	60	S	200	203,00
M 10	x	20	S	200	99,00
M 10	x	25	S	200	117,00
M 10	x	30	S	200	125,00
M 10	x	35	S	100	130,00
M 10	x	40	S	100	149,00
M 10	x	45	S	100	164,00
M 10	x	50	S	100	195,00
M 10	x	60	S	100	214,00
M 12	x	25	S	100	130,00
M 12	x	30	S	100	164,00
M 12	x	35	S	100	195,00
M 12	x	40	S	100	214,00
M 12	x	45	S	100	228,00
M 12	x	50	S	100	300,00
M 12	x	60	S	100	325,00
M 14	x	35	S	100	228,00
M 14	x	40	S	100	360,00
M 14	x	50	S	50	520,00
M 16	x	30	S	50	260,00
M 16	x	35	S	50	280,00
M 16	x	40	S	50	295,00
M 16	x	45	S	50	315,00
M 16	x	50	S	50	325,00
M 16	x	60	S	50	405,00
M 16	x	70	S	25	425,00
M 16	x	80	S	25	460,00
M 16	x	90	S	25	500,00
M 16	x	100	S	25	550,00
M 20	x	40	S	25	325,00
M 20	x	45	S	25	395,00
M 20	x	50	S	25	460,00
M 20	x	55	S	25	520,00
M 20	x	60	S	25	560,00
M 20	x	70	S	25	600,00
M 20	x	80	S	25	630,00
M 20	x	90	S	25	650,00
M 20	x	100	S	25	720,00
M 24	x	60	S	25	990,00
M 24	x	70	S	25	1040,00
M 24	x	80	S	25	1180,00
M 24	x	90	S	10	1210,00
M 24	x	100	S	10	1570,00

ISO	04026.200	RAZ 370

4026

45 H



Hexagon socket set screws with flat point

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6

Stainless → S. 507

ISO 4026 → replaces DIN 913

M 1,6	x	2	S	100	250,00
M 1,6	x	2	S	100	105,00
M 1,6	x	3	S	100	93,00
M 1,6	x	4	S	100	92,00
M 1,6	x	5	S	100	97,00
M 1,6	x	6	S	100	97,00
M 1,6	x	8	S	100	98,00
M 1,6	x	10	S	100	98,00
M 2	x	2	S	100	92,00
M 2	x	3	S	100	83,00
M 2	x	4	S	100	85,00
M 2	x	5	S	100	86,00
M 2	x	6	S	100	89,00
M 2	x	8	S	100	94,00
M 2	x	10	S	100	101,00
M 2,5	x	3	S	100	68,00
M 2,5	x	4	S	100	71,00
M 2,5	x	5	S	100	73,00
M 2,5	x	6	S	100	77,00
M 2,5	x	8	S	100	80,00
M 2,5	x	10	S	100	83,00
M 3	x	3	S	200	7,70
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	1000	7,50
M 3	x	6	K	200	7,50
M 3	x	8	S	1000	7,80
M 3	x	8	K	200	7,80
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	6,70
M 4	x	5	S	200	6,40
M 4	x	6	S	1000	6,50
M 4	x	6	K	200	6,50
M 4	x	8	S	1000	6,70
M 4	x	8	K	200	6,70
M 4	x	10	S	1000	6,90
M 4	x	10	K	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	1000	8,30
M 4	x	16	K	200	8,30
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	35	S	200	51,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	7,30
M 5	x	6	S	200	7,10
M 5	x	8	S	1000	7,30
M 5	x	8	K	200	7,30
M 5	x	10	S	500	7,60
M 5	x	10	K	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	14,20
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	4	S	200	16,00
M 6	x	5	S	200	10,90
M 6	x	6	S	500	8,30
M 6	x	6	K	200	8,30
M 6	x	8	S	500	7,70
M 6	x	8	K	200	7,70
M 6	x	10	S	500	7,90
M 6	x	10	K	200	7,90
M 6	x	12	S	500	8,30
M 6	x	12	K	200	8,30
M 6	x	16	S	500	9,30
M 6	x	16	K	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	500	10,60
M 6	x	20	K	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 6	x	55	S	100	75,00
M 6	x	50	S	100	33,75
M 6	x	70	S	100	152,00
M 8	x	6	S	200	12,60
M 8	x	8	S	500	9,60
M 8	x	8	K	200	9,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	8	S	200	18,80
M 10	x	10	S	200	14,20
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	18	S	200	17,70
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	55	S	100	76,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00
M 10	x	80	S	100	110,00
M 10	x	90	S	100	111,90
M 10	x	100	S	100	127,90
M 12	x	10	S	100	35,00
M 12	x	12	S	100	26,50
M 12	x	16	S	100	24,20
M 12	x	18	S	100	28,00
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 12	x	90	S	50	290,00
M 12	x	100	S	50	500,00
M 14	x	16	S	50	256,10
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 14	x	50	S	50	124,00
M 16	x	12	S	100	210,00
M 16	x	16	S	100	52,00
M 16	x	18	S	100	56,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 16	x	100	S	25	475,00
M 20	x	20	S	100	102,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	20	S	50	556,00
M 24	x	25	S	50	498,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	40	S	25	230,00
M 24	x	45	S	25	450,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	70	S	25	430,00
M 24	x	80	S	25	470,00
M 24	x	90	S	25	510,00
M 24	x	100	S	25	730,00

ISO	04026.210	RAZ 370

4026

45 H
zinc plated

Hexagon socket set screws with flat point

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 507

ISO 4026 → replaces DIN 913

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	4	S	100	150,00 ZP
M 2	x	6	S	100	160,75 ZP
M 2	x	8	S	100	166,00 ZP
M 2	x	10	S	100	185,25 ZP
M 3	x	3	S	200	12,00 ZP
M 3	x	4	S	200	10,90 ZP
M 3	x	5	S	200	11,00 ZP
M 3	x	6	S	200	11,20 ZP
M 3	x	8	S	200	11,70 ZP
M 3	x	10	S	200	12,10 ZP
M 3	x	12	S	200	12,90 ZP
M 3	x	16	S	200	14,90 ZP
M 3	x	20	S	200	15,40 ZP
M 4	x	4	S	200	8,60 ZP
M 4	x	5	S	200	8,30 ZP
M 4	x	6	S	200	8,50 ZP
M 4	x	8	S	200	10,00 ZP
M 4	x	10	S	200	10,40 ZP
M 4	x	12	S	200	11,00 ZP
M 4	x	14	S	200	24,75 ZP
M 4	x	16	S	200	12,40 ZP
M 4	x	18	S	200	12,80 ZP
M 4	x	20	S	200	12,80 ZP
M 4	x	25	S	200	20,90 ZP
M 4	x	30	S	200	56,00 ZP
M 4	x	35	S	200	76,00 ZP
M 4	x	40	S	200	89,00 ZP
M 5	x	4	S	200	14,70 ZP
M 5	x	5	S	200	14,75 ZP
M 5	x	6	S	200	9,30 ZP
M 5	x	8	S	200	9,70 ZP
M 5	x	10	S	200	10,20 ZP
M 5	x	12	S	200	11,60 ZP
M 5	x	16	S	200	12,50 ZP
M 5	x	18	S	200	14,10 ZP
M 5	x	20	S	200	14,10 ZP
M 5	x	25	S	200	21,20 ZP
M 5	x	30	S	100	25,50 ZP
M 5	x	35	S	100	32,00 ZP
M 5	x	40	S	100	36,50 ZP
M 6	x	5	S	200	19,40 ZP
M 6	x	6	S	200	11,00 ZP
M 6	x	8	S	200	10,40 ZP
M 6	x	10	S	200	10,80 ZP
M 6	x	12	S	200	11,60 ZP
M 6	x	14	S	200	14,45 ZP
M 6	x	16	S	200	13,80 ZP
M 6	x	18	S	200	29,20 ZP
M 6	x	20	S	200	16,10 ZP
M 6	x	25	S	200	21,60 ZP
M 6	x	30	S	200	24,00 ZP
M 6	x	35	S	100	30,50 ZP
M 6	x	40	S	100	35,00 ZP
M 6	x	45	S	200	43,50 ZP
M 6	x	50	S	200	55,00 ZP
M 6	x	60	S	100	59,00 ZP
M 8	x	6	S	200	25,20 ZP
M 8	x	8	S	200	13,20 ZP
M 8	x	10	S	200	12,70 ZP
M 8	x	12	S	200	13,80 ZP
M 8	x	16	S	200	15,90 ZP
M 8	x	18	S	200	22,40 ZP
M 8	x	20	S	200	19,10 ZP
M 8	x	25	S	200	27,00 ZP
M 8	x	30	S	100	32,50 ZP
M 8	x	35	S	100	29,00 ZP
M 8	x	40	S	100	42,50 ZP
M 8	x	45	S	100	51,00 ZP
M 8	x	50	S	100	59,00 ZP
M 8	x	55	S	100	89,00 ZP
M 8	x	60	S	100	97,00 ZP
M 8	x	70	S	100	109,00 ZP
M 8	x	80	S	100	160,00 ZP
M 8	x	90	S	100	285,00 ZP
M 8	x	100	S	100	315,00 ZP
M 8	x	130	S	50	395,00 ZP
M 10	x	8	S	200	28,50 ZP
M 10	x	10	S	200	20,00 ZP
M 10	x	12	S	200	19,10 ZP
M 10	x	16	S	200	22,60 ZP
M 10	x	20	S	200	29,00 ZP
M 10	x	25	S	100	35,00 ZP
M 10	x	30	S	100	41,50 ZP
M 10	x	35	S	100	47,00 ZP
M 10	x	40	S	100	58,00 ZP
M 10	x	45	S	100	71,00 ZP
M 10	x	50	S	100	79,00 ZP
M 10	x	60	S	100	135,00 ZP
M 10	x	70	S	100	161,00 ZP
M 10	x	80	S	100	192,50 ZP
M 10	x	90	S	100	481,25 ZP
M 10	x	100	S	100	551,25 ZP
M 12	x	10	S	100	63,00 ZP
M 12	x	12	S	100	39,50 ZP
M 12	x	14	S	100	36,00 ZP
M 12	x	16	S	100	36,00 ZP
M 12	x	20	S	200	44,50 ZP
M 12	x	25	S	100	51,00 ZP
M 12	x	30	S	100	59,00 ZP
M 12	x	35	S	100	64,00 ZP
M 12	x	40	S	100	75,00 ZP
M 12	x	45	S	100	86,00 ZP
M 12	x	50	S	100	99,00 ZP
M 12	x	55	S	100	118,00 ZP
M 12	x	60	S	50	120,00 ZP
M 12	x	70	S	50	166,00 ZP
M 12	x	80	S	50	200,00 ZP
M 12	x	90	S	50	278,00 ZP
M 12	x	100	S	50	875,00 ZP
M 14	x	20	S	100	115,00 ZP
M 14	x	50	S	50	164,00 ZP
M 14	x	60	S	50	224,00 ZP
M 16	x	16	S	100	91,00 ZP
M 16	x	20	S	100	99,00 ZP
M 16	x	25	S	100	109,00 ZP
M 16	x	30	S	100	114,00 ZP
M 16	x	35	S	100	122,50 ZP
M 16	x	40	S	50	132,00 ZP
M 16	x	45	S	50	150,00 ZP
M 16	x	50	S	50	170,00 ZP
M 16	x	55	S	50	205,00 ZP
M 16	x	60	S	50	205,00 ZP
M 16	x	70	S	50	275,00 ZP
M 16	x	80	S	50	300,00 ZP
M 16	x	90	S	25	335,00 ZP
M 20	x	20	S	100	178,00 ZP
M 20	x	25	S	100	191,00 ZP
M 20	x	30	S	50	206,00 ZP
M 20	x	35	S	50	212,00 ZP
M 20	x	40	S	50	228,00 ZP
M 20	x	50	S	50	260,00 ZP
M 20	x	60	S	25	280,00 ZP
M 20	x	70	S	25	527,50 ZP
M 20	x	80	S	25	585,00 ZP
M 20	x	90	S	25	650,00 ZP
M 24	x	25	S	50	659,00 ZP
M 24	x	30	S	50	370,00 ZP
M 24	x	35	S	50	379,00 ZP
M 24	x	40	S	25	405,00 ZP
M 24	x	60	S	25	690,00 ZP
M 24	x	70	S	25	780,00 ZP
M 24	x	80	S	25	860,00 ZP

~ISO	04026.205	RAZ 370

4026

45 H **fine**

Hexagon socket set screws with flat point, with metric fine pitch thread

Caution! Not for tensile loading.

Dimensions → TI-20 Standard conversion → TI-6

ISO 4026 → replaces DIN 913

Dimensions					PU	Pieces	€/100/Mat.
M 4	x	0,5	x	4	S	100	195,00
M 4	x	0,5	x	5	S	100	215,00
M 4	x	0,5	x	6	S	100	230,00
M 5	x	0,5	x	6	S	100	130,00
M 5	x	0,5	x	8	S	100	140,00
M 5	x	0,5	x	10	S	100	210,00
M 5	x	0,5	x	12	S	100	154,00
M 5	x	0,5	x	16	S	100	175,00
M 5	x	0,5	x	20	S	100	485,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions					PU	Pieces	€/100/Mat.
M 5	x	0,5	x	25	S	100	510,00
M 5	x	0,5	x	30	S	100	535,00
M 6	x	0,75	x	5	S	100	105,00
M 6	x	0,5	x	6	S	100	173,00
M 6	x	0,75	x	6	S	100	155,00
M 6	x	0,5	x	8	S	100	190,00
M 6	x	0,75	x	8	S	100	215,00
M 6	x	0,5	x	10	S	100	147,00
M 6	x	0,75	x	10	S	100	241,00
M 6	x	0,5	x	12	S	100	260,00
M 6	x	0,75	x	12	S	100	241,00
M 6	x	0,5	x	16	S	100	196,00
M 6	x	0,5	x	20	S	100	179,00
M 6	x	0,75	x	20	S	100	268,00
M 8	x	1	x	5	S	100	84,00
M 8	x	1	x	6	S	100	45,00
M 8	x	0,75	x	8	S	100	168,00
M 8	x	1	x	8	S	100	115,00
M 8	x	0,5	x	10	S	100	283,00
M 8	x	0,75	x	10	S	100	238,00
M 8	x	1	x	10	S	100	165,00
M 8	x	0,5	x	12	S	100	172,00
M 8	x	0,75	x	12	S	100	91,00
M 8	x	1	x	12	S	100	190,00
M 8	x	0,5	x	16	S	100	473,00
M 8	x	0,75	x	16	S	100	130,00
M 8	x	1	x	16	S	100	195,00
M 8	x	20			S	100	164,00
M 8	x	1	x	20	S	100	217,00
M 8	x	0,75	x	25	S	100	178,00
M 8	x	1	x	25	S	100	100,00
M 8	x	0,75	x	30	S	100	200,00
M 8	x	1	x	30	S	100	105,00
M 8	x	1	x	35	S	100	108,00
M 8	x	1	x	40	S	100	115,00
M 8	x	1	x	50	S	100	150,00
M 8	x	1	x	60	S	100	200,00
M 8	x	1	x	70	S	100	230,00
M 8	x	1	x	80	S	100	266,00
M 8	x	1	x	90	S	100	312,00
M 8	x	1,0	x	100	S	100	345,00
M 10	x	1	x	8	S	100	206,00
M 10	x	1,25	x	8	S	100	266,00
M 10	x	1	x	10	S	100	206,00
M 10	x	1,25	x	10	S	100	114,00
M 10	x	1	x	12	S	100	192,00
M 10	x	1,25	x	12	S	100	129,00
M 10	x	1	x	16	S	100	275,00
M 10	x	1,25	x	16	S	100	158,00
M 10	x	1	x	20	S	100	285,00
M 10	x	1,25	x	20	S	100	169,00
M 10	x	1	x	25	S	100	98,00
M 10	x	1,25	x	25	S	100	188,00
M 10	x	1	x	30	S	100	112,00
M 10	x	1,25	x	30	S	100	193,00
M 10	x	1	x	35	S	100	120,00
M 10	x	1,25	x	35	S	100	204,00
M 10	x	1,25	x	40	S	100	219,00
M 10	x	1	x	45	S	100	182,00
M 10	x	1	x	50	S	100	191,00
M 10	x	1,25	x	50	S	100	278,00
M 10	x	1	x	60	S	100	208,00
M 10	x	1,25	x	60	S	100	282,00
M 12	x	1	x	8	S	100	150,00
M 12	x	1	x	10	S	100	461,00
M 12	x	1,25	x	10	S	50	153,00
M 12	x	1,5	x	10	S	100	488,00
M 12	x	1,25	x	12	S	50	141,00
M 12	x	1,5	x	12	S	100	108,00
M 12	x	1	x	16	S	100	505,00
M 12	x	1,25	x	16	S	50	155,00
M 12	x	1,5	x	16	S	100	113,00
M 12	x	1	x	20	S	100	526,00
M 12	x	1,25	x	20	S	50	164,00
M 12	x	1,5	x	20	S	100	121,00

Dimensions					PU	Pieces	€/100/Mat.
M 12	x	1	x	25	S	100	650,00
M 12	x	1,25	x	25	S	50	175,00
M 12	x	1,5	x	25	S	100	128,00
M 12	x	1	x	30	S	100	129,00
M 12	x	1,25	x	30	S	50	185,00
M 12	x	1,5	x	30	S	100	136,00
M 12	x	1	x	40	S	100	166,00
M 12	x	1,25	x	40	S	50	195,00
M 12	x	1,5	x	40	S	100	166,00
M 12	x	1	x	45	S	100	202,00
M 12	x	1,5	x	45	S	100	202,00
M 12	x	1	x	50	S	100	205,00
M 12	x	1,5	x	55	S	100	245,00
M 12	x	1	x	60	S	100	316,00
M 12	x	1,5	x	70	S	50	424,00
M 14	x	1	x	10	S	50	339,00
M 14	x	1,5	x	10	S	50	397,00
M 14	x	1	x	12	S	50	350,00
M 14	x	1,5	x	12	S	50	292,00
M 14	x	1	x	16	S	50	401,00
M 14	x	1,5	x	16	S	50	266,00
M 14	x	1	x	20	S	50	587,00
M 14	x	1,5	x	20	S	50	240,00
M 14	x	1,5	x	25	S	50	252,00
M 14	x	1,5	x	30	S	50	263,00
M 14	x	1,5	x	35	S	50	273,00
M 14	x	1,5	x	40	S	50	284,00
M 14	x	1,5	x	45	S	50	296,00
M 14	x	1,5	x	50	S	50	341,00
M 14	x	1,5	x	60	S	50	379,00
M 16	x	1	x	12	S	50	430,00
M 16	x	1,5	x	12	S	50	211,00
M 16	x	1	x	16	S	50	349,00
M 16	x	1,5	x	16	S	50	264,00
M 16	x	1	x	20	S	50	420,00
M 16	x	1,5	x	20	S	50	266,00
M 16	x	1,5	x	25	S	50	278,00
M 16	x	1,5	x	30	S	50	283,00
M 16	x	1,5	x	40	S	50	311,00
M 16	x	1,5	x	50	S	50	324,00
M 16	x	1,5	x	60	S	25	342,00
M 16	x	1,5	x	70	S	25	378,00
M 20	x	1,5	x	20	S	25	480,00
M 20	x	1,5	x	25	S	25	518,00
M 20	x	1,5	x	30	S	25	548,00
M 20	x	1,5	x	35	S	25	580,00
M 20	x	1,5	x	40	S	25	610,00
M 20	x	1,5	x	45	S	25	645,00
M 20	x	1,5	x	50	S	25	695,00
M 20	x	1,5	x	60	S	25	755,00
M 20	x	1,5	x	70	S	25	840,00
M 20	x	1,5	x	80	S	25	920,00
M 20	x	1,5	x	100	S	25	1010,00
M 24	x	1,5	x	25	S	10	920,00
M 24	x	1,5	x	30	S	10	966,00
M 24	x	1,5	x	40	S	10	1115,00
M 24	x	1,5	x	60	S	10	1210,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	04027.200		RAZ 370

4027

45 H

Hexagon socket set screws with cone point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6

Stainless ➔ S. 509

ISO 4027 ➔ replaces DIN 914

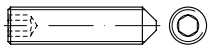
M 2	x	2	S	200	106,00
M 2	x	3	S	200	96,00
M 2	x	4	S	200	98,00
M 2	x	5	S	200	100,00
M 2	x	6	S	200	104,00
M 2	x	8	S	200	110,00
M 2	x	10	S	200	118,00
M 2,5	x	3	S	200	80,00
M 2,5	x	3	S	200	82,00
M 2,5	x	5	S	200	84,00
M 2,5	x	6	S	200	90,00
M 2,5	x	8	S	200	94,00
M 2,5	x	10	S	200	96,00
M 3	x	3	S	200	8,50
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	200	7,50
M 3	x	8	S	200	7,80
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	7,30
M 4	x	5	S	200	6,40
M 4	x	6	S	200	6,50
M 4	x	8	S	200	6,70
M 4	x	10	S	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	200	8,30
M 4	x	18	S	200	8,50
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	35	S	200	51,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	8,10
M 5	x	6	S	200	7,10
M 5	x	8	S	200	7,30
M 5	x	10	S	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	14,20
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	5	S	200	10,90
M 6	x	6	S	200	9,10
M 6	x	8	S	200	7,70
M 6	x	10	S	200	7,90
M 6	x	12	S	200	8,30
M 6	x	16	S	200	9,30
M 6	x	18	S	200	10,60

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	20	S	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 8	x	6	S	200	12,60
M 8	x	8	S	200	10,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	8	S	200	18,80
M 10	x	10	S	200	15,60
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	18	S	200	17,70
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00
M 10	x	80	S	100	110,00
M 10	x	100	S	50	189,00
M 12	x	10	S	100	35,00
M 12	x	12	S	100	29,00
M 12	x	16	S	100	24,20
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 16	x	16	S	100	57,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 20	x	20	S	100	112,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	40	S	25	230,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	80	S	25	470,00
M 24	x	100	S	25	730,00

ISO	04027.210	RAZ 370

4027

45 H
zinc plated



Hexagon socket set screws with cone point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 509

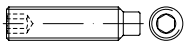
ISO 4027 ➔ replaces DIN 914

M 3	x	3	S	200	15,00 ZP
M 3	x	4	S	200	9,30 ZP
M 3	x	5	S	200	9,40 ZP
M 3	x	6	S	200	9,60 ZP
M 3	x	8	S	200	10,10 ZP
M 3	x	10	S	200	10,90 ZP
M 4	x	4	S	200	9,40 ZP
M 4	x	5	S	200	8,50 ZP
M 4	x	6	S	200	8,50 ZP
M 4	x	8	S	200	8,70 ZP
M 4	x	10	S	200	9,20 ZP
M 4	x	12	S	200	10,10 ZP
M 4	x	16	S	200	11,40 ZP
M 4	x	18	S	200	15,00 ZP
M 4	x	20	S	200	12,80 ZP
M 4	x	25	S	200	24,50 ZP
M 4	x	30	S	200	64,75 ZP
M 4	x	35	S	200	89,25 ZP
M 5	x	4	S	200	17,15 ZP
M 5	x	5	S	200	14,50 ZP
M 5	x	6	S	200	9,30 ZP
M 5	x	8	S	200	9,70 ZP
M 5	x	10	S	200	10,10 ZP
M 5	x	12	S	200	11,00 ZP
M 5	x	16	S	200	12,00 ZP
M 5	x	20	S	200	13,40 ZP
M 5	x	25	S	200	45,40 ZP
M 5	x	30	S	200	49,90 ZP
M 6	x	5	S	200	13,40 ZP
M 6	x	6	S	200	11,60 ZP
M 6	x	8	S	200	10,30 ZP
M 6	x	10	S	200	10,80 ZP
M 6	x	12	S	200	11,40 ZP
M 6	x	16	S	200	13,20 ZP
M 6	x	18	S	200	18,55 ZP
M 6	x	20	S	200	15,10 ZP
M 6	x	25	S	200	21,60 ZP
M 6	x	30	S	200	24,00 ZP
M 6	x	40	S	100	40,25 ZP
M 6	x	45	S	100	47,25 ZP
M 8	x	8	S	200	16,50 ZP
M 8	x	10	S	200	12,60 ZP
M 8	x	12	S	200	14,50 ZP
M 8	x	16	S	200	15,80 ZP
M 8	x	20	S	200	19,00 ZP
M 8	x	25	S	200	27,00 ZP
M 8	x	30	S	100	32,50 ZP
M 8	x	35	S	100	36,00 ZP
M 8	x	40	S	100	50,00 ZP
M 8	x	45	S	100	59,50 ZP
M 8	x	50	S	100	68,25 ZP
M 8	x	60	S	100	98,00 ZP
M 10	x	10	S	200	22,50 ZP
M 10	x	12	S	200	20,20 ZP
M 10	x	16	S	200	22,40 ZP
M 10	x	20	S	200	31,50 ZP
M 10	x	25	S	100	35,00 ZP
M 10	x	30	S	100	41,50 ZP
M 10	x	35	S	100	52,00 ZP
M 10	x	40	S	100	63,00 ZP
M 10	x	45	S	100	80,00 ZP
M 10	x	50	S	100	86,00 ZP
M 12	x	10	S	100	48,80 ZP
M 12	x	12	S	100	42,80 ZP
M 12	x	16	S	100	38,00 ZP
M 12	x	20	S	100	44,50 ZP
M 12	x	25	S	100	51,00 ZP
M 12	x	30	S	100	59,00 ZP
M 12	x	35	S	100	75,80 ZP
M 12	x	40	S	100	63,00 ZP
M 12	x	50	S	100	99,00 ZP
M 12	x	60	S	50	110,00 ZP
M 16	x	16	S	50	100,00 ZP
M 16	x	20	S	100	99,00 ZP
M 16	x	25	S	100	109,00 ZP
M 16	x	30	S	100	114,00 ZP
M 16	x	35	S	50	119,00 ZP
M 16	x	40	S	50	130,00 ZP
M 16	x	45	S	50	150,00 ZP
M 16	x	50	S	50	165,00 ZP
M 16	x	60	S	50	190,00 ZP
M 16	x	70	S	50	265,00 ZP
M 16	x	80	S	50	295,00 ZP
M 16	x	90	S	25	330,00 ZP
M 20	x	20	S	100	196,00 ZP
M 20	x	30	S	50	215,00 ZP
M 20	x	40	S	50	230,00 ZP
M 20	x	50	S	50	260,00 ZP
M 20	x	60	S	25	285,00 ZP

ISO	04028.200	RAZ 370

4028

45 H



Hexagon socket set screws with full dog point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6

Stainless ➔ S. 509

ISO 4028 ➔ replaces DIN 915

M 3	x	3	S	200	8,50
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	200	7,50
M 3	x	8	S	200	7,80

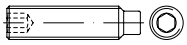
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20
M 4	x	4	S	200	7,30
M 4	x	5	S	200	6,40
M 4	x	6	S	200	6,50
M 4	x	8	S	200	6,70
M 4	x	10	S	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	200	8,30
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	35	S	200	51,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	8,10
M 5	x	6	S	200	7,10
M 5	x	8	S	200	7,30
M 5	x	10	S	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	14,20
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	5	S	200	10,90
M 6	x	6	S	200	9,10
M 6	x	8	S	200	7,70
M 6	x	10	S	200	7,90
M 6	x	12	S	200	8,30
M 6	x	16	S	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 8	x	6	S	200	12,60
M 8	x	8	S	200	10,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	8	S	200	18,80
M 10	x	10	S	200	15,60
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	18	S	200	17,70
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	55	S	100	81,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	80	S	100	110,00
M 12	x	10	S	100	35,00
M 12	x	12	S	100	29,00
M 12	x	16	S	100	24,20
M 12	x	18	S	100	28,00
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 16	x	16	S	100	57,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 16	x	100	S	25	217,00
M 20	x	20	S	100	112,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	40	S	25	230,00
M 24	x	45	S	25	260,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	70	S	25	430,00
M 24	x	80	S	25	470,00
M 24	x	90	S	25	510,00
M 24	x	100	S	25	730,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	04028.210		RAZ 370

4028 **45 H zinc plated**



Hexagon socket set screws with full dog point

Caution! Not for tensile loading.

Dimensions ➔ TI-20 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 509

ISO 4028 ➔ replaces DIN 915

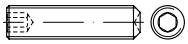
M 3	x	6	S	200	9,90 ZP
M 3	x	8	S	200	10,20 ZP
M 3	x	10	S	200	10,50 ZP
M 3	x	12	S	200	11,00 ZP
M 3	x	16	S	200	12,00 ZP
M 3	x	20	S	200	12,40 ZP
M 4	x	4	S	200	16,25 ZP
M 4	x	5	S	200	15,00 ZP
M 4	x	6	S	200	13,75 ZP
M 4	x	8	S	200	9,10 ZP
M 4	x	10	S	200	9,50 ZP
M 4	x	12	S	200	15,00 ZP
M 4	x	16	S	200	18,00 ZP
M 4	x	20	S	200	22,00 ZP
M 4	x	25	S	200	25,00 ZP
M 4	x	30	S	200	65,00 ZP
M 5	x	5	S	200	10,90 ZP
M 5	x	6	S	200	14,50 ZP
M 5	x	8	S	200	14,80 ZP
M 5	x	10	S	200	10,40 ZP
M 5	x	12	S	200	11,40 ZP
M 5	x	16	S	200	12,50 ZP
M 5	x	20	S	200	24,00 ZP
M 5	x	25	S	200	17,00 ZP
M 5	x	30	S	200	18,60 ZP
M 6	x	6	S	200	18,20 ZP
M 6	x	8	S	200	15,40 ZP
M 6	x	10	S	200	11,10 ZP
M 6	x	12	S	200	11,90 ZP
M 6	x	16	S	200	13,70 ZP
M 6	x	20	S	200	26,50 ZP
M 6	x	25	S	200	30,75 ZP
M 6	x	30	S	200	33,50 ZP
M 6	x	35	S	100	39,00 ZP
M 6	x	40	S	100	27,40 ZP
M 6	x	45	S	100	31,40 ZP
M 6	x	50	S	100	34,40 ZP
M 8	x	8	S	200	15,40 ZP
M 8	x	10	S	200	13,80 ZP
M 8	x	12	S	200	14,50 ZP
M 8	x	16	S	200	16,70 ZP
M 8	x	20	S	200	20,20 ZP
M 8	x	25	S	200	42,60 ZP
M 8	x	30	S	100	48,50 ZP
M 8	x	35	S	100	29,60 ZP
M 8	x	40	S	100	64,00 ZP
M 8	x	50	S	100	88,00 ZP
M 10	x	8	S	200	30,10 ZP
M 10	x	12	S	200	24,40 ZP
M 10	x	16	S	200	26,30 ZP
M 10	x	20	S	200	29,00 ZP
M 10	x	25	S	100	35,00 ZP
M 10	x	30	S	100	46,00 ZP
M 10	x	35	S	100	36,30 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	40	S	100	63,00 ZP
M 10	x	50	S	100	122,00 ZP
M 10	x	55	S	100	93,00 ZP
M 10	x	60	S	100	176,00 ZP
M 12	x	12	S	100	45,50 ZP
M 12	x	16	S	100	48,00 ZP
M 12	x	20	S	100	44,50 ZP
M 12	x	25	S	100	54,25 ZP
M 12	x	30	S	100	60,50 ZP
M 12	x	35	S	100	66,75 ZP
M 12	x	40	S	100	71,75 ZP
M 12	x	50	S	100	112,00 ZP
M 12	x	55	S	100	83,50 ZP
M 12	x	60	S	50	83,50 ZP
M 12	x	70	S	50	110,50 ZP
M 12	x	80	S	50	128,50 ZP
M 16	x	16	S	100	110,00 ZP
M 16	x	20	S	100	108,00 ZP
M 16	x	25	S	100	122,00 ZP
M 16	x	30	S	100	132,50 ZP
M 16	x	35	S	100	144,00 ZP
M 16	x	40	S	100	156,00 ZP
M 16	x	45	S	50	173,75 ZP
M 16	x	50	S	50	186,60 ZP
M 16	x	55	S	50	199,60 ZP
M 16	x	60	S	50	208,00 ZP
M 16	x	70	S	50	298,00 ZP
M 20	x	25	S	100	190,75 ZP
M 20	x	35	S	50	213,50 ZP
M 20	x	40	S	50	225,75 ZP
M 20	x	50	S	50	255,50 ZP
M 20	x	60	S	25	278,25 ZP
M 20	x	70	S	25	369,25 ZP
M 20	x	80	S	25	409,50 ZP
M 24	x	30	S	50	210,00 ZP
M 24	x	40	S	25	223,00 ZP

ISO	04029.200	RAZ 370

4029

45 H



Hexagon socket set screws with cup point

Caution! Not for tensile loading.

Dimensions ➔ TI-21 Standard conversion ➔ TI-6

Stainless ➔ S. 510

ISO 4029 ➔ replaces DIN 916

M 2	x	2	S	100	92,00
M 2	x	3	S	100	83,00
M 2	x	4	S	100	85,00
M 2	x	5	S	100	86,00
M 2	x	6	S	100	89,00
M 2,5	x	3	S	100	68,00
M 2,5	x	4	S	100	71,00
M 2,5	x	5	S	100	73,00
M 2,5	x	6	S	100	77,00
M 2,5	x	10	S	100	83,00
M 3	x	3	S	200	7,70
M 3	x	4	S	200	7,20
M 3	x	5	S	200	7,30
M 3	x	6	S	200	7,50
M 3	x	8	S	200	7,80
M 3	x	10	S	200	8,10
M 3	x	12	S	200	8,60
M 3	x	16	S	200	9,60
M 3	x	20	S	200	10,20

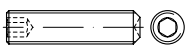
Dimensions			PU	Pieces	€/100/Mat.
M 4	x	4	S	200	6,70
M 4	x	5	S	200	6,40
M 4	x	6	S	200	6,50
M 4	x	8	S	200	6,70
M 4	x	10	S	200	6,90
M 4	x	12	S	200	7,30
M 4	x	16	S	200	8,30
M 4	x	20	S	200	8,50
M 4	x	25	S	200	14,00
M 4	x	30	S	200	37,00
M 4	x	40	S	200	60,00
M 5	x	4	S	200	9,80
M 5	x	5	S	200	7,30
M 5	x	6	S	200	7,10
M 5	x	8	S	1000	6,40
M 5	x	8	K	200	7,30
M 5	x	10	S	200	7,60
M 5	x	12	S	200	8,10
M 5	x	16	S	200	8,80
M 5	x	18	S	200	9,70
M 5	x	20	S	200	9,70
M 5	x	25	S	200	13,80
M 5	x	30	S	200	15,70
M 5	x	35	S	100	21,10
M 5	x	40	S	100	24,10
M 6	x	5	S	200	10,90
M 6	x	6	S	500	7,20
M 6	x	6	K	200	8,30
M 6	x	8	S	500	6,75
M 6	x	8	K	200	7,70
M 6	x	10	S	500	6,85
M 6	x	10	K	200	7,90
M 6	x	12	S	500	7,25
M 6	x	12	K	200	8,30
M 6	x	16	S	500	8,15
M 6	x	16	K	200	9,30
M 6	x	18	S	200	10,60
M 6	x	20	S	200	10,60
M 6	x	25	S	200	14,50
M 6	x	30	S	200	15,90
M 6	x	35	S	100	19,40
M 6	x	40	S	100	23,00
M 6	x	45	S	100	27,00
M 6	x	50	S	100	30,00
M 8	x	6	S	200	12,60
M 8	x	8	S	500	8,35
M 8	x	8	K	200	9,60
M 8	x	10	S	200	9,00
M 8	x	12	S	200	9,70
M 8	x	16	S	200	10,70
M 8	x	18	S	200	12,80
M 8	x	20	S	200	12,80
M 8	x	25	S	200	16,70
M 8	x	30	S	100	20,30
M 8	x	35	S	100	22,20
M 8	x	40	S	100	28,50
M 8	x	45	S	100	34,00
M 8	x	50	S	100	39,00
M 8	x	55	S	100	56,00
M 8	x	60	S	100	56,00
M 8	x	70	S	100	64,00
M 8	x	80	S	100	76,00
M 10	x	9	S	200	18,80
M 10	x	10	S	200	14,20
M 10	x	12	S	200	13,10
M 10	x	16	S	200	15,00
M 10	x	20	S	200	17,70
M 10	x	25	S	100	20,80
M 10	x	30	S	100	24,30
M 10	x	35	S	100	28,00
M 10	x	40	S	100	34,50
M 10	x	45	S	100	44,00
M 10	x	50	S	100	49,00
M 10	x	60	S	100	76,00
M 10	x	70	S	100	92,00

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	80	S	100	110,00
M 12	x	10	S	100	35,00
M 12	x	12	S	100	26,50
M 12	x	16	S	100	24,20
M 12	x	20	S	100	28,00
M 12	x	25	S	100	31,00
M 12	x	30	S	100	34,50
M 12	x	35	S	100	37,50
M 12	x	40	S	100	41,00
M 12	x	45	S	100	47,00
M 12	x	50	S	100	56,00
M 12	x	55	S	100	67,00
M 12	x	60	S	50	67,00
M 12	x	70	S	50	94,00
M 12	x	80	S	50	112,00
M 14	x	20	S	100	75,00
M 14	x	30	S	100	86,00
M 14	x	40	S	50	97,00
M 14	x	50	S	50	124,00
M 16	x	16	S	100	52,00
M 16	x	20	S	100	56,00
M 16	x	25	S	100	61,00
M 16	x	30	S	100	65,00
M 16	x	35	S	100	70,00
M 16	x	40	S	50	73,00
M 16	x	45	S	50	83,00
M 16	x	50	S	50	93,00
M 16	x	55	S	50	106,00
M 16	x	60	S	50	106,00
M 16	x	70	S	50	149,00
M 16	x	80	S	50	168,00
M 16	x	90	S	25	187,00
M 16	x	100	S	25	405,00
M 20	x	20	S	100	102,00
M 20	x	25	S	100	109,00
M 20	x	30	S	50	116,00
M 20	x	35	S	50	122,00
M 20	x	40	S	50	129,00
M 20	x	45	S	50	136,00
M 20	x	50	S	50	146,00
M 20	x	60	S	25	159,00
M 20	x	70	S	25	211,00
M 20	x	80	S	25	234,00
M 20	x	90	S	25	260,00
M 24	x	30	S	50	209,00
M 24	x	35	S	50	218,00
M 24	x	50	S	25	265,00
M 24	x	60	S	25	395,00
M 24	x	70	S	25	430,00
M 24	x	90	S	25	510,00
M 24	x	100	S	25	730,00

ISO	04029.210	RAZ 370

4029

45 H
zinc plated



Hexagon socket set screws with cup point

Caution! Not for tensile loading.

Dimensions ➔ TI-21 Standard conversion ➔ TI-6
Corrosion protection ➔ TI-217

Stainless ➔ S. 510

ISO 4029 ➔ replaces DIN 916

M 3	x	3	S	200	9,70 ZP
M 3	x	4	S	200	9,20 ZP
M 3	x	5	S	200	9,40 ZP

€/100 = price in € plus VAT when ordering full package unit

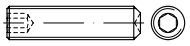
Dimensions	PU	Pieces	€/100/Mat.
M 3 x 6	S	200	9,60 ZP
M 3 x 8	S	200	10,00 ZP
M 3 x 10	S	200	10,20 ZP
M 3 x 12	S	200	10,80 ZP
M 3 x 16	S	200	11,70 ZP
M 3 x 20	S	200	12,40 ZP
M 4 x 4	S	200	8,50 ZP
M 4 x 5	S	200	8,50 ZP
M 4 x 6	S	200	8,50 ZP
M 4 x 8	S	200	8,70 ZP
M 4 x 10	S	200	12,60 ZP
M 4 x 12	S	200	13,70 ZP
M 4 x 16	S	200	14,90 ZP
M 4 x 20	S	200	15,40 ZP
M 5 x 5	S	200	9,60 ZP
M 5 x 6	S	200	9,30 ZP
M 5 x 8	S	200	9,70 ZP
M 5 x 10	S	200	10,20 ZP
M 5 x 12	S	200	14,90 ZP
M 5 x 16	S	200	15,40 ZP
M 5 x 20	S	200	17,10 ZP
M 5 x 25	S	200	25,50 ZP
M 5 x 30	S	200	27,40 ZP
M 5 x 40	S	100	35,80 ZP
M 6 x 5	S	200	19,50 ZP
M 6 x 6	S	200	13,30 ZP
M 6 x 8	S	200	10,40 ZP
M 6 x 10	S	200	10,80 ZP
M 6 x 12	S	200	11,40 ZP
M 6 x 16	S	200	13,20 ZP
M 6 x 20	S	200	16,10 ZP
M 6 x 25	S	200	21,60 ZP
M 6 x 30	S	200	28,50 ZP
M 6 x 35	S	100	33,95 ZP
M 6 x 40	S	100	49,00 ZP
M 6 x 45	S	100	47,25 ZP
M 6 x 50	S	100	55,00 ZP
M 8 x 6	S	200	22,80 ZP
M 8 x 8	S	200	13,20 ZP
M 8 x 10	S	200	12,70 ZP
M 8 x 12	S	200	13,80 ZP
M 8 x 16	S	200	15,90 ZP
M 8 x 20	S	200	20,50 ZP
M 8 x 25	S	200	27,00 ZP
M 8 x 30	S	100	32,50 ZP
M 8 x 35	S	100	34,40 ZP
M 8 x 40	S	100	40,70 ZP
M 8 x 45	S	100	59,50 ZP
M 8 x 50	S	100	68,25 ZP
M 10 x 8	S	200	22,00 ZP
M 10 x 10	S	200	21,10 ZP
M 10 x 12	S	200	19,10 ZP
M 10 x 14	S	200	30,00 ZP
M 10 x 16	S	200	22,50 ZP
M 10 x 20	S	200	27,00 ZP
M 10 x 25	S	100	36,50 ZP
M 10 x 30	S	100	40,00 ZP
M 10 x 35	S	100	52,00 ZP
M 10 x 40	S	100	63,00 ZP
M 10 x 50	S	100	86,00 ZP
M 10 x 60	S	100	105,00 ZP
M 10 x 70	S	100	121,00 ZP
M 10 x 80	S	100	121,00 ZP
M 12 x 10	S	100	39,00 ZP
M 12 x 12	S	100	31,00 ZP
M 12 x 16	S	100	38,50 ZP
M 12 x 20	S	100	44,50 ZP
M 12 x 25	S	100	51,00 ZP
M 12 x 30	S	100	59,00 ZP
M 12 x 35	S	100	64,00 ZP
M 12 x 40	S	100	70,00 ZP
M 12 x 45	S	100	82,25 ZP
M 12 x 50	S	100	77,00 ZP
M 12 x 60	S	50	84,00 ZP
M 16 x 16	S	100	91,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 20	S	100	99,00 ZP
M 16 x 25	S	100	109,00 ZP
M 16 x 30	S	100	114,00 ZP
M 16 x 35	S	100	121,00 ZP
M 16 x 40	S	50	132,00 ZP
M 16 x 50	S	50	152,00 ZP
M 16 x 60	S	50	165,00 ZP
M 16 x 70	S	50	210,00 ZP
M 16 x 90	S	25	248,00 ZP
M 20 x 20	S	100	162,00 ZP
M 20 x 30	S	50	176,00 ZP

~ISO	04029.205	RAZ 370

4029

45 H **fine**



Hexagon socket set screws with cup point, with metric fine pitch thread

Caution! Not for tensile loading.

Dimensions → TI-21 Standard conversion → TI-6

ISO 4029 → replaces DIN 916

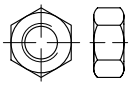
Dimensions	PU	Pieces	€/100/Mat.
M 6 x 0,75 x 6	S	100	91,00
M 6 x 0,75 x 8	S	100	98,00
M 6 x 0,75 x 10	S	100	107,00
M 6 x 0,75 x 12	S	100	112,00
M 6 x 0,75 x 16	S	100	119,00
M 6 x 0,75 x 20	S	100	120,00
M 8 x 1 x 6	S	100	47,00
M 8 x 1 x 8	S	100	32,00
M 8 x 1 x 10	S	100	41,00
M 8 x 1 x 12	S	100	49,00
M 8 x 1 x 16	S	100	73,00
M 8 x 1 x 20	S	100	81,00
M 8 x 1 x 25	S	100	102,00
M 8 x 1 x 30	S	100	110,00
M 8 x 1 x 40	S	100	139,00
M 8 x 1 x 50	S	100	173,00
M 10 x 1 x 8	S	100	64,00
M 10 x 1,25 x 8	S	100	298,00
M 10 x 1 x 10	S	100	48,00
M 10 x 1,25 x 10	S	100	158,00
M 10 x 1 x 12	S	100	66,00
M 10 x 1,25 x 12	S	100	195,00
M 10 x 1 x 16	S	100	82,00
M 10 x 1,25 x 16	S	100	211,00
M 10 x 1 x 20	S	100	121,00
M 10 x 1,25 x 20	S	100	218,00
M 10 x 1 x 25	S	100	124,00
M 10 x 1,25 x 25	S	100	223,00
M 10 x 1 x 30	S	100	129,00
M 10 x 1,25 x 30	S	100	235,00
M 12 x 1 x 10	S	100	336,00
M 12 x 1,5 x 10	S	100	174,00
M 12 x 1 x 12	S	100	132,00
M 12 x 1,25 x 12	S	100	201,00
M 12 x 1,5 x 12	S	100	177,00
M 12 x 1 x 16	S	100	144,00
M 12 x 1,25 x 16	S	100	206,00
M 12 x 1,25 x 20	S	100	222,00
M 12 x 1,5 x 20	S	100	201,00
M 12 x 1,25 x 25	S	100	235,00
M 12 x 1,5 x 25	S	100	210,00
M 12 x 1,25 x 30	S	100	245,00
M 16 x 1,5 x 16	S	50	300,00

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 1,5 x 20	S	50	302,00
M 16 x 1,5 x 25	S	50	313,00
M 16 x 1,5 x 30	S	50	329,00
M 16 x 1,5 x 40	S	50	349,00

ISO	04032.(**)	*

4032

5-2 **AD W7**



Hexagon nuts, ISO type 1

For press. vessel const. as per AD regul. ≤ M 39,
*M 5 – M 39 = RAZ 3320 other ∅ = RAZ 411,
**M 6 – M 39 = 504 others ∅ = 500

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 511

ISO 4032 → replaces DIN 934

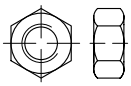
M 6	S	100	9,70
M 8	S	100	11,40
M 10	S	100	16,20
M 12	S	100	17,80
M 14	S	100	31,00
M 16	S	100	32,00
M 18	S	50	57,00
M 20	S	50	67,00
M 22	S	50	88,00
M 24	S	50	103,00
M 27	S	50	164,00
M 30	S	25	211,00
M 33	S	10	335,00
M 36	S	10	405,00
M 39	S	5	590,00
M 42	S	1	890,00
M 45	S	1	1090,00

ISO	04032.514	RAZ 3320

4032

5-2 **AD W7**

zinc plated



Hexagon nuts, ISO type 1

For pressure vessel const. as per AD regulation

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

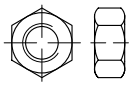
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 6	S	100	12,60 ZP
M 8	S	100	16,00 ZP
M 10	S	100	19,10 ZP
M 12	S	100	22,20 ZP
M 16	S	100	40,00 ZP
M 20	S	100	83,00 ZP
M 24	S	50	130,00 ZP
M 27	S	50	203,00 ZP
M 30	S	25	270,00 ZP
M 33	S	10	405,00 ZP
M 36	S	10	510,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	04032.564		RAZ 3320

4032 5-2 **AD W7**
zinc plated yellow



Hexagon nuts, ISO type 1

For pressure vessel const. as per AD regulation

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

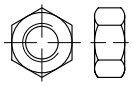
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 12	S	100	22,50 YZP
M 16	S	100	41,50 YZP
M 20	S	100	84,00 YZP
M 24	S	50	133,00 YZP
M 30	S	25	275,00 YZP

ISO	04032.524	RAZ 3320

4032 5-2 **AD W7**
hot dip galvanized



Hexagon nuts, ISO type 1

For pressure vessel const. as per AD regulations, Thread tolerance 6H

Dimensions → TI-61 Corrosion protection → TI-219
Mech. properties → TI-221

Stainless → S. 511

ISO 4032 → replaces DIN 934

M 10	S	100	30,00 HDG
M 12	S	100	31,00 HDG
M 16	S	100	57,00 HDG
M 20	S	50	114,00 HDG
M 24	S	50	184,00 HDG
M 27	S	50	250,00 HDG
M 30	S	25	320,00 HDG
M 33	S	25	400,00 HDG
M 36	S	10	750,00 HDG

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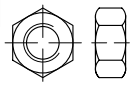
Dimensions	PU	Pieces	€/100/Mat.
ISO	04032.004		RAZ 3320

4032 C35 **AD W7**



Hexagon nuts, ISO type 1

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate

Dimensions → TI-61 Mech. properties → TI-221

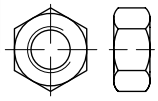
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 12	S	100	39,00
M 16	S	100	69,00
M 20	S	50	104,00
M 24	S	25	177,00
M 27	S	25	285,00
M 30	S	25	415,00
M 33	S	10	590,00
M 36	S	10	760,00

ISO	04032.374	RAZ 400

4032 1.7218 +QT (25CrMo4)



Hexagon nuts, ISO type 1

Approved for use acc. to pressure equipment directive → cert. 3.1 on request

Dimensions → TI-15 Properties → TI-232

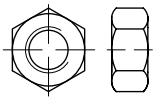
ISO 4032 → replaces DIN 934

DGRL Zulassung

M 12	S	100	32,00
M 16	S	100	56,00
M 20	S	50	118,00
M 24	S	50	181,00
M 27	S	50	287,00
M 30	S	25	370,00
M 33	S	10	587,00
M 36	S	10	709,00
M 39	S	5	1035,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	04032.375		RAZ 400

4032 1.7218 +QT (25CrMo4)
zinc plated



Hexagon nuts, ISO type 1

Approved for use acc. to pressure equipment directive → cert. 3.1 on request

Dimensions → TI-61 Corrosion protection → TI-217
Properties → TI-232

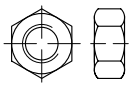
ISO 4032 → replaces DIN 934

DGRL Zulassung

M 12	S	100	39,00 ZP
M 16	S	100	70,00 ZP
M 20	S	100	146,00 ZP
M 24	S	50	228,00 ZP
M 27	S	50	356,00 ZP
M 30	S	25	473,00 ZP
M 33	S	10	709,00 ZP
M 36	S	10	895,00 ZP

ISO	04032.301	*

4032 6 AU



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3320 other ∅ = RAZ 411, marking from ∅ M 12

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

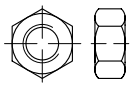
ISO 4032 → replaces DIN 934

M 1,0	K	100	186,00
M 1,2	K	100	122,00
M 1,4	K	100	126,00
M 1,6	K	100	83,60
M 1,7	K	100	81,20
M 2	S	1000	22,00
M 2	K	100	28,80
M 2,3	S	1000	14,60
M 2,5	S	1000	14,60
M 2,5	K	100	28,80
M 2,6	S	1000	23,60
M 2,6	K	100	28,80
M 3	S	1000	23,60
M 3	K	100	27,20
M 3,5	S	1000	24,80
M 3,5	K	100	28,00
M 4	S	1000	16,20
M 4	K	100	28,40
M 5	S	1000	21,20
M 6	S	1000	27,20
M 8	S	1000	52,80
M 10	S	500	87,60

Dimensions	PU	Pieces	€/100/Mat.
M 12	S	250	124,00
M 14	S	250	186,00
M 16	S	100	69,00
M 18	S	50	104,00
M 20	S	50	130,00
M 22	S	50	156,00
M 24	S	25	225,00
M 27	S	25	360,00
M 30	S	10	520,00
M 36	S	10	880,00
M 39	S	5	1100,00
M 42	S	1	5800,00
M 45	S	1	7160,00
M 48	S	1	8560,00
M 52	S	1	10400,00
M 56	S	1	14200,00
M 60	S	1	17000,00
M 64	S	1	28000,00
M 68	S	1	32000,00

ISO | 04032.304 | *

4032 **6 AU** **left**



Hexagon nuts, ISO type 1, with metric left hand thread

*M 5 –M 39 = RAZ 3320 other ∅ = RAZ 411, marking from ∅ M 12

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 512

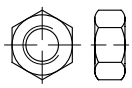
ISO 4032 → replaces DIN 934

M 4	S	100	97,60
M 5	S	100	97,60
M 6	S	100	97,60
M 8	S	100	102,00
M 10	S	100	38,50
M 12	S	100	190,00
M 14	S	50	79,00
M 16	S	50	102,00
M 18	S	50	144,00
M 20	S	50	191,00
M 22	S	25	232,00
M 24	S	25	300,00
M 27	S	10	470,00
M 30	S	10	600,00
M 36	S	5	1050,00
M 42	S	1	7440,00
M 48	S	1	11800,00

Dimensions	PU	Pieces	€/100/Mat.
M 2,5	S	1000	2,15 blank
M 2,5	K	100	4,45 blank
M 3	S	1000	1,40 blank
M 3	K	100	3,65 blank
M 4	S	1000	1,55 blank
M 4	K	100	3,90 blank
M 5	S	1000	2,00 blank
M 6	S	1000	2,40 blank
M 7	S	1000	3,85 blank
M 8	S	1000	3,80 blank
M 10	S	500	7,70 blank
M 12	S	500	11,10 blank
M 14	S	500	15,40 blank
M 16	S	200	22,20 blank
M 18	S	100	33,50 blank
M 20	S	100	39,00 blank
M 22	S	50	72,00 blank
M 24	S	50	69,00 blank
M 27	S	25	125,00 blank
M 30	S	25	157,00 blank
M 33	S	10	210,00 blank
M 36	S	10	255,00 blank
M 39	S	5	495,00 blank
M 42	S	5	670,00 blank
M 45	S	1	860,00 blank
M 48	S	1	1270,00 blank
M 52	S	1	1490,00 blank
M 56	S	1	2850,00 blank
M 60	S	1	3250,00 blank
M 64	S	1	4000,00 blank

ISO | 04032.810 | *

4032 **8** **zinc plated**



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3330 other ∅ = RAZ 412

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

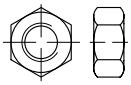
ISO 4032 → replaces DIN 934

M 2	S	1000	2,15 ZP
M 2	K	100	4,50 ZP
M 2,5	S	1000	2,20 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 2,5	K	100	4,50 ZP
M 3	S	1000	1,45 ZP
M 3	K	100	3,80 ZP
M 4	S	1000	1,75 ZP
M 4	K	100	4,05 ZP
M 5	S	1000	2,30 ZP
M 5	K	100	5,00 ZP
M 6	S	1000	2,85 ZP
M 6	K	100	5,60 ZP
M 7	S	1000	4,30 ZP
M 8	S	1000	4,60 ZP
M 8	K	100	7,30 ZP
M 10	S	500	9,20 ZP
M 10	K	100	12,20 ZP
M 12	S	500	13,40 ZP
M 12	K	100	16,40 ZP
M 14	S	500	19,00 ZP
M 16	S	200	27,50 ZP
M 16	K	50	32,00 ZP
M 18	S	100	40,50 ZP
M 20	S	100	49,50 ZP
M 20	K	25	63,00 ZP
M 22	S	50	73,00 ZP
M 24	S	50	84,00 ZP
M 27	S	50	151,00 ZP
M 30	S	25	190,00 ZP
M 36	S	10	315,00 ZP
M 39	S	5	560,00 ZP
M 42	S	1	750,00 ZP
M 45	S	1	950,00 ZP
M 48	S	1	1420,00 ZP
M 52	S	1	1660,00 ZP
M 56	S	1	3100,00 ZP
M 60	S	1	4200,00 ZP
M 64	S	1	4350,00 ZP
M 68	S	1	5500,00 ZP

ISO | 04032.359 | RAZ 3330

4032 **8**** **zinc plated 8 TLP**



Hexagon nuts

*< M 5 = RAZ 412,
**≤M 5: property class = 6

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

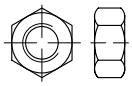
Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 2,5	S	1000	2,90 ZP TLP
M 3	S	1000	1,90 ZP TLP
M 3	K	100	4,90 ZP TLP
M 4	S	1000	2,35 ZP TLP
M 4	K	100	5,50 ZP TLP
M 5	S	1000	2,95 ZP TLP
M 6	S	1000	3,85 ZP TLP
M 8	S	1000	6,15 ZP TLP
M 10	S	500	12,70 ZP TLP
M 12	S	500	18,30 ZP TLP
M 14	S	100	32,00 ZP TLP
M 16	S	200	37,00 ZP TLP
M 20	S	100	64,00 ZP TLP
M 24	S	50	107,00 ZP TLP
M 30	S	25	258,00 ZP TLP
M 36	S	10	425,00 ZP TLP

Dimensions | PU | Pieces | €/100/Mat.

ISO	04032.(**)	*
4032	**8** **zinc plated yellow****	



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3330 other ∅ = RAZ 412,
**< M 6 min. coating thickness 5µm = (860),
**from M 6 min. coating thickness 8µm = (311)

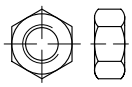
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 2,5	S	1000	2,30 YZP
M 3	S	1000	1,50 YZP
M 3	K	100	3,90 YZP
M 4	S	1000	1,85 YZP
M 4	K	100	4,40 YZP
M 5	S	1000	2,45 YZP
M 6	S	1000	3,05 YZP8
M 8	S	1000	4,90 YZP8
M 10	S	500	9,80 YZP8
M 12	S	500	14,40 YZP8
M 14	S	200	21,00 YZP8
M 16	S	200	30,50 YZP8
M 20	S	100	54,00 YZP8
M 24	S	50	88,00 YZP8
M 30	S	25	206,00 YZP8
M 36	S	10	340,00 YZP8

ISO	04032.353	RAZ 1550
4032	**8** **zinc flake coated**	



Hexagon nuts, ISO type 1

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-61 Corrosion protection → TI-218
Mech. properties → TI-221

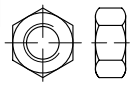
Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 6	S	1000	4,40 flZn
M 8	S	1000	12,60 flZn
M 10	S	500	24,60 flZn
M 12	S	500	41,50 flZn
M 16	S	200	63,00 flZn
M 20	S	100	164,00 flZn
M 24	S	50	255,00 flZn

Dimensions | PU | Pieces | €/100/Mat.

ISO	04032.820	*
4032	**8** **hot dip galvanized**	



Hexagon nuts, ISO type 1

Thread tolerance 6H,
*M 5 – M 39 = RAZ 3340 other ∅ = RAZ 413

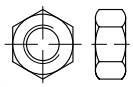
Dimensions → TI-61 Corrosion protection → TI-219
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 6	S	1000	5,20 HDG
M 8	S	1000	9,50 HDG
M 10	S	500	16,70 HDG
M 12	S	500	22,80 HDG
M 14	S	500	39,50 HDG
M 16	S	200	44,00 HDG
M 18	S	50	85,00 HDG
M 20	S	100	79,00 HDG
M 22	S	50	149,00 HDG
M 24	S	50	132,00 HDG
M 27	S	25	242,00 HDG
M 30	S	25	300,00 HDG
M 33	S	10	405,00 HDG
M 36	S	10	520,00 HDG
M 39	S	5	940,00 HDG
M 42	S	5	1300,00 HDG
M 45	S	1	1690,00 HDG
M 48	S	1	1990,00 HDG
M 52	S	1	3000,00 HDG
M 56	S	1	4600,00 HDG
M 64	S	1	5900,00 HDG

ISO	04032.830	*
4032	**8** **nickel plated**	



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3330 other ∅ = RAZ 412

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

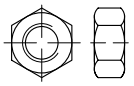
Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 3	S	1000	1,85 NP
M 4	S	1000	2,25 NP
M 5	S	1000	3,05 NP
M 6	S	1000	4,00 NP
M 8	S	1000	7,90 NP
M 10	S	500	15,50 NP

Dimensions | PU | Pieces | €/100/Mat.

ISO	04032.805	RAZ 3330
4032	**8**	**left**



Hexagon nuts, ISO type 1 with metric left hand thread

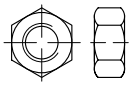
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 512

ISO 4032 → replaces DIN 934

M 6 -LH	S	100	7,60
M 8 -LH	S	100	9,50
M 10 -LH	S	100	15,50
M 12 -LH	S	100	26,97
M 16 -LH	S	50	52,00
M 20 -LH	S	50	75,00
M 24 -LH	S	50	171,00
M 30 -LH	S	25	285,00

ISO	04032.814	RAZ 3330
4032	**8** **zinc plated**	**left**



Hexagon nuts, ISO type 1, with metric left hand thread

*M 5 – M 39 = RAZ 3330 other ∅ = RAZ 412

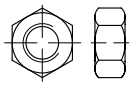
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 512

ISO 4032 → replaces DIN 934

M 4	S	100	6,90 ZP
M 5	S	100	620,00 ZP
M 6	S	100	8,40 ZP
M 8	S	100	10,50 ZP
M 10	S	100	17,30 ZP
M 12	S	100	26,00 ZP
M 16	S	50	59,00 ZP
M 20	S	50	84,00 ZP
M 24	S	50	190,00 ZP
M 30	S	25	320,00 ZP
M 36	S	1	950,00 ZP
M 39	S	1	1750,00 ZP
M 42	S	1	2200,00 ZP
M 48	S	1	3500,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	04032.809		RAZ 1400
4032	**8**		**AD W7**
	-50 to +300 °C		



Hexagon nuts, ISO type 1, applicable from -50 up to +300 °C

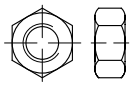
With inspection certificate 3.1,
prices are plus certificate costs

Dimensions → TI-61 Mech. properties → TI-221

ISO 4032 → replaces DIN 934

M 8	S	1000	5,70
M 10	S	500	11,60
M 12	S	500	16,70
M 16	S	200	33,30
M 20	S	100	58,50
M 24	S	50	104,00
M 27	S	25	188,00

ISO	04032.819	RAZ 1400
4032	**8**	**AD W7**
	ZP, -50 to +300°C	



Hexagon nuts, ISO type 1, applicable from -50 up to +300 °C

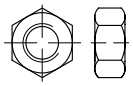
With inspection certificate 3.1,
prices are plus certificate costs

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

ISO 4032 → replaces DIN 934

M 8	S	1000	6,90 ZP
M 10	S	500	13,80 ZP
M 12	S	500	20,10 ZP
M 16	S	200	41,30 ZP
M 20	S	100	74,30 ZP
M 24	S	50	126,00 ZP
M 27	S	50	227,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	04032.100		*
4032	**10**		



Hexagon nuts, ISO type 1

*M 5 - M 39 = RAZ 3320 other ∅ = RAZ 411

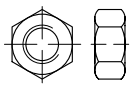
Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 4	S	1000	5,10
M 4	K	100	7,20
M 5	S	1000	5,10
M 6	S	1000	5,70
M 8	S	1000	7,80
M 10	S	500	14,20
M 12	S	500	22,70
M 14	S	100	36,50
M 16	S	100	44,50
M 18	S	100	65,00
M 20	S	50	69,00
M 22	S	50	102,00
M 24	S	50	113,00
M 27	S	50	157,00
M 30	S	10	242,00
M 33	S	10	320,00
M 36	S	10	420,00
M 39	S	5	710,00
M 42	S	1	1080,00
M 45	S	1	1330,00
M 48	S	1	1540,00
M 52	S	1	3050,00

ISO	04032.110	RAZ 3320
4032	**10**	
	zinc plated	



Hexagon nuts, ISO type 1

*M 5 - M 39 = RAZ 3320 other ∅ = RAZ 411

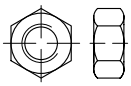
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 4	K	100	7,70 ZP
M 5	S	1000	5,60 ZP
M 6	S	1000	6,20 ZP
M 8	S	1000	8,70 ZP
M 10	S	500	16,30 ZP
M 12	S	500	26,00 ZP
M 14	S	100	41,50 ZP
M 16	S	100	51,00 ZP
M 18	S	100	71,50 ZP
M 20	S	50	80,00 ZP
M 22	S	50	110,00 ZP
M 24	S	50	134,00 ZP
M 27	S	50	165,00 ZP
M 30	S	10	285,00 ZP
M 33	S	10	410,00 ZP
M 36	S	10	510,00 ZP
M 39	S	1	810,00 ZP
M 42	S	5	1210,00 ZP
M 48	S	1	1210,00 ZP
M 52	S	1	3200,00 ZP

ISO	04032.180	RAZ 3320
4032	**10**	
	zinc plated 8 TLP	



Hexagon nuts, ISO type 1

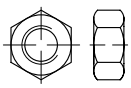
Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 5	S	1000	6,65 ZP TLP
M 6	S	1000	7,80 ZP TLP
M 8	S	1000	11,00 ZP TLP
M 10	S	500	20,80 ZP TLP
M 12	S	500	34,00 ZP TLP
M 16	S	100	65,00 ZP TLP
M 20	S	50	102,00 ZP TLP
M 24	S	50	170,00 ZP TLP
M 27	S	50	239,00 ZP TLP
M 30	S	10	369,00 ZP TLP

ISO	04032.354	RAZ 1560
4032	**10**	
	zinc flake coated	



Hexagon nuts, ISO type 1

Friction coefficient 0,09 - 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-61 Corrosion protection → TI-218
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

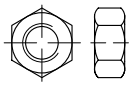
ISO 4032 → replaces DIN 934

M 6	S	1000	8,10 flZn
M 8	S	1000	13,00 flZn
M 10	S	500	22,70 flZn
M 12	S	500	37,00 flZn
M 16	S	100	70,00 flZn
M 20	S	50	144,00 flZn
M 24	S	50	204,00 flZn
M 30	S	25	253,26 flZn

Dimensions	PU Pieces	€/100/Mat.
ISO	04032.120	RAZ 3340

4032

10
hot dip galvanized



Hexagon nuts, ISO type 1

Thread tolerance 6H

Dimensions → TI-61 Corrosion protection → TI-219
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

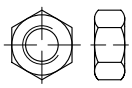
ISO 4032 → replaces DIN 934

M 12	S	100	60,00 HDG
M 16	S	100	180,00 HDG
M 20	S	100	76,90 HDG
M 22	S	50	350,00 HDG
M 24	S	50	360,00 HDG
M 27	S	25	600,00 HDG
M 30	S	25	550,00 HDG
M 33	S	10	950,00 HDG
M 36	S	10	1100,00 HDG
M 42	S	1	3000,00 HDG
M 48	S	1	3750,00 HDG

ISO	04032.200	RAZ 3320

4032

12



Hexagon nuts, ISO type 1

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 511
Brass, aluminium, titanium, copper → S. 589

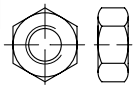
ISO 4032 → replaces DIN 934

M 6	S	100	13,60
M 8	S	100	19,10
M 10	S	100	34,00
M 12	S	500	494,13
M 16	S	100	71,00
M 20	S	50	142,00
M 24	S	25	248,00
M 27	S	25	465,00
M 30	S	10	710,00
M 36	S	10	770,00

Dimensions	PU Pieces	€/100/Mat.
ISO	04033.200	RAZ 3350

4033

12



Hexagon nuts, ISO type 2

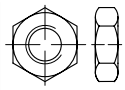
Dimensions → TI-61 Mech. properties → TI-221

M 6	S	100	13,60
M 8	S	100	19,10
M 10	S	100	34,00
M 12	S	100	48,00
M 16	S	100	71,00
M 20	S	50	142,00
M 24	S	50	248,00
M 27	S	25	465,00
M 30	S	10	710,00
M 36	S	10	1030,00

ISO	04035.400	RAZ 170

4035

04



Hexagon thin nuts, chamfered

*M 10, 12, 14, 22 = RAZ 3370

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 513
Brass → S. 590

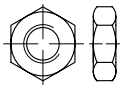
ISO 4035 → replaces DIN 439 type B

M 2	S	1000	3,20
M 2	K	100	6,30
M 2,5	S	1000	3,20
M 2,5	K	100	6,30
M 3	S	1000	2,55
M 3	K	100	5,40
M 3,5	K	100	5,60
M 4	S	1000	2,85
M 4	K	100	5,90
M 5	S	1000	3,25
M 5	K	100	6,20
M 6	S	1000	3,60
M 6	K	100	6,50
M 8	S	1000	7,00
M 8	K	100	9,80
M 10	S	500	13,50
M 12	S	100	24,20
M 14	S	100	29,50
M 16	S	100	32,00
M 18	S	100	60,00
M 20	S	50	71,00
M 22	S	50	109,00
M 24	S	50	128,00
M 27	S	25	240,00
M 30	S	25	255,00
M 33	S	10	455,00
M 36	S	10	540,00
M 42	S	10	1110,00

Dimensions	PU Pieces	€/100/Mat.
ISO	04035.410	RAZ 170

4035

04
zinc plated



Hexagon thin nuts, chamfered

*M 10, 12, 14, 22 = RAZ 3370

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 513
Brass → S. 590

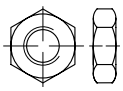
ISO 4035 → replaces DIN 439 type B

M 2	S	1000	3,25 ZP
M 2,5	S	1000	3,25 ZP
M 3	S	1000	2,60 ZP
M 3	K	100	5,50 ZP
M 4	S	1000	3,05 ZP
M 4	K	100	6,00 ZP
M 5	S	1000	3,55 ZP
M 5	K	100	6,40 ZP
M 6	S	1000	4,05 ZP
M 6	K	100	7,00 ZP
M 8	S	1000	7,90 ZP
M 8	K	100	10,90 ZP
M 10	S	500	15,70 ZP
M 12	S	100	27,50 ZP
M 14	S	100	33,50 ZP
M 16	S	100	36,50 ZP
M 20	S	50	79,00 ZP
M 24	S	50	143,00 ZP
M 30	S	25	285,00 ZP
M 33	S	10	515,00 ZP
M 36	S	10	600,00 ZP
M 42	S	10	1170,00 ZP

ISO	04035.308	RAZ 170

4035

04
zinc plated 8 TLP



Hexagon thin nuts, chamfered

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

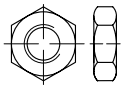
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

BM 3	S	1000	3,50 ZP TLP
BM 4	S	1000	4,20 ZP TLP
BM 5	S	1000	4,90 ZP TLP
BM 6	S	100	5,65 ZP TLP
BM 8	S	1000	10,70 ZP TLP

Dimensions	PU Pieces	€/100/Mat.
ISO	04035.460	RAZ 170

4035 04 zinc plated yellow



Hexagon thin nuts, chamfered

*M 10, 12 = RAZ 3370

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

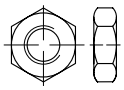
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

M 3	S	1000	2,80 YZP
M 4	S	1000	3,35 YZP
M 5	S	1000	3,90 YZP
M 6	S	1000	4,50 YZP
M 8	S	1000	8,50 YZP
M 12	S	100	29,50 YZP
M 16	S	100	39,00 YZP

ISO	04035.470	RAZ 170

4035 04 zinc flake coated



Hexagon thin nuts, chamfered

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free,
*M 10, 12 = RAZ 3370

Dimensions → TI-62 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

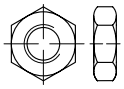
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

M 6	S	1000	5,30 flZn
M 8	S	1000	10,30 flZn
M 10	S	500	20,50 flZn
M 12	S	100	36,00 flZn
M 16	S	100	47,50 flZn
M 20	S	50	103,00 flZn
M 24	S	50	186,00 flZn
M 30	S	25	414,00 flZn

Dimensions	PU Pieces	€/100/Mat.
ISO	04035.420	RAZ 170

4035 04 hot dip galvanized



Hexagon thin nuts, chamfered

Thread tolerance 6H,
*M 10, 12 = RAZ 3370

Dimensions → TI-62 Corrosion protection → TI-219
Mech. properties → TI-221 Standard conversion → TI-7

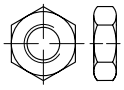
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

M 8	S	100	40,00 HDG
M 10	S	100	40,00 HDG
M 12	S	100	40,00 HDG
M 16	S	100	45,50 HDG
M 20	S	50	97,00 HDG
M 24	S	50	173,00 HDG
M 27	S	25	310,00 HDG
M 30	S	25	345,00 HDG

ISO	04035.414	RAZ 170

4035 04 zinc plated left



Hexagon thin nuts, chamfered, with metric fine left hand thread

*M 10, 12 = RAZ 3370

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

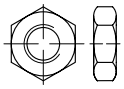
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

M 6	S	100	30,00 ZP
M 8	S	100	15,00 ZP
M 10	S	100	30,00 ZP
M 12	S	100	60,00 ZP
M 16	S	50	95,00 ZP
M 20	S	50	180,00 ZP
M 24	S	25	350,00 ZP
M 30	S	25	600,00 ZP
M 36	S	10	1600,00 ZP
M 42	S	10	1800,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	04035.500	RAZ 3370

4035 05



Hexagon thin nuts, chamfered

Dimensions → TI-62 Mech. properties → TI-221

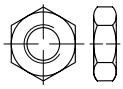
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

M 10	S	500	35,00
M 12	S	100	64,00
M 14	S	100	193,00
M 22	S	50	385,00

ISO	04035.510	RAZ 3370

4035 05 zinc plated



Hexagon thin nuts, chamfered

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221

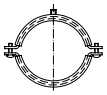
Stainless → S. 513
Brass → S. 590

ISO 4035 → replaces DIN 439 type B

M 10	S	500	36,50 ZP
M 12	S	100	68,00 ZP
M 14	S	100	198,00 ZP
M 22	S	50	400,00 ZP

~DIN	04109.010	RAZ 560

4109 Steel + inlay zinc plated



Screwed tubular clamps, comb. thread connector M 8/M 10, noise protection inlay ~ DIN 4109

≤ 71 = steel strip 20 x 1,0,
≥ 72 = steel strip 25 x 2,5,
temperature-resistant -50 up to +110 °C

Dimensions → TI-129

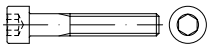
for pipe ∅ from-to/combined thread connector

20-23 M 8/M 10	S	100	275,00 ZP
25-28 M 8/M 10	S	100	295,00 ZP
32-35 M 8/M 10	S	100	310,00 ZP
40-43 M 8/M 10	S	100	350,00 ZP
48-53 M 8/M 10	S	50	415,00 ZP
57-61 M 8/M 10	S	50	465,00 ZP
60-64 M 8/M 10	S	50	500,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	04762.800	RAZ 360

4762

8.8



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 513

ISO 4762 → replaces DIN 912 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	4	S	500	27,50
M 3	x	5	S	500	27,50
M 3	x	6	S	500	7,70
M 3	x	8	S	500	5,30
M 3	x	10	S	500	4,40
M 3	x	12	S	500	4,65
M 3	x	14	S	500	7,55
M 3	x	16	S	500	4,85
M 3	x	18	S	500	5,05
M 3	x	20	S	500	5,20
M 3	x	22	S	500	9,75
M 3	x	25	S	500	5,55
M 3	x	30	S	500	6,25
M 3	x	35	S	500	24,25
M 3	x	35	K	100	27,25
M 3	x	40	S	500	25,60
M 3	x	40	K	100	28,65
M 3	x	45	S	500	64,90
M 3	x	45	K	100	67,90
M 3	x	50	S	500	72,20
M 3	x	50	K	100	75,20
M 4	x	4	S	500	86,00
M 4	x	5	S	500	16,10
M 4	x	5	K	100	19,10
M 4	x	6	S	500	9,25
M 4	x	6	K	100	12,30
M 4	x	8	S	500	5,40
M 4	x	8	K	100	8,40
M 4	x	10	S	500	4,00
M 4	x	10	K	100	7,05
M 4	x	12	S	500	4,30
M 4	x	12	K	100	7,30
M 4	x	14	S	500	6,85
M 4	x	16	S	500	4,10
M 4	x	16	K	100	7,15
M 4	x	18	S	500	4,35
M 4	x	18	K	100	7,35
M 4	x	20	S	500	4,40
M 4	x	20	K	100	7,50
M 4	x	22	S	500	8,40
M 4	x	25	S	500	4,90
M 4	x	25	K	100	8,00
M 4	x	28	S	500	9,70
M 4	x	30	S	500	5,40
M 4	x	30	K	100	8,45
M 4	x	35	S	500	6,50
M 4	x	35	K	100	9,55
M 4	x	40	S	500	6,85
M 4	x	40	K	100	9,90
M 4	x	45	S	500	14,85
M 4	x	45	K	100	17,85
M 4	x	50	S	500	16,40
M 4	x	50	K	100	19,45
M 4	x	55	S	200	19,70
M 4	x	55	K	100	22,70
M 4	x	60	S	200	19,70
M 4	x	60	K	100	22,70
M 4	x	65	S	200	30,80
M 4	x	65	K	100	33,80
M 4	x	70	S	200	30,80
M 4	x	70	K	100	33,80
M 4	x	75	S	200	55,95
M 4	x	80	S	200	64,30
M 4	x	85	S	200	247,00
M 4	x	90	S	200	272,00
M 4	x	95	S	200	298,00
M 4	x	100	S	200	322,00
M 4	x	110	S	200	345,00
M 4	x	120	S	200	395,00
M 5	x	5	S	500	87,90
M 5	x	6	S	500	9,75
M 5	x	6	K	100	12,80
M 5	x	8	S	500	7,55
M 5	x	8	K	100	10,55
M 5	x	10	S	500	3,90
M 5	x	10	K	100	6,90
M 5	x	12	S	500	4,00
M 5	x	12	K	100	7,05
M 5	x	14	S	500	6,85
M 5	x	16	S	500	3,90
M 5	x	16	K	100	6,90
M 5	x	18	S	500	4,20
M 5	x	18	K	100	7,20
M 5	x	20	S	500	4,30
M 5	x	20	K	100	7,30
M 5	x	22	S	500	7,70
M 5	x	25	S	500	4,40
M 5	x	25	K	100	7,50
M 5	x	30	S	500	5,45
M 5	x	30	K	100	8,50
M 5	x	35	S	200	5,85
M 5	x	40	S	200	6,20
M 5	x	45	S	200	10,60
M 5	x	50	S	200	15,20
M 5	x	55	S	200	18,75
M 5	x	60	S	200	19,95
M 5	x	65	S	200	28,50
M 5	x	70	S	200	29,05
M 5	x	75	S	200	36,65
M 5	x	80	S	200	38,55
M 5	x	85	S	200	53,60
M 5	x	90	S	200	49,10
M 5	x	95	S	200	63,05
M 5	x	100	S	200	52,50
M 5	x	105	S	100	136,00
M 5	x	110	S	200	58,95
M 5	x	115	S	100	161,00
M 5	x	120	S	100	64,90
M 5	x	125	S	100	274,00
M 5	x	130	S	100	250,00
M 5	x	135	S	100	301,00
M 5	x	140	S	100	420,00
M 5	x	145	S	100	558,00
M 5	x	150	S	100	540,00
M 5	x	155	S	100	566,00
M 5	x	160	S	100	553,00
M 5	x	165	S	100	590,00
M 5	x	170	S	100	586,00
M 5	x	175	S	100	625,00
M 5	x	180	S	100	607,00
M 5	x	185	S	100	745,00
M 5	x	190	S	100	745,00
M 5	x	195	S	100	813,00
M 5	x	200	S	100	795,00
M 5	x	210	S	100	950,00
M 5	x	220	S	100	972,00
M 6	x	6	S	500	25,45
M 6	x	8	S	500	8,55
M 6	x	8	K	100	11,60
M 6	x	10	S	500	4,10
M 6	x	10	K	100	7,15
M 6	x	12	S	500	4,30
M 6	x	12	K	100	7,30
M 6	x	14	S	500	6,35
M 6	x	16	S	500	4,00
M 6	x	16	K	100	7,05
M 6	x	18	S	500	4,30
M 6	x	18	K	100	7,30
M 6	x	20	S	500	4,35
M 6	x	20	K	100	7,35
M 6	x	22	S	500	7,70
M 6	x	22	K	100	10,75
M 6	x	25	S	500	4,40
M 6	x	25	K	100	7,50
M 6	x	28	S	500	12,05
M 6	x	30	S	500	5,15
M 6	x	30	K	100	8,15
M 6	x	35	S	200	5,55
M 6	x	40	S	200	6,20
M 6	x	45	S	200	8,10
M 6	x	50	S	200	8,50
M 6	x	55	S	200	13,55
M 6	x	60	S	200	14,40
M 6	x	65	S	200	19,45
M 6	x	70	S	200	19,95
M 6	x	75	S	200	27,80
M 6	x	80	S	200	28,50
M 6	x	85	S	200	37,20
M 6	x	90	S	200	33,60
M 6	x	95	S	200	87,90
M 6	x	100	S	200	39,40
M 6	x	105	S	100	87,90
M 6	x	110	S	100	57,40
M 6	x	115	S	100	111,00
M 6	x	120	S	100	66,70
M 6	x	125	S	100	152,00
M 6	x	130	S	100	107,00
M 6	x	135	S	100	170,00
M 6	x	140	S	100	145,00
M 6	x	145	S	100	329,00
M 6	x	150	S	100	172,00
M 6	x	155	S	100	428,00
M 6	x	160	S	100	486,00
M 6	x	165	S	100	510,00
M 6	x	170	S	100	583,00
M 6	x	175	S	100	656,00
M 6	x	180	S	100	656,00
M 6	x	185	S	100	801,00
M 6	x	190	S	100	801,00
M 6	x	195	S	100	874,00
M 6	x	200	S	100	874,00
M 6	x	210	S	100	923,00
M 6	x	220	S	100	971,00
M 6	x	230	S	100	1048,00
M 6	x	240	S	100	1048,00
M 6	x	250	S	100	1093,00
M 6	x	280	S	100	1179,00
M 6	x	300	S	100	1310,00
M 8	x	8	S	200	22,70
M 8	x	10	S	200	10,10
M 8	x	12	S	200	10,55
M 8	x	14	S	200	10,60
M 8	x	16	S	200	6,50
M 8	x	18	S	200	6,90
M 8	x	20	S	200	6,60
M 8	x	22	S	200	11,80
M 8	x	25	S	200	7,20
M 8	x	30	S	200	7,55
M 8	x	35	S	200	8,25
M 8	x	40	S	200	9,35
M 8	x	45	S	200	9,55
M 8	x	50	S	200	10,70
M 8	x	55	S	200	12,60
M 8	x	60	S	200	14,05
M 8	x	65	S	200	20,35
M 8	x	70	S	200	20,95
M 8	x	75	S	200	25,95

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 80	S	200	33,10
M 8 x 85	S	100	49,00
M 8 x 90	S	100	41,10
M 8 x 95	S	100	68,55
M 8 x 100	S	100	45,85
M 8 x 105	S	100	68,55
M 8 x 110	S	100	54,25
M 8 x 115	S	100	106,00
M 8 x 120	S	100	63,70
M 8 x 125	S	100	135,00
M 8 x 130	S	100	84,30
M 8 x 135	S	100	143,00
M 8 x 140	S	100	93,40
M 8 x 145	S	100	244,00
M 8 x 150	S	100	158,00
M 8 x 155	S	100	272,00
M 8 x 160	S	100	200,00
M 8 x 165	S	100	293,00
M 8 x 170	S	100	306,00
M 8 x 180	S	100	275,00
M 8 x 190	S	100	362,00
M 8 x 200	S	100	290,00
M 8 x 210	S	100	401,00
M 8 x 220	S	100	421,00
M 8 x 230	S	100	452,00
M 8 x 240	S	100	485,00
M 8 x 250	S	100	501,00
M 8 x 260	S	100	534,00
M 8 x 270	S	100	551,00
M 8 x 280	S	100	568,00
M 8 x 300	S	100	601,00
M 10 x 10	S	200	85,50
M 10 x 12	S	200	37,35
M 10 x 14	S	200	29,05
M 10 x 16	S	200	19,15
M 10 x 18	S	200	38,90
M 10 x 20	S	200	11,95
M 10 x 22	S	200	23,40
M 10 x 25	S	200	12,30
M 10 x 28	S	200	26,70
M 10 x 30	S	200	13,25
M 10 x 35	S	100	14,05
M 10 x 40	S	100	15,30
M 10 x 45	S	100	16,90
M 10 x 50	S	100	18,00
M 10 x 55	S	100	19,30
M 10 x 60	S	100	20,90
M 10 x 65	S	100	22,65
M 10 x 70	S	100	23,15
M 10 x 75	S	100	28,60
M 10 x 80	S	100	29,40
M 10 x 85	S	100	58,35
M 10 x 90	S	100	39,20
M 10 x 95	S	100	102,00
M 10 x 100	S	100	42,70
M 10 x 105	S	100	112,00
M 10 x 110	S	100	48,85
M 10 x 115	S	100	121,00
M 10 x 120	S	50	60,05
M 10 x 125	S	50	137,00
M 10 x 130	S	50	88,55
M 10 x 135	S	50	168,00
M 10 x 140	S	50	108,00
M 10 x 150	S	50	148,00
M 10 x 155	S	50	233,00
M 10 x 160	S	50	162,00
M 10 x 170	S	50	265,00
M 10 x 180	S	50	244,00
M 10 x 185	S	50	361,00
M 10 x 190	S	50	290,00
M 10 x 200	S	50	271,00
M 10 x 210	S	50	529,00
M 10 x 220	S	50	529,00
M 10 x 230	S	50	550,00
M 10 x 240	S	50	550,00

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 250	S	50	682,00
M 10 x 260	S	50	659,00
M 10 x 270	S	50	726,00
M 10 x 280	S	50	726,00
M 10 x 290	S	50	792,00
M 10 x 300	S	50	792,00
M 10 x 320	S	50	1055,00
M 10 x 340	S	50	1187,00
M 12 x 14	S	100	113,00
M 12 x 16	S	100	23,80
M 12 x 18	S	100	41,05
M 12 x 20	S	100	22,10
M 12 x 22	S	100	37,70
M 12 x 25	S	100	19,35
M 12 x 30	S	100	19,30
M 12 x 35	S	100	19,55
M 12 x 40	S	100	20,55
M 12 x 45	S	100	21,55
M 12 x 50	S	100	23,45
M 12 x 55	S	100	25,85
M 12 x 60	S	100	27,80
M 12 x 65	S	50	31,85
M 12 x 70	S	50	32,85
M 12 x 75	S	50	34,45
M 12 x 80	S	50	34,85
M 12 x 85	S	50	77,65
M 12 x 90	S	50	43,75
M 12 x 95	S	50	121,00
M 12 x 100	S	50	53,85
M 12 x 105	S	50	130,00
M 12 x 110	S	50	61,85
M 12 x 115	S	50	143,00
M 12 x 120	S	50	72,20
M 12 x 125	S	50	161,00
M 12 x 130	S	50	103,00
M 12 x 135	S	50	177,00
M 12 x 140	S	50	122,00
M 12 x 145	S	50	199,00
M 12 x 150	S	50	157,00
M 12 x 155	S	50	213,00
M 12 x 160	S	50	189,00
M 12 x 165	S	50	310,00
M 12 x 170	S	50	255,00
M 12 x 180	S	50	255,00
M 12 x 190	S	50	295,00
M 12 x 200	S	50	295,00
M 12 x 210	S	25	756,00
M 12 x 220	S	25	547,00
M 12 x 230	S	25	811,00
M 12 x 240	S	25	614,00
M 12 x 250	S	25	882,00
M 12 x 260	S	25	677,00
M 12 x 270	S	25	941,00
M 12 x 280	S	25	721,00
M 12 x 290	S	25	1128,00
M 12 x 300	S	25	778,00
M 12 x 310	S	25	983,00
M 12 x 320	S	25	983,00
M 12 x 340	S	25	1164,00
M 12 x 360	S	25	1638,00
M 12 x 380	S	25	1747,00
M 12 x 400	S	25	1820,00
M 14 x 20	S	100	91,00
M 14 x 25	S	100	67,35
M 14 x 30	S	100	60,35
M 14 x 35	S	100	69,75
M 14 x 40	S	100	62,50
M 14 x 45	S	50	71,00
M 14 x 50	S	50	69,75
M 14 x 55	S	50	87,35
M 14 x 60	S	50	80,05
M 14 x 65	S	50	101,00
M 14 x 70	S	50	102,00
M 14 x 75	S	50	113,00
M 14 x 80	S	50	118,00

Dimensions	PU	Pieces	€/100/Mat.
M 14 x 85	S	50	127,00
M 14 x 90	S	50	127,00
M 14 x 95	S	50	150,00
M 14 x 100	S	50	140,00
M 14 x 110	S	50	168,00
M 14 x 120	S	50	184,00
M 14 x 130	S	50	210,00
M 14 x 140	S	25	219,00
M 14 x 150	S	25	283,00
M 14 x 160	S	25	492,00
M 14 x 170	S	25	519,00
M 14 x 180	S	25	543,00
M 14 x 190	S	25	560,00
M 14 x 200	S	25	578,00
M 14 x 210	S	25	875,00
M 14 x 220	S	25	695,00
M 14 x 230	S	25	909,00
M 14 x 240	S	25	721,00
M 14 x 250	S	25	951,00
M 14 x 260	S	25	754,00
M 14 x 270	S	25	1005,00
M 14 x 280	S	25	796,00
M 14 x 290	S	25	1160,00
M 14 x 300	S	25	853,00
M 16 x 16	S	50	267,00
M 16 x 18	S	50	267,00
M 16 x 20	S	50	81,25
M 16 x 25	S	50	59,70
M 16 x 30	S	50	38,10
M 16 x 35	S	50	38,55
M 16 x 40	S	50	40,50
M 16 x 45	S	50	43,45
M 16 x 50	S	50	47,35
M 16 x 55	S	50	50,65
M 16 x 60	S	50	52,55
M 16 x 65	S	25	61,25
M 16 x 70	S	25	61,25
M 16 x 75	S	25	68,55
M 16 x 80	S	25	68,55
M 16 x 85	S	25	178,00
M 16 x 90	S	25	83,10
M 16 x 95	S	25	141,00
M 16 x 100	S	25	91,00
M 16 x 110	S	25	120,00
M 16 x 120	S	25	132,00
M 16 x 130	S	25	151,00
M 16 x 140	S	25	195,00
M 16 x 150	S	25	252,00
M 16 x 160	S	25	264,00
M 16 x 170	S	25	343,00
M 16 x 180	S	25	306,00
M 16 x 190	S	25	491,00
M 16 x 200	S	25	368,00
M 16 x 210	S	25	592,00
M 16 x 220	S	25	444,00
M 16 x 230	S	25	667,00
M 16 x 240	S	25	563,00
M 16 x 250	S	25	612,00
M 16 x 260	S	25	612,00
M 16 x 270	S	25	787,00
M 16 x 280	S	25	662,00
M 16 x 290	S	25	809,00
M 16 x 300	S	25	780,00
M 16 x 310	S	10	1446,00
M 16 x 320	S	10	1315,00
M 16 x 330	S	10	1687,00
M 16 x 340	S	10	1547,00
M 16 x 350	S	10	2009,00
M 16 x 360	S	10	1827,00
M 16 x 370	S	10	2249,00
M 16 x 380	S	10	2042,00
M 16 x 390	S	10	2414,00
M 16 x 400	S	10	2190,00
M 16 x 410	S	10	2640,00
M 16 x 420	S	10	2399,00

Dimensions	PU	Pieces	€/100/Mat.
M 16 x 440	S	10	2556,00
M 16 x 460	S	10	2799,00
M 16 x 480	S	10	2920,00
M 16 x 500	S	10	3503,00
M 16 x 520	S	10	3651,00
M 16 x 540	S	10	3871,00
M 16 x 560	S	10	4162,00
M 16 x 580	S	10	4380,00
M 16 x 600	S	10	4673,00
M 18 x 30	S	50	200,00
M 18 x 35	S	50	200,00
M 18 x 40	S	50	175,00
M 16 x 45	S	50	186,00
M 18 x 50	S	50	190,00
M 18 x 55	S	25	197,00
M 18 x 60	S	25	201,00
M 18 x 65	S	25	222,00
M 18 x 70	S	25	229,00
M 18 x 75	S	25	236,00
M 18 x 80	S	25	242,00
M 18 x 85	S	25	263,00
M 18 x 90	S	25	263,00
M 18 x 100	S	25	293,00
M 18 x 110	S	25	382,00
M 18 x 120	S	25	418,00
M 18 x 130	S	25	443,00
M 18 x 140	S	25	520,00
M 18 x 150	S	25	605,00
M 18 x 160	S	25	658,00
M 18 x 170	S	25	692,00
M 18 x 180	S	25	727,00
M 18 x 190	S	25	754,00
M 18 x 200	S	1	894,00
M 18 x 210	S	1	1166,00
M 18 x 220	S	1	951,00
M 18 x 230	S	1	1310,00
M 18 x 240	S	1	1008,00
M 18 x 250	S	1	1398,00
M 18 x 260	S	1	1073,00
M 18 x 270	S	1	1496,00
M 18 x 280	S	1	1148,00
M 18 x 300	S	1	1229,00
M 18 x 320	S	1	1534,00
M 18 x 350	S	1	2129,00
M 20 x 20	S	25	327,00
M 20 x 25	S	25	327,00
M 20 x 30	S	25	152,00
M 20 x 35	S	25	152,00
M 20 x 40	S	25	86,10
M 20 x 45	S	25	89,75
M 20 x 50	S	25	92,20
M 20 x 55	S	25	98,25
M 20 x 60	S	25	98,25
M 20 x 65	S	25	108,00
M 20 x 70	S	25	108,00
M 20 x 75	S	25	114,00
M 20 x 80	S	25	114,00
M 20 x 85	S	25	862,00
M 20 x 90	S	25	141,00
M 20 x 95	S	25	909,00
M 20 x 100	S	25	150,00
M 20 x 110	S	25	162,00
M 20 x 120	S	25	175,00
M 20 x 130	S	25	254,00
M 20 x 140	S	25	372,00
M 20 x 150	S	25	433,00
M 20 x 160	S	10	437,00
M 20 x 170	S	10	534,00
M 20 x 180	S	10	534,00
M 20 x 190	S	10	635,00
M 20 x 200	S	1	635,00
M 20 x 210	S	1	714,00
M 20 x 220	S	1	714,00
M 20 x 230	S	1	836,00
M 20 x 240	S	1	836,00

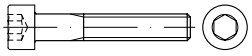
Dimensions	PU	Pieces	€/100/Mat.
M 20 x 250	S	1	885,00
M 20 x 260	S	1	885,00
M 20 x 270	S	1	1004,00
M 20 x 280	S	1	1004,00
M 20 x 290	S	1	1098,00
M 20 x 300	S	1	1098,00
M 20 x 310	S	1	1252,00
M 20 x 320	S	1	954,00
M 20 x 330	S	1	1224,00
M 20 x 340	S	1	1244,00
M 20 x 350	S	1	1457,00
M 20 x 360	S	1	1323,00
M 20 x 370	S	1	1691,00
M 20 x 380	S	1	1536,00
M 20 x 390	S	1	1982,00
M 20 x 400	S	1	1801,00
M 20 x 410	S	1	1853,00
M 20 x 420	S	1	1853,00
M 20 x 440	S	1	1985,00
M 20 x 450	S	1	2328,00
M 20 x 460	S	1	2117,00
M 20 x 480	S	1	2250,00
M 20 x 500	S	1	2382,00
M 20 x 520	S	1	3173,00
M 20 x 540	S	1	3293,00
M 20 x 560	S	1	3413,00
M 20 x 580	S	1	3571,00
M 20 x 600	S	1	3770,00
M 22 x 35	S	25	514,00
M 22 x 40	S	25	514,00
M 22 x 45	S	25	514,00
M 22 x 50	S	25	648,00
M 22 x 55	S	25	648,00
M 22 x 60	S	25	648,00
M 22 x 65	S	25	670,00
M 22 x 70	S	25	670,00
M 22 x 75	S	25	700,00
M 22 x 80	S	25	700,00
M 22 x 85	S	25	700,00
M 22 x 90	S	25	749,00
M 22 x 100	S	10	768,00
M 22 x 110	S	1	783,00
M 22 x 120	S	1	801,00
M 22 x 130	S	1	822,00
M 22 x 140	S	1	857,00
M 22 x 150	S	1	879,00
M 22 x 160	S	1	899,00
M 22 x 170	S	1	1072,00
M 22 x 180	S	1	972,00
M 22 x 190	S	1	1154,00
M 22 x 200	S	1	1044,00
M 22 x 210	S	1	1549,00
M 22 x 220	S	1	1237,00
M 22 x 240	S	1	1321,00
M 22 x 250	S	1	1732,00
M 22 x 260	S	1	1387,00
M 22 x 280	S	1	1459,00
M 22 x 300	S	1	1557,00
M 24 x 30	S	25	1025,00
M 24 x 35	S	25	1025,00
M 24 x 40	S	25	588,00
M 24 x 45	S	25	588,00
M 24 x 50	S	25	214,00
M 24 x 55	S	25	236,00
M 24 x 60	S	25	236,00
M 24 x 65	S	25	255,00
M 24 x 70	S	25	255,00
M 24 x 75	S	25	260,00
M 24 x 80	S	25	260,00
M 24 x 85	S	10	873,00
M 24 x 90	S	10	313,00
M 24 x 95	S	10	909,00
M 24 x 100	S	10	324,00
M 24 x 105	S	10	870,00
M 24 x 110	S	10	379,00

Dimensions	PU	Pieces	€/100/Mat.
M 24 x 120	S	10	406,00
M 24 x 125	S	10	870,00
M 24 x 130	S	1	470,00
M 24 x 140	S	1	596,00
M 24 x 150	S	1	744,00
M 24 x 160	S	1	654,00
M 24 x 170	S	1	710,00
M 24 x 180	S	1	728,00
M 24 x 190	S	1	785,00
M 24 x 200	S	1	799,00
M 24 x 210	S	1	1365,00
M 24 x 220	S	1	1095,00
M 24 x 230	S	1	1452,00
M 24 x 240	S	1	1166,00
M 24 x 250	S	1	1540,00
M 24 x 260	S	1	1236,00
M 24 x 270	S	1	1655,00
M 24 x 280	S	1	1327,00
M 24 x 290	S	1	1802,00
M 24 x 300	S	1	1446,00
M 24 x 310	S	1	2474,00
M 24 x 320	S	1	2120,00
M 24 x 330	S	1	2516,00
M 24 x 340	S	1	2189,00
M 24 x 350	S	1	2535,00
M 24 x 360	S	1	2478,00
M 24 x 370	S	1	2632,00
M 24 x 380	S	1	2632,00
M 24 x 390	S	1	2787,00
M 24 x 400	S	1	2787,00
M 24 x 410	S	1	2980,00
M 24 x 420	S	1	2980,00
M 24 x 430	S	1	3214,00
M 24 x 440	S	1	3214,00
M 24 x 450	S	1	3405,00
M 24 x 460	S	1	3405,00
M 24 x 470	S	1	3598,00
M 24 x 480	S	1	3598,00
M 24 x 490	S	1	3869,00
M 24 x 500	S	1	3869,00
M 24 x 520	S	1	5275,00
M 24 x 530	S	1	5495,00
M 24 x 540	S	1	5694,00
M 24 x 560	S	1	5908,00
M 24 x 580	S	1	6120,00
M 24 x 600	S	1	6330,00
M 27 x 40	S	10	1274,00
M 27 x 45	S	10	1274,00
M 27 x 50	S	10	892,00
M 27 x 55	S	10	892,00
M 27 x 60	S	10	892,00
M 27 x 65	S	10	925,00
M 27 x 70	S	10	925,00
M 27 x 75	S	10	964,00
M 27 x 80	S	10	964,00
M 27 x 85	S	10	1004,00
M 27 x 90	S	10	1004,00
M 27 x 100	S	10	1049,00
M 27 x 110	S	10	1076,00
M 27 x 120	S	10	1190,00
M 27 x 130	S	1	1237,00
M 27 x 140	S	1	1288,00
M 27 x 150	S	1	1337,00
M 27 x 160	S	1	1370,00
M 27 x 170	S	1	1575,00
M 27 x 180	S	1	1470,00
M 27 x 190	S	1	1665,00
M 27 x 200	S	1	1535,00
M 27 x 210	S	1	2292,00
M 27 x 220	S	1	1658,00
M 27 x 230	S	1	2467,00
M 27 x 240	S	1	1789,00
M 27 x 250	S	1	2625,00
M 27 x 260	S	1	1909,00
M 27 x 270	S	1	2812,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 27 x 280	S	1	2032,00
M 27 x 300	S	1	2163,00
M 27 x 320	S	1	4535,00
M 30 x 35	S	10	1638,00
M 30 x 40	S	10	1638,00
M 30 x 45	S	10	1638,00
M 30 x 50	S	10	1082,00
M 30 x 55	S	10	1082,00
M 30 x 60	S	10	1082,00
M 30 x 65	S	10	1106,00
M 30 x 70	S	10	1130,00
M 30 x 75	S	10	1176,00
M 30 x 80	S	10	1176,00
M 30 x 85	S	1	1221,00
M 30 x 90	S	1	1221,00
M 30 x 95	S	1	1221,00
M 30 x 100	S	1	1268,00
M 30 x 110	S	1	1314,00
M 30 x 120	S	1	1362,00
M 30 x 130	S	1	1408,00
M 30 x 140	S	1	1454,00
M 30 x 150	S	1	1524,00
M 30 x 160	S	1	1594,00
M 30 x 170	S	1	1640,00
M 30 x 180	S	1	1688,00
M 30 x 190	S	1	1756,00
M 30 x 200	S	1	1827,00
M 30 x 210	S	1	1968,00
M 30 x 220	S	1	1968,00
M 30 x 230	S	1	2060,00
M 30 x 240	S	1	2060,00
M 30 x 250	S	1	2152,00
M 30 x 260	S	1	2152,00
M 30 x 270	S	1	2292,00
M 30 x 280	S	1	2292,00
M 30 x 290	S	1	3128,00
M 30 x 300	S	1	2478,00
M 30 x 310	S	1	3101,00
M 30 x 320	S	1	2801,00
M 30 x 330	S	1	3169,00
M 30 x 340	S	1	2968,00
M 30 x 350	S	1	3169,00
M 30 x 360	S	1	3269,00
M 30 x 370	S	1	4417,00
M 30 x 380	S	1	4417,00
M 30 x 390	S	1	4802,00
M 30 x 400	S	1	4802,00
M 30 x 420	S	1	4802,00
M 30 x 430	S	1	4802,00
M 30 x 440	S	1	5239,00
M 30 x 450	S	1	5239,00
M 30 x 460	S	1	6184,00
M 30 x 470	S	1	6483,00
M 30 x 480	S	1	6483,00
M 30 x 490	S	1	6911,00
M 30 x 500	S	1	6911,00
M 30 x 540	S	1	12731,00
M 30 x 700	S	1	15124,00
M 33 x 50	S	1	3223,00
M 33 x 55	S	1	3223,00
M 33 x 60	S	1	1319,00
M 33 x 65	S	1	1319,00
M 33 x 70	S	1	1319,00
M 33 x 80	S	1	1319,00
M 33 x 90	S	1	1392,00
M 33 x 100	S	1	1503,00
M 33 x 110	S	1	1568,00
M 33 x 120	S	1	1680,00
M 33 x 130	S	1	1737,00
M 33 x 140	S	1	1836,00
M 33 x 150	S	1	1944,00
M 33 x 160	S	1	1991,00
M 33 x 180	S	1	2187,00
M 33 x 190	S	1	3120,00
M 33 x 200	S	1	2318,00
M 36 x 50	S	1	1747,00
M 36 x 55	S	1	1747,00
M 36 x 60	S	1	1747,00
M 36 x 65	S	1	1747,00
M 36 x 70	S	1	1713,00
M 36 x 75	S	1	1713,00
M 36 x 80	S	1	1713,00
M 36 x 85	S	1	1761,00
M 36 x 90	S	1	1761,00
M 36 x 95	S	1	1811,00
M 36 x 100	S	1	1811,00
M 36 x 110	S	1	1859,00
M 36 x 120	S	1	1944,00
M 36 x 130	S	1	2003,00
M 36 x 140	S	1	2074,00
M 36 x 150	S	1	2155,00
M 36 x 160	S	1	2225,00
M 36 x 170	S	1	2547,00
M 36 x 180	S	1	2400,00
M 36 x 190	S	1	2760,00
M 36 x 200	S	1	2586,00
M 36 x 210	S	1	3032,00
M 36 x 220	S	1	2737,00
M 36 x 230	S	1	3199,00
M 36 x 240	S	1	2888,00
M 36 x 250	S	1	3354,00
M 36 x 260	S	1	3027,00
M 36 x 270	S	1	3573,00
M 36 x 280	S	1	3224,00
M 36 x 290	S	1	3895,00
M 36 x 300	S	1	3516,00
M 36 x 310	S	1	5264,00
M 36 x 320	S	1	4784,00
M 36 x 330	S	1	5657,00
M 36 x 340	S	1	5151,00
M 36 x 350	S	1	6210,00
M 36 x 360	S	1	5646,00
M 36 x 370	S	1	7693,00
M 36 x 380	S	1	6992,00
M 36 x 390	S	1	8123,00
M 36 x 400	S	1	7381,00
M 36 x 420	S	1	14417,00
M 36 x 430	S	1	14691,00
M 36 x 440	S	1	14691,00
M 36 x 500	S	1	15515,00
M 36 x 560	S	1	16334,00
M 36 x 600	S	1	16885,00
M 42 x 70	S	1	2947,00
M 42 x 80	S	1	2947,00
M 42 x 90	S	1	2947,00
M 42 x 100	S	1	3056,00
M 42 x 110	S	1	3056,00
M 42 x 120	S	1	3202,00
M 42 x 130	S	1	3318,00
M 42 x 140	S	1	3275,00
M 42 x 150	S	1	3690,00
M 42 x 160	S	1	3456,00
M 42 x 170	S	1	3972,00
M 42 x 180	S	1	3638,00
M 42 x 190	S	1	4453,00
M 42 x 200	S	1	4184,00
M 42 x 210	S	1	4759,00
M 42 x 220	S	1	4759,00
M 42 x 240	S	1	7870,00
M 42 x 260	S	1	8470,00
M 42 x 270	S	1	16688,00
M 42 x 280	S	1	8989,00
M 42 x 300	S	1	9743,00
M 42 x 350	S	1	18671,00
M 42 x 400	S	1	19742,00
M 42 x 500	S	1	22386,00
M 42 x 560	S	1	23870,00
M 48 x 80	S	1	5438,00
M 48 x 90	S	1	5438,00
M 48 x 100	S	1	5438,00
M 48 x 110	S	1	5719,00
M 48 x 120	S	1	6009,00
M 48 x 130	S	1	6239,00
M 48 x 140	S	1	6584,00
M 48 x 150	S	1	6951,00
M 48 x 160	S	1	7330,00
M 48 x 170	S	1	8010,00
M 48 x 180	S	1	8010,00
M 48 x 190	S	1	8581,00
M 48 x 200	S	1	8581,00
M 48 x 210	S	1	11444,00
M 48 x 220	S	1	11444,00
M 48 x 240	S	1	12422,00
M 48 x 260	S	1	13451,00
M 48 x 270	S	1	20596,00
M 48 x 280	S	1	14306,00
M 48 x 300	S	1	14873,00
M 56 x 120	S	1	13051,00
M 56 x 130	S	1	14142,00
M 56 x 140	S	1	14735,00
M 56 x 150	S	1	15779,00
M 56 x 160	S	1	16437,00
M 56 x 180	S	1	17008,00
M 56 x 200	S	1	18132,00
M 56 x 210	S	1	20347,00
M 56 x 220	S	1	18499,00
M 56 x 230	S	1	21468,00
M 56 x 260	S	1	20129,00
M 56 x 280	S	1	21220,00
M 56 x 300	S	1	22850,00

ISO	04762.810	RAZ 360
4762	**8.8 zinc plated**	



Hexagon socket head cap screws

Dimensions → TI-12
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 513

ISO 4762 → replaces DIN 912 (compatible)

M 3	x	4	S	500	27,60 ZP
M 3	x	5	S	500	27,60 ZP
M 3	x	6	S	500	7,75 ZP
M 3	x	8	S	500	5,40 ZP
M 3	x	10	S	500	4,60 ZP
M 3	x	12	S	500	4,75 ZP
M 3	x	14	S	500	7,70 ZP
M 3	x	16	S	500	5,05 ZP
M 3	x	18	S	500	5,20 ZP
M 3	x	20	S	500	5,40 ZP
M 3	x	22	S	500	10,00 ZP
M 3	x	25	S	500	5,80 ZP
M 3	x	30	S	500	6,50 ZP
M 3	x	35	S	500	24,65 ZP
M 3	x	40	S	500	26,00 ZP
M 3	x	45	S	500	65,50 ZP
M 3	x	50	S	500	72,75 ZP
M 4	x	4	S	500	87,00 ZP
M 4	x	5	S	500	16,50 ZP
M 4	x	6	S	500	9,55 ZP
M 4	x	6	K	100	12,55 ZP
M 4	x	8	S	500	5,60 ZP
M 4	x	8	K	100	8,65 ZP
M 4	x	10	S	500	4,30 ZP
M 4	x	10	K	100	7,30 ZP

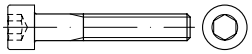
Dimensions	PU	Pieces	€/100/Mat.
M 4 x 12	S	500	4,50 ZP
M 4 x 12	K	100	7,60 ZP
M 4 x 14	S	500	7,25 ZP
M 4 x 16	S	500	4,40 ZP
M 4 x 16	K	100	7,45 ZP
M 4 x 18	S	500	4,70 ZP
M 4 x 20	S	500	4,80 ZP
M 4 x 20	K	100	7,85 ZP
M 4 x 22	S	500	8,95 ZP
M 4 x 25	S	500	5,40 ZP
M 4 x 25	K	100	8,45 ZP
M 4 x 28	S	500	10,50 ZP
M 4 x 30	S	500	5,90 ZP
M 4 x 30	K	100	8,95 ZP
M 4 x 35	S	500	7,10 ZP
M 4 x 35	K	100	10,10 ZP
M 4 x 40	S	500	7,55 ZP
M 4 x 40	K	100	10,50 ZP
M 4 x 45	S	500	15,85 ZP
M 4 x 50	S	500	17,45 ZP
M 4 x 55	S	200	23,60 ZP
M 4 x 60	S	200	23,75 ZP
M 4 x 65	S	200	36,10 ZP
M 4 x 70	S	200	36,20 ZP
M 4 x 75	S	200	62,15 ZP
M 4 x 80	S	200	70,70 ZP
M 4 x 85	S	200	254,00 ZP
M 4 x 90	S	200	279,00 ZP
M 4 x 95	S	200	305,00 ZP
M 4 x 100	S	200	329,00 ZP
M 4 x 110	S	200	354,00 ZP
M 4 x 120	S	200	405,00 ZP
M 5 x 5	S	500	88,30 ZP
M 5 x 6	S	500	10,20 ZP
M 5 x 6	K	100	13,25 ZP
M 5 x 8	S	500	8,05 ZP
M 5 x 8	K	100	11,10 ZP
M 5 x 10	S	500	4,30 ZP
M 5 x 10	K	100	7,30 ZP
M 5 x 12	S	500	4,40 ZP
M 5 x 12	K	100	7,50 ZP
M 5 x 14	S	500	7,50 ZP
M 5 x 14	K	100	10,50 ZP
M 5 x 16	S	500	4,40 ZP
M 5 x 16	K	100	7,50 ZP
M 5 x 18	S	500	4,70 ZP
M 5 x 18	K	100	7,70 ZP
M 5 x 20	S	500	4,80 ZP
M 5 x 20	K	100	7,85 ZP
M 5 x 22	S	500	8,50 ZP
M 5 x 22	K	100	11,50 ZP
M 5 x 25	S	500	5,15 ZP
M 5 x 25	K	100	8,15 ZP
M 5 x 30	S	500	6,30 ZP
M 5 x 30	K	100	9,30 ZP
M 5 x 35	S	200	6,70 ZP
M 5 x 40	S	200	7,15 ZP
M 5 x 45	S	200	12,10 ZP
M 5 x 50	S	200	16,85 ZP
M 5 x 55	S	200	20,60 ZP
M 5 x 60	S	200	21,90 ZP
M 5 x 65	S	200	30,55 ZP
M 5 x 70	S	200	31,25 ZP
M 5 x 75	S	200	39,10 ZP
M 5 x 80	S	200	41,10 ZP
M 5 x 85	S	200	56,35 ZP
M 5 x 90	S	200	51,95 ZP
M 5 x 95	S	200	65,80 ZP
M 5 x 100	S	200	55,70 ZP
M 5 x 110	S	200	62,50 ZP
M 5 x 115	S	100	165,00 ZP
M 5 x 120	S	100	68,55 ZP
M 5 x 125	S	100	278,00 ZP
M 5 x 130	S	100	254,00 ZP
M 5 x 140	S	100	425,00 ZP
M 5 x 150	S	100	544,00 ZP
M 5 x 160	S	100	559,00 ZP
M 5 x 170	S	100	592,00 ZP
M 5 x 180	S	100	612,00 ZP
M 5 x 200	S	100	802,00 ZP
M 6 x 6	S	500	26,20 ZP
M 6 x 6	K	100	29,60 ZP
M 6 x 8	S	500	9,45 ZP
M 6 x 8	K	100	12,45 ZP
M 6 x 10	S	500	4,75 ZP
M 6 x 10	K	100	7,75 ZP
M 6 x 12	S	500	5,00 ZP
M 6 x 12	K	100	8,00 ZP
M 6 x 14	S	500	7,35 ZP
M 6 x 14	K	100	10,35 ZP
M 6 x 16	S	500	4,80 ZP
M 6 x 16	K	100	7,85 ZP
M 6 x 18	S	500	5,15 ZP
M 6 x 18	K	100	8,15 ZP
M 6 x 20	S	500	5,25 ZP
M 6 x 20	K	100	8,30 ZP
M 6 x 22	S	500	9,05 ZP
M 6 x 22	K	100	12,05 ZP
M 6 x 25	S	500	5,55 ZP
M 6 x 25	K	100	8,55 ZP
M 6 x 28	S	500	13,15 ZP
M 6 x 28	K	100	16,15 ZP
M 6 x 30	S	500	6,35 ZP
M 6 x 30	K	100	9,45 ZP
M 6 x 35	S	200	6,95 ZP
M 6 x 40	S	200	7,70 ZP
M 6 x 45	S	200	9,90 ZP
M 6 x 50	S	200	10,40 ZP
M 6 x 55	S	200	16,25 ZP
M 6 x 60	S	200	17,30 ZP
M 6 x 65	S	200	22,55 ZP
M 6 x 70	S	200	23,35 ZP
M 6 x 75	S	200	31,35 ZP
M 6 x 80	S	200	32,30 ZP
M 6 x 85	S	200	41,15 ZP
M 6 x 90	S	200	37,80 ZP
M 6 x 95	S	200	92,00 ZP
M 6 x 100	S	200	44,00 ZP
M 6 x 105	S	100	92,00 ZP
M 6 x 110	S	100	63,05 ZP
M 6 x 115	S	100	116,00 ZP
M 6 x 120	S	100	72,20 ZP
M 6 x 125	S	100	157,00 ZP
M 6 x 130	S	100	114,00 ZP
M 6 x 140	S	100	152,00 ZP
M 6 x 145	S	100	335,00 ZP
M 6 x 150	S	100	178,00 ZP
M 6 x 160	S	100	495,00 ZP
M 6 x 170	S	100	610,00 ZP
M 6 x 180	S	100	665,00 ZP
M 6 x 200	S	100	885,00 ZP
M 6 x 210	S	100	934,00 ZP
M 6 x 220	S	100	983,00 ZP
M 6 x 230	S	100	1060,00 ZP
M 6 x 280	S	100	1195,00 ZP
M 6 x 300	S	100	1337,00 ZP
M 8 x 8	S	200	24,55 ZP
M 8 x 10	S	200	11,60 ZP
M 8 x 12	S	200	12,10 ZP
M 8 x 14	S	200	12,80 ZP
M 8 x 16	S	200	8,25 ZP
M 8 x 18	S	200	8,75 ZP
M 8 x 20	S	200	8,50 ZP
M 8 x 22	S	200	14,45 ZP
M 8 x 25	S	200	9,30 ZP
M 8 x 30	S	200	9,95 ZP
M 8 x 35	S	200	10,90 ZP
M 8 x 40	S	200	12,35 ZP
M 8 x 45	S	200	12,80 ZP
M 8 x 50	S	200	14,25 ZP
M 8 x 55	S	200	16,45 ZP
M 8 x 60	S	200	18,15 ZP
M 8 x 65	S	200	26,30 ZP
M 8 x 70	S	200	27,20 ZP
M 8 x 75	S	200	32,60 ZP
M 8 x 80	S	200	40,15 ZP
M 8 x 85	S	100	61,85 ZP
M 8 x 90	S	100	48,95 ZP
M 8 x 95	S	100	69,54 ZP
M 8 x 100	S	100	54,45 ZP
M 8 x 105	S	100	77,55 ZP
M 8 x 110	S	100	63,70 ZP
M 8 x 115	S	100	117,00 ZP
M 8 x 120	S	100	74,00 ZP
M 8 x 125	S	100	145,30 ZP
M 8 x 130	S	100	95,20 ZP
M 8 x 135	S	100	154,00 ZP
M 8 x 140	S	100	105,00 ZP
M 8 x 145	S	100	256,00 ZP
M 8 x 150	S	100	170,00 ZP
M 8 x 160	S	100	214,00 ZP
M 8 x 170	S	100	320,00 ZP
M 8 x 180	S	100	290,00 ZP
M 8 x 190	S	100	379,00 ZP
M 8 x 200	S	100	308,00 ZP
M 8 x 210	S	100	420,00 ZP
M 8 x 220	S	100	452,00 ZP
M 8 x 230	S	100	484,00 ZP
M 8 x 240	S	100	517,00 ZP
M 8 x 250	S	100	534,00 ZP
M 8 x 260	S	100	534,00 ZP
M 8 x 270	S	100	586,00 ZP
M 8 x 280	S	100	730,00 ZP
M 10 x 10	S	200	88,95 ZP
M 10 x 12	S	200	40,95 ZP
M 10 x 14	S	200	32,50 ZP
M 10 x 16	S	200	22,15 ZP
M 10 x 18	S	200	43,05 ZP
M 10 x 20	S	200	15,20 ZP
M 10 x 22	S	200	27,95 ZP
M 10 x 25	S	200	15,90 ZP
M 10 x 30	S	200	17,20 ZP
M 10 x 35	S	100	18,50 ZP
M 10 x 40	S	100	20,15 ZP
M 10 x 45	S	100	22,20 ZP
M 10 x 50	S	100	23,70 ZP
M 10 x 55	S	100	25,50 ZP
M 10 x 60	S	100	27,50 ZP
M 10 x 65	S	100	29,70 ZP
M 10 x 70	S	100	30,70 ZP
M 10 x 75	S	100	36,50 ZP
M 10 x 80	S	100	37,75 ZP
M 10 x 85	S	100	51,05 ZP
M 10 x 90	S	100	51,60 ZP
M 10 x 95	S	100	117,00 ZP
M 10 x 100	S	100	56,35 ZP
M 10 x 110	S	100	63,70 ZP
M 10 x 115	S	100	137,00 ZP
M 10 x 120	S	50	76,40 ZP
M 10 x 125	S	50	154,00 ZP
M 10 x 130	S	50	106,00 ZP
M 10 x 135	S	50	185,00 ZP
M 10 x 140	S	50	127,00 ZP
M 10 x 150	S	50	167,00 ZP
M 10 x 155	S	50	255,00 ZP
M 10 x 160	S	50	184,00 ZP
M 10 x 170	S	50	258,00 ZP
M 10 x 180	S	50	266,00 ZP
M 10 x 190	S	50	316,00 ZP
M 10 x 200	S	50	296,00 ZP
M 10 x 210	S	50	558,00 ZP
M 10 x 220	S	50	559,00 ZP
M 10 x 230	S	50	581,00 ZP
M 10 x 240	S	50	582,00 ZP
M 10 x 250	S	50	717,00 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	260	S	50	695,00 ZP
M 10	x	270	S	50	762,00 ZP
M 10	x	280	S	50	765,00 ZP
M 10	x	300	S	50	834,00 ZP
M 12	x	14	S	100	118,00 ZP
M 12	x	16	S	100	28,00 ZP
M 12	x	20	S	100	26,65 ZP
M 12	x	22	S	100	44,00 ZP
M 12	x	25	S	100	23,95 ZP
M 12	x	30	S	100	24,95 ZP
M 12	x	35	S	100	25,75 ZP
M 12	x	40	S	100	27,25 ZP
M 12	x	45	S	100	28,90 ZP
M 12	x	50	S	100	31,45 ZP
M 12	x	55	S	100	34,50 ZP
M 12	x	60	S	100	37,00 ZP
M 12	x	65	S	50	41,70 ZP
M 12	x	70	S	50	43,35 ZP
M 12	x	75	S	50	45,55 ZP
M 12	x	80	S	50	46,60 ZP
M 12	x	85	S	50	97,05 ZP
M 12	x	90	S	50	56,75 ZP
M 12	x	95	S	50	134,00 ZP
M 12	x	100	S	50	68,55 ZP
M 12	x	110	S	50	83,10 ZP
M 12	x	115	S	50	165,00 ZP
M 12	x	120	S	50	94,60 ZP
M 12	x	125	S	50	183,00 ZP
M 12	x	130	S	50	128,00 ZP
M 12	x	135	S	50	199,00 ZP
M 12	x	140	S	50	149,00 ZP
M 12	x	145	S	50	226,00 ZP
M 12	x	150	S	50	184,00 ZP
M 12	x	155	S	50	240,00 ZP
M 12	x	160	S	50	218,00 ZP
M 12	x	170	S	50	289,00 ZP
M 12	x	180	S	50	288,00 ZP
M 12	x	190	S	50	331,00 ZP
M 12	x	200	S	50	331,00 ZP
M 12	x	210	S	25	797,00 ZP
M 12	x	220	S	25	590,00 ZP
M 12	x	230	S	25	856,00 ZP
M 12	x	240	S	25	661,00 ZP
M 12	x	250	S	25	931,00 ZP
M 12	x	260	S	25	726,00 ZP
M 12	x	270	S	25	990,00 ZP
M 12	x	290	S	25	1178,00 ZP
M 12	x	300	S	25	828,00 ZP
M 14	x	20	S	100	98,85 ZP
M 14	x	25	S	100	76,40 ZP
M 14	x	30	S	100	71,00 ZP
M 14	x	35	S	100	80,70 ZP
M 14	x	40	S	100	74,60 ZP
M 14	x	45	S	50	83,70 ZP
M 14	x	50	S	50	83,70 ZP
M 14	x	55	S	50	104,00 ZP
M 14	x	60	S	50	96,40 ZP
M 14	x	65	S	50	119,00 ZP
M 14	x	70	S	50	122,00 ZP
M 14	x	75	S	50	133,00 ZP
M 14	x	80	S	50	138,00 ZP
M 14	x	90	S	50	150,00 ZP
M 14	x	100	S	50	166,00 ZP
M 14	x	110	S	50	195,00 ZP
M 14	x	120	S	50	214,00 ZP
M 14	x	130	S	50	243,00 ZP
M 14	x	140	S	25	255,00 ZP
M 14	x	150	S	25	320,00 ZP
M 14	x	160	S	25	532,00 ZP
M 14	x	200	S	25	626,00 ZP
M 16	x	20	S	50	93,40 ZP
M 16	x	25	S	50	73,40 ZP
M 16	x	30	S	50	49,15 ZP
M 16	x	35	S	50	50,50 ZP
M 16	x	40	S	50	53,50 ZP
M 16	x	45	S	50	57,30 ZP
M 16	x	50	S	50	62,50 ZP
M 16	x	55	S	50	67,35 ZP
M 16	x	60	S	50	70,35 ZP
M 16	x	65	S	25	79,40 ZP
M 16	x	70	S	25	80,70 ZP
M 16	x	75	S	25	89,75 ZP
M 16	x	80	S	25	91,00 ZP
M 16	x	85	S	25	206,00 ZP
M 16	x	90	S	25	108,00 ZP
M 16	x	95	S	25	169,00 ZP
M 16	x	100	S	25	119,00 ZP
M 16	x	110	S	25	159,00 ZP
M 16	x	120	S	25	174,00 ZP
M 16	x	130	S	25	195,00 ZP
M 16	x	140	S	25	243,00 ZP
M 16	x	150	S	25	303,00 ZP
M 16	x	160	S	25	317,00 ZP
M 16	x	170	S	25	400,00 ZP
M 16	x	180	S	25	366,00 ZP
M 16	x	190	S	25	567,00 ZP
M 16	x	200	S	25	434,00 ZP
M 16	x	210	S	25	675,00 ZP
M 16	x	220	S	25	516,00 ZP
M 16	x	230	S	25	759,00 ZP
M 16	x	240	S	25	641,00 ZP
M 16	x	250	S	25	697,00 ZP
M 16	x	260	S	25	697,00 ZP
M 16	x	270	S	25	878,00 ZP
M 16	x	280	S	25	753,00 ZP
M 16	x	300	S	25	878,00 ZP
M 16	x	320	S	10	1419,00 ZP
M 16	x	340	S	10	1660,00 ZP
M 16	x	360	S	10	1950,00 ZP
M 18	x	30	S	50	222,00 ZP
M 18	x	35	S	50	223,00 ZP
M 18	x	40	S	50	200,00 ZP
M 18	x	45	S	50	213,00 ZP
M 18	x	50	S	50	217,00 ZP
M 18	x	55	S	25	226,00 ZP
M 18	x	60	S	25	234,00 ZP
M 18	x	70	S	25	264,00 ZP
M 18	x	80	S	25	282,00 ZP
M 18	x	90	S	25	306,00 ZP
M 18	x	100	S	25	340,00 ZP
M 18	x	110	S	25	435,00 ZP
M 18	x	120	S	25	472,00 ZP
M 20	x	25	S	25	351,00 ZP
M 20	x	30	S	25	176,00 ZP
M 20	x	35	S	25	178,00 ZP
M 20	x	40	S	25	108,00 ZP
M 20	x	45	S	25	113,00 ZP
M 20	x	50	S	25	118,00 ZP
M 20	x	55	S	25	125,00 ZP
M 20	x	60	S	25	127,00 ZP
M 20	x	65	S	25	137,00 ZP
M 20	x	70	S	25	140,00 ZP
M 20	x	75	S	25	148,00 ZP
M 20	x	80	S	25	149,00 ZP
M 20	x	85	S	25	897,00 ZP
M 20	x	90	S	25	179,00 ZP
M 20	x	100	S	25	191,00 ZP
M 20	x	110	S	25	223,00 ZP
M 20	x	120	S	25	241,00 ZP
M 20	x	130	S	25	324,00 ZP
M 20	x	140	S	25	447,00 ZP
M 20	x	150	S	25	512,00 ZP
M 20	x	160	S	10	523,00 ZP
M 20	x	170	S	10	629,00 ZP
M 20	x	180	S	10	629,00 ZP
M 20	x	190	S	10	730,00 ZP
M 20	x	200	S	1	739,00 ZP
M 20	x	210	S	1	821,00 ZP
M 20	x	220	S	1	827,00 ZP
M 20	x	230	S	1	952,00 ZP
M 20	x	240	S	1	958,00 ZP
M 20	x	250	S	1	1012,00 ZP
M 20	x	260	S	1	1016,00 ZP
M 20	x	270	S	1	1135,00 ZP
M 20	x	280	S	1	1144,00 ZP
M 20	x	300	S	1	1223,00 ZP
M 20	x	310	S	1	1410,00 ZP
M 20	x	320	S	1	1420,00 ZP
M 22	x	50	S	25	696,00 ZP
M 22	x	80	S	25	764,00 ZP
M 22	x	100	S	10	843,00 ZP
M 24	x	30	S	25	1049,00 ZP
M 24	x	40	S	25	638,00 ZP
M 24	x	45	S	25	642,00 ZP
M 24	x	50	S	25	256,00 ZP
M 24	x	55	S	25	281,00 ZP
M 24	x	60	S	25	283,00 ZP
M 24	x	65	S	25	304,00 ZP
M 24	x	70	S	25	306,00 ZP
M 24	x	75	S	25	314,00 ZP
M 24	x	80	S	25	317,00 ZP
M 24	x	85	S	10	930,00 ZP
M 24	x	90	S	10	374,00 ZP
M 24	x	100	S	10	392,00 ZP
M 24	x	110	S	10	476,00 ZP
M 24	x	120	S	10	510,00 ZP
M 24	x	130	S	1	581,00 ZP
M 24	x	140	S	1	713,00 ZP
M 24	x	150	S	1	868,00 ZP
M 24	x	160	S	1	785,00 ZP
M 24	x	170	S	10	835,00 ZP
M 24	x	180	S	1	871,00 ZP
M 24	x	200	S	1	955,00 ZP
M 24	x	210	S	1	1258,00 ZP
M 24	x	220	S	1	1264,00 ZP
M 24	x	230	S	1	1339,00 ZP
M 24	x	240	S	1	1345,00 ZP
M 24	x	250	S	1	1421,00 ZP
M 24	x	260	S	1	1427,00 ZP
M 24	x	280	S	1	1530,00 ZP
M 24	x	300	S	1	1659,00 ZP
M 25	x	50	S	10	960,00 ZP
M 27	x	60	S	10	967,00 ZP
M 27	x	65	S	10	1005,00 ZP
M 27	x	70	S	10	1008,00 ZP
M 27	x	80	S	10	1056,00 ZP
M 27	x	90	S	10	1104,00 ZP
M 27	x	100	S	10	1159,00 ZP
M 27	x	110	S	10	1194,00 ZP
M 27	x	120	S	10	1316,00 ZP
M 27	x	130	S	1	1373,00 ZP
M 27	x	140	S	1	1432,00 ZP
M 27	x	200	S	1	1730,00 ZP
M 30	x	35	S	10	1680,00 ZP
M 30	x	40	S	10	1680,00 ZP
M 30	x	50	S	10	1117,00 ZP
M 30	x	55	S	10	1117,00 ZP
M 30	x	60	S	10	1117,00 ZP
M 30	x	65	S	10	1146,00 ZP
M 30	x	70	S	10	1171,00 ZP
M 30	x	80	S	10	1219,00 ZP
M 30	x	85	S	1	1268,00 ZP
M 30	x	90	S	1	1268,00 ZP
M 30	x	100	S	1	1316,00 ZP
M 30	x	110	S	1	1365,00 ZP
M 30	x	120	S	1	1420,00 ZP
M 30	x	130	S	1	1468,00 ZP
M 30	x	140	S	1	1517,00 ZP
M 30	x	150	S	1	1608,00 ZP
M 30	x	160	S	1	1668,00 ZP
M 30	x	170	S	1	1740,00 ZP
M 30	x	180	S	1	1760,00 ZP
M 30	x	190	S	1	1850,00 ZP
M 30	x	200	S	1	1910,00 ZP
M 30	x	210	S	1	2062,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	220	S	1	2062,00 ZP
M 30	x	240	S	1	2153,00 ZP
M 30	x	250	S	1	2275,00 ZP
M 30	x	260	S	1	2275,00 ZP
M 30	x	280	S	1	2396,00 ZP
M 30	x	300	S	1	2608,00 ZP
M 36	x	50	S	1	1930,00 ZP
M 36	x	60	S	1	1930,00 ZP
M 36	x	65	S	1	1930,00 ZP
M 36	x	70	S	1	1900,00 ZP
M 36	x	80	S	1	1917,00 ZP
M 36	x	90	S	1	1981,00 ZP
M 36	x	100	S	1	2046,00 ZP
M 36	x	110	S	1	2110,00 ZP
M 36	x	120	S	1	2210,00 ZP
M 36	x	130	S	1	2284,00 ZP
M 36	x	140	S	1	2369,00 ZP
M 36	x	150	S	1	2466,00 ZP
M 36	x	160	S	1	2552,00 ZP
M 36	x	180	S	1	2757,00 ZP
M 36	x	200	S	1	2974,00 ZP
M 36	x	220	S	1	3155,00 ZP
M 36	x	230	S	1	3321,00 ZP
M 36	x	260	S	1	3507,00 ZP
M 36	x	310	S	1	5820,00 ZP
M 36	x	320	S	1	5360,00 ZP
M 42	x	70	S	1	3230,00 ZP
M 42	x	80	S	1	3250,00 ZP
M 42	x	90	S	1	3270,00 ZP
M 42	x	100	S	1	3400,00 ZP

ISO	04762.317	RAZ 360
4762	**8.8** **zinc plated 8 TLP**	



Hexagon socket head cap screws

Dimensions → TI-12
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 513

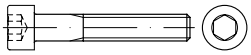
ISO 4762 → replaces DIN 912 (compatible)

M 3	x	6	S	500	9,70 ZP TLP
M 3	x	8	S	500	6,75 ZP TLP
M 3	x	10	S	500	5,75 ZP TLP
M 3	x	12	S	500	5,95 ZP TLP
M 3	x	16	S	500	6,35 ZP TLP
M 3	x	20	S	500	6,75 ZP TLP
M 4	x	6	S	500	11,90 ZP TLP
M 4	x	8	S	500	7,00 ZP TLP
M 4	x	10	S	500	5,40 ZP TLP
M 4	x	12	S	500	5,65 ZP TLP
M 4	x	16	S	500	5,50 ZP TLP
M 4	x	20	S	500	6,00 ZP TLP
M 4	x	25	S	500	6,85 ZP TLP
M 4	x	30	S	500	7,35 ZP TLP
M 4	x	35	S	500	8,95 ZP TLP
M 4	x	40	S	500	9,50 ZP TLP
M 5	x	6	S	500	12,80 ZP TLP
M 5	x	8	S	500	10,10 ZP TLP
M 5	x	10	S	500	5,45 ZP TLP
M 5	x	12	S	500	5,60 ZP TLP
M 5	x	16	S	500	5,55 ZP TLP
M 5	x	20	S	500	6,00 ZP TLP
M 5	x	25	S	500	6,45 ZP TLP
M 5	x	30	S	500	7,90 ZP TLP
M 5	x	35	S	200	8,45 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	40	S	200	9,00 ZP TLP
M 5	x	45	S	200	16,50 ZP TLP
M 5	x	50	S	200	21,30 ZP TLP
M 6	x	8	S	500	11,90 ZP TLP
M 6	x	10	S	500	5,95 ZP TLP
M 6	x	12	S	500	6,25 ZP TLP
M 6	x	16	S	500	6,00 ZP TLP
M 6	x	20	S	500	6,65 ZP TLP
M 6	x	22	S	500	11,60 ZP TLP
M 6	x	25	S	500	6,95 ZP TLP
M 6	x	30	S	500	8,00 ZP TLP
M 6	x	35	S	200	8,85 ZP TLP
M 6	x	40	S	200	9,65 ZP TLP
M 6	x	45	S	200	12,40 ZP TLP
M 6	x	50	S	200	13,00 ZP TLP
M 6	x	55	S	200	20,30 ZP TLP
M 6	x	60	S	200	21,70 ZP TLP
M 6	x	65	S	200	31,10 ZP TLP
M 6	x	70	S	200	32,30 ZP TLP
M 6	x	75	S	200	42,50 ZP TLP
M 6	x	80	S	200	43,90 ZP TLP
M 6	x	100	S	200	54,90 ZP TLP
M 8	x	10	S	200	14,50 ZP TLP
M 8	x	12	S	200	15,15 ZP TLP
M 8	x	16	S	200	10,35 ZP TLP
M 8	x	20	S	200	10,65 ZP TLP
M 8	x	25	S	200	11,65 ZP TLP
M 8	x	30	S	200	12,50 ZP TLP
M 8	x	35	S	200	13,70 ZP TLP
M 8	x	40	S	200	15,45 ZP TLP
M 8	x	45	S	200	16,00 ZP TLP
M 8	x	50	S	200	17,85 ZP TLP
M 8	x	55	S	200	27,00 ZP TLP
M 8	x	60	S	200	22,80 ZP TLP
M 8	x	65	S	200	38,50 ZP TLP
M 8	x	70	S	200	40,70 ZP TLP
M 8	x	80	S	200	56,90 ZP TLP
M 8	x	90	S	100	64,40 ZP TLP
M 8	x	100	S	100	77,00 ZP TLP
M 10	x	16	S	200	27,80 ZP TLP
M 10	x	20	S	200	19,00 ZP TLP
M 10	x	25	S	200	20,20 ZP TLP
M 10	x	30	S	200	21,65 ZP TLP
M 10	x	35	S	100	23,20 ZP TLP
M 10	x	40	S	100	25,45 ZP TLP
M 10	x	45	S	100	28,15 ZP TLP
M 10	x	50	S	100	29,70 ZP TLP
M 10	x	55	S	100	31,90 ZP TLP
M 10	x	60	S	100	34,50 ZP TLP
M 10	x	70	S	100	50,90 ZP TLP
M 10	x	80	S	100	61,50 ZP TLP
M 10	x	90	S	100	77,00 ZP TLP
M 10	x	100	S	100	82,70 ZP TLP
M 12	x	20	S	100	41,00 ZP TLP
M 12	x	25	S	100	30,00 ZP TLP
M 12	x	30	S	100	31,50 ZP TLP
M 12	x	35	S	100	32,30 ZP TLP
M 12	x	40	S	100	34,20 ZP TLP
M 12	x	45	S	100	36,50 ZP TLP
M 12	x	50	S	100	39,50 ZP TLP
M 12	x	60	S	100	46,40 ZP TLP
M 12	x	65	S	50	52,40 ZP TLP
M 12	x	70	S	50	54,50 ZP TLP
M 12	x	75	S	50	57,20 ZP TLP
M 12	x	80	S	50	58,50 ZP TLP
M 12	x	90	S	50	71,20 ZP TLP
M 16	x	25	S	50	88,40 ZP TLP
M 16	x	30	S	50	62,20 ZP TLP
M 16	x	35	S	50	63,40 ZP TLP
M 16	x	40	S	50	67,10 ZP TLP
M 16	x	50	S	50	78,50 ZP TLP
M 16	x	55	S	50	90,20 ZP TLP
M 16	x	60	S	50	116,00 ZP TLP
M 16	x	65	S	25	102,00 ZP TLP
M 16	x	70	S	25	103,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	80	S	25	150,00 ZP TLP
M 16	x	90	S	25	175,00 ZP TLP
M 16	x	100	S	25	190,00 ZP TLP
M 16	x	120	S	25	254,00 ZP TLP

ISO	04762.(*)	RAZ 360
4762	**8.8** **zinc plated yellow***	



Hexagon socket head cap screws

*< M 6 min. coating thickness 5µm = (860),
*from M 6 min. coating thickness 8µm = (308)

Dimensions → TI-12
Mech. properties → TI-220
Corrosion protection → TI-217
Tightening torque → TI-230
Standard conversion → TI-6

Stainless → S. 513

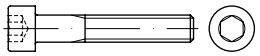
ISO 4762 → replaces DIN 912 (compatible)

M 3	x	6	S	500	7,75 YZP
M 3	x	8	S	500	5,40 YZP
M 3	x	10	S	500	4,60 YZP
M 3	x	12	S	500	4,75 YZP
M 3	x	16	S	500	5,05 YZP
M 3	x	20	S	500	5,40 YZP
M 4	x	6	S	500	9,50 YZP
M 4	x	8	S	500	5,60 YZP
M 4	x	10	S	500	4,30 YZP
M 4	x	12	S	500	4,50 YZP
M 4	x	16	S	500	4,40 YZP
M 4	x	20	S	500	4,80 YZP
M 4	x	25	S	500	5,45 YZP
M 4	x	30	S	500	5,85 YZP
M 4	x	35	S	500	7,15 YZP
M 4	x	40	S	500	7,60 YZP
M 4	x	45	S	500	16,50 YZP
M 4	x	50	S	500	19,50 YZP
M 5	x	6	S	500	10,20 YZP
M 5	x	8	S	500	8,05 YZP
M 5	x	10	S	500	4,35 YZP
M 5	x	12	S	500	4,45 YZP
M 5	x	14	S	500	7,60 YZP
M 5	x	16	S	500	4,40 YZP
M 5	x	20	S	500	4,80 YZP
M 5	x	25	S	500	5,15 YZP
M 5	x	30	S	500	6,30 YZP
M 5	x	35	S	200	6,75 YZP
M 5	x	40	S	200	7,20 YZP
M 5	x	45	S	200	13,20 YZP
M 5	x	50	S	200	17,00 YZP
M 5	x	55	S	200	18,50 YZP
M 6	x	8	S	500	9,45 YZP8
M 6	x	10	S	500	4,75 YZP
M 6	x	10	S	500	4,75 YZP8
M 6	x	12	S	500	5,00 YZP8
M 6	x	16	S	500	4,80 YZP8
M 6	x	20	S	500	5,30 YZP8
M 6	x	22	S	500	9,25 YZP8
M 6	x	25	S	500	5,55 YZP8
M 6	x	30	S	500	6,40 YZP8
M 6	x	35	S	200	7,05 YZP8
M 6	x	40	S	200	7,70 YZP8
M 6	x	45	S	200	9,90 YZP8
M 6	x	50	S	200	10,40 YZP8
M 6	x	55	S	200	16,20 YZP8
M 6	x	60	S	200	17,30 YZP8
M 6	x	65	S	200	24,85 YZP8
M 6	x	70	S	200	25,80 YZP8

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	75	S	200	34,00 YZP8
M 6	x	80	S	200	35,10 YZP8
M 6	x	100	S	200	43,90 YZP8
M 8	x	10	S	200	11,60 YZP8
M 8	x	12	S	200	12,10 YZP8
M 8	x	16	S	200	8,25 YZP8
M 8	x	20	S	200	8,50 YZP8
M 8	x	25	S	200	9,30 YZP8
M 8	x	30	S	200	10,00 YZP8
M 8	x	35	S	200	10,95 YZP8
M 8	x	40	S	200	12,35 YZP8
M 8	x	45	S	200	12,80 YZP8
M 8	x	50	S	200	14,25 YZP8
M 8	x	55	S	200	21,55 YZP8
M 8	x	60	S	200	18,20 YZP8
M 8	x	65	S	200	30,80 YZP8
M 8	x	70	S	200	32,50 YZP8
M 8	x	80	S	200	45,50 YZP8
M 8	x	90	S	100	51,50 YZP8
M 8	x	100	S	100	61,60 YZP8
M 8	x	110	S	100	71,40 YZP8
M 10	x	12	S	200	40,95 YZP8
M 10	x	16	S	200	22,15 YZP8
M 10	x	20	S	200	15,20 YZP8
M 10	x	25	S	200	16,10 YZP8
M 10	x	30	S	200	17,30 YZP8
M 10	x	35	S	100	18,55 YZP8
M 10	x	40	S	100	20,35 YZP8
M 10	x	45	S	100	22,50 YZP8
M 10	x	50	S	100	23,70 YZP8
M 10	x	55	S	100	25,50 YZP8
M 10	x	60	S	100	27,60 YZP8
M 10	x	70	S	100	40,65 YZP8
M 10	x	80	S	100	49,15 YZP8
M 10	x	90	S	100	61,60 YZP
M 10	x	90	S	100	61,60 YZP8
M 10	x	100	S	100	66,15 YZP8
M 10	x	110	S	100	74,10 YZP8
M 10	x	120	S	50	87,80 YZP8
M 12	x	20	S	100	32,80 YZP8
M 12	x	25	S	100	23,95 YZP
M 12	x	25	S	100	23,95 YZP8
M 12	x	30	S	100	25,20 YZP8
M 12	x	35	S	100	25,80 YZP8
M 12	x	40	S	100	27,30 YZP8
M 12	x	45	S	100	29,15 YZP8
M 12	x	50	S	100	31,55 YZP
M 12	x	50	S	100	72,86 YZP8
M 12	x	60	S	100	37,10 YZP8
M 12	x	65	S	50	41,85 YZP8
M 12	x	70	S	50	43,55 YZP
M 12	x	70	S	50	43,55 YZP8
M 12	x	75	S	50	45,75 YZP8
M 12	x	80	S	50	46,75 YZP8
M 12	x	90	S	50	56,95 YZP8
M 12	x	100	S	50	73,00 YZP8
M 16	x	25	S	50	70,70 YZP8
M 16	x	30	S	50	49,70 YZP8
M 16	x	35	S	50	50,65 YZP8
M 16	x	40	S	50	53,65 YZP8
M 16	x	45	S	50	59,50 YZP
M 16	x	45	S	50	59,50 YZP8
M 16	x	50	S	50	62,80 YZP
M 16	x	50	S	50	62,80 YZP8
M 16	x	55	S	50	72,15 YZP8
M 16	x	60	S	50	92,75 YZP
M 16	x	60	S	50	92,75 YZP8
M 16	x	65	S	25	80,95 YZP8
M 16	x	70	S	25	82,10 YZP
M 16	x	70	S	25	82,10 YZP8
M 16	x	80	S	25	120,00 YZP
M 16	x	80	S	25	120,00 YZP8
M 16	x	85	S	25	210,00 YZP8
M 16	x	90	S	25	140,00 YZP8
M 16	x	100	S	25	152,00 YZP8
M 16	x	120	S	25	203,00 YZP8
M 16	x	130	S	25	226,00 YZP8
M 16	x	140	S	25	251,00 YZP8
M 16	x	150	S	25	313,00 YZP8
M 20	x	50	S	25	118,00 YZP8
M 20	x	60	S	25	127,00 YZP8
M 20	x	65	S	25	137,00 YZP8

ISO	04762.353	RAZ 1570

4762 **8.8 zinc flake coated**



Hexagon socket head cap screws

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

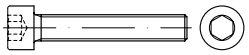
Dimensions ➔ TI-12 Corrosion protection ➔ TI-218
Mech. properties ➔ TI-221 Tightening torque ➔ TI-230

Stainless ➔ S. 513

ISO 4762 ➔ replaces DIN 912 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	12	S	500	6,50 fIZn
M 6	x	14	S	500	9,60 fIZn
M 6	x	16	S	500	6,25 fIZn
M 6	x	18	S	500	6,70 fIZn
M 6	x	20	S	500	6,85 fIZn
M 6	x	22	S	500	11,80 fIZn
M 6	x	25	S	500	7,25 fIZn
M 6	x	28	S	500	17,10 fIZn
M 6	x	30	S	500	8,30 fIZn
M 6	x	35	S	200	9,05 fIZn
M 6	x	40	S	200	10,05 fIZn
M 6	x	45	S	200	12,90 fIZn
M 6	x	50	S	200	13,55 fIZn
M 6	x	55	S	200	21,15 fIZn
M 6	x	60	S	200	22,50 fIZn
M 6	x	65	S	200	29,35 fIZn
M 6	x	70	S	200	30,40 fIZn
M 6	x	75	S	200	40,80 fIZn
M 6	x	80	S	200	42,00 fIZn
M 8	x	16	S	200	10,75 fIZn
M 8	x	20	S	200	11,05 fIZn
M 8	x	25	S	200	12,10 fIZn
M 8	x	30	S	200	12,95 fIZn
M 8	x	35	S	200	14,20 fIZn
M 8	x	40	S	200	16,10 fIZn
M 8	x	45	S	200	16,65 fIZn
M 8	x	50	S	200	18,55 fIZn
M 8	x	55	S	200	21,40 fIZn
M 8	x	60	S	200	23,60 fIZn
M 8	x	65	S	200	34,20 fIZn
M 8	x	70	S	200	35,40 fIZn
M 8	x	75	S	200	42,40 fIZn
M 8	x	80	S	200	52,20 fIZn
M 8	x	90	S	100	63,65 fIZn
M 10	x	20	S	200	19,80 fIZn
M 10	x	25	S	200	20,70 fIZn
M 10	x	30	S	200	22,40 fIZn
M 10	x	35	S	100	24,05 fIZn
M 10	x	40	S	100	26,20 fIZn
M 10	x	45	S	100	28,90 fIZn
M 10	x	50	S	100	30,85 fIZn
M 10	x	55	S	100	33,15 fIZn
M 10	x	60	S	100	35,75 fIZn
M 10	x	65	S	100	38,65 fIZn
M 10	x	70	S	100	39,95 fIZn
M 10	x	75	S	100	47,45 fIZn
M 10	x	80	S	100	49,10 fIZn
M 10	x	90	S	100	67,10 fIZn
M 12	x	20	S	100	34,65 fIZn
M 12	x	25	S	100	31,15 fIZn
M 12	x	30	S	100	32,45 fIZn
M 12	x	35	S	100	33,50 fIZn
M 12	x	40	S	100	35,45 fIZn
M 12	x	45	S	100	37,58 fIZn
M 12	x	50	S	100	40,90 fIZn
M 12	x	55	S	100	44,85 fIZn
M 12	x	60	S	100	48,10 fIZn
M 12	x	65	S	50	54,25 fIZn
M 12	x	70	S	50	56,40 fIZn
M 12	x	75	S	50	59,25 fIZn
M 12	x	80	S	50	60,60 fIZn
M 12	x	90	S	50	73,80 fIZn
M 12	x	100	S	50	89,15 fIZn
M 16	x	30	S	50	63,90 fIZn
M 16	x	35	S	50	65,65 fIZn
M 16	x	40	S	50	69,55 fIZn
M 16	x	45	S	50	74,50 fIZn
M 16	x	50	S	50	81,25 fIZn
M 16	x	55	S	50	87,60 fIZn
M 16	x	60	S	50	91,45 fIZn
M 16	x	65	S	25	104,00 fIZn
M 16	x	70	S	25	105,00 fIZn
M 16	x	75	S	25	117,00 fIZn
M 16	x	80	S	25	119,00 fIZn
M 16	x	90	S	25	141,00 fIZn
M 16	x	100	S	25	155,00 fIZn
M 16	x	110	S	25	207,00 fIZn
M 16	x	120	S	25	227,00 fIZn
M 20	x	65	S	25	179,00 fIZn
M 20	x	70	S	25	182,00 fIZn
M 20	x	75	S	25	193,00 fIZn
M 20	x	80	S	25	194,00 fIZn
M 20	x	90	S	25	233,00 fIZn
M 20	x	100	S	25	249,00 fIZn
M 20	x	110	S	25	290,00 fIZn
M 20	x	120	S	25	314,00 fIZn
M 20	x	130	S	25	422,00 fIZn
M 20	x	140	S	25	582,00 fIZn
M 20	x	150	S	25	666,00 fIZn
M 20	x	160	S	10	680,00 fIZn
M 20	x	170	S	10	818,00 fIZn
M 20	x	180	S	10	818,00 fIZn
M 24	x	75	S	25	409,00 fIZn
M 24	x	80	S	25	413,00 fIZn
M 24	x	90	S	10	487,00 fIZn
M 24	x	100	S	10	510,00 fIZn
M 24	x	110	S	10	619,00 fIZn
M 24	x	120	S	10	663,00 fIZn
M 24	x	130	S	1	756,00 fIZn
M 24	x	140	S	1	927,00 fIZn
M 24	x	150	S	1	1129,00 fIZn
M 24	x	160	S	1	1021,00 fIZn
M 24	x	170	S	1	1086,00 fIZn
M 24	x	180	S	1	1133,00 fIZn

Dimensions	PU	Pieces	€/100/Mat.
~ISO	04762.388		RAZ 364
4762	**8.8**		**FT**



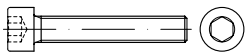
Hexagon socket head cap screws, FT = full thread

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Design and other dimensions identical to ISO 4762

M 5	x	40	S	200	20,30
M 5	x	50	S	200	23,20
M 5	x	60	S	200	26,00
M 5	x	70	S	200	28,80
M 5	x	80	S	200	31,60
M 6	x	40	S	200	22,40
M 6	x	50	S	200	28,00
M 6	x	60	S	200	33,60
M 6	x	70	S	200	38,40
M 6	x	80	S	200	42,40
M 6	x	90	S	200	54,60
M 6	x	100	S	200	114,00
M 8	x	50	S	200	42,40
M 8	x	60	S	200	48,70
M 8	x	70	S	200	60,20
M 8	x	80	S	200	72,10
M 8	x	90	S	100	78,40
M 8	x	100	S	100	91,70
M 10	x	50	S	100	65,50
M 10	x	60	S	100	108,00
M 10	x	70	S	100	125,00
M 10	x	80	S	100	146,00
M 10	x	90	S	100	210,00
M 10	x	100	S	100	240,00
M 12	x	70	S	50	150,00
M 12	x	80	S	50	180,00
M 12	x	90	S	50	240,00
M 12	x	100	S	50	340,00
M 16	x	70	S	25	200,00
M 16	x	80	S	25	240,00
M 16	x	90	S	25	320,00
M 16	x	100	S	25	450,00
M 16	x	120	S	25	540,00

Dimensions	PU	Pieces	€/100/Mat.
~ISO	04762.329		RAZ 364
4762	**8.8 zinc plated**		**FT**



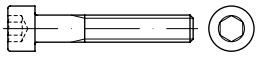
Hexagon socket head cap screws, FT = full thread

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

Design and other dimensions identical to ISO 4762

M 4	x	30	S	500	29,00 ZP
M 5	x	40	S	200	29,00 ZP
M 5	x	45	S	200	31,20 ZP
M 5	x	50	S	200	33,10 ZP
M 5	x	60	S	200	37,10 ZP
M 5	x	70	S	200	41,05 ZP
M 5	x	80	S	200	45,05 ZP
M 6	x	40	S	200	32,00 ZP
M 6	x	50	S	200	39,90 ZP
M 6	x	60	S	200	47,90 ZP
M 6	x	70	S	200	54,75 ZP
M 6	x	75	S	200	75,00 ZP
M 6	x	80	S	200	60,45 ZP
M 6	x	90	S	200	78,00 ZP
M 6	x	100	S	200	162,00 ZP
M 8	x	45	S	200	58,15 ZP
M 8	x	50	S	200	60,45 ZP
M 8	x	60	S	200	69,55 ZP
M 8	x	70	S	200	86,00 ZP
M 8	x	75	S	200	95,00 ZP
M 8	x	80	S	200	103,00 ZP
M 8	x	90	S	100	112,00 ZP
M 8	x	100	S	100	131,00 ZP
M 10	x	50	S	100	88,00 ZP
M 10	x	50	S	100	93,50 ZP
M 10	x	60	S	100	154,00 ZP
M 10	x	80	S	100	208,00 ZP
M 10	x	90	S	100	297,00 ZP
M 10	x	100	S	100	343,00 ZP
M 12	x	60	S	100	183,00 ZP
M 12	x	80	S	50	258,00 ZP
M 12	x	100	S	50	485,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	04762.100		RAZ 362
4762	**10.9**		



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 513

ISO 4762 → replaces DIN 912 (compatible)

M 3	x	6	S	500	8,30
M 3	x	8	S	500	6,60
M 3	x	10	S	500	5,40
M 3	x	12	S	500	5,65
M 3	x	14	S	500	13,40
M 3	x	16	S	500	5,85
M 3	x	20	S	500	6,20
M 3	x	25	S	500	6,75
M 3	x	30	S	500	7,70
M 4	x	6	S	500	16,65
M 4	x	8	S	500	6,35
M 4	x	10	S	500	5,85
M 4	x	12	S	500	5,90
M 4	x	14	S	500	16,85
M 4	x	16	S	500	6,00
M 4	x	18	S	500	6,25
M 4	x	20	S	500	6,35
M 4	x	22	S	500	16,90
M 4	x	25	S	500	6,60
M 4	x	30	S	500	7,05
M 4	x	35	S	500	7,35
M 4	x	40	S	500	8,00
M 4	x	45	S	500	20,65
M 4	x	50	S	500	21,30
M 4	x	55	S	200	23,40
M 4	x	60	S	200	24,85
M 4	x	65	S	200	25,50
M 4	x	70	S	200	28,50
M 5	x	6	S	500	19,35
M 5	x	8	S	500	13,80
M 5	x	10	S	500	5,05
M 5	x	12	S	500	5,30
M 5	x	14	S	500	14,00
M 5	x	16	S	500	5,40
M 5	x	18	S	500	6,60
M 5	x	20	S	500	5,70
M 5	x	22	S	500	14,55
M 5	x	25	S	500	6,00
M 5	x	30	S	500	6,40
M 5	x	35	S	200	8,55
M 5	x	40	S	200	8,75
M 5	x	45	S	200	14,85
M 5	x	50	S	200	19,95
M 5	x	55	S	200	22,70
M 5	x	60	S	200	23,90
M 5	x	65	S	200	32,80
M 5	x	70	S	200	33,40
M 5	x	75	S	200	52,85
M 5	x	80	S	200	52,85
M 5	x	85	S	200	112,00
M 5	x	90	S	200	57,30
M 5	x	95	S	200	160,00
M 5	x	100	S	200	63,70
M 5	x	110	S	100	149,00
M 5	x	120	S	100	153,00
M 5	x	130	S	100	438,00
M 5	x	135	S	100	521,00
M 5	x	140	S	100	521,00
M 5	x	150	S	100	532,00
M 5	x	160	S	100	542,00
M 5	x	170	S	100	576,00
M 5	x	180	S	100	594,00
M 5	x	190	S	100	683,00
M 5	x	200	S	100	745,00
M 6	x	8	S	500	15,30
M 6	x	10	S	500	5,20
M 6	x	12	S	500	5,30
M 6	x	14	S	500	12,05
M 6	x	16	S	500	5,40
M 6	x	18	S	500	6,05
M 6	x	20	S	500	5,50
M 6	x	22	S	500	14,95
M 6	x	25	S	500	5,65
M 6	x	30	S	500	6,45
M 6	x	35	S	200	6,90
M 6	x	40	S	200	7,75
M 6	x	45	S	200	10,10
M 6	x	50	S	200	12,05
M 6	x	55	S	200	19,10
M 6	x	60	S	200	19,45
M 6	x	65	S	200	24,45
M 6	x	70	S	200	32,55
M 6	x	75	S	200	40,10
M 6	x	80	S	200	44,15
M 6	x	85	S	200	78,85
M 6	x	90	S	200	54,05
M 6	x	95	S	200	94,60
M 6	x	100	S	200	64,90
M 6	x	110	S	100	88,55
M 6	x	120	S	100	96,40
M 6	x	130	S	100	296,00
M 6	x	135	S	100	344,00
M 6	x	140	S	100	311,00
M 6	x	145	S	100	425,00
M 6	x	150	S	100	350,00
M 6	x	160	S	100	592,00
M 6	x	170	S	100	651,00
M 6	x	180	S	100	692,00
M 6	x	190	S	100	849,00
M 6	x	200	S	100	941,00
M 6	x	210	S	50	965,00
M 6	x	220	S	50	977,00
M 6	x	230	S	50	1062,00

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 240	S	50	1062,00
M 8 x 10	S	200	12,60
M 8 x 12	S	200	12,60
M 8 x 14	S	200	18,75
M 8 x 16	S	200	8,85
M 8 x 18	S	200	9,65
M 8 x 20	S	200	8,40
M 8 x 22	S	200	19,35
M 8 x 25	S	200	9,05
M 8 x 30	S	200	9,55
M 8 x 35	S	200	10,60
M 8 x 40	S	200	11,75
M 8 x 45	S	200	12,45
M 8 x 50	S	200	13,65
M 8 x 55	S	200	18,55
M 8 x 60	S	200	19,00
M 8 x 65	S	200	25,55
M 8 x 70	S	200	26,15
M 8 x 75	S	200	32,50
M 8 x 80	S	200	42,85
M 8 x 85	S	100	63,70
M 8 x 90	S	100	51,85
M 8 x 95	S	100	74,00
M 8 x 100	S	100	60,35
M 8 x 110	S	100	78,85
M 8 x 120	S	100	80,05
M 8 x 125	S	100	172,00
M 8 x 130	S	100	122,00
M 8 x 135	S	100	185,00
M 8 x 140	S	50	134,00
M 8 x 150	S	50	226,00
M 8 x 160	S	50	255,00
M 8 x 170	S	50	292,00
M 8 x 180	S	50	309,00
M 8 x 190	S	50	485,00
M 8 x 200	S	50	485,00
M 8 x 220	S	50	544,00
M 8 x 240	S	50	685,00
M 8 x 250	S	50	723,00
M 8 x 260	S	50	723,00
M 8 x 270	S	50	781,00
M 8 x 280	S	50	781,00
M 8 x 300	S	50	820,00
M 10 x 10	S	200	57,80
M 10 x 12	S	200	57,80
M 10 x 16	S	200	25,60
M 10 x 18	S	200	59,15
M 10 x 20	S	200	15,45
M 10 x 22	S	200	43,00
M 10 x 25	S	200	16,70
M 10 x 30	S	200	17,35
M 10 x 35	S	100	18,35
M 10 x 40	S	100	19,15
M 10 x 45	S	100	21,20
M 10 x 50	S	100	22,40
M 10 x 55	S	100	24,40
M 10 x 60	S	100	25,10
M 10 x 65	S	100	26,15
M 10 x 70	S	100	27,10
M 10 x 75	S	100	36,80
M 10 x 80	S	100	37,80
M 10 x 85	S	100	85,50
M 10 x 90	S	100	49,45
M 10 x 95	S	100	92,75
M 10 x 100	S	100	55,05
M 10 x 110	S	50	91,55
M 10 x 115	S	50	189,00
M 10 x 120	S	50	120,00
M 10 x 125	S	50	189,00
M 10 x 130	S	50	142,00
M 10 x 135	S	50	211,00
M 10 x 140	S	50	159,00
M 10 x 145	S	50	314,00
M 10 x 150	S	50	234,00
M 10 x 160	S	50	262,00
M 10 x 170	S	50	306,00
M 10 x 180	S	50	324,00
M 10 x 190	S	50	366,00
M 10 x 200	S	50	366,00
M 10 x 210	S	50	458,00
M 10 x 220	S	50	439,00
M 10 x 230	S	50	532,00
M 10 x 240	S	50	514,00
M 10 x 250	S	50	566,00
M 10 x 260	S	50	586,00
M 10 x 270	S	50	792,00
M 10 x 280	S	50	659,00
M 10 x 290	S	50	878,00
M 10 x 300	S	50	732,00
M 10 x 310	S	50	1799,00
M 10 x 320	S	50	1937,00
M 10 x 340	S	50	2325,00
M 10 x 350	S	50	3044,00
M 10 x 400	S	50	4013,00
M 12 x 12	S	100	234,00
M 12 x 14	S	100	67,90
M 12 x 16	S	100	67,90
M 12 x 18	S	100	67,90
M 12 x 20	S	100	30,45
M 12 x 25	S	100	25,60
M 12 x 30	S	100	26,60
M 12 x 35	S	100	27,30
M 12 x 40	S	100	27,80
M 12 x 45	S	100	29,50
M 12 x 50	S	100	30,95
M 12 x 55	S	100	34,20
M 12 x 60	S	100	35,70
M 12 x 65	S	50	39,60
M 12 x 70	S	50	41,00
M 12 x 75	S	50	43,45
M 12 x 80	S	50	44,20
M 12 x 85	S	50	119,00
M 12 x 90	S	50	55,40
M 12 x 95	S	50	132,00
M 12 x 100	S	50	62,50
M 12 x 110	S	50	95,85
M 12 x 120	S	50	107,00
M 12 x 125	S	50	217,00
M 12 x 130	S	50	165,00
M 12 x 135	S	50	257,00
M 12 x 140	S	50	193,00
M 12 x 150	S	50	250,00
M 12 x 160	S	25	278,00
M 12 x 170	S	25	301,00
M 12 x 180	S	25	320,00
M 12 x 190	S	25	635,00
M 12 x 200	S	25	412,00
M 12 x 210	S	25	604,00
M 12 x 220	S	25	604,00
M 12 x 230	S	25	710,00
M 12 x 240	S	25	691,00
M 12 x 250	S	25	1017,00
M 12 x 260	S	25	756,00
M 12 x 270	S	25	1034,00
M 12 x 280	S	25	802,00
M 12 x 290	S	25	1052,00
M 12 x 300	S	25	875,00
M 12 x 310	S	25	1717,00
M 12 x 320	S	25	1884,00
M 12 x 330	S	25	2217,00
M 12 x 340	S	25	2217,00
M 12 x 360	S	25	2770,00
M 12 x 380	S	25	3325,00
M 12 x 400	S	25	3601,00
M 14 x 20	S	100	162,00
M 14 x 25	S	100	125,00
M 14 x 30	S	100	120,00
M 14 x 35	S	100	124,00
M 14 x 40	S	100	98,85
M 14 x 45	S	50	102,00
M 14 x 50	S	50	108,00
M 14 x 55	S	50	162,00
M 14 x 60	S	50	119,00
M 14 x 65	S	50	145,00
M 14 x 70	S	50	150,00
M 14 x 75	S	50	170,00
M 14 x 80	S	50	170,00
M 14 x 90	S	50	182,00
M 14 x 100	S	50	205,00
M 14 x 110	S	50	216,00
M 14 x 120	S	50	244,00
M 14 x 125	S	50	543,00
M 14 x 130	S	50	273,00
M 14 x 140	S	25	350,00
M 14 x 150	S	25	398,00
M 14 x 160	S	25	637,00
M 14 x 170	S	25	672,00
M 14 x 180	S	25	704,00
M 14 x 190	S	25	727,00
M 14 x 200	S	25	749,00
M 16 x 20	S	50	162,00
M 16 x 25	S	50	118,00
M 16 x 30	S	50	54,00
M 16 x 35	S	50	56,85
M 16 x 40	S	50	58,00
M 16 x 45	S	50	59,65
M 16 x 50	S	50	61,85
M 16 x 55	S	50	63,70
M 16 x 60	S	50	66,70
M 16 x 65	S	25	76,40
M 16 x 70	S	25	76,40
M 16 x 75	S	25	87,35
M 16 x 80	S	25	87,35
M 16 x 85	S	25	308,00
M 16 x 90	S	25	106,00
M 16 x 100	S	25	116,00
M 16 x 110	S	25	140,00
M 16 x 120	S	25	169,00
M 16 x 125	S	25	371,00
M 16 x 130	S	25	236,00
M 16 x 140	S	25	309,00
M 16 x 150	S	25	350,00
M 16 x 160	S	25	429,00
M 16 x 170	S	25	499,00
M 16 x 180	S	25	499,00
M 16 x 190	S	25	626,00
M 16 x 200	S	25	706,00
M 16 x 210	S	25	1120,00
M 16 x 220	S	25	757,00
M 16 x 230	S	25	1158,00
M 16 x 240	S	25	759,00
M 16 x 250	S	25	1236,00
M 16 x 260	S	25	846,00
M 16 x 270	S	25	1306,00
M 16 x 280	S	25	933,00
M 16 x 290	S	25	1508,00
M 16 x 300	S	25	1049,00
M 16 x 320	S	10	1398,00
M 16 x 330	S	10	1400,00
M 16 x 340	S	10	1513,00
M 16 x 350	S	10	1536,00
M 16 x 360	S	10	1632,00
M 16 x 380	S	10	2303,00
M 16 x 400	S	10	2425,00
M 18 x 35	S	50	306,00
M 18 x 40	S	50	258,00
M 18 x 45	S	50	263,00
M 18 x 50	S	50	263,00
M 18 x 55	S	25	264,00
M 18 x 60	S	25	264,00
M 18 x 65	S	25	281,00
M 18 x 70	S	25	281,00
M 18 x 75	S	25	317,00
M 18 x 80	S	25	311,00
M 18 x 90	S	25	317,00

Dimensions	PU	Pieces	€/100/Mat.
M 18 x 120	S	25	407,00
M 18 x 130	S	25	697,00
M 18 x 140	S	25	768,00
M 18 x 150	S	25	854,00
M 18 x 160	S	25	942,00
M 18 x 180	S	25	1039,00
M 18 x 200	S	25	1039,00
M 18 x 210	S	10	1237,00
M 18 x 220	S	10	1237,00
M 18 x 240	S	10	1308,00
M 18 x 250	S	10	1398,00
M 18 x 260	S	10	1398,00
M 18 x 280	S	10	1496,00
M 18 x 300	S	10	1594,00
M 20 x 20	S	25	470,00
M 20 x 25	S	25	470,00
M 20 x 30	S	25	258,00
M 20 x 35	S	25	258,00
M 20 x 40	S	25	112,00
M 20 x 45	S	25	113,00
M 20 x 50	S	25	114,00
M 20 x 55	S	25	121,00
M 20 x 60	S	25	125,00
M 20 x 65	S	25	136,00
M 20 x 70	S	25	136,00
M 20 x 75	S	25	142,00
M 20 x 80	S	25	142,00
M 20 x 85	S	25	350,00
M 20 x 90	S	25	166,00
M 20 x 95	S	25	638,00
M 20 x 100	S	25	181,00
M 20 x 110	S	25	205,00
M 20 x 120	S	25	248,00
M 20 x 125	S	25	1169,00
M 20 x 130	S	25	320,00
M 20 x 135	S	25	1195,00
M 20 x 140	S	25	468,00
M 20 x 145	S	25	1221,00
M 20 x 150	S	25	543,00
M 20 x 160	S	10	708,00
M 20 x 170	S	10	865,00
M 20 x 180	S	10	754,00
M 20 x 190	S	10	840,00
M 20 x 200	S	10	705,00
M 20 x 210	S	1	1469,00
M 20 x 220	S	1	1030,00
M 20 x 230	S	1	1651,00
M 20 x 240	S	1	1091,00
M 20 x 250	S	1	1761,00
M 20 x 260	S	1	1152,00
M 20 x 270	S	1	1885,00
M 20 x 280	S	1	1211,00
M 20 x 290	S	1	2163,00
M 20 x 300	S	1	1341,00
M 20 x 310	S	1	1695,00
M 20 x 320	S	1	1747,00
M 20 x 330	S	1	1919,00
M 20 x 340	S	1	1980,00
M 20 x 350	S	1	2123,00
M 20 x 360	S	1	2189,00
M 20 x 380	S	1	2375,00
M 20 x 400	S	1	2608,00
M 22 x 40	S	25	883,00
M 22 x 45	S	25	708,00
M 22 x 50	S	25	882,00
M 22 x 60	S	25	927,00
M 22 x 65	S	25	958,00
M 22 x 70	S	25	958,00
M 22 x 75	S	25	1001,00
M 22 x 80	S	25	1001,00
M 22 x 90	S	25	1072,00
M 22 x 100	S	10	1097,00
M 22 x 110	S	10	1120,00
M 22 x 120	S	10	1122,00
M 22 x 130	S	10	1177,00

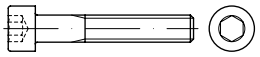
Dimensions	PU	Pieces	€/100/Mat.
M 22 x 140	S	10	1227,00
M 22 x 150	S	10	1258,00
M 22 x 160	S	10	1286,00
M 22 x 180	S	10	1446,00
M 22 x 200	S	10	1687,00
M 22 x 220	S	10	1752,00
M 24 x 30	S	25	763,00
M 24 x 35	S	25	763,00
M 24 x 40	S	25	688,00
M 24 x 45	S	25	708,00
M 24 x 50	S	25	343,00
M 24 x 55	S	25	365,00
M 24 x 60	S	25	365,00
M 24 x 65	S	25	380,00
M 24 x 70	S	25	380,00
M 24 x 75	S	25	396,00
M 24 x 80	S	25	396,00
M 24 x 85	S	10	714,00
M 24 x 90	S	10	452,00
M 24 x 95	S	10	742,00
M 24 x 100	S	10	464,00
M 24 x 110	S	10	516,00
M 24 x 120	S	10	531,00
M 24 x 130	S	10	702,00
M 24 x 140	S	10	891,00
M 24 x 150	S	10	1049,00
M 24 x 160	S	10	1122,00
M 24 x 170	S	10	1339,00
M 24 x 180	S	10	1389,00
M 24 x 190	S	10	1697,00
M 24 x 200	S	10	1492,00
M 24 x 210	S	1	1911,00
M 24 x 220	S	1	1738,00
M 24 x 230	S	1	2081,00
M 24 x 240	S	1	1895,00
M 24 x 250	S	1	2238,00
M 24 x 260	S	1	2033,00
M 24 x 270	S	1	2382,00
M 24 x 280	S	1	2091,00
M 24 x 290	S	1	2518,00
M 24 x 300	S	1	2156,00
M 24 x 310	S	1	2330,00
M 24 x 320	S	1	2330,00
M 24 x 330	S	1	2621,00
M 24 x 340	S	1	2621,00
M 24 x 350	S	1	2866,00
M 24 x 360	S	1	2866,00
M 24 x 380	S	1	3098,00
M 24 x 400	S	1	3354,00
M 24 x 420	S	1	4402,00
M 24 x 440	S	1	4802,00
M 24 x 450	S	1	4958,00
M 24 x 460	S	1	5202,00
M 24 x 480	S	1	5602,00
M 24 x 500	S	1	6003,00
M 24 x 520	S	1	6293,00
M 27 x 40	S	10	1365,00
M 27 x 45	S	10	1365,00
M 27 x 50	S	10	1115,00
M 27 x 55	S	10	1115,00
M 27 x 60	S	10	1115,00
M 27 x 65	S	10	1158,00
M 27 x 70	S	10	1158,00
M 27 x 75	S	10	1208,00
M 27 x 80	S	10	1208,00
M 27 x 85	S	10	1253,00
M 27 x 90	S	10	1253,00
M 27 x 95	S	10	1313,00
M 27 x 100	S	10	1313,00
M 27 x 110	S	10	1342,00
M 27 x 120	S	10	1487,00
M 27 x 130	S	1	1546,00
M 27 x 140	S	1	1610,00
M 27 x 150	S	1	1668,00
M 27 x 160	S	1	1711,00

Dimensions	PU	Pieces	€/100/Mat.
M 27 x 170	S	1	2122,00
M 27 x 180	S	1	1837,00
M 27 x 190	S	1	2306,00
M 27 x 200	S	1	1920,00
M 27 x 210	S	1	2949,00
M 27 x 220	S	1	2155,00
M 27 x 230	S	1	3210,00
M 27 x 240	S	1	2325,00
M 27 x 250	S	1	3413,00
M 27 x 260	S	1	2486,00
M 27 x 270	S	1	2566,00
M 27 x 280	S	1	2638,00
M 27 x 290	S	1	2714,00
M 27 x 300	S	1	2812,00
M 27 x 320	S	1	4102,00
M 27 x 340	S	1	4399,00
M 27 x 360	S	1	4721,00
M 27 x 380	S	1	5443,00
M 27 x 400	S	1	6390,00
M 30 x 40	S	10	1380,00
M 30 x 45	S	10	1380,00
M 30 x 50	S	10	1258,00
M 30 x 55	S	10	1258,00
M 30 x 60	S	10	1258,00
M 30 x 65	S	10	1306,00
M 30 x 70	S	10	1306,00
M 30 x 75	S	10	1342,00
M 30 x 80	S	10	1342,00
M 30 x 85	S	10	1404,00
M 30 x 90	S	10	1404,00
M 30 x 95	S	10	1487,00
M 30 x 100	S	10	1487,00
M 30 x 110	S	10	1561,00
M 30 x 120	S	10	1632,00
M 30 x 130	S	10	1690,00
M 30 x 140	S	10	1756,00
M 30 x 150	S	10	1846,00
M 30 x 160	S	10	1932,00
M 30 x 170	S	10	2027,00
M 30 x 180	S	10	2047,00
M 30 x 190	S	10	2189,00
M 30 x 200	S	10	2222,00
M 30 x 210	S	1	2397,00
M 30 x 220	S	1	2397,00
M 30 x 230	S	1	2674,00
M 30 x 240	S	1	2674,00
M 30 x 250	S	1	2856,00
M 30 x 260	S	1	2856,00
M 30 x 270	S	1	3086,00
M 30 x 280	S	1	2804,00
M 30 x 290	S	1	3552,00
M 30 x 300	S	1	3039,00
M 30 x 310	S	1	4521,00
M 30 x 320	S	1	3954,00
M 30 x 330	S	1	4859,00
M 30 x 340	S	1	5034,00
M 30 x 350	S	1	5730,00
M 30 x 360	S	1	5395,00
M 30 x 380	S	1	5946,00
M 30 x 400	S	1	6493,00
M 30 x 420	S	1	6879,00
M 30 x 440	S	1	8936,00
M 30 x 450	S	1	9809,00
M 30 x 460	S	1	9809,00
M 30 x 480	S	1	10971,00
M 30 x 500	S	1	11412,00
M 30 x 520	S	1	11704,00
M 33 x 60	S	1	1649,00
M 33 x 70	S	1	1649,00
M 33 x 80	S	1	1649,00
M 33 x 90	S	1	1744,00
M 33 x 100	S	1	1877,00
M 33 x 110	S	1	1960,00
M 33 x 120	S	1	2096,00
M 33 x 130	S	1	2165,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 33	x	140	S	1	2295,00
M 33	x	150	S	1	2432,00
M 33	x	160	S	1	2487,00
M 33	x	170	S	1	3255,00
M 33	x	180	S	1	2734,00
M 33	x	190	S	1	3512,00
M 33	x	200	S	1	2897,00
M 33	x	220	S	1	3161,00
M 33	x	240	S	1	3370,00
M 33	x	260	S	1	3606,00
M 33	x	280	S	1	3780,00
M 33	x	300	S	1	4083,00
M 33	x	320	S	1	4675,00
M 33	x	340	S	1	5060,00
M 33	x	360	S	1	5356,00
M 33	x	380	S	1	5833,00
M 33	x	400	S	1	6306,00
M 36	x	50	S	1	3275,00
M 36	x	55	S	1	3275,00
M 36	x	60	S	1	2225,00
M 36	x	65	S	1	2225,00
M 36	x	70	S	1	2225,00
M 36	x	75	S	1	2225,00
M 36	x	80	S	1	2225,00
M 36	x	90	S	1	2284,00
M 36	x	100	S	1	2352,00
M 36	x	110	S	1	2422,00
M 36	x	120	S	1	2515,00
M 36	x	130	S	1	2608,00
M 36	x	140	S	1	2701,00
M 36	x	150	S	1	2796,00
M 36	x	160	S	1	2888,00
M 36	x	170	S	1	3564,00
M 36	x	180	S	1	3122,00
M 36	x	190	S	1	3260,00
M 36	x	200	S	1	3378,00
M 36	x	210	S	1	3564,00
M 36	x	220	S	1	3564,00
M 36	x	230	S	1	3750,00
M 36	x	240	S	1	3750,00
M 36	x	250	S	1	3936,00
M 36	x	260	S	1	3936,00
M 36	x	270	S	1	4008,00
M 36	x	280	S	1	4192,00
M 36	x	290	S	1	4390,00
M 36	x	300	S	1	4564,00
M 36	x	310	S	1	5074,00
M 36	x	320	S	1	5449,00
M 36	x	330	S	1	5644,00
M 36	x	340	S	1	5728,00
M 36	x	350	S	1	5872,00
M 36	x	360	S	1	5984,00
M 36	x	380	S	1	6356,00
M 36	x	400	S	1	6846,00
M 36	x	420	S	1	8711,00
M 36	x	440	S	1	10549,00
M 36	x	450	S	1	10963,00
M 36	x	460	S	1	10963,00
M 36	x	480	S	1	11475,00
M 36	x	500	S	1	11779,00
M 42	x	80	S	1	7475,00
M 42	x	90	S	1	7475,00
M 42	x	100	S	1	3695,00
M 42	x	110	S	1	3817,00
M 42	x	120	S	1	4067,00
M 42	x	130	S	1	4120,00
M 42	x	140	S	1	4549,00
M 42	x	150	S	1	4864,00
M 42	x	160	S	1	5030,00
M 42	x	170	S	1	5140,00
M 42	x	180	S	1	5275,00
M 42	x	190	S	1	5507,00
M 42	x	200	S	1	5783,00
M 42	x	220	S	1	6684,00
M 42	x	240	S	1	7236,00
M 42	x	260	S	1	7783,00
M 42	x	280	S	1	8260,00
M 42	x	300	S	1	8952,00
M 42	x	320	S	1	15621,00
M 42	x	400	S	1	18796,00
M 42	x	420	S	1	19150,00
M 48	x	110	S	1	7236,00
M 48	x	160	S	1	8816,00
M 48	x	200	S	1	10325,00
M 48	x	400	S	1	42556,00

ISO	04762.110	RAZ 362
4762	**10.9 zinc plated**	



Hexagon socket head cap screws

baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-12
Tightening torque → TI-230
Mech. properties → TI-220
Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 513

ISO 4762 → replaces DIN 912 (compatible)

M 3	x	6	S	500	8,65 ZP
M 3	x	8	S	500	7,00 ZP
M 3	x	10	S	500	5,85 ZP
M 3	x	12	S	500	6,15 ZP
M 3	x	16	S	500	6,45 ZP
M 3	x	20	S	500	6,90 ZP
M 3	x	25	S	500	7,60 ZP
M 3	x	30	S	500	8,70 ZP
M 4	x	6	S	500	12,20 ZP
M 4	x	8	S	500	7,15 ZP
M 4	x	10	S	500	6,70 ZP
M 4	x	12	S	500	6,80 ZP
M 4	x	14	S	500	17,90 ZP
M 4	x	16	S	500	7,10 ZP
M 4	x	18	S	500	7,25 ZP
M 4	x	20	S	500	7,50 ZP
M 4	x	25	S	500	8,00 ZP
M 4	x	30	S	500	8,75 ZP
M 4	x	35	S	500	9,50 ZP
M 4	x	40	S	500	10,25 ZP
M 4	x	45	S	500	22,75 ZP
M 4	x	50	S	500	24,30 ZP
M 4	x	60	S	200	27,50 ZP
M 4	x	65	S	200	28,50 ZP
M 5	x	6	S	500	20,50 ZP
M 5	x	8	S	500	15,00 ZP
M 5	x	10	S	500	6,30 ZP
M 5	x	12	S	500	6,70 ZP
M 5	x	14	S	500	15,00 ZP
M 5	x	16	S	500	7,05 ZP
M 5	x	18	S	500	8,50 ZP
M 5	x	20	S	500	7,60 ZP
M 5	x	25	S	500	8,10 ZP
M 5	x	30	S	500	8,90 ZP
M 5	x	35	S	200	11,30 ZP
M 5	x	40	S	200	11,90 ZP
M 5	x	45	S	200	18,25 ZP
M 5	x	50	S	200	23,75 ZP
M 5	x	55	S	200	26,80 ZP
M 5	x	60	S	200	28,40 ZP
M 5	x	65	S	200	37,65 ZP
M 5	x	70	S	200	38,80 ZP
M 5	x	75	S	200	58,00 ZP
M 5	x	80	S	200	58,00 ZP
M 5	x	85	S	200	118,00 ZP
M 5	x	90	S	200	63,30 ZP
M 5	x	95	S	200	166,00 ZP
M 5	x	100	S	200	70,20 ZP
M 5	x	110	S	100	155,50 ZP
M 5	x	120	S	100	159,00 ZP
M 5	x	130	S	100	444,50 ZP
M 5	x	140	S	100	444,50 ZP
M 5	x	150	S	100	539,00 ZP
M 5	x	160	S	100	552,00 ZP
M 6	x	8	S	500	18,95 ZP
M 6	x	10	S	500	9,75 ZP
M 6	x	12	S	500	10,10 ZP
M 6	x	14	S	500	16,45 ZP
M 6	x	16	S	500	10,40 ZP
M 6	x	18	S	500	11,45 ZP
M 6	x	20	S	500	10,90 ZP
M 6	x	22	S	500	20,25 ZP
M 6	x	25	S	500	11,50 ZP
M 6	x	30	S	500	13,10 ZP
M 6	x	35	S	200	13,75 ZP
M 6	x	40	S	200	16,10 ZP
M 6	x	45	S	200	17,30 ZP
M 6	x	50	S	200	18,20 ZP
M 6	x	55	S	200	25,30 ZP
M 6	x	60	S	200	26,70 ZP
M 6	x	65	S	200	31,00 ZP
M 6	x	70	S	200	40,65 ZP
M 6	x	75	S	200	48,50 ZP
M 6	x	80	S	200	52,00 ZP
M 6	x	85	S	200	87,00 ZP
M 6	x	90	S	200	62,40 ZP
M 6	x	100	S	200	72,00 ZP
M 6	x	110	S	100	97,00 ZP
M 6	x	120	S	100	105,00 ZP
M 6	x	125	S	100	182,00 ZP
M 6	x	130	S	100	307,00 ZP
M 6	x	140	S	100	325,00 ZP
M 6	x	150	S	100	365,00 ZP
M 6	x	160	S	100	612,00 ZP
M 8	x	10	S	200	16,60 ZP
M 8	x	12	S	200	16,60 ZP
M 8	x	14	S	200	23,15 ZP
M 8	x	16	S	200	13,25 ZP
M 8	x	20	S	200	17,90 ZP
M 8	x	22	S	200	28,85 ZP
M 8	x	25	S	200	19,45 ZP
M 8	x	30	S	200	20,65 ZP
M 8	x	35	S	200	23,05 ZP
M 8	x	40	S	200	25,50 ZP
M 8	x	45	S	200	26,80 ZP
M 8	x	50	S	200	29,70 ZP
M 8	x	55	S	200	35,60 ZP
M 8	x	60	S	200	37,00 ZP
M 8	x	65	S	200	43,55 ZP
M 8	x	70	S	200	41,25 ZP
M 8	x	75	S	200	47,00 ZP
M 8	x	80	S	200	59,30 ZP
M 8	x	90	S	100	69,00 ZP
M 8	x	100	S	100	78,00 ZP
M 8	x	120	S	100	105,00 ZP
M 8	x	125	S	100	198,00 ZP
M 8	x	130	S	100	147,00 ZP
M 8	x	140	S	50	159,00 ZP
M 8	x	150	S	50	252,00 ZP
M 8	x	160	S	50	283,00 ZP
M 8	x	170	S	50	322,00 ZP
M 8	x	180	S	50	340,00 ZP
M 8	x	200	S	50	521,00 ZP
M 10	x	10	S	200	66,00 ZP
M 10	x	12	S	200	66,00 ZP
M 10	x	16	S	200	35,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	20	S	200	32,15 ZP
M 10	x	25	S	200	35,20 ZP
M 10	x	30	S	200	37,00 ZP
M 10	x	35	S	100	39,45 ZP
M 10	x	40	S	100	41,85 ZP
M 10	x	45	S	100	34,90 ZP
M 10	x	50	S	100	37,30 ZP
M 10	x	55	S	100	44,30 ZP
M 10	x	60	S	100	46,70 ZP
M 10	x	65	S	100	47,90 ZP
M 10	x	70	S	100	51,55 ZP
M 10	x	75	S	100	62,70 ZP
M 10	x	80	S	100	63,85 ZP
M 10	x	85	S	100	110,00 ZP
M 10	x	90	S	100	77,55 ZP
M 10	x	95	S	100	121,00 ZP
M 10	x	100	S	100	85,50 ZP
M 10	x	110	S	50	125,00 ZP
M 10	x	120	S	50	157,00 ZP
M 10	x	130	S	50	180,00 ZP
M 10	x	140	S	50	197,00 ZP
M 10	x	160	S	50	300,00 ZP
M 10	x	170	S	50	344,00 ZP
M 10	x	180	S	50	364,00 ZP
M 10	x	210	S	50	503,00 ZP
M 10	x	220	S	50	500,00 ZP
M 12	x	20	S	100	42,15 ZP
M 12	x	25	S	100	52,80 ZP
M 12	x	30	S	100	55,20 ZP
M 12	x	35	S	100	57,65 ZP
M 12	x	40	S	100	59,45 ZP
M 12	x	45	S	100	53,35 ZP
M 12	x	50	S	100	67,35 ZP
M 12	x	55	S	100	73,45 ZP
M 12	x	60	S	100	77,65 ZP
M 12	x	65	S	50	84,40 ZP
M 12	x	70	S	50	87,80 ZP
M 12	x	75	S	50	94,10 ZP
M 12	x	80	S	50	94,65 ZP
M 12	x	85	S	50	154,00 ZP
M 12	x	90	S	50	95,80 ZP
M 12	x	95	S	50	170,00 ZP
M 12	x	100	S	50	109,00 ZP
M 12	x	110	S	50	155,00 ZP
M 12	x	120	S	50	159,00 ZP
M 12	x	125	S	50	266,00 ZP
M 12	x	130	S	50	241,00 ZP
M 12	x	135	S	50	309,00 ZP
M 12	x	140	S	50	275,00 ZP
M 12	x	150	S	50	337,00 ZP
M 12	x	160	S	25	370,00 ZP
M 12	x	170	S	25	399,00 ZP
M 12	x	180	S	25	423,00 ZP
M 12	x	190	S	25	744,00 ZP
M 12	x	200	S	25	526,00 ZP
M 12	x	210	S	25	723,00 ZP
M 12	x	220	S	25	729,00 ZP
M 12	x	230	S	25	840,00 ZP
M 12	x	240	S	25	827,00 ZP
M 12	x	250	S	25	1160,00 ZP
M 12	x	260	S	25	903,00 ZP
M 12	x	270	S	25	1185,00 ZP
M 12	x	280	S	25	959,00 ZP
M 12	x	290	S	25	1215,00 ZP
M 12	x	300	S	25	1045,00 ZP
M 12	x	310	S	25	1890,00 ZP
M 12	x	320	S	25	2065,00 ZP
M 12	x	330	S	25	2400,00 ZP
M 12	x	340	S	25	2410,00 ZP
M 12	x	360	S	25	2975,00 ZP
M 12	x	380	S	25	3550,00 ZP
M 14	x	30	S	100	141,00 ZP
M 14	x	35	S	100	147,00 ZP
M 14	x	40	S	100	124,00 ZP
M 14	x	45	S	50	130,00 ZP
M 14	x	50	S	50	138,00 ZP
M 14	x	55	S	50	195,00 ZP
M 14	x	60	S	50	154,00 ZP
M 14	x	65	S	50	182,00 ZP
M 14	x	70	S	50	189,00 ZP
M 14	x	80	S	50	214,00 ZP
M 14	x	90	S	50	231,00 ZP
M 14	x	100	S	50	259,00 ZP
M 14	x	110	S	50	275,00 ZP
M 14	x	120	S	50	307,00 ZP
M 14	x	130	S	50	341,00 ZP
M 16	x	20	S	50	188,00 ZP
M 16	x	25	S	50	147,00 ZP
M 16	x	30	S	50	89,75 ZP
M 16	x	35	S	50	95,85 ZP
M 16	x	40	S	50	91,30 ZP
M 16	x	45	S	50	95,20 ZP
M 16	x	50	S	50	101,00 ZP
M 16	x	55	S	50	118,00 ZP
M 16	x	60	S	50	123,00 ZP
M 16	x	65	S	25	134,00 ZP
M 16	x	70	S	25	137,00 ZP
M 16	x	75	S	25	144,00 ZP
M 16	x	80	S	25	144,00 ZP
M 16	x	85	S	25	364,00 ZP
M 16	x	90	S	25	176,00 ZP
M 16	x	100	S	25	201,00 ZP
M 16	x	110	S	25	228,00 ZP
M 16	x	120	S	25	271,00 ZP
M 16	x	125	S	25	462,00 ZP
M 16	x	130	S	25	345,00 ZP
M 16	x	140	S	25	419,00 ZP
M 16	x	150	S	25	460,00 ZP
M 16	x	160	S	25	595,00 ZP
M 16	x	170	S	25	678,00 ZP
M 16	x	180	S	25	687,00 ZP
M 16	x	200	S	25	914,00 ZP
M 16	x	210	S	25	1340,00 ZP
M 16	x	230	S	25	1320,00 ZP
M 16	x	240	S	25	925,00 ZP
M 16	x	250	S	25	1410,00 ZP
M 16	x	270	S	25	1490,00 ZP
M 18	x	50	S	50	325,00 ZP
M 18	x	55	S	25	328,00 ZP
M 18	x	60	S	25	330,00 ZP
M 18	x	65	S	25	350,00 ZP
M 18	x	70	S	25	355,00 ZP
M 18	x	80	S	25	395,00 ZP
M 18	x	90	S	25	410,00 ZP
M 18	x	120	S	25	525,00 ZP
M 18	x	130	S	25	820,00 ZP
M 18	x	140	S	25	890,00 ZP
M 18	x	150	S	25	990,00 ZP
M 18	x	160	S	25	1090,00 ZP
M 18	x	180	S	25	1200,00 ZP
M 20	x	20	S	25	540,00 ZP
M 20	x	30	S	25	328,00 ZP
M 20	x	35	S	25	328,00 ZP
M 20	x	40	S	25	182,00 ZP
M 20	x	45	S	25	185,00 ZP
M 20	x	50	S	25	195,00 ZP
M 20	x	55	S	25	212,00 ZP
M 20	x	60	S	25	216,00 ZP
M 20	x	65	S	25	232,00 ZP
M 20	x	70	S	25	238,00 ZP
M 20	x	75	S	25	235,00 ZP
M 20	x	80	S	25	256,00 ZP
M 20	x	90	S	25	280,00 ZP
M 20	x	100	S	25	316,00 ZP
M 20	x	110	S	25	344,00 ZP
M 20	x	120	S	25	398,00 ZP
M 20	x	130	S	25	480,00 ZP
M 20	x	140	S	25	639,00 ZP
M 20	x	150	S	25	724,00 ZP
M 20	x	160	S	10	902,00 ZP
M 20	x	170	S	10	1065,00 ZP
M 20	x	180	S	10	975,00 ZP
M 20	x	190	S	10	1150,00 ZP
M 20	x	200	S	10	1030,00 ZP
M 20	x	210	S	1	1810,00 ZP
M 20	x	220	S	1	1386,00 ZP
M 20	x	230	S	1	2007,00 ZP
M 20	x	240	S	1	2007,00 ZP
M 20	x	260	S	1	1520,00 ZP
M 24	x	40	S	25	810,00 ZP
M 24	x	45	S	25	825,00 ZP
M 24	x	50	S	25	479,00 ZP
M 24	x	60	S	25	516,00 ZP
M 24	x	65	S	25	520,00 ZP
M 24	x	70	S	25	545,00 ZP
M 24	x	80	S	25	578,00 ZP
M 24	x	90	S	10	650,00 ZP
M 24	x	100	S	10	679,00 ZP
M 24	x	110	S	10	747,00 ZP
M 24	x	120	S	10	778,00 ZP
M 24	x	130	S	10	966,00 ZP
M 24	x	140	S	10	1171,00 ZP
M 24	x	150	S	10	1346,00 ZP
M 24	x	160	S	10	1437,00 ZP
M 24	x	170	S	10	1665,00 ZP
M 24	x	180	S	10	1739,00 ZP
M 24	x	190	S	10	2053,00 ZP
M 24	x	200	S	10	1870,00 ZP
M 24	x	210	S	1	2250,00 ZP
M 24	x	220	S	1	2116,00 ZP
M 24	x	230	S	1	2445,00 ZP
M 24	x	240	S	1	2275,00 ZP
M 24	x	260	S	1	2415,00 ZP
M 24	x	280	S	1	2490,00 ZP
M 24	x	300	S	1	2600,00 ZP
M 24	x	320	S	1	3600,00 ZP
M 24	x	330	S	1	3100,00 ZP
M 27	x	50	S	10	1260,00 ZP
M 27	x	60	S	10	1275,00 ZP
M 27	x	65	S	10	1325,00 ZP
M 27	x	70	S	10	1335,00 ZP
M 30	x	40	S	10	1570,00 ZP
M 30	x	50	S	10	1470,00 ZP
M 30	x	60	S	10	1490,00 ZP
M 30	x	65	S	1	1550,00 ZP
M 30	x	70	S	10	1560,00 ZP
M 30	x	80	S	10	1620,00 ZP
M 30	x	90	S	10	1700,00 ZP
M 30	x	100	S	10	1810,00 ZP
M 30	x	110	S	10	1900,00 ZP
M 30	x	120	S	10	2000,00 ZP
M 30	x	130	S	10	2080,00 ZP
M 30	x	150	S	10	2280,00 ZP
M 30	x	160	S	10	2380,00 ZP
M 30	x	170	S	10	2500,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

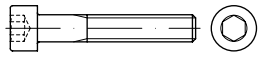
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	180	S	10	2550,00 ZP
M 30	x	200	S	10	2765,00 ZP
M 30	x	220	S	1	2980,00 ZP
M 30	x	230	S	1	3280,00 ZP
M 30	x	240	S	1	3300,00 ZP
M 30	x	250	S	1	3480,00 ZP
M 30	x	260	S	1	3530,00 ZP
M 30	x	280	S	1	3525,00 ZP
M 30	x	300	S	1	3800,00 ZP
M 30	x	320	S	1	4760,00 ZP
M 30	x	340	S	1	5990,00 ZP
M 30	x	350	S	1	6600,00 ZP
M 36	x	50	S	1	3650,00 ZP
M 36	x	60	S	1	2590,00 ZP
M 36	x	70	S	1	2620,00 ZP
M 36	x	80	S	1	2620,00 ZP
M 36	x	90	S	1	2750,00 ZP
M 36	x	100	S	1	2850,00 ZP
M 36	x	110	S	1	2950,00 ZP
M 36	x	130	S	1	3200,00 ZP
M 36	x	140	S	1	3300,00 ZP
M 3	x	12	S	1	3450,00 ZP
M 36	x	160	S	1	3580,00 ZP
M 36	x	170	S	1	3720,00 ZP
M 36	x	180	S	1	3870,00 ZP
M 36	x	200	S	1	4400,00 ZP
M 36	x	220	S	1	4440,00 ZP

ISO	04762.354	RAZ 1580

4762

10.9
zinc flake coated



Hexagon socket head cap screws

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-12 Corrosion protection → TI-218
Mech. properties → TI-221 Tightening torque → TI-230

Stainless → S. 513

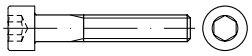
ISO 4762 → replaces DIN 912 (compatible)

M 6	x	12	S	500	11,65 flZn
M 6	x	14	S	500	19,50 flZn
M 6	x	16	S	500	12,00 flZn
M 6	x	18	S	500	13,20 flZn
M 6	x	20	S	500	12,55 flZn
M 6	x	22	S	500	23,30 flZn
M 6	x	25	S	500	13,25 flZn
M 6	x	30	S	500	15,10 flZn
M 6	x	35	S	200	15,85 flZn
M 6	x	40	S	200	18,55 flZn
M 6	x	45	S	200	19,90 flZn
M 6	x	50	S	200	20,95 flZn
M 6	x	55	S	200	29,10 flZn
M 6	x	60	S	200	30,75 flZn
M 6	x	65	S	200	35,65 flZn
M 6	x	70	S	200	46,75 flZn
M 6	x	75	S	200	55,80 flZn
M 6	x	80	S	200	59,80 flZn
M 8	x	16	S	200	15,25 flZn
M 8	x	20	S	200	20,60 flZn
M 8	x	25	S	200	22,40 flZn
M 8	x	30	S	200	23,75 flZn
M 8	x	35	S	200	26,55 flZn
M 8	x	40	S	200	29,35 flZn
M 8	x	45	S	200	30,85 flZn
M 8	x	50	S	200	34,20 flZn
M 8	x	55	S	200	40,95 flZn
M 8	x	60	S	200	42,55 flZn
M 8	x	65	S	200	50,10 flZn
M 8	x	70	S	200	47,45 flZn
M 8	x	75	S	200	54,05 flZn
M 8	x	80	S	200	68,20 flZn
M 8	x	90	S	100	79,35 flZn
M 10	x	20	S	200	37,00 flZn
M 10	x	25	S	200	40,50 flZn
M 10	x	30	S	200	42,55 flZn
M 10	x	35	S	100	45,40 flZn
M 10	x	40	S	100	48,15 flZn
M 10	x	45	S	100	40,15 flZn
M 10	x	50	S	100	42,90 flZn
M 10	x	55	S	100	50,95 flZn
M 10	x	60	S	100	53,75 flZn
M 10	x	65	S	100	55,10 flZn
M 10	x	70	S	100	59,30 flZn
M 10	x	75	S	100	72,15 flZn
M 10	x	80	S	100	73,45 flZn
M 10	x	90	S	100	89,20 flZn
M 12	x	20	S	100	48,50 flZn
M 12	x	25	S	100	60,75 flZn
M 12	x	30	S	100	63,50 flZn
M 12	x	35	S	100	66,30 flZn
M 12	x	40	S	100	68,40 flZn
M 12	x	45	S	100	61,35 flZn
M 12	x	50	S	100	77,45 flZn
M 12	x	55	S	100	84,50 flZn
M 12	x	60	S	100	89,30 flZn
M 12	x	65	S	50	97,10 flZn
M 12	x	70	S	50	101,00 flZn
M 12	x	75	S	50	109,00 flZn
M 12	x	80	S	50	109,00 flZn
M 12	x	90	S	50	111,00 flZn
M 12	x	100	S	50	126,00 flZn
M 16	x	30	S	50	104,00 flZn
M 16	x	35	S	50	111,00 flZn
M 16	x	40	S	50	105,00 flZn
M 16	x	45	S	50	110,00 flZn
M 16	x	50	S	50	117,00 flZn
M 16	x	55	S	50	136,00 flZn
M 16	x	60	S	50	142,00 flZn
M 16	x	65	S	25	155,00 flZn
M 16	x	70	S	25	158,00 flZn
M 16	x	75	S	25	166,00 flZn
M 16	x	80	S	25	166,00 flZn
M 16	x	90	S	25	203,00 flZn
M 16	x	100	S	25	232,00 flZn
M 16	x	110	S	25	263,00 flZn
M 16	x	120	S	25	312,00 flZn
M 20	x	65	S	25	267,00 flZn
M 20	x	70	S	25	274,00 flZn
M 20	x	75	S	25	271,00 flZn
M 20	x	80	S	25	295,00 flZn
M 20	x	90	S	25	322,00 flZn
M 20	x	100	S	25	364,00 flZn
M 20	x	110	S	25	396,00 flZn
M 20	x	120	S	25	458,00 flZn
M 20	x	130	S	25	552,00 flZn
M 20	x	140	S	25	735,00 flZn
M 20	x	150	S	25	833,00 flZn
M 20	x	160	S	10	1038,00 flZn
M 20	x	170	S	10	1225,00 flZn
M 20	x	180	S	10	1122,00 flZn
M 24	x	80	S	25	665,00 flZn
M 24	x	90	S	10	748,00 flZn
M 24	x	100	S	10	781,00 flZn
M 24	x	110	S	10	860,00 flZn
M 24	x	120	S	10	895,00 flZn
M 24	x	130	S	10	1111,00 flZn
M 24	x	140	S	10	1347,00 flZn
M 24	x	150	S	10	1548,00 flZn
M 24	x	150	S	10	1653,00 flZn
M 24	x	170	S	10	1915,00 flZn
M 24	x	180	S	10	2000,00 flZn

ISO	04762.200	RAZ 363

4762

12.9



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

Stainless → S. 513

ISO 4762 → replaces DIN 912 (compatible)

M 1,4	x	6	S	100	128,00
M 1,4	x	10	S	100	152,00
M 1,6	x	3	S	100	93,40
M 1,6	x	4	S	100	104,00
M 1,6	x	5	S	100	110,00
M 1,6	x	6	S	100	113,00
M 2	x	3	S	100	78,20
M 2	x	4	S	100	80,70
M 2	x	5	S	100	81,25
M 2	x	6	S	100	86,70
M 2	x	8	S	100	88,55
M 2	x	10	S	100	92,75
M 2	x	12	S	100	111,00
M 2,5	x	4	S	100	66,70
M 2,5	x	5	S	100	69,75
M 2,5	x	6	S	100	74,00
M 2,5	x	8	S	100	75,20
M 2,5	x	10	S	100	78,20
M 2,5	x	12	S	100	94,60
M 2,5	x	16	S	100	113,00
M 3	x	4	S	500	29,60
M 3	x	5	S	500	29,60
M 3	x	5	K	100	32,60
M 3	x	6	S	500	8,30
M 3	x	6	K	100	11,30
M 3	x	8	S	500	6,60
M 3	x	8	K	100	9,60
M 3	x	10	S	500	5,40
M 3	x	10	K	100	8,40
M 3	x	12	S	500	5,65
M 3	x	12	K	100	8,65
M 3	x	14	S	500	5,85
M 3	x	14	K	100	8,85
M 3	x	16	S	500	5,85
M 3	x	16	K	100	8,85
M 3	x	18	S	500	6,20
M 3	x	18	K	100	9,20
M 3	x	20	S	500	6,20
M 3	x	20	K	100	9,20
M 3	x	22	S	500	6,75
M 3	x	22	K	100	9,75
M 3	x	25	S	500	6,75
M 3	x	25	K	100	9,75
M 3	x	30	S	500	7,70
M 3	x	30	K	100	10,75
M 3	x	35	S	500	21,80
M 3	x	35	K	100	24,80
M 3	x	40	S	500	36,35
M 3	x	45	S	500	47,80
M 3	x	50	S	500	52,90
M 4	x	5	S	500	30,40
M 4	x	5	K	100	33,40
M 4	x	6	S	500	16,85

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 6	K	100	19,90
M 4 x 8	S	500	6,35
M 4 x 8	K	100	9,35
M 4 x 10	S	500	5,85
M 4 x 10	K	100	8,85
M 4 x 12	S	500	5,90
M 4 x 12	K	100	8,95
M 4 x 14	S	500	16,50
M 4 x 14	K	100	19,50
M 4 x 16	S	500	6,00
M 4 x 16	K	100	9,05
M 4 x 18	S	500	6,25
M 4 x 18	K	100	9,25
M 4 x 20	S	500	6,35
M 4 x 20	K	100	9,35
M 4 x 22	S	500	16,25
M 4 x 22	K	100	19,30
M 4 x 25	S	500	6,60
M 4 x 25	K	100	9,60
M 4 x 30	S	500	7,05
M 4 x 30	K	100	10,05
M 4 x 35	S	500	7,35
M 4 x 35	K	100	10,40
M 4 x 40	S	500	8,00
M 4 x 40	K	100	11,00
M 4 x 45	S	500	19,65
M 4 x 45	K	100	22,65
M 4 x 50	S	500	19,65
M 4 x 50	K	100	22,65
M 4 x 55	S	200	23,35
M 4 x 60	S	200	24,25
M 4 x 65	S	200	29,85
M 4 x 70	S	200	34,95
M 4 x 75	S	500	86,70
M 4 x 80	S	200	92,75
M 4 x 90	S	200	306,00
M 4 x 100	S	200	336,00
M 4 x 110	S	200	492,00
M 4 x 120	S	200	509,00
M 5 x 6	S	500	19,35
M 5 x 6	K	100	22,35
M 5 x 8	S	500	13,80
M 5 x 8	K	100	16,85
M 5 x 10	S	500	5,05
M 5 x 10	K	100	8,05
M 5 x 12	S	500	5,30
M 5 x 12	K	100	8,35
M 5 x 14	S	500	14,00
M 5 x 14	K	100	17,00
M 5 x 16	S	500	5,40
M 5 x 16	K	100	8,40
M 5 x 18	S	500	6,60
M 5 x 18	K	100	9,60
M 5 x 20	S	500	5,70
M 5 x 20	K	100	8,75
M 5 x 22	S	500	14,55
M 5 x 22	K	100	17,60
M 5 x 25	S	500	6,00
M 5 x 25	K	100	9,05
M 5 x 30	S	500	6,40
M 5 x 30	K	100	9,45
M 5 x 35	S	200	8,55
M 5 x 40	S	200	8,75
M 5 x 45	S	200	14,85
M 5 x 50	S	200	19,95
M 5 x 55	S	200	22,70
M 5 x 60	S	200	23,90
M 5 x 65	S	200	32,80
M 5 x 70	S	200	33,40
M 5 x 75	S	200	51,85
M 5 x 80	S	200	52,85
M 5 x 85	S	200	60,10
M 5 x 90	S	200	57,30
M 5 x 95	S	200	67,35
M 5 x 100	S	200	63,70
M 5 x 105	S	100	150,00
M 5 x 110	S	100	71,55
M 5 x 115	S	100	175,00
M 5 x 120	S	100	105,00
M 5 x 125	S	100	482,00
M 5 x 130	S	100	435,00
M 5 x 135	S	100	535,00
M 5 x 140	S	100	548,00
M 5 x 145	S	100	535,00
M 5 x 150	S	100	552,00
M 5 x 155	S	100	544,00
M 5 x 160	S	100	583,00
M 5 x 165	S	100	576,00
M 5 x 170	S	100	614,00
M 5 x 175	S	100	614,00
M 5 x 180	S	100	614,00
M 5 x 190	S	100	745,00
M 5 x 200	S	100	745,00
M 5 x 210	S	100	949,00
M 5 x 220	S	100	949,00
M 5 x 230	S	100	966,00
M 5 x 240	S	100	1008,00
M 6 x 6	S	500	158,00
M 6 x 6	K	100	161,00
M 6 x 8	S	500	15,30
M 6 x 8	K	100	18,30
M 6 x 10	S	500	5,20
M 6 x 10	K	100	8,25
M 6 x 12	S	500	11,70
M 6 x 12	K	100	14,75
M 6 x 14	S	500	12,05
M 6 x 16	S	500	5,40
M 6 x 16	K	100	8,40
M 6 x 18	S	500	6,05
M 6 x 18	K	100	9,10
M 6 x 20	S	500	5,45
M 6 x 20	K	100	8,50
M 6 x 22	S	500	13,35
M 6 x 22	K	100	16,40
M 6 x 25	S	500	5,65
M 6 x 25	K	100	8,70
M 6 x 30	S	500	6,40
M 6 x 30	K	100	9,45
M 6 x 35	S	200	6,90
M 6 x 40	S	200	7,75
M 6 x 45	S	200	10,10
M 6 x 50	S	200	12,05
M 6 x 55	S	200	19,10
M 6 x 60	S	200	19,45
M 6 x 65	S	200	24,45
M 6 x 70	S	200	32,55
M 6 x 75	S	200	40,10
M 6 x 80	S	200	44,15
M 6 x 85	S	200	83,10
M 6 x 90	S	100	54,05
M 6 x 95	S	100	107,00
M 6 x 100	S	100	64,90
M 6 x 105	S	100	132,00
M 6 x 110	S	100	88,55
M 6 x 115	S	100	172,00
M 6 x 120	S	100	96,40
M 6 x 125	S	100	270,00
M 6 x 130	S	100	287,00
M 6 x 135	S	100	377,00
M 6 x 140	S	100	301,00
M 6 x 145	S	100	537,00
M 6 x 150	S	100	571,00
M 6 x 155	S	100	588,00
M 6 x 160	S	100	573,00
M 6 x 165	S	100	617,00
M 6 x 170	S	100	632,00
M 6 x 175	S	100	682,00
M 6 x 180	S	100	671,00
M 6 x 185	S	100	835,00
M 6 x 190	S	100	820,00
M 6 x 200	S	100	913,00
M 6 x 210	S	100	951,00
M 6 x 220	S	100	989,00
M 6 x 230	S	100	1074,00
M 6 x 240	S	100	1086,00
M 6 x 250	S	100	1190,00
M 6 x 260	S	100	1213,00
M 6 x 270	S	100	1334,00
M 6 x 280	S	100	1681,00
M 6 x 290	S	100	1958,00
M 6 x 300	S	100	2300,00
M 8 x 8	S	200	149,00
M 8 x 10	S	200	12,60
M 8 x 12	S	200	12,60
M 8 x 14	S	200	18,60
M 8 x 16	S	200	8,85
M 8 x 18	S	200	9,65
M 8 x 20	S	200	8,40
M 8 x 22	S	200	19,35
M 8 x 25	S	200	9,05
M 8 x 30	S	200	9,55
M 8 x 35	S	200	10,60
M 8 x 40	S	200	11,75
M 8 x 45	S	200	12,45
M 8 x 50	S	200	13,65
M 8 x 55	S	200	18,55
M 8 x 60	S	200	19,00
M 8 x 65	S	200	25,55
M 8 x 70	S	200	26,15
M 8 x 75	S	200	32,50
M 8 x 80	S	200	42,85
M 8 x 90	S	100	51,85
M 8 x 100	S	100	60,35
M 8 x 110	S	100	78,85
M 8 x 120	S	100	80,05
M 8 x 130	S	100	122,00
M 8 x 140	S	50	134,00
M 8 x 150	S	50	226,00
M 8 x 160	S	50	267,00
M 8 x 170	S	50	306,00
M 8 x 180	S	50	327,00
M 8 x 190	S	50	539,00
M 8 x 200	S	50	471,00
M 8 x 210	S	50	586,00
M 8 x 220	S	50	600,00
M 8 x 230	S	50	633,00
M 8 x 240	S	50	657,00
M 8 x 250	S	50	699,00
M 8 x 260	S	50	729,00
M 8 x 270	S	50	757,00
M 8 x 280	S	50	778,00
M 8 x 290	S	50	1008,00
M 8 x 300	S	50	1068,00
M 8 x 310	S	50	1351,00
M 10 x 10	S	200	194,00
M 10 x 12	S	200	64,90
M 10 x 16	S	200	25,60
M 10 x 18	S	200	25,60
M 10 x 20	S	200	15,45
M 10 x 22	S	200	42,85
M 10 x 25	S	200	16,70
M 10 x 30	S	200	17,35
M 10 x 35	S	100	18,35
M 10 x 40	S	100	19,15
M 10 x 45	S	100	21,20
M 10 x 50	S	100	22,40
M 10 x 55	S	100	24,40
M 10 x 60	S	100	27,10
M 10 x 65	S	100	30,25
M 10 x 70	S	100	27,10
M 10 x 75	S	100	36,80
M 10 x 80	S	100	37,80
M 10 x 85	S	100	85,50
M 10 x 90	S	100	49,45
M 10 x 100	S	100	55,05

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 110	S	50	91,55
M 10 x 120	S	50	120,00
M 10 x 130	S	50	142,00
M 10 x 140	S	50	159,00
M 10 x 150	S	50	234,00
M 10 x 160	S	50	293,00
M 10 x 170	S	50	343,00
M 10 x 180	S	50	365,00
M 10 x 190	S	50	490,00
M 10 x 200	S	50	410,00
M 10 x 210	S	50	458,00
M 10 x 220	S	50	439,00
M 10 x 230	S	50	532,00
M 10 x 240	S	50	514,00
M 10 x 250	S	50	566,00
M 10 x 260	S	50	586,00
M 10 x 270	S	50	792,00
M 10 x 280	S	50	659,00
M 10 x 290	S	50	878,00
M 10 x 300	S	50	732,00
M 12 x 12	S	100	267,00
M 12 x 16	S	100	34,35
M 12 x 18	S	100	34,35
M 12 x 20	S	100	30,45
M 12 x 22	S	100	83,70
M 12 x 25	S	100	25,60
M 12 x 30	S	100	26,60
M 12 x 35	S	100	27,30
M 12 x 40	S	100	27,80
M 12 x 45	S	100	29,50
M 12 x 50	S	100	30,95
M 12 x 55	S	100	34,20
M 12 x 60	S	100	35,70
M 12 x 65	S	50	39,60
M 12 x 70	S	50	41,00
M 12 x 75	S	50	48,20
M 12 x 80	S	50	48,80
M 12 x 90	S	50	55,40
M 12 x 100	S	50	62,50
M 12 x 110	S	50	95,85
M 12 x 120	S	50	107,00
M 12 x 130	S	50	165,00
M 12 x 140	S	50	193,00
M 12 x 150	S	50	254,00
M 12 x 160	S	25	281,00
M 12 x 170	S	25	322,00
M 12 x 180	S	25	325,00
M 12 x 190	S	25	419,00
M 12 x 200	S	25	419,00
M 12 x 220	S	25	645,00
M 12 x 230	S	25	932,00
M 12 x 240	S	25	691,00
M 12 x 250	S	25	1017,00
M 12 x 260	S	25	756,00
M 12 x 280	S	25	802,00
M 12 x 300	S	25	875,00
M 12 x 310	S	25	2358,00
M 12 x 320	S	1	2358,00
M 12 x 340	S	1	2579,00
M 12 x 360	S	1	2947,00
M 12 x 380	S	1	4583,00
M 12 x 400	S	1	5239,00
M 14 x 20	S	100	159,00
M 14 x 25	S	100	125,00
M 14 x 30	S	100	120,00
M 14 x 35	S	100	124,00
M 14 x 40	S	100	111,00
M 14 x 45	S	50	114,00
M 14 x 50	S	50	121,00
M 14 x 55	S	50	162,00
M 14 x 60	S	50	133,00
M 14 x 65	S	50	145,00
M 14 x 70	S	50	150,00
M 14 x 75	S	50	170,00
M 14 x 80	S	50	170,00

Dimensions	PU	Pieces	€/100/Mat.
M 14 x 90	S	50	182,00
M 14 x 100	S	50	205,00
M 14 x 110	S	50	216,00
M 14 x 120	S	50	244,00
M 14 x 130	S	50	273,00
M 14 x 140	S	25	350,00
M 14 x 150	S	25	398,00
M 14 x 160	S	25	637,00
M 14 x 170	S	25	672,00
M 14 x 180	S	25	704,00
M 14 x 190	S	25	727,00
M 14 x 200	S	25	749,00
M 14 x 220	S	10	903,00
M 14 x 240	S	10	939,00
M 14 x 260	S	10	977,00
M 14 x 280	S	10	1034,00
M 14 x 300	S	10	1106,00
M 16 x 20	S	50	162,00
M 16 x 22	S	50	196,00
M 16 x 25	S	50	118,00
M 16 x 30	S	50	54,00
M 16 x 35	S	50	56,85
M 16 x 40	S	50	58,00
M 16 x 45	S	50	59,65
M 16 x 50	S	50	61,85
M 16 x 55	S	50	63,70
M 16 x 60	S	50	66,70
M 16 x 65	S	25	76,40
M 16 x 70	S	25	76,40
M 16 x 75	S	25	87,35
M 16 x 80	S	25	87,35
M 16 x 85	S	25	106,00
M 16 x 90	S	25	106,00
M 16 x 100	S	25	116,00
M 16 x 110	S	25	140,00
M 16 x 120	S	25	169,00
M 16 x 130	S	25	251,00
M 16 x 140	S	25	273,00
M 16 x 150	S	25	324,00
M 16 x 160	S	25	360,00
M 16 x 170	S	25	446,00
M 16 x 180	S	25	446,00
M 16 x 190	S	25	583,00
M 16 x 200	S	25	501,00
M 16 x 210	S	25	1136,00
M 16 x 220	S	25	756,00
M 16 x 230	S	25	1185,00
M 16 x 240	S	25	759,00
M 16 x 250	S	25	1236,00
M 16 x 260	S	25	846,00
M 16 x 270	S	25	1306,00
M 16 x 280	S	25	933,00
M 16 x 290	S	25	1508,00
M 16 x 300	S	25	1049,00
M 16 x 310	S	1	1285,00
M 16 x 320	S	1	1398,00
M 16 x 330	S	1	1400,00
M 16 x 340	S	1	1513,00
M 16 x 350	S	1	1536,00
M 16 x 360	S	1	1632,00
M 16 x 370	S	1	2390,00
M 16 x 380	S	1	2303,00
M 16 x 390	S	1	2731,00
M 16 x 400	S	1	2425,00
M 16 x 420	S	1	3072,00
M 18 x 30	S	50	339,00
M 18 x 35	S	50	339,00
M 18 x 40	S	50	258,00
M 18 x 45	S	50	263,00
M 18 x 50	S	50	263,00
M 18 x 55	S	25	264,00
M 18 x 60	S	25	264,00
M 18 x 65	S	25	281,00
M 18 x 70	S	25	281,00
M 18 x 75	S	25	311,00

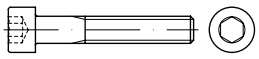
Dimensions	PU	Pieces	€/100/Mat.
M 18 x 80	S	25	311,00
M 18 x 90	S	25	317,00
M 18 x 100	S	25	346,00
M 18 x 110	S	25	368,00
M 18 x 120	S	25	407,00
M 18 x 130	S	25	454,00
M 18 x 140	S	25	533,00
M 18 x 150	S	25	624,00
M 18 x 160	S	25	857,00
M 18 x 170	S	25	901,00
M 18 x 180	S	25	944,00
M 18 x 190	S	25	981,00
M 18 x 200	S	10	1015,00
M 18 x 220	S	10	1237,00
M 18 x 240	S	10	1308,00
M 18 x 260	S	1	1398,00
M 18 x 280	S	1	1496,00
M 18 x 300	S	1	1594,00
M 20 x 30	S	25	291,00
M 20 x 35	S	25	291,00
M 20 x 40	S	25	112,00
M 20 x 45	S	25	113,00
M 20 x 50	S	25	114,00
M 20 x 55	S	25	121,00
M 20 x 60	S	25	125,00
M 20 x 65	S	25	136,00
M 20 x 70	S	25	136,00
M 20 x 75	S	25	142,00
M 20 x 80	S	25	158,00
M 20 x 90	S	25	166,00
M 20 x 100	S	25	181,00
M 20 x 110	S	25	205,00
M 20 x 120	S	25	248,00
M 20 x 130	S	25	320,00
M 20 x 140	S	25	468,00
M 20 x 150	S	25	543,00
M 20 x 160	S	10	553,00
M 20 x 170	S	10	772,00
M 20 x 180	S	10	755,00
M 20 x 190	S	10	840,00
M 20 x 200	S	10	705,00
M 20 x 210	S	10	1469,00
M 20 x 220	S	10	1030,00
M 20 x 230	S	10	1651,00
M 20 x 240	S	10	1091,00
M 20 x 250	S	10	1761,00
M 20 x 260	S	10	1152,00
M 20 x 270	S	10	1885,00
M 20 x 280	S	10	1211,00
M 20 x 290	S	10	2163,00
M 20 x 300	S	10	1341,00
M 20 x 310	S	1	1695,00
M 20 x 320	S	1	1747,00
M 20 x 330	S	1	1919,00
M 20 x 340	S	1	1980,00
M 20 x 350	S	1	2123,00
M 20 x 360	S	1	2189,00
M 20 x 380	S	1	2375,00
M 20 x 400	S	1	2608,00
M 20 x 420	S	1	2911,00
M 20 x 440	S	1	3202,00
M 20 x 460	S	1	3492,00
M 20 x 480	S	1	3784,00
M 20 x 500	S	1	4075,00
M 22 x 40	S	25	670,00
M 22 x 45	S	25	670,00
M 22 x 50	S	25	850,00
M 22 x 55	S	25	964,00
M 22 x 60	S	25	964,00
M 22 x 65	S	25	997,00
M 22 x 70	S	25	997,00
M 22 x 75	S	25	1044,00
M 22 x 80	S	25	1044,00
M 22 x 90	S	25	1118,00
M 22 x 100	S	10	1144,00

Dimensions	PU	Pieces	€/100/Mat.
M 22 x 110	S	10	1166,00
M 22 x 120	S	10	1196,00
M 22 x 130	S	1	1225,00
M 22 x 140	S	1	1275,00
M 22 x 150	S	1	1310,00
M 22 x 160	S	1	1341,00
M 22 x 170	S	1	1398,00
M 22 x 180	S	1	1446,00
M 22 x 200	S	1	1687,00
M 22 x 220	S	1	1752,00
M 22 x 240	S	1	1839,00
M 22 x 260	S	1	1905,00
M 22 x 280	S	1	1970,00
M 22 x 300	S	1	2026,00
M 24 x 40	S	25	688,00
M 24 x 45	S	25	708,00
M 24 x 50	S	25	343,00
M 24 x 55	S	25	365,00
M 24 x 60	S	25	365,00
M 24 x 65	S	25	380,00
M 24 x 70	S	25	380,00
M 24 x 75	S	25	396,00
M 24 x 80	S	25	396,00
M 24 x 90	S	10	452,00
M 24 x 100	S	10	464,00
M 24 x 110	S	10	516,00
M 24 x 120	S	10	531,00
M 24 x 130	S	1	886,00
M 24 x 140	S	1	903,00
M 24 x 150	S	1	1064,00
M 24 x 160	S	1	1403,00
M 24 x 170	S	1	1567,00
M 24 x 180	S	1	1753,00
M 24 x 190	S	1	1848,00
M 24 x 200	S	1	1848,00
M 24 x 210	S	1	2013,00
M 24 x 220	S	1	1894,00
M 24 x 230	S	1	2144,00
M 24 x 240	S	1	1970,00
M 24 x 250	S	1	2253,00
M 24 x 260	S	1	2037,00
M 24 x 270	S	1	2382,00
M 24 x 280	S	1	2091,00
M 24 x 290	S	1	2518,00
M 24 x 300	S	1	2156,00
M 24 x 310	S	1	2330,00
M 24 x 320	S	1	2330,00
M 24 x 330	S	1	2621,00
M 24 x 340	S	1	2621,00
M 24 x 350	S	1	2866,00
M 24 x 360	S	1	2866,00
M 24 x 380	S	1	3098,00
M 24 x 400	S	1	3354,00
M 24 x 420	S	1	4402,00
M 24 x 440	S	1	4802,00
M 24 x 450	S	1	5300,00
M 24 x 460	S	1	5202,00
M 24 x 480	S	1	5602,00
M 24 x 500	S	1	6003,00
M 27 x 50	S	10	1159,00
M 27 x 55	S	10	1159,00
M 27 x 60	S	10	1159,00
M 27 x 65	S	10	1202,00
M 27 x 70	S	10	1202,00
M 27 x 75	S	10	1256,00
M 27 x 80	S	10	1256,00
M 27 x 90	S	10	1304,00
M 27 x 100	S	10	1367,00
M 27 x 110	S	10	1399,00
M 27 x 120	S	10	1544,00
M 27 x 130	S	1	1610,00
M 27 x 140	S	1	1674,00
M 27 x 150	S	1	1739,00
M 27 x 160	S	1	1782,00
M 27 x 170	S	1	2536,00
M 27 x 180	S	1	1908,00
M 27 x 190	S	1	2770,00
M 27 x 200	S	1	1998,00
M 27 x 210	S	1	2984,00
M 27 x 220	S	1	2155,00
M 27 x 230	S	1	3210,00
M 27 x 240	S	1	2325,00
M 27 x 250	S	1	3413,00
M 27 x 260	S	1	2486,00
M 27 x 280	S	1	2638,00
M 27 x 300	S	1	2812,00
M 30 x 45	S	1	1292,00
M 30 x 50	S	1	1292,00
M 30 x 55	S	1	1292,00
M 30 x 60	S	1	1292,00
M 30 x 65	S	1	1323,00
M 30 x 70	S	1	1349,00
M 30 x 75	S	1	1349,00
M 30 x 80	S	1	1408,00
M 30 x 90	S	1	1467,00
M 30 x 100	S	1	1524,00
M 30 x 110	S	1	1583,00
M 30 x 120	S	1	1640,00
M 30 x 130	S	1	1699,00
M 30 x 140	S	1	1756,00
M 30 x 150	S	1	1846,00
M 30 x 160	S	1	1932,00
M 30 x 170	S	1	2028,00
M 30 x 180	S	1	2047,00
M 30 x 190	S	1	2189,00
M 30 x 200	S	1	2222,00
M 30 x 210	S	1	2397,00
M 30 x 220	S	1	2397,00
M 30 x 230	S	1	2674,00
M 30 x 240	S	1	2513,00
M 30 x 250	S	1	2856,00
M 30 x 260	S	1	2856,00
M 30 x 270	S	1	3086,00
M 30 x 280	S	1	2804,00
M 30 x 290	S	1	3552,00
M 30 x 300	S	1	3039,00
M 30 x 320	S	1	3954,00
M 30 x 340	S	1	5034,00
M 30 x 360	S	1	5395,00
M 30 x 380	S	1	5946,00
M 30 x 400	S	1	6493,00
M 30 x 420	S	1	6879,00
M 30 x 440	S	1	8936,00
M 30 x 460	S	1	9809,00
M 33 x 60	S	1	1717,00
M 33 x 70	S	1	1717,00
M 33 x 80	S	1	1717,00
M 33 x 90	S	1	1811,00
M 33 x 100	S	1	1953,00
M 33 x 110	S	1	2039,00
M 33 x 120	S	1	2184,00
M 33 x 130	S	1	2258,00
M 33 x 140	S	1	2384,00
M 33 x 150	S	1	2527,00
M 33 x 160	S	1	2586,00
M 33 x 170	S	1	3807,00
M 33 x 180	S	1	2844,00
M 33 x 200	S	1	3015,00
M 33 x 210	S	1	4485,00
M 33 x 220	S	1	3257,00
M 33 x 240	S	1	3516,00
M 33 x 260	S	1	3778,00
M 33 x 280	S	1	4024,00
M 33 x 300	S	1	4286,00
M 36 x 60	S	1	2225,00
M 36 x 70	S	1	2225,00
M 36 x 80	S	1	2225,00
M 36 x 90	S	1	2284,00
M 36 x 100	S	1	2352,00
M 36 x 110	S	1	2422,00
M 36 x 120	S	1	2515,00
M 36 x 130	S	1	2608,00
M 36 x 140	S	1	2701,00
M 36 x 150	S	1	2796,00
M 36 x 160	S	1	2888,00
M 36 x 170	S	1	3564,00
M 36 x 180	S	1	3122,00
M 36 x 200	S	1	3378,00
M 36 x 220	S	1	3564,00
M 36 x 240	S	1	3750,00
M 36 x 260	S	1	3936,00
M 36 x 280	S	1	4192,00
M 36 x 300	S	1	4564,00
M 36 x 320	S	1	5449,00
M 36 x 340	S	1	5728,00
M 36 x 360	S	1	5984,00
M 36 x 380	S	1	6356,00
M 36 x 400	S	1	6846,00
M 36 x 420	S	1	8711,00
M 39 x 100	S	1	3888,00
M 39 x 110	S	1	4261,00
M 39 x 120	S	1	4387,00
M 39 x 130	S	1	4676,00
M 39 x 140	S	1	4916,00
M 39 x 150	S	1	5126,00
M 39 x 160	S	1	5249,00
M 39 x 170	S	1	5584,00
M 39 x 180	S	1	5779,00
M 39 x 200	S	1	6247,00
M 39 x 220	S	1	6739,00
M 39 x 240	S	1	7232,00
M 39 x 260	S	1	8059,00
M 39 x 280	S	1	8479,00
M 39 x 300	S	1	8971,00
M 42 x 120	S	1	4067,00
M 42 x 130	S	1	4120,00
M 42 x 140	S	1	4549,00
M 42 x 150	S	1	4864,00
M 42 x 160	S	1	5030,00
M 42 x 170	S	1	5140,00
M 42 x 180	S	1	5275,00
M 42 x 190	S	1	5507,00
M 42 x 200	S	1	5783,00
M 42 x 220	S	1	6684,00
M 42 x 240	S	1	7236,00
M 42 x 260	S	1	7783,00
M 42 x 280	S	1	8260,00
M 42 x 300	S	1	8952,00
M 48 x 120	S	1	7236,00
M 48 x 130	S	1	7507,00
M 48 x 140	S	1	7924,00
M 48 x 150	S	1	8340,00
M 48 x 160	S	1	8816,00
M 48 x 180	S	1	9639,00
M 48 x 200	S	1	10325,00
M 48 x 220	S	1	13771,00
M 48 x 240	S	1	14944,00
M 48 x 260	S	1	16186,00
M 48 x 280	S	1	17219,00
M 48 x 300	S	1	17902,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
ISO	04762.280	RAZ 1580

4762 12.9 zinc flake coated



Hexagon socket head cap screws

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque if zinc plated or without corrosion protection.

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-218

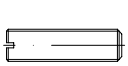
Stainless → S. 513

ISO 4762 → replaces DIN 912 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 12	S	500	12,85 flZn
M 6 x 14	S	500	21,45 flZn
M 6 x 16	S	500	13,20 flZn
M 6 x 18	S	500	14,55 flZn
M 6 x 20	S	500	13,80 flZn
M 6 x 22	S	500	25,65 flZn
M 6 x 25	S	500	14,60 flZn
M 6 x 30	S	500	16,60 flZn
M 6 x 35	S	200	17,45 flZn
M 6 x 40	S	200	20,40 flZn
M 6 x 45	S	200	21,90 flZn
M 6 x 50	S	200	23,05 flZn
M 6 x 55	S	200	32,00 flZn
M 6 x 60	S	200	33,85 flZn
M 6 x 65	S	200	39,25 flZn
M 6 x 70	S	200	51,45 flZn
M 6 x 75	S	200	61,40 flZn
M 6 x 80	S	200	65,80 flZn
M 8 x 16	S	200	16,80 flZn
M 8 x 20	S	200	22,70 flZn
M 8 x 25	S	200	24,65 flZn
M 8 x 30	S	200	26,15 flZn
M 8 x 35	S	200	29,20 flZn
M 8 x 40	S	200	32,30 flZn
M 8 x 45	S	200	33,95 flZn
M 8 x 50	S	200	37,65 flZn
M 8 x 55	S	200	45,05 flZn
M 8 x 60	S	200	46,80 flZn
M 8 x 65	S	200	55,10 flZn
M 8 x 70	S	200	52,20 flZn
M 8 x 75	S	200	59,45 flZn
M 8 x 80	S	200	75,00 flZn
M 8 x 90	S	100	87,30 flZn
M 10 x 20	S	200	40,70 flZn
M 10 x 25	S	200	44,55 flZn
M 10 x 30	S	200	46,80 flZn
M 10 x 35	S	100	49,95 flZn
M 10 x 40	S	100	53,00 flZn
M 10 x 45	S	100	44,20 flZn
M 10 x 50	S	100	47,20 flZn
M 10 x 55	S	100	56,00 flZn
M 10 x 60	S	100	59,15 flZn
M 10 x 65	S	100	60,60 flZn
M 10 x 70	S	100	65,20 flZn
M 10 x 75	S	100	79,40 flZn
M 10 x 80	S	100	80,80 flZn
M 10 x 90	S	100	98,10 flZn
M 12 x 20	S	100	53,35 flZn
M 12 x 25	S	100	66,85 flZn
M 12 x 30	S	100	69,85 flZn
M 12 x 35	S	100	72,95 flZn
M 12 x 40	S	100	75,25 flZn
M 12 x 45	S	100	67,50 flZn
M 12 x 50	S	100	85,20 flZn
M 12 x 55	S	100	92,95 flZn
M 12 x 60	S	100	98,25 flZn
M 12 x 65	S	50	107,00 flZn
M 12 x 70	S	50	112,00 flZn
M 12 x 75	S	50	120,00 flZn
M 12 x 80	S	50	120,00 flZn
M 12 x 90	S	50	123,00 flZn
M 12 x 100	S	50	139,00 flZn
M 16 x 30	S	50	115,00 flZn
M 16 x 35	S	50	123,00 flZn
M 16 x 40	S	50	116,00 flZn
M 16 x 45	S	50	121,00 flZn
M 16 x 50	S	50	129,00 flZn
M 16 x 55	S	50	150,00 flZn
M 16 x 60	S	50	157,00 flZn
M 16 x 65	S	25	171,00 flZn
M 16 x 70	S	25	174,00 flZn
M 16 x 75	S	25	183,00 flZn
M 16 x 80	S	25	183,00 flZn
M 16 x 90	S	25	224,00 flZn
M 16 x 100	S	25	256,00 flZn
M 16 x 110	S	25	290,00 flZn
M 16 x 120	S	25	344,00 flZn
M 20 x 65	S	25	294,00 flZn
M 20 x 70	S	25	302,00 flZn
M 20 x 75	S	25	299,00 flZn
M 20 x 80	S	25	325,00 flZn
M 20 x 90	S	25	355,00 flZn
M 20 x 100	S	25	401,00 flZn
M 20 x 110	S	25	436,00 flZn
M 20 x 120	S	25	504,00 flZn
M 20 x 130	S	25	608,00 flZn
M 20 x 140	S	25	809,00 flZn
M 20 x 150	S	25	917,00 flZn
M 20 x 160	S	10	1142,00 flZn
M 20 x 170	S	10	1348,00 flZn
M 20 x 180	S	10	1235,00 flZn
M 24 x 80	S	25	732,00 flZn
M 24 x 90	S	10	823,00 flZn
M 24 x 100	S	10	860,00 flZn
M 24 x 110	S	10	946,00 flZn
M 24 x 120	S	10	985,00 flZn
M 24 x 130	S	10	1223,00 flZn
M 24 x 140	S	10	1482,00 flZn
M 24 x 150	S	10	1703,00 flZn
M 24 x 160	S	10	1819,00 flZn
M 24 x 170	S	10	2107,00 flZn
M 24 x 180	S	10	2200,00 flZn

ISO	04766.000	RAZ 230

4766 14 H



Slotted grub screws with flat point

Dimensions → TI-19 Standard conversion → TI-6

Stainless → S. 518
Brass, plastic → S. 590

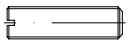
ISO 4766 → replaces DIN 551 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
M 1,6 x 2	K	100	10,00
M 1,6 x 3	K	100	10,00
M 2 x 3	K	200	8,70
M 2 x 4	K	200	8,80
M 2 x 5	K	200	8,90
M 2 x 6	K	200	9,10
M 2 x 8	K	200	9,20
M 2,5 x 3	K	200	9,20
M 2,5 x 4	K	200	8,90
M 2,5 x 5	K	200	9,10
M 2,5 x 6	K	200	9,20
M 2,5 x 8	K	200	9,30
M 2,5 x 10	K	200	9,70
M 2,5 x 16	K	200	11,00
M 3 x 3	S	1000	6,10
M 3 x 3	K	200	6,90
M 3 x 4	S	1000	3,40
M 3 x 4	K	200	4,10
M 3 x 5	S	1000	3,25
M 3 x 5	K	200	4,00
M 3 x 6	S	1000	3,35
M 3 x 6	K	200	4,05
M 3 x 8	S	1000	3,40
M 3 x 8	K	200	4,10
M 3 x 10	S	1000	3,40
M 3 x 10	K	200	4,10
M 3 x 12	S	1000	3,80
M 3 x 12	K	200	4,50
M 3 x 16	K	200	5,20
M 3 x 20	K	200	5,70
M 3 x 22	K	200	8,50
M 3 x 25	K	200	9,20
M 3 x 30	K	200	10,60
M 4 x 3	K	200	10,90
M 4 x 4	S	1000	3,40
M 4 x 4	K	200	4,10
M 4 x 5	S	1000	3,55
M 4 x 5	K	200	4,30
M 4 x 6	S	1000	3,55
M 4 x 6	K	200	4,35
M 4 x 8	S	1000	3,55
M 4 x 8	K	200	4,35
M 4 x 10	S	1000	3,80
M 4 x 10	K	200	4,50
M 4 x 12	S	1000	4,00
M 4 x 12	K	200	4,80
M 4 x 16	S	1000	4,45
M 4 x 16	K	200	5,20
M 4 x 20	K	200	5,90
M 4 x 25	K	200	6,50
M 4 x 30	K	200	7,70
M 4 x 40	K	100	35,00
M 5 x 4	K	200	7,70
M 5 x 5	S	1000	4,50
M 5 x 5	K	200	5,30
M 5 x 6	S	1000	4,00
M 5 x 6	K	200	4,80
M 5 x 8	S	1000	4,35
M 5 x 8	K	200	5,10
M 5 x 10	S	1000	4,80
M 5 x 10	K	200	5,60
M 5 x 12	S	1000	5,10
M 5 x 12	K	200	6,00
M 5 x 16	S	1000	6,50
M 5 x 16	K	200	7,20
M 5 x 20	K	200	7,60
M 5 x 25	K	200	8,00
M 5 x 30	K	200	9,30
M 5 x 35	K	100	14,90
M 5 x 40	K	100	19,70
M 6 x 4	K	200	7,70
M 6 x 5	K	200	7,70
M 6 x 6	S	1000	4,80
M 6 x 6	K	200	5,60
M 6 x 8	S	1000	5,20
M 6 x 8	K	200	6,10
M 6 x 10	S	1000	5,50
M 6 x 10	K	200	6,30

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	12	S	1000	5,90
M 6	x	12	K	200	6,50
M 6	x	16	S	1000	6,70
M 6	x	16	K	200	7,50
M 6	x	18	K	200	7,70
M 6	x	20	S	1000	7,50
M 6	x	20	K	200	8,10
M 6	x	25	S	1000	8,60
M 6	x	25	K	100	9,40
M 6	x	30	K	100	11,40
M 6	x	35	K	100	13,40
M 6	x	40	K	100	46,00
M 6	x	50	K	100	49,50
M 6	x	60	K	100	54,00
M 8	x	5	K	100	19,70
M 8	x	6	K	100	13,80
M 8	x	8	K	100	7,70
M 8	x	10	K	100	8,60
M 8	x	12	S	1000	8,00
M 8	x	12	K	100	9,70
M 8	x	16	S	1000	8,50
M 8	x	16	K	100	10,20
M 8	x	18	K	100	11,80
M 8	x	20	S	1000	10,40
M 8	x	20	K	100	12,10
M 8	x	25	S	1000	11,60
M 8	x	25	K	100	13,30
M 8	x	30	K	100	16,20
M 8	x	35	K	100	18,40
M 8	x	40	K	100	24,70
M 8	x	45	K	100	38,00
M 8	x	50	K	100	39,50
M 8	x	60	K	100	43,00
M 8	x	70	K	100	47,00
M 8	x	80	K	100	51,00
M 10	x	6	K	100	27,00
M 10	x	8	K	100	27,00
M 10	x	10	K	100	19,10
M 10	x	12	K	100	19,40
M 10	x	16	K	100	20,60
M 10	x	20	K	100	22,50
M 10	x	25	K	100	24,40
M 10	x	30	K	100	26,50
M 10	x	35	K	100	28,50
M 10	x	40	K	100	30,50
M 10	x	45	K	100	55,00
M 10	x	50	K	100	40,50
M 10	x	60	K	100	44,50
M 10	x	70	K	100	69,00
M 10	x	80	K	100	75,00
M 12	x	20	S	100	41,50
M 12	x	25	S	100	44,50
M 12	x	30	S	100	53,00
M 12	x	35	S	100	56,00
M 12	x	40	S	100	60,00
M 12	x	60	S	50	85,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	04766.010		RAZ 230

4766 — 14 H zinc plated



Slotted grub screws with flat point

Dimensions → TI-19 Standard conversion → TI-6
Corrosion protection → TI-217

Stainless → S. 518
Brass, plastic → S. 590

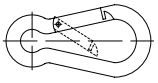
ISO 4766 → replaces DIN 551 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	3	S	200	9,20 ZP
M 3	x	4	S	200	6,40 ZP
M 3	x	5	S	200	6,30 ZP
M 3	x	6	S	200	6,40 ZP
M 3	x	8	S	200	6,40 ZP
M 3	x	10	S	200	6,40 ZP
M 3	x	12	S	200	6,80 ZP
M 3	x	16	S	200	7,50 ZP
M 3	x	20	S	200	8,00 ZP
M 4	x	4	S	200	6,40 ZP
M 4	x	5	S	200	6,60 ZP
M 4	x	6	S	200	6,70 ZP
M 4	x	8	S	200	6,70 ZP
M 4	x	10	S	200	6,80 ZP
M 4	x	12	S	200	7,10 ZP
M 4	x	16	S	200	7,50 ZP
M 4	x	20	S	200	8,10 ZP
M 4	x	25	S	200	8,80 ZP
M 4	x	30	S	200	10,00 ZP
M 4	x	40	S	200	38,00 ZP
M 5	x	5	S	200	7,60 ZP
M 5	x	6	S	200	7,10 ZP
M 5	x	8	S	200	7,40 ZP
M 5	x	10	S	200	8,20 ZP
M 5	x	12	S	200	8,30 ZP
M 5	x	16	S	200	9,10 ZP
M 5	x	20	S	200	9,80 ZP
M 5	x	25	S	200	38,00 ZP
M 5	x	30	S	200	12,30 ZP
M 5	x	35	S	100	18,00 ZP
M 6	x	6	S	200	8,30 ZP
M 6	x	8	S	200	8,70 ZP
M 6	x	10	S	200	9,20 ZP
M 6	x	12	S	200	9,50 ZP
M 6	x	16	S	200	9,70 ZP
M 6	x	20	S	200	10,40 ZP
M 6	x	25	S	100	11,70 ZP
M 6	x	30	S	100	13,70 ZP
M 6	x	35	S	100	15,70 ZP
M 6	x	40	S	100	43,00 ZP
M 6	x	50	S	100	45,00 ZP
M 8	x	6	S	100	18,20 ZP
M 8	x	8	S	100	10,70 ZP
M 8	x	10	S	100	12,30 ZP
M 8	x	12	S	100	13,40 ZP
M 8	x	16	S	100	13,90 ZP
M 8	x	20	S	100	15,80 ZP
M 8	x	25	S	100	17,80 ZP
M 8	x	30	S	100	19,70 ZP
M 8	x	35	S	100	22,20 ZP
M 8	x	40	S	100	28,50 ZP
M 8	x	45	S	100	41,50 ZP
M 8	x	50	S	100	43,50 ZP
M 8	x	60	S	100	46,50 ZP
M 10	x	6	S	100	30,50 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	10	S	100	23,10 ZP
M 10	x	12	S	100	21,70 ZP
M 10	x	16	S	100	22,80 ZP
M 10	x	20	S	100	24,80 ZP
M 10	x	25	S	100	27,00 ZP
M 10	x	30	S	100	29,00 ZP
M 10	x	35	S	100	27,10 ZP
M 10	x	40	S	100	34,50 ZP
M 10	x	45	S	100	59,00 ZP
M 10	x	50	S	100	44,50 ZP
M 10	x	60	S	100	48,50 ZP
M 10	x	70	S	100	73,00 ZP
M 10	x	80	S	100	80,00 ZP
M 12	x	12	S	100	45,50 ZP
M 12	x	16	S	100	45,50 ZP
M 12	x	20	S	100	45,50 ZP
M 12	x	25	S	100	48,50 ZP
M 12	x	30	S	100	57,00 ZP
M 12	x	35	S	100	61,00 ZP
M 12	x	40	S	100	65,00 ZP
M 12	x	45	S	100	70,00 ZP
M 12	x	50	S	100	80,00 ZP
M 12	x	60	S	50	90,00 ZP

DIN	05299.013	RAZ 341

5299 — Steel zinc plated type C



Snap hooks C = pear-typed

Dimensions → TI-130 Corrosion protection → TI-217

Length x wire ∅			PU	Pieces	€/100/Mat.
C 40	x	4	S	100	270,00 ZP
C 50	x	5	S	100	280,00 ZP
C 60	x	6	S	100	328,00 ZP
C 70	x	7	S	50	415,00 ZP
C 80	x	8	S	50	500,00 ZP
C 100	x	10	S	50	845,00 ZP

DIN	05406.000	RAZ 481

5406 — Steel MB

Lockwashers/safety plates for locknuts acc. to DIN 981

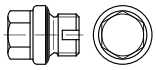
Dimensions → TI-98

Type/no./for locknuts			PU	Pieces	€/100/Mat.
MB 0/M10	x	0,75	S	25	140,00
MB 1/M 12	x	1	S	25	104,00
MB 2/M 15	x	1	S	25	96,00
MB 3/M 17	x	1	S	25	104,00
MB 4/M 20	x	1	S	25	121,00
MB 5/M 25	x	1,5	S	25	109,00
MB 6/M 30	x	1,5	S	25	109,00
MB 7/M 35	x	1,5	S	25	109,00
MB 8/M 40	x	1,5	S	25	109,00
MB 9/M 45	x	1,5	S	25	129,00
MB 10/M 50	x	1,5	S	25	146,00

Dimensions			PU	Pieces	€/100/Mat.
MB 11/M 55	x	2	S	10	187,00
MB 12/M 60	x	2	S	10	214,00
MB 13/M 65	x	2	S	10	249,00
MB 14/M 70	x	2	S	10	285,00
MB 15/M 75	x	2	S	10	305,00
MB 16/M 80	x	2	S	10	375,00
MB 17/M 85	x	2	S	10	400,00
MB 18/M 90	x	2	S	10	435,00
MB 19/M 95	x	2	S	10	495,00
MB 20/M100	x	2	S	10	550,00
MB 21/M105	x	2	S	10	690,00
MB 22/M110	x	2	S	10	730,00
MB 23/M115	x	2	S	10	920,00
MB 24/M120	x	2	S	10	920,00
MB 25/M125	x	2	S	5	1750,00
MB 26/M130	x	2	S	5	1750,00
MB 27/M135	x	2	S	5	2550,00
MB 28/M140	x	2	S	5	2310,00
MB 29/M145	x	2	S	5	4050,00
MB 30/M150	x	2	S	5	2750,00

DIN 05586.064 RAZ 570

5586 Steel zinc plated yellow type B



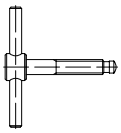
Hexagon head screw plugs with collar and vent, B = with melted sealing

Dimensions → TI-24 Corrosion protection → TI-217

BG 1/8 A	S	100	600,00 YZP
BG 1/4 A	S	100	600,00 YZP
BG 1/2 A	S	50	840,00 YZP
BG 3/4 A	S	25	1370,00 YZP
BG 1 A	S	25	1740,00 YZP
BG 1 1/2 A	S	1	4250,00 YZP
BG 2 A	S	1	6500,00 YZP

DIN 06304.534 RAZ 575

6304 5.8 browned type E



Tommy screws with fixed clamping bolt, E = without thrust pad

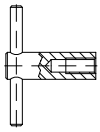
thrust pads → DIN 6311/S

Dimensions → TI-125

EM 6	x	40	S	1	1390,00 browned
EM 6	x	50	S	1	1440,00 browned
EM 8	x	50	S	1	1670,00 browned
EM 8	x	60	S	1	1770,00 browned
EM 10	x	60	S	1	1980,00 browned
EM 10	x	70	S	1	2110,00 browned
EM 12	x	70	S	1	2450,00 browned
EM 12	x	80	S	1	2600,00 browned
EM 16	x	75	S	1	3300,00 browned
EM 16	x	110	S	1	3600,00 browned
EM 20	x	90	S	1	5100,00 browned
EM 20	x	110	S	1	5400,00 browned

DIN 06305.530 RAZ 575

6305 5 browned



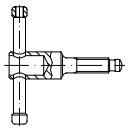
Tommy nuts with fixed clamping bolt

Dimensions → TI-125

M 10	S	1	1670,00 browned
M 12	S	1	1920,00 browned
M 16	S	1	2600,00 browned
M 20	S	1	3900,00 browned

DIN 06306.534 RAZ 575

6306 5.8 browned type D



Tommy screws with movable clamping bolt, D = without thrust pad

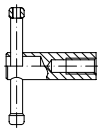
Thrust pads → DIN 6311/S

Dimensions → TI-126

DM 10	x	40	S	1	2700,00 browned
DM 10	x	50	S	1	2750,00 browned
DM 12	x	50	S	1	3250,00 browned
DM 12	x	60	S	1	3300,00 browned
DM 16	x	55	S	1	4100,00 browned
DM 16	x	70	S	1	4350,00 browned
DM 16	x	90	S	1	4550,00 browned
DM 20	x	70	S	1	6000,00 browned
DM 20	x	90	S	1	6400,00 browned

DIN 06307.530 RAZ 575

6307 5 browned



Tommy nuts with movable clamping bolt

Dimensions → TI-126

M 10	S	1	2380,00 browned
M 12	S	1	2600,00 browned
M 16	S	1	3350,00 browned
M 20	S	1	4650,00 browned

DIN 06311.004 RAZ 575

6311 Steel type S

Thrust pads, S = with snap ring

- Tommy screws → DIN 6304/6306
- Grub screws with thrust point → DIN 6332

Dimensions → TI-126

Outside ∅ - for grub screw M

S 12 M 6	S	10	480,00
S 16 M 8	S	10	495,00
S 20 M 10	S	10	580,00
S 25 M 12	S	10	680,00
S 32 M 16	S	10	1030,00
S 40 M 20	S	5	1460,00

DIN 06319.003 RAZ 570

6319 Steel type C

Spherical washers, case hardened

Dimensions → TI-111

Inside ∅ x outside ∅ x thickness

C 6,4	x	12	x	2,3	S	50	77,00
C 8,4	x	17	x	3,2	S	50	93,00
C10,5	x	21	x	4	S	50	130,00
C13	x	24	x	4,6	S	50	149,00
C17	x	30	x	5,3	S	25	239,00
C21	x	36	x	6,3	S	10	360,00
C25	x	44	x	8,2	S	10	590,00
C31	x	56	x	11,2	S	1	1010,00
C37	x	68	x	14	S	1	2310,00
C43	x	78	x	17	S	1	3250,00
C50	x	92	x	21	S	1	4800,00

DIN 06319.013 RAZ 570

6319 Steel zinc plated type C

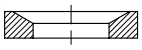
Spherical washers, case hardened

Dimensions → TI-111 Corrosion protection → TI-217

Inside ∅ x outside ∅ x thickness

C 13	x	24	x	4,6	S	50	217,00 ZP
C 17	x	30	x	5,3	S	25	340,00 ZP
C 21	x	36	x	6,3	S	10	510,00 ZP
C 25	x	44	x	8,2	S	10	890,00 ZP
C 31	x	56	x	11,2	S	1	1410,00 ZP
C 37	x	68	x	14,0	S	1	3700,00 ZP

Dimensions						PU	Pieces	€/100/Mat.
DIN						06319.004		RAZ 570
6319						**Steel**		**type D**



Conical seats, case hardened

Outside ∅ = outside ∅ of spherical washers

Dimensions → TI-111

Inside ∅	x	outside ∅	x	thickness		PU	Pieces	€/100/Mat.
D 7,1	x	12	x	2,8	S	50		64,00
D 9,6	x	17	x	3,5	S	50		99,00
D 12	x	21	x	4,2	S	50		138,00
D 14,2	x	24	x	5	S	50		160,00
D 19	x	30	x	6,2	S	25		255,00
D 23,2	x	36	x	7,5	S	10		405,00
D 28	x	44	x	9,5	S	10		650,00
D 35	x	56	x	12	S	1		1080,00
D 42	x	68	x	14	S	1		2380,00
D 49	x	78	x	18	S	1		2400,00
D 56	x	92	x	22	S	1		3050,00

DIN						06319.014		RAZ 570
6319						**Steel zinc plated***		**type D**

Conical seats, case hardened

Outside ∅ = outside ∅ of spherical washers,*baked

Dimensions → TI-111 Corrosion protection → TI-217

Inside ∅	x	outside ∅	x	thickness		PU	Pieces	€/100/Mat.
D 14,2	x	24	x	5	S	50		240,00 ZP
D 19	x	30	x	6,2	S	25		380,00 ZP
D 23,2	x	36	x	7,5	S	10		610,00 ZP
D 28	x	44	x	9,5	S	10		980,00 ZP
D 35	x	56	x	12	S	1		1610,00 ZP
D 42	x	68	x	14	S	1		4500,00 ZP

DIN						06319.005		RAZ 570
6319						**Steel**		**type G**

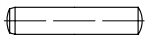
Conical seats, quenched and tempered

Outside ∅ > outside ∅ of spherical washers

Dimensions → TI-111

Inside ∅	x	outside ∅	x	thickness		PU	Pieces	€/100/Mat.
G 12	x	30	x	5	S	50		260,00
G 14,2	x	36	x	6	S	50		320,00
G 19	x	44	x	7	S	25		460,00
G 23,2	x	50	x	8	S	10		690,00
G 28	x	60	x	10	S	10		1200,00
G 35	x	68	x	12	S	1		1890,00

Dimensions						PU	Pieces	€/100/Mat.
DIN						06325.000		RAZ 570
6325						**Steel, hardened**		**m6**



Parallel pins, tolerance m6

Dimensions → TI-114

DIN 6325 → replaced by ISO 8734

						PU	Pieces	€/100/Mat.
1 m6	x	4			S	100		20,10
1 m6	x	5			S	100		20,70
1 m6	x	6			S	100		21,10
1 m6	x	8			S	100		21,60
1 m6	x	10			S	100		22,20
1 m6	x	12			S	100		23,10
1,5 m6	x	4			S	100		17,30
1,5 m6	x	5			S	100		17,30
1,5 m6	x	6			S	100		17,70
1,5 m6	x	8			S	100		18,40
1,5 m6	x	10			S	100		19,00
1,5 m6	x	12			S	100		19,70
1,5 m6	x	14			S	100		20,10
1,5 m6	x	16			S	100		20,70
1,5 m6	x	20			S	100		21,50
2 m6	x	4			S	100		18,20
2 m6	x	5			S	100		18,20
2 m6	x	6			S	100		18,40
2 m6	x	8			S	100		18,60
2 m6	x	10			S	100		19,20
2 m6	x	12			S	100		19,90
2 m6	x	14			S	100		20,30
2 m6	x	16			S	100		21,40
2 m6	x	18			S	100		21,60
2 m6	x	20			S	100		22,20
2 m6	x	24			S	100		26,80
2 m6	x	30			S	100		38,50
2 m6	x	32			S	100		39,50
2 m6	x	50			S	100		44,50
2,5 m6	x	6			S	100		18,60
2,5 m6	x	8			S	100		19,00
2,5 m6	x	10			S	100		19,70
2,5 m6	x	12			S	100		20,10
2,5 m6	x	14			S	100		20,70
2,5 m6	x	16			S	100		21,60
2,5 m6	x	18			S	100		22,20
2,5 m6	x	20			S	100		22,80
2,5 m6	x	24			S	100		31,50
2,5 m6	x	26			S	100		33,50
2,5 m6	x	28			S	100		36,00
3 m6	x	6			S	100		19,20
3 m6	x	8			S	100		19,20
3 m6	x	10			S	100		19,90
3 m6	x	12			S	100		20,30
3 m6	x	14			S	100		21,40
3 m6	x	16			S	100		22,20
3 m6	x	18			S	100		22,60
3 m6	x	20			S	100		23,30
3 m6	x	22			S	100		24,30
3 m6	x	24			S	100		25,50
3 m6	x	26			S	100		26,00
3 m6	x	28			S	100		26,50
3 m6	x	30			S	100		27,50
3 m6	x	32			S	100		28,00
3 m6	x	40			S	100		40,50
3 m6	x	45			S	100		47,00
3 m6	x	50			S	100		55,00
4 m6	x	6			S	100		19,20
4 m6	x	8			S	100		20,70
4 m6	x	10			S	100		22,20
4 m6	x	12			S	100		23,60
4 m6	x	14			S	100		25,50
4 m6	x	16			S	100		26,00
4 m6	x	18			S	100		27,50
4 m6	x	20			S	100		28,50
4 m6	x	22			S	100		29,50
4 m6	x	24			S	100		31,00
4 m6	x	26			S	100		32,00
4 m6	x	28			S	100		34,00
4 m6	x	30			S	100		35,00
4 m6	x	32			S	100		36,00
4 m6	x	36			S	100		38,50
4 m6	x	40			S	100		43,00
4 m6	x	45			S	100		52,00
4 m6	x	50			S	100		62,00
4 m6	x	60			S	100		87,00
5 m6	x	8			S	100		27,50
5 m6	x	10			S	100		27,50
5 m6	x	12			S	100		27,50
5 m6	x	14			S	100		28,50
5 m6	x	16			S	100		30,50
5 m6	x	18			S	100		32,50
5 m6	x	20			S	100		34,00
5 m6	x	22			S	100		50,30
5 m6	x	24			S	100		38,00
5 m6	x	26			S	100		39,00
5 m6	x	28			S	100		41,50
5 m6	x	30			S	100		43,00
5 m6	x	32			S	100		44,00
5 m6	x	36			S	100		47,50
5 m6	x	40			S	100		52,00
5 m6	x	45			S	100		56,00
5 m6	x	50			S	50		67,00
5 m6	x	55			S	50		73,00
5 m6	x	60			S	50		79,00
5 m6	x	70			S	50		92,00
6 m6	x	8			S	10		31,00
6 m6	x	10			S	100		31,00
6 m6	x	12			S	100		31,00
6 m6	x	14			S	100		33,50
6 m6	x	16			S	100		35,50
6 m6	x	18			S	100		38,00
6 m6	x	20			S	100		40,00
6 m6	x	22			S	100		42,00
6 m6	x	24			S	100		44,50
6 m6	x	26			S	100		47,00
6 m6	x	28			S	100		49,50
6 m6	x	30			S	100		52,00
6 m6	x	32			S	100		55,00
6 m6	x	36			S	100		60,00
6 m6	x	40			S	100		63,00
6 m6	x	45			S	100		69,00
6 m6	x	50			S	50		76,00
6 m6	x	55			S	50		86,00
6 m6	x	60			S	50		92,00
6 m6	x	70			S	50		103,00
6 m6	x	80			S	50		137,00
6 m6	x	90			S	50		156,00
6 m6	x	100			S	50		174,00
8 m6	x	10			S	50		63,00
8 m6	x	12			S	50		58,00
8 m6	x	14			S	50		58,00
8 m6	x	16			S	50		63,00
8 m6	x	18			S	50		67,00
8 m6	x	20			S	50		70,00
8 m6	x	22			S	50		74,00
8 m6	x	24			S	50		77,00
8 m6	x	26			S	50		79,00
8 m6	x	28			S	50		83,00
8 m6	x	30			S	50		87,00
8 m6	x	32			S	50		91,00
8 m6	x	36			S	50		96,00
8 m6	x	40			S	50		103,00
8 m6	x	45			S	50		112,00

€/100 = price in € plus VAT when ordering full package unit

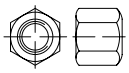
Dimensions				PU	Pieces	€/100/Mat.
8	m6	x	50	S	50	120,00
8	m6	x	55	S	50	128,00
8	m6	x	60	S	50	137,00
8	m6	x	70	S	50	157,00
8	m6	x	80	S	50	171,00
8	m6	x	90	S	50	189,00
8	m6	x	100	S	25	206,00
8	m6	x	120	S	25	242,00
10	m6	x	16	S	50	102,00
10	m6	x	20	S	50	104,00
10	m6	x	22	S	50	107,00
10	m6	x	24	S	50	108,00
10	m6	x	26	S	50	113,00
10	m6	x	28	S	50	118,00
10	m6	x	30	S	50	122,00
10	m6	x	32	S	50	128,00
10	m6	x	36	S	25	145,00
10	m6	x	40	S	25	153,00
10	m6	x	45	S	25	169,00
10	m6	x	50	S	25	178,00
10	m6	x	55	S	25	193,00
10	m6	x	60	S	25	203,00
10	m6	x	70	S	25	228,00
10	m6	x	80	S	25	255,00
10	m6	x	90	S	25	285,00
10	m6	x	100	S	25	310,00
10	m6	x	110	S	25	350,00
10	m6	x	120	S	50	425,00
12	m6	x	20	S	50	152,00
12	m6	x	24	S	25	165,00
12	m6	x	26	S	25	165,00
12	m6	x	28	S	25	165,00
12	m6	x	30	S	25	169,00
12	m6	x	32	S	25	176,00
12	m6	x	36	S	25	189,00
12	m6	x	40	S	25	201,00
12	m6	x	45	S	25	216,00
12	m6	x	50	S	25	233,00
12	m6	x	55	S	25	248,00
12	m6	x	60	S	25	265,00
12	m6	x	70	S	10	335,00
12	m6	x	80	S	10	365,00
12	m6	x	90	S	10	400,00
12	m6	x	100	S	10	430,00
12	m6	x	110	S	10	485,00
12	m6	x	120	S	10	520,00
14	m6	x	50	S	25	480,00
14	m6	x	60	S	25	560,00
14	m6	x	70	S	10	650,00
14	m6	x	80	S	10	780,00
14	m6	x	100	S	10	910,00
14	m6	x	120	S	10	1080,00
16	m6	x	30	S	50	445,00
16	m6	x	40	S	10	465,00
16	m6	x	45	S	10	500,00
16	m6	x	50	S	10	530,00
16	m6	x	55	S	10	560,00
16	m6	x	60	S	10	610,00
16	m6	x	70	S	10	700,00
16	m6	x	80	S	10	810,00
16	m6	x	90	S	10	860,00
16	m6	x	100	S	1	940,00
16	m6	x	110	S	1	1040,00
16	m6	x	120	S	1	1110,00
20	m6	x	40	S	10	730,00
20	m6	x	50	S	10	750,00
20	m6	x	60	S	10	810,00
20	m6	x	80	S	10	1040,00
20	m6	x	100	S	10	1210,00
20	m6	x	120	S	10	1420,00

Dimensions PU Pieces €/100/Mat.

DIN 06330.102 RAZ 570

6330

10 type B



Hexagon nuts with a height of 1,5 d, B = with one spherical bearing face

Dimensions → TI-62 Mech. properties → TI-221

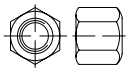
Stainless → S. 518

Thread - wrench size			
BM 6 SW 10	S	50	63,00
BM 8 SW 13	S	50	78,00
BM 10 SW 16	S	50	88,00
BM 12 SW 18	S	25	133,00
BM 14 SW 22	S	25	300,00
BM 16 SW 24	S	25	216,00
BM 18 SW 27	S	25	360,00
BM 20 SW 30	S	10	375,00
BM 22 SW 32	S	10	540,00
BM 24 SW 36	S	10	590,00
BM 27 SW 41	S	1	1450,00
BM 30 SW 46	S	1	1170,00

DIN 06330.112 RAZ 570

6330

10 zinc plated type B



Hexagon nuts with a height of 1,5 d, B = with one spherical bearing face

Dimensions → TI-62 Corrosion protection → TI-217

Stainless → S. 518

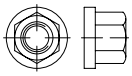
Thread - wrench size			
BM 6 SW 10	S	50	71,00 ZP
BM 8 SW 13	S	50	85,00 ZP
BM 10 SW 16	S	50	107,00 ZP
BM 12 SW 18	S	25	162,00 ZP
BM 14 SW 22	S	25	365,00 ZP
BM 16 SW 24	S	25	265,00 ZP
BM 18 SW 27	S	25	435,00 ZP
BM 20 SW 30	S	10	455,00 ZP
BM 24 SW 36	S	10	690,00 ZP
BM 27 SW 41	S	1	1680,00 ZP
BM 30 SW 46	S	1	1250,00 ZP

Dimensions PU Pieces €/100/Mat.

DIN 06331.100 RAZ 570

6331

10



Hexagon nuts with collar with a height of 1,5 d

Dimensions → TI-63

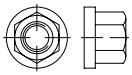
Stainless → S. 518

Thread - wrench size			
M 6 SW 10	S	100	65,00
M 8 SW 13	S	50	143,00
M 10 SW 16	S	50	219,00
M 12 SW 18	S	25	265,00
M 14 SW 22	S	10	520,00
M 16 SW 24	S	10	430,00
M 18 SW 27	S	10	570,00
M 20 SW 30	S	10	570,00
M 22 SW 32	S	1	1170,00
M 24 SW 36	S	1	1050,00
M 27 SW 41	S	1	2470,00
M 30 SW 46	S	1	1770,00
M 36 SW 55	S	1	4600,00
M 42 SW 65	S	1	8100,00

DIN 06331.110 RAZ 570

6331

10 zinc plated



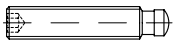
Hexagon nuts with collar with a height of 1,5 d

Dimensions → TI-63 Corrosion protection → TI-217

Stainless → S. 518

Thread - wrench size			
M 6 SW 10	S	100	86,00 ZP
M 8 SW 13	S	50	159,00 ZP
M 10 SW 16	S	50	255,00 ZP
M 12 SW 18	S	25	315,00 ZP
M 14 SW 22	S	10	640,00 ZP
M 16 SW 24	S	10	550,00 ZP
M 20 SW 30	S	10	860,00 ZP
M 24 SW 36	S	1	1580,00 ZP
M 27 SW 41	S	1	3000,00 ZP
M 30 SW 46	S	1	2500,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	06332.534	RAZ 575
6332	**5.8 browned**	**type IS**



Grub screws with thrust point, with hardened adaptor end, IS = with hexagon socket

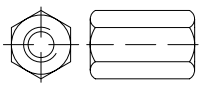
Thrust pads ➔ DIN 6311

Dimensions ➔ TI-127

Type with slot (S/Sz) on request

IS M 6	x	30	S	1	310,00	browned
IS M 6	x	35	S	10	320,00	browned
IS M 6	x	40	S	10	320,00	browned
IS M 6	x	50	S	10	335,00	browned
IS M 8	x	35	S	10	350,00	browned
IS M 8	x	40	S	10	360,00	browned
IS M 8	x	45	S	10	380,00	browned
IS M 8	x	50	S	10	395,00	browned
IS M 8	x	60	S	10	420,00	browned
IS M 8	x	70	S	10	455,00	browned
IS M 10	x	45	S	10	475,00	browned
IS M 10	x	50	S	10	485,00	browned
IS M 10	x	60	S	10	510,00	browned
IS M 10	x	80	S	10	640,00	browned
IS M 12	x	50	S	10	590,00	browned
IS M 12	x	60	S	10	610,00	browned
IS M 12	x	65	S	10	620,00	browned
IS M 12	x	70	S	10	650,00	browned
IS M 12	x	80	S	10	680,00	browned
IS M 12	x	100	S	10	760,00	browned
IS M 16	x	65	S	1	880,00	browned
IS M 16	x	75	S	1	960,00	browned
IS M 16	x	80	S	1	1000,00	browned
IS M 16	x	100	S	1	1160,00	browned
IS M 16	x	125	S	1	1250,00	browned
IS M 20	x	80	S	1	1610,00	browned
IS M 20	x	100	S	1	1770,00	browned
IS M 20	x	125	S	1	1950,00	browned
IS M 20	x	150	S	1	2140,00	browned

~DIN	06334.100	RAZ 570
6334	**10**	



Hexagon nuts with a height of 3 d

Dimensions ➔ TI-63 Mech. properties ➔ TI-221

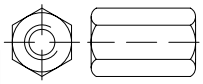
Stainless ➔ S. 519

Round and hexagon couplings ➔ article 88088/88087

Internal thread - wrench size

M 8	SW 13	S 100	183,00
M 10	SW 17	S 50	217,00
M 12	SW 19	S 50	275,00
M 16	SW 24	S 25	550,00
M 20	SW 30	S 25	930,00
M 24	SW 36	S 10	1560,00
M 30	SW 46	S 10	3100,00
M 36	SW 55	S 1	6000,00

~DIN	06334.110	RAZ 570
6334	**10 zinc plated**	



Hexagon nuts with a height of 3 d

Dimensions ➔ TI-63 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-221

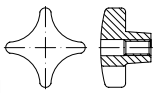
Stainless ➔ S. 519

Round and hexagon couplings ➔ article 88088/88087

Internal thread - wrench size

M 6	SW 10	S 100	180,00 ZP
M 8	SW 13	S 100	199,00 ZP
M 10	SW 17	S 50	230,00 ZP
M 12	SW 19	S 50	305,00 ZP
M 16	SW 24	S 25	610,00 ZP
M 20	SW 30	S 25	990,00 ZP
M 24	SW 36	S 10	1680,00 ZP
M 30	SW 46	S 10	4450,00 ZP

DIN	6.335.004	RAZ 575
6335	**Cast iron**	**type D**



Palm grips, D = with continuous thread

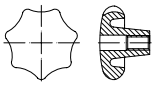
Dimensions ➔ TI-124

Other types/finishes on request

Grip ∅ - internal thread

D 32	M 6	S 10	560,00
D 40	M 8	S 10	620,00
D 50	M 10	S 10	810,00
D 63	M 12	S 10	1160,00
D 80	M 16	S 5	1990,00
D 100	M 20	S 5	4150,00

Dimensions	PU Pieces	€/100/Mat.
DIN	06336.004	RAZ 575
6336	**Cast iron**	**type D**



Star grips, D = with continuous thread

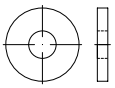
Dimensions ➔ TI-124

Other types/finishes on request

Grip ∅ - internal thread

D 32	M 6	S 10	600,00
D 40	M 8	S 10	720,00
D 50	M 8	S 10	1050,00
D 50	M 10	S 10	1430,00
D 63	M 10	S 10	1460,00
D 63	M 12	S 10	1990,00
D 80	M 12	S 5	2700,00
D 80	M 16	S 5	3350,00

DIN	06340.000	RAZ 570
6340	**Steel, QT**	



Washers for clamping devices, quenched and tempered

Dimensions ➔ TI-84

Inside ∅ x outside ∅ x thickness

6,4	x	17	x 3	S	100	94,00
8,4	x	23	x 4	S	100	94,00
10,5	x	28	x 4	S	100	111,00
13	x	35	x 5	S	50	148,00
15	x	40	x 5	S	100	208,00
17	x	45	x 6	S	50	208,00
21	x	50	x 6	S	25	325,00
25	x	60	x 8	S	10	500,00
31	x	68	x 10	S	10	910,00

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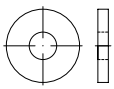
- Label design
- Packing quantities to match your needs

Dimensions						PU	Pieces	€/100/Mat.
DIN	06340.010							RAZ 570
6340	**Steel, QT zinc plated**							



Washers for clamping devices, quenched and tempered

baked

Caution! Note information about hydrogen embrittlement.

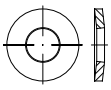
Dimensions → TI-84 Corrosion protection → TI-217

Inside ∅	x	outside ∅	x	thickness			
6,4	x	17	x	3	S	100	105,00 ZP
8,4	x	23	x	4	S	100	114,00 ZP
10,5	x	28	x	4	S	100	135,00 ZP
13	x	35	x	5	S	50	168,00 ZP
15	x	40	x	5	S	100	239,00 ZP
17	x	45	x	6	S	50	239,00 ZP
21	x	50	x	6	S	25	365,00 ZP
25	x	60	x	8	S	10	570,00 ZP
31	x	68	x	10	S	10	970,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

DIN	06796.030	RAZ 580
6796	**Spring steel phosphated**	

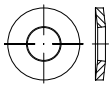


Conical spring washers for screwed fastening

Stainless → S. 519

Nominal ∅	x	outside ∅	x	thickness			
3	x	7	x	0,6	S	10000	1,25
3	x	7	x	0,6	K	500	1,95
4	x	9	x	1	S	5000	1,95
4	x	9	x	1	K	250	3,25
5	x	11	x	1,2	S	2500	2,85
5	x	11	x	1,2	K	250	4,20
6	x	14	x	1,5	S	1000	4,80
6	x	14	x	1,5	K	250	6,40
8	x	1	x	2	S	1000	9,80
8	x	1	x	2	K	250	11,90
10	x	23	x	2,5	S	500	25,50
10	x	23	x	2,5	K	100	31,00
12	x	29	x	3	S	250	47,50
12	x	29	x	3	K	100	55,00
14	x	35	x	3,5	S	100	85,00
16	x	39	x	4	S	100	95,00
18	x	42	x	4,5	S	100	151,00
20	x	45	x	5	S	100	186,00
22	x	49	x	5,5	S	100	860,00
24	x	56	x	6	S	50	920,00
27	x	60	x	6,5	S	50	1250,00
30	x	70	x	7	S	50	1440,00

DIN	06796.060	RAZ 580
6796	**Spring steel mech. YZP**	

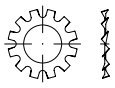


Conical spring washers for screwed fastenings

Stainless → S. 519

Nominal ∅	x	outside ∅	x	thickness			
2,5	x	6	x	0,5	S	10000	1,20 mech YZP
3	x	7	x	0,6	S	10000	1,45 mech YZP
3	x	7	x	0,6	K	500	1,95 mech YZP
4	x	9	x	1	S	5000	2,05 mech YZP
4	x	9	x	1	K	250	3,05 mech YZP
5	x	11	x	1,2	S	2500	3,10 mech YZP
5	x	11	x	1,2	K	250	4,05 mech YZP
6	x	14	x	1,5	S	2500	5,30 mech YZP
6	x	14	x	1,5	K	250	6,30 mech YZP
8	x	1	x	2	S	1000	10,90 mech YZP
8	x	1	x	2	K	250	11,80 mech YZP
10	x	23	x	2,5	S	500	28,00 mech YZP
10	x	23	x	2,5	K	100	30,50 mech YZP
12	x	29	x	3	S	250	57,00 mech YZP
12	x	29	x	3	K	100	60,00 mech YZP
14	x	35	x	3,5	S	100	93,00 mech YZP
16	x	39	x	4	S	100	105,00 mech YZP
18	x	42	x	4,5	S	100	159,00 mech YZP
20	x	45	x	5	S	100	205,00 mech YZP
22	x	49	x	5,5	S	100	960,00 mech YZP
24	x	56	x	6	S	50	1080,00 mech YZP
27	x	60	x	6,5	S	50	1450,00 mech YZP
30	x	70	x	7	S	50	1710,00 mech YZP

~DIN	06797.001	RAZ 580
6797	**Spring steel**	**type A**



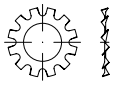
Toothed lock washers, A = external teeth

Dimensions → TI-99

Stainless → S. 519

A 3,2	S	5000	1,30
A 3,2	K	500	2,40
A 4,3	S	5000	1,45
A 4,3	K	500	2,70
A 5,3	S	3000	1,80
A 5,3	K	500	2,95
A 6,4	S	2000	2,15
A 6,4	K	500	3,35
A 8,4	S	2000	3,95
A 8,4	K	250	6,00
A 10,5	S	1000	6,00
A 10,5	K	250	8,10
A 13	S	750	8,30
A 13	K	100	12,20
A 15	S	500	15,00
A 15	K	100	19,00
A 17	S	500	20,30
A 17	K	100	25,50
A 19	K	100	38,50
A 21	S	200	36,00
A 21	K	100	42,50
A 23	S	100	52,00
A 25	S	100	55,00
A 31	S	100	86,00

~DIN	06797.011	RAZ 580
6797	**Spring steel zinc plated**	**type A**



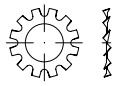
Toothed lock washers, A = external teeth

Dimensions → TI-99

Stainless → S. 519

A 3,2	S	5000	1,50 ZP
A 3,2	K	500	2,60 ZP
A 3,7	K	500	2,70 ZP
A 4,3	S	5000	1,60 ZP
A 4,3	K	500	2,80 ZP
A 5,3	S	3000	2,20 ZP
A 5,3	K	500	3,40 ZP
A 6,4	S	2000	2,45 ZP
A 6,4	K	500	3,65 ZP
A 7,4	K	250	6,40 ZP
A 8,4	S	2000	4,80 ZP
A 8,4	K	250	6,90 ZP
A 10,5	S	1000	7,30 ZP
A 10,5	K	250	9,60 ZP
A 13	S	750	10,10 ZP
A 13	K	100	14,30 ZP
A 15	K	100	22,00 ZP
A 17	S	500	23,60 ZP
A 17	K	100	29,50 ZP
A 19	K	100	44,00 ZP
A 21	S	200	43,00 ZP
A 21	K	100	50,00 ZP
A 23	S	100	61,00 ZP
A 25	S	100	64,00 ZP
A 28	S	100	87,00 ZP
A 31	S	100	101,00 ZP

Dimensions	PU Pieces	€/100/Mat.
~DIN	06797.061	RAZ 580
6797	**Spring steel zinc plated yellow**	**type A**



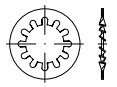
Toothed lock washers, I = internal teeth

Dimensions → TI-99

Stainless → S. 519

A 3,2	K	500	2,60 YZP
A 4,3	K	500	2,80 YZP
A 5,3	K	500	3,40 YZP
A 6,4	K	500	3,65 YZP
A 8,4	K	250	7,00 YZP
A 10,5	K	250	9,80 YZP

~DIN	06797.004	RAZ 580
6797	**Spring steel**	**type I**



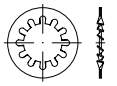
Toothed lock washers, I = internal teeth

Dimensions → TI-99

Stainless → S. 519

I 3,2	S	5000	1,30
I 3,2	K	500	2,40
I 4,3	S	5000	1,45
I 4,3	K	500	2,70
I 5,3	S	3000	1,80
I 5,3	K	500	2,95
I 6,4	S	2000	2,15
I 6,4	K	500	3,35
I 7,4	K	250	4,05
I 8,4	S	2000	3,95
I 8,4	K	250	6,00
I 10,5	S	1000	6,00
I 10,5	K	250	8,10
I 13	S	750	8,30
I 13	K	100	12,20
I 15	S	500	15,00
I 15	K	100	19,00
I 17	S	500	20,30
I 17	K	100	25,50
I 21	S	200	36,00
I 23	S	100	52,00
I 25	S	100	55,00
I 28	S	100	75,00
I 31	S	100	86,00

Dimensions	PU Pieces	€/100/Mat.
~DIN	06797.014	RAZ 580
6797	**Spring steel zinc plated**	**type I**



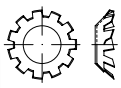
Toothed lock washers, I = internal teeth

Dimensions → TI-99 Corrosion protection → TI-217

Stainless → S. 519

I 3,2	S	5000	1,50 ZP
I 3,2	K	500	2,60 ZP
I 3,7	K	500	2,70 ZP
I 4,3	S	5000	1,60 ZP
I 4,3	K	500	2,80 ZP
I 5,3	S	3000	2,20 ZP
I 5,3	K	500	3,40 ZP
I 6,4	S	2000	2,45 ZP
I 6,4	K	500	3,65 ZP
I 7,4	K	250	6,40 ZP
I 8,4	S	2000	4,80 ZP
I 8,4	K	250	6,90 ZP
I 10,5	S	1000	7,30 ZP
I 10,5	K	250	9,60 ZP
I 13	S	750	10,10 ZP
I 13	K	100	14,30 ZP
I 15	K	100	22,00 ZP
I 17	S	500	23,60 ZP
I 17	K	100	29,50 ZP
I 19	K	100	44,00 ZP
I 21	S	200	43,00 ZP
I 21	K	100	50,00 ZP
I 23	S	100	60,00 ZP
I 25	S	100	64,00 ZP
I 28	S	100	87,00 ZP
I 31	S	100	101,00 ZP

~DIN	06797.015	RAZ 580
6797	**Spring steel zinc plated**	**type V**

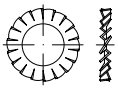


Toothed lock washers, V = countersunk

Dimensions → TI-99 Corrosion protection → TI-217

V 3,2	S	5000	2,75 ZP
V 3,2	K	250	4,75 ZP
V 4,3	S	3000	3,05 ZP
V 4,3	K	250	4,90 ZP
V 5,3	S	4000	3,95 ZP
V 5,3	K	250	6,00 ZP
V 6,4	S	2000	4,50 ZP
V 6,4	K	250	6,50 ZP
V 8,4	S	2000	7,00 ZP
V 8,4	K	100	9,40 ZP
V 10,5	S	1000	9,40 ZP
V 10,5	K	100	13,50 ZP
V 13	S	500	20,20 ZP
V 13	K	100	25,50 ZP

Dimensions	PU Pieces	€/100/Mat.
~DIN	06798.001	RAZ 580
6798	**Spring steel**	**type A**



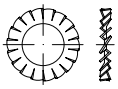
Serrated lock washers, A = external teeth

Dimensions → TI-99

Stainless → S. 519
Bronze → S. 591

A 2,2	S	5000	1,30
A 2,2	K	500	2,40
A 2,5	K	500	2,40
A 2,7	K	500	2,40
A 3,2	S	5000	1,30
A 3,2	K	500	2,40
A 4,3	S	5000	1,45
A 4,3	K	500	2,70
A 5,3	S	3000	1,80
A 5,3	K	500	2,95
A 6,4	S	2000	2,15
A 6,4	K	500	3,35
A 8,4	S	2000	3,95
A 8,4	K	250	6,00
A 10,5	S	1000	6,00
A 10,5	K	250	8,10
A 13	S	750	8,30
A 13	K	100	12,20
A 15	K	100	16,10
A 17	S	500	17,60
A 17	K	100	21,90
A 19	K	100	34,00
A 21	S	200	36,00
A 21	K	100	42,50
A 23	S	100	52,00
A 25	S	100	54,00
A 28	S	100	75,00
A 31	S	100	86,00

~DIN	06798.011	RAZ 580
6798	**Spring steel zinc plated**	**type A**



Serrated lock washers, A = external teeth

Dimensions → TI-99 Corrosion protection → TI-217

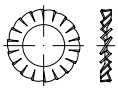
Stainless → S. 519
Bronze → S. 591

A 2,2	S	5000	1,40 ZP
A 2,2	K	500	2,60 ZP
A 2,5	S	5000	1,40 ZP
A 2,5	K	500	2,60 ZP
A 2,7	S	5000	1,50 ZP
A 2,7	K	500	2,70 ZP
A 3,2	S	5000	1,50 ZP
A 3,2	K	500	2,60 ZP
A 3,7	K	500	2,70 ZP
A 4,3	S	5000	1,60 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
A 4,3	K	500	2,80 ZP
A 5,3	S	3000	2,20 ZP
A 5,3	K	500	3,40 ZP
A 6,4	S	2000	2,45 ZP
A 6,4	K	500	3,65 ZP
A 7,4	K	250	6,40 ZP
A 8,4	S	2000	4,80 ZP
A 8,4	K	250	6,90 ZP
A 10,5	S	1000	7,30 ZP
A 10,5	K	250	9,60 ZP
A 13	S	750	10,10 ZP
A 13	K	100	14,30 ZP
A 15	K	100	22,00 ZP
A 17	S	500	23,60 ZP
A 17	K	100	29,50 ZP
A 19	K	100	44,00 ZP
A 21	S	200	43,00 ZP
A 21	K	100	50,00 ZP
A 23	S	100	60,00 ZP
A 25	S	100	64,00 ZP
A 28	S	100	87,00 ZP
A 31	S	100	101,00 ZP

~DIN	06798.081	RAZ 580
6798	Spring steel zinc plated 8 TLP	type A



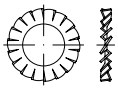
Serrated lock washers, A = external teeth

Dimensions → TI-99 Corrosion protection → TI-217

Stainless → S. 519
Bronze → S. 591

A 5,3	S	3000	2,75 ZP TLP
A 6,4	S	2000	3,10 ZP TLP
A 8,4	S	2000	6,10 ZP TLP
A 10,5	S	1000	9,40 ZP TLP

~DIN	06798.061	RAZ 580
6798	Spring steel zinc plated yellow	type A



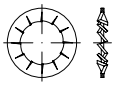
Serrated lock washers, A = external teeth

Dimensions → TI-99 Corrosion protection → TI-217

Stainless → S. 519
Bronze → S. 591

A 5,3	S	3000	2,20 YZP
A 6,4	S	2000	2,45 YZP
A 8,4	S	2000	4,85 YZP
A 10,5	S	1000	7,50 YZP
A 13	S	750	10,20 YZP

Dimensions	PU	Pieces	€/100/Mat.
~DIN	06798.004		RAZ 580
6798	Spring steel		type I



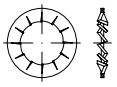
Serrated lock washers, I = internal teeth

Dimensions → TI-99

Stainless → S. 519

I 2,5	K	500	2,40
I 3,2	S	5000	1,30
I 3,2	K	500	2,40
I 4,3	S	5000	1,45
I 4,3	K	500	2,70
I 5,3	S	3000	1,80
I 5,3	K	500	2,95
I 6,4	S	2000	2,15
I 6,4	K	500	3,35
I 8,4	S	2000	3,95
I 8,4	K	250	6,00
I 10,5	S	1000	6,00
I 10,5	K	250	8,10
I 13	S	750	8,30
I 13	K	100	12,20
I 15	K	100	15,70
I 17	S	500	17,60
I 17	K	100	21,90
I 21	S	200	36,00
I 23	S	100	52,00
I 25	S	100	55,00

~DIN	06798.014	RAZ 580
6798	Spring steel zinc plated	type I



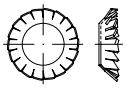
Serrated lock washers, I = internal teeth

Dimensions → TI-99 Corrosion protection → TI-217

Stainless → S. 519

I 2,2	S	5000	1,40 ZP
I 2,2	K	500	2,60 ZP
I 3,2	S	5000	1,50 ZP
I 3,2	K	500	2,60 ZP
I 3,7	K	500	2,70 ZP
I 4,3	S	5000	1,60 ZP
I 4,3	K	500	2,80 ZP
I 5,3	S	3000	2,20 ZP
I 5,3	K	500	3,40 ZP
I 6,4	S	2000	2,45 ZP
I 6,4	K	500	3,65 ZP
I 7,4	K	250	6,40 ZP
I 8,4	S	2000	4,80 ZP
I 8,4	K	250	6,90 ZP
I 10,5	S	1000	7,30 ZP
I 10,5	K	250	9,60 ZP
I 13	S	750	10,10 ZP
I 13	K	100	14,30 ZP
I 15	K	100	22,00 ZP
I 17	S	500	23,60 ZP
I 17	K	100	29,50 ZP
I 19	K	100	44,00 ZP
I 21	S	200	43,00 ZP
I 21	K	100	50,00 ZP
I 23	S	100	60,00 ZP
I 25	S	100	64,00 ZP
I 28	S	100	87,00 ZP
I 31	S	100	101,00 ZP

~DIN	06798.005	RAZ 580
6798	Spring steel	type V



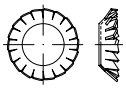
Serrated lock washers, V = countersunk

Dimensions → TI-99

Stainless → S. 520

V 3,2	S	5000	2,65
V 3,2	K	250	4,50
V 4,3	S	3000	2,75
V 4,3	K	250	4,75
V 5,3	S	4000	3,75
V 5,3	K	250	5,60
V 6,4	S	2000	3,95
V 6,4	K	250	6,00
V 8,4	S	2000	6,40
V 8,4	K	100	10,30
V 10,5	S	1000	8,10
V 10,5	K	100	12,20
V 13	S	500	18,20
V 13	K	100	23,00

~DIN	06798.015	RAZ 580
6798	Spring steel zinc plated	type V



Serrated lock washers, V = countersunk

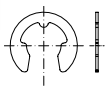
Dimensions → TI-99 Corrosion protection → TI-217

Stainless → S. 520

V 3,2	S	5000	2,75 ZP
V 3,2	K	250	4,75 ZP
V 4,3	S	3000	3,05 ZP
V 4,3	K	250	4,90 ZP
V 5,3	S	4000	3,95 ZP
V 5,3	K	250	6,00 ZP
V 6,4	S	2000	4,50 ZP
V 6,4	K	250	6,50 ZP
V 8,4	S	2000	7,00 ZP
V 8,4	K	100	9,40 ZP
V 10,5	S	1000	9,40 ZP
V 10,5	K	100	13,50 ZP
V 13	S	500	20,20 ZP
V 13	K	100	25,50 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	06799.000		RAZ 580

6799 Spring steel



Retaining rings for shafts

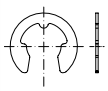
Dimensions → TI-100

Nominal size = slot ∅

0,8	K	1000	8,30
1,2	K	500	2,80
1,5	S	10000	1,25
1,5	K	500	2,35
1,9	S	10000	1,25
1,9	K	500	2,40
2,3	S	5000	1,45
2,3	K	500	2,45
3,2	S	5000	1,50
3,2	K	500	2,75
4	S	5000	2,00
4	K	500	3,45
5	S	5000	2,45
5	K	500	4,10
6	S	2500	2,75
6	K	500	4,50
7	S	2500	4,00
7	K	250	7,10
8	S	2000	5,40
8	K	250	8,70
9	S	1000	7,20
9	K	250	11,00
10	S	1000	8,60
10	K	250	12,50
12	S	1000	11,00
12	K	200	17,10
15	S	500	19,00
15	K	150	28,00
19	S	250	48,00
19	K	150	65,00
24	S	100	69,00

DIN	06799.010	RAZ 580

6799 Spring steel zinc plated



Retaining rings for shafts

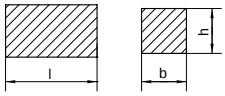
Dimensions → TI-100 Corrosion protection → TI-217

Nominal size = slot ∅

2,3	S	500	4,50 ZP
3,2	S	500	5,00 ZP
4	S	500	6,00 ZP
5	S	500	7,50 ZP
6	S	500	8,50 ZP
7	S	250	9,00 ZP
8	S	250	10,00 ZP
9	S	250	11,50 ZP
10	S	250	12,00 ZP
12	S	200	13,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	06880.000		RAZ 590

6880 Steel C45+C



Key steel

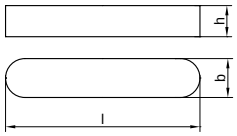
Dimensions → TI-134

Width b x height h x length l

3	x		x	1000	S	1	1100,00
4	x		x	1000	S	1	1300,00
5	x		x	1000	S	1	1500,00
6	x		x	1000	S	1	1900,00
8	x	7	x	1000	S	1	2550,00
10	x	8	x	1000	S	1	3700,00
12	x	8	x	1000	S	1	4400,00
14	x	9	x	1000	S	1	5900,00
16	x	10	x	1000	S	1	7500,00
18	x	11	x	1000	S	1	9200,00
20	x	12	x	1000	S	1	11500,00
22	x	14	x	1000	S	1	14500,00
25	x	14	x	1000	S	1	17000,00
28	x	16	x	1000	S	1	21000,00
32	x	18	x	1000	S	1	27000,00
36	x	20	x	1000	S	1	32000,00

DIN	06885.001	RAZ 590

6885 Steel C45+C type A



Parallel keys, deep pattern, A = round-ended without holes

Dimensions → TI-135

Stainless → S. 520

Width b x height h x length l

A 2	x	2	x	8	S	100	28,50
A 2	x	2	x	10	S	100	30,00
A 2	x	2	x	12	S	100	30,50
A 2	x	2	x	16	S	100	40,00
A 3	x	3	x	8	S	100	26,50
A 3	x	3	x	10	S	100	28,00
A 3	x	3	x	12	S	100	28,00
A 3	x	3	x	14	S	100	26,00
A 3	x	3	x	16	S	100	26,00
A 3	x	3	x	18	S	100	26,00
A 3	x	3	x	20	S	100	26,50
A 3	x	3	x	22	S	100	40,00
A 3	x	3	x	25	S	100	28,00
A 4	x	4	x	8	S	100	26,50
A 4	x	4	x	10	S	100	27,50
A 4	x	4	x	12	S	100	27,50
A 4	x	4	x	14	S	100	26,00
A 4	x	4	x	16	S	100	26,00
A 4	x	4	x	18	S	100	26,00
A 4	x	4	x	20	S	100	27,00
A 4	x	4	x	22	S	100	27,00
A 4	x	4	x	25	S	100	27,50
A 4	x	4	x	28	S	100	27,50
A 4	x	4	x	30	S	100	28,50

Dimensions	PU	Pieces	€/100/Mat.
A 4 x 4 x 32	S	100	28,50
A 4 x 4 x 36	S	100	29,50
A 4 x 4 x 40	S	100	30,00
A 5 x 5 x 10	S	100	27,00
A 5 x 5 x 12	S	100	27,00
A 5 x 5 x 14	S	100	26,00
A 5 x 5 x 16	S	100	26,50
A 5 x 5 x 18	S	100	26,50
A 5 x 5 x 20	S	100	27,00
A 5 x 5 x 22	S	100	27,00
A 5 x 5 x 25	S	100	28,50
A 5 x 5 x 28	S	100	28,50
A 5 x 5 x 30	S	100	29,50
A 5 x 5 x 32	S	100	29,50
A 5 x 5 x 36	S	100	30,00
A 5 x 5 x 40	S	100	30,50
A 5 x 5 x 50	S	100	32,50
A 5 x 5 x 56	S	100	32,50
A 6 x 6 x 10	S	100	32,00
A 6 x 6 x 12	S	100	32,00
A 6 x 6 x 14	S	100	30,00
A 6 x 6 x 16	S	100	30,50
A 6 x 6 x 18	S	50	30,50
A 6 x 6 x 20	S	50	35,50
A 6 x 6 x 22	S	50	35,50
A 6 x 6 x 25	S	50	36,50
A 6 x 6 x 28	S	50	36,50
A 6 x 6 x 30	S	50	38,00
A 6 x 6 x 32	S	50	38,00
A 6 x 6 x 36	S	50	39,00
A 6 x 6 x 40	S	50	40,00
A 6 x 6 x 45	S	50	41,50
A 6 x 6 x 50	S	50	42,50
A 6 x 6 x 56	S	50	46,50
A 6 x 6 x 60	S	50	50,00
A 6 x 6 x 63	S	50	52,00
A 6 x 6 x 70	S	50	54,00
A 6 x 6 x 80	S	50	54,00
A 6 x 6 x 100	S	50	64,00
A 8 x 7 x 16	S	50	38,00
A 8 x 7 x 18	S	50	42,50
A 8 x 7 x 20	S	50	42,50
A 8 x 7 x 22	S	50	42,50
A 8 x 7 x 25	S	50	44,00
A 8 x 7 x 28	S	50	44,00
A 8 x 7 x 30	S	50	46,00
A 8 x 7 x 32	S	50	46,00
A 8 x 7 x 35	S	50	47,00
A 8 x 7 x 36	S	50	47,00
A 8 x 7 x 40	S	50	48,00
A 8 x 7 x 45	S	50	50,00
A 8 x 7 x 50	S	50	52,00
A 8 x 7 x 56	S	50	54,00
A 8 x 7 x 60	S	50	56,00
A 8 x 7 x 63	S	50	59,00
A 8 x 7 x 70	S	50	60,00
A 8 x 7 x 80	S	50	64,00
A 8 x 7 x 90	S	50	68,00
A 8 x 7 x 100	S	50	71,00
A 8 x 7 x 110	S	50	79,00
A 8 x 7 x 120	S	50	85,00
A 10 x 8 x 20	S	50	46,00
A 10 x 8 x 22	S	50	48,50
A 10 x 8 x 25	S	50	48,50
A 10 x 8 x 28	S	50	48,50
A 10 x 8 x 30	S	50	51,00
A 10 x 8 x 32	S	50	51,00
A 10 x 8 x 36	S	50	52,00
A 10 x 8 x 40	S	50	54,00
A 10 x 8 x 45	S	50	56,00
A 10 x 8 x 50	S	50	59,00
A 10 x 8 x 55	S	50	63,00
A 10 x 8 x 56	S	50	63,00
A 10 x 8 x 60	S	50	65,00
A 10 x 8 x 63	S	25	72,00

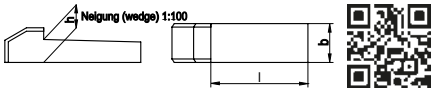
Dimensions	PU	Pieces	€/100/Mat.
A 10 x 8 x 70	S	25	77,00
A 10 x 8 x 80	S	25	79,00
A 10 x 8 x 90	S	25	88,00
A 10 x 8 x 100	S	25	95,00
A 10 x 8 x 110	S	25	100,00
A 10 x 8 x 120	S	25	112,00
A 10 x 8 x 125	S	25	145,00
A 10 x 8 x 140	S	25	185,00
A 12 x 8 x 20	S	50	59,00
A 12 x 8 x 25	S	50	61,00
A 12 x 8 x 28	S	50	62,00
A 12 x 8 x 30	S	50	63,00
A 12 x 8 x 32	S	50	63,00
A 12 x 8 x 35	S	50	67,00
A 12 x 8 x 36	S	50	67,00
A 12 x 8 x 40	S	50	69,00
A 12 x 8 x 45	S	50	70,00
A 12 x 8 x 50	S	50	75,00
A 12 x 8 x 55	S	25	84,00
A 12 x 8 x 56	S	25	84,00
A 12 x 8 x 60	S	25	86,00
A 12 x 8 x 63	S	25	89,00
A 12 x 8 x 65	S	25	89,00
A 12 x 8 x 70	S	25	94,00
A 12 x 8 x 75	S	25	98,00
A 12 x 8 x 80	S	25	101,00
A 12 x 8 x 90	S	25	107,00
A 12 x 8 x 100	S	25	114,00
A 12 x 8 x 110	S	25	133,00
A 12 x 8 x 120	S	25	138,00
A 12 x 8 x 125	S	25	145,00
A 12 x 8 x 140	S	25	179,00
A 12 x 8 x 150	S	25	209,00
A 14 x 9 x 28	S	25	84,00
A 14 x 9 x 30	S	25	85,00
A 14 x 9 x 32	S	25	85,00
A 14 x 9 x 36	S	25	86,00
A 14 x 9 x 40	S	25	89,00
A 14 x 9 x 45	S	25	93,00
A 14 x 9 x 50	S	25	96,00
A 14 x 9 x 56	S	25	103,00
A 14 x 9 x 60	S	25	107,00
A 14 x 9 x 63	S	25	111,00
A 14 x 9 x 70	S	25	116,00
A 14 x 9 x 80	S	25	129,00
A 14 x 9 x 90	S	25	142,00
A 14 x 9 x 100	S	25	165,00
A 14 x 9 x 110	S	25	167,00
A 14 x 9 x 120	S	25	168,00
A 14 x 9 x 125	S	25	169,00
A 14 x 9 x 140	S	10	215,00
A 14 x 9 x 150	S	10	260,00
A 14 x 9 x 160	S	10	280,00
A 14 x 9 x 180	S	10	315,00
A 14 x 9 x 200	S	10	415,00
A 16 x 10 x 36	S	25	122,00
A 16 x 10 x 40	S	25	125,00
A 16 x 10 x 45	S	25	129,00
A 16 x 10 x 50	S	25	135,00
A 16 x 10 x 55	S	25	146,00
A 16 x 10 x 56	S	25	146,00
A 16 x 10 x 60	S	25	151,00
A 16 x 10 x 63	S	25	154,00
A 16 x 10 x 70	S	25	158,00
A 16 x 10 x 80	S	25	170,00
A 16 x 10 x 90	S	25	186,00
A 16 x 10 x 100	S	10	200,00
A 16 x 10 x 110	S	10	221,00
A 16 x 10 x 125	S	10	244,00
A 16 x 10 x 140	S	10	270,00
A 16 x 10 x 160	S	10	315,00
A 16 x 10 x 180	S	10	360,00
A 18 x 11 x 36	S	10	145,00
A 18 x 11 x 40	S	10	145,00
A 18 x 11 x 45	S	10	145,00

Dimensions	PU	Pieces	€/100/Mat.
A 18 x 11 x 50	S	10	145,00
A 18 x 11 x 56	S	10	152,00
A 18 x 11 x 60	S	10	160,00
A 18 x 11 x 63	S	10	160,00
A 18 x 11 x 70	S	10	191,00
A 18 x 11 x 80	S	10	219,00
A 18 x 11 x 90	S	10	232,00
A 18 x 11 x 100	S	10	244,00
A 18 x 11 x 110	S	10	255,00
A 18 x 11 x 120	S	10	275,00
A 18 x 11 x 125	S	10	275,00
A 18 x 11 x 140	S	10	295,00
A 18 x 11 x 160	S	10	340,00
A 18 x 11 x 180	S	10	430,00
A 18 x 11 x 200	S	10	500,00
A 20 x 12 x 50	S	10	209,00
A 20 x 12 x 56	S	10	209,00
A 20 x 12 x 60	S	10	226,00
A 20 x 12 x 63	S	10	226,00
A 20 x 12 x 70	S	10	231,00
A 20 x 12 x 80	S	10	255,00
A 20 x 12 x 90	S	10	275,00
A 20 x 12 x 100	S	10	300,00
A 20 x 12 x 110	S	10	345,00
A 20 x 12 x 125	S	10	380,00
A 20 x 12 x 140	S	10	430,00
A 20 x 12 x 150	S	5	510,00
A 20 x 12 x 160	S	10	530,00
A 20 x 12 x 180	S	10	690,00
A 20 x 12 x 200	S	10	760,00
A 20 x 12 x 220	S	10	780,00
A 20 x 12 x 250	S	10	880,00
A 22 x 14 x 50	S	10	290,00
A 22 x 14 x 63	S	10	300,00
A 22 x 14 x 70	S	10	305,00
A 22 x 14 x 80	S	10	320,00
A 22 x 14 x 90	S	10	340,00
A 22 x 14 x 100	S	10	350,00
A 22 x 14 x 110	S	10	355,00
A 22 x 14 x 125	S	10	465,00
A 22 x 14 x 140	S	10	520,00
A 22 x 14 x 160	S	5	610,00
A 22 x 14 x 180	S	5	690,00
A 22 x 14 x 200	S	5	720,00
A 22 x 14 x 250	S	5	910,00
A 25 x 14 x 70	S	1	430,00
A 25 x 14 x 80	S	1	430,00
A 25 x 14 x 90	S	1	455,00
A 25 x 14 x 100	S	1	495,00
A 25 x 14 x 110	S	1	540,00
A 25 x 14 x 125	S	1	570,00
A 25 x 14 x 140	S	1	670,00
A 25 x 14 x 160	S	1	760,00
A 25 x 14 x 180	S	1	930,00
A 25 x 14 x 200	S	1	960,00
A 28 x 16 x 80	S	1	550,00
A 28 x 16 x 90	S	1	590,00
A 28 x 16 x 100	S	1	630,00
A 28 x 16 x 110	S	1	730,00
A 28 x 16 x 120	S	1	730,00
A 28 x 16 x 125	S	1	750,00
A 28 x 16 x 140	S	1	850,00
A 28 x 16 x 160	S	1	960,00
A 28 x 16 x 180	S	1	1080,00
A 28 x 16 x 200	S	1	1220,00
A 28 x 16 x 220	S	1	1340,00
A 28 x 16 x 250	S	1	1520,00
A 28 x 16 x 320	S	1	1835,00
A 32 x 18 x 70	S	1	710,00
A 32 x 18 x 90	S	1	750,00
A 32 x 18 x 100	S	1	770,00
A 32 x 18 x 110	S	1	910,00
A 32 x 18 x 125	S	1	970,00
A 32 x 18 x 140	S	1	1030,00
A 32 x 18 x 160	S	1	1180,00

Dimensions	PU	Pieces	€/100/Mat.
A 32 x 18 x 180	S	1	1320,00
A 32 x 18 x 200	S	1	1450,00
A 32 x 18 x 220	S	1	1770,00
A 32 x 18 x 250	S	1	1880,00
A 36 x 20 x 100	S	1	940,00
A 36 x 20 x 125	S	1	1100,00
A 36 x 20 x 140	S	1	1270,00
A 36 x 20 x 160	S	1	1430,00
A 36 x 20 x 170	S	1	1600,00
A 36 x 20 x 180	S	1	1670,00
A 36 x 20 x 200	S	1	1790,00
A 36 x 20 x 220	S	1	1920,00
A 36 x 20 x 250	S	1	2440,00
A 40 x 22 x 140	S	1	1580,00
A 40 x 22 x 160	S	1	1760,00
A 40 x 20 x 240	S	1	2920,00
A 40 x 22 x 280	S	1	3280,00
A 45 x 25 x 200	S	1	3400,00
A 45 x 25 x 220	S	1	3460,00
A 45 x 25 x 250	S	1	4000,00

DIN	06887.000	RAZ 590

6887 **Steel C45+C**



Taper keys with gib head

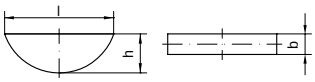
Dimensions → TI-135

Width b x height h x length l	PU	Pieces	€/100/Mat.
6 x x 32	S	50	138,00
6 x x 40	S	50	141,00
6 x x 50	S	50	144,00
8 x 7 x 32	S	25	197,00
8 x 7 x 36	S	25	197,00
8 x 7 x 40	S	25	195,00
8 x 7 x 45	S	25	200,00
8 x 7 x 50	S	25	206,00
8 x 7 x 60	S	25	216,00
8 x 7 x 63	S	25	216,00
10 x 8 x 40	S	25	285,00
10 x 8 x 45	S	25	285,00
10 x 8 x 50	S	25	300,00
10 x 8 x 60	S	25	310,00
10 x 8 x 70	S	10	340,00
10 x 8 x 80	S	10	355,00
10 x 8 x 90	S	10	415,00
10 x 8 x 100	S	10	470,00
12 x 8 x 40	S	25	295,00
12 x 8 x 50	S	25	305,00
12 x 8 x 56	S	10	315,00
12 x 8 x 60	S	10	335,00
12 x 8 x 63	S	10	335,00
12 x 8 x 70	S	10	345,00
12 x 8 x 80	S	10	360,00
12 x 8 x 90	S	10	380,00
12 x 8 x 100	S	10	400,00
14 x 9 x 56	S	10	390,00
14 x 9 x 60	S	10	405,00
14 x 9 x 63	S	10	405,00
14 x 9 x 70	S	10	440,00
14 x 9 x 80	S	10	455,00
14 x 9 x 90	S	10	480,00
14 x 9 x 100	S	10	510,00
16 x 10 x 70	S	10	520,00
16 x 10 x 80	S	10	540,00
16 x 10 x 90	S	10	560,00
16 x 10 x 100	S	10	570,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 06888.000			RAZ 590

6888

Steel C45+C



Woodruff keys

Dimensions → TI-135

Width b x height h

2	x	2,6	S	100	15,20
2	x	3,7	S	100	21,20
2	x	5	S	100	26,00
2,5	x	3,7	S	100	21,20
3	x	3,7	S	100	21,20
3	x	5	S	100	27,50
3	x	6,5	S	100	34,00
3	x	7,5	S	100	39,50
4	x	5	S	100	27,00
4	x	6,5	S	100	34,00
4	x	7,5	S	100	39,50
4	x	9	S	100	46,00
5	x	6,5	S	100	34,00
5	x	7,5	S	100	39,50
5	x	9	S	100	46,00
5	x	10	S	100	52,00
6	x	7,5	S	100	39,50
6	x	9	S	50	46,00
6	x	10	S	50	52,00
6	x	11	S	50	57,00
8	x	9	S	50	46,00
8	x	11	S	50	57,00
8	x	13	S	50	64,00
10	x	11	S	25	59,00
10	x	13	S	25	67,00
10	x	16	S	25	89,00

DIN	06899.010	RAZ 341

6899

Steel zinc plated type BF

Thimbles, BF = medium heavy, with deep groove for fibre ropes

Clips for wire ropes → DIN 741

Dimensions → TI-130 Corrosion protection → TI-217

Other dimensions and thimbles acc. to DIN 3090 and 3091 on request

Nominal size/groove width = for rope nominal ∅

BF 3,5	/ RW	4	S	100	54,00 ZP
BF 4	/ RW	5	S	100	60,00 ZP
BF 5	/ RW	6	S	100	68,00 ZP
BF 6	/ RW	7	S	100	83,00 ZP
BF 7	/ RW	8	S	100	100,00 ZP
BF 9	/ RW	10	S	50	124,00 ZP
BF 11	/ RW	12	S	50	174,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 06911.000			RAZ 600

6911

Steel, QT blackened

Hexagon socket screw keys with pilot

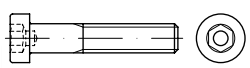
Pin wrench for DIN 6912

SW 3	M 4	K	10	130,00
SW 4	M 5	K	10	130,00
SW 5	M 6	S	50	113,00
SW 5	M 6	K	10	153,00
SW 6	M 8	S	50	120,00
SW 6	M 8	K	10	159,00
SW 8	M 10	S	50	213,00
SW 8	M 10	K	10	255,00
SW 10	M 12	S	25	325,00
SW 10	M 12	K	5	365,00
SW 12	M 14	S	25	420,00
SW 12	M 14	K	5	495,00
SW 14	M 16/18	S	25	910,00
SW 14	M 16/18	K	5	940,00
SW 17	M 20	K	5	1120,00
SW 19	M 24	S	5	1780,00
SW 22	M 30	S	1	2380,00

DIN	06912.800	RAZ 600

6912

08.8



Hexagon socket head cap screws, low head, with centre

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 521

M 4	x	6	S	500	29,10
M 4	x	6	K	100	32,10
M 4	x	8	S	500	20,65
M 4	x	8	K	100	23,70
M 4	x	10	S	500	15,10
M 4	x	10	K	100	18,10
M 4	x	12	S	500	14,20
M 4	x	12	K	100	17,25
M 4	x	16	S	500	14,80
M 4	x	16	K	100	17,80
M 4	x	18	S	500	17,80
M 4	x	20	S	500	16,15
M 4	x	20	K	100	19,15
M 4	x	25	S	500	18,30
M 4	x	25	K	100	21,40
M 4	x	30	S	500	19,55
M 4	x	30	K	100	22,60
M 4	x	35	S	500	22,70
M 4	x	35	K	100	25,75
M 4	x	40	S	500	23,50
M 4	x	40	K	100	26,60
M 5	x	6	S	500	30,15
M 5	x	6	K	100	33,25

Dimensions	PU	Pieces	€/100/Mat.
M 5	x 8	S 500	26,15
M 5	x 8	K 100	29,15
M 5	x 10	S 500	17,10
M 5	x 10	K 100	20,15
M 5	x 12	S 500	15,75
M 5	x 12	K 100	18,75
M 5	x 16	S 500	16,40
M 5	x 16	K 100	19,45
M 5	x 18	S 500	17,80
M 5	x 20	S 500	16,85
M 5	x 20	K 100	19,85
M 5	x 25	S 500	18,05
M 5	x 25	K 100	21,10
M 5	x 30	S 500	20,95
M 5	x 30	K 100	23,95
M 5	x 35	S 200	23,80
M 5	x 40	S 200	27,10
M 5	x 45	S 200	28,70
M 5	x 50	S 200	40,95
M 5	x 55	S 200	45,75
M 5	x 60	S 200	49,15
M 6	x 8	S 500	32,40
M 6	x 8	K 100	35,40
M 6	x 10	S 500	19,45
M 6	x 10	K 100	22,50
M 6	x 12	S 500	17,80
M 6	x 12	K 100	20,85
M 6	x 16	S 500	19,10
M 6	x 16	K 100	22,20
M 6	x 18	S 500	19,80
M 6	x 18	K 100	22,90
M 6	x 20	S 500	19,80
M 6	x 20	K 100	22,90
M 6	x 22	S 500	21,45
M 6	x 25	S 500	20,55
M 6	x 25	K 100	23,55
M 6	x 30	S 500	21,85
M 6	x 30	K 100	24,95
M 6	x 35	S 200	24,20
M 6	x 40	S 200	25,95
M 6	x 45	S 200	28,70
M 6	x 50	S 200	31,45
M 6	x 55	S 200	35,45
M 6	x 60	S 200	38,20
M 6	x 65	S 200	49,85
M 6	x 70	S 200	54,55
M 6	x 75	S 200	57,30
M 6	x 80	S 200	63,05
M 6	x 90	S 200	67,35
M 6	x 100	S 200	84,90
M 6	x 110	S 200	119,00
M 6	x 120	S 200	137,00
M 8	x 10	S 200	36,75
M 8	x 12	S 200	32,25
M 8	x 16	S 200	24,60
M 8	x 18	S 200	27,30
M 8	x 20	S 200	25,15
M 8	x 22	S 200	28,70
M 8	x 25	S 200	26,65
M 8	x 30	S 200	29,40
M 8	x 35	S 200	32,80
M 8	x 40	S 200	36,90
M 8	x 45	S 200	40,95
M 8	x 50	S 200	43,70
M 8	x 55	S 200	47,80
M 8	x 60	S 200	51,90
M 8	x 65	S 200	57,30
M 8	x 70	S 200	65,50
M 8	x 75	S 200	95,85
M 8	x 80	S 200	95,85
M 8	x 90	S 100	103,00
M 8	x 100	S 100	110,00
M 8	x 110	S 100	145,00
M 8	x 120	S 100	174,00
M 10	x 16	S 200	78,20

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 18	S	200	65,50
M 10 x 20	S	200	40,95
M 10 x 22	S	200	42,05
M 10 x 25	S	200	42,05
M 10 x 30	S	200	43,70
M 10 x 35	S	200	49,85
M 10 x 40	S	100	56,00
M 10 x 45	S	100	61,85
M 10 x 50	S	100	68,55
M 10 x 55	S	100	76,40
M 10 x 60	S	100	81,85
M 10 x 65	S	100	89,15
M 10 x 70	S	100	95,85
M 10 x 75	S	100	98,25
M 10 x 80	S	100	110,00
M 10 x 90	S	100	121,00
M 10 x 100	S	100	165,00
M 10 x 110	S	100	192,00
M 10 x 120	S	100	219,00
M 10 x 130	S	50	260,00
M 10 x 140	S	50	288,00
M 12 x 16	S	100	226,00
M 12 x 20	S	100	72,20
M 12 x 25	S	100	67,35
M 12 x 30	S	100	69,75
M 12 x 35	S	100	74,00
M 12 x 40	S	100	81,85
M 12 x 45	S	100	90,35
M 12 x 50	S	100	98,25
M 12 x 55	S	100	106,00
M 12 x 60	S	100	113,00
M 12 x 65	S	100	120,00
M 12 x 70	S	100	128,00
M 12 x 75	S	50	146,00
M 12 x 80	S	50	149,00
M 12 x 90	S	50	162,00
M 12 x 100	S	50	181,00
M 12 x 110	S	50	234,00
M 12 x 120	S	50	266,00
M 12 x 130	S	50	298,00
M 12 x 140	S	50	329,00
M 12 x 150	S	50	370,00
M 12 x 160	S	1	620,00
M 14 x 30	S	100	146,00
M 14 x 35	S	100	156,00
M 14 x 40	S	100	170,00
M 14 x 45	S	50	179,00
M 14 x 50	S	50	207,00
M 14 x 60	S	50	214,00
M 14 x 70	S	50	256,00
M 14 x 80	S	50	298,00
M 14 x 90	S	50	340,00
M 14 x 100	S	50	382,00
M 16 x 25	S	50	165,00
M 16 x 30	S	50	153,00
M 16 x 35	S	50	159,00
M 16 x 40	S	50	169,00
M 16 x 45	S	50	176,00
M 16 x 50	S	50	186,00
M 16 x 55	S	50	205,00
M 16 x 60	S	50	224,00
M 16 x 65	S	50	240,00
M 16 x 70	S	50	247,00
M 16 x 75	S	50	274,00
M 16 x 80	S	50	288,00
M 16 x 90	S	25	301,00
M 16 x 100	S	25	345,00
M 16 x 110	S	25	372,00
M 16 x 120	S	25	404,00
M 16 x 130	S	25	435,00
M 16 x 140	S	25	494,00
M 16 x 150	S	25	574,00
M 16 x 160	S	25	629,00
M 16 x 180	S	25	724,00
M 16 x 200	S	25	792,00

Dimensions	PU	Pieces	€/100/Mat.
M 20 x 30	S	25	827,00
M 20 x 35	S	25	837,00
M 20 x 40	S	25	544,00
M 20 x 45	S	25	550,00
M 20 x 50	S	25	557,00
M 20 x 55	S	25	561,00
M 20 x 60	S	25	566,00
M 20 x 65	S	25	581,00
M 20 x 70	S	25	605,00
M 20 x 80	S	25	647,00
M 20 x 90	S	25	697,00
M 20 x 100	S	25	752,00
M 20 x 110	S	25	819,00
M 20 x 120	S	25	887,00
M 20 x 130	S	25	956,00
M 20 x 140	S	25	1024,00
M 20 x 150	S	25	1093,00
M 20 x 160	S	10	1228,00
M 20 x 180	S	10	1365,00
M 20 x 220	S	1	2125,00
M 24 x 40	S	1	1129,00
M 24 x 45	S	1	1164,00
M 24 x 50	S	1	1164,00
M 24 x 55	S	1	1237,00
M 24 x 60	S	1	1237,00
M 24 x 70	S	1	1310,00
M 24 x 80	S	1	1383,00
M 24 x 90	S	1	1493,00
M 24 x 100	S	1	1528,00
M 24 x 120	S	1	1601,00
M 24 x 130	S	1	1674,00
M 24 x 140	S	1	1747,00
M 24 x 180	S	1	2474,00
M 30 x 50	S	1	1780,00
M 30 x 55	S	1	1827,00
M 30 x 60	S	1	1827,00
M 30 x 70	S	1	1896,00
M 30 x 80	S	1	1973,00
M 30 x 90	S	1	2001,00
M 30 x 100	S	1	2067,00
M 30 x 110	S	1	2125,00
M 30 x 120	S	1	2209,00
M 30 x 150	S	1	2441,00
M 30 x 160	S	1	2489,00
M 36 x 60	S	1	3550,00
M 36 x 70	S	1	3642,00
M 36 x 80	S	1	3856,00

DIN	06912.810	RAZ 600
6912	**08.8 zinc plated**	

Hexagon socket head cap screws, low head, with centre

Dimensions → TI-12 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230
Stainless → S. 521

M 4	x	6	S	500	29,30 ZP
M 4	x	8	S	500	20,95 ZP
M 4	x	10	S	500	15,40 ZP
M 4	x	12	S	500	14,65 ZP
M 4	x	14	S	500	17,82 ZP
M 4	x	16	S	500	15,35 ZP
M 4	x	18	S	500	18,70 ZP
M 4	x	20	S	500	16,85 ZP
M 4	x	25	S	500	19,10 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 30	S	500	20,50 ZP
M 4 x 35	S	500	23,70 ZP
M 4 x 40	S	500	24,75 ZP
M 5 x 6	S	500	30,70 ZP
M 5 x 8	S	500	26,65 ZP
M 5 x 10	S	500	17,75 ZP
M 5 x 12	S	500	16,45 ZP
M 5 x 16	S	500	17,30 ZP
M 5 x 18	S	500	18,90 ZP
M 5 x 20	S	500	17,90 ZP
M 5 x 25	S	500	19,35 ZP
M 5 x 30	S	500	22,40 ZP
M 5 x 35	S	200	25,45 ZP
M 5 x 40	S	200	29,00 ZP
M 5 x 45	S	200	30,85 ZP
M 5 x 50	S	200	43,10 ZP
M 5 x 55	S	200	48,30 ZP
M 5 x 60	S	200	51,80 ZP
M 6 x 8	S	500	33,30 ZP
M 6 x 10	S	500	20,50 ZP
M 6 x 12	S	500	18,95 ZP
M 6 x 14	S	500	19,00 ZP
M 6 x 16	S	500	20,50 ZP
M 6 x 18	S	500	21,30 ZP
M 6 x 20	S	500	21,35 ZP
M 6 x 22	S	500	22,95 ZP
M 6 x 25	S	500	22,30 ZP
M 6 x 30	S	500	24,00 ZP
M 6 x 35	S	200	25,65 ZP
M 6 x 40	S	200	29,45 ZP
M 6 x 45	S	200	31,90 ZP
M 6 x 50	S	200	34,80 ZP
M 6 x 55	S	200	39,20 ZP
M 6 x 60	S	200	42,20 ZP
M 6 x 65	S	200	54,00 ZP
M 6 x 70	S	200	59,20 ZP
M 6 x 80	S	200	70,70 ZP
M 6 x 90	S	200	75,00 ZP
M 6 x 100	S	200	92,55 ZP
M 6 x 110	S	200	126,65 ZP
M 6 x 120	S	200	145,00 ZP
M 8 x 10	S	200	38,85 ZP
M 8 x 12	S	200	34,45 ZP
M 8 x 14	S	200	88,00 ZP
M 8 x 16	S	200	27,15 ZP
M 8 x 18	S	200	29,75 ZP
M 8 x 20	S	200	28,10 ZP
M 8 x 22	S	200	31,15 ZP
M 8 x 25	S	200	30,30 ZP
M 8 x 30	S	200	33,40 ZP
M 8 x 35	S	200	37,35 ZP
M 8 x 40	S	200	41,95 ZP
M 8 x 45	S	200	46,65 ZP
M 8 x 50	S	200	49,95 ZP
M 8 x 55	S	200	54,55 ZP
M 8 x 60	S	200	59,25 ZP
M 8 x 65	S	200	65,50 ZP
M 8 x 70	S	200	74,00 ZP
M 8 x 75	S	200	106,00 ZP
M 8 x 80	S	200	106,00 ZP
M 8 x 90	S	100	114,00 ZP
M 8 x 100	S	100	122,00 ZP
M 8 x 105	S	100	492,00 ZP
M 8 x 110	S	100	157,00 ZP
M 10 x 16	S	200	82,50 ZP
M 10 x 18	S	200	70,75 ZP
M 10 x 20	S	200	46,20 ZP
M 10 x 25	S	200	47,90 ZP
M 10 x 30	S	200	50,10 ZP
M 10 x 35	S	200	57,25 ZP
M 10 x 40	S	100	64,30 ZP
M 10 x 45	S	100	71,00 ZP
M 10 x 50	S	100	78,20 ZP
M 10 x 55	S	100	87,90 ZP
M 10 x 60	S	100	94,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	65	S	100	102,00 ZP
M 10	x	70	S	100	110,00 ZP
M 10	x	75	S	100	119,00 ZP
M 10	x	80	S	100	126,00 ZP
M 10	x	90	S	100	138,00 ZP
M 10	x	100	S	100	184,00 ZP
M 10	x	120	S	100	243,00 ZP
M 10	x	130	S	100	287,00 ZP
M 10	x	140	S	50	315,00 ZP
M 12	x	16	S	100	233,00 ZP
M 12	x	20	S	100	79,40 ZP
M 12	x	25	S	100	75,85 ZP
M 12	x	30	S	100	79,40 ZP
M 12	x	35	S	100	84,90 ZP
M 12	x	40	S	100	94,00 ZP
M 12	x	45	S	100	104,00 ZP
M 12	x	50	S	100	113,00 ZP
M 12	x	55	S	100	122,00 ZP
M 12	x	60	S	100	129,00 ZP
M 12	x	65	S	100	138,00 ZP
M 12	x	70	S	100	148,00 ZP
M 12	x	80	S	50	170,00 ZP
M 12	x	90	S	50	186,00 ZP
M 12	x	100	S	50	208,00 ZP
M 12	x	110	S	50	265,00 ZP
M 12	x	120	S	50	299,00 ZP
M 12	x	130	S	50	331,00 ZP
M 12	x	140	S	50	362,00 ZP
M 12	x	150	S	50	405,00 ZP
M 12	x	160	S	1	655,00 ZP
M 12	x	180	S	1	710,00 ZP
M 14	x	30	S	100	171,00 ZP
M 14	x	35	S	100	181,00 ZP
M 14	x	40	S	100	195,00 ZP
M 14	x	45	S	50	204,00 ZP
M 14	x	50	S	50	232,00 ZP
M 14	x	60	S	50	240,00 ZP
M 14	x	70	S	50	281,00 ZP
M 16	x	25	S	50	190,00 ZP
M 16	x	30	S	50	173,00 ZP
M 16	x	35	S	50	179,00 ZP
M 16	x	40	S	50	192,00 ZP
M 16	x	45	S	50	200,00 ZP
M 16	x	50	S	50	214,00 ZP
M 16	x	60	S	50	255,00 ZP
M 16	x	70	S	50	282,00 ZP
M 16	x	80	S	50	329,00 ZP
M 16	x	90	S	25	346,00 ZP
M 16	x	100	S	25	395,00 ZP
M 16	x	110	S	25	427,00 ZP
M 16	x	120	S	25	462,00 ZP
M 16	x	130	S	25	493,00 ZP
M 16	x	140	S	25	552,00 ZP
M 16	x	150	S	25	633,00 ZP
M 16	x	160	S	25	690,00 ZP
M 16	x	180	S	25	784,00 ZP
M 16	x	200	S	25	855,00 ZP
M 20	x	30	S	25	873,00 ZP
M 20	x	35	S	25	900,00 ZP
M 20	x	40	S	25	581,00 ZP
M 20	x	45	S	25	590,00 ZP
M 20	x	50	S	25	600,00 ZP
M 20	x	60	S	25	616,00 ZP
M 20	x	70	S	25	662,00 ZP
M 20	x	80	S	25	711,00 ZP
M 20	x	90	S	25	769,00 ZP
M 20	x	100	S	25	829,00 ZP
M 20	x	110	S	25	896,00 ZP
M 20	x	120	S	25	965,00 ZP
M 20	x	130	S	25	1035,00 ZP
M 20	x	140	S	25	1105,00 ZP
M 20	x	150	S	25	1175,00 ZP
M 20	x	160	S	10	1310,00 ZP
M 20	x	180	S	10	1445,00 ZP
M 20	x	200	S	10	1585,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	220	S	1	2210,00 ZP
M 24	x	40	S	1	1249,00 ZP
M 24	x	45	S	1	1284,00 ZP
M 24	x	50	S	1	1284,00 ZP
M 24	x	60	S	1	1357,00 ZP
M 24	x	70	S	1	1435,00 ZP
M 24	x	80	S	1	1515,00 ZP
M 24	x	90	S	1	1625,00 ZP
M 24	x	100	S	1	1666,00 ZP
M 30	x	50	S	1	1825,00 ZP
M 30	x	55	S	1	1872,00 ZP
M 30	x	60	S	1	1872,00 ZP
M 30	x	70	S	1	1941,00 ZP
M 30	x	80	S	1	1941,00 ZP
M 30	x	90	S	1	2051,00 ZP
M 30	x	100	S	1	2117,00 ZP

DIN	06912.860	RAZ 600

6912

08.8
zinc plated yellow

Hexagon socket head cap screws, low head, with centre

Dimensions → TI-12 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

Stainless → S. 521

M 4	x	8	S	500	20,95 YZP
M 4	x	10	S	500	15,40 YZP
M 4	x	12	S	500	14,65 YZP
M 5	x	10	S	500	17,75 YZP
M 5	x	12	S	500	16,45 YZP
M 5	x	16	S	500	17,30 YZP
M 6	x	10	S	500	20,50 YZP
M 6	x	12	S	500	18,95 YZP
M 6	x	16	S	500	20,50 YZP
M 6	x	20	S	500	21,35 YZP
M 6	x	25	S	500	22,30 YZP
M 8	x	16	S	200	27,15 YZP
M 8	x	20	S	200	28,10 YZP
M 8	x	25	S	200	30,30 YZP
M 10	x	20	S	200	46,20 YZP
M 10	x	25	S	200	47,90 YZP
M 10	x	30	S	200	50,10 YZP

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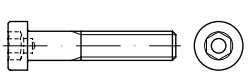
Technical Competence
REM – REYHER Engineering Management

- Experienced engineers and technicians with comprehensive specialist expertise
- Technology hotline for customer consulting
- Our training lifts you to the cutting-edge of technology

Dimensions		PU	Pieces	€/100/Mat.
DIN	06912.100			RAZ 600

6912

010.9



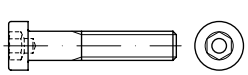
Hexagon socket head cap screws, low head, with centre

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 521

M 6	x	10	S	500	40,00
M 6	x	12	S	500	36,50
M 6	x	16	S	500	39,00
M 6	x	20	S	500	40,50
M 6	x	25	S	500	42,50
M 6	x	30	S	500	45,00
M 6	x	35	S	200	48,00
M 6	x	40	S	200	54,00
M 8	x	16	S	200	51,00
M 8	x	20	S	200	52,00
M 8	x	25	S	200	55,00
M 8	x	30	S	200	60,00
M 8	x	35	S	200	67,00
M 8	x	40	S	200	76,00
M 8	x	45	S	200	84,00
M 8	x	50	S	200	89,00
M 8	x	60	S	200	106,00
M 10	x	16	S	200	223,00
M 10	x	20	S	200	84,00
M 10	x	25	S	200	86,00
M 10	x	30	S	200	89,00
M 10	x	35	S	200	102,00
M 10	x	40	S	100	116,00
M 10	x	45	S	100	127,00
M 10	x	50	S	100	141,00
M 10	x	60	S	100	168,00
M 12	x	25	S	100	138,00
M 12	x	30	S	100	143,00
M 12	x	35	S	100	152,00
M 12	x	40	S	100	168,00
M 12	x	45	S	100	186,00
M 12	x	50	S	100	202,00
M 12	x	60	S	100	230,00
M 16	x	30	S	50	320,00
M 16	x	35	S	50	325,00
M 16	x	40	S	50	350,00
M 16	x	45	S	50	360,00
M 16	x	50	S	50	380,00
M 16	x	60	S	50	460,00
M 16	x	70	S	50	510,00
M 16	x	80	S	50	590,00
M 20	x	40	S	25	1010,00
M 20	x	50	S	25	1020,00
M 20	x	60	S	25	1030,00
M 20	x	70	S	25	1070,00
M 24	x	40	S	25	2068,00
M 24	x	50	S	25	2068,00
M 24	x	60	S	25	2213,00
M 24	x	70	S	25	2650,00
M 24	x	80	S	25	2690,00
M 24	x	90	S	25	2832,00

Dimensions	PU Pieces	€/100/Mat.
DIN	06912.110	RAZ 600
6912	**010.9 zinc plated**	



Hexagon socket head cap screws, low head, with centre

baked

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-12 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

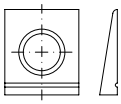
Stainless → S. 521

M 6	x	12	S	500	90,00 ZP
M 6	x	16	S	500	91,00 ZP
M 6	x	20	S	500	96,00 ZP
M 6	x	25	S	500	99,00 ZP
M 6	x	30	S	500	107,00 ZP
M 8	x	16	S	200	165,00 ZP
M 8	x	20	S	200	166,00 ZP
M 8	x	25	S	200	181,00 ZP
M 8	x	30	S	200	197,00 ZP
M 10	x	20	S	200	234,00 ZP
M 10	x	25	S	200	244,00 ZP
M 10	x	30	S	200	255,00 ZP
M 10	x	40	S	100	280,00 ZP
M 12	x	25	S	100	425,00 ZP
M 12	x	30	S	100	435,00 ZP
M 16	x	30	S	50	940,00 ZP
M 16	x	35	S	50	950,00 ZP
M 16	x	40	S	50	980,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions	PU Pieces	€/100/Mat.
DIN	06917.000	RAZ 610
6917	**Steel, QT**	

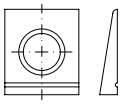


Square taper washers, wedge angle 14%, for friction grip bolts on double-T-beams in steel constructions

Dimensions → TI-86

			• ÜH products
13	S	1	104,00
17	S	1	117,00
21	S	1	185,00
25	S	1	316,00

DIN	06917.020	RAZ 610
6917	**Steel, QT hot dip galvanized**	

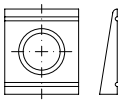


Square taper washers, wedge angle 14%, for friction grip bolts on double-T-beams in steel constructions

Dimensions → TI-86 Corrosion protection → TI-219

			• ÜH products
13	S	1	110,00 HDG
17	S	1	127,00 HDG
21	S	1	202,00 HDG
23	S	1	251,00 HDG
25	S	1	353,00 HDG

Dimensions	PU Pieces	€/100/Mat.
DIN	06918.000	RAZ 610
6918	**Steel, QT**	

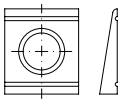


Square taper washers, wedge angle 8%, for friction grip bolts on U beams in steel constructions

Dimensions → TI-86

			• ÜH products
13	S	1	102,00
17	S	1	121,00
21	S	1	162,00
23	S	1	212,00
25	S	1	306,00
28	S	1	329,00
31	S	1	569,00

DIN	06918.020	RAZ 610
6918	**Steel, QT hot dip galvanized**	



Square taper washers, wedge angle 8%, for friction grip bolts on U beams in steel constructions

Dimensions → TI-86 Corrosion protection → TI-219

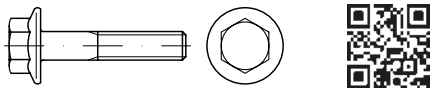
			• ÜH products
13	S	1	106,00 HDG
17	S	1	129,00 HDG
21	S	1	178,00 HDG
23	S	1	233,00 HDG
25	S	1	336,00 HDG
28	S	1	363,00 HDG
31	S	1	612,00 HDG

Dimensions | PU Pieces | €/100/Mat.

DIN 06921.800 RAZ 615

6921

8.8



Hexagon flange bolts

Dimensions → TI-17 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 522

DIN 6921 → replaced by EN 1665

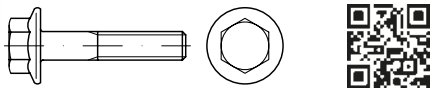
M 6	x	12	S	500	22,90
M 6	x	16	S	500	15,50
M 6	x	20	S	500	14,90
M 6	x	25	S	500	14,90
M 6	x	30	S	500	16,70
M 8	x	12	S	200	47,00
M 8	x	16	S	200	41,50
M 8	x	20	S	200	29,50
M 8	x	25	S	200	30,00
M 8	x	30	S	200	32,50
M 8	x	35	S	200	35,50
M 8	x	40	S	200	38,00
M 8	x	50	S	200	43,50
M 10	x	16	S	200	68,00
M 10	x	20	S	200	41,50
M 10	x	25	S	200	44,00
M 10	x	30	S	200	47,00
M 10	x	35	S	100	52,00
M 10	x	40	S	100	56,00
M 10	x	45	S	100	62,00
M 10	x	50	S	100	66,00
M 10	x	60	S	100	73,00
M 12	x	20	S	100	126,00
M 12	x	25	S	100	117,00
M 12	x	30	S	100	126,00
M 12	x	35	S	100	138,00
M 12	x	40	S	100	143,00
M 12	x	45	S	100	157,00
M 12	x	50	S	100	166,00
M 12	x	60	S	100	187,00
M 12	x	70	S	50	214,00
M 12	x	80	S	50	236,00
M 12	x	90	S	50	270,00
M 12	x	100	S	50	290,00
M 16	x	30	S	50	192,00
M 16	x	35	S	50	205,00
M 16	x	40	S	50	216,00
M 16	x	45	S	50	228,00
M 16	x	50	S	50	240,00
M 16	x	60	S	50	285,00
M 16	x	65	S	25	300,00
M 16	x	70	S	25	300,00

Dimensions | PU Pieces | €/100/Mat.

DIN 06921.810 RAZ 615

6921

8.8
zinc plated



Hexagon flange bolts

Dimensions → TI-17 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

Stainless → S. 522

DIN 6921 → replaced by EN 1665

M 6	x	12	S	500	24,80 ZP
M 6	x	16	S	500	17,40 ZP
M 6	x	20	S	500	17,40 ZP
M 6	x	25	S	500	18,50 ZP
M 8	x	12	S	200	51,00 ZP
M 8	x	16	S	200	45,50 ZP
M 8	x	20	S	200	33,50 ZP
M 8	x	25	S	200	35,00 ZP
M 8	x	30	S	200	37,50 ZP
M 8	x	35	S	200	40,50 ZP
M 8	x	40	S	200	41,00 ZP
M 8	x	50	S	200	50,00 ZP
M 8	x	60	S	200	57,00 ZP
M 10	x	20	S	200	48,00 ZP
M 10	x	25	S	200	51,00 ZP
M 10	x	30	S	200	61,00 ZP
M 12	x	20	S	100	136,00 ZP
M 12	x	25	S	100	128,00 ZP
M 12	x	30	S	100	137,00 ZP
M 12	x	35	S	100	149,00 ZP
M 12	x	40	S	100	155,00 ZP
M 12	x	45	S	100	170,00 ZP
M 12	x	50	S	100	180,00 ZP
M 12	x	60	S	100	202,00 ZP
M 12	x	70	S	50	230,00 ZP
M 12	x	80	S	50	254,00 ZP
M 12	x	90	S	50	290,00 ZP
M 16	x	30	S	50	212,00 ZP
M 16	x	35	S	50	225,00 ZP
M 16	x	40	S	50	238,00 ZP
M 16	x	50	S	50	260,00 ZP
M 16	x	60	S	50	310,00 ZP
M 16	x	70	S	25	350,00 ZP

E-Business

Electronically supported processes make c-part sourcing easier

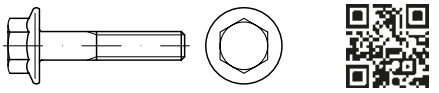
- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions | PU Pieces | €/100/Mat.

DIN 06921.100 RAZ 615

6921

10.9



Hexagon flange bolts

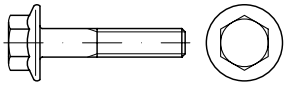
Dimensions → TI-17 Tightening torque → TI-230
Mech. properties → TI-220

Stainless → S. 522

DIN 6921 → replaced by EN 1665

M 5	x	10	S	500	23,50
M 5	x	12	S	500	24,20
M 5	x	16	S	500	24,80
M 5	x	20	S	500	25,50
M 6	x	12	S	500	29,50
M 6	x	16	S	500	19,20
M 6	x	20	S	500	19,80
M 6	x	25	S	500	20,50
M 6	x	30	S	500	21,10
M 8	x	10	S	200	46,00
M 8	x	12	S	200	45,00
M 8	x	16	S	200	43,50
M 8	x	20	S	200	36,50
M 8	x	25	S	200	38,00
M 8	x	30	S	200	40,50
M 8	x	35	S	200	44,00
M 8	x	40	S	200	47,00
M 8	x	50	S	200	54,00
M 10	x	16	S	200	76,00
M 10	x	20	S	200	52,00
M 10	x	25	S	200	56,00
M 10	x	30	S	200	60,00
M 10	x	35	S	100	66,00
M 10	x	40	S	100	70,00
M 10	x	50	S	100	83,00
M 10	x	60	S	100	93,00
M 12	x	25	S	100	112,00
M 12	x	30	S	100	116,00
M 12	x	35	S	100	120,00
M 12	x	40	S	100	126,00
M 12	x	45	S	100	156,00
M 12	x	50	S	100	156,00
M 12	x	60	S	100	186,00
M 12	x	80	S	50	295,00
M 16	x	30	S	50	270,00
M 16	x	35	S	50	285,00
M 16	x	40	S	50	300,00
M 16	x	50	S	50	335,00
M 16	x	60	S	50	395,00
M 16	x	70	S	25	415,00

Dimensions	PU Pieces	€/100/Mat.
DIN	06921.110	RAZ 615
6921	**10.9 zinc plated**	



Hexagon flange bolts

baked

Caution! Note information about hydrogen embrittlement.

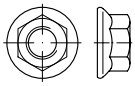
Dimensions → TI-17 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

Stainless → S. 522

DIN 6921 → replaced by EN 1665

M 5	x	10	S	500	30,50 ZP
M 5	x	12	S	500	31,20 ZP
M 5	x	16	S	500	32,80 ZP
M 5	x	20	S	500	33,00 ZP
M 6	x	12	S	500	37,50 ZP
M 6	x	16	S	500	27,20 ZP
M 6	x	20	S	500	27,80 ZP
M 6	x	25	S	500	28,50 ZP
M 6	x	30	S	500	29,10 ZP
M 8	x	10	S	200	54,00 ZP
M 8	x	16	S	200	54,00 ZP
M 8	x	20	S	200	46,50 ZP
M 8	x	25	S	200	48,00 ZP
M 8	x	30	S	200	50,50 ZP
M 8	x	35	S	200	57,00 ZP
M 8	x	40	S	200	57,00 ZP
M 8	x	50	S	200	64,00 ZP
M 10	x	16	S	200	89,00 ZP
M 10	x	20	S	200	67,00 ZP
M 10	x	25	S	200	72,00 ZP
M 10	x	30	S	200	75,00 ZP
M 10	x	40	S	100	85,00 ZP
M 10	x	50	S	100	99,00 ZP
M 10	x	60	S	100	110,00 ZP
M 12	x	25	S	100	132,00 ZP
M 12	x	30	S	100	136,00 ZP
M 12	x	35	S	100	145,00 ZP
M 12	x	40	S	100	151,00 ZP
M 12	x	45	S	100	186,00 ZP
M 12	x	50	S	100	186,00 ZP
M 12	x	60	S	100	216,00 ZP
M 12	x	70	S	50	325,00 ZP
M 12	x	80	S	50	325,00 ZP
M 16	x	35	S	50	320,00 ZP
M 16	x	40	S	50	335,00 ZP
M 16	x	50	S	50	370,00 ZP
M 16	x	60	S	50	435,00 ZP
M 16	x	70	S	25	455,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	06923.810	RAZ 615
6923	**8 zinc plated**	



Hexagon flange nuts

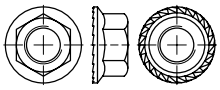
Dimensions → TI-63 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 522

DIN 6923 → replaced by EN 1661

M 4	S	1000	10,30 ZP
M 5	S	1000	11,80 ZP
M 6	S	1000	13,00 ZP
M 8	S	1000	18,70 ZP
M 10	S	500	34,00 ZP
M 12	S	250	46,50 ZP
M 16	S	50	146,00 ZP
M 20	S	50	242,00 ZP

~DIN	06923.814	RAZ 615
6923	**8 zinc plated**	**locking**



Hexagon locking nuts with flange

Dimensions → TI-63 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 522

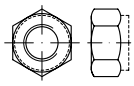
Nuts with hardened surface → article 88934

M 4	S	1000	11,00 ZP
M 5	S	1000	12,00 ZP
M 6	S	1000	13,50 ZP
M 8	S	1000	20,00 ZP
M 10	S	500	36,00 ZP
M 12	S	250	50,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions	PU Pieces	€/100/Mat.
DIN	06924.810	RAZ 615
6924	**8 zinc plated**	



Prevailing torque type hexagon nuts with non-metallic insert

For use under temperatures from -50 to +120 °C

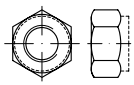
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 522

DIN 6924 coarse thread
→ replaced by ISO 7040 (compatible)

M 4	S	200	16,50 ZP
M 5	S	200	15,70 ZP
M 6	S	100	18,20 ZP
M 8	S	100	23,00 ZP
M 10	S	100	39,50 ZP
M 12	S	100	51,00 ZP
M 16	S	50	99,00 ZP
M 20	S	50	187,00 ZP
M 24	S	25	295,00 ZP

DIN	06924.110	RAZ 480
6924	**10 zinc plated**	



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use under temperatures from -50 to +120 °C

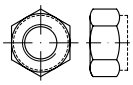
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 522

DIN 6924 coarse thread
→ replaced by ISO 7040 (compatible)

M 10	S	100	63,00 ZP
M 12	S	100	91,00 ZP
M 16	S	50	162,00 ZP
M 20	S	50	295,00 ZP
M 24	S	25	395,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	06924.115				RAZ 480
6924	**10** **zinc plated**				**fine**



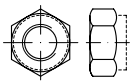
Prevailing torque type hexagon nuts with non-metallic insert, high type

for use under temperatures from -50 to +120 °C

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

M 10	x	1	S	100	69,00 ZP
M 12	x	1,5	S	100	99,00 ZP
M 14	x	1,5	S	100	133,00 ZP
M 16	x	1,5	S	50	178,00 ZP
M 20	x	1,5	S	50	320,00 ZP
M 24	x	2	S	25	470,00 ZP

DIN	06925.810	RAZ 615
6925	**8** **zinc plated**	



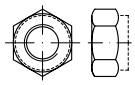
Prevailing torque type hexagon nuts, all metal nuts

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 6925 coarse thread → replaced by ISO 7042

M 4	S	100	7,50 ZP
M 5	S	100	7,50 ZP
M 6	S	100	8,90 ZP
M 8	S	100	12,50 ZP
M 10	S	100	21,70 ZP
M 12	S	100	35,50 ZP
M 14	S	100	48,00 ZP
M 16	S	100	69,00 ZP
M 18	S	50	104,00 ZP
M 20	S	50	108,00 ZP
M 24	S	25	190,00 ZP
M 27	S	25	420,00 ZP
M 30	S	10	495,00 ZP
M 33	S	10	950,00 ZP
M 36	S	10	1000,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	06925.860				RAZ 480
6925	**8** **zinc plated yellow**				



Prevailing torque type hexagon nuts, all-metal nuts

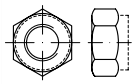
*for dimensions M 10 and 12 RAZ = 3395

Dimensions → TI-66 Corrosion protection → TI-217
Standard conversion → TI-7 Standard conversion → TI-7

DIN 6925 coarse thread → replaced by ISO 7042

M 5	S	1000	6,80 YZP
M 6	S	1000	7,00 YZP
M 8	S	500	10,90 YZP
M 10	S	500	18,10 YZP
M 12	S	250	28,50 YZP
M 16	S	100	56,00 YZP
M 20	S	50	108,00 YZP

DIN	06925.840	RAZ 1525
6925	**8** **zinc flake coated**	



Prevailing torque type hexagon nuts, all metal nuts

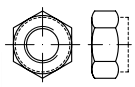
Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free,
*for dimensions M 10 and 12 RAZ = 3395

Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

DIN 6925 coarse thread → replaced by ISO 7042

M 6	S	1000	9,10 flZn
M 8	S	500	14,10 flZn
M 10	S	500	24,60 flZn
M 12	S	250	38,00 flZn
M 16	S	100	72,00 flZn
M 20	S	50	141,00 flZn
M 24	S	25	255,00 flZn

DIN	06925.820	RAZ 3395
6925	**8** **hot dip galvanized**	



Prevailing torque type hexagon nuts, all metal nuts

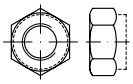
Thread tolerance 6H

Dimensions → TI-66 Corrosion protection → TI-219
Mech. properties → TI-221 Standard conversion → TI-7

DIN 6925 coarse thread → replaced by ISO 7042

M 5	S	100	146,00 HDG
M 6	S	100	58,00 HDG
M 8	S	100	60,00 HDG
M 10	S	100	78,00 HDG
M 12	S	100	95,00 HDG
M 16	S	50	160,00 HDG
M 20	S	50	560,00 HDG
M 24	S	25	770,00 HDG

DIN	06925.815	RAZ 480
6925	**8** **zinc plated**	**fine**



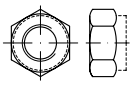
Prevailing torque type hexagon nuts, V = all-metal nuts, single component, with metric fine pitch thread

*for dimensions M 10, 12 and 14 RAZ = 3395

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

M 8	x	1	S	100	24,60 ZP
M 10	x	1	S	100	28,50 ZP
M 12	x	1,5	S	100	34,50 ZP
M 14	x	1,5	S	100	49,50 ZP
M 16	x	1,5	S	100	65,00 ZP
M 18	x	1,5	S	50	112,00 ZP
M 20	x	1,5	S	50	108,00 ZP
M 20	x	2	S	50	108,00 ZP
M 24	x	1,5	S	25	197,00 ZP
M 24	x	2	S	25	197,00 ZP
M 30	x	2	S	10	510,00 ZP

DIN	06925.110	RAZ 615
6925	**10** **zinc plated**	



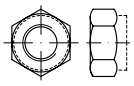
Prevailing torque type hexagon nuts, all metal nuts

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

DIN 6925 coarse thread → replaced by ISO 7042

M 8	S	100	28,50 ZP
M 10	S	100	41,50 ZP
M 12	S	100	54,00 ZP
M 14	S	100	69,00 ZP
M 16	S	50	85,00 ZP
M 18	S	50	129,00 ZP
M 20	S	50	150,00 ZP
M 24	S	25	241,00 ZP
M 27	S	10	680,00 ZP
M 30	S	10	485,00 ZP
M 36	S	10	2500,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	06925.140	RAZ 1525
6925	**10** **zinc flake coated**	



Prevailing torque type hexagon nuts all metal nuts

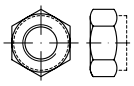
Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free,
*For dimensions M 10 and 12 RAZ = 3395

Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

DIN 6925 coarse thread → replaced by ISO 7042

M 6	S	1000	55,00 flZn
M 8	S	500	65,00 flZn
M 10	S	500	90,00 flZn
M 12	S	250	100,00 flZn
M 16	S	50	120,00 flZn
M 18	S	50	63,32 flZn
M 20	S	50	180,00 flZn
M 24	S	25	330,00 flZn

DIN	06925.115	RAZ 480*
6925	**10** **zinc plated**	**fine**



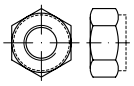
Prevailing torque type hexagon nuts, V = all-metal nuts, single component, with metric fine pitch thread

*For dimensions M 10, 12 and 14 RAZ = 3395

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

M 8	x 1	S	100	28,00 ZP
M 10	x 1	S	100	44,00 ZP
M 10	x 1,25	S	100	43,00 ZP
M 12	x 1,25	S	100	53,00 ZP
M 12	x 1,5	S	100	53,00 ZP
M 14	x 1,5	S	100	76,00 ZP
M 16	x 1,5	S	50	92,00 ZP
M 18	x 1,5	S	50	140,00 ZP
M 20	x 1,5	S	50	162,00 ZP
M 24	x 1,5	S	25	260,00 ZP
M 24	x 2	S	25	260,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07040.810	*
7040	**8** **zinc plated**	



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use at temperatures from –50 to +120 °C,
*M 14 RAZ = 3395, M 20/24 RAZ = 480,
other ∅ RAZ = 615

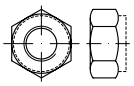
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 523

ISO 7040 → replaces DIN 982 and 6924

M 4	S	200	16,50 ZP
M 5	S	200	15,70 ZP
M 6	S	100	18,20 ZP
M 8	S	100	23,00 ZP
M 10	S	100	39,50 ZP
M 12	S	100	51,00 ZP
M 14	S	100	68,00 ZP
M 16	S	50	99,00 ZP
M 20	S	50	187,00 ZP
M 24	S	25	295,00 ZP

ISO	07040.814	RAZ 3395
7040	**8** **zinc plated**	**HS***



Prevailing torque type hexagon nuts with non-metallic insert, high type, with heat-stabilised* polyamide locking ring

*up to ~ +150/180 °C (DB 205107-03)

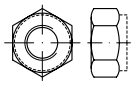
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 523

ISO 7040 → replaces DIN 982 and 6924

M 5	S	1000	18,50 ZP
M 6	S	1000	19,20 ZP
M 8	S	1000	26,50 ZP
M 10	S	500	43,50 ZP
M 12	S	500	59,00 ZP
M 16	S	200	132,00 ZP
M 20	S	50	365,00 ZP
M 24	S	25	415,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07040.110	*
7040	**10** **zinc plated**	



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use at temperatures from –50 to +120 °C,
*M 10/12 RAZ = 3395, other ∅ RAZ = 480

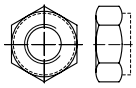
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 523

ISO 7040 → replaces DIN 982 and 6924

10	S	100	63,00 ZP
12	S	100	91,00 ZP
16	S	50	162,00 ZP
20	S	50	295,00 ZP
24	S	25	395,00 ZP

ISO	07042.810	*
7042	**8** **zinc plated**	



Prevailing torque type hexagon nuts, (all metal nuts)

*M 10/12/22 RAZ = 3395, M 14 RAZ = 615,
other ∅ RAZ = 480

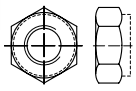
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

ISO 7042 → replaces DIN 980 and 6925

M 4	S	100	7,50 ZP
M 5	S	100	7,50 ZP
M 10	S	500	17,90 ZP
M 12	S	250	28,00 ZP
M 14	S	100	48,00 ZP
M 18	S	50	104,00 ZP
M 20	S	50	108,00 ZP
M 24	S	25	190,00 ZP
M 27	S	25	420,00 ZP
M 30	S	10	495,00 ZP
M 33	S	10	950,00 ZP
M 36	S	10	1000,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07042.860	*

7042 8 yellow zinc plated



Prevailing torque type hexagon nuts, (all metal nuts)

*M 10/12 RAZ = 3395, other ∅ RAZ = 480

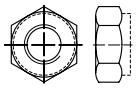
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

ISO 7042 → replaces DIN 980 and 6925

M 5	S	1000	6,80 YZP
M 6	S	1000	7,00 YZP
M 8	S	500	10,90 YZP
M 10	S	500	18,10 YZP
M 12	S	250	28,50 YZP
M 16	S	100	56,00 YZP
M 20	S	50	108,00 YZP

ISO	07042.841	RAZ 1525

7042 8 zinc flake coated



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

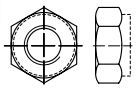
Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

ISO 7042 → replaces DIN 980 and 6925

M 6	S	1000	9,10 flZn
M 8	S	500	14,10 flZn
M 10	S	500	24,60 flZn
M 12	S	250	38,00 flZn
M 16	S	100	72,00 flZn
M 20	S	50	141,00 flZn
M 24	S	25	255,00 flZn

Dimensions	PU Pieces	€/100/Mat.
ISO	07042.820	RAZ 3395

7042 8 hot dip galvanized



Prevailing torque type hexagon nuts, all-metal nuts, two parts

Thread tolerance 6H

→ ISO 4014/4017 8.8 HDG SB

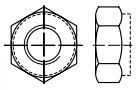
Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

CE = also for use in steel construction as non-preloaded fastenings acc. to EN 15048

M 5	S	100	146,00 HDG
M 6	S	100	58,00 HDG
M 8	S	100	60,00 HDG
M 10	S	100	78,00 HDG
M 12	S	100	95,00 HDG
M 16	S	50	160,00 HDG
M 20	S	50	560,00 HDG
M 24	S	25	770,00 HDG

ISO	07042.110	*

7042 10 zinc plated



Prevailing torque type hexagon nuts, all metal nuts

*M 22 RAZ = 3395, M 27/30/36 RAZ = 480, other ∅ RAZ = 615

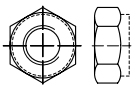
Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

ISO 7042 → replaces DIN 980 and 6925

M 8	S	100	28,50 ZP
M 10	S	100	41,50 ZP
M 12	S	100	54,00 ZP
M 14	S	100	69,00 ZP
M 16	S	50	85,00 ZP
M 18	S	50	129,00 ZP
M 20	S	50	150,00 ZP
M 24	S	25	241,00 ZP
M 27	S	10	680,00 ZP
M 30	S	10	485,00 ZP
M 36	S	10	2500,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07042.140	RAZ 1525

7042 10 zinc flake coated



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Friction coefficient 0,09 – 0,14,
480h salt spray test, Cr(VI)-free

Caution! Different tightening torque to zinc plated.

Dimensions → TI-66 Corrosion protection → TI-218
Mech. properties → TI-221 Standard conversion → TI-7

ISO 7042 → replaces DIN 980 and 6925

M 6	S	1000	55,00 flZn
M 8	S	500	65,00 flZn
M 10	S	500	90,00 flZn
M 12	S	250	100,00 flZn
M 16	S	50	120,00 flZn
M 18	S	50	63,32 flZn
M 20	S	50	180,00 flZn
M 24	S	25	330,00 flZn

ISO	07045.404	RAZ 710

7045 4.8 H

Cheese head screws with Phillips cross recess H

Dimensions → TI-40 Standard conversion → TI-11

Stainless → S. 524

ISO 7045 → replaces DIN 7985 (compatible)

M 3	x	5	-H	S 2000	5,00
M 3	x	6	-H	S 2000	2,85
M 3	x	8	-H	S 2000	1,90
M 3	x	10	-H	S 2000	1,95
M 3	x	12	-H	S 2000	2,00
M 3	x	16	-H	S 2000	2,25
M 3	x	20	-H	S 2000	2,55
M 4	x	6	-H	S 2000	4,20
M 4	x	8	-H	S 2000	2,70
M 4	x	10	-H	S 2000	2,80
M 4	x	12	-H	S 2000	2,85
M 4	x	16	-H	S 2000	3,35
M 4	x	20	-H	S 2000	3,45
M 4	x	25	-H	S 1000	3,60
M 4	x	30	-H	S 1000	4,90
M 5	x	8	-H	S 2000	3,95
M 5	x	10	-H	S 2000	4,00
M 5	x	12	-H	S 1000	4,20
M 5	x	16	-H	S 1000	4,60
M 5	x	20	-H	S 1000	4,90
M 5	x	25	-H	S 1000	5,70
M 6	x	10	-H	S 1000	5,90
M 6	x	12	-H	S 1000	5,90
M 6	x	16	-H	S 1000	6,50

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	20 -H	S	1000	6,70
M 6	x	25 -H	S	500	7,50
M 6	x	40 -H	S	500	11,20
M 8	x	16 -H	S	500	13,80
M 8	x	25 -H	S	200	17,00

ISO	07045.414	RAZ 710
7045	**4.8** zinc plated	**H**

Cheese head screws with Phillips cross recess H

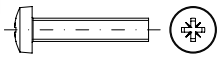
Dimensions ➔ TI-40 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217

Stainless ➔ S. 524

ISO 7045 ➔ replaces DIN 7985 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	4 -H	S	2000	6,90 ZP
M 2	x	4 -H	K	200	9,30 ZP
M 2	x	5 -H	S	2000	6,90 ZP
M 2	x	5 -H	K	200	9,30 ZP
M 2	x	6 -H	S	2000	3,80 ZP
M 2	x	6 -H	K	200	5,20 ZP
M 2	x	8 -H	S	2000	3,80 ZP
M 2	x	8 -H	K	200	6,20 ZP
M 2	x	10 -H	S	2000	3,90 ZP
M 2	x	10 -H	K	200	6,30 ZP
M 2	x	12 -H	S	2000	4,00 ZP
M 2	x	12 -H	K	200	6,40 ZP
M 2	x	16 -H	S	2000	4,10 ZP
M 2	x	16 -H	K	200	6,50 ZP
M 2	x	20 -H	S	2000	4,35 ZP
M 2	x	20 -H	K	200	6,75 ZP
M 2,5	x	4 -H	S	2000	7,60 ZP
M 2,5	x	4 -H	K	200	10,00 ZP
M 2,5	x	5 -H	S	2000	7,60 ZP
M 2,5	x	5 -H	K	200	10,00 ZP
M 2,5	x	6 -H	S	2000	3,85 ZP
M 2,5	x	6 -H	K	200	6,30 ZP
M 2,5	x	8 -H	S	2000	3,85 ZP
M 2,5	x	8 -H	K	200	6,30 ZP
M 2,5	x	10 -H	S	2000	3,95 ZP
M 2,5	x	10 -H	K	200	6,40 ZP
M 2,5	x	12 -H	K	200	6,50 ZP
M 2,5	x	14 -H	S	2000	8,00 ZP
M 2,5	x	16 -H	S	2000	4,40 ZP
M 2,5	x	16 -H	K	200	6,90 ZP
M 2,5	x	20 -H	S	2000	4,75 ZP
M 2,5	x	20 -H	K	200	7,15 ZP
M 2,5	x	25 -H	S	2000	5,60 ZP
M 2,5	x	25 -H	K	200	8,00 ZP
M 2,5	x	30 -H	S	2000	12,00 ZP
M 2,5	x	30 -H	K	200	14,40 ZP
M 3	x	3 -H	S	2000	10,00 ZP
M 3	x	3 -H	K	200	12,00 ZP
M 3	x	4 -H	S	2000	8,20 ZP
M 3	x	4 -H	K	200	10,60 ZP
M 3	x	5 -H	S	2000	5,50 ZP
M 3	x	5 -H	K	200	7,90 ZP
M 3	x	6 -H	K	200	5,60 ZP
M 3	x	8 -H	K	200	4,50 ZP
M 3	x	10 -H	S	2000	2,15 ZP
M 3	x	10 -H	K	200	4,50 ZP
M 3	x	12 -H	S	2000	2,25 ZP
M 3	x	12 -H	K	200	4,70 ZP
M 3	x	14 -H	S	2000	2,65 ZP
M 3	x	14 -H	K	200	5,10 ZP
M 3	x	16 -H	S	2000	2,45 ZP
M 3	x	16 -H	K	200	4,85 ZP
M 3	x	18 -H	S	2000	2,80 ZP
M 3	x	18 -H	K	200	5,20 ZP
M 3	x	20 -H	S	2000	2,80 ZP
M 3	x	20 -H	K	200	5,20 ZP
M 3	x	22 -H	S	2000	3,15 ZP
M 3	x	22 -H	K	200	5,60 ZP
M 3	x	25 -H	S	2000	3,45 ZP
M 3	x	25 -H	K	200	5,90 ZP
M 3	x	28 -H	S	2000	11,00 ZP
M 3	x	28 -H	K	200	13,45 ZP
M 3	x	30 -H	S	2000	4,30 ZP
M 3	x	30 -H	K	200	6,70 ZP
M 3	x	35 -H	S	2000	6,70 ZP
M 3	x	35 -H	K	200	9,10 ZP
M 3	x	40 -H	S	1000	7,00 ZP
M 3	x	40 -H	K	200	9,40 ZP
M 3	x	45 -H	S	1000	10,50 ZP
M 3	x	45 -H	K	200	12,47 ZP
M 3	x	50 -H	S	1000	12,00 ZP
M 3	x	50 -H	K	200	14,40 ZP
M 3	x	55 -H	S	200	25,00 ZP
M 3,5	x	5 -H	S	2000	9,00 ZP
M 3,5	x	6 -H	S	2000	9,20 ZP
M 4	x	4 -H	S	2000	10,00 ZP
M 4	x	4 -H	K	200	12,45 ZP
M 4	x	5 -H	S	2000	7,10 ZP
M 4	x	5 -H	K	200	9,50 ZP
M 4	x	6 -H	S	2000	4,60 ZP
M 4	x	6 -H	K	200	7,10 ZP
M 4	x	8 -H	K	200	5,50 ZP
M 4	x	10 -H	K	200	5,60 ZP
M 4	x	12 -H	S	2000	3,20 ZP
M 4	x	12 -H	K	200	5,60 ZP
M 4	x	14 -H	S	2000	4,45 ZP
M 4	x	14 -H	K	200	6,90 ZP
M 4	x	16 -H	S	2000	3,60 ZP
M 4	x	16 -H	K	200	6,00 ZP
M 4	x	18 -H	S	2000	4,20 ZP
M 4	x	18 -H	K	200	6,60 ZP
M 4	x	20 -H	S	2000	3,80 ZP
M 4	x	20 -H	K	200	6,30 ZP
M 4	x	22 -H	S	2000	6,00 ZP
M 4	x	25 -H	S	1000	4,00 ZP
M 4	x	25 -H	K	200	6,50 ZP
M 4	x	30 -H	S	1000	5,50 ZP
M 4	x	30 -H	K	200	7,90 ZP
M 4	x	35 -H	S	1000	6,40 ZP
M 4	x	35 -H	K	200	8,80 ZP
M 4	x	40 -H	S	1000	7,20 ZP
M 4	x	40 -H	K	200	9,60 ZP
M 4	x	45 -H	S	1000	11,10 ZP
M 4	x	45 -H	K	200	13,60 ZP
M 4	x	50 -H	S	1000	13,30 ZP
M 4	x	50 -H	K	200	15,80 ZP
M 4	x	55 -H	S	500	19,10 ZP
M 4	x	60 -H	S	500	19,10 ZP
M 4	x	65 -H	S	500	39,00 ZP
M 4	x	70 -H	S	500	24,70 ZP
M 4	x	80 -H	S	500	31,50 ZP
M 4	x	85 -H	S	500	40,00 ZP
M 4	x	90 -H	S	200	55,00 ZP
M 4	x	100 -H	S	200	65,00 ZP
M 5	x	6 -H	S	2000	8,80 ZP
M 5	x	6 -H	K	200	11,20 ZP
M 5	x	8 -H	S	2000	4,30 ZP
M 5	x	8 -H	K	200	6,70 ZP
M 5	x	10 -H	K	200	6,90 ZP
M 5	x	12 -H	S	1000	4,60 ZP
M 5	x	12 -H	K	200	7,10 ZP
M 5	x	14 -H	S	1000	5,00 ZP
M 5	x	14 -H	K	200	7,40 ZP
M 5	x	16 -H	K	200	7,50 ZP
M 5	x	18 -H	S	1000	6,00 ZP
M 5	x	18 -H	K	200	8,40 ZP
M 5	x	20 -H	S	1000	5,50 ZP
M 5	x	20 -H	K	200	7,90 ZP
M 5	x	25 -H	S	1000	6,40 ZP
M 5	x	25 -H	K	200	8,80 ZP
M 5	x	30 -H	S	1000	7,60 ZP
M 5	x	30 -H	K	200	10,00 ZP
M 5	x	35 -H	S	500	8,70 ZP
M 5	x	35 -H	K	200	11,00 ZP
M 5	x	40 -H	S	500	8,70 ZP
M 5	x	40 -H	K	200	11,10 ZP
M 5	x	45 -H	S	500	10,20 ZP
M 5	x	45 -H	K	200	12,70 ZP
M 5	x	50 -H	S	500	14,90 ZP
M 5	x	50 -H	K	200	17,30 ZP
M 5	x	60 -H	S	200	19,70 ZP
M 5	x	70 -H	S	200	27,50 ZP
M 5	x	80 -H	S	200	34,50 ZP
M 5	x	90 -H	S	200	40,00 ZP
M 5	x	100 -H	S	200	47,00 ZP
M 6	x	8 -H	K	200	14,00 ZP
M 6	x	10 -H	S	1000	6,60 ZP
M 6	x	10 -H	K	200	9,00 ZP
M 6	x	12 -H	S	1000	6,40 ZP
M 6	x	12 -H	K	200	8,90 ZP
M 6	x	14 -H	S	1000	8,00 ZP
M 6	x	14 -H	K	200	10,50 ZP
M 6	x	16 -H	K	200	9,70 ZP
M 6	x	18 -H	S	1000	8,00 ZP
M 6	x	20 -H	S	1000	7,50 ZP
M 6	x	20 -H	K	200	9,90 ZP
M 6	x	25 -H	S	500	8,30 ZP
M 6	x	25 -H	K	200	10,70 ZP
M 6	x	30 -H	S	500	9,70 ZP
M 6	x	30 -H	K	200	12,20 ZP
M 6	x	35 -H	S	500	11,70 ZP
M 6	x	35 -H	K	200	14,10 ZP
M 6	x	40 -H	K	200	14,90 ZP
M 6	x	45 -H	S	500	13,00 ZP
M 6	x	45 -H	K	200	15,40 ZP
M 6	x	50 -H	S	200	14,80 ZP
M 6	x	55 -H	S	200	39,00 ZP
M 6	x	60 -H	S	200	18,30 ZP
M 6	x	70 -H	S	200	29,00 ZP
M 6	x	75 -H	S	200	33,50 ZP
M 6	x	80 -H	S	200	33,50 ZP
M 6	x	90 -H	S	100	40,50 ZP
M 6	x	100 -H	S	100	47,50 ZP
M 8	x	12 -H	S	500	21,90 ZP
M 8	x	12 -H	K	200	24,30 ZP
M 8	x	16 -H	S	500	15,30 ZP
M 8	x	16 -H	K	200	17,70 ZP
M 8	x	20 -H	S	500	16,20 ZP
M 8	x	20 -H	K	200	18,70 ZP
M 8	x	25 -H	S	200	18,70 ZP
M 8	x	30 -H	S	200	20,50 ZP
M 8	x	35 -H	S	200	22,80 ZP
M 8	x	40 -H	S	100	24,30 ZP
M 8	x	45 -H	S	100	28,50 ZP
M 8	x	50 -H	S	100	29,50 ZP
M 8	x	60 -H	S	100	36,50 ZP
M 8	x	70 -H	S	100	44,50 ZP
M 8	x	80 -H	S	100	56,00 ZP
M 8	x	90 -H	S	100	75,00 ZP
M 10	x	25 -H	S	100	95,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	07045.416		RAZ 710
7045	**4.8**		**Z**
	zinc plated		



Cheese head screws with Pozidriv cross recess Z

Dimensions → TI-40 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 525

ISO 7045 → replaces DIN 7985 (compatible)

M 2,5	x	4 -Z	S	2000	7,60 ZP
M 2,5	x	5 -Z	S	2000	7,60 ZP
M 2,5	x	6 -Z	S	2000	3,85 ZP
M 2,5	x	8 -Z	S	2000	3,85 ZP
M 2,5	x	10 -Z	S	2000	3,95 ZP
M 2,5	x	12 -Z	S	2000	4,05 ZP
M 2,5	x	16 -Z	S	2000	4,40 ZP
M 3	x	4 -Z	S	2000	8,20 ZP
M 3	x	5 -Z	S	2000	5,50 ZP
M 3	x	6 -Z	S	2000	3,15 ZP
M 3	x	8 -Z	S	2000	2,15 ZP
M 3	x	10 -Z	S	2000	2,15 ZP
M 3	x	12 -Z	S	2000	2,25 ZP
M 3	x	16 -Z	S	2000	2,45 ZP
M 3	x	20 -Z	S	2000	2,80 ZP
M 3	x	25 -Z	S	2000	3,45 ZP
M 3	x	30 -Z	S	2000	4,30 ZP
M 3	x	35 -Z	S	2000	6,70 ZP
M 3	x	40 -Z	S	1000	7,00 ZP
M 4	x	5 -Z	S	2000	7,10 ZP
M 4	x	6 -Z	S	2000	4,60 ZP
M 4	x	8 -Z	S	2000	3,00 ZP
M 4	x	10 -Z	S	2000	3,10 ZP
M 4	x	12 -Z	S	2000	3,20 ZP
M 4	x	16 -Z	S	2000	3,60 ZP
M 4	x	18 -Z	S	2000	4,20 ZP
M 4	x	20 -Z	S	2000	3,80 ZP
M 4	x	25 -Z	S	1000	4,00 ZP
M 4	x	30 -Z	S	1000	5,50 ZP
M 4	x	35 -Z	S	1000	6,40 ZP
M 4	x	40 -Z	S	1000	7,20 ZP
M 4	x	45 -Z	S	1000	11,10 ZP
M 4	x	50 -Z	S	1000	13,30 ZP
M 4	x	60 -Z	S	500	19,10 ZP
M 4	x	70 -Z	S	500	24,70 ZP
M 5	x	6 -Z	S	2000	8,80 ZP
M 5	x	8 -Z	S	2000	4,30 ZP
M 5	x	10 -Z	S	2000	4,40 ZP
M 5	x	12 -Z	S	1000	4,60 ZP
M 5	x	16 -Z	S	1000	5,10 ZP
M 5	x	20 -Z	S	1000	5,50 ZP
M 5	x	25 -Z	S	1000	6,40 ZP
M 5	x	30 -Z	S	1000	7,60 ZP
M 5	x	35 -Z	S	500	8,70 ZP
M 5	x	40 -Z	S	500	8,70 ZP
M 5	x	45 -Z	S	500	10,20 ZP
M 5	x	50 -Z	S	500	14,90 ZP
M 5	x	60 -Z	S	200	19,70 ZP
M 5	x	70 -Z	S	200	27,50 ZP
M 5	x	80 -Z	S	200	34,50 ZP
M 6	x	8 -Z	S	1000	11,60 ZP
M 6	x	10 -Z	S	1000	6,60 ZP
M 6	x	12 -Z	S	1000	6,40 ZP
M 6	x	16 -Z	S	1000	7,20 ZP
M 6	x	20 -Z	S	1000	7,50 ZP
M 6	x	25 -Z	S	500	8,30 ZP
M 6	x	30 -Z	S	500	9,70 ZP
M 6	x	35 -Z	S	500	11,70 ZP
M 6	x	40 -Z	S	500	12,50 ZP
M 6	x	45 -Z	S	500	13,00 ZP
M 6	x	50 -Z	S	200	14,80 ZP
M 6	x	60 -Z	S	200	18,30 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	07045.435		RAZ 710
7045	**4.8**		**H**
	zinc plated 8 TLP		

Cheese head screws with Phillips cross recess H

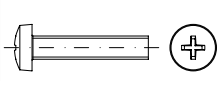
Dimensions → TI-40 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 524

ISO 7045 → replaces DIN 7985 (compatible)

M 3	x	6-H	S	2000	4,20 ZP TLP
M 3	x	8-H	S	2000	2,90 ZP TLP
M 3	x	12-H	S	2000	3,00 ZP TLP
M 3	x	16-H	S	2000	3,35 ZP TLP
M 4	x	8-H	S	2000	4,20 ZP TLP
M 4	x	10-H	S	2000	4,35 ZP TLP
M 4	x	12-H	S	2000	4,50 ZP TLP
M 4	x	16-H	S	2000	4,90 ZP TLP
M 4	x	20-H	S	2000	5,10 ZP TLP
M 4	x	25-H	S	1000	5,45 ZP TLP
M 4	x	30-H	S	1000	7,00 ZP TLP
M 5	x	8-H	S	2000	5,50 ZP TLP
M 5	x	10-H	S	2000	6,00 ZP TLP
M 5	x	12-H	S	1000	6,25 ZP TLP
M 5	x	16-H	S	1000	6,90 ZP TLP
M 5	x	20-H	S	1000	7,15 ZP TLP
M 6	x	10-H	S	1000	8,80 ZP TLP
M 6	x	12-H	S	1000	9,00 ZP TLP
M 6	x	25-H	S	500	11,00 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.
ISO	07045.464		RAZ 710
7045	**4.8**		**H**
	zinc plated yellow		



Cheese head screws with Phillips cross recess H

Dimensions → TI-40 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 524

ISO 7045 → replaces DIN 7985 (compatible)

M 3	x	6 -H	S	2000	3,35 YZP
M 3	x	8 -H	S	2000	2,30 YZP
M 3	x	10 -H	S	2000	2,30 YZP
M 3	x	12 -H	S	2000	2,40 YZP
M 3	x	16 -H	S	2000	2,65 YZP
M 4	x	6 -H	S	2000	4,90 YZP
M 4	x	8 -H	S	2000	3,35 YZP
M 4	x	10 -H	S	2000	3,45 YZP
M 4	x	12 -H	S	2000	3,60 YZP
M 4	x	16 -H	S	2000	3,90 YZP
M 4	x	20 -H	S	2000	4,05 YZP
M 4	x	25 -H	S	1000	4,35 YZP
M 4	x	30 -H	S	1000	5,60 YZP
M 5	x	8 -H	S	2000	4,40 YZP
M 5	x	10 -H	S	2000	4,80 YZP
M 5	x	12 -H	S	1000	5,00 YZP
M 5	x	16 -H	S	1000	5,50 YZP
M 5	x	20 -H	S	1000	5,70 YZP
M 5	x	25 -H	S	1000	6,70 YZP
M 5	x	30 -H	S	1000	8,00 YZP
M 6	x	10 -H	S	1000	7,00 YZP
M 6	x	12 -H	S	1000	7,20 YZP
M 6	x	16 -H	S	1000	7,50 YZP
M 6	x	20 -H	S	1000	7,80 YZP
M 6	x	25 -H	S	500	8,60 YZP

ISO	07046.404	RAZ 460
7046-1	**4.8**	**H**

Countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Stainless → S. 526

ISO 7046 → replaces DIN 965 (compatible)

M 2,5	x	6 -H	S	2000	3,75
M 2,5	x	8 -H	S	2000	3,80
M 3	x	5 -H	S	2000	4,45
M 3	x	6 -H	S	2000	3,05
M 3	x	8 -H	S	2000	1,60
M 3	x	10 -H	S	2000	1,75
M 3	x	12 -H	S	2000	1,80
M 3	x	16 -H	S	2000	2,25
M 3	x	20 -H	S	2000	2,30
M 3	x	25 -H	S	2000	3,25
M 4	x	6 -H	S	2000	4,25
M 4	x	8 -H	S	2000	2,30
M 4	x	10 -H	S	2000	2,35
M 4	x	12 -H	S	2000	2,55
M 4	x	16 -H	S	2000	2,75
M 4	x	20 -H	S	2000	3,00
M 4	x	25 -H	S	1000	3,40
M 4	x	30 -H	S	1000	4,40
M 5	x	8 -H	S	2000	6,00
M 5	x	10 -H	S	2000	3,20
M 5	x	12 -H	S	1000	3,35
M 5	x	16 -H	S	1000	3,60
M 5	x	20 -H	S	1000	4,10
M 5	x	25 -H	S	1000	4,60
M 5	x	40 -H	S	500	6,90
M 6	x	10 -H	S	1000	8,00
M 6	x	12 -H	S	1000	4,70
M 6	x	16 -H	S	1000	5,30
M 6	x	20 -H	S	1000	5,90
M 6	x	25 -H	S	500	6,70
M 6	x	30 -H	S	200	7,50
M 6	x	35 -H	S	500	8,80
M 8	x	16 -H	S	500	12,30
M 8	x	20 -H	S	500	12,80
M 8	x	25 -H	S	200	14,10
M 8	x	30 -H	S	200	16,10

Dimensions	PU	Pieces	€/100/Mat.
ISO 07046.414			RAZ 460

7046-1 4.8 zinc plated H

Countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 526

ISO 7046 → replaces DIN 965 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	5 -H	S	2000	3,80 ZP
M 2	x	6 -H	S	2000	3,80 ZP
M 2	x	6 -H	K	200	6,20 ZP
M 2	x	8 -H	S	2000	3,80 ZP
M 2	x	8 -H	K	200	6,20 ZP
M 2	x	10 -H	K	200	6,30 ZP
M 2	x	12 -H	S	2000	4,00 ZP
M 2	x	12 -H	K	200	6,40 ZP
M 2	x	16 -H	S	2000	4,10 ZP
M 2	x	16 -H	K	200	6,50 ZP
M 2	x	20 -H	S	2000	4,35 ZP
M 2	x	20 -H	K	200	6,75 ZP
M 2,5	x	4 -H	S	2000	9,10 ZP
M 2,5	x	4 -H	K	200	11,50 ZP
M 2,5	x	5 -H	S	2000	5,50 ZP
M 2,5	x	5 -H	K	200	7,90 ZP
M 2,5	x	6 -H	S	2000	4,10 ZP
M 2,5	x	6 -H	K	200	6,60 ZP
M 2,5	x	8 -H	S	2000	3,80 ZP
M 2,5	x	8 -H	K	200	6,60 ZP
M 2,5	x	10 -H	K	200	6,70 ZP
M 2,5	x	12 -H	S	2000	4,35 ZP
M 2,5	x	12 -H	K	200	6,80 ZP
M 2,5	x	16 -H	S	2000	4,75 ZP
M 2,5	x	16 -H	K	200	7,20 ZP
M 2,5	x	20 -H	S	2000	6,80 ZP
M 2,5	x	20 -H	K	200	9,20 ZP
M 3	x	4 -H	S	2000	4,20 ZP
M 3	x	4 -H	K	200	6,30 ZP
M 3	x	5 -H	S	2000	4,80 ZP
M 3	x	5 -H	K	200	7,20 ZP
M 3	x	6 -H	K	200	5,80 ZP
M 3	x	8 -H	K	200	4,25 ZP
M 3	x	10 -H	K	200	4,35 ZP
M 3	x	12 -H	S	2000	1,95 ZP
M 3	x	12 -H	K	200	4,40 ZP
M 3	x	14 -H	S	2000	2,30 ZP
M 3	x	14 -H	K	200	4,75 ZP
M 3	x	16 -H	S	2000	2,45 ZP
M 3	x	16 -H	K	200	4,90 ZP
M 3	x	18 -H	S	2000	2,80 ZP
M 3	x	18 -H	K	200	5,20 ZP
M 3	x	20 -H	S	2000	2,60 ZP
M 3	x	20 -H	K	200	5,00 ZP
M 3	x	22 -H	S	2000	3,00 ZP
M 3	x	22 -H	K	200	5,40 ZP
M 3	x	25 -H	S	2000	3,60 ZP
M 3	x	25 -H	K	200	6,00 ZP
M 3	x	30 -H	S	2000	4,40 ZP
M 3	x	30 -H	K	200	7,10 ZP
M 3	x	35 -H	S	2000	6,50 ZP
M 3	x	40 -H	S	1000	7,50 ZP
M 3	x	45 -H	S	1000	8,50 ZP
M 3	x	50 -H	S	1000	9,30 ZP
M 4	x	5 -H	S	2000	4,70 ZP
M 4	x	5 -H	K	200	7,10 ZP
M 4	x	6 -H	S	2000	4,70 ZP
M 4	x	6 -H	K	200	7,10 ZP
M 4	x	8 -H	K	200	5,00 ZP
M 4	x	10 -H	S	2000	2,65 ZP
M 4	x	10 -H	K	200	5,10 ZP
M 4	x	12 -H	K	200	5,20 ZP
M 4	x	14 -H	S	2000	3,00 ZP
M 4	x	14 -H	K	200	5,50 ZP
M 4	x	16 -H	S	2000	3,05 ZP
M 4	x	16 -H	K	200	5,50 ZP
M 4	x	18 -H	S	2000	3,65 ZP
M 4	x	20 -H	S	2000	3,25 ZP
M 4	x	20 -H	K	200	5,70 ZP
M 4	x	25 -H	S	1000	3,75 ZP
M 4	x	25 -H	K	200	6,20 ZP
M 4	x	28 -H	S	1000	10,50 ZP
M 4	x	30 -H	S	1000	4,85 ZP
M 4	x	30 -H	K	200	7,30 ZP
M 4	x	35 -H	S	1000	6,10 ZP
M 4	x	35 -H	K	200	8,60 ZP
M 4	x	40 -H	S	1000	7,10 ZP
M 4	x	40 -H	K	200	9,50 ZP
M 4	x	45 -H	S	1000	8,70 ZP
M 4	x	45 -H	K	200	11,00 ZP
M 4	x	50 -H	S	1000	10,40 ZP
M 4	x	50 -H	K	200	12,90 ZP
M 4	x	60 -H	S	500	14,80 ZP
M 4	x	60 -H	K	200	17,30 ZP
M 4	x	70 -H	S	500	19,90 ZP
M 4	x	80 -H	S	500	25,50 ZP
M 4	x	90 -H	S	200	68,00 ZP
M 5	x	6 -H	S	2000	6,70 ZP
M 5	x	6 -H	K	200	9,50 ZP
M 5	x	8 -H	S	2000	6,70 ZP
M 5	x	8 -H	K	200	9,10 ZP
M 5	x	10 -H	S	2000	3,50 ZP
M 5	x	10 -H	K	200	5,90 ZP
M 5	x	12 -H	K	200	6,00 ZP
M 5	x	14 -H	S	1000	6,50 ZP
M 5	x	14 -H	K	200	8,95 ZP
M 5	x	16 -H	K	200	6,50 ZP
M 5	x	20 -H	K	200	7,00 ZP
M 5	x	25 -H	S	1000	5,10 ZP
M 5	x	25 -H	K	200	7,50 ZP
M 5	x	30 -H	S	1000	6,40 ZP
M 5	x	30 -H	K	200	8,90 ZP
M 5	x	35 -H	S	500	7,10 ZP
M 5	x	35 -H	K	200	9,60 ZP
M 5	x	40 -H	S	500	7,70 ZP
M 5	x	40 -H	K	200	10,10 ZP
M 5	x	45 -H	S	500	9,00 ZP
M 5	x	45 -H	K	200	11,40 ZP
M 5	x	50 -H	S	500	12,50 ZP
M 5	x	50 -H	K	200	14,90 ZP
M 5	x	55 -H	S	200	29,00 ZP
M 5	x	60 -H	S	200	15,90 ZP
M 5	x	70 -H	S	200	19,30 ZP
M 5	x	80 -H	S	200	29,50 ZP
M 5	x	90 -H	S	100	41,50 ZP
M 6	x	8 -H	S	1000	7,50 ZP
M 6	x	8 -H	K	200	9,90 ZP
M 6	x	10 -H	K	200	11,30 ZP
M 6	x	12 -H	K	200	7,60 ZP
M 6	x	14 -H	S	1000	7,10 ZP
M 6	x	16 -H	S	1000	5,90 ZP
M 6	x	16 -H	K	200	8,40 ZP
M 6	x	18 -H	S	1000	12,00 ZP
M 6	x	18 -H	K	200	15,00 ZP
M 6	x	20 -H	S	1000	6,50 ZP
M 6	x	20 -H	K	200	8,90 ZP
M 6	x	25 -H	S	500	7,30 ZP
M 6	x	25 -H	K	200	9,70 ZP
M 6	x	30 -H	S	500	8,40 ZP
M 6	x	30 -H	K	200	10,80 ZP
M 6	x	35 -H	S	500	9,70 ZP
M 6	x	35 -H	K	200	12,10 ZP
M 6	x	40 -H	S	500	10,90 ZP
M 6	x	40 -H	K	200	13,30 ZP
M 6	x	45 -H	S	200	12,80 ZP
M 6	x	50 -H	S	200	14,50 ZP
M 6	x	55 -H	S	200	21,10 ZP
M 6	x	60 -H	S	200	17,40 ZP
M 6	x	70 -H	S	200	21,90 ZP
M 6	x	80 -H	S	200	32,50 ZP
M 8	x	12 -H	S	500	36,50 ZP
M 8	x	16 -H	S	500	13,70 ZP
M 8	x	16 -H	K	200	16,10 ZP
M 8	x	20 -H	S	500	14,10 ZP
M 8	x	20 -H	K	200	16,60 ZP
M 8	x	25 -H	S	200	15,70 ZP
M 8	x	30 -H	S	200	17,80 ZP
M 8	x	35 -H	S	200	21,40 ZP
M 8	x	40 -H	S	100	25,00 ZP
M 8	x	45 -H	S	100	27,00 ZP
M 8	x	50 -H	S	100	28,00 ZP
M 8	x	55 -H	S	100	36,00 ZP
M 8	x	60 -H	S	100	32,00 ZP
M 8	x	70 -H	S	100	38,50 ZP
M 8	x	80 -H	S	100	47,00 ZP
M 8	x	90 -H	S	100	55,50 ZP
M 8	x	100 -H	S	100	64,00 ZP
M 10	x	16 -H	S	100	54,00 ZP
M 10	x	20 -H	S	100	31,50 ZP
M 10	x	25 -H	S	100	33,00 ZP
M 10	x	30 -H	S	100	36,00 ZP
M 10	x	40 -H	S	100	41,00 ZP
M 10	x	45 -H	S	100	44,00 ZP
M 10	x	50 -H	S	100	47,00 ZP
M 10	x	60 -H	S	100	59,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO 07046.415			RAZ 460

7046-1 4.8 zinc plated Z

Countersunk head screws with Pozidriv cross recess Z

Dimensions → TI-39 Standard conversion → TI-11
Corrosion protection → TI-217

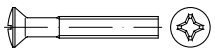
Stainless → S. 526

ISO 7046 → replaces DIN 965 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	4 -Z	S	2000	9,10 ZP
M 2,5	x	5 -Z	S	2000	5,50 ZP
M 2,5	x	6 -Z	S	2000	4,10 ZP
M 2,5	x	8 -Z	S	2000	3,80 ZP
M 2,5	x	10 -Z	S	2000	4,25 ZP
M 2,5	x	12 -Z	S	2000	4,35 ZP
M 3	x	4 -Z	S	2000	4,70 ZP
M 3	x	5 -Z	S	2000	5,10 ZP
M 3	x	6 -Z	S	2000	3,40 ZP
M 3	x	8 -Z	S	2000	1,80 ZP
M 3	x	10 -Z	S	2000	1,90 ZP
M 3	x	12 -Z	S	2000	1,95 ZP
M 3	x	16 -Z	S	2000	2,45 ZP
M 3	x	20 -Z	S	2000	2,60 ZP
M 3	x	25 -Z	S	2000	3,60 ZP
M 4	x	6 -Z	S	2000	4,70 ZP
M 4	x	8 -Z	S	2000	2,55 ZP
M 4	x	10 -Z	S	2000	2,65 ZP
M 4	x	12 -Z	S	2000	2,75 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 16 -Z	S	2000	3,05 ZP
M 4 x 20 -Z	S	2000	3,25 ZP
M 4 x 25 -Z	S	1000	3,75 ZP
M 4 x 30 -Z	S	1000	4,85 ZP
M 4 x 35 -Z	S	1000	6,10 ZP
M 4 x 40 -Z	S	1000	7,10 ZP
M 4 x 45 -Z	S	500	8,70 ZP
M 4 x 50 -Z	S	500	10,40 ZP
M 5 x 8 -Z	S	2000	6,70 ZP
M 5 x 10 -Z	S	2000	3,50 ZP
M 5 x 12 -Z	S	1000	3,60 ZP
M 5 x 16 -Z	S	1000	4,00 ZP
M 5 x 20 -Z	S	1000	4,50 ZP
M 5 x 25 -Z	S	1000	5,10 ZP
M 5 x 30 -Z	S	1000	6,40 ZP
M 5 x 35 -Z	S	500	7,10 ZP
M 5 x 40 -Z	S	500	7,70 ZP
M 5 x 45 -Z	S	500	9,00 ZP
M 5 x 50 -Z	S	500	12,50 ZP
M 5 x 60 -Z	S	200	15,90 ZP
M 5 x 70 -Z	S	200	19,30 ZP
M 5 x 80 -Z	S	200	29,50 ZP
M 6 x 10 -Z	S	1000	8,90 ZP
M 6 x 12 -Z	S	1000	5,20 ZP
M 6 x 16 -Z	S	1000	5,90 ZP
M 6 x 20 -Z	S	1000	6,50 ZP
M 6 x 25 -Z	S	500	7,30 ZP
M 6 x 30 -Z	S	500	7,40 ZP
M 6 x 35 -Z	S	500	9,70 ZP
M 6 x 40 -Z	S	500	10,90 ZP
M 6 x 45 -Z	S	200	12,80 ZP
M 6 x 50 -Z	S	200	14,50 ZP
M 6 x 60 -Z	S	200	17,40 ZP

ISO	07047.414	RAZ 460
7047	**4.8 zinc plated**	**H**



Raised countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 528

ISO 7047 → replaces DIN 966 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
M 2,5 x 5 -H	S	2000	6,90 ZP
M 2,5 x 6 -H	S	2000	4,90 ZP
M 2,5 x 6 -H	K	200	7,30 ZP
M 2,5 x 8 -H	S	2000	5,10 ZP
M 2,5 x 8 -H	K	200	7,50 ZP
M 2,5 x 10 -H	S	2000	5,10 ZP
M 2,5 x 10 -H	K	200	7,50 ZP
M 3 x 5 -H	S	2000	4,90 ZP
M 3 x 5 -H	K	200	7,30 ZP
M 3 x 6 -H	S	2000	3,75 ZP
M 3 x 6 -H	K	200	6,20 ZP
M 3 x 8 -H	S	2000	1,95 ZP
M 3 x 8 -H	K	200	4,35 ZP
M 3 x 10 -H	S	2000	2,00 ZP
M 3 x 10 -H	K	200	4,40 ZP
M 3 x 12 -H	S	2000	2,45 ZP
M 3 x 12 -H	K	200	4,85 ZP
M 3 x 16 -H	S	2000	3,05 ZP
M 3 x 16 -H	K	200	5,45 ZP
M 3 x 20 -H	S	2000	3,20 ZP
M 3 x 20 -H	K	200	5,60 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 25 -H	S	2000	4,10 ZP
M 3 x 25 -H	K	200	7,30 ZP
M 3 x 30 -H	S	2000	5,20 ZP
M 3 x 30 -H	K	200	7,60 ZP
M 3 x 35 -H	S	2000	7,60 ZP
M 3 x 40 -H	S	1000	8,60 ZP
M 4 x 6 -H	S	2000	5,50 ZP
M 4 x 6 -H	K	200	7,90 ZP
M 4 x 8 -H	S	2000	2,70 ZP
M 4 x 8 -H	K	200	5,10 ZP
M 4 x 10 -H	S	2000	2,80 ZP
M 4 x 10 -H	K	200	5,20 ZP
M 4 x 12 -H	S	2000	2,95 ZP
M 4 x 12 -H	K	200	5,35 ZP
M 4 x 16 -H	S	2000	3,25 ZP
M 4 x 16 -H	K	200	5,65 ZP
M 4 x 20 -H	S	2000	3,50 ZP
M 4 x 20 -H	K	200	5,90 ZP
M 4 x 25 -H	S	1000	4,00 ZP
M 4 x 25 -H	K	200	6,40 ZP
M 4 x 30 -H	S	1000	5,60 ZP
M 4 x 30 -H	K	200	8,00 ZP
M 4 x 35 -H	S	1000	7,10 ZP
M 4 x 35 -H	K	200	9,50 ZP
M 4 x 40 -H	S	1000	8,10 ZP
M 4 x 40 -H	K	200	10,50 ZP
M 4 x 45 -H	S	1000	9,40 ZP
M 4 x 45 -H	K	200	11,80 ZP
M 4 x 50 -H	S	1000	13,00 ZP
M 4 x 50 -H	K	200	15,40 ZP
M 4 x 60 -H	S	500	18,70 ZP
M 5 x 8 -H	S	2000	7,70 ZP
M 5 x 8 -H	K	200	10,10 ZP
M 5 x 10 -H	S	2000	3,80 ZP
M 5 x 10 -H	K	200	6,20 ZP
M 5 x 12 -H	S	1000	3,85 ZP
M 5 x 12 -H	K	200	6,25 ZP
M 5 x 16 -H	S	1000	4,35 ZP
M 5 x 16 -H	K	200	6,75 ZP
M 5 x 20 -H	S	1000	5,50 ZP
M 5 x 20 -H	K	200	7,90 ZP
M 5 x 25 -H	S	1000	5,50 ZP
M 5 x 25 -H	K	200	7,90 ZP
M 5 x 30 -H	S	1000	7,00 ZP
M 5 x 30 -H	K	200	9,40 ZP
M 5 x 35 -H	S	500	7,70 ZP
M 5 x 40 -H	S	500	8,30 ZP
M 5 x 45 -H	S	500	10,40 ZP
M 5 x 50 -H	S	500	13,60 ZP
M 5 x 60 -H	S	200	18,50 ZP
M 5 x 70 -H	S	200	27,00 ZP
M 5 x 80 -H	S	200	34,50 ZP
M 6 x 10 -H	S	1000	9,50 ZP
M 6 x 10 -H	K	200	11,90 ZP
M 6 x 12 -H	S	1000	5,70 ZP
M 6 x 12 -H	K	200	8,10 ZP
M 6 x 16 -H	S	1000	6,40 ZP
M 6 x 16 -H	K	200	8,80 ZP
M 6 x 20 -H	S	1000	7,10 ZP
M 6 x 20 -H	K	200	9,50 ZP
M 6 x 25 -H	S	500	8,00 ZP
M 6 x 30 -H	S	500	9,10 ZP
M 6 x 35 -H	S	500	10,50 ZP
M 6 x 40 -H	S	500	11,80 ZP
M 6 x 45 -H	S	500	14,70 ZP
M 6 x 50 -H	S	200	15,60 ZP
M 6 x 60 -H	S	200	19,60 ZP
M 6 x 70 -H	S	200	27,00 ZP
M 6 x 80 -H	S	200	38,50 ZP
M 8 x 16 -H	S	500	26,00 ZP
M 8 x 20 -H	S	500	16,00 ZP
M 8 x 25 -H	S	200	19,30 ZP
M 8 x 30 -H	S	200	21,90 ZP
M 8 x 35 -H	S	200	24,70 ZP
M 8 x 40 -H	S	100	31,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 45 -H	S	100	33,00 ZP
M 8 x 50 -H	S	100	34,00 ZP
M 8 x 60 -H	S	100	40,00 ZP
M 8 x 70 -H	S	100	49,00 ZP
M 8 x 80 -H	S	100	59,00 ZP

ISO	07049.019	RAZ 690
7049	**Steel, hard. zinc plated**	**type C-H**

Pan head tapping screws with Phillips cross recess H, C = with cone end

Nominal length from 60 mm with partial thread

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

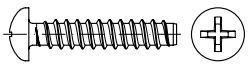
Stainless → S. 528

ISO 7049 → replaces DIN 7981 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
C2,2 x 4,5-H	S	2000	5,20 ZP
C2,2 x 6,5-H	S	2000	3,75 ZP
C2,2 x 6,5-H	K	100	5,75 ZP
C2,2 x 9,5-H	S	2000	3,50 ZP
C2,2 x 13 -H	S	2000	3,75 ZP
C2,2 x 16 -H	S	2000	4,50 ZP
C2,2 x 19 -H	S	2000	5,90 ZP
C2,2 x 22 -H	S	2000	7,35 ZP
C2,9 x 6,5-H	K	100	4,60 ZP
C2,9 x 6,5-H	S	2000	2,15 ZP
C2,9 x 9,5-H	S	2000	1,90 ZP
C2,9 x 9,5-H	K	100	4,40 ZP
C2,9 x 13 -H	S	2000	2,00 ZP
C2,9 x 13 -H	K	100	4,50 ZP
C2,9 x 16 -H	S	2000	2,15 ZP
C2,9 x 16 -H	K	100	4,60 ZP
C2,9 x 19 -H	S	2000	3,05 ZP
C2,9 x 19 -H	K	100	5,50 ZP
C2,9 x 22 -H	S	2000	3,80 ZP
C2,9 x 22 -H	K	100	6,30 ZP
C2,9 x 25 -H	S	1000	4,05 ZP
C2,9 x 25 -H	K	100	6,50 ZP
C2,9 x 32 -H	S	1000	4,80 ZP
C3,5 x 6,5-H	S	1000	2,95 ZP
C3,5 x 6,5-H	K	100	5,40 ZP
C3,5 x 9,5-H	S	1000	2,25 ZP
C3,5 x 9,5-H	K	100	4,70 ZP
C3,5 x 13 -H	S	1000	2,35 ZP
C3,5 x 13 -H	K	100	4,85 ZP
C3,5 x 16 -H	S	1000	2,45 ZP
C3,5 x 16 -H	K	100	4,90 ZP
C3,5 x 19 -H	S	1000	3,10 ZP
C3,5 x 19 -H	K	100	5,60 ZP
C3,5 x 22 -H	S	1000	4,30 ZP
C3,5 x 22 -H	K	100	6,80 ZP
C3,5 x 25 -H	S	500	4,50 ZP
C3,5 x 25 -H	K	100	7,10 ZP
C3,5 x 32 -H	S	500	4,90 ZP
C3,5 x 32 -H	K	100	7,40 ZP
C3,5 x 38 -H	S	500	5,50 ZP
C3,5 x 38 -H	K	100	7,90 ZP
C3,5 x 45 -H	S	500	8,95 ZP
C3,5 x 50 -H	S	500	10,90 ZP
C3,9 x 6,5-H	S	2000	5,30 ZP
C3,9 x 9,5-H	S	1000	2,65 ZP
C3,9 x 9,5-H	K	100	5,10 ZP
C3,9 x 13 -H	S	1000	2,70 ZP

Dimensions	PU	Pieces	€/100/Mat.
C3,9 x 13 -H	K	100	5,20 ZP
C3,9 x 16 -H	S	1000	2,95 ZP
C3,9 x 16 -H	K	100	5,50 ZP
C3,9 x 19 -H	S	1000	3,35 ZP
C3,9 x 19 -H	K	100	5,80 ZP
C3,9 x 22 -H	S	500	4,40 ZP
C3,9 x 22 -H	K	100	6,90 ZP
C3,9 x 25 -H	S	500	4,90 ZP
C3,9 x 25 -H	K	100	7,40 ZP
C3,9 x 32 -H	S	500	5,10 ZP
C3,9 x 32 -H	K	100	7,50 ZP
C3,9 x 38 -H	S	500	7,20 ZP
C3,9 x 38 -H	K	100	9,60 ZP
C3,9 x 45 -H	S	1000	7,40 ZP
C4,2 x 9,5-H	S	1000	2,80 ZP
C4,2 x 9,5-H	K	100	5,30 ZP
C4,2 x 13 -H	S	1000	2,85 ZP
C4,2 x 13 -H	K	100	5,30 ZP
C4,2 x 16 -H	S	1000	3,20 ZP
C4,2 x 16 -H	K	100	5,70 ZP
C4,2 x 19 -H	S	500	3,40 ZP
C4,2 x 19 -H	K	100	5,90 ZP
C4,2 x 22 -H	S	500	4,70 ZP
C4,2 x 22 -H	K	100	7,20 ZP
C4,2 x 25 -H	S	500	5,20 ZP
C4,2 x 25 -H	K	100	7,70 ZP
C4,2 x 32 -H	S	500	5,20 ZP
C4,2 x 32 -H	K	100	7,70 ZP
C4,2 x 38 -H	S	500	7,50 ZP
C4,2 x 38 -H	K	100	10,00 ZP
C4,2 x 45 -H	S	500	8,70 ZP
C4,2 x 45 -H	K	100	11,10 ZP
C4,2 x 50 -H	S	500	9,80 ZP
C4,2 x 50 -H	K	100	12,30 ZP
C4,2 x 60 -H	S	250	16,70 ZP
C4,2 x 70 -H	S	250	19,80 ZP
C4,2 x 80 -H	S	250	21,70 ZP
C4,8 x 9,5-H	S	500	3,95 ZP
C4,8 x 9,5-H	K	100	6,40 ZP
C4,8 x 13 -H	S	500	4,00 ZP
C4,8 x 13 -H	K	100	6,50 ZP
C4,8 x 16 -H	S	500	4,20 ZP
C4,8 x 16 -H	K	100	6,70 ZP
C4,8 x 19 -H	S	500	4,75 ZP
C4,8 x 19 -H	K	100	7,20 ZP
C4,8 x 22 -H	S	500	5,10 ZP
C4,8 x 22 -H	K	100	7,60 ZP
C4,8 x 25 -H	S	500	6,00 ZP
C4,8 x 25 -H	K	100	8,50 ZP
C4,8 x 32 -H	S	250	6,90 ZP
C4,8 x 32 -H	K	100	9,40 ZP
C4,8 x 38 -H	S	250	8,00 ZP
C4,8 x 38 -H	K	100	10,40 ZP
C4,8 x 45 -H	S	250	10,80 ZP
C4,8 x 45 -H	K	100	13,30 ZP
C4,8 x 50 -H	S	250	12,00 ZP
C4,8 x 50 -H	K	100	14,50 ZP
C4,8 x 60 -H	S	250	19,20 ZP
C4,8 x 70 -H	S	250	25,50 ZP
C4,8 x 80 -H	S	250	30,50 ZP
C4,8 x 90 -H	S	250	37,00 ZP
C4,8 x 100 -H	S	250	44,00 ZP
C4,8 x 110 -H	S	250	51,00 ZP
C4,8 x 120 -H	S	250	62,00 ZP
C5,5 x 13 -H	S	500	5,30 ZP
C5,5 x 13 -H	K	100	7,90 ZP
C5,5 x 16 -H	S	500	5,90 ZP
C5,5 x 16 -H	K	100	8,40 ZP
C5,5 x 19 -H	S	500	6,20 ZP
C5,5 x 19 -H	K	100	8,70 ZP
C5,5 x 22 -H	S	500	8,70 ZP
C5,5 x 22 -H	K	100	11,10 ZP
C5,5 x 25 -H	S	250	9,20 ZP
C5,5 x 25 -H	K	100	11,70 ZP
C5,5 x 32 -H	S	250	10,60 ZP
C5,5 x 32 -H	K	100	13,10 ZP
C5,5 x 38 -H	S	250	13,20 ZP
C5,5 x 38 -H	K	100	15,60 ZP
C5,5 x 45 -H	S	250	14,80 ZP
C5,5 x 45 -H	K	100	17,30 ZP
C5,5 x 50 -H	S	250	17,40 ZP
C5,5 x 50 -H	K	100	19,80 ZP
C5,5 x 60 -H	S	250	33,00 ZP
C5,5 x 70 -H	S	250	40,50 ZP
C5,5 x 80 -H	S	250	48,50 ZP
C6,3 x 13 -H	S	250	7,80 ZP
C6,3 x 13 -H	K	100	10,20 ZP
C6,3 x 16 -H	S	250	8,00 ZP
C6,3 x 16 -H	K	100	10,40 ZP
C6,3 x 19 -H	S	250	8,10 ZP
C6,3 x 19 -H	K	100	10,60 ZP
C6,3 x 22 -H	S	250	9,70 ZP
C6,3 x 22 -H	K	100	12,20 ZP
C6,3 x 25 -H	S	250	11,80 ZP
C6,3 x 25 -H	K	100	14,30 ZP
C6,3 x 32 -H	S	250	12,90 ZP
C6,3 x 32 -H	K	100	15,40 ZP
C6,3 x 38 -H	S	250	16,10 ZP
C6,3 x 38 -H	K	100	18,60 ZP
C6,3 x 45 -H	S	250	19,80 ZP
C6,3 x 45 -H	K	100	22,30 ZP
C6,3 x 50 -H	S	250	21,10 ZP
C6,3 x 50 -H	K	100	23,50 ZP
C6,3 x 60 -H	S	250	37,50 ZP
C6,3 x 70 -H	S	250	53,00 ZP
C6,3 x 80 -H	S	250	68,00 ZP
C6,3 x 90 -H	S	250	83,00 ZP
C6,3 x 100 -H	S	250	98,00 ZP

ISO	07049.014	RAZ 690
7049	**Steel, hard. zinc plated**	**type F**



Pan head tapping screws with Phillips cross recess H, F = with flat end

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

Stainless → S. 529

ISO 7049 → replaces DIN 7981 (compatible)

F 2,2	x	4,5-H	S	2000	6,00 ZP
F 2,2	x	6,5-H	S	2000	6,00 ZP
F 2,2	x	9,5-H	S	2000	6,00 ZP
F 2,2	x	13 -H	S	2000	8,50 ZP
F 2,2	x	16 -H	S	2000	10,40 ZP
F 2,9	x	4,5-H	S	2000	6,00 ZP
F 2,9	x	6,5-H	S	2000	2,30 ZP
F 2,9	x	6,5-H	K	100	4,60 ZP
F 2,9	x	9,5-H	S	2000	2,15 ZP
F 2,9	x	9,5-H	K	100	4,40 ZP
F 2,9	x	13 -H	S	2000	2,25 ZP
F 2,9	x	13 -H	K	100	4,50 ZP
F 2,9	x	16 -H	S	2000	2,40 ZP
F 2,9	x	16 -H	K	100	4,60 ZP
F 2,9	x	19 -H	S	2000	3,50 ZP
F 2,9	x	22 -H	S	2000	4,85 ZP
F 3,5	x	6,5-H	S	1000	2,40 ZP
F 3,5	x	9,5-H	S	2000	2,45 ZP
F 3,5	x	9,5-H	K	100	4,70 ZP
F 3,5	x	13 -H	S	1000	2,55 ZP
F 3,5	x	13 -H	K	100	4,85 ZP
F 3,5	x	16 -H	S	1000	2,60 ZP
F 3,5	x	16 -H	K	100	4,90 ZP
F 3,5	x	19 -H	S	1000	2,80 ZP
F 3,5	x	22 -H	S	1000	3,50 ZP
F 3,5	x	25 -H	S	1000	4,95 ZP
F 3,9	x	6,5-H	S	1000	3,50 ZP
F 3,9	x	9,5-H	S	1000	2,95 ZP
F 3,9	x	9,5-H	K	100	5,10 ZP
F 3,9	x	13 -H	S	1000	3,00 ZP
F 3,9	x	13 -H	K	100	5,20 ZP
F 3,9	x	16 -H	S	1000	3,25 ZP
F 3,9	x	16 -H	K	100	5,50 ZP
F 3,9	x	19 -H	S	1000	4,00 ZP
F 3,9	x	22 -H	S	1000	4,65 ZP
F 3,9	x	25 -H	S	1000	5,20 ZP
F 4,2	x	6,5-H	S	1000	4,05 ZP
F 4,2	x	9,5-H	S	1000	3,75 ZP
F 4,2	x	13 -H	S	1000	3,20 ZP
F 4,2	x	13 -H	K	100	5,30 ZP
M 4,2	x	16 -H	S	1000	3,10 ZP
F 4,2	x	19 -H	S	1000	5,00 ZP
F 4,2	x	22 -H	S	1000	5,00 ZP
M 4,2	x	25 -H	S	1000	6,00 ZP
F 4,2	x	32 -H	S	1000	6,00 ZP
F 4,8	x	6,5-H	S	1000	5,00 ZP
F 4,8	x	9,5-H	S	500	3,95 ZP
F 4,8	x	9,5-H	K	100	6,40 ZP
F 4,8	x	13 -H	S	500	4,25 ZP
F 4,8	x	13 -H	K	100	6,50 ZP
F 4,8	x	16 -H	S	500	4,40 ZP
F 4,8	x	16 -H	K	100	6,70 ZP
F 4,8	x	19 -H	S	500	7,90 ZP
F 4,8	x	22 -H	S	500	9,10 ZP
F 4,8	x	25 -H	S	500	9,50 ZP
F 4,8	x	32 -H	S	500	12,25 ZP
F 4,8	x	38 -H	S	500	15,00 ZP
F 5,5	x	13 -H	S	500	4,90 ZP
F 5,5	x	16 -H	S	500	5,50 ZP
F 5,5	x	19 -H	S	500	8,50 ZP
F 5,5	x	22 -H	S	500	10,00 ZP
F 5,5	x	25 -H	S	250	12,50 ZP
F 5,5	x	32 -H	S	250	15,00 ZP
F 5,5	x	38 -H	S	250	19,00 ZP
F 6,3	x	13 -H	S	250	7,50 ZP
F 6,3	x	16 -H	S	250	11,00 ZP

ISO	07049.303	RAZ 690
7049	**Steel, hard. zinc plated**	**type C-Z**

Pan head screws, with Pozidriv cross recess Z, C = with cone point

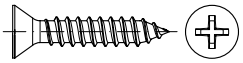
Dimensions → TI-46 Standard conversion → TI-6
Corrosion protection → TI-217 Mounting instructions → TI-237

ISO 7049 → replaces DIN 7981 (compatible)

2,2	x	4,5 -C-Z	S	2000	5,20 ZP
2,2	x	6,5 -C-Z	S	2000	3,75 ZP
2,2	x	6,5 -C-Z	K	100	5,75 ZP
2,2	x	9,5 -C-Z	S	2000	3,50 ZP
2,2	x	13 -C-Z	S	2000	3,75 ZP
2,2	x	16 -C-Z	S	2000	4,50 ZP
2,2	x	19 -C-Z	S	2000	5,90 ZP
2,2	x	22 -C-Z	S	2000	7,35 ZP
2,9	x	6,5 -C-Z	S	2000	2,15 ZP

Dimensions				PU	Pieces	€/100/Mat.
2,9	x	6,5	-C-Z	K	100	4,60 ZP
2,9	x	9,5	-C-Z	S	2000	1,90 ZP
2,9	x	9,5	-C-Z	K	100	4,40 ZP
2,9	x	13	-C-Z	S	2000	2,00 ZP
2,9	x	13	-C-Z	K	100	4,50 ZP
2,9	x	16	-C-Z	S	2000	2,15 ZP
2,9	x	16	-C-Z	K	100	4,60 ZP
2,9	x	19	-C-Z	S	2000	3,05 ZP
2,9	x	19	-C-Z	K	100	5,50 ZP
2,9	x	22	-C-Z	S	1000	3,80 ZP
2,9	x	22	-C-Z	K	100	6,30 ZP
2,9	x	25	-C-Z	S	1000	4,05 ZP
2,9	x	25	-C-Z	K	100	6,50 ZP
2,9	x	32	-C-Z	S	1000	4,80 ZP
3,5	x	6,5	-C-Z	S	1000	2,95 ZP
3,5	x	6,5	-C-Z	K	100	5,40 ZP
3,5	x	9,5	-C-Z	S	1000	2,25 ZP
3,5	x	9,5	-C-Z	K	100	4,70 ZP
3,5	x	13	-C-Z	S	1000	2,35 ZP
3,5	x	13	-C-Z	K	100	4,85 ZP
3,5	x	16	-C-Z	S	1000	2,45 ZP
3,5	x	16	-C-Z	K	100	4,90 ZP
3,5	x	19	-C-Z	S	1000	3,10 ZP
3,5	x	19	-C-Z	K	100	5,60 ZP
3,5	x	22	-C-Z	S	1000	4,30 ZP
3,5	x	22	-C-Z	K	100	6,80 ZP
3,5	x	25	-C-Z	S	500	4,50 ZP
3,5	x	25	-C-Z	K	100	7,10 ZP
3,5	x	32	-C-Z	S	500	5,10 ZP
3,5	x	32	-C-Z	K	100	7,40 ZP
3,5	x	38	-C-Z	S	500	5,50 ZP
3,5	x	38	-C-Z	K	100	7,90 ZP
3,5	x	45	-C-Z	S	500	8,95 ZP
3,5	x	50	-C-Z	S	500	10,90 ZP
3,9	x	6,5	-C-Z	S	2000	5,30 ZP
3,9	x	9,5	-C-Z	S	1000	2,65 ZP
3,9	x	9,5	-C-Z	K	100	5,10 ZP
3,9	x	13	-C-Z	S	1000	2,70 ZP
3,9	x	13	-C-Z	K	100	5,20 ZP
3,9	x	16	-C-Z	S	1000	2,95 ZP
3,9	x	16	-C-Z	K	100	5,50 ZP
3,9	x	19	-C-Z	S	1000	3,35 ZP
3,9	x	19	-C-Z	K	100	5,80 ZP
3,9	x	22	-C-Z	S	500	4,40 ZP
3,9	x	22	-C-Z	K	100	6,90 ZP
3,9	x	25	-C-Z	S	500	4,90 ZP
3,9	x	25	-C-Z	K	100	7,40 ZP
3,9	x	32	-C-Z	S	500	5,25 ZP
3,9	x	32	-C-Z	K	100	7,50 ZP
3,9	x	38	-C-Z	S	500	7,20 ZP
3,9	x	38	-C-Z	K	100	9,60 ZP
3,9	x	45	-C-Z	S	500	7,40 ZP
4,2	x	9,5	-C-Z	S	1000	2,80 ZP
4,2	x	9,5	-C-Z	K	100	5,30 ZP
4,2	x	13	-C-Z	S	1000	2,85 ZP
4,2	x	13	-C-Z	K	100	5,30 ZP
4,2	x	16	-C-Z	S	1000	3,20 ZP
4,2	x	16	-C-Z	K	100	5,70 ZP
4,2	x	19	-C-Z	S	500	3,40 ZP
4,2	x	19	-C-Z	K	100	5,90 ZP
4,2	x	22	-C-Z	S	500	4,70 ZP
4,2	x	22	-C-Z	K	100	7,20 ZP
4,2	x	25	-C-Z	S	500	5,20 ZP
4,2	x	25	-C-Z	K	100	7,70 ZP
4,2	x	32	-C-Z	S	500	5,20 ZP
4,2	x	32	-C-Z	K	100	7,70 ZP
4,2	x	38	-C-Z	S	500	7,50 ZP
4,2	x	38	-C-Z	K	100	10,00 ZP
4,2	x	45	-C-Z	S	500	8,70 ZP
4,2	x	45	-C-Z	K	100	11,10 ZP
4,2	x	50	-C-Z	S	500	9,80 ZP
4,2	x	50	-C-Z	K	100	12,30 ZP
4,2	x	60	-C-Z	S	250	16,70 ZP
4,2	x	70	-C-Z	S	250	19,80 ZP
4,2	x	80	-C-Z	S	250	21,70 ZP
4,8	x	9,5	-C-Z	S	500	3,95 ZP
4,8	x	9,5	-C-Z	K	100	6,40 ZP
4,8	x	13	-C-Z	S	500	4,00 ZP
4,8	x	13	-C-Z	K	100	6,50 ZP
4,8	x	16	-C-Z	S	500	4,20 ZP
4,8	x	16	-C-Z	K	100	6,70 ZP
4,8	x	19	-C-Z	S	500	4,75 ZP
4,8	x	19	-C-Z	K	100	7,20 ZP
4,8	x	22	-C-Z	S	500	5,10 ZP
4,8	x	22	-C-Z	K	100	7,60 ZP
4,8	x	25	-C-Z	S	500	6,00 ZP
4,8	x	25	-C-Z	K	100	8,50 ZP
4,8	x	32	-C-Z	S	250	6,90 ZP
4,8	x	32	-C-Z	K	100	9,40 ZP
4,8	x	38	-C-Z	S	250	8,00 ZP
4,8	x	38	-C-Z	K	100	10,40 ZP
4,8	x	45	-C-Z	S	250	10,80 ZP
4,8	x	45	-C-Z	K	100	13,30 ZP
4,8	x	50	-C-Z	S	250	12,00 ZP
4,8	x	50	-C-Z	K	100	14,50 ZP
4,8	x	60	-C-Z	S	250	19,20 ZP
4,8	x	70	-C-Z	S	250	25,50 ZP
4,8	x	80	-C-Z	S	250	30,50 ZP
4,8	x	90	-C-Z	S	250	37,00 ZP
4,8	x	100	-C-Z	S	250	44,00 ZP
4,8	x	110	-C-Z	S	250	51,00 ZP
4,8	x	120	-C-Z	S	250	62,00 ZP
5,5	x	13	-C-Z	S	500	5,30 ZP
5,5	x	13	-C-Z	K	100	7,90 ZP
5,5	x	16	-C-Z	S	500	5,90 ZP
5,5	x	16	-C-Z	K	100	8,40 ZP
5,5	x	19	-C-Z	S	500	5,90 ZP
5,5	x	19	-C-Z	K	100	8,70 ZP
5,5	x	22	-C-Z	S	500	8,70 ZP
5,5	x	22	-C-Z	K	100	11,10 ZP
5,5	x	25	-C-Z	S	250	9,20 ZP
5,5	x	25	-C-Z	K	100	11,70 ZP
5,5	x	32	-C-Z	S	250	10,60 ZP
5,5	x	32	-C-Z	K	100	13,10 ZP
5,5	x	38	-C-Z	S	250	10,60 ZP
5,5	x	38	-C-Z	K	100	15,60 ZP
5,5	x	45	-C-Z	S	250	14,80 ZP
5,5	x	45	-C-Z	K	100	17,30 ZP
5,5	x	50	-C-Z	S	250	17,40 ZP
5,5	x	50	-C-Z	K	100	19,80 ZP
5,5	x	60	-C-Z	S	250	33,00 ZP
5,5	x	70	-C-Z	S	250	40,50 ZP
5,5	x	80	-C-Z	S	250	48,50 ZP
6,3	x	13	-C-Z	S	250	7,80 ZP
6,3	x	13	-C-Z	K	100	10,20 ZP
6,3	x	16	-C-Z	S	250	8,00 ZP
6,3	x	16	-C-Z	K	100	10,40 ZP
6,3	x	19	-C-Z	S	250	8,10 ZP
6,3	x	19	-C-Z	K	100	10,60 ZP
6,3	x	22	-C-Z	S	250	9,70 ZP
6,3	x	22	-C-Z	K	100	12,20 ZP
6,3	x	25	-C-Z	S	250	11,80 ZP
6,3	x	25	-C-Z	K	100	14,30 ZP
6,3	x	32	-C-Z	S	250	12,90 ZP
6,3	x	32	-C-Z	K	100	15,40 ZP
6,3	x	38	-C-Z	S	250	16,10 ZP
6,3	x	38	-C-Z	K	100	18,60 ZP
6,3	x	45	-C-Z	S	250	19,80 ZP
6,3	x	45	-C-Z	K	100	22,30 ZP
6,3	x	50	-C-Z	S	250	21,10 ZP
6,3	x	50	-C-Z	K	100	23,50 ZP
6,3	x	60	-C-Z	S	250	37,50 ZP
6,3	x	70	-C-Z	S	250	53,00 ZP
6,3	x	80	-C-Z	S	250	68,00 ZP
6,3	x	90	-C-Z	S	250	83,00 ZP
6,3	x	100	-C-Z	S	250	98,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	07050.014		RAZ 690
7050	**Steel, hard. zinc plated**		**type C-H**



Countersunk head tapping screws with Phillips cross recess H, C = with cone end

Nominal length from 60 mm with partial thread
countersunk ⍋ = 90°

Dimensions → TI-47 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

Stainless → S. 530

ISO 7050 → replaces DIN 7982

2,2	x	6,5	-C-H	S	2000	4,60 ZP
2,2	x	9,5	-C-H	S	2000	4,30 ZP
2,2	x	13	-C-H	S	2000	4,35 ZP
2,2	x	16	-C-H	S	2000	6,50 ZP
2,9	x	6,5	-C-H	S	2000	4,70 ZP
2,9	x	9,5	-C-H	S	2000	1,90 ZP
2,9	x	13	-C-H	S	2000	2,00 ZP
2,9	x	16	-C-H	S	2000	2,15 ZP
2,9	x	19	-C-H	S	2000	3,05 ZP
2,9	x	22	-C-H	S	2000	3,55 ZP
2,9	x	25	-C-H	S	1000	4,35 ZP
2,9	x	32	-C-H	S	1000	4,95 ZP
3,5	x	6,5	-C-H	S	1000	3,00 ZP
3,5	x	9,5	-C-H	S	1000	2,25 ZP
3,5	x	13	-C-H	S	1000	2,35 ZP
3,5	x	16	-C-H	S	1000	2,45 ZP
3,5	x	19	-C-H	S	1000	3,20 ZP
3,5	x	22	-C-H	S	1000	3,85 ZP
3,5	x	25	-C-H	S	500	4,70 ZP
3,5	x	32	-C-H	S	500	5,90 ZP
3,5	x	38	-C-H	S	500	6,50 ZP
4,2	x	9,5	-C-H	S	1000	2,80 ZP
4,2	x	13	-C-H	S	1000	2,85 ZP
4,2	x	16	-C-H	S	1000	3,15 ZP
4,2	x	19	-C-H	S	500	3,60 ZP
4,2	x	22	-C-H	S	500	4,10 ZP
4,2	x	25	-C-H	S	500	5,10 ZP
4,2	x	32	-C-H	S	500	6,40 ZP
4,2	x	38	-C-H	S	500	7,70 ZP
4,2	x	45	-C-H	S	500	8,60 ZP
4,2	x	50	-C-H	S	500	15,80 ZP
4,2	x	60	-C-H	S	250	18,10 ZP
4,2	x	70	-C-H	S	250	21,20 ZP
4,2	x	80	-C-H	S	250	23,50 ZP
4,8	x	9,5	-C-H	S	500	6,40 ZP
4,8	x	13	-C-H	S	500	4,00 ZP
4,8	x	16	-C-H	S	500	4,20 ZP
4,8	x	19	-C-H	S	500	3,85 ZP
4,8	x	22	-C-H	S	500	5,10 ZP
4,8	x	25	-C-H	S	500	6,00 ZP
4,8	x	32	-C-H	S	250	6,90 ZP
4,8	x	38	-C-H	S	250	8,00 ZP
4,8	x	45	-C-H	S	250	8,80 ZP
4,8	x	50	-C-H	S	250	16,70 ZP
4,8	x	60	-C-H	S	250	19,80 ZP
4,8	x	70	-C-H	S	250	24,20 ZP
4,8	x	80	-C-H	S	250	30,50 ZP
4,8	x	90	-C-H	S	250	36,00 ZP
4,8	x	100	-C-H	S	250	47,50 ZP
4,8	x	110	-C-H	S	100	60,00 ZP
4,8	x	120	-C-H	S	100	75,00 ZP
5,5	x	13	-C-H	S	500	6,60 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
5,5 x 16 -C-H	S	500	5,90 ZP
5,5 x 19 -C-H	S	500	6,20 ZP
5,5 x 22 -C-H	S	500	8,60 ZP
5,5 x 25 -C-H	S	250	9,20 ZP
5,5 x 32 -C-H	S	250	9,30 ZP
5,5 x 38 -C-H	S	250	12,10 ZP
5,5 x 45 -C-H	S	250	14,80 ZP
5,5 x 50 -C-H	S	250	18,00 ZP
5,5 x 60 -C-H	S	250	25,00 ZP
6,3 x 16 -C-H	S	250	9,60 ZP
6,3 x 19 -C-H	S	250	10,90 ZP
6,3 x 22 -C-H	S	250	12,10 ZP
6,3 x 25 -C-H	S	250	12,90 ZP
6,3 x 32 -C-H	S	250	14,20 ZP
6,3 x 38 -C-H	S	250	17,20 ZP
6,3 x 45 -C-H	S	250	19,80 ZP
6,3 x 50 -C-H	S	250	22,70 ZP
6,3 x 60 -C-H	S	250	40,50 ZP
6,3 x 70 -C-H	S	250	53,00 ZP
6,3 x 80 -C-H	S	250	65,00 ZP

ISO | 07050.016 | RAZ 690

7050

Steel, hard. zinc plated type C-Z

Countersunk head tapping screws with Pozidriv cross recess Z, C = with cone point,

countersunk ⊀ = 90°

Dimensions → TI-47 Standard conversion → TI-6
Corrosion protection → TI-217 Mounting instructions → TI-237

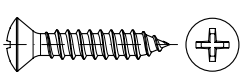
ISO 7050 → replaces DIN 7982

Dimensions	PU	Pieces	€/100/Mat.
2,2 x 6,5 -C-Z	S	2000	6,90 ZP
2,2 x 9,5 -C-Z	S	2000	6,45 ZP
2,2 x 13 -C-Z	S	2000	6,53 ZP
2,2 x 16 -C-Z	S	2000	9,75 ZP
2,9 x 6,5 -C-Z	S	2000	7,05 ZP
2,9 x 9,5 -C-Z	S	2000	2,85 ZP
2,9 x 13 -C-Z	S	2000	3,00 ZP
2,9 x 16 -C-Z	S	2000	3,23 ZP
2,9 x 19 -C-Z	S	2000	4,58 ZP
2,9 x 22 -C-Z	S	2000	5,33 ZP
2,9 x 25 -C-Z	S	1000	6,53 ZP
2,9 x 32 -C-Z	S	1000	7,43 ZP
3,5 x 6,5 -C-Z	S	1000	4,50 ZP
3,5 x 9,5 -C-Z	S	1000	3,38 ZP
3,5 x 13 -C-Z	S	1000	3,53 ZP
3,5 x 16 -C-Z	S	1000	3,68 ZP
3,5 x 19 -C-Z	S	1000	4,80 ZP
3,5 x 22 -C-Z	S	1000	5,78 ZP
3,5 x 22 -C-Z	S	500	7,05 ZP
3,5 x 32 -C-Z	S	500	8,85 ZP
3,5 x 38 -C-Z	S	500	9,75 ZP
3,9 x 9,5 -C-Z	S	1000	3,98 ZP
3,9 x 13 -C-Z	S	1000	4,05 ZP
3,9 x 16 -C-Z	S	1000	4,43 ZP
3,9 x 19 -C-Z	S	1000	5,18 ZP
3,9 x 22 -C-Z	S	500	5,93 ZP
3,9 x 25 -C-Z	S	500	7,28 ZP
3,9 x 32 -C-Z	S	500	9,30 ZP
3,9 x 38 -C-Z	S	500	10,80 ZP
3,9 x 45 -C-Z	S	500	11,55 ZP
3,9 x 50 -C-Z	S	500	21,90 ZP
3,9 x 60 -C-Z	S	250	24,15 ZP
4,2 x 9,5 -C-Z	S	1000	4,20 ZP
4,2 x 13 -C-Z	S	1000	4,28 ZP
4,2 x 16 -C-Z	S	1000	4,73 ZP
4,2 x 19 -C-Z	S	500	5,40 ZP
4,2 x 22 -C-Z	S	500	6,15 ZP
4,2 x 25 -C-Z	S	500	7,65 ZP
4,2 x 32 -C-Z	S	500	9,60 ZP
4,2 x 38 -C-Z	S	500	11,55 ZP
4,2 x 45 -C-Z	S	500	12,90 ZP
4,2 x 50 -C-Z	S	500	23,70 ZP
4,2 x 60 -C-Z	S	250	27,15 ZP
4,2 x 70 -C-Z	S	250	31,80 ZP
4,2 x 80 -C-Z	S	250	35,25 ZP
4,8 x 9,5 -C-Z	S	500	9,60 ZP
4,8 x 13 -C-Z	S	500	6,00 ZP
4,8 x 16 -C-Z	S	500	6,30 ZP
4,8 x 19 -C-Z	S	500	5,78 ZP
4,8 x 22 -C-Z	S	500	7,65 ZP
4,8 x 25 -C-Z	S	500	9,00 ZP
4,8 x 32 -C-Z	S	250	10,35 ZP
4,8 x 38 -C-Z	S	250	12,00 ZP
4,8 x 45 -C-Z	S	250	13,20 ZP
4,8 x 50 -C-Z	S	250	25,05 ZP
4,8 x 60 -C-Z	S	250	29,70 ZP
4,8 x 70 -C-Z	S	250	36,30 ZP
4,8 x 80 -C-Z	S	250	45,75 ZP
4,8 x 90 -C-Z	S	250	54,00 ZP
4,8 x 100 -C-Z	S	250	71,25 ZP
4,8 x 110 -C-Z	S	100	90,00 ZP
4,8 x 120 -C-Z	S	100	112,50 ZP
5,5 x 13 -C-Z	S	500	9,90 ZP
5,5 x 16 -C-Z	S	500	8,85 ZP
5,5 x 19 -C-Z	S	500	9,30 ZP
5,5 x 22 -C-Z	S	500	12,90 ZP
5,5 x 25 -C-Z	S	250	13,80 ZP
5,5 x 32 -C-Z	S	250	13,95 ZP
5,5 x 38 -C-Z	S	250	18,15 ZP
5,5 x 45 -C-Z	S	250	22,20 ZP
5,5 x 50 -C-Z	S	250	27,00 ZP
5,5 x 60 -C-Z	S	250	37,50 ZP
6,3 x 16 -C-Z	S	250	14,40 ZP
6,3 x 19 -C-Z	S	250	16,35 ZP
6,3 x 22 -C-Z	S	250	18,15 ZP
6,3 x 25 -C-Z	S	250	19,35 ZP
6,3 x 32 -C-Z	S	250	21,30 ZP
6,3 x 38 -C-Z	S	250	25,80 ZP
6,3 x 45 -C-Z	S	250	29,70 ZP
6,3 x 50 -C-Z	S	250	34,05 ZP
6,3 x 60 -C-Z	S	250	60,75 ZP
6,3 x 70 -C-Z	S	250	79,50 ZP
6,3 x 80 -C-Z	S	250	97,50 ZP

ISO | 07051.014 | RAZ 690

7051

Steel, hard. zinc plated type C-H



Raised csk. head tapping screws with Phillips cross recess H, C = with cone end

countersunk ⊀ = 90°

Dimensions → TI-47 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

Stainless → S. 530

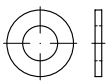
ISO 7051 → replaces DIN 7983

Dimensions	PU	Pieces	€/100/Mat.
2,9 x 6,5 -C-H	S	2000	4,60 ZP
2,9 x 9,5 -C-H	S	2000	1,90 ZP
2,9 x 13 -C-H	S	2000	2,00 ZP
2,9 x 16 -C-H	S	2000	2,30 ZP
2,9 x 19 -C-H	S	2000	3,05 ZP
2,9 x 22 -C-H	S	2000	3,80 ZP
2,9 x 25 -C-H	S	1000	4,00 ZP
3,5 x 9,5 -C-H	S	1000	2,75 ZP
3,5 x 13 -C-H	S	1000	3,20 ZP
3,5 x 16 -C-H	S	1000	2,45 ZP
3,5 x 19 -C-H	S	1000	3,25 ZP
3,5 x 22 -C-H	S	1000	3,85 ZP
3,5 x 25 -C-H	S	500	4,30 ZP
3,5 x 32 -C-H	S	500	5,50 ZP
3,5 x 38 -C-H	S	500	6,00 ZP
4,2 x 9,5 -C-H	S	1000	2,35 ZP
4,2 x 13 -C-H	S	1000	2,85 ZP
4,2 x 16 -C-H	S	1000	3,15 ZP
4,2 x 19 -C-H	S	500	3,65 ZP
4,2 x 22 -C-H	S	500	5,10 ZP
4,2 x 25 -C-H	S	500	5,20 ZP
4,2 x 32 -C-H	S	500	6,00 ZP
4,2 x 38 -C-H	S	500	6,10 ZP
4,2 x 45 -C-H	S	500	8,60 ZP
4,2 x 50 -C-H	S	500	10,60 ZP
4,8 x 9,5 -C-H	S	500	6,40 ZP
4,8 x 13 -C-H	S	500	4,00 ZP
4,8 x 16 -C-H	S	500	4,20 ZP
4,8 x 19 -C-H	S	500	5,10 ZP
4,8 x 22 -C-H	S	500	5,80 ZP
4,8 x 25 -C-H	S	500	6,90 ZP
4,8 x 32 -C-H	S	250	7,40 ZP
4,8 x 38 -C-H	S	250	8,00 ZP
4,8 x 45 -C-H	S	250	8,80 ZP
4,8 x 50 -C-H	S	250	11,20 ZP
5,5 x 13 -C-H	S	500	7,20 ZP
5,5 x 16 -C-H	S	500	7,80 ZP
5,5 x 19 -C-H	S	500	8,40 ZP
5,5 x 22 -C-H	S	500	9,30 ZP
5,5 x 25 -C-H	S	250	10,00 ZP
5,5 x 32 -C-H	S	250	11,50 ZP
5,5 x 38 -C-H	S	250	12,10 ZP
5,5 x 45 -C-H	S	250	14,80 ZP
5,5 x 50 -C-H	S	250	17,10 ZP
6,3 x 16 -C-H	S	250	9,70 ZP
6,3 x 19 -C-H	S	250	10,10 ZP
6,3 x 22 -C-H	S	250	11,70 ZP
6,3 x 25 -C-H	S	250	11,80 ZP
6,3 x 32 -C-H	S	250	14,20 ZP
6,3 x 38 -C-H	S	250	14,80 ZP
6,3 x 45 -C-H	S	250	15,90 ZP
6,3 x 50 -C-H	S	250	21,00 ZP

ISO | 07089.000 | RAZ 3380

7089

Steel 200 HV



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

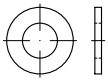
For screws M

	PU	Pieces	
1,6	S	100	12,90
2	S	5000	0,84
2,5	S	5000	1,20
3	S	5000	0,36
4	S	1000	1,08
5	S	1000	1,35

Dimensions	PU	Pieces	€/100/Mat.
5	K	100	3,10
6	S	1000	2,25
6	K	100	4,25
8	S	1000	3,15
8	K	100	4,80
10	S	500	5,20
10	K	100	7,15
12	S	500	18,50
12	K	100	11,70
14	S	250	10,80
16	S	250	33,50
16	K	100	16,60
18	S	250	21,00
18	K	100	25,00
20	S	200	51,70
20	K	100	26,50
22	S	200	44,50
24	S	200	96,50
24	K	100	57,00
30	S	100	99,00
33	S	50	94,00
36	S	50	191,00

ISO 07089.010 RAZ 3380

7089 Steel 200 HV zinc plated



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

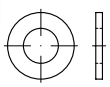
For screws M

2	S	5000	0,96 ZP
2,5	S	5000	1,26 ZP
3	S	1000	1,30 ZP
3	K	200	2,85 ZP
4	S	1000	1,60 ZP
4	K	200	3,50 ZP
5	S	1000	1,60 ZP
5	K	100	3,75 ZP
6	S	1000	2,85 ZP
6	K	100	5,60 ZP
8	S	1000	4,00 ZP
8	K	100	6,85 ZP
10	S	500	6,90 ZP
10	K	100	10,00 ZP
12	S	500	12,30 ZP
12	K	100	18,00 ZP
14	S	250	16,20 ZP
14	K	100	20,00 ZP
16	S	250	18,40 ZP
16	K	100	26,00 ZP
18	S	250	24,00 ZP
18	K	100	32,00 ZP
20	S	200	30,00 ZP
20	K	100	40,00 ZP
22	S	200	53,00 ZP
22	K	100	63,00 ZP
24	S	200	59,00 ZP
24	K	100	69,00 ZP
27	S	100	100,00 ZP
30	S	100	137,00 ZP
33	S	50	100,00 ZP
36	S	50	260,00 ZP

Dimensions	PU	Pieces	€/100/Mat.

ISO 07089.080 RAZ 3380

7089 Steel 200 HV zinc plated 8 TLP



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

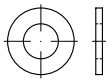
ISO 7089 → replaces DIN 125 type A

For screws M

5	S	1000	2,15 ZP TLP
6	S	1000	3,90 ZP TLP
8	S	1000	5,20 ZP TLP
10	S	500	8,80 ZP TLP
12	S	500	15,80 ZP TLP
16	S	250	23,50 ZP TLP
20	S	200	38,50 ZP TLP
24	S	200	104,00 ZP TLP
30	S	100	175,00 ZP TLP
36	S	50	344,00 ZP TLP

ISO 07089.(*) RAZ 3380

7089 Steel 200 HV zinc plated yellow*



Plain washers, normal series, product grade A, without chamfer

*< ∅ 6 min. coating thickness 5µm = (060),
*from ∅ 6 min. coating thickness 8µm = (066)

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

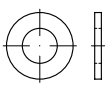
For screws M

3	S	1000	0,72 YZP
4	S	1000	1,08 YZP
5	S	1000	1,70 YZP
6	S	1000	3,05 YZP8
6	S	200	55,00 YZP8
8	S	200	59,00 YZP8
8	S	1000	4,10 YZP8
10	S	500	7,00 YZP8
10	S	100	211,00 YZP8
12	S	500	12,60 YZP8
12	S	100	233,00 YZP8
14	S	500	17,88 YZP8
16	S	250	18,50 YZP8
16	S	100	425,00 YZP8
18	S	250	31,80 YZP8
20	S	200	30,50 YZP8
20	S	100	455,00 YZP8
24	S	50	610,00 YZP8
24	S	200	83,00 YZP8
30	S	100	140,00 YZP8
36	S	50	275,00 YZP8

Dimensions	PU	Pieces	€/100/Mat.

ISO 07089.020 RAZ 3381

7089 Steel 200 HV hot dip galvanized



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84 Corrosion protection → TI-219

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

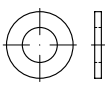
ISO 7089 → replaces DIN 125 type A

For screws M

6	S	1000	5,58 HDG
8	S	1000	7,80 HDG
10	S	500	14,00 HDG
12	S	500	18,50 HDG
14	S	500	30,00 HDG
16	S	250	28,00 HDG
18	S	250	43,20 HDG
20	S	200	44,00 HDG
24	S	200	84,00 HDG
27	S	100	160,00 HDG
30	S	100	160,00 HDG
33	S	50	135,00 HDG

ISO 07089.031 RAZ 3380

7089 Steel 200 HV nickel plated



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

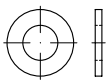
For screws M

3	S	1000	0,84 NP
4	S	1000	1,26 NP
5	S	1000	1,74 NP
6	S	1000	2,88 NP
8	S	1000	4,08 NP
10	S	1000	7,08 NP

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
ISO	07089.004	RAZ 3381

7089 Steel, QT 300 HV



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

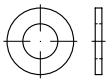
Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M			
4	S	200	22,70
5	S	200	46,00
6	S	200	54,00
8	S	200	57,00
10	S	100	201,00
12	S	100	224,00
16	S	100	415,00
20	S	100	435,00
24	S	50	570,00
30	S	50	720,00

ISO	07089.015	RAZ 3381

7089 Steel, QT 300 HV zinc plated



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84 Corrosion protection → TI-217

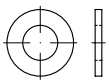
Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M			
4	S	200	23,80 ZP
5	S	200	47,50 ZP
6	S	200	55,00 ZP
8	S	200	59,00 ZP
10	S	100	211,00 ZP
13	S	100	233,00 ZP
17	S	100	425,00 ZP
21	S	100	455,00 ZP
24	S	50	610,00 ZP
27	S	50	695,00 ZP
30	S	50	760,00 ZP
36	S	50	870,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07089.(*)	RAZ 3381

7089 Steel, QT 300 HV zinc plated yellow*



Plain washers, normal series, product grade A, without chamfer

*< ∅ 6min. coating thickness 5µm = (064),
*from ∅ 6 min. coating thickness 8µm = (068)

Dimensions → TI-84 Corrosion protection → TI-217

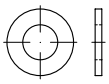
Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M			
4	S	200	23,80 YZP
5	S	200	47,50 YZP

ISO	07089.024	RAZ 3381

7089 Steel, QT 300 HV hot dip galvanized



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84 Corrosion protection → TI-219

Stainless → S. 531
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M			
10	S	500	10,60 HDG
12	S	500	8,38 HDG
16	S	250	383,47 HDG
20	S	200	40,40 HDG
24	S	200	76,38 HDG
27	S	100	134,00 HDG
30	S	50	895,00 HDG
36	S	50	1050,00 HDG

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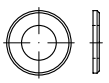
Dimensions	PU Pieces	€/100/Mat.
ISO	07090.000	RAZ 3380

7090 Steel 200 HV



Plain washers, chamfered, normal series, product grade A

Dimensions → TI-84

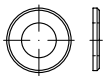
Stainless → S. 532
Brass → S. 592

ISO 7090 → replaces DIN 125 type B

For screws M			
3	S	1000	1,40
4	S	1000	1,93
5	S	1000	2,75
6	S	1000	3,00
8	S	1000	5,10
10	S	500	9,40
12	S	500	10,90
14	S	250	16,00
16	S	250	16,20
18	S	250	18,50
20	S	200	24,40
22	S	200	29,15
24	S	200	47,00
27	S	50	77,00
30	S	100	99,00
33	S	50	185,00
36	S	50	191,00
39	S	25	212,40
42	S	25	366,00
45	S	25	390,00
48	S	10	576,00
52	S	1	924,00
56	S	1	1248,00
60	S	1	1488,00
64	S	1	1488,00

ISO	07090.010	RAZ 3380

7090 Steel 200 HV zinc plated



Plain washers, chamfered, normal series, product grade A

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 532
Brass → S. 592

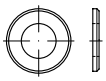
ISO 7090 → replaces DIN 125 type B

For screws M			
3	S	1000	2,81 ZP
3	K	100	4,30 ZP
4	S	1000	2,04 ZP
4	K	100	3,90 ZP
5	S	1000	3,00 ZP
5	K	100	5,15 ZP
6	S	1000	4,25 ZP
6	K	100	7,00 ZP
8	S	1000	6,30 ZP

Dimensions	PU	Pieces	€/100/Mat.
8	K	100	9,15 ZP
10	S	500	11,80 ZP
10	K	100	14,90 ZP
12	S	500	13,80 ZP
12	K	100	19,50 ZP
14	S	250	19,00 ZP
16	S	250	21,20 ZP
16	K	100	28,50 ZP
18	S	250	27,00 ZP
20	S	200	31,00 ZP
20	K	100	41,00 ZP
22	S	200	33,00 ZP
24	S	200	59,00 ZP
24	K	100	69,00 ZP
27	S	50	105,60 ZP
30	S	100	137,00 ZP
33	S	50	205,00 ZP
36	S	50	260,00 ZP
39	S	25	312,00 ZP
42	S	25	504,00 ZP
45	S	25	552,00 ZP
48	S	10	804,00 ZP
52	S	1	1152,00 ZP
56	S	1	1596,00 ZP
60	S	1	1848,00 ZP
64	S	1	1884,00 ZP

ISO 07090.080 RAZ 3380

7090 Steel 200 HV zinc plated 8 TLP



Plain washers, chamfered, normal series, product grade A

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 532
Brass → S. 592

ISO 7090 → replaces DIN 125 type B

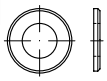
For screws M

5	S	1000	3,75 ZP TLP
6	S	1000	5,70 ZP TLP
8	S	1000	9,00 ZP TLP
10	S	500	16,00 ZP TLP
12	S	500	18,70 ZP TLP
16	S	250	28,50 ZP TLP
20	S	200	42,00 ZP TLP
24	S	200	104,00 ZP TLP
30	S	100	175,00 ZP TLP
36	S	50	344,00 ZP TLP

Dimensions	PU	Pieces	€/100/Mat.

ISO 07090.(*) RAZ 3380

7090 Steel 200 HV zinc plated yellow*



Plain washers, chamfered, normal series, product grade A

*< ∅ 6 min. coating thickness 5µm = (060),
*from ∅ 6 min. coating thickness 8µm = (066)

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 532
Brass → S. 592

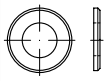
ISO 7090 → replaces DIN 125 type B

For screws M

5	S	1000	3,00 YZP
6	S	1000	4,55 YZP8
8	S	1000	7,20 YZP8
10	S	500	12,80 YZP8
12	S	500	14,90 YZP8
16	S	250	22,60 YZP8
20	S	200	33,50 YZP8
22	S	200	50,40 YZP8
24	S	200	83,00 YZP8
27	S	50	132,00 YZP8
30	S	100	140,00 YZP8
36	S	50	275,00 YZP8
42	S	25	522,00 YZP8
48	S	25	522,00 YZP8

ISO 07090.050 RAZ 3380

7090 Steel 200 HV black zinc plated



Plain washers, chamfered, normal series, product grade A

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 532
Brass → S. 592

ISO 7090 → replaces DIN 125 type B

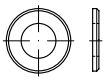
For screws M

4	S	1000	3,85 ZP black
5	S	1000	6,24 ZP black
6	S	1000	6,60 ZP black
8	S	1000	8,16 ZP black

Dimensions	PU	Pieces	€/100/Mat.

ISO 07090.353 RAZ 1590

7090 Steel 200 HV zinc flake coated



Plain washers, chamfered, normal series, product grade A

*friction coefficient 0,09 – 0,14.
480h salt spray test, Cr(VI)-free

Dimensions → TI-84 Corrosion protection → TI-218

Stainless → S. 532
Brass → S. 592

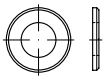
ISO 7090 → replaces DIN 125 type B

For screws M

6	S	1000	6,70 flZn
8	S	1000	8,20 flZn
10	S	500	15,40 flZn
12	S	500	18,00 flZn
14	S	250	24,70 flZn
16	S	250	32,50 flZn
18	S	250	38,50 flZn
20	S	200	54,00 flZn
22	S	200	55,00 flZn
24	S	200	86,00 flZn

ISO 07090.020 RAZ 3380

7090 Steel 200 HV hot dip galvanized



Plain washers, chamfered, normal series, product grade A

Dimensions → TI-84 Corrosion protection → TI-219

Stainless → S. 532
Brass → S. 592

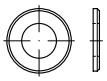
ISO 7090 → replaces DIN 125 type B

For screws M

6	S	1000	9,00 HDG
8	S	1000	14,00 HDG
10	S	1000	24,00 HDG
12	S	500	32,00 HDG
16	S	250	46,00 HDG
20	S	200	67,00 HDG
22	S	200	57,00 HDG
24	S	200	130,00 HDG
27	S	100	142,80 HDG
30	S	100	295,00 HDG
33	S	50	219,60 HDG
36	S	50	570,00 HDG
39	S	25	390,00 HDG
42	S	25	552,00 HDG
45	S	25	576,00 HDG
48	S	25	1068,00 HDG
52	S	1	1068,00 HDG

Dimensions	PU	Pieces	€/100/Mat.
ISO	07090.026		RAZ 3381

7090 Steel 300 HV hot dip galvanized



Plain washers, chamfered, normal series, product grade A

CE-conform only for usage with REYHER SB-Sets acc. to EN 15048

Dimensions ➔ TI-84 Corrosion protection ➔ TI-219

ISO 7090 ➔ replaces DIN 125 type B

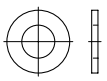
CE

For screws M

8	S	100	231,00 HDG
10	S	100	251,20 HDG
12	S	100	278,80 HDG
16	S	100	508,00 HDG
20	S	100	532,00 HDG
24	S	50	694,00 HDG
27	S	50	762,40 HDG
30	S	50	895,00 HDG
36	S	50	895,00 HDG

Dimensions	PU	Pieces	€/100/Mat.
ISO	07091.000		RAZ 100

7091 Steel 100 HV



Plain washers, normal series, product grade C

Dimensions ➔ TI-84

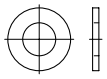
ISO 7091 ➔ replaces DIN 126 (compatible)

For screws M

5	S	1000	1,25
5	K	100	5,00
6	S	1000	1,45
6	K	100	5,20
8	S	1000	2,70
8	K	100	6,40
10	S	1000	4,00
10	K	100	8,10
12	S	500	5,70
12	K	100	11,40
14	K	100	15,20
16	S	250	8,40
16	K	100	13,80
18	K	100	20,00
20	S	250	13,70
20	K	100	18,90
22	S	100	17,50
24	S	100	21,70
27	S	100	29,50
30	S	100	35,50
33	S	100	54,00
36	S	100	69,00
39	S	50	83,00
42	S	50	130,00
45	S	50	149,00
48	S	25	185,00
52	S	25	390,00
56	S	25	560,00
60	S	10	620,00
64	S	10	670,00
72	S	10	870,00
80	S	1	1400,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	07091.010		RAZ 100

7091 Steel 100 HV zinc plated



Plain washers, normal series, product grade C

Dimensions ➔ TI-84

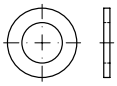
ISO 7091 ➔ replaces DIN 126 (compatible)

For screws M

5	S	1000	1,40 ZP
5	K	100	5,10 ZP
6	S	1000	1,80 ZP
6	K	100	5,50 ZP
8	S	1000	3,25 ZP
8	K	100	6,90 ZP
10	S	1000	5,10 ZP
10	K	100	9,10 ZP
12	S	500	7,60 ZP
12	K	100	13,20 ZP
14	K	100	17,70 ZP
16	S	250	11,80 ZP
16	K	100	16,90 ZP
18	K	100	24,30 ZP
20	S	250	18,90 ZP
20	K	100	23,40 ZP
22	S	100	22,80 ZP
24	S	100	31,50 ZP
30	S	100	40,50 ZP
30	S	100	50,00 ZP
33	S	100	73,00 ZP
36	S	100	93,00 ZP
39	S	50	118,00 ZP
42	S	50	178,00 ZP
45	S	50	207,00 ZP
48	S	25	265,00 ZP
52	S	25	480,00 ZP
56	S	25	680,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	07092.004		RAZ 3380

7092 Steel 200 HV



Plain washers, small series, product grade A

Primarily for cap screws

Dimensions ➔ TI-84

Stainless ➔ S. 532
Brass ➔ S. 592

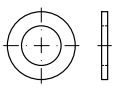
ISO 7092 ➔ replaces DIN 433

For screws M

2	S	5000	0,50
3	S	5000	0,25
3,5	S	5000	1,40
4	S	5000	0,35
5	S	5000	0,80
6	S	1000	1,40
8	S	1000	2,60
10	S	1000	3,95
12	S	1000	6,20
14	S	500	9,10
16	S	500	11,70
18	S	500	17,50
20	S	500	20,90

Dimensions	PU	Pieces	€/100/Mat.
ISO	07092.014		RAZ 3380

7092 Steel 200 HV zinc plated



Plain washers, small series, product grade A

Primarily for cap screws

Dimensions ➔ TI-84

Stainless ➔ S. 532
Brass ➔ S. 592

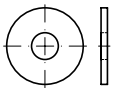
ISO 7092 ➔ replaces DIN 433

For screws M

2	S	5000	0,75 ZP
2,5	S	5000	0,55 ZP
3	S	5000	0,45 ZP
4	S	5000	0,35 ZP
5	S	5000	0,85 ZP
6	S	1000	1,60 ZP
8	S	1000	3,00 ZP
10	S	1000	4,40 ZP
12	S	1000	6,90 ZP
14	S	500	10,10 ZP
16	S	500	12,90 ZP
18	S	500	19,40 ZP
20	S	500	23,30 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07093.004	RAZ 3380

7093-1 Steel 200 HV



Plain washers, large series, product grade A

Dimensions → TI-85

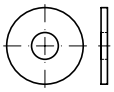
Stainless → S. 533
Brass → S. 593

ISO 7093 → replaces DIN 9021

For screws M			
3	S	10000	0,61
4	S	5000	0,94
5	S	2500	1,20
6	S	2500	2,30
8	S	500	2,50
10	S	250	18,00
12	S	100	27,00
14	S	100	22,50
16	S	100	41,00
18	S	100	50,00
20	S	100	62,00
24	S	50	90,00
30	S	25	180,00
36	S	25	500,00

ISO	07093.014	RAZ 3380

7093-1 Steel 200 HV zinc plated



Plain washers, large series, product grade A

Dimensions → TI-85 Corrosion protection → TI-217

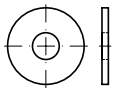
Stainless → S. 533
Brass → S. 593

ISO 7093 → replaces DIN 9021

For screws M			
3	S	10000	1,50 ZP
4	S	5000	1,80 ZP
5	S	2500	2,10 ZP
6	S	2500	2,50 ZP
8	S	500	3,60 ZP
10	S	250	20,00 ZP
12	S	100	38,00 ZP
14	S	100	32,00 ZP
16	S	100	56,00 ZP
18	S	100	69,00 ZP
20	S	100	75,00 ZP
24	S	50	120,00 ZP
30	S	25	240,00 ZP
36	S	25	580,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	07093.066	RAZ 3380

7093-1 Steel 200 HV yellow ZP A3C



Plain washers, large series, product grade A

A3C = minimum coating thickness 8µm

Dimensions → TI-85 Corrosion protection → TI-217

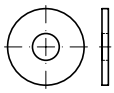
Stainless → S. 533
Brass → S. 593

ISO 7093 → replaces DIN 9021

For screws M			
3	S	1000	2,05 YZP
4	S	1000	2,45 YZP
5	S	1000	2,70 YZP
6	S	1000	2,95 YZP
8	S	500	8,10 YZP
10	S	250	13,30 YZP
12	S	100	28,00 YZP
14	S	100	41,50 YZP
16	S	100	47,00 YZP
20	S	100	78,00 YZP

ISO	07093.024	RAZ 3380

7093-1 Steel 200 HV hot dip galvanized



Plain washers, large series, product grade A

Dimensions → TI-85 Corrosion protection → TI-219

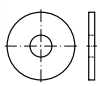
Stainless → S. 533
Brass → S. 593

ISO 7093 → replaces DIN 9021

For screws M			
6	S	2500	5,00 HDG
8	S	500	7,20 HDG
10	S	250	56,00 HDG
12	S	100	76,00 HDG
16	S	100	112,00 HDG
18	S	100	104,00 HDG
20	S	100	160,00 HDG
24	S	50	240,00 HDG
30	S	25	480,00 HDG
36	S	25	1100,00 HDG

Dimensions	PU Pieces	€/100/Mat.
ISO	07094.000	RAZ 170

7094 Steel 100 HV



Plain washers, extra large series, product grade C

Especially for wood constructions

Dimensions → TI-84

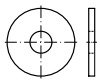
Stainless → S. 533

ISO 7094 → replaces DIN 440 type R (compatible)

For screws M			
5	S	100	5,10
6	S	100	5,60
8	S	100	9,40
10	S	100	13,20
12	S	100	23,20
16	S	50	40,50
20	S	50	68,00
22	S	50	104,00
24	S	50	135,00
27	S	25	177,00
30	S	25	206,00
33	S	25	235,00
36	S	25	380,00
39	S	25	750,00
42	S	10	800,00

ISO	07094.010	RAZ 170

7094 Steel 100 HV zinc plated



Plain washers, extra large series, product grade C

especially for wood constructions

Dimensions → TI-84 Corrosion protection → TI-217

Stainless → S. 533

ISO 7094 → replaces DIN 440 type R (compatible)

For screws M			
5	S	100	5,90 ZP
6	S	100	6,80 ZP
8	S	100	12,10 ZP
10	S	100	17,10 ZP
12	S	100	32,50 ZP
16	S	50	60,00 ZP
20	S	50	117,00 ZP
22	S	50	149,00 ZP
24	S	50	185,00 ZP
27	S	25	244,00 ZP
30	S	25	285,00 ZP
33	S	25	325,00 ZP
36	S	25	520,00 ZP
39	S	25	910,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	07094.020		RAZ 170

7094 Steel 100 HV hot dip galvanized

Plain washers, extra large series, product grade C

Especially for wood constructions

Dimensions ➔ TI-84 Corrosion protection ➔ TI-219

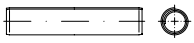
Stainless ➔ S. 533

ISO 7094 ➔ replaces DIN 440 type R (compatible)

For screws M			
6	S	100	24,30 HDG
8	S	100	32,50 HDG
10	S	100	32,50 HDG
12	S	100	39,50 HDG
16	S	50	73,00 HDG
20	S	50	118,00 HDG
24	S	50	243,00 HDG

DIN	07343.000	RAZ 623

7343 Spring steel



Spring-type straight pins, coiled, standard duty

Dimensions ➔ TI-119 Standard conversion ➔ TI-10

Stainless ➔ S. 533

DIN 7343 ➔ replaced by ISO 8750 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
1,5	x	5	S	1000	5,30
1,5	x	6	S	1000	5,30
1,5	x	8	S	1000	5,70
1,5	x	10	S	1000	5,90
1,5	x	12	S	1000	5,90
2	x	6	S	1000	6,00
2	x	8	S	1000	6,10
2	x	10	S	1000	6,20
2	x	12	S	1000	6,30
2	x	14	S	1000	6,30
2	x	16	S	1000	6,30
2	x	18	S	1000	6,40
2	x	20	S	1000	7,10
2,5	x	10	S	1000	6,70
2,5	x	12	S	1000	6,90
2,5	x	16	S	1000	7,00
2,5	x	20	S	1000	7,50
3	x	8	S	1000	6,70
3	x	10	S	1000	7,00
3	x	12	S	1000	7,20
3	x	14	S	1000	7,30
3	x	16	S	1000	7,50
3	x	18	S	1000	7,70
3	x	20	S	1000	7,90
3	x	24	S	1000	8,30
3	x	26	S	1000	8,60
3	x	30	S	1000	8,60
3,5	x	20	S	1000	8,60
3,5	x	24	S	1000	9,30
4	x	10	S	500	8,60
4	x	12	S	500	8,60
4	x	14	S	500	8,80
4	x	16	S	500	9,10
4	x	18	S	500	9,30
4	x	20	S	500	9,50
4	x	24	S	500	10,00
4	x	26	S	500	10,30
4	x	30	S	500	11,20
4	x	32	S	500	12,20
4	x	36	S	500	13,20
4	x	40	S	500	14,10
4	x	50	S	500	16,80
5	x	20	S	500	12,80
5	x	22	S	500	13,40
5	x	24	S	500	13,70
5	x	26	S	500	14,40
5	x	30	S	500	15,40
5	x	32	S	500	16,00
5	x	40	S	500	18,10
6	x	14	S	500	16,00
6	x	18	S	500	16,50
6	x	20	S	500	17,00
6	x	24	S	500	19,40
6	x	26	S	500	18,70
6	x	30	S	500	23,10
6	x	35	S	500	26,00
6	x	40	S	250	27,50
6	x	45	S	250	30,50
6	x	50	S	250	33,50
8	x	20	S	500	32,00
8	x	24	S	500	33,50
8	x	30	S	250	41,50
8	x	35	S	250	46,50
8	x	40	S	500	49,50
8	x	45	S	500	55,00
8	x	50	S	250	59,00
10	x	40	S	250	76,00
10	x	50	S	250	93,00
10	x	70	S	100	135,00
12	x	40	S	50	174,00
12	x	50	S	100	186,00
12	x	60	S	50	198,00
12	x	80	S	50	232,00
14	x	50	S	25	221,00
14	x	70	S	25	255,00
16	x	60	S	25	250,00
16	x	90	S	25	570,00

DIN	07344.000	RAZ 623

7344 Spring steel

Spring-type straight pins, coiled, heavy duty

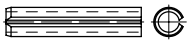
Dimensions ➔ TI-119 Standard conversion ➔ TI-10

DIN 7344 ➔ replaced by ISO 8748 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
1,5	x	14	S	1000	6,80
2	x	8	S	1000	6,50
2	x	10	S	1000	6,70
2	x	12	S	1000	6,80
2	x	16	S	1000	7,00
2	x	18	S	1000	7,10
2,5	x	12	S	1000	7,00
2,5	x	14	S	1000	7,20
2,5	x	16	S	1000	7,20
2,5	x	20	S	1000	7,30
2,5	x	24	S	1000	7,50
3	x	8	S	1000	7,90
3	x	10	S	1000	8,10
3	x	12	S	1000	8,10
3	x	14	S	1000	8,30
3	x	16	S	1000	8,60
3	x	18	S	1000	8,80
3	x	20	S	1000	8,90
3	x	24	S	1000	9,30
3	x	30	S	1000	10,00
3	x	32	S	1000	9,60
4	x	16	S	1000	9,70
4	x	18	S	500	10,10
4	x	20	S	500	10,60
4	x	24	S	500	11,40
4	x	26	S	500	12,80
4	x	30	S	500	13,20
5	x	12	S	1000	7,20
5	x	14	S	500	8,90
5	x	18	S	500	11,50
5	x	20	S	500	13,20
5	x	22	S	500	14,30
5	x	24	S	500	15,00
5	x	26	S	500	16,80
5	x	28	S	500	17,10
5	x	30	S	500	17,50
5	x	35	S	500	20,30
6	x	16	S	500	18,70
6	x	20	S	500	19,50
6	x	24	S	500	22,70
6	x	30	S	500	26,50
6	x	40	S	250	34,00
6	x	50	S	250	41,50
8	x	20	S	500	85,00
8	x	40	S	500	119,00
8	x	50	S	250	120,00

DIN	07346.000	RAZ 620

7346 Spring steel



Spring-type straight pins, slotted, light duty

Dimensions ➔ TI-120 Standard conversion ➔ TI-10

DIN 7346 ➔ replaced by ISO 13337 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
2	x	4	S	200	6,40
2	x	5	S	200	6,80
2	x	6	S	200	6,90
2	x	8	S	200	7,00
2	x	10	S	200	7,10
2	x	12	S	200	7,10
2	x	14	S	200	7,10
2	x	16	S	200	7,20
2	x	18	S	200	7,20
2	x	20	S	200	7,80
2	x	22	S	200	8,00
2	x	24	S	200	8,10
2	x	26	S	200	8,60
2	x	28	S	200	9,10
2	x	30	S	200	9,40
2,5	x	4	S	200	7,00
2,5	x	5	S	200	7,20
2,5	x	6	S	200	7,20
2,5	x	8	S	200	7,30

Dimensions			PU	Pieces	€/100/Mat.
2,5	x	10	S	200	7,60
2,5	x	12	S	200	7,60
2,5	x	14	S	200	7,60
2,5	x	16	S	200	7,80
2,5	x	18	S	200	7,90
2,5	x	20	S	200	8,00
2,5	x	22	S	200	8,00
2,5	x	24	S	200	8,60
2,5	x	26	S	200	8,90
2,5	x	28	S	200	9,40
2,5	x	30	S	200	10,10
3	x	4	S	200	6,10
3	x	5	S	200	6,20
3	x	6	S	200	6,30
3	x	8	S	200	6,30
3	x	10	S	200	6,40
3	x	12	S	200	6,50
3	x	14	S	200	6,50
3	x	16	S	200	6,80
3	x	18	S	200	6,90
3	x	22	S	200	7,20
3	x	24	S	200	7,30
3	x	26	S	200	7,60
3	x	28	S	200	8,00
3	x	30	S	200	8,30
3	x	32	S	200	8,60
3	x	36	S	200	9,30
3	x	40	S	200	10,20
4	x	4	S	200	16,90
4	x	5	S	200	6,90
4	x	6	S	200	7,00
4	x	8	S	200	7,10
4	x	10	S	200	7,10
4	x	12	S	200	7,20
4	x	14	S	200	7,60
4	x	16	S	200	7,60
4	x	18	S	200	7,60
4	x	20	S	200	7,90
4	x	22	S	200	7,90
4	x	24	S	200	8,10
4	x	26	S	200	8,40
4	x	28	S	200	8,80
4	x	30	S	200	9,20
4	x	32	S	100	10,50
4	x	36	S	100	10,90
4	x	40	S	100	11,80
4	x	45	S	100	12,60
4	x	50	S	100	13,60
5	x	5	S	200	8,10
5	x	6	S	200	8,10
5	x	8	S	200	8,30
5	x	12	S	200	8,10
5	x	14	S	200	9,10
5	x	16	S	200	9,40
5	x	18	S	200	10,00
5	x	20	S	100	11,00
5	x	22	S	100	12,00
5	x	24	S	100	12,40
5	x	26	S	100	12,80
5	x	28	S	100	12,60
5	x	30	S	100	12,80
5	x	32	S	100	13,30
5	x	36	S	100	14,10
5	x	40	S	100	14,80
5	x	45	S	100	16,00
5	x	50	S	100	16,80
5	x	55	S	100	18,70
5	x	60	S	100	20,20
5	x	65	S	100	21,70
5	x	70	S	100	24,10
5	x	75	S	100	26,50
5	x	80	S	100	29,50
6	x	10	S	100	10,30
6	x	12	S	100	10,50
6	x	14	S	100	11,20
6	x	16	S	100	11,40
6	x	18	S	100	12,00
6	x	20	S	100	12,80
6	x	22	S	100	13,50
6	x	24	S	100	14,20
6	x	26	S	100	15,10
6	x	28	S	100	15,90
6	x	30	S	100	16,70
6	x	32	S	100	17,60
6	x	36	S	100	18,40
6	x	40	S	100	19,40
6	x	45	S	100	21,50
6	x	50	S	100	23,00
6	x	55	S	100	24,80
6	x	60	S	100	27,00
6	x	65	S	100	29,50
6	x	70	S	100	32,00
6	x	75	S	100	34,00
6	x	80	S	100	36,50
6	x	90	S	100	46,50
6	x	100	S	100	59,00
10	x	10	S	50	61,00
10	x	12	S	50	61,00
10	x	14	S	100	21,10
10	x	16	S	100	22,60
10	x	18	S	100	24,70
10	x	20	S	100	26,50
10	x	22	S	100	28,00
10	x	24	S	100	30,50
10	x	26	S	100	32,00
10	x	28	S	100	34,00
10	x	30	S	100	35,50
10	x	32	S	100	39,00
10	x	36	S	100	42,00
10	x	40	S	100	44,50
10	x	45	S	50	52,00
10	x	50	S	50	57,00
10	x	55	S	50	61,00
10	x	60	S	50	68,00
10	x	65	S	50	75,00
10	x	70	S	50	80,00
10	x	75	S	50	85,00
10	x	80	S	50	91,00
10	x	90	S	50	102,00
10	x	100	S	50	114,00
10	x	120	S	25	455,00
10	x	140	S	25	570,00
10	x	160	S	25	620,00
12	x	10	S	50	255,00
12	x	12	S	50	248,00
12	x	14	S	50	241,00
12	x	16	S	50	216,00
12	x	18	S	50	209,00
12	x	20	S	50	122,00
12	x	22	S	50	126,00
12	x	24	S	50	129,00
12	x	26	S	50	132,00
12	x	28	S	50	135,00
12	x	30	S	50	129,00
12	x	32	S	50	143,00
12	x	36	S	50	143,00
12	x	40	S	50	149,00
12	x	45	S	50	152,00
12	x	50	S	50	156,00
12	x	55	S	50	162,00
12	x	60	S	50	168,00
12	x	65	S	50	178,00
12	x	70	S	50	184,00
12	x	75	S	50	192,00
12	x	80	S	50	197,00
12	x	90	S	25	345,00
12	x	100	S	25	475,00
12	x	120	S	25	570,00
12	x	140	S	25	690,00
12	x	160	S	10	870,00
13	x	10	S	25	246,00
13	x	12	S	25	239,00
13	x	14	S	25	233,00
13	x	16	S	25	226,00
13	x	18	S	25	219,00
13	x	20	S	50	129,00
13	x	22	S	50	132,00
13	x	24	S	50	135,00
13	x	26	S	50	138,00
13	x	28	S	50	141,00
13	x	30	S	50	146,00
13	x	32	S	50	149,00
13	x	36	S	50	152,00
13	x	40	S	50	165,00
13	x	45	S	50	158,00
13	x	50	S	50	162,00
13	x	55	S	50	168,00
13	x	60	S	50	164,00
13	x	65	S	50	184,00
13	x	70	S	50	191,00
13	x	75	S	50	198,00
13	x	80	S	50	227,00
13	x	90	S	25	380,00
13	x	100	S	25	510,00
13	x	120	S	25	700,00
13	x	140	S	25	760,00
13	x	160	S	10	930,00
13	x	180	S	10	1070,00
16	x	10	S	25	275,00
16	x	12	S	25	260,00
16	x	14	S	25	260,00
16	x	16	S	25	247,00
16	x	18	S	25	241,00
16	x	20	S	50	162,00
16	x	22	S	50	165,00
16	x	24	S	50	168,00
16	x	26	S	50	170,00
16	x	28	S	50	173,00
16	x	30	S	50	178,00
16	x	32	S	50	182,00
16	x	36	S	50	184,00
16	x	40	S	50	187,00
16	x	45	S	50	190,00
16	x	50	S	50	192,00
16	x	55	S	50	195,00
16	x	60	S	25	205,00
16	x	65	S	25	213,00
16	x	70	S	25	235,00
16	x	75	S	25	255,00
16	x	80	S	25	270,00
16	x	90	S	25	460,00
16	x	100	S	25	570,00
16	x	120	S	25	780,00
16	x	140	S	10	930,00
16	x	160	S	10	1050,00
16	x	180	S	10	1190,00
16	x	200	S	10	1320,00
21	x	30	S	50	360,00
21	x	36	S	25	365,00
21	x	40	S	25	390,00
21	x	45	S	25	420,00
21	x	50	S	25	420,00
21	x	60	S	25	460,00
21	x	85	S	25	600,00
21	x	90	S	25	650,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions						PU	Pieces	€/100/Mat.
DIN	07349.000							RAZ 620

7349 **Steel 100HV**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85

Stainless → S. 534

Inside ∅	x	outside ∅	x	thickness			
19	x	44	x	8	S	50	112,00
21	x	44	x	8	S	25	113,00
23	x	50	x	8	S	25	168,00
25	x	50	x	10	S	10	223,00
28	x	60	x	10	S	10	285,00
31	x	68	x	10	S	10	365,00

DIN	07349.010	RAZ 620

7349 **Steel 100HV zinc plated**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-217

Stainless → S. 534

Inside ∅	x	outside ∅	x	thickness			
19	x	44	x	8	S	50	141,00 ZP
21	x	44	x	8	S	25	141,00 ZP
23	x	50	x	8	S	25	205,00 ZP
25	x	50	x	10	S	25	270,00 ZP
28	x	60	x	10	S	25	350,00 ZP
31	x	68	x	10	S	25	455,00 ZP

DIN	07349.081	RAZ 620

7349 **Steel 200HV zinc plated 8 TLP**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-217

Inside ∅	x	outside ∅	x	thickness			
6,4	x	17	x	3	S	1000	11,90 ZP TLP
8,4	x	21	x	4	S	500	27,80 ZP TLP
10,5	x	25	x	4	S	500	34,00 ZP TLP
13	x	30	x	6	S	250	72,00 ZP TLP
17	x	40	x	6	S	250	118,00 ZP TLP

Dimensions						PU	Pieces	€/100/Mat.
DIN	07349.080							RAZ 620

7349 **Steel 100HV zinc plated 8 TLP**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-217

Stainless → S. 534

Inside ∅	x	outside ∅	x	thickness			
21	x	44	x	8	S	25	189,00 ZP TLP

DIN	07349.060	RAZ 620

7349 **Steel 100HV zinc plated yellow**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-217

Stainless → S. 534

Inside ∅	x	outside ∅	x	thickness			
21	x	44	x	8	S	25	151,00 YZP

DIN	07349.020	RAZ 620

7349 **Steel 100HV hot dip galvanized**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-219

Stainless → S. 534

Inside ∅	x	outside ∅	x	thickness			
21	x	44	x	8	S	50	201,00 HDG
25	x	50	x	10	S	25	395,00 HDG
31	x	68	x	10	S	25	520,00 HDG

Dimensions						PU	Pieces	€/100/Mat.
DIN	07349.001							RAZ 620

7349 **Steel 200HV**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85

Inside ∅	x	outside ∅	x	thickness			
3,2	x	9	x	1	S	1000	1,25
4,3	x	12	x	1,6	S	1000	2,15
5,3	x	15	x	2	S	1000	3,80
6,4	x	17	x	3	S	1000	7,90
8,4	x	21	x	4	S	500	16,50
10,5	x	25	x	4	S	500	24,30
13	x	30	x	6	S	250	42,50
15	x	36	x	6	S	250	57,00
17	x	40	x	6	S	250	69,00

DIN	07349.011	RAZ 620

7349 **Steel 200HV zinc plated**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-217

Inside ∅	x	outside ∅	x	thickness			
3,2	x	9	x	1	S	1000	1,35 ZP
4,3	x	12	x	1,6	S	1000	2,40 ZP
5,3	x	15	x	2	S	1000	4,35 ZP
6,4	x	17	x	3	S	1000	9,40 ZP
8,4	x	21	x	4	S	500	19,90 ZP
10,5	x	25	x	4	S	500	29,50 ZP
13	x	30	x	6	S	250	53,00 ZP
15	x	36	x	6	S	250	72,00 ZP
17	x	40	x	6	S	250	86,00 ZP

DIN	07349.061	RAZ 620

7349 **Steel 200HV zinc plated yellow**

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85 Corrosion protection → TI-217

Inside ∅	x	outside ∅	x	thickness			
6,4	x	17	x	3	S	1000	9,50 YZP
8,4	x	21	x	4	S	500	22,20 YZP
10,5	x	25	x	4	S	500	27,00 YZP
13	x	30	x	6	S	250	57,00 YZP
15	x	36	x	6	S	250	94,00 YZP
17	x	40	x	6	S	250	94,00 YZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 07349.021			RAZ 620

7349 Steel 200HV hot dip galvanized

Washers for screws with heavy spring-type straight pins

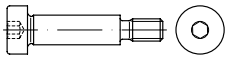
Dimensions → TI-85 Corrosion protection → TI-219

Inside ∅ x outside ∅ x thickness

8,4	x	21	x	4	S	100	37,40 HDG
10,5	x	25	x	4	S	100	45,50 HDG
13	x	30	x	6	S	50	78,00 HDG
17	x	40	x	6	S	50	109,00 HDG

~ISO	07379.200	RAZ 3400

7379 12.9 h8



Hex. socket head shoulder screws, outer nominal size = ISO 7379, tolerance of fit shank h8

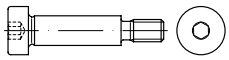
Dimensions → TI-13 Mech. properties → TI-220

Shank ∅/thread M x shank length

6 - M 5	x	10	S	50	186,00
6 - M 5	x	12	S	50	192,00
6 - M 5	x	16	S	50	200,00
6 - M 5	x	20	S	50	215,00
6 - M 5	x	25	S	50	233,00
6 - M 5	x	30	S	50	250,00
8 - M 6	x	10	S	50	224,00
8 - M 6	x	12	S	50	224,00
8 - M 6	x	16	S	50	228,00
8 - M 6	x	20	S	50	233,00
8 - M 6	x	25	S	50	241,00
8 - M 6	x	30	S	50	249,00
8 - M 6	x	40	S	50	295,00
8 - M 6	x	45	S	50	340,00
8 - M 6	x	50	S	50	390,00
10 - M 8	x	10	S	50	280,00
10 - M 8	x	12	S	50	280,00
10 - M 8	x	16	S	50	285,00
10 - M 8	x	20	S	50	285,00
10 - M 8	x	25	S	50	290,00
10 - M 8	x	30	S	50	300,00
10 - M 8	x	40	S	50	310,00
10 - M 8	x	45	S	50	320,00
10 - M 8	x	50	S	50	320,00
10 - M 8	x	60	S	25	335,00
10 - M 8	x	70	S	25	353,00
10 - M 8	x	80	S	25	375,00
12 - M 10	x	12	S	25	400,00
12 - M 10	x	16	S	25	415,00
12 - M 10	x	20	S	25	430,00
12 - M 10	x	25	S	25	430,00
12 - M 10	x	30	S	25	440,00
12 - M 10	x	35	S	25	445,00
12 - M 10	x	40	S	25	450,00
12 - M 10	x	50	S	25	460,00
12 - M 10	x	60	S	25	470,00
12 - M 10	x	70	S	10	480,00
12 - M 10	x	80	S	10	490,00
12 - M 10	x	100	S	10	500,00
16 - M 12	x	20	S	25	640,00
16 - M 12	x	25	S	25	640,00
16 - M 12	x	30	S	25	670,00
16 - M 12	x	40	S	25	700,00
16 - M 12	x	50	S	25	730,00
16 - M 12	x	70	S	25	790,00
20 - M 16	x	40	S	10	2090,00
20 - M 16	x	50	S	10	2250,00
20 - M 16	x	60	S	10	2410,00
20 - M 16	x	70	S	10	2570,00
20 - M 16	x	80	S	10	2730,00

~ISO	07379.204	RAZ 3400

7379 12.9 f9



Hex. socket head shoulder screws, outer nominal size = ISO 7379, tolerance of fit shank f9

Dimensions → TI-13 Mech. properties → TI-220

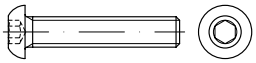
Stainless → S. 534

Shank ∅/thread M x shank length

6 - M 5	x	16	S	50	180,00
6 - M 5	x	20	S	50	193,50
6 - M 5	x	25	S	50	209,70
6 - M 5	x	30	S	50	225,00
8 - M 6	x	10	S	50	201,60
8 - M 6	x	12	S	50	201,60
8 - M 6	x	16	S	50	205,20
8 - M 6	x	20	S	50	209,70
8 - M 6	x	25	S	50	216,90
8 - M 6	x	30	S	50	224,10
8 - M 6	x	40	S	50	265,50
8 - M 6	x	45	S	50	351,00
8 - M 6	x	50	S	50	252,00
10 - M 8	x	10	S	50	252,00
10 - M 8	x	12	S	50	256,50
10 - M 8	x	16	S	50	256,50
10 - M 8	x	20	S	50	261,00
10 - M 8	x	25	S	50	270,00
10 - M 8	x	30	S	50	288,00
10 - M 8	x	40	S	50	288,00
10 - M 8	x	45	S	50	301,48
10 - M 8	x	50	S	50	317,68
10 - M 8	x	60	S	25	317,68
10 - M 8	x	70	S	25	360,00
10 - M 8	x	80	S	25	373,48
12 - M 10	x	12	S	25	387,00
12 - M 10	x	16	S	25	387,00
12 - M 10	x	20	S	25	396,00
12 - M 10	x	25	S	25	400,48
12 - M 10	x	30	S	25	405,00
12 - M 10	x	35	S	25	414,00
12 - M 10	x	40	S	25	423,00
12 - M 10	x	50	S	25	432,00
12 - M 10	x	60	S	25	441,00
12 - M 10	x	70	S	10	450,00
12 - M 10	x	80	S	10	576,00
12 - M 10	x	100	S	10	576,00
16 - M 12	x	20	S	25	603,00
16 - M 12	x	25	S	25	630,00
16 - M 12	x	30	S	25	657,00
16 - M 12	x	40	S	25	711,00
16 - M 12	x	50	S	25	1881,00
16 - M 12	x	70	S	25	2025,00
20 - M 16	x	40	S	10	2169,00
20 - M 16	x	50	S	10	2313,00
20 - M 16	x	60	S	10	2457,00
20 - M 16	x	70	S	10	2685,00
20 - M 16	x	80	S	10	2915,00

ISO	07380.100	RAZ 3500

7380-1 010.9



Hexagon socket button head screws, Thread almost up to head

Caution! Screws have only a reduced loadability.

Dimensions → TI-14 Tightening torque → TI-232
Mech. properties → TI-220

Stainless → S. 534

With hexalobular socket
→ ~ISO 7380 ISR

M 3	x	5	S	500	24,00
M 3	x	6	S	500	12,50
M 3	x	8	S	500	13,70
M 3	x	10	S	500	14,10
M 3	x	12	S	500	14,10
M 3	x	16	S	500	16,00
M 3	x	20	S	500	17,00
M 3	x	25	S	500	38,00
M 4	x	6	S	500	15,30
M 4	x	8	S	500	14,90
M 4	x	10	S	500	14,90
M 4	x	12	S	500	15,90
M 4	x	16	S	500	17,00
M 4	x	20	S	500	18,10
M 4	x	25	S	500	20,10
M 4	x	30	S	500	22,70
M 4	x	35	S	500	35,00
M 4	x	40	S	500	42,50
M 5	x	6	S	500	35,00
M 5	x	8	S	500	15,50
M 5	x	10	S	500	15,70
M 5	x	12	S	500	16,30
M 5	x	16	S	500	17,50
M 5	x	20	S	500	18,20
M 5	x	25	S	500	18,50
M 5	x	30	S	500	19,20
M 5	x	35	S	200	36,00
M 5	x	40	S	200	43,50
M 5	x	45	S	200	52,00
M 6	x	6	S	500	30,00
M 6	x	8	S	500	15,80
M 6	x	10	S	500	15,80
M 6	x	12	S	500	16,80
M 6	x	14	S	500	16,80
M 6	x	16	S	500	18,00
M 6	x	18	S	500	20,50
M 6	x	20	S	500	18,50
M 6	x	22	S	500	21,30
M 6	x	25	S	500	19,30
M 6	x	30	S	500	20,90
M 6	x	35	S	200	24,10
M 6	x	40	S	200	27,50
M 6	x	45	S	200	32,50
M 6	x	50	S	200	34,00
M 6	x	55	S	200	70,00
M 6	x	60	S	200	76,00

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	8	S	200	47,00
M 8	x	10	S	200	26,00
M 8	x	12	S	200	25,50
M 8	x	16	S	200	24,80
M 8	x	20	S	200	21,20
M 8	x	25	S	200	22,00
M 8	x	30	S	200	24,30
M 8	x	35	S	200	28,50
M 8	x	40	S	200	35,00
M 8	x	45	S	200	45,50
M 8	x	50	S	200	43,00
M 8	x	55	S	200	72,00
M 8	x	60	S	200	72,00
M 10	x	12	S	200	91,00
M 10	x	16	S	200	57,00
M 10	x	20	S	200	52,00
M 10	x	25	S	200	56,00
M 10	x	30	S	200	60,00
M 10	x	35	S	100	64,00
M 10	x	40	S	100	68,00
M 10	x	45	S	100	72,00
M 10	x	50	S	100	76,00
M 10	x	55	S	100	112,00
M 10	x	60	S	100	128,00

ISO	07380.110	RAZ 3500

7380-1 010.9 zinc plated

Hexagon socket button head screws, Thread almost up to head

Caution! Screws have only a reduced loadability.
Note information about hydrogen embrittlement.

Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 534

With hexalobular socket → ~ISO 7380 ISR

M 3	x	5	S	500	27,00 ZP
M 3	x	6	S	500	15,40 ZP
M 3	x	8	S	500	15,90 ZP
M 3	x	10	S	500	14,30 ZP
M 3	x	12	S	500	14,30 ZP
M 3	x	16	S	500	16,20 ZP
M 3	x	20	S	500	17,40 ZP
M 3	x	25	S	500	38,50 ZP
M 3	x	30	S	500	39,00 ZP
M 4	x	5	S	500	15,30 ZP
M 4	x	6	S	500	15,30 ZP
M 4	x	8	S	500	15,10 ZP
M 4	x	10	S	500	15,20 ZP
M 4	x	12	S	500	16,20 ZP
M 4	x	16	S	500	17,60 ZP
M 4	x	20	S	500	18,70 ZP
M 4	x	25	S	500	20,90 ZP
M 4	x	30	S	500	25,40 ZP
M 4	x	40	S	500	45,20 ZP
M 5	x	6	S	500	35,50 ZP
M 5	x	8	S	500	16,00 ZP
M 5	x	10	S	500	15,90 ZP
M 5	x	12	S	500	16,70 ZP
M 5	x	14	S	500	25,00 ZP
M 5	x	16	S	500	17,80 ZP
M 5	x	20	S	500	19,30 ZP
M 5	x	25	S	500	20,20 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	30	S	500	20,90 ZP
M 5	x	35	S	200	37,00 ZP
M 5	x	40	S	200	44,50 ZP
M 5	x	45	S	200	53,00 ZP
M 6	x	6	S	500	31,00 ZP
M 6	x	8	S	500	16,60 ZP
M 6	x	10	S	500	16,70 ZP
M 6	x	12	S	500	17,80 ZP
M 6	x	14	S	500	18,10 ZP
M 6	x	16	S	500	18,30 ZP
M 6	x	18	S	500	25,00 ZP
M 6	x	20	S	500	19,50 ZP
M 6	x	25	S	500	21,50 ZP
M 6	x	30	S	500	23,50 ZP
M 6	x	35	S	200	27,50 ZP
M 6	x	40	S	200	31,00 ZP
M 6	x	45	S	200	36,00 ZP
M 6	x	50	S	200	37,50 ZP
M 6	x	55	S	200	73,50 ZP
M 6	x	60	S	200	79,50 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

M 8	x	8	S	200	49,00 ZP
M 8	x	10	S	200	28,00 ZP
M 8	x	12	S	200	27,50 ZP
M 8	x	14	S	200	28,00 ZP
M 8	x	16	S	200	28,00 ZP
M 8	x	18	S	200	28,00 ZP
M 8	x	20	S	200	24,80 ZP
M 8	x	25	S	200	26,50 ZP
M 8	x	30	S	200	30,00 ZP
M 8	x	35	S	200	35,00 ZP
M 8	x	40	S	200	42,00 ZP
M 8	x	45	S	200	49,00 ZP
M 8	x	50	S	200	52,00 ZP
M 8	x	55	S	200	81,00 ZP
M 8	x	60	S	200	81,00 ZP
M 10	x	12	S	200	100,00 ZP
M 10	x	16	S	200	66,00 ZP
M 10	x	20	S	200	61,00 ZP
M 10	x	25	S	200	65,00 ZP
M 10	x	30	S	200	70,00 ZP
M 10	x	35	S	100	75,00 ZP
M 10	x	40	S	100	81,00 ZP
M 10	x	45	S	100	81,00 ZP
M 10	x	50	S	100	85,00 ZP
M 10	x	55	S	100	122,00 ZP
M 10	x	60	S	100	138,00 ZP
M 12	x	14	S	100	210,00 ZP
M 12	x	16	S	100	190,00 ZP
M 12	x	20	S	100	146,00 ZP
M 12	x	25	S	100	141,00 ZP
M 12	x	30	S	100	157,00 ZP
M 12	x	35	S	100	138,00 ZP
M 12	x	40	S	100	189,00 ZP
M 12	x	45	S	100	205,00 ZP
M 12	x	50	S	100	221,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	60	S	100	237,00 ZP
M 16	x	30	S	100	350,00 ZP
M 16	x	40	S	100	360,00 ZP
M 16	x	45	S	50	370,00 ZP
M 16	x	50	S	50	380,00 ZP
M 16	x	60	S	50	390,00 ZP

~ISO	07380.114	RAZ 1000

7380-1 010.9 zinc plated ISR

Hexalobular socket button head screws

Caution! Screws have only a reduced loadability.
Note information about hydrogen embrittlement.

Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 534

M 4	x	6 -T20	S	500	16,70 ZP
M 4	x	8 -T20	S	500	16,70 ZP
M 4	x	10 -T20	S	500	16,90 ZP
M 4	x	12 -T20	S	500	18,00 ZP
M 4	x	16 -T20	S	500	19,50 ZP
M 4	x	20 -T20	S	500	20,80 ZP
M 5	x	8 -T25	S	500	16,00 ZP
M 5	x	10 -T25	S	500	16,10 ZP
M 5	x	12 -T25	S	500	16,90 ZP
M 5	x	16 -T25	S	500	18,90 ZP
M 5	x	20 -T25	S	500	21,40 ZP
M 5	x	25 -T25	S	500	22,40 ZP
M 5	x	30 -T25	S	500	23,40 ZP
M 5	x	35 -T25	S	500	25,00 ZP
M 6	x	16 -T30	S	500	21,00 ZP
M 6	x	20 -T30	S	500	21,70 ZP
M 6	x	25 -T30	S	500	23,80 ZP
M 8	x	12 -T40	S	200	30,00 ZP
M 8	x	16 -T40	S	200	31,00 ZP
M 8	x	20 -T40	S	200	27,50 ZP
M 8	x	25 -T40	S	200	29,50 ZP
M 8	x	30 -T40	S	200	33,00 ZP
M 8	x	35 -T40	S	200	35,00 ZP

ISO	07380.102	RAZ 3500

7380-2 010.9

Hexagon socket button head screws with collar

Sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions → TI-14 Tightening torque → TI-232
Mech. properties → TI-220

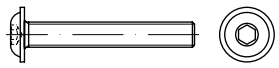
Stainless → S. 535

M 4	x	6	S	500	18,70
M 4	x	8	S	500	18,10
M 4	x	10	S	500	17,40

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	12	S	500	18,40
M 4	x	16	S	500	19,30
M 4	x	20	S	500	20,30
M 4	x	25	S	500	23,80
M 4	x	30	S	500	27,50
M 5	x	6	S	500	39,50
M 5	x	8	S	500	19,10
M 5	x	10	S	500	18,40
M 5	x	12	S	500	19,10
M 5	x	16	S	500	22,50
M 5	x	20	S	500	23,00
M 5	x	25	S	500	23,30
M 5	x	30	S	500	27,00
M 5	x	35	S	200	30,50
M 6	x	6	S	500	91,00
M 6	x	8	S	500	22,20
M 6	x	10	S	500	20,80
M 6	x	12	S	500	22,50
M 6	x	16	S	500	23,50
M 6	x	20	S	500	23,90
M 6	x	25	S	500	24,30
M 6	x	30	S	500	26,00
M 6	x	35	S	500	27,00
M 6	x	40	S	500	34,00
M 8	x	12	S	200	32,50
M 8	x	16	S	200	32,50
M 8	x	20	S	200	31,50
M 8	x	25	S	200	34,00
M 8	x	30	S	200	36,00
M 8	x	35	S	200	44,00
M 8	x	40	S	200	57,50
M 8	x	50	S	200	83,00
M 8	x	60	S	200	105,00
M 10	x	20	S	200	63,00
M 10	x	25	S	200	77,00
M 10	x	30	S	200	88,00
M 10	x	35	S	100	98,00

ISO	07380.112	RAZ 3500

7380-2 010.9 zinc plated



Hexagon socket button head screws with collar

Sometimes thread up to head

Caution! Screws have only a reduced loadability.
Note information about hydrogen embrittlement.

Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 535

M 3	x	6	S	500	16,50 ZP
M 3	x	8	S	500	16,50 ZP
M 3	x	10	S	500	16,50 ZP
M 3	x	12	S	500	18,50 ZP
M 4	x	6	S	500	21,90 ZP
M 4	x	8	S	500	18,70 ZP
M 4	x	10	S	500	18,20 ZP
M 4	x	12	S	500	19,50 ZP
M 4	x	16	S	500	20,60 ZP
M 4	x	20	S	500	28,00 ZP
M 4	x	25	S	500	33,00 ZP
M 4	x	30	S	500	37,50 ZP
M 5	x	6	S	500	36,00 ZP
M 5	x	8	S	500	20,10 ZP
M 5	x	10	S	500	19,50 ZP

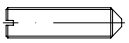
Dimensions			PU	Pieces	€/100/Mat.
M 5	x	12	S	500	20,30 ZP
M 5	x	16	S	500	24,00 ZP
M 5	x	20	S	500	24,60 ZP
M 5	x	25	S	500	29,00 ZP
M 5	x	30	S	500	33,50 ZP
M 5	x	35	S	200	38,00 ZP
M 6	x	8	S	500	23,50 ZP
M 6	x	10	S	500	22,40 ZP
M 6	x	12	S	500	24,20 ZP
M 6	x	14	S	500	22,50 ZP
M 6	x	16	S	500	26,00 ZP
M 6	x	20	S	500	27,00 ZP
M 6	x	25	S	500	28,00 ZP
M 6	x	30	S	500	29,00 ZP
M 6	x	35	S	500	30,50 ZP
M 6	x	40	S	500	34,00 ZP
M 6	x	45	S	200	37,00 ZP
M 6	x	50	S	200	37,50 ZP
M 6	x	60	S	200	41,00 ZP
M 8	x	10	S	200	41,50 ZP
M 8	x	12	S	200	36,50 ZP
M 8	x	14	S	200	36,50 ZP
M 8	x	16	S	200	36,50 ZP
M 8	x	20	S	200	36,00 ZP
M 8	x	25	S	200	39,00 ZP
M 8	x	30	S	200	42,00 ZP
M 8	x	35	S	200	52,00 ZP
M 8	x	40	S	200	54,00 ZP
M 8	x	45	S	200	59,00 ZP
M 8	x	50	S	200	64,00 ZP
M 8	x	60	S	200	69,00 ZP
M 10	x	20	S	200	76,00 ZP
M 10	x	30	S	200	107,00 ZP
M 10	x	35	S	100	112,00 ZP
M 10	x	40	S	100	117,00 ZP
M 10	x	50	S	100	122,00 ZP
M 12	x	20	S	100	156,00 ZP
M 12	x	25	S	100	168,00 ZP
M 12	x	30	S	100	178,00 ZP
M 12	x	40	S	100	195,00 ZP
M 12	x	50	S	100	210,00 ZP
M 12	x	60	S	100	220,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions	PU	Pieces	€/100/Mat.
ISO	07434.000		RAZ 230

7434 14 H



Slotted grub screws with cone point

Dimensions → TI-19 Standard conversion → TI-6

Stainless → S. 535
Brass → S. 593

ISO 7434 → replaces DIN 553 (compatible)

M 1,6	x	2	K	100	10,00
M 1,6	x	3	K	100	10,00
M 2	x	3	K	200	8,70
M 2	x	4	K	200	8,80
M 2	x	5	K	200	8,90
M 2	x	6	K	200	9,10
M 2	x	12	K	200	10,20
M 2,5	x	3	K	200	9,20
M 2,5	x	4	K	200	8,90
M 2,5	x	5	K	200	9,10
M 2,5	x	6	K	200	9,20
M 2,5	x	8	K	200	9,30
M 2,5	x	10	K	200	9,70
M 2,5	x	12	K	200	10,40
M 3	x	3	K	200	6,90
M 3	x	4	S	1000	3,40
M 3	x	4	K	200	4,10
M 3	x	5	S	1000	3,25
M 3	x	5	K	200	4,00
M 3	x	6	S	1000	3,35
M 3	x	6	K	200	4,05
M 3	x	8	S	1000	3,40
M 3	x	8	K	200	4,10
M 3	x	10	S	1000	3,40
M 3	x	10	K	200	4,10
M 3	x	12	K	200	4,50
M 3	x	16	K	200	7,50
M 3	x	20	K	200	5,70
M 4	x	4	S	1000	3,40
M 4	x	4	K	200	4,10
M 4	x	5	S	1000	3,55
M 4	x	5	K	200	4,30
M 4	x	6	S	1000	3,55
M 4	x	6	K	200	4,35
M 4	x	8	S	1000	3,55
M 4	x	8	K	200	4,35
M 4	x	10	S	1000	3,80
M 4	x	10	K	200	4,50
M 4	x	12	S	1000	4,00
M 4	x	12	K	200	4,80
M 4	x	16	K	200	5,20
M 4	x	20	K	200	5,90
M 4	x	30	K	200	7,70
M 5	x	5	S	1000	4,00
M 5	x	5	K	200	4,75
M 5	x	6	S	1000	4,00
M 5	x	6	K	200	4,80
M 5	x	8	S	1000	4,35
M 5	x	8	K	200	5,10
M 5	x	10	S	1000	4,80
M 5	x	10	K	200	5,60
M 5	x	12	S	1000	5,10
M 5	x	12	K	200	6,00
M 5	x	16	S	1000	6,50
M 5	x	16	K	200	7,20
M 5	x	20	K	200	7,60
M 5	x	25	K	200	8,00

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	5	K	200	7,70
M 6	x	6	S	1000	4,80
M 6	x	6	K	200	5,60
M 6	x	8	S	1000	5,20
M 6	x	8	K	200	6,10
M 6	x	10	S	1000	5,50
M 6	x	10	K	200	6,30
M 6	x	12	S	1000	5,90
M 6	x	12	K	200	6,50
M 6	x	16	S	1000	6,70
M 6	x	16	K	200	7,50
M 6	x	20	S	1000	7,50
M 6	x	20	K	200	8,10
M 6	x	25	S	1000	8,60
M 6	x	25	K	100	9,40
M 6	x	30	K	100	11,40
M 6	x	40	K	100	32,00
M 8	x	8	K	100	7,70
M 8	x	10	S	1000	6,90
M 8	x	10	K	100	8,60
M 8	x	12	S	1000	8,00
M 8	x	12	K	100	9,70
M 8	x	16	S	1000	8,50
M 8	x	16	K	100	10,20
M 8	x	18	K	100	11,80
M 8	x	20	S	1000	10,40
M 8	x	20	K	100	12,10
M 8	x	25	S	1000	11,60
M 8	x	25	K	100	13,30
M 8	x	30	K	100	16,20
M 8	x	40	K	100	27,00
M 8	x	50	K	100	56,00
M 10	x	10	K	100	19,10
M 10	x	12	K	100	19,40
M 10	x	16	K	100	20,60
M 10	x	20	K	100	22,50
M 10	x	25	K	100	24,40
M 10	x	30	K	100	26,50
M 10	x	35	K	100	28,50
M 10	x	40	K	100	43,50
M 10	x	60	K	100	64,00

ISO | 07435.000 | RAZ 140

7435

14 H

Slotted grub screws with full dog point

Dimensions → TI-19

ISO 7435 → replaces DIN 417 (compatible)

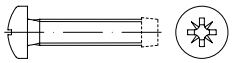
M 3	x	5	S	100	8,00
M 3	x	6	S	100	5,20
M 3	x	8	S	100	5,30
M 3	x	10	S	100	6,70
M 3	x	12	S	100	7,10
M 4	x	5	S	100	11,00
M 4	x	6	S	100	8,80
M 4	x	8	S	100	5,50
M 4	x	10	S	100	5,70
M 4	x	12	S	100	7,50
M 4	x	16	S	100	6,40
M 5	x	8	S	100	6,30
M 5	x	10	S	100	6,80
M 5	x	12	S	100	7,10
M 5	x	16	S	100	8,50
M 5	x	20	S	100	11,00
M 5	x	25	S	100	11,60

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	8	S	100	7,20
M 6	x	10	S	100	7,50
M 6	x	12	S	100	7,80
M 6	x	16	S	100	8,70
M 6	x	20	S	100	9,50
M 6	x	25	S	100	10,60
M 6	x	30	S	100	14,80
M 8	x	10	S	100	17,80
M 8	x	12	S	100	10,10
M 8	x	16	S	100	10,50
M 8	x	20	S	100	12,50
M 8	x	25	S	100	13,70
M 8	x	30	S	100	16,70
M 8	x	35	S	100	23,80
M 8	x	40	S	100	32,00
M 10	x	12	S	50	22,00
M 10	x	16	S	50	23,20
M 10	x	20	S	50	32,00
M 10	x	25	S	50	27,50
M 10	x	30	S	50	36,50
M 10	x	35	S	50	39,50
M 10	x	40	S	50	42,00
M 10	x	50	S	50	44,00
M 12	x	20	S	50	51,00
M 12	x	25	S	50	55,00
M 12	x	40	S	50	69,00
M 12	x	50	S	50	77,00

DIN | 07500.014 | RAZ 637

7500

Steel type C-Z zinc plated



Thread rolling screws, C = pan head acc. to DIN 7985, Z = with Pozidriv cross recess Z, metric thread

hardened

Dimensions → TI-41 Corrosion protection → TI-217

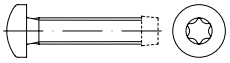
CM 2	x	5 -Z	S	1000	4,75 ZP
CM 2	x	6 -Z	S	1000	4,70 ZP
CM 2	x	8 -Z	S	1000	4,85 ZP
CM 2	x	10 -Z	S	1000	7,50 ZP
CM 2	x	12 -Z	S	1000	8,50 ZP
CM 2,5	x	4 -Z	S	1000	4,75 ZP
CM 2,5	x	5 -Z	S	1000	4,85 ZP
CM 2,5	x	6 -Z	S	1000	4,90 ZP
CM 2,5	x	8 -Z	S	1000	5,10 ZP
CM 2,5	x	10 -Z	S	1000	5,30 ZP
CM 2,5	x	12 -Z	S	1000	5,30 ZP
CM 2,5	x	16 -Z	S	1000	5,60 ZP
CM 2,5	x	20 -Z	S	1000	5,70 ZP
CM 3	x	4 -Z	S	1000	9,80 ZP
CM 3	x	5 -Z	S	2000	10,50 ZP
CM 3	x	6 -Z	S	2000	10,50 ZP
CM 3	x	8 -Z	S	2000	10,70 ZP
CM 3	x	10 -Z	S	2000	11,20 ZP
CM 3	x	12 -Z	S	1000	11,50 ZP
CM 3	x	16 -Z	S	1000	11,70 ZP
CM 3	x	20 -Z	S	1000	11,90 ZP
CM 3	x	25 -Z	S	1000	12,10 ZP
CM 3	x	30 -Z	S	1000	13,00 ZP
CM 3,5	x	6 -Z	S	1000	14,00 ZP
CM 3,5	x	8 -Z	S	1000	14,00 ZP
CM 3,5	x	10 -Z	S	1000	17,50 ZP
CM 3,5	x	12 -Z	S	1000	18,25 ZP
CM 3,5	x	16 -Z	S	1000	18,95 ZP

Dimensions			PU	Pieces	€/100/Mat.
CM 4	x	6 -Z	S	2000	13,90 ZP
CM 4	x	8 -Z	S	2000	13,90 ZP
CM 4	x	10 -Z	S	2000	14,80 ZP
CM 4	x	12 -Z	S	2000	16,50 ZP
CM 4	x	16 -Z	S	2000	18,00 ZP
CM 4	x	20 -Z	S	2000	18,90 ZP
CM 4	x	25 -Z	S	1000	20,70 ZP
CM 4	x	30 -Z	S	1000	21,10 ZP
CM 4	x	35 -Z	S	1000	25,00 ZP
CM 4	x	40 -Z	S	1000	30,00 ZP
CM 5	x	6 -Z	S	1000	18,60 ZP
CM 5	x	8 -Z	S	2000	19,80 ZP
CM 5	x	10 -Z	S	2000	19,80 ZP
CM 5	x	12 -Z	S	1000	21,10 ZP
CM 5	x	16 -Z	S	1000	23,50 ZP
CM 5	x	20 -Z	S	1000	25,50 ZP
CM 5	x	25 -Z	S	1000	28,50 ZP
CM 5	x	30 -Z	S	1000	28,50 ZP
CM 5	x	35 -Z	S	500	35,00 ZP
CM 5	x	40 -Z	S	500	42,00 ZP
CM 6	x	8 -Z	S	500	23,20 ZP
CM 6	x	10 -Z	S	1000	33,50 ZP
CM 6	x	12 -Z	S	1000	41,50 ZP
CM 6	x	16 -Z	S	1000	37,50 ZP
CM 6	x	20 -Z	S	1000	40,00 ZP
CM 6	x	25 -Z	S	500	40,50 ZP
CM 6	x	30 -Z	S	500	41,00 ZP
CM 6	x	35 -Z	S	500	41,50 ZP
CM 6	x	40 -Z	S	500	42,50 ZP
CM 8	x	16 -Z	S	250	54,00 ZP
CM 8	x	20 -Z	S	250	59,00 ZP
CM 8	x	25 -Z	S	250	64,00 ZP
CM 8	x	30 -Z	S	250	70,00 ZP
CM 8	x	35 -Z	S	250	76,00 ZP
CM 8	x	40 -Z	S	100	88,00 ZP

DIN | 07500.017 | RAZ 637

7500

Steel type CE-ISR/PE zinc plated



Thread rolling screws, CE/PE = pan head acc. to ISO 14583, ISR = hexalobular socket, metric thread

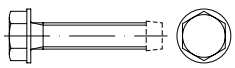
hardened

Dimensions → TI-41 Corrosion protection → TI-217

CEM 3	x	4-T10	S	1000	12,50 ZP
CEM 3	x	5-T10	S	1000	12,50 ZP
CEM 3	x	6-T10	S	1000	12,60 ZP
CEM 3	x	8-T10	S	1000	12,80 ZP
CEM 3	x	10-T10	S	1000	13,40 ZP
CEM 3	x	12-T10	S	1000	13,80 ZP
CEM 3	x	16-T10	S	1000	14,00 ZP
CEM 3	x	20-T10	S	1000	14,30 ZP
CEM 3	x	25-T10	S	1000	25,00 ZP
CEM 4	x	6-T20	S	1000	16,70 ZP
CEM 4	x	8-T20	S	1000	17,00 ZP
CEM 4	x	10-T20	S	1000	17,80 ZP
CEM 4	x	12-T20	S	1000	19,80 ZP
CEM 4	x	16-T20	S	1000	21,60 ZP
CEM 4	x	20-T20	S	1000	22,70 ZP
CEM 4	x	25-T20	S	1000	24,90 ZP
CEM 4	x	30-T20	S	1000	25,50 ZP
CEM 4	x	35-T20	S	1000	30,00 ZP
CEM 5	x	6-T25	S	1000	22,40 ZP
CEM 5	x	8-T25	S	1000	23,80 ZP

Dimensions			PU	Pieces	€/100/Mat.
CEM 5	x	10-T25	S	1000	24,50 ZP
CEM 5	x	12-T25	S	1000	25,50 ZP
CEM 5	x	16-T25	S	1000	28,45 ZP
CEM 5	x	20-T25	S	1000	30,50 ZP
CEM 5	x	25-T25	S	1000	34,50 ZP
CEM 5	x	30-T25	S	500	36,00 ZP
CEM 5	x	35-T25	S	1000	38,50 ZP
CEM 5	x	40-T25	S	1000	43,50 ZP
CEM 6	x	8-T30	S	1000	40,50 ZP
CEM 6	x	10-T30	S	1000	40,50 ZP
CEM 6	x	12-T30	S	500	44,00 ZP
CEM 6	x	16-T30	S	500	45,00 ZP
CEM 6	x	20-T30	S	500	48,00 ZP
CEM 6	x	25-T30	S	500	48,50 ZP
CEM 6	x	30-T30	S	500	49,50 ZP
CEM 6	x	35-T30	S	500	50,00 ZP
CEM 6	x	40-T30	S	500	51,00 ZP
CEM 6	x	45-T30	S	500	58,00 ZP
CEM 6	x	50-T30	S	500	68,00 ZP
CEM 8	x	12-T45	S	500	52,00 ZP
CEM 8	x	16-T45	S	500	54,00 ZP
CEM 8	x	20-T45	S	500	59,00 ZP
CEM 8	x	25-T45	S	500	64,00 ZP
CEM 8	x	30-T45	S	100	70,00 ZP
CEM 8	x	35-T45	S	100	76,00 ZP
CEM 8	x	40-T45	S	100	88,00 ZP
CEM 8	x	45-T45	S	100	98,00 ZP
CEM 8	x	50-T45	S	100	111,00 ZP
CEM 8	x	60-T45	S	250	165,00 ZP

~DIN	07500.015	RAZ 637
7500	**Steel zinc plated**	**~ type D**



Thread rolling screws,
~D = hexagon head with collar,
with metric thread

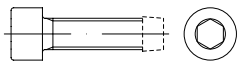
hardened

Dimensions → TI-41 Corrosion protection → TI-217

DM 4	x	6	S	1000	10,00 ZP
DM 4	x	8	S	1000	8,40 ZP
DM 4	x	10	S	1000	8,70 ZP
DM 4	x	12	S	1000	9,30 ZP
DM 4	x	16	S	1000	10,20 ZP
DM 4	x	20	S	1000	11,20 ZP
DM 4	x	25	S	1000	14,00 ZP
DM 4	x	30	S	1000	19,50 ZP
DM 5	x	8	S	1000	12,10 ZP
DM 5	x	10	S	1000	13,30 ZP
DM 5	x	12	S	1000	14,00 ZP
DM 5	x	16	S	1000	14,90 ZP
DM 5	x	20	S	1000	15,80 ZP
DM 5	x	25	S	1000	18,30 ZP
DM 5	x	30	S	1000	21,10 ZP
DM 5	x	35	S	1000	25,00 ZP
DM 5	x	40	S	1000	32,00 ZP
DM 6	x	8	S	1000	23,90 ZP
DM 6	x	10	S	1000	25,50 ZP
DM 6	x	12	S	1000	26,00 ZP
DM 6	x	16	S	1000	27,00 ZP
DM 6	x	20	S	1000	27,00 ZP
DM 6	x	25	S	1000	28,00 ZP
DM 6	x	30	S	1000	30,50 ZP
DM 6	x	35	S	500	35,00 ZP
DM 6	x	40	S	500	42,00 ZP
DM 6	x	45	S	500	55,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DM 6	x	50	S	500	69,00 ZP
DM 8	x	12	S	500	48,50 ZP
DM 8	x	16	S	500	45,00 ZP
DM 8	x	20	S	500	48,50 ZP
DM 8	x	25	S	500	55,00 ZP
DM 8	x	30	S	500	61,00 ZP
DM 8	x	35	S	500	70,00 ZP
DM 8	x	40	S	500	72,00 ZP
DM 8	x	45	S	500	90,00 ZP
DM 8	x	50	S	250	92,00 ZP
DM 8	x	60	S	500	138,00 ZP

~DIN	07500.018	RAZ 637
7500	**Steel zinc plated**	**type E**



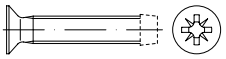
Thread rolling screws,
E = hexagon socket head cap*,
with metric thread

hardened
*acc. to DIN 912

Dimensions → TI-41 Corrosion protection → TI-217

E M 4	x	6	S	2000	15,00 ZP
E M 4	x	8	S	2000	15,60 ZP
E M 4	x	10	S	2000	16,90 ZP
E M 4	x	12	S	2000	18,50 ZP
E M 4	x	16	S	2000	20,10 ZP
E M 4	x	20	S	1000	21,90 ZP
E M 4	x	25	S	1000	24,75 ZP
E M 4	x	30	S	1000	28,00 ZP
E M 4	x	35	S	1000	35,00 ZP
E M 4	x	40	S	500	45,00 ZP
E M 4	x	45	S	500	58,00 ZP
E M 5	x	8	S	2000	18,20 ZP
E M 5	x	10	S	2000	20,00 ZP
E M 5	x	12	S	2000	22,00 ZP
E M 5	x	16	S	2000	24,40 ZP
E M 5	x	20	S	1000	27,00 ZP
E M 5	x	25	S	1000	31,05 ZP
E M 5	x	30	S	1000	35,70 ZP
E M 5	x	35	S	1000	53,00 ZP
E M 5	x	40	S	500	47,75 ZP
E M 6	x	10	S	1000	39,60 ZP
E M 6	x	12	S	1000	43,60 ZP
E M 6	x	16	S	1000	48,00 ZP
E M 6	x	20	S	1000	111,00 ZP
E M 6	x	25	S	1000	61,00 ZP
E M 6	x	30	S	500	70,20 ZP
E M 6	x	35	S	250	80,75 ZP
E M 6	x	40	S	250	92,90 ZP
E M 6	x	45	S	250	107,00 ZP
E M 6	x	50	S	250	123,20 ZP
E M 8	x	30	S	250	245,00 ZP
E M 8	x	35	S	250	280,00 ZP
E M 8	x	50	S	100	400,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	07500.016				RAZ 637
7500	**Steel zinc plated**				**type M-Z**



Thread rolling screws,
M = counters head acc. To DIN 965,
Z = with Pozidriv cross recess Z,
with metric thread

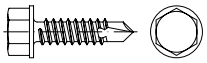
hardened

Dimensions → TI-41 Corrosion protection → TI-217

MM 2,5	x	5 -Z	S	1000	4,90 ZP
MM 2,5	x	6 -Z	S	1000	4,70 ZP
MM 2,5	x	8 -Z	S	1000	4,85 ZP
MM 2,5	x	10 -Z	S	1000	4,90 ZP
MM 2,5	x	12 -Z	S	1000	5,00 ZP
MM 2,5	x	16 -Z	S	1000	8,00 ZP
MM 2,5	x	20 -Z	S	1000	10,25 ZP
MM 3	x	4 -Z	S	1000	8,00 ZP
MM 3	x	5 -Z	S	1000	8,00 ZP
MM 3	x	6 -Z	S	1000	5,10 ZP
MM 3	x	8 -Z	S	1000	5,20 ZP
MM 3	x	10 -Z	S	1000	5,60 ZP
MM 3	x	12 -Z	S	1000	5,70 ZP
MM 3	x	16 -Z	S	1000	6,30 ZP
MM 3	x	20 -Z	S	1000	7,30 ZP
MM 3	x	25 -Z	S	1000	7,50 ZP
MM 4	x	6 -Z	S	1000	10,00 ZP
MM 4	x	8 -Z	S	1000	7,00 ZP
MM 4	x	10 -Z	S	1000	7,30 ZP
MM 4	x	12 -Z	S	1000	7,80 ZP
MM 4	x	16 -Z	S	1000	8,80 ZP
MM 4	x	20 -Z	S	1000	9,20 ZP
MM 4	x	25 -Z	S	1000	10,60 ZP
MM 4	x	30 -Z	S	1000	11,50 ZP
MM 5	x	8 -Z	S	1000	12,00 ZP
MM 5	x	10 -Z	S	1000	9,70 ZP
MM 5	x	12 -Z	S	1000	10,40 ZP
MM 5	x	16 -Z	S	1000	11,60 ZP
MM 5	x	20 -Z	S	1000	12,90 ZP
MM 5	x	25 -Z	S	1000	16,10 ZP
MM 5	x	30 -Z	S	1000	17,40 ZP
MM 5	x	35 -Z	S	1000	19,80 ZP
MM 5	x	40 -Z	S	1000	22,30 ZP
MM 6	x	8 -Z	S	1000	20,00 ZP
MM 6	x	10 -Z	S	1000	20,00 ZP
MM 6	x	12 -Z	S	500	16,70 ZP
MM 6	x	16 -Z	S	500	18,30 ZP
MM 6	x	20 -Z	S	500	18,90 ZP
MM 6	x	25 -Z	S	500	21,70 ZP
MM 6	x	30 -Z	S	500	23,50 ZP
MM 6	x	35 -Z	S	500	25,50 ZP
MM 6	x	40 -Z	S	500	29,50 ZP
MM 6	x	45 -Z	S	500	40,00 ZP
MM 6	x	50 -Z	S	500	40,50 ZP
MM 8	x	10 -Z	S	500	36,00 ZP
MM 8	x	12 -Z	S	500	32,00 ZP
MM 8	x	16 -Z	S	250	36,00 ZP
MM 8	x	20 -Z	S	250	38,00 ZP
MM 8	x	25 -Z	S	250	38,80 ZP
MM 8	x	30 -Z	S	250	49,00 ZP
MM 8	x	35 -Z	S	250	58,00 ZP
MM 8	x	40 -Z	S	250	70,00 ZP
MM 8	x	45 -Z	S	250	82,00 ZP
MM 8	x	50 -Z	S	250	98,00 ZP
MM 8	x	60 -Z	S	250	134,00 ZP

€/100 = price in € plus VAT when ordering full package unit

DIN	07504.014	RAZ 637
7504	**Steel zinc plated**	**type K**



Drilling screws,
K = hexagon head with collar*,
with tapping screw thread

hardened
*acc. to DIN 6928/~ISO 15480

Dimensions → TI-42 Corrosion protection → TI-217

Dimensions			PU	Pieces	€/100/Mat.
K 3,5	x	9,5	S	1000	7,80 ZP
K 3,5	x	13	S	1000	8,00 ZP
K 3,5	x	16	S	1000	8,80 ZP
K 3,5	x	19	S	1000	9,20 ZP
K 3,5	x	22	S	1000	14,20 ZP
K 3,5	x	25	S	1000	18,30 ZP
K 3,9	x	13	S	1000	8,50 ZP
K 3,9	x	16	S	1000	9,30 ZP
K 3,9	x	19	S	1000	10,10 ZP
K 3,9	x	22	S	1000	16,00 ZP
K 3,9	x	25	S	1000	21,00 ZP
K 3,9	x	32	S	1000	28,60 ZP
K 4,2	x	13	S	1000	9,60 ZP
K 4,2	x	13	K	100	13,60 ZP
K 4,2	x	16	S	1000	10,10 ZP
K 4,2	x	19	S	1000	10,30 ZP
K 4,2	x	22	S	1000	11,80 ZP
K 4,2	x	25	S	1000	12,50 ZP
K 4,2	x	32	S	500	17,70 ZP
K 4,2	x	38	S	500	22,90 ZP
K 4,8	x	13	S	1000	11,80 ZP
K 4,8	x	16	S	1000	12,40 ZP
K 4,8	x	19	S	1000	12,90 ZP
K 4,8	x	22	S	1000	14,80 ZP
K 4,8	x	25	S	1000	15,80 ZP
K 4,8	x	32	S	500	17,70 ZP
K 4,8	x	38	S	500	19,80 ZP
K 4,8	x	45	S	500	22,30 ZP
K 4,8	x	50	S	500	23,50 ZP
K 4,8	x	60	S	500	27,50 ZP
K 4,8	x	70	S	250	30,20 ZP
K 4,8	x	80	S	250	35,00 ZP
K 5,5	x	16	S	500	17,70 ZP
K 5,5	x	19	S	500	16,70 ZP
K 5,5	x	22	S	500	18,90 ZP
K 5,5	x	25	S	500	19,50 ZP
K 5,5	x	32	S	250	21,70 ZP
K 5,5	x	38	S	250	21,70 ZP
K 5,5	x	45	S	250	22,00 ZP
K 5,5	x	50	S	250	22,00 ZP
K 5,5	x	60	S	250	32,00 ZP
K 5,5	x	70	S	100	38,00 ZP
K 5,5	x	80	S	100	45,00 ZP
K 5,5	x	90	S	100	52,00 ZP
K 5,5	x	100	S	100	64,00 ZP
K 6,3	x	16	S	500	22,30 ZP
K 6,3	x	19	S	500	23,20 ZP
K 6,3	x	22	S	500	24,80 ZP
K 6,3	x	25	S	500	26,00 ZP
K 6,3	x	32	S	250	30,50 ZP
K 6,3	x	38	S	250	32,50 ZP
K 6,3	x	45	S	250	36,50 ZP
K 6,3	x	50	S	250	40,50 ZP
K 6,3	x	60	S	250	44,50 ZP
K 6,3	x	70	S	100	49,00 ZP
K 6,3	x	80	S	100	56,00 ZP
K 6,3	x	90	S	100	68,00 ZP
K 6,3	x	100	S	100	82,00 ZP
K 6,3	x	110	S	100	98,00 ZP
K 6,3	x	120	S	100	116,00 ZP
K 6,3	x	130	S	100	136,00 ZP
K 6,3	x	140	S	100	160,00 ZP
K 6,3	x	150	S	100	190,00 ZP
K 6,3	x	160	S	100	240,00 ZP

DIN	07504.015	RAZ 637
7504	**Steel zinc plated**	**type N-H**

Drilling screws,
N = pan head acc. to DIN 7981,
H = with Phillips cross recess H,
with tapping screw thread

hardened

Dimensions → TI-42 Corrosion protection → TI-217

Dimensions			PU	Pieces	€/100/Mat.
N 2,9	x	9,5-H	S	1000	7,10 ZP
N 2,9	x	13 -H	S	1000	7,20 ZP
N 2,9	x	16 -H	S	1000	7,30 ZP
N 2,9	x	19 -H	S	1000	7,90 ZP
N 3,5	x	9,5-H	S	1000	8,10 ZP
N 3,5	x	13 -H	S	1000	8,30 ZP
N 3,5	x	16 -H	S	1000	8,50 ZP
N 3,5	x	19 -H	S	1000	8,80 ZP
N 3,5	x	22 -H	S	1000	9,60 ZP
N 3,5	x	25 -H	S	1000	9,90 ZP
N 3,5	x	32 -H	S	1000	11,00 ZP
N 3,9	x	9,5-H	S	1000	8,30 ZP
N 3,9	x	13 -H	S	1000	8,40 ZP
N 3,9	x	16 -H	S	1000	8,90 ZP
N 3,9	x	19 -H	S	1000	9,30 ZP
N 3,9	x	22 -H	S	1000	9,60 ZP
N 3,9	x	25 -H	S	1000	10,00 ZP
N 3,9	x	32 -H	S	1000	10,60 ZP
N 3,9	x	38 -H	S	500	11,30 ZP
N 3,9	x	45 -H	S	500	12,00 ZP
N 3,9	x	50 -H	S	500	13,20 ZP
N 4,2	x	13 -H	S	1000	10,10 ZP
N 4,2	x	16 -H	S	1000	10,40 ZP
N 4,2	x	19 -H	S	1000	10,60 ZP
N 4,2	x	22 -H	S	1000	11,90 ZP
N 4,2	x	25 -H	S	1000	12,60 ZP
N 4,2	x	32 -H	S	500	13,60 ZP
N 4,2	x	38 -H	S	500	14,70 ZP
N 4,2	x	45 -H	S	500	15,90 ZP
N 4,2	x	50 -H	S	500	17,20 ZP
N 4,8	x	13 -H	S	1000	12,30 ZP
N 4,8	x	16 -H	S	1000	12,60 ZP
N 4,8	x	19 -H	S	1000	13,20 ZP
N 4,8	x	22 -H	S	1000	14,00 ZP
N 4,8	x	25 -H	S	1000	15,40 ZP
N 4,8	x	32 -H	S	500	15,50 ZP
N 4,8	x	38 -H	S	500	17,00 ZP
N 4,8	x	45 -H	S	500	18,30 ZP
N 4,8	x	50 -H	S	500	19,50 ZP
N 4,8	x	60 -H	S	250	21,50 ZP
N 4,8	x	70 -H	S	250	23,75 ZP
N 4,8	x	80 -H	S	250	26,20 ZP
N 4,8	x	90 -H	S	250	42,00 ZP
N 4,8	x	100 -H	S	250	66,00 ZP
N 4,8	x	110 -H	S	100	98,00 ZP
N 4,8	x	120 -H	S	250	140,00 ZP
N 5,5	x	16 -H	S	500	15,30 ZP
N 5,5	x	19 -H	S	500	16,00 ZP
N 5,5	x	22 -H	S	500	17,70 ZP
N 5,5	x	25 -H	S	500	23,80 ZP
N 5,5	x	32 -H	S	500	25,70 ZP
N 5,5	x	38 -H	S	500	27,80 ZP
N 5,5	x	45 -H	S	500	30,00 ZP
N 5,5	x	50 -H	S	500	32,40 ZP
N 5,5	x	60 -H	S	250	35,65 ZP
N 5,5	x	70 -H	S	250	40,35 ZP
N 5,5	x	80 -H	S	250	44,40 ZP
N 6,3	x	16 -H	S	500	26,80 ZP
N 6,3	x	19 -H	S	500	28,00 ZP
N 6,3	x	22 -H	S	500	30,25 ZP
N 6,3	x	25 -H	S	500	32,70 ZP
N 6,3	x	32 -H	S	500	35,35 ZP
N 6,3	x	38 -H	S	500	38,20 ZP
N 6,3	x	45 -H	S	500	41,30 ZP
N 6,3	x	50 -H	S	500	44,60 ZP
N 6,3	x	60 -H	S	250	49,10 ZP
N 6,3	x	70 -H	S	250	54,05 ZP
N 6,3	x	80 -H	S	250	59,50 ZP
N 6,3	x	90 -H	S	100	66,65 ZP
N 6,3	x	100 -H	S	100	74,65 ZP

~DIN	07504.301	RAZ 637
7504	**Steel zinc plated**	**type N-ISR**

Drilling screws,
N = pan head acc. to ISO 14583,
ISR = hexalobular socket,
with tapping screw thread

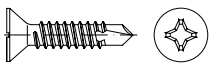
hardened

Dimensions → TI-42 Corrosion protection → TI-217

Dimensions			PU	Pieces	€/100/Mat.
N 2,9	x	9,5-T10	S	1000	9,60 ZP
N 2,9	x	13 -T10	S	1000	9,75 ZP
N 2,9	x	16 -T10	S	1000	9,90 ZP
N 2,9	x	19 -T10	S	1000	10,70 ZP
N 3,5	x	9,5-T15	S	1000	11,00 ZP
N 3,5	x	13 -T15	S	1000	11,30 ZP
N 3,5	x	16 -T15	S	1000	12,00 ZP
N 3,5	x	19 -T15	S	1000	12,90 ZP
N 3,5	x	22 -T15	S	1000	13,00 ZP
N 3,5	x	25 -T15	S	1000	13,40 ZP
N 3,5	x	32 -T15	S	1000	15,00 ZP
N 3,9	x	9,5-T20	S	1000	11,25 ZP
N 3,9	x	13 -T20	S	1000	11,35 ZP
N 3,9	x	16 -T20	S	1000	12,05 ZP
N 3,9	x	19 -T20	S	1000	12,60 ZP
N 3,9	x	22 -T20	S	1000	13,00 ZP
N 3,9	x	25 -T20	S	1000	13,50 ZP
N 3,9	x	32 -T20	S	1000	14,40 ZP
N 3,9	x	38 -T20	S	500	15,30 ZP
N 3,9	x	45 -T20	S	500	16,20 ZP
N 3,9	x	50 -T20	S	500	18,00 ZP
N 4,2	x	13 -T20	S	1000	13,65 ZP
N 4,2	x	16 -T20	S	1000	14,05 ZP
N 4,2	x	19 -T20	S	1000	14,35 ZP
N 4,2	x	22 -T20	S	1000	16,10 ZP
N 4,2	x	25 -T20	S	1000	17,05 ZP
N 4,2	x	32 -T20	S	500	18,50 ZP
N 4,2	x	38 -T20	S	500	20,00 ZP
N 4,2	x	45 -T20	S	500	21,50 ZP
N 4,2	x	50 -T20	S	500	23,30 ZP
N 4,8	x	13 -T25	S	1000	16,65 ZP
N 4,8	x	16 -T25	S	1000	17,05 ZP

Dimensions	PU	Pieces	€/100/Mat.
N 4,8 x 19 -T25	S	1000	17,85 ZP
N 4,8 x 22 -T25	S	1000	19,00 ZP
N 4,8 x 25 -T25	S	1000	20,80 ZP
N 4,8 x 32 -T25	S	500	21,00 ZP
N 4,8 x 38 -T25	S	500	23,00 ZP
N 4,8 x 45 -T25	S	500	25,00 ZP
N 4,8 x 50 -T25	S	500	26,50 ZP
N 4,8 x 55 -T25	S	500	28,75 ZP
N 4,8 x 60 -T25	S	250	29,05 ZP
N 4,8 x 70 -T25	S	250	32,10 ZP
N 4,8 x 80 -T25	S	250	35,50 ZP
N 5,5 x 16 -T25	S	500	20,75 ZP
N 5,5 x 19 -T25	S	500	21,60 ZP
N 5,5 x 22 -T25	S	500	23,90 ZP
N 5,5 x 25 -T25	S	500	32,20 ZP
N 5,5 x 32 -T25	S	500	34,70 ZP
N 5,5 x 38 -T25	S	500	37,60 ZP
N 5,5 x 45 -T25	S	500	40,50 ZP
N 5,5 x 50 -T25	S	500	44,00 ZP
N 5,5 x 60 -T25	S	250	48,50 ZP
N 5,5 x 70 -T25	S	250	55,00 ZP
N 5,5 x 80 -T25	S	250	60,00 ZP
N 6,3 x 16 -T30	S	500	36,20 ZP
N 6,3 x 19 -T30	S	500	38,00 ZP
N 6,3 x 22 -T30	S	500	41,00 ZP
N 6,3 x 25 -T30	S	500	44,50 ZP
N 6,3 x 32 -T30	S	500	48,00 ZP
N 6,3 x 38 -T30	S	500	52,00 ZP
N 6,3 x 45 -T30	S	500	56,00 ZP
N 6,3 x 50 -T30	S	500	60,50 ZP
N 6,3 x 60 -T30	S	250	66,50 ZP
N 6,3 x 70 -T30	S	250	73,00 ZP
N 6,3 x 80 -T30	S	250	80,50 ZP
N 6,3 x 90 -T30	S	100	90,00 ZP
N 6,3 x 100 -T30	S	100	105,00 ZP

DIN	07504.016	RAZ 637
7504	**Steel zinc plated**	**type P-H**



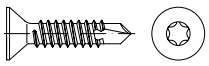
Drilling screws, P = countersunk head*, H = with Phillips cross recess H, with tapping screw thread

hardened
*acc. to DIN 7982 (countersunk ⊀ = 80°)
DIN 7504 form P will be replaced through ISO 15482

Dimensions → TI-42 Corrosion protection → TI-217

P 2,9	x 13 -H	S	1000	6,70 ZP
P 2,9	x 16 -H	S	1000	6,90 ZP
P 2,9	x 19 -H	S	1000	7,30 ZP
P 3,5	x 13 -H	S	1000	7,70 ZP
P 3,5	x 16 -H	S	1000	7,90 ZP
P 3,5	x 19 -H	S	1000	8,10 ZP
P 3,5	x 22 -H	S	1000	8,90 ZP
P 3,5	x 25 -H	S	1000	9,20 ZP
P 3,9	x 13 -H	S	1000	7,50 ZP
P 3,9	x 16 -H	S	1000	7,60 ZP
P 3,9	x 19 -H	S	1000	7,60 ZP
P 3,9	x 22 -H	S	1000	8,50 ZP
P 3,9	x 25 -H	S	1000	8,80 ZP
P 3,9	x 32 -H	S	1000	9,90 ZP
P 3,9	x 38 -H	S	500	12,20 ZP
P 3,9	x 45 -H	S	500	12,50 ZP
P 4,2	x 13 -H	S	1000	9,30 ZP
P 4,2	x 16 -H	S	1000	9,60 ZP
P 4,2	x 19 -H	S	1000	9,80 ZP
P 4,2	x 22 -H	S	1000	11,10 ZP
P 4,2	x 25 -H	S	1000	11,70 ZP
P 4,2	x 32 -H	S	500	12,50 ZP
P 4,2	x 38 -H	S	500	14,00 ZP
P 4,2	x 45 -H	S	500	15,60 ZP
P 4,2	x 50 -H	S	500	19,50 ZP
P 4,8	x 16 -H	S	1000	10,00 ZP
P 4,8	x 19 -H	S	1000	11,50 ZP
P 4,8	x 22 -H	S	1000	12,10 ZP
P 4,8	x 25 -H	S	500	12,20 ZP
P 4,8	x 32 -H	S	500	13,30 ZP
P 4,8	x 38 -H	S	500	14,60 ZP
P 4,8	x 45 -H	S	500	17,40 ZP
P 4,8	x 50 -H	S	250	19,90 ZP
P 5,5	x 25 -H	S	250	14,90 ZP
P 5,5	x 32 -H	S	250	16,20 ZP
P 5,5	x 38 -H	S	250	17,50 ZP
P 5,5	x 45 -H	S	250	19,60 ZP
P 5,5	x 50 -H	S	250	21,60 ZP
P 6,3	x 25 -H	S	250	21,40 ZP
P 6,3	x 32 -H	S	250	22,70 ZP
P 6,3	x 38 -H	S	250	24,00 ZP
P 6,3	x 45 -H	S	250	27,50 ZP
P 6,3	x 50 -H	S	250	30,00 ZP
P 6,3	x 60 -H	S	250	31,50 ZP
P 6,3	x 70 -H	S	250	53,00 ZP
P 6,3	x 80 -H	S	250	72,00 ZP

DIN	07504.019	RAZ 637
7504	**Steel zinc plated**	**type P-T**



Drilling screws, P = countersunk head*, T = hexalobular socket, with tapping screw thread

hardened
*acc. to DIN 7982 (countersunk ⊀ = 80°)

Dimensions → TI-42 Corrosion protection → TI-217

P 2,9	x 13 -T10	S	1000	6,70 ZP
P 3,5	x 13 -T15	S	1000	7,70 ZP
P 3,5	x 16 -T15	S	1000	7,90 ZP
P 3,5	x 19 -T15	S	1000	8,10 ZP
P 3,5	x 22 -T15	S	1000	8,90 ZP
P 3,5	x 25 -T15	S	1000	9,20 ZP
P 3,9	x 13 -T20	S	1000	7,50 ZP
P 3,9	x 16 -T20	S	1000	7,60 ZP
P 3,9	x 19 -T20	S	1000	7,60 ZP
P 3,9	x 22 -T20	S	1000	8,50 ZP
P 3,9	x 25 -T20	S	1000	8,80 ZP
P 3,9	x 32 -T20	S	1000	9,90 ZP
P 3,9	x 38 -T20	S	500	12,20 ZP
P 4,2	x 13 -T20	S	1000	9,30 ZP
P 4,2	x 16 -T20	S	1000	9,60 ZP
P 4,2	x 19 -T20	S	1000	9,80 ZP
P 4,2	x 22 -T20	S	1000	11,10 ZP
P 4,2	x 25 -T20	S	1000	11,70 ZP
P 4,2	x 32 -T20	S	500	12,50 ZP
P 4,2	x 38 -T20	S	500	14,00 ZP
P 4,2	x 45 -T20	S	500	15,60 ZP
P 4,2	x 50 -T20	S	500	19,50 ZP
P 4,8	x 16 -T25	S	1000	10,00 ZP
P 4,8	x 19 -T25	S	1000	11,50 ZP
P 4,8	x 22 -T25	S	1000	12,10 ZP
P 4,8	x 25 -T25	S	500	12,20 ZP

Dimensions	PU	Pieces	€/100/Mat.
P 4,8 x 32 -T25	S	500	13,30 ZP
P 4,8 x 38 -T25	S	500	14,60 ZP
P 4,8 x 45 -T25	S	500	17,40 ZP
P 4,8 x 50 -T25	S	250	19,90 ZP
P 5,5 x 19 -T25	S	250	14,90 ZP
P 5,5 x 22 -T25	S	250	14,90 ZP
P 5,5 x 25 -T25	S	250	14,90 ZP
P 5,5 x 32 -T25	S	250	16,20 ZP
P 5,5 x 38 -T25	S	250	17,50 ZP
P 5,5 x 45 -T25	S	250	19,60 ZP
P 5,5 x 50 -T25	S	250	21,60 ZP
P 6,3 x 19 -T30	S	250	21,40 ZP
P 6,3 x 22 -T30	S	250	21,40 ZP
P 6,3 x 25 -T30	S	250	21,40 ZP
P 6,3 x 32 -T30	S	250	22,70 ZP
P 6,3 x 38 -T30	S	250	24,00 ZP
P 6,3 x 45 -T30	S	250	27,50 ZP
P 6,3 x 50 -T30	S	250	30,00 ZP
P 6,3 x 60 -T30	S	250	31,50 ZP
P 6,3 x 70 -T30	S	250	53,00 ZP
P 6,3 x 80 -T30	S	100	68,00 ZP

DIN	07513.011	RAZ 639
7513	**Steel zinc plated**	

Thread cutting screws, A = hexagon head acc. to DIN 933

hardened

Dimensions → TI-44 Corrosion protection → TI-217

AM 4	x 8	S	1000	18,00 ZP
AM 4	x 10	S	1000	16,00 ZP
AM 4	x 12	S	1000	12,00 ZP
AM 4	x 16	S	1000	18,30 ZP
AM 4	x 20	S	1000	21,90 ZP
AM 4	x 25	S	1000	27,85 ZP
AM 5	x 10	S	1000	14,10 ZP
AM 5	x 12	S	1000	14,80 ZP
AM 5	x 16	S	1000	15,30 ZP
AM 5	x 20	S	500	20,00 ZP
AM 5	x 25	S	500	28,00 ZP
AM 5	x 30	S	500	36,00 ZP
AM 6	x 12	S	1000	28,00 ZP
AM 6	x 16	S	500	29,50 ZP
AM 6	x 20	S	500	30,50 ZP
AM 6	x 25	S	500	31,50 ZP
AM 6	x 30	S	500	39,00 ZP
AM 6	x 35	S	500	52,00 ZP
AM 8	x 16	S	100	42,50 ZP
AM 8	x 20	S	100	45,00 ZP
AM 8	x 25	S	100	47,00 ZP
AM 8	x 30	S	100	59,00 ZP
AM 8	x 35	S	100	68,00 ZP
AM 8	x 40	S	100	80,00 ZP
AM 8	x 45	S	50	92,00 ZP
AM 8	x 50	S	50	105,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	07513.012		RAZ 639
7513	**Steel zinc plated**		**type B**

Thread cutting screws, B = slotted cheese head acc. DIN 84

hardened

Dimensions → TI-44 Corrosion protection → TI-217

BM 3	x	6	S	1000	6,10 ZP
BM 3	x	8	S	1000	6,10 ZP
BM 3	x	10	S	1000	6,10 ZP
BM 3	x	12	S	1000	6,30 ZP
BM 3	x	16	S	1000	8,00 ZP
BM 3	x	20	S	1000	10,00 ZP
BM 4	x	8	S	1000	8,20 ZP
BM 4	x	10	S	1000	8,40 ZP
BM 4	x	12	S	1000	8,60 ZP
BM 4	x	16	S	1000	9,10 ZP
BM 4	x	20	S	1000	9,80 ZP
BM 4	x	25	S	1000	14,00 ZP
BM 5	x	10	S	1000	10,20 ZP
BM 5	x	12	S	1000	10,80 ZP
BM 5	x	16	S	1000	11,20 ZP
BM 5	x	20	S	1000	12,00 ZP
BM 6	x	12	S	1000	15,00 ZP
BM 6	x	16	S	500	17,75 ZP
BM 6	x	20	S	500	22,80 ZP
BM 6	x	25	S	500	25,00 ZP

DIN	07516.011	RAZ 639
7516	**Steel zinc plated**	**type A-H**

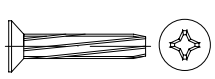
Thread cutting screws, A = pan head acc. to DIN 7985, H = with Phillips cross recess H

hardened

Dimensions → TI-45 Corrosion protection → TI-217

AM 3	x	6 -H	S	2000	8,20 ZP
AM 3	x	8 -H	S	2000	8,20 ZP
AM 3	x	10 -H	S	2000	8,30 ZP
AM 3	x	12 -H	S	2000	8,50 ZP
AM 3	x	16 -H	S	2000	8,70 ZP
AM 4	x	6 -H	S	2000	10,90 ZP
AM 4	x	8 -H	S	2000	10,90 ZP
AM 4	x	10 -H	S	2000	11,00 ZP
AM 4	x	12 -H	S	2000	11,40 ZP
AM 4	x	16 -H	S	2000	11,70 ZP
AM 4	x	20 -H	S	1000	12,50 ZP
AM 4	x	25 -H	S	1000	12,60 ZP
AM 4	x	30 -H	S	1000	13,40 ZP
AM 5	x	10 -H	S	2000	13,60 ZP
AM 5	x	12 -H	S	1000	14,10 ZP
AM 5	x	16 -H	S	1000	14,30 ZP
AM 5	x	20 -H	S	500	15,60 ZP
AM 5	x	25 -H	S	500	16,50 ZP
AM 5	x	30 -H	S	500	17,50 ZP
AM 5	x	35 -H	S	500	20,75 ZP
AM 5	x	40 -H	S	500	25,60 ZP
AM 6	x	12 -H	S	500	29,00 ZP
AM 6	x	16 -H	S	500	26,00 ZP
AM 6	x	20 -H	S	500	27,50 ZP
AM 6	x	25 -H	S	500	29,00 ZP
AM 6	x	30 -H	S	500	30,00 ZP
AM 6	x	35 -H	S	500	32,75 ZP
AM 6	x	40 -H	S	250	37,80 ZP
AM 6	x	50 -H	S	250	42,50 ZP
AM 8	x	16 -H	S	500	38,00 ZP
AM 8	x	20 -H	S	500	41,50 ZP
AM 8	x	25 -H	S	500	46,75 ZP
AM 8	x	30 -H	S	500	52,00 ZP
AM 8	x	35 -H	S	500	65,00 ZP
AM 8	x	40 -H	S	500	78,00 ZP

DIN	07516.014	RAZ 639
7516	**Steel zinc plated**	**type D-H**



Thread cutting screws, D = counters. head acc. to DIN 965, H = with Phillips cross recess H

hardened

Dimensions → TI-45 Corrosion protection → TI-217

DM 3	x	6 -H	S	2000	8,00 ZP
DM 3	x	8 -H	S	2000	8,00 ZP
DM 3	x	10 -H	S	2000	8,10 ZP
DM 3	x	12 -H	S	2000	8,40 ZP
DM 3	x	16 -H	S	2000	8,40 ZP
DM 4	x	8 -H	S	2000	11,00 ZP
DM 4	x	10 -H	S	2000	10,80 ZP
DM 4	x	12 -H	S	2000	10,90 ZP
DM 4	x	16 -H	S	2000	11,10 ZP
DM 4	x	20 -H	S	1000	12,10 ZP
DM 4	x	25 -H	S	1000	14,00 ZP
DM 5	x	10 -H	S	2000	12,90 ZP
DM 5	x	12 -H	S	1000	12,90 ZP
DM 5	x	16 -H	S	1000	13,40 ZP
DM 5	x	20 -H	S	500	14,30 ZP
DM 5	x	25 -H	S	500	15,30 ZP
DM 5	x	30 -H	S	500	20,00 ZP
DM 6	x	12 -H	S	1000	24,40 ZP
DM 6	x	16 -H	S	500	24,40 ZP
DM 6	x	20 -H	S	500	26,00 ZP
DM 6	x	25 -H	S	500	27,50 ZP
DM 6	x	30 -H	S	500	28,50 ZP
DM 6	x	35 -H	S	500	30,00 ZP
DM 6	x	40 -H	S	250	34,00 ZP
DM 6	x	45 -H	S	250	54,00 ZP
DM 6	x	50 -H	S	250	62,50 ZP
DM 6	x	60 -H	S	250	75,75 ZP
DM 8	x	16 -H	S	100	60,00 ZP
DM 8	x	20 -H	S	100	58,00 ZP
DM 8	x	25 -H	S	100	65,00 ZP
DM 8	x	30 -H	S	100	75,00 ZP
DM 8	x	35 -H	S	100	88,00 ZP
DM 8	x	40 -H	S	100	99,50 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	07516.015		RAZ 639
7516	**Steel zinc plated**		**type E-H**

Thread cutting screws, E = raised countersunk head*, H = with Phillips cross recess H

hardened
*acc. to DIN 966

Dimensions → TI-45 Corrosion protection → TI-217

EM 3	x	6 -H	S	2000	14,80 ZP
EM 3	x	8 -H	S	2000	14,80 ZP
EM 3	x	10 -H	S	2000	15,30 ZP
EM 3	x	12 -H	S	2000	15,60 ZP
EM 3	x	16 -H	S	1000	17,75 ZP
EM 3	x	20 -H	S	1000	18,50 ZP
EM 4	x	8 -H	S	2000	17,40 ZP
EM 4	x	10 -H	S	2000	15,80 ZP
EM 4	x	12 -H	S	2000	21,00 ZP
EM 4	x	16 -H	S	2000	15,70 ZP
EM 4	x	20 -H	S	1000	17,20 ZP
EM 4	x	25 -H	S	1000	28,00 ZP
EM 5	x	10 -H	S	1000	24,00 ZP
EM 5	x	12 -H	S	1000	24,00 ZP
EM 5	x	16 -H	S	1000	19,10 ZP
EM 5	x	20 -H	S	500	20,20 ZP
EM 5	x	25 -H	S	500	28,50 ZP
EM 5	x	30 -H	S	500	37,00 ZP
EM 6	x	12 -H	S	1000	45,50 ZP
EM 6	x	16 -H	S	500	35,00 ZP
EM 6	x	20 -H	S	500	48,10 ZP
EM 6	x	25 -H	S	500	51,00 ZP
EM 6	x	30 -H	S	500	53,00 ZP
EM 6	x	35 -H	S	500	56,00 ZP
EM 6	x	40 -H	S	500	63,00 ZP
EM 6	x	50 -H	S	500	15,08 ZP
EM 6	x	60 -H	S	500	16,87 ZP
EM 8	x	16 -H	S	500	115,00 ZP
EM 8	x	20 -H	S	250	110,00 ZP
EM 8	x	25 -H	S	250	125,00 ZP
EM 8	x	30 -H	S	250	140,00 ZP
EM 8	x	35 -H	S	250	175,00 ZP

~DIN	07516.018	RAZ 639
7516	**Steel zinc plated**	**type AE-ISR**

Thread cutting screws, AE = pan head acc. to ISO 7045, ISR = hexalobular socket

hardened

Pin wrench → ~ DIN 911 ISR,
Bits → article 88655

Dimensions → TI-45 Corrosion protection → TI-217

AE M 4	x	12 -T20	S	2000	15,50 ZP
AE M 4	x	16 -T20	S	2000	16,00 ZP
AE M 4	x	20 -T20	S	1000	16,90 ZP

Dimensions			PU	Pieces	€/100/Mat.
AE M 5	x	10 -T25	S	1000	18,50 ZP
AE M 5	x	12 -T25	S	1000	19,10 ZP
AE M 5	x	16 -T25	S	1000	19,50 ZP
AE M 5	x	20 -T25	S	500	21,10 ZP
AE M 5	x	25 -T25	S	500	22,30 ZP
AE M 6	x	12 -T30	S	1000	40,00 ZP
AE M 6	x	16 -T30	S	500	35,10 ZP
AE M 6	x	20 -T30	S	500	37,20 ZP
AE M 6	x	25 -T30	S	500	39,15 ZP

~DIN | 07516.017 | RAZ 639

7516 Steel zinc plated type DE-ISR

**Thread cutting screws,
DE = countersunk head*,
ISR = hexalobular socket**

hardened,
*acc. to ISO 7046-1

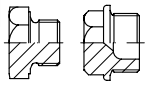
Pin wrench ➔ ~ DIN 911 ISR,
Bits ➔ article 88655

Dimensions ➔ TI-45 Corrosion protection ➔ TI-217

DE M 3	x	6 -T10	S	2000	11,00 ZP
DE M 3	x	8 -T10	S	2000	11,00 ZP
DE M 3	x	10 -T10	S	2000	11,20 ZP
DE M 3	x	12 -T10	S	2000	11,50 ZP
DE M 3	x	16 -T10	S	1000	11,50 ZP
DE M 3	x	20 -T10	S	1000	14,40 ZP
DE M 4	x	8 -T20	S	2000	14,90 ZP
DE M 4	x	10 -T20	S	2000	15,75 ZP
DE M 4	x	12 -T20	S	2000	16,00 ZP
DE M 4	x	16 -T20	S	2000	16,75 ZP
DE M 4	x	20 -T20	S	1000	17,30 ZP
DE M 4	x	25 -T20	S	1000	18,90 ZP
DE M 5	x	10 -T25	S	1000	17,50 ZP
DE M 5	x	12 -T25	S	1000	17,50 ZP
DE M 5	x	16 -T25	S	1000	18,50 ZP
DE M 5	x	20 -T25	S	500	20,00 ZP
DE M 5	x	25 -T25	S	500	22,00 ZP
DE M 5	x	30 -T25	S	500	27,00 ZP
DE M 6	x	12 -T30	S	1000	33,00 ZP
DE M 6	x	16 -T30	S	500	33,00 ZP
DE M 6	x	20 -T30	S	500	35,10 ZP
DE M 6	x	25 -T30	S	500	37,20 ZP
DE M 6	x	30 -T30	S	500	38,50 ZP
DE M 6	x	35 -T30	S	500	40,50 ZP
DE M 6	x	40 -T30	S	500	45,90 ZP
DE M 6	x	45 -T30	S	500	49,00 ZP
DE M 6	x	50 -T30	S	500	56,00 ZP
DE M 8	x	20 -T45	S	250	84,00 ZP
DE M 8	x	25 -T45	S	250	88,00 ZP
DE M 8	x	30 -T45	S	250	105,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	07604.001				RAZ 640

7604 Steel type A



≤ M 16 ≥ M 18

**Hexagon head screw plugs
with collar, light type,
A = short stud end,
cylindrical fine pitch thread**

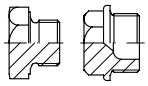
Dimensions ➔ TI-24

Stainless ➔ S. 535

AM 10	x	1	S	100	78,00
AM 12	x	1,5	S	50	113,00
AM 14	x	1,5	S	50	134,00
AM 16	x	1,5	S	50	169,00
AM 18	x	1,5	S	25	194,00
AM 22	x	1,5	S	25	215,00
AM 26	x	1,5	S	25	395,00
AM 30	x	1,5	S	25	480,00

DIN | 07604.011 | RAZ 640

7604 Steel zinc plated type A



≤ M 16 ≥ M 18

**Hexagon head screw plugs
with collar, light type,
A = short stud end,
cylindrical fine pitch thread**

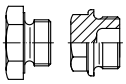
Dimensions ➔ TI-24 Corrosion protection ➔ TI-217

Stainless ➔ S. 535

AM 10	x	1	S	100	83,00 ZP
AM 12	x	1,5	S	50	121,00 ZP
AM 14	x	1,5	S	50	142,00 ZP
AM 16	x	1,5	S	50	182,00 ZP
AM 18	x	1,5	S	25	214,00 ZP
AM 22	x	1,5	S	25	245,00 ZP
AM 26	x	1,5	S	25	430,00 ZP
AM 30	x	1,5	S	25	520,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
DIN	07604.003				RAZ 640

7604 Steel type C



≤ M 16 ≥ M 18

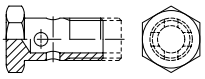
**Hexagon head screw plugs
with collar, light type,
C = long stud end,
cylindrical fine pitch thread**

Dimensions ➔ TI-24

CM 8	x	1	S	100	68,00
CM 10	x	1	S	100	78,00
CM 22	x	1,5	S	25	305,00
CM 26	x	1,5	S	25	420,00
CM 30	x	1,5	S	25	520,00
CM 38	x	1,5	S	10	790,00
CM 45	x	1,5	S	1	1110,00
CM 52	x	1,5	S	1	1780,00

DIN | 07643.060 | RAZ 640

7643 Steel zinc plated yellow



**Hollow screws for ring type banjos,
short thread length**

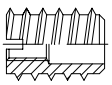
Dimensions ➔ TI-34 Corrosion protection ➔ TI-217

Pipe outside ∅ = number of holes - thread

4-5-3	M 8	x	1	S	50	187,00 YZP
6-3	M10	x	1	S	50	225,00 YZP
8-3	M12	x	1,5	S	50	285,00 YZP
10-3	M14	x	1,5	S	25	345,00 YZP
12-3	M16	x	1,5	S	25	495,00 YZP
15-3	M18	x	1,5	S	25	690,00 YZP
18-3	M22	x	1,5	S	10	1380,00 YZP
22-4	M26	x	1,5	S	10	2150,00 YZP

DIN | 07965.000 | RAZ 640

7965 Steel



Screwed inserts "RAMPA"

Dimensions ➔ TI-77

Brass ➔ S. 594

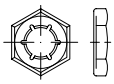
internal thread x length

M 3	x	8	S	100	25,50
M 3	x	10	S	100	27,50
M 3	x	12	S	100	30,50
M 4	x	8	S	100	23,50
M 4	x	10	S	100	24,80

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	12	S	100	28,50
M 4	x	15	S	100	35,00
M 5	x	10	S	100	29,50
M 5	x	12	S	100	31,50
M 5	x	15	S	100	39,00
M 5	x	18	S	100	46,00
M 5	x	20	S	100	55,00
M 6	x	12	S	100	36,50
M 6	x	15	S	100	42,00
M 6	x	18	S	100	51,00
M 6	x	20	S	100	57,00
M 6	x	25	S	100	75,00
M 6	x	30	S	100	119,00
M 8	x	18	S	100	76,00
M 8	x	30	S	100	152,00
M 10	x	20	S	100	124,00
M 10	x	25	S	100	156,00
M 10	x	30	S	100	183,00
M 10	x	40	S	100	243,00
M 12	x	25	S	100	227,00
M 12	x	30	S	50	275,00

~DIN | 07967.000 | RAZ 640

7967 Spring steel



Self locking counter nuts

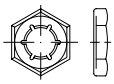
Dimensions → TI-67

Stainless → S. 536

M 6	S	1000	7,70
M 8	S	1000	8,30
M 10	S	1000	10,30
M 12	S	1000	14,90
M 16	S	500	21,10
M 20	S	250	34,50
M 22	S	200	72,00
M 24	S	200	56,00
M 27	S	100	79,00
M 30	S	100	93,00
M 33	S	50	165,00
M 36	S	25	395,00
M 42	S	1	500,00
M 48	S	1	730,00

~DIN | 07967.010 | RAZ 640

7967 Spring steel zinc plated



Self locking counter nuts

Dimensions → TI-67 Corrosion protection → TI-217

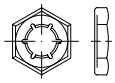
Stainless → S. 536

M 6	S	1000	8,70 ZP
M 6	K	100	11,80 ZP
M 8	S	1000	11,30 ZP
M 8	K	100	14,40 ZP
M 10	S	1000	11,80 ZP
M 10	K	100	14,90 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 12	S	1000	16,00 ZP
M 12	K	100	19,10 ZP
M 14	S	500	36,00 ZP
M 14	K	100	41,50 ZP
M 16	S	500	22,60 ZP
M 16	K	100	26,00 ZP
M 20	S	250	39,00 ZP
M 20	K	100	42,50 ZP
M 22	S	200	80,00 ZP
M 22	K	100	85,00 ZP
M 24	S	200	72,00 ZP
M 24	K	100	76,00 ZP
M 27	S	100	117,00 ZP
M 30	S	100	125,00 ZP
M 33	S	50	199,00 ZP
M 36	S	25	460,00 ZP
M 42	S	1	600,00 ZP
M 48	S	1	890,00 ZP

~DIN | 07967.020 | RAZ 640

7967 Spring steel hot dip galvanized



Self locking counter nuts

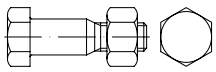
Dimensions → TI-67 Corrosion protection → TI-219

Stainless → S. 536

M 8	S	100	16,00 HDG
M 10	S	100	17,10 HDG
M 12	S	100	21,60 HDG
M 16	S	100	29,50 HDG
M 20	S	100	47,00 HDG
M 22	S	100	104,00 HDG
M 24	S	100	91,00 HDG
M 27	S	100	189,00 HDG
M 30	S	100	217,00 HDG
M 33	S	50	300,00 HDG
M 36	S	25	500,00 HDG
M 42	S	1	800,00 HDG
M 48	S	1	1000,00 HDG

DIN | 07968.500 | RAZ 650

7968 Mu 5.6 SB



Hexagon fit bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

Dimensions → TI-56 Tightening torque → TI-234

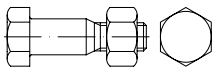
Mech. properties → TI-220

Declaration of performance → www.reyher.de

M 12	x	35	S	100	1100,00
M 12	x	40	S	100	1210,00
M 12	x	45	S	100	1250,00

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	50	S	100	1290,00
M 12	x	55	S	100	1340,00
M 12	x	60	S	100	1450,00
M 12	x	70	S	50	1700,00
M 12	x	100	S	50	2080,00
M 16	x	35	S	50	720,00
M 16	x	40	S	50	760,00
M 16	x	45	S	50	770,00
M 16	x	50	S	50	790,00
M 16	x	55	S	50	810,00
M 16	x	60	S	50	830,00
M 16	x	65	S	25	860,00
M 16	x	70	S	25	870,00
M 16	x	75	S	25	890,00
M 16	x	80	S	25	910,00
M 16	x	90	S	25	950,00
M 16	x	100	S	25	1330,00
M 16	x	110	S	25	1460,00
M 16	x	120	S	25	1530,00
M 20	x	40	S	25	890,00
M 20	x	45	S	25	920,00
M 20	x	50	S	25	950,00
M 20	x	55	S	25	1000,00
M 20	x	60	S	25	1020,00
M 20	x	65	S	25	1040,00
M 20	x	70	S	25	1070,00
M 20	x	75	S	25	1090,00
M 20	x	80	S	25	1110,00
M 20	x	85	S	25	1210,00
M 20	x	90	S	25	1170,00
M 20	x	100	S	25	1220,00
M 20	x	110	S	25	1580,00
M 20	x	120	S	25	1660,00
M 20	x	130	S	25	1820,00
M 20	x	140	S	25	1910,00
M 24	x	50	S	25	1020,00
M 24	x	55	S	25	1040,00
M 24	x	60	S	25	1050,00
M 24	x	65	S	25	1090,00
M 24	x	70	S	25	1110,00
M 24	x	75	S	25	1130,00
M 24	x	80	S	25	1160,00
M 24	x	85	S	10	1270,00
M 24	x	90	S	10	1210,00
M 24	x	95	S	10	1350,00
M 24	x	100	S	10	1270,00
M 24	x	105	S	10	1540,00
M 24	x	110	S	10	1610,00
M 24	x	115	S	10	2090,00
M 24	x	120	S	10	1690,00
M 24	x	125	S	10	2220,00
M 24	x	130	S	10	2090,00
M 24	x	140	S	10	2220,00
M 27	x	60	S	10	1340,00
M 27	x	65	S	10	1380,00
M 27	x	70	S	10	1420,00
M 27	x	75	S	10	1440,00
M 27	x	80	S	10	1480,00
M 27	x	85	S	10	1600,00
M 27	x	90	S	10	1540,00
M 27	x	95	S	10	1690,00
M 27	x	100	S	10	1600,00
M 27	x	105	S	10	1820,00
M 27	x	110	S	10	1690,00
M 27	x	115	S	10	2350,00
M 27	x	120	S	10	1820,00
M 27	x	130	S	10	2350,00
M 27	x	140	S	10	2470,00
M 30	x	80	S	10	2330,00
M 30	x	90	S	10	2460,00
M 30	x	100	S	10	2600,00
M 30	x	120	S	10	2950,00
M 30	x	130	S	10	3050,00

Dimensions	PU Pieces	€/100/Mat.
DIN	07968.510	RAZ 650
7968	**Mu 5.6 zinc plated**	**SB**



Hexagon fit bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

Dimensions → TI-56 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-234

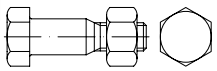
Declaration of performance → www.reyher.de

M 12	x	40	S	100	1220,00 ZP
M 12	x	45	S	100	1270,00 ZP
M 12	x	50	S	100	1320,00 ZP
M 12	x	55	S	100	1360,00 ZP
M 16	x	40	S	50	790,00 ZP
M 16	x	45	S	50	810,00 ZP
M 16	x	50	S	50	840,00 ZP
M 16	x	55	S	50	860,00 ZP
M 16	x	60	S	50	880,00 ZP
M 16	x	70	S	25	930,00 ZP
M 20	x	45	S	25	1000,00 ZP
M 20	x	50	S	25	1030,00 ZP
M 20	x	55	S	25	1080,00 ZP
M 20	x	60	S	25	1100,00 ZP
M 20	x	65	S	25	1130,00 ZP
M 20	x	70	S	25	1160,00 ZP
M 20	x	75	S	25	1180,00 ZP
M 20	x	80	S	25	1200,00 ZP
M 20	x	90	S	25	1280,00 ZP
M 20	x	100	S	25	1350,00 ZP
M 24	x	60	S	25	1190,00 ZP
M 24	x	65	S	25	1210,00 ZP
M 24	x	70	S	25	1250,00 ZP
M 24	x	75	S	25	1280,00 ZP
M 24	x	80	S	25	1300,00 ZP
M 24	x	90	S	10	1370,00 ZP
M 24	x	100	S	10	1440,00 ZP
M 24	x	105	S	10	1710,00 ZP

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions	PU Pieces	€/100/Mat.
DIN	07968.520	RAZ 650
7968	**Mu 5.6 hot dip galvanized**	**SB**



Hexagon fit bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

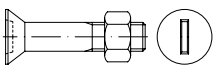
Caution! See information box.

Dimensions → TI-56 Corrosion protection → TI-219
Mech. properties → TI-220 Tightening torque → TI-234

Declaration of performance → www.reyher.de

M 12	x	35	S	100	1130,00 HDG
M 12	x	40	S	100	1240,00 HDG
M 12	x	45	S	100	1280,00 HDG
M 12	x	50	S	100	1330,00 HDG
M 12	x	55	S	100	1370,00 HDG
M 12	x	60	S	100	1500,00 HDG
M 12	x	65	S	50	1680,00 HDG
M 12	x	70	S	50	1750,00 HDG
M 12	x	80	S	50	1920,00 HDG
M 12	x	90	S	50	2020,00 HDG
M 12	x	100	S	50	2150,00 HDG
M 16	x	40	S	50	810,00 HDG
M 16	x	45	S	50	840,00 HDG
M 16	x	50	S	50	860,00 HDG
M 16	x	55	S	50	880,00 HDG
M 16	x	60	S	50	910,00 HDG
M 16	x	65	S	25	930,00 HDG
M 16	x	70	S	25	950,00 HDG
M 16	x	75	S	25	970,00 HDG
M 16	x	80	S	25	1000,00 HDG
M 16	x	90	S	25	1040,00 HDG
M 16	x	100	S	25	1440,00 HDG
M 16	x	110	S	25	1580,00 HDG
M 16	x	120	S	25	1660,00 HDG
M 20	x	40	S	25	1000,00 HDG
M 20	x	45	S	25	1030,00 HDG
M 20	x	50	S	25	1080,00 HDG
M 20	x	55	S	25	1120,00 HDG
M 20	x	60	S	25	1140,00 HDG
M 20	x	65	S	25	1180,00 HDG
M 20	x	70	S	25	1210,00 HDG
M 20	x	75	S	25	1240,00 HDG
M 20	x	80	S	25	1260,00 HDG
M 20	x	85	S	25	1370,00 HDG
M 20	x	90	S	25	1340,00 HDG
M 20	x	100	S	25	1410,00 HDG
M 20	x	110	S	25	1770,00 HDG
M 20	x	120	S	25	1860,00 HDG
M 20	x	130	S	25	2030,00 HDG
M 20	x	140	S	25	2140,00 HDG
M 24	x	60	S	25	1260,00 HDG
M 24	x	65	S	25	1290,00 HDG
M 24	x	70	S	25	1330,00 HDG
M 24	x	75	S	25	1360,00 HDG
M 24	x	80	S	25	1400,00 HDG
M 24	x	90	S	10	1460,00 HDG
M 24	x	100	S	10	1530,00 HDG

Dimensions	PU Pieces	€/100/Mat.
DIN	07969.410	RAZ 650
7969	**Mu 4.6 zinc plated**	**SB**



Slotted countersunk head bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

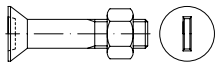
Dimensions → TI-56 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-234

Declaration of performance → www.reyher.de

M 12	x	30	S	100	616,00 ZP
M 12	x	35	S	100	616,00 ZP
M 12	x	40	S	100	582,00 ZP
M 12	x	45	S	100	582,00 ZP
M 12	x	50	S	100	531,00 ZP
M 12	x	55	S	100	474,00 ZP
M 12	x	60	S	100	508,00 ZP
M 12	x	65	S	50	536,00 ZP
M 12	x	70	S	50	565,00 ZP
M 12	x	80	S	50	605,00 ZP
M 16	x	30	S	50	696,00 ZP
M 16	x	35	S	50	696,00 ZP
M 16	x	40	S	50	685,00 ZP
M 16	x	45	S	50	685,00 ZP
M 16	x	50	S	50	673,00 ZP
M 16	x	55	S	50	616,00 ZP
M 16	x	60	S	50	730,00 ZP
M 16	x	65	S	25	878,00 ZP
M 16	x	70	S	25	947,00 ZP
M 16	x	75	S	25	981,00 ZP
M 16	x	80	S	25	1015,00 ZP
M 16	x	90	S	25	1072,00 ZP
M 16	x	100	S	25	1118,00 ZP
M 16	x	140	S	25	1255,00 ZP
M 20	x	45	S	25	1084,00 ZP
M 20	x	50	S	25	1084,00 ZP
M 20	x	55	S	25	1095,00 ZP
M 20	x	60	S	25	1118,00 ZP
M 20	x	65	S	25	1152,00 ZP
M 20	x	70	S	25	1186,00 ZP
M 20	x	75	S	25	1198,00 ZP
M 20	x	80	S	25	1220,00 ZP
M 20	x	90	S	25	1266,00 ZP
M 20	x	100	S	25	1300,00 ZP
M 24	x	60	S	25	1950,00 ZP
M 24	x	70	S	25	2018,00 ZP
M 24	x	80	S	25	2110,00 ZP
M 24	x	90	S	10	2212,00 ZP
M 24	x	100	S	10	2303,00 ZP
M 24	x	110	S	10	2395,00 ZP
M 24	x	120	S	10	2486,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	07969.420	RAZ 650

7969 Mu 4.6 hot dip galvanized SB



Slotted countersunk head bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

Caution! See information box.

Dimensions → TI-56 Corrosion protection → TI-219
Mech. properties → TI-220 Tightening torque → TI-234

Declaration of performance → www.reyher.de

M 12	x	35	S	100	628,00 HDG
M 12	x	40	S	100	593,00 HDG
M 12	x	45	S	100	593,00 HDG
M 16	x	45	S	50	696,00 HDG
M 16	x	50	S	50	685,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

DIN	07976.013	RAZ 660

7976 Steel, hard. zinc plated type C

Hexagon head tapping screws, C = with cone end

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

Stainless → S. 536

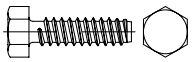
DIN 7976 → replaced by ISO 1479

C 2,9	x	6,5	S	2000	4,40 ZP
C 2,9	x	9,5	S	2000	4,10 ZP
C 2,9	x	13	S	2000	4,30 ZP
C 2,9	x	16	S	2000	5,20 ZP
C 2,9	x	19	S	2000	5,30 ZP
C 3,5	x	6,5	S	1000	4,75 ZP
C 3,5	x	9,5	S	1000	2,75 ZP
C 3,5	x	13	S	1000	3,25 ZP
C 3,5	x	16	S	1000	3,45 ZP

Dimensions	PU Pieces	€/100/Mat.
C 3,5 x 19	S 1000	3,80 ZP
C 3,5 x 22	S 1000	4,05 ZP
C 3,5 x 25	S 1000	4,25 ZP
C 3,9 x 6,5	S 1000	5,30 ZP
C 3,9 x 9,5	S 1000	4,10 ZP
C 3,9 x 13	S 1000	4,35 ZP
C 3,9 x 16	S 1000	5,60 ZP
C 3,9 x 19	S 1000	4,05 ZP
C 3,9 x 22	S 500	4,70 ZP
C 3,9 x 25	S 500	5,10 ZP
C 3,9 x 32	S 500	7,50 ZP
C 4,2 x 9,5	S 1000	4,45 ZP
C 4,2 x 13	S 1000	4,70 ZP
C 4,2 x 16	S 1000	5,70 ZP
C 4,2 x 19	S 500	5,90 ZP
C 4,2 x 22	S 500	6,30 ZP
C 4,2 x 25	S 500	7,30 ZP
C 4,2 x 32	S 500	7,50 ZP
C 4,2 x 38	S 500	8,70 ZP
C 4,2 x 45	S 500	12,75 ZP
C 4,2 x 50	S 500	16,85 ZP
C 4,8 x 9,5	S 500	5,90 ZP
C 4,8 x 13	S 500	4,80 ZP
C 4,8 x 16	S 500	5,90 ZP
C 4,8 x 19	S 500	6,20 ZP
C 4,8 x 22	S 500	9,00 ZP
C 4,8 x 25	S 500	9,30 ZP
C 4,8 x 32	S 250	11,80 ZP
C 4,8 x 38	S 250	13,60 ZP
C 4,8 x 45	S 250	24,20 ZP
C 4,8 x 50	S 250	27,50 ZP
C 5,5 x 13	S 500	7,50 ZP
C 5,5 x 16	S 500	8,10 ZP
C 5,5 x 19	S 500	8,70 ZP
C 5,5 x 22	S 500	10,00 ZP
C 5,5 x 25	S 250	12,40 ZP
C 5,5 x 32	S 250	13,70 ZP
C 5,5 x 38	S 250	15,30 ZP
C 5,5 x 45	S 250	30,10 ZP
C 5,5 x 50	S 250	35,00 ZP
C 5,5 x 60	S 250	43,00 ZP
C 6,3 x 13	S 250	8,70 ZP
C 6,3 x 16	S 250	9,00 ZP
C 6,3 x 19	S 250	10,00 ZP
C 6,3 x 22	S 250	10,70 ZP
C 6,3 x 25	S 250	13,00 ZP
C 6,3 x 32	S 250	14,80 ZP
C 6,3 x 38	S 250	16,20 ZP
C 6,3 x 45	S 250	23,10 ZP
C 6,3 x 50	S 250	26,50 ZP
C 6,3 x 60	S 250	77,20 ZP
C 6,3 x 70	S 250	95,00 ZP
C 6,3 x 80	S 250	118,00 ZP
C 8,0 x 16	S 250	23,90 ZP
C 8,0 x 19	S 250	24,10 ZP
C 8,0 x 22	S 250	33,50 ZP
C 8,0 x 25	S 250	32,50 ZP
C 8,0 x 32	S 250	35,50 ZP
C 8,0 x 38	S 250	36,00 ZP
C 8,0 x 45	S 250	49,50 ZP
C 8,0 x 50	S 250	54,00 ZP
C 8,0 x 60	S 200	69,00 ZP
C 8,0 x 80	S 200	98,00 ZP

Dimensions	PU Pieces	€/100/Mat.
DIN	07976.015	RAZ 660

7976 Steel, hard. zinc plated type F



Hexagon head tapping screws, F = with flat end

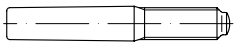
Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

DIN 7976 → replaced by ISO 1479

4,2	x	9,5 -F	S	500	8,00 ZP
4,2	x	13 -F	S	500	8,20 ZP
4,2	x	16 -F	S	500	8,25 ZP
4,2	x	19 -F	S	500	8,25 ZP
4,2	x	25 -F	S	500	8,50 ZP
4,8	x	9,5 -F	S	500	8,00 ZP
4,8	x	13 -F	S	500	7,00 ZP
4,8	x	16 -F	S	500	8,00 ZP
4,8	x	19 -F	S	250	8,25 ZP
4,8	x	22 -F	S	250	8,40 ZP
4,8	x	25 -F	S	500	8,50 ZP
6,3	x	16 -F	S	250	12,70 ZP
6,3	x	19 -F	S	250	14,00 ZP
6,3	x	22 -F	S	250	16,80 ZP
6,3	x	25 -F	S	250	17,90 ZP

DIN	07977.000	RAZ 670

7977 Steel



Taper pins with external thread and constant threaded part, taper 1: 50

Dimensions → TI-116 Standard conversion → TI-10

DIN 7977 → replaced by ISO 8737, type with constant taper lengths → DIN 258

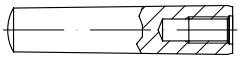
5	x	40	S	25	114,00
5	x	45	S	25	122,00
5	x	50	S	25	128,00
6	x	40	S	25	136,00
6	x	45	S	25	144,00
6	x	50	S	25	144,00
6	x	55	S	10	185,00
6	x	60	S	10	157,00
8	x	50	S	10	194,00
8	x	55	S	10	194,00
8	x	60	S	10	198,00
8	x	65	S	10	206,00
8	x	75	S	10	222,00
8	x	85	S	10	280,00
8	x	100	S	10	355,00
10	x	50	S	10	260,00
10	x	60	S	10	270,00
10	x	65	S	10	270,00
10	x	75	S	10	285,00
10	x	85	S	10	315,00
10	x	100	S	10	345,00

Dimensions			PU	Pieces	€/100/Mat.
10	x	120	S	1	480,00
12	x	75	S	10	375,00
12	x	80	S	10	485,00
12	x	85	S	10	385,00
12	x	100	S	10	440,00
12	x	120	S	10	610,00
12	x	140	S	5	620,00
13	x	75	S	10	560,00
13	x	85	S	10	540,00
13	x	100	S	10	590,00
13	x	140	S	10	920,00
14	x	85	S	10	445,00
14	x	100	S	10	510,00
16	x	85	S	5	590,00
16	x	100	S	5	620,00
16	x	120	S	5	790,00
16	x	140	S	1	1000,00
16	x	160	S	5	1050,00
20	x	100	S	1	1040,00
20	x	120	S	1	1080,00
20	x	140	S	1	1160,00
20	x	160	S	1	1270,00
20	x	190	S	1	4800,00

DIN | 07978.001 | RAZ 670

7978

Steel **type A**



Taper pins with internal thread,
A = grounded,
taper 1 : 50

Dimensions → TI-116 Standard conversion → TI-10

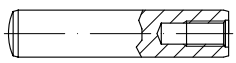
DIN 7978 → replaced by ISO 8736

A 6	x	16	S	25	128,00
A 6	x	20	S	25	130,00
A 6	x	24	S	25	141,00
A 6	x	26	S	25	142,00
A 6	x	28	S	25	146,00
A 6	x	30	S	25	149,00
A 6	x	32	S	25	151,00
A 6	x	36	S	25	157,00
A 6	x	40	S	25	157,00
A 6	x	45	S	25	162,00
A 6	x	50	S	25	168,00
A 6	x	55	S	25	174,00
A 6	x	60	S	25	218,00
A 6	x	70	S	25	244,00
A 6	x	80	S	25	265,00
A 8	x	20	S	10	168,00
A 8	x	24	S	10	179,00
A 8	x	26	S	10	183,00
A 8	x	28	S	10	185,00
A 8	x	30	S	10	189,00
A 8	x	32	S	10	192,00
A 8	x	36	S	10	199,00
A 8	x	40	S	10	201,00
A 8	x	45	S	10	211,00
A 8	x	50	S	10	217,00
A 8	x	55	S	10	224,00
A 8	x	60	S	10	231,00
A 8	x	70	S	10	260,00
A 8	x	80	S	10	275,00
A 8	x	90	S	10	300,00
A 8	x	100	S	10	395,00
A 10	x	28	S	10	226,00
A 10	x	30	S	10	231,00
A 10	x	32	S	10	233,00
A 10	x	36	S	10	240,00
A 10	x	40	S	10	247,00
A 10	x	45	S	10	260,00
A 10	x	50	S	10	265,00
A 10	x	55	S	10	275,00
A 10	x	60	S	10	280,00
A 10	x	70	S	10	325,00
A 10	x	80	S	10	355,00
A 10	x	90	S	10	385,00
A 10	x	100	S	10	415,00
A 10	x	120	S	5	570,00
A 12	x	36	S	10	305,00
A 12	x	40	S	10	315,00
A 12	x	45	S	10	325,00
A 12	x	50	S	10	340,00
A 12	x	55	S	10	350,00
A 12	x	60	S	10	365,00
A 12	x	70	S	10	395,00
A 12	x	80	S	10	445,00
A 12	x	90	S	10	475,00
A 12	x	100	S	10	510,00
A 16	x	40	S	10	460,00
A 16	x	45	S	10	485,00
A 16	x	50	S	10	510,00
A 16	x	55	S	10	530,00
A 16	x	60	S	10	560,00
A 16	x	70	S	5	600,00
A 16	x	80	S	5	640,00
A 16	x	90	S	5	690,00
A 16	x	100	S	5	760,00
A 16	x	120	S	5	2850,00
A 20	x	50	S	1	1020,00
A 20	x	55	S	1	1080,00
A 20	x	60	S	1	1130,00
A 20	x	70	S	1	1190,00
A 20	x	80	S	1	1270,00
A 20	x	90	S	1	1400,00
A 20	x	100	S	1	1520,00
A 20	x	120	S	1	1780,00

DIN | 07979.004 | RAZ 670

7979

Steel **type D/m6**



Parallel pins with internal thread,
D = hardened, tolerance m6

Dimensions → TI-115 Standard conversion → TI-10

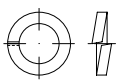
DIN 7979 → replaced by ISO 8735,
∅ 4 and 5 not standardized

D 4	x	10	S	100	315,00
D 4	x	12	S	100	315,00
D 4	x	16	S	100	229,00
D 4	x	20	S	100	220,00
D 4	x	24	S	100	360,00
D 5	x	10	S	100	105,00
D 5	x	12	S	100	180,00
D 5	x	16	S	100	105,00
D 5	x	18	S	100	111,00
D 5	x	20	S	100	111,00
D 5	x	24	S	100	117,00
D 5	x	28	S	100	122,00
D 5	x	30	S	50	128,00
D 5	x	32	S	50	132,00
D 5	x	36	S	50	138,00
D 5	x	40	S	50	145,00
D 5	x	45	S	50	148,00
D 5	x	50	S	50	153,00
D 6	x	10	S	25	201,00
D 6	x	12	S	25	195,00
D 6	x	14	S	25	175,00
D 6	x	16	S	25	111,00
D 6	x	18	S	25	114,00
D 6	x	20	S	25	117,00
D 6	x	22	S	25	120,00
D 6	x	24	S	25	122,00
D 6	x	26	S	25	125,00
D 6	x	28	S	25	128,00
D 6	x	30	S	25	132,00
D 6	x	32	S	25	134,00
D 6	x	36	S	25	141,00
D 6	x	40	S	25	146,00
D 6	x	45	S	25	154,00
D 6	x	50	S	25	161,00
D 6	x	55	S	25	169,00
D 6	x	60	S	25	176,00
D 6	x	70	S	25	290,00
D 6	x	80	S	25	398,00
D 8	x	12	S	10	109,00
D 8	x	16	S	10	154,00
D 8	x	18	S	10	158,00
D 8	x	20	S	10	161,00
D 8	x	24	S	10	169,00
D 8	x	26	S	10	175,00
D 8	x	28	S	10	179,00
D 8	x	30	S	10	185,00
D 8	x	32	S	10	187,00
D 8	x	36	S	10	197,00
D 8	x	40	S	10	205,00
D 8	x	45	S	10	217,00
D 8	x	50	S	10	227,00
D 8	x	55	S	10	239,00
D 8	x	60	S	10	265,00
D 8	x	70	S	10	275,00
D 8	x	80	S	10	300,00
D 8	x	90	S	10	395,00
D 8	x	100	S	10	465,00
D 10	x	18	S	200	210,00
D 10	x	20	S	200	194,00
D 10	x	24	S	10	202,00
D 10	x	28	S	10	241,00
D 10	x	30	S	10	241,00
D 10	x	32	S	10	255,00
D 10	x	36	S	10	270,00
D 10	x	40	S	10	280,00
D 10	x	45	S	10	315,00
D 10	x	50	S	10	315,00
D 10	x	55	S	10	335,00
D 10	x	60	S	10	345,00
D 10	x	70	S	10	380,00
D 10	x	80	S	10	415,00
D 10	x	90	S	10	455,00
D 10	x	100	S	10	480,00
D 10	x	120	S	10	560,00
D 12	x	20	S	10	285,00
D 12	x	24	S	10	248,00
D 12	x	28	S	10	265,00
D 12	x	30	S	10	285,00
D 12	x	32	S	10	305,00
D 12	x	36	S	10	325,00
D 12	x	40	S	10	345,00
D 12	x	45	S	10	365,00
D 12	x	50	S	10	385,00
D 12	x	55	S	10	405,00
D 12	x	60	S	10	430,00
D 12	x	70	S	10	470,00
D 12	x	80	S	10	520,00
D 12	x	90	S	10	570,00
D 12	x	100	S	10	600,00
D 12	x	120	S	10	860,00
D 14	x	32	S	10	240,00

Dimensions			PU	Pieces	€/100/Mat.
D 14	x	40	S	10	495,00
D 14	x	50	S	10	530,00
D 14	x	60	S	10	560,00
D 14	x	80	S	10	790,00
D 16	x	28	S	10	600,00
D 16	x	30	S	10	600,00
D 16	x	32	S	10	600,00
D 16	x	36	S	10	600,00
D 16	x	40	S	10	600,00
D 16	x	45	S	10	640,00
D 16	x	50	S	5	710,00
D 16	x	55	S	5	780,00
D 16	x	60	S	1	830,00
D 16	x	70	S	1	880,00
D 16	x	80	S	1	960,00
D 16	x	90	S	1	1030,00
D 16	x	100	S	1	1130,00
D 16	x	120	S	1	1270,00
D 20	x	36	S	1	690,00
D 20	x	40	S	1	750,00
D 20	x	45	S	1	785,00
D 20	x	50	S	1	800,00
D 20	x	55	S	1	880,00
D 20	x	60	S	1	940,00
D 20	x	70	S	1	1020,00
D 20	x	80	S	1	1070,00
D 20	x	90	S	1	1180,00
D 20	x	100	S	1	1260,00
D 20	x	120	S	1	1650,00
D 20	x	140	S	1	2100,00
D 20	x	150	S	1	2350,00
D 20	x	160	S	1	2600,00
D 20	x	180	S	1	3100,00
D 20	x	200	S	1	3500,00
D 25	x	50	S	1	1070,00
D 25	x	60	S	1	4400,00
D 25	x	70	S	1	4800,00
D 25	x	80	S	1	5100,00
D 25	x	100	S	1	5400,00
D 25	x	120	S	1	6200,00
D 25	x	130	S	1	6700,00
D 30	x	55	S	1	2110,00
D 30	x	60	S	1	2200,00
D 30	x	70	S	1	2250,00
D 30	x	80	S	1	2440,00
D 30	x	100	S	1	2800,00
D 30	x	120	S	1	3200,00
D 40	x	60	S	1	4000,00
D 40	x	70	S	1	4100,00
D 40	x	80	S	1	4200,00
D 40	x	90	S	1	4400,00
D 40	x	100	S	1	4700,00

~DIN	07980.000	RAZ 680

7980 Spring steel



Spring lock washers for cheese head screws

Caution! Only for screws with property class < 8.8.

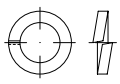
Dimensions → TI-100

Stainless → S. 536

3	S	1000	0,85
3	K	100	3,10
4	S	1000	1,05
4	K	100	3,40
5	S	1000	1,40
5	K	100	3,75
6	S	1000	1,60
6	K	100	4,05
8	S	1000	3,25
8	K	100	5,90
10	S	1000	4,75
10	K	100	7,30
12	S	500	5,70
12	K	100	8,50
14	S	500	8,70
14	K	100	11,40
16	S	250	12,70
16	K	100	16,00
18	S	250	14,00
18	K	100	19,50
20	S	100	26,00
22	S	100	28,00
24	S	100	36,50
27	S	100	41,50
30	S	50	85,00
33	S	50	95,00
36	S	50	124,00
42	S	25	222,00
48	S	25	231,00

~DIN	07980.010	RAZ 680

7980 Spring steel zinc plated



Spring lock washers for cheese head screws

Caution! Only for screws with property class < 8.8.

Dimensions → TI-100 Corrosion protection → TI-217

Stainless → S. 536

3	S	1000	0,85 ZP
3	K	100	3,15 ZP
4	S	1000	1,25 ZP
4	K	100	3,55 ZP
5	S	1000	1,75 ZP
5	K	100	4,05 ZP
6	S	1000	1,90 ZP
6	K	100	4,35 ZP
8	S	1000	4,10 ZP
8	K	100	6,80 ZP
10	S	1000	6,30 ZP
10	K	100	8,90 ZP
12	S	500	7,60 ZP
12	K	100	10,50 ZP
14	S	500	11,80 ZP
14	K	100	15,00 ZP
16	S	250	17,60 ZP
16	K	100	21,20 ZP
18	S	250	19,30 ZP
18	K	100	23,20 ZP
20	S	100	36,50 ZP
22	S	100	40,00 ZP
24	S	100	52,00 ZP
27	S	100	57,00 ZP
30	S	50	116,00 ZP
33	S	50	129,00 ZP
36	S	50	174,00 ZP
42	S	25	270,00 ZP
48	S	25	320,00 ZP

DIN	07981.014	RAZ 690

7981 Steel zinc plated type C-H

Pan head tapping screws with Phillips cross recess H, C = with cone end

Hardened nominal length from 60 mm with partial thread

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

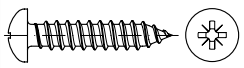
Stainless → S. 537

DIN 7981 → replaced by ISO 7049

C2,2	x	4,5-H	S	2000	5,20 ZP
C2,2	x	6,5-H	S	2000	3,75 ZP
C2,2	x	6,5-H	K	100	5,75 ZP
C2,2	x	9,5-H	S	2000	3,50 ZP
C2,2	x	13 -H	S	2000	3,75 ZP
C2,2	x	16 -H	S	2000	4,50 ZP
C2,2	x	19 -H	S	2000	5,90 ZP
C2,2	x	22 -H	S	2000	7,35 ZP
C2,9	x	6,5-H	K	100	4,60 ZP
C2,9	x	6,5-H	S	2000	2,15 ZP
C2,9	x	9,5-H	S	2000	1,90 ZP
C2,9	x	9,5-H	K	100	4,40 ZP
C2,9	x	13 -H	S	2000	2,00 ZP
C2,9	x	13 -H	K	100	4,50 ZP
C2,9	x	16 -H	S	2000	2,15 ZP
C2,9	x	16 -H	K	100	4,60 ZP
C2,9	x	19 -H	S	2000	3,05 ZP
C2,9	x	19 -H	K	100	5,50 ZP
C2,9	x	22 -H	S	2000	3,80 ZP
C2,9	x	22 -H	K	100	6,30 ZP
C2,9	x	25 -H	S	1000	4,05 ZP
C2,9	x	25 -H	K	100	6,50 ZP
C2,9	x	32 -H	S	1000	4,80 ZP
C3,5	x	6,5-H	S	1000	2,95 ZP
C3,5	x	6,5-H	K	100	5,40 ZP
C3,5	x	9,5-H	S	1000	2,25 ZP
C3,5	x	9,5-H	K	100	4,70 ZP
C3,5	x	13 -H	S	1000	2,35 ZP
C3,5	x	13 -H	K	100	4,85 ZP
C3,5	x	16 -H	S	1000	2,45 ZP
C3,5	x	16 -H	K	100	4,90 ZP
C3,5	x	19 -H	S	1000	3,10 ZP
C3,5	x	19 -H	K	100	5,60 ZP
C3,5	x	22 -H	S	1000	4,30 ZP
C3,5	x	22 -H	K	100	6,80 ZP
C3,5	x	25 -H	S	500	4,50 ZP
C3,5	x	25 -H	K	100	7,10 ZP
C3,5	x	32 -H	S	500	4,90 ZP
C3,5	x	32 -H	K	100	7,40 ZP
C3,5	x	38 -H	S	500	5,50 ZP
C3,5	x	38 -H	K	100	7,90 ZP
C3,5	x	45 -H	S	500	8,95 ZP
C3,5	x	50 -H	S	500	10,90 ZP
C3,9	x	6,5-H	S	2000	5,30 ZP
C3,9	x	9,5-H	S	1000	2,65 ZP
C3,9	x	9,5-H	K	100	5,10 ZP
C3,9	x	13 -H	S	1000	2,70 ZP
C3,9	x	13 -H	K	100	5,20 ZP
C3,9	x	16 -H	S	1000	2,95 ZP
C3,9	x	16 -H	K	100	5,50 ZP
C3,9	x	19 -H	S	1000	3,35 ZP
C3,9	x	19 -H	K	100	5,80 ZP
C3,9	x	22 -H	S	500	4,40 ZP

Dimensions	PU	Pieces	€/100/Mat.
C3,9 x 22 -H	K	100	6,90 ZP
C3,9 x 25 -H	S	500	4,90 ZP
C3,9 x 25 -H	K	100	7,40 ZP
C3,9 x 32 -H	S	500	5,10 ZP
C3,9 x 32 -H	K	100	7,50 ZP
C3,9 x 38 -H	S	500	7,20 ZP
C3,9 x 38 -H	K	100	9,60 ZP
C3,9 x 45 -H	S	1000	7,40 ZP
C4,2 x 9,5-H	S	1000	2,80 ZP
C4,2 x 9,5-H	K	100	5,30 ZP
C4,2 x 13 -H	S	1000	2,85 ZP
C4,2 x 13 -H	K	100	5,30 ZP
C4,2 x 16 -H	S	1000	3,20 ZP
C4,2 x 16 -H	K	100	5,70 ZP
C4,2 x 19 -H	S	500	3,40 ZP
C4,2 x 19 -H	K	100	5,90 ZP
C4,2 x 22 -H	S	500	4,70 ZP
C4,2 x 22 -H	K	100	7,20 ZP
C4,2 x 25 -H	S	500	5,20 ZP
C4,2 x 25 -H	K	100	7,70 ZP
C4,2 x 32 -H	S	500	5,20 ZP
C4,2 x 32 -H	K	100	7,70 ZP
C4,2 x 38 -H	S	500	7,50 ZP
C4,2 x 38 -H	K	100	10,00 ZP
C4,2 x 45 -H	S	500	8,70 ZP
C4,2 x 45 -H	K	100	11,10 ZP
C4,2 x 50 -H	S	500	9,80 ZP
C4,2 x 50 -H	K	100	12,30 ZP
C4,2 x 60 -H	S	250	16,70 ZP
C4,2 x 70 -H	S	250	19,80 ZP
C4,2 x 80 -H	S	250	21,70 ZP
C4,8 x 9,5-H	S	500	3,95 ZP
C4,8 x 9,5-H	K	100	6,40 ZP
C4,8 x 13 -H	S	500	4,00 ZP
C4,8 x 13 -H	K	100	6,50 ZP
C4,8 x 16 -H	S	500	4,20 ZP
C4,8 x 16 -H	K	100	6,70 ZP
C4,8 x 19 -H	S	500	4,75 ZP
C4,8 x 19 -H	K	100	7,20 ZP
C4,8 x 22 -H	S	500	5,10 ZP
C4,8 x 22 -H	K	100	7,60 ZP
C4,8 x 25 -H	S	500	6,00 ZP
C4,8 x 25 -H	K	100	8,50 ZP
C4,8 x 32 -H	S	250	6,90 ZP
C4,8 x 32 -H	K	100	9,40 ZP
C4,8 x 38 -H	S	250	8,00 ZP
C4,8 x 38 -H	K	100	10,40 ZP
C4,8 x 45 -H	S	250	10,80 ZP
C4,8 x 45 -H	K	100	13,30 ZP
C4,8 x 50 -H	S	250	12,00 ZP
C4,8 x 50 -H	K	100	14,50 ZP
C4,8 x 60 -H	S	250	19,20 ZP
C4,8 x 70 -H	S	250	25,50 ZP
C4,8 x 80 -H	S	250	30,50 ZP
C4,8 x 90 -H	S	250	37,00 ZP
C4,8 x 100 -H	S	250	44,00 ZP
C4,8 x 110 -H	S	250	51,00 ZP
C4,8 x 120 -H	S	250	62,00 ZP
C5,5 x 13 -H	S	500	5,30 ZP
C5,5 x 13 -H	K	100	7,90 ZP
C5,5 x 16 -H	S	500	5,90 ZP
C5,5 x 16 -H	K	100	8,40 ZP
C5,5 x 19 -H	S	500	6,20 ZP
C5,5 x 19 -H	K	100	8,70 ZP
C5,5 x 22 -H	S	500	8,70 ZP
C5,5 x 22 -H	K	100	11,10 ZP
C5,5 x 25 -H	S	250	9,20 ZP
C5,5 x 25 -H	K	100	11,70 ZP
C5,5 x 32 -H	S	250	10,60 ZP
C5,5 x 32 -H	K	100	13,10 ZP
C5,5 x 38 -H	S	250	13,20 ZP
C5,5 x 38 -H	K	100	15,60 ZP
C5,5 x 45 -H	S	250	14,80 ZP
C5,5 x 45 -H	K	100	17,30 ZP
C5,5 x 50 -H	S	250	17,40 ZP
C5,5 x 50 -H	K	100	19,80 ZP
C5,5 x 60 -H	S	250	33,00 ZP
C5,5 x 70 -H	S	250	40,50 ZP
C5,5 x 80 -H	S	250	48,50 ZP
C6,3 x 13 -H	S	250	7,80 ZP
C6,3 x 13 -H	K	100	10,20 ZP
C6,3 x 16 -H	S	250	8,00 ZP
C6,3 x 16 -H	K	100	10,40 ZP
C6,3 x 19 -H	S	250	8,10 ZP
C6,3 x 19 -H	K	100	10,60 ZP
C6,3 x 22 -H	S	250	9,70 ZP
C6,3 x 22 -H	K	100	12,20 ZP
C6,3 x 25 -H	S	250	11,80 ZP
C6,3 x 25 -H	K	100	14,30 ZP
C6,3 x 32 -H	S	250	12,90 ZP
C6,3 x 32 -H	K	100	15,40 ZP
C6,3 x 38 -H	S	250	16,10 ZP
C6,3 x 38 -H	K	100	18,60 ZP
C6,3 x 45 -H	S	250	19,80 ZP
C6,3 x 45 -H	K	100	22,30 ZP
C6,3 x 50 -H	S	250	21,10 ZP
C6,3 x 50 -H	K	100	23,50 ZP
C6,3 x 60 -H	S	250	37,50 ZP
C6,3 x 70 -H	S	250	53,00 ZP
C6,3 x 80 -H	S	250	68,00 ZP
C6,3 x 90 -H	S	250	83,00 ZP
C6,3 x 100 -H	S	250	98,00 ZP

DIN	07981.016	RAZ 690
7981	**Steel zinc plated**	**type C-Z**



Pan head tapping screws, with Pozidriv cross recess Z, C = with cone point

hardened

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

DIN 7981 → replaced by ISO 7049

Dimensions	PU	Pieces	€/100/Mat.
2,2 x 4,5 -C-Z	S	2000	5,20 ZP
2,2 x 6,5 -C-Z	S	2000	3,75 ZP
2,2 x 6,5 -C-Z	K	100	5,75 ZP
2,2 x 9,5 -C-Z	S	2000	3,50 ZP
2,2 x 13 -C-Z	S	2000	3,75 ZP
2,2 x 16 -C-Z	S	2000	4,50 ZP
2,2 x 19 -C-Z	S	2000	5,90 ZP
2,2 x 22 -C-Z	S	2000	7,35 ZP
2,9 x 6,5 -C-Z	S	2000	2,15 ZP
2,9 x 6,5 -C-Z	K	100	4,60 ZP
2,9 x 9,5 -C-Z	S	2000	1,90 ZP
2,9 x 9,5 -C-Z	K	100	4,40 ZP
2,9 x 13 -C-Z	K	100	4,50 ZP
2,9 x 16 -C-Z	S	2000	2,15 ZP
2,9 x 16 -C-Z	K	100	4,60 ZP
2,9 x 19 -C-Z	S	2000	3,05 ZP
2,9 x 19 -C-Z	K	100	5,50 ZP
2,9 x 22 -C-Z	S	1000	3,80 ZP
2,9 x 22 -C-Z	K	100	6,30 ZP
2,9 x 25 -C-Z	S	1000	4,05 ZP
2,9 x 25 -C-Z	K	100	6,50 ZP
2,9 x 32 -C-Z	S	1000	4,80 ZP
3,5 x 6,5 -C-Z	S	1000	2,95 ZP
3,5 x 6,5 -C-Z	K	100	5,40 ZP
3,5 x 9,5 -C-Z	S	1000	2,25 ZP
3,5 x 9,5 -C-Z	K	100	4,70 ZP
3,5 x 13 -C-Z	S	1000	2,45 ZP
3,5 x 13 -C-Z	K	100	4,85 ZP
3,5 x 16 -C-Z	S	1000	2,45 ZP
3,5 x 16 -C-Z	K	100	4,90 ZP
3,5 x 19 -C-Z	S	1000	3,10 ZP
3,5 x 19 -C-Z	K	100	5,60 ZP
3,5 x 22 -C-Z	S	1000	4,30 ZP
3,5 x 22 -C-Z	K	100	6,80 ZP
3,5 x 25 -C-Z	S	500	4,50 ZP
3,5 x 25 -C-Z	K	100	7,10 ZP
3,5 x 32 -C-Z	K	100	7,40 ZP
3,5 x 38 -C-Z	S	500	5,50 ZP
3,5 x 38 -C-Z	K	100	7,90 ZP
3,5 x 45 -C-Z	S	500	8,95 ZP
3,5 x 50 -C-Z	S	500	10,90 ZP
3,9 x 6,5 -C-Z	S	2000	5,30 ZP
3,9 x 9,5 -C-Z	S	1000	2,65 ZP
3,9 x 9,5 -C-Z	K	100	5,10 ZP
3,9 x 13 -C-Z	S	1000	2,70 ZP
3,9 x 13 -C-Z	K	100	5,20 ZP
3,9 x 16 -C-Z	S	1000	2,95 ZP
3,9 x 16 -C-Z	K	100	5,50 ZP
3,9 x 19 -C-Z	S	1000	3,35 ZP
3,9 x 19 -C-Z	K	100	5,80 ZP
3,9 x 22 -C-Z	S	500	4,40 ZP
3,9 x 22 -C-Z	K	100	6,90 ZP
3,9 x 25 -C-Z	S	500	4,90 ZP
3,9 x 25 -C-Z	K	100	7,40 ZP
3,9 x 32 -C-Z	K	100	7,50 ZP
3,9 x 38 -C-Z	S	500	7,20 ZP
3,9 x 38 -C-Z	K	100	9,60 ZP
4,2 x 9,5 -C-Z	K	100	5,30 ZP
4,2 x 13 -C-Z	S	1000	2,85 ZP
4,2 x 13 -C-Z	K	100	5,30 ZP
4,2 x 16 -C-Z	S	1000	3,20 ZP
4,2 x 16 -C-Z	K	100	5,70 ZP
4,2 x 19 -C-Z	S	500	3,40 ZP
4,2 x 19 -C-Z	K	100	5,90 ZP
4,2 x 22 -C-Z	S	500	4,70 ZP
4,2 x 22 -C-Z	K	100	7,20 ZP
4,2 x 25 -C-Z	K	100	7,70 ZP
4,2 x 32 -C-Z	S	500	5,20 ZP
4,2 x 32 -C-Z	K	100	7,70 ZP
4,2 x 38 -C-Z	S	500	7,50 ZP
4,2 x 38 -C-Z	K	100	10,00 ZP
4,2 x 45 -C-Z	S	500	8,70 ZP
4,2 x 45 -C-Z	K	100	11,10 ZP
4,2 x 50 -C-Z	S	500	9,80 ZP
4,2 x 50 -C-Z	K	100	12,30 ZP
4,2 x 60 -C-Z	S	250	16,70 ZP
4,2 x 70 -C-Z	S	250	19,80 ZP
4,2 x 80 -C-Z	S	250	21,70 ZP
4,8 x 9,5 -C-Z	S	500	3,95 ZP
4,8 x 9,5 -C-Z	K	100	6,40 ZP
4,8 x 13 -C-Z	S	500	4,00 ZP
4,8 x 13 -C-Z	K	100	6,50 ZP
4,8 x 16 -C-Z	S	500	4,20 ZP
4,8 x 16 -C-Z	K	100	6,70 ZP
4,8 x 19 -C-Z	S	500	4,75 ZP
4,8 x 19 -C-Z	K	100	7,20 ZP
4,8 x 22 -C-Z	S	500	5,10 ZP
4,8 x 22 -C-Z	K	100	7,60 ZP
4,8 x 25 -C-Z	S	500	6,00 ZP
4,8 x 25 -C-Z	K	100	8,50 ZP
4,8 x 32 -C-Z	S	250	6,90 ZP
4,8 x 32 -C-Z	K	100	9,40 ZP
4,8 x 38 -C-Z	S	250	8,00 ZP
4,8 x 38 -C-Z	K	100	10,40 ZP
4,8 x 45 -C-Z	S	250	10,80 ZP
4,8 x 45 -C-Z	K	100	13,30 ZP
4,8 x 50 -C-Z	S	250	12,00 ZP
4,8 x 50 -C-Z	K	100	14,50 ZP
4,8 x 60 -C-Z	S	250	19,20 ZP
4,8 x 70 -C-Z	S	250	25,50 ZP
4,8 x 80 -C-Z	S	250	30,50 ZP
4,8 x 90 -C-Z	S	250	37,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
4,8 x 100 -C-Z	S	250	44,00 ZP
4,8 x 110 -C-Z	S	250	51,00 ZP
4,8 x 120 -C-Z	S	250	62,00 ZP
5,5 x 13 -C-Z	S	500	5,30 ZP
5,5 x 13 -C-Z	K	100	7,90 ZP
5,5 x 16 -C-Z	S	500	5,90 ZP
5,5 x 16 -C-Z	K	100	8,40 ZP
5,5 x 19 -C-Z	S	500	5,90 ZP
5,5 x 19 -C-Z	K	100	8,70 ZP
5,5 x 22 -C-Z	S	500	8,70 ZP
5,5 x 22 -C-Z	K	100	11,10 ZP
5,5 x 25 -C-Z	S	250	9,20 ZP
5,5 x 25 -C-Z	K	100	11,70 ZP
5,5 x 32 -C-Z	S	250	10,60 ZP
5,5 x 32 -C-Z	K	100	13,10 ZP
5,5 x 38 -C-Z	S	250	10,60 ZP
5,5 x 38 -C-Z	K	100	15,60 ZP
5,5 x 45 -C-Z	S	250	14,80 ZP
5,5 x 45 -C-Z	K	100	17,30 ZP
5,5 x 50 -C-Z	S	250	17,40 ZP
5,5 x 50 -C-Z	K	100	19,80 ZP
5,5 x 60 -C-Z	S	250	33,00 ZP
5,5 x 70 -C-Z	S	250	40,50 ZP
5,5 x 80 -C-Z	S	250	48,50 ZP
6,3 x 13 -C-Z	S	250	7,80 ZP
6,3 x 13 -C-Z	K	100	10,20 ZP
6,3 x 16 -C-Z	S	250	8,00 ZP
6,3 x 16 -C-Z	K	100	10,40 ZP
6,3 x 19 -C-Z	S	250	8,10 ZP
6,3 x 19 -C-Z	K	100	10,60 ZP
6,3 x 22 -C-Z	S	250	9,70 ZP
6,3 x 22 -C-Z	K	100	12,20 ZP
6,3 x 25 -C-Z	S	250	11,80 ZP
6,3 x 25 -C-Z	K	100	14,30 ZP
6,3 x 32 -C-Z	S	250	12,90 ZP
6,3 x 32 -C-Z	K	100	15,40 ZP
6,3 x 38 -C-Z	S	250	16,10 ZP
6,3 x 38 -C-Z	K	100	18,60 ZP
6,3 x 45 -C-Z	S	250	19,80 ZP
6,3 x 45 -C-Z	K	100	22,30 ZP
6,3 x 50 -C-Z	S	250	21,10 ZP
6,3 x 50 -C-Z	K	100	23,50 ZP
6,3 x 60 -C-Z	S	250	37,50 ZP
6,3 x 70 -C-Z	S	250	53,00 ZP
6,3 x 80 -C-Z	S	250	68,00 ZP
6,3 x 90 -C-Z	S	250	83,00 ZP
6,3 x 100 -C-Z	S	250	98,00 ZP

~DIN	07981.308	RAZ 690

7981 Steel zinc plated type C-ISR

Pan head tapping screws, ISR = hexalobular socket, C = with cone end

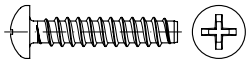
hardened
~ISO 14585

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

2,2	x 4,5-C-T6	S	2000	8,50 ZP
2,2	x 6,5-C-T6	S	2000	7,50 ZP
2,2	x 9,5-C-T6	S	2000	8,95 ZP
2,2	x 13 -C-T6	S	2000	9,75 ZP
2,2	x 16 -C-T6	S	2000	10,95 ZP
2,9	x 6,5-C-T10	S	2000	2,45 ZP
2,9	x 9,5-C-T10	S	2000	2,20 ZP
2,9	x 13 -C-T10	S	2000	2,30 ZP
2,9	x 16 -C-T10	S	2000	2,40 ZP
2,9	x 19 -C-T10	S	2000	3,50 ZP
2,9	x 22 -C-T10	S	2000	4,35 ZP
2,9	x 25 -C-T10	S	1000	4,65 ZP
3,5	x 9,5-C-T15	S	1000	2,60 ZP
3,5	x 13 -C-T15	S	1000	2,70 ZP
3,5	x 16 -C-T15	S	1000	2,80 ZP
3,5	x 19 -C-T15	S	1000	3,55 ZP
3,5	x 22 -C-T15	S	1000	4,90 ZP
3,5	x 25 -C-T15	S	500	5,20 ZP
3,5	x 32 -C-T15	S	500	5,60 ZP
3,5	x 38 -C-T15	S	500	6,30 ZP
3,5	x 45 -C-T15	S	500	9,30 ZP
3,5	x 50 -C-T15	S	500	10,10 ZP
3,9	x 9,5-C-T20	S	1000	2,95 ZP
3,9	x 13 -C-T20	S	1000	3,10 ZP
3,9	x 16 -C-T20	S	1000	3,40 ZP
3,9	x 19 -C-T20	S	1000	3,85 ZP
3,9	x 22 -C-T20	S	500	5,10 ZP
3,9	x 25 -C-T20	S	500	5,60 ZP
3,9	x 32 -C-T20	S	500	5,90 ZP
3,9	x 38 -C-T20	S	500	8,20 ZP
3,9	x 45 -C-T20	S	500	8,40 ZP
3,9	x 50 -C-T20	S	500	8,60 ZP
4,2	x 9,5-C-T20	S	1000	3,20 ZP
4,2	x 13 -C-T20	S	1000	3,25 ZP
4,2	x 16 -C-T20	S	1000	3,65 ZP
4,2	x 19 -C-T20	S	500	3,90 ZP
4,2	x 22 -C-T20	S	500	5,40 ZP
4,2	x 25 -C-T20	S	500	5,90 ZP
4,2	x 32 -C-T20	S	500	6,00 ZP
4,2	x 38 -C-T20	S	500	8,60 ZP
4,2	x 45 -C-T20	S	500	9,80 ZP
4,2	x 50 -C-T20	S	500	11,20 ZP
4,2	x 60 -C-T20	S	500	19,10 ZP
4,2	x 70 -C-T20	S	500	22,60 ZP
4,8	x 9,5-C-T25	S	500	6,50 ZP
4,8	x 13 -C-T25	S	500	4,60 ZP
4,8	x 16 -C-T25	S	500	4,80 ZP
4,8	x 19 -C-T25	S	500	5,50 ZP
4,8	x 22 -C-T25	S	500	5,90 ZP
4,8	x 25 -C-T25	S	500	6,90 ZP
4,8	x 32 -C-T25	S	250	7,90 ZP
4,8	x 38 -C-T25	S	250	9,10 ZP
4,8	x 45 -C-T25	S	250	12,40 ZP
4,8	x 50 -C-T25	S	250	13,70 ZP
4,8	x 60 -C-T25	S	250	21,90 ZP
4,8	x 70 -C-T25	S	250	29,00 ZP
4,8	x 80 -C-T25	S	250	35,00 ZP
4,8	x 90 -C-T25	S	250	44,50 ZP
4,8	x 100 -C-T25	S	250	51,00 ZP
5,5	x 13 -C-T25	S	500	12,50 ZP
5,5	x 16 -C-T25	S	500	10,50 ZP
5,5	x 19 -C-T25	S	500	7,10 ZP
5,5	x 22 -C-T25	S	500	12,70 ZP
5,5	x 25 -C-T25	S	250	10,50 ZP
5,5	x 32 -C-T25	S	250	12,10 ZP
5,5	x 38 -C-T25	S	250	15,60 ZP
5,5	x 45 -C-T25	S	250	16,80 ZP
5,5	x 50 -C-T25	S	250	19,90 ZP
5,5	x 60 -C-T25	S	250	37,50 ZP
5,5	x 70 -C-T25	S	250	46,50 ZP
5,5	x 80 -C-T25	S	250	56,00 ZP
5,5	x 90 -C-T25	S	250	60,00 ZP
5,5	x 100 -C-T25	S	250	68,00 ZP
6,3	x 13 -C-T30	S	250	18,75 ZP
6,3	x 16 -C-T30	S	250	14,00 ZP
6,3	x 19 -C-T30	S	250	11,70 ZP
6,3	x 22 -C-T30	S	250	13,50 ZP
6,3	x 25 -C-T30	S	250	13,50 ZP
6,3	x 32 -C-T30	S	250	14,80 ZP
6,3	x 38 -C-T30	S	250	18,40 ZP
6,3	x 45 -C-T30	S	250	22,60 ZP
6,3	x 50 -C-T30	S	250	24,10 ZP
6,3	x 60 -C-T30	S	250	42,50 ZP
6,3	x 70 -C-T30	S	250	60,00 ZP
6,3	x 80 -C-T30	S	250	67,00 ZP
6,3	x 90 -C-T30	S	250	75,00 ZP
6,3	x 100 -C-T30	S	250	81,00 ZP

DIN	07981.015	RAZ 690

7981 Steel zinc plated type F



Pan head tapping screws with Phillips cross recess H, F = with flat end

hardened

Dimensions → TI-46 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

Stainless → S. 538

DIN 7981 → replaced by ISO 7049

F 2,2	x 4,5-H	S	2000	6,00 ZP
F 2,2	x 6,5-H	S	2000	6,00 ZP
F 2,2	x 9,5-H	S	2000	6,00 ZP
F 2,2	x 13 -H	S	2000	8,50 ZP
F 2,2	x 16 -H	S	2000	10,40 ZP
F 2,9	x 4,5-H	S	2000	6,00 ZP
F 2,9	x 6,5-H	S	2000	2,30 ZP
F 2,9	x 6,5-H	K	100	4,60 ZP
F 2,9	x 9,5-H	S	2000	2,15 ZP
F 2,9	x 9,5-H	K	100	4,40 ZP
F 2,9	x 13 -H	S	2000	2,25 ZP
F 2,9	x 13 -H	K	100	4,50 ZP
F 2,9	x 16 -H	S	2000	2,40 ZP
F 2,9	x 16 -H	K	100	4,60 ZP
F 2,9	x 19 -H	S	2000	3,50 ZP
F 2,9	x 22 -H	S	2000	4,85 ZP
F 3,5	x 6,5-H	S	1000	2,40 ZP
F 3,5	x 9,5-H	S	2000	2,45 ZP
F 3,5	x 9,5-H	K	100	4,70 ZP
F 3,5	x 13 -H	S	1000	2,55 ZP
F 3,5	x 13 -H	K	100	4,85 ZP
F 3,5	x 16 -H	S	1000	2,60 ZP
F 3,5	x 16 -H	K	100	4,90 ZP
F 3,5	x 19 -H	S	1000	2,80 ZP
F 3,5	x 22 -H	S	1000	3,50 ZP
F 3,5	x 25 -H	S	1000	4,95 ZP
F 3,9	x 6,5-H	S	1000	3,50 ZP
F 3,9	x 9,5-H	S	1000	2,95 ZP
F 3,9	x 9,5-H	K	100	5,10 ZP
F 3,9	x 13 -H	S	1000	3,00 ZP
F 3,9	x 13 -H	K	100	5,20 ZP
F 3,9	x 16 -H	S	1000	3,25 ZP
F 3,9	x 16 -H	K	100	5,50 ZP
F 3,9	x 19 -H	S	1000	4,00 ZP
F 3,9	x 22 -H	S	1000	4,65 ZP
F 3,9	x 25 -H	S	1000	5,20 ZP
F 4,2	x 6,5-H	S	1000	4,05 ZP
F 4,2	x 9,5-H	S	1000	3,75 ZP
F 4,2	x 13 -H	S	1000	3,20 ZP
F 4,2	x 13 -H	K	100	5,30 ZP
F 4,2	x 16 -H	S	1000	3,10 ZP
F 4,2	x 19 -H	S	1000	5,00 ZP
F 4,2	x 22 -H	S	1000	5,00 ZP
F 4,2	x 25 -H	S	1000	6,00 ZP
F 4,2	x 32 -H	S	1000	6,00 ZP
F 4,8	x 6,5-H	S	1000	5,00 ZP
F 4,8	x 9,5-H	S	500	3,95 ZP

Dimensions			PU	Pieces	€/100/Mat.
F 4,8	x	9,5-H	K	100	6,40 ZP
F 4,8	x	13 -H	S	500	4,25 ZP
F 4,8	x	13 -H	K	100	6,50 ZP
F 4,8	x	16 -H	S	500	4,40 ZP
F 4,8	x	16 -H	K	100	6,70 ZP
F 4,8	x	19 -H	S	500	7,90 ZP
F 4,8	x	22 -H	S	500	9,10 ZP
F 4,8	x	25 -H	S	500	9,50 ZP
F 4,8	x	32 -H	S	500	12,25 ZP
F 4,8	x	38 -H	S	500	15,00 ZP
F 5,5	x	13 -H	S	500	4,90 ZP
F 5,5	x	16 -H	S	500	5,50 ZP
F 5,5	x	19 -H	S	500	8,50 ZP
F 5,5	x	22 -H	S	500	10,00 ZP
F 5,5	x	25 -H	S	250	12,50 ZP
F 5,5	x	32 -H	S	250	15,00 ZP
F 5,5	x	38 -H	S	250	19,00 ZP
F 6,3	x	13 -H	S	250	7,50 ZP
F 6,3	x	16 -H	S	250	11,00 ZP

Article	88981.010	RAZ 998

7981 Steel zinc plated article 88981

Cap-head tapping screws with Phillips cross recess H, C = with cone point

hardened

Matching decorative caps ➔ article 88003

Dimensions ➔ TI-46 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217 Mounting instructions ➔ TI-237

3,9	x	9,5 -H	S	1000	6,00 ZP
3,9	x	13 -H	S	1000	5,50 ZP
3,9	x	16 -H	S	1000	5,60 ZP
3,9	x	19 -H	S	1000	7,00 ZP
3,9	x	22 -H	S	500	7,00 ZP
3,9	x	25 -H	S	500	8,10 ZP
3,9	x	32 -H	S	500	9,50 ZP
3,9	x	38 -H	S	500	17,00 ZP

Article	88003.*	RAZ 800

88003 Plastic

Decorative caps for cap screws article 88981 Ø 3.9

White RAL 9010 (*630), grey RAL 7035 (*640), Black RAL 9005 (*650)

F. 3,9	S	1000	5,70

Dimensions			PU	Pieces	€/100/Mat.
DIN	07982.014				RAZ 690

7982 Steel zinc plated type C-H

Countersunk head tapping screws with Phillips cross recess H, C = with cone end

hardened
Nominal length from 60 mm with partial thread, countersunk ∢ = 80°

Dimensions ➔ TI-47 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217 Mounting instructions ➔ TI-237

Stainless ➔ S. 538

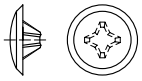
DIN 7982 ➔ replaced by ISO 7050

C 2,2	x	6,5-H	S	2000	4,60 ZP
C 2,2	x	9,5-H	S	2000	4,30 ZP
C 2,2	x	13 -H	S	2000	4,35 ZP
C 2,2	x	16 -H	S	2000	6,50 ZP
C 2,9	x	6,5-H	S	2000	4,70 ZP
C 2,9	x	9,5-H	S	2000	1,90 ZP
C 2,9	x	9,5-H	K	100	4,40 ZP
C 2,9	x	13 -H	S	2000	2,00 ZP
C 2,9	x	13 -H	K	100	4,50 ZP
C 2,9	x	16 -H	S	2000	2,15 ZP
C 2,9	x	16 -H	K	100	4,60 ZP
C 2,9	x	19 -H	S	2000	3,05 ZP
C 2,9	x	19 -H	K	100	5,50 ZP
C 2,9	x	22 -H	S	2000	3,55 ZP
C 2,9	x	22 -H	K	100	6,00 ZP
C 2,9	x	25 -H	S	1000	4,35 ZP
C 2,9	x	25 -H	K	100	6,90 ZP
C 2,9	x	32 -H	S	1000	4,95 ZP
C 2,9	x	32 -H	K	100	5,50 ZP
C 3,5	x	6 -H	S	1000	3,00 ZP
C 3,5	x	9,5-H	S	1000	2,25 ZP
C 3,5	x	9,5-H	K	100	4,70 ZP
C 3,5	x	13 -H	S	1000	2,35 ZP
C 3,5	x	13 -H	K	100	4,85 ZP
C 3,5	x	16 -H	S	1000	2,45 ZP
C 3,5	x	16 -H	K	100	4,90 ZP
C 3,5	x	19 -H	S	1000	3,20 ZP
C 3,5	x	19 -H	K	100	5,70 ZP
C 3,5	x	22 -H	S	1000	3,85 ZP
C 3,5	x	22 -H	K	100	6,40 ZP
C 3,5	x	25 -H	S	500	4,70 ZP
C 3,5	x	25 -H	K	100	7,20 ZP
C 3,5	x	32 -H	S	500	5,90 ZP
C 3,5	x	32 -H	K	100	8,40 ZP
C 3,5	x	38 -H	S	500	6,50 ZP
C 3,5	x	38 -H	K	100	9,10 ZP
C 3,9	x	9,5-H	S	1000	2,65 ZP
C 3,9	x	9,5-H	K	100	5,10 ZP
C 3,9	x	13 -H	S	1000	2,70 ZP
C 3,9	x	13 -H	K	100	5,20 ZP
C 3,9	x	16 -H	S	1000	2,95 ZP
C 3,9	x	16 -H	K	100	5,50 ZP
C 3,9	x	19 -H	S	1000	3,45 ZP
C 3,9	x	19 -H	K	100	5,90 ZP
C 3,9	x	22 -H	S	500	3,95 ZP
C 3,9	x	22 -H	K	100	6,40 ZP
C 3,9	x	25 -H	S	500	4,85 ZP
C 3,9	x	25 -H	K	100	7,30 ZP
C 3,9	x	32 -H	S	500	6,20 ZP
C 3,9	x	32 -H	K	100	8,70 ZP
C 3,9	x	38 -H	S	500	7,20 ZP
C 3,9	x	38 -H	K	100	9,70 ZP
C 3,9	x	45 -H	S	500	7,70 ZP
C 3,9	x	50 -H	S	500	14,60 ZP
C 3,9	x	60 -H	S	250	16,10 ZP
C 4,2	x	9,5-H	S	1000	2,80 ZP
C 4,2	x	13 -H	S	1000	2,85 ZP
C 4,2	x	13 -H	K	100	5,30 ZP
C 4,2	x	16 -H	S	1000	3,15 ZP
C 4,2	x	16 -H	K	100	5,60 ZP
C 4,2	x	19 -H	S	500	3,60 ZP
C 4,2	x	19 -H	K	100	6,10 ZP
C 4,2	x	22 -H	S	500	4,10 ZP
C 4,2	x	22 -H	K	100	6,60 ZP
C 4,2	x	25 -H	S	500	5,10 ZP
C 4,2	x	25 -H	K	100	7,60 ZP
C 4,2	x	32 -H	S	500	6,40 ZP
C 4,2	x	32 -H	K	100	8,90 ZP
C 4,2	x	38 -H	S	500	7,70 ZP
C 4,2	x	38 -H	K	100	10,10 ZP
C 4,2	x	45 -H	S	500	8,60 ZP
C 4,2	x	45 -H	K	100	11,10 ZP
C 4,2	x	50 -H	S	500	15,80 ZP
C 4,2	x	50 -H	K	100	18,30 ZP
C 4,2	x	60 -H	S	250	18,10 ZP
C 4,2	x	70 -H	S	250	21,20 ZP
C 4,2	x	80 -H	S	250	23,50 ZP
C 4,8	x	9,5-H	S	500	6,40 ZP
C 4,8	x	13 -H	S	500	4,00 ZP
C 4,8	x	13 -H	K	100	6,50 ZP
C 4,8	x	16 -H	S	500	4,20 ZP
C 4,8	x	16 -H	K	100	6,70 ZP
C 4,8	x	19 -H	S	500	3,85 ZP
C 4,8	x	19 -H	K	100	6,40 ZP
C 4,8	x	22 -H	S	500	5,10 ZP
C 4,8	x	22 -H	K	100	7,60 ZP
C 4,8	x	25 -H	S	500	6,00 ZP
C 4,8	x	25 -H	K	100	8,50 ZP
C 4,8	x	32 -H	S	250	6,90 ZP
C 4,8	x	32 -H	K	100	9,50 ZP
C 4,8	x	38 -H	S	250	8,00 ZP
C 4,8	x	38 -H	K	100	10,40 ZP
C 4,8	x	45 -H	S	250	8,80 ZP
C 4,8	x	45 -H	K	100	11,20 ZP
C 4,8	x	50 -H	S	250	16,70 ZP
C 4,8	x	50 -H	K	100	19,20 ZP
C 4,8	x	60 -H	S	250	19,80 ZP
C 4,8	x	70 -H	S	250	24,20 ZP
C 4,8	x	80 -H	S	250	30,50 ZP
C 4,8	x	90 -H	S	250	36,00 ZP
C 4,8	x	100 -H	S	250	47,50 ZP
C 4,8	x	110 -H	S	100	60,00 ZP
C 4,8	x	120 -H	S	100	75,00 ZP
C 5,5	x	13 -H	S	500	6,60 ZP
C 5,5	x	13 -H	K	100	9,10 ZP
C 5,5	x	16 -H	S	500	5,90 ZP
C 5,5	x	16 -H	K	100	8,30 ZP
C 5,5	x	19 -H	S	500	6,20 ZP
C 5,5	x	19 -H	K	100	8,70 ZP
C 5,5	x	22 -H	S	500	8,60 ZP
C 5,5	x	22 -H	K	100	11,00 ZP
C 5,5	x	25 -H	S	250	9,20 ZP
C 5,5	x	25 -H	K	100	11,60 ZP
C 5,5	x	32 -H	S	250	9,30 ZP
C 5,5	x	32 -H	K	100	11,80 ZP
C 5,5	x	38 -H	S	250	12,10 ZP
C 5,5	x	38 -H	K	100	14,60 ZP
C 5,5	x	45 -H	S	250	14,80 ZP
C 5,5	x	45 -H	K	100	17,30 ZP
C 5,5	x	50 -H	S	250	18,00 ZP
C 5,5	x	50 -H	K	100	20,50 ZP
C 5,5	x	60 -H	S	250	25,00 ZP
C 6,3	x	16 -H	S	250	9,60 ZP
C 6,3	x	16 -H	K	100	12,10 ZP
C 6,3	x	19 -H	S	250	10,90 ZP
C 6,3	x	19 -H	K	100	13,30 ZP
C 6,3	x	22 -H	S	250	12,10 ZP

Dimensions			PU	Pieces	€/100/Mat.
C 6,3	x	22 -H	K	100	14,60 ZP
C 6,3	x	25 -H	S	250	12,90 ZP
C 6,3	x	25 -H	K	100	15,40 ZP
C 6,3	x	32 -H	S	250	14,20 ZP
C 6,3	x	32 -H	K	100	16,70 ZP
C 6,3	x	38 -H	S	250	17,20 ZP
C 6,3	x	38 -H	K	100	19,70 ZP
C 6,3	x	45 -H	S	250	19,80 ZP
C 6,3	x	45 -H	K	100	22,30 ZP
C 6,3	x	50 -H	S	250	22,70 ZP
C 6,3	x	50 -H	K	100	25,50 ZP
C 6,3	x	60 -H	S	250	40,50 ZP
C 6,3	x	70 -H	S	250	53,00 ZP
C 6,3	x	80 -H	S	250	65,00 ZP

Article	88004.630	RAZ 800

88004 Plastic H



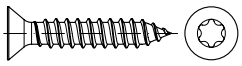
Caps for countersunk head screws with Phillips cross recess H

white RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Cross recess no. x caps ∅/for screws ∅					
2	x	12 / 3,5-5	S	1000	2,05 plastic

~DIN	07982.016	RAZ 690

7982 Steel zinc plated type C-ISR



Countersunk head tapping screws, ISR = hexalobular socket, C = with cone end

hardened
countersunk ⊀ = 80°

Dimensions → TI-47 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

With countersunk ⊀ = 90° → ISO 14586

2,2	x	4,5-C-T6	S	2000	8,50 ZP
2,2	x	6,5-C-T6	S	2000	7,50 ZP
2,2	x	9,5-C-T6	S	2000	8,95 ZP
2,2	x	13 -C-T6	S	2000	9,75 ZP
2,2	x	16 -C-T6	S	2000	10,95 ZP
2,9	x	6,5-C-T10	S	2000	5,40 ZP
2,9	x	9,5-C-T10	S	2000	2,20 ZP
2,9	x	13 -C-T10	S	2000	2,30 ZP
2,9	x	16 -C-T10	S	2000	2,45 ZP
2,9	x	19 -C-T10	S	2000	3,55 ZP
2,9	x	22 -C-T10	S	2000	4,35 ZP
2,9	x	25 -C-T10	S	1000	4,65 ZP
3,5	x	9,5-C-T15	S	1000	2,60 ZP
3,5	x	13 -C-T15	S	1000	2,70 ZP
3,5	x	16 -C-T15	S	1000	2,80 ZP
3,5	x	19 -C-T15	S	1000	3,65 ZP
3,5	x	22 -C-T15	S	1000	4,40 ZP
3,5	x	25 -C-T15	S	500	5,40 ZP
3,5	x	32 -C-T15	S	500	6,70 ZP
3,5	x	38 -C-T15	S	500	6,30 ZP
3,5	x	45 -C-T15	S	500	9,30 ZP
3,5	x	50 -C-T15	S	500	10,10 ZP
3,9	x	9,5-C-T20	S	1000	3,05 ZP
3,9	x	13 -C-T20	S	1000	3,10 ZP
3,9	x	16 -C-T20	S	1000	3,40 ZP
3,9	x	19 -C-T20	S	1000	3,95 ZP
3,9	x	22 -C-T20	S	500	4,50 ZP
3,9	x	25 -C-T20	S	500	4,00 ZP
3,9	x	32 -C-T20	S	500	7,10 ZP
3,9	x	38 -C-T20	S	500	8,20 ZP
3,9	x	45 -C-T20	S	500	8,40 ZP
3,9	x	50 -C-T20	S	500	8,60 ZP
4,2	x	9,5-C-T20	S	1000	3,20 ZP
4,2	x	13 -C-T20	S	1000	3,25 ZP
4,2	x	16 -C-T20	S	1000	3,60 ZP
4,2	x	19 -C-T20	S	500	4,10 ZP
4,2	x	22 -C-T20	S	500	4,70 ZP
4,2	x	25 -C-T20	S	500	5,90 ZP
4,2	x	32 -C-T20	S	500	7,30 ZP
4,2	x	38 -C-T20	S	500	8,80 ZP
4,2	x	45 -C-T20	S	500	9,80 ZP
4,2	x	50 -C-T20	S	500	11,20 ZP
4,2	x	60 -C-T20	S	500	19,10 ZP
4,2	x	70 -C-T20	S	500	22,60 ZP
4,2	x	80 -C-T20	S	500	32,00 ZP
4,8	x	9,5-C-T25	S	500	6,50 ZP
4,8	x	13 -C-T25	S	500	4,60 ZP
4,8	x	16 -C-T25	S	500	4,80 ZP
4,8	x	19 -C-T25	S	500	5,50 ZP
4,8	x	22 -C-T25	S	500	5,90 ZP
4,8	x	25 -C-T25	S	500	6,90 ZP
4,8	x	32 -C-T25	S	250	7,90 ZP
4,8	x	38 -C-T25	S	250	9,10 ZP
4,8	x	45 -C-T25	S	250	12,40 ZP
4,8	x	50 -C-T25	S	250	13,70 ZP
4,8	x	60 -C-T25	S	250	21,90 ZP
4,8	x	70 -C-T25	S	250	29,00 ZP
4,8	x	80 -C-T25	S	250	35,00 ZP
4,8	x	90 -C-T25	S	250	44,50 ZP
4,8	x	100 -C-T25	S	250	51,00 ZP
5,5	x	13 -C-T25	S	500	12,50 ZP
5,5	x	16 -C-T25	S	500	10,50 ZP
5,5	x	19 -C-T25	S	500	7,10 ZP
5,5	x	22 -C-T25	S	500	12,70 ZP
5,5	x	25 -C-T25	S	250	10,50 ZP
5,5	x	32 -C-T25	S	250	12,10 ZP
5,5	x	38 -C-T25	S	250	15,60 ZP
5,5	x	45 -C-T25	S	250	16,80 ZP
5,5	x	50 -C-T25	S	250	19,90 ZP
5,5	x	60 -C-T25	S	250	37,50 ZP
5,5	x	70 -C-T25	S	250	46,50 ZP
5,5	x	80 -C-T25	S	250	56,00 ZP
5,5	x	90 -C-T25	S	250	60,00 ZP
5,5	x	100 -C-T25	S	250	68,00 ZP
6,3	x	13 -C-T30	S	250	18,75 ZP
6,3	x	16 -C-T30	S	250	14,00 ZP
6,3	x	19 -C-T30	S	250	11,70 ZP
6,3	x	22 -C-T30	S	250	13,50 ZP
6,3	x	25 -C-T30	S	250	13,50 ZP
6,3	x	32 -C-T30	S	250	14,80 ZP
6,3	x	38 -C-T30	S	250	18,40 ZP
6,3	x	45 -C-T30	S	250	22,60 ZP
6,3	x	50 -C-T30	S	250	24,10 ZP
6,3	x	60 -C-T30	S	250	42,50 ZP
6,3	x	70 -C-T30	S	250	60,00 ZP
6,3	x	80 -C-T30	S	250	67,00 ZP
6,3	x	90 -C-T30	S	250	75,00 ZP
6,3	x	100 -C-T30	S	250	81,00 ZP

DIN	07983.014	RAZ 690

7983 Steel zinc plated type C-H

Raised csk. head tapping screws with Phillips cross recess H, C = with cone end

hardened
(countersunk ⊀ = 80°)

Dimensions → TI-47 Standard conversion → TI-11
Corrosion protection → TI-217 Mounting instructions → TI-237

Stainless → S. 539

DIN 7983 → replaced by ISO 7051

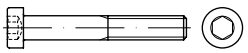
C 2,9	x	9,5-H	S	2000	4,60 ZP
C 2,9	x	9,5-H	S	2000	1,90 ZP
C 2,9	x	9,5-H	K	100	4,40 ZP
C 2,9	x	13 -H	S	2000	2,00 ZP
C 2,9	x	13 -H	K	100	4,50 ZP
C 2,9	x	16 -H	S	2000	2,30 ZP
C 2,9	x	16 -H	K	100	4,80 ZP
C 2,9	x	19 -H	S	2000	3,05 ZP
C 2,9	x	19 -H	K	100	5,50 ZP
C 2,9	x	22 -H	S	2000	3,80 ZP
C 2,9	x	22 -H	K	100	6,30 ZP
C 2,9	x	25 -H	S	1000	4,00 ZP
C 2,9	x	25 -H	K	100	6,50 ZP
C 3,5	x	9,5-H	S	1000	2,75 ZP
C 3,5	x	9,5-H	K	100	5,20 ZP
C 3,5	x	13 -H	S	1000	3,20 ZP
C 3,5	x	13 -H	K	100	4,85 ZP
C 3,5	x	16 -H	S	1000	2,45 ZP
C 3,5	x	16 -H	K	100	4,90 ZP
C 3,5	x	19 -H	S	1000	3,25 ZP
C 3,5	x	19 -H	K	100	5,70 ZP
C 3,5	x	22 -H	S	1000	3,85 ZP
C 3,5	x	22 -H	K	100	6,40 ZP
C 3,5	x	25 -H	S	500	4,30 ZP
C 3,5	x	25 -H	K	100	6,80 ZP
C 3,5	x	32 -H	S	500	5,50 ZP
C 3,5	x	32 -H	K	100	7,90 ZP
C 3,5	x	38 -H	S	500	6,00 ZP
C 3,5	x	38 -H	K	100	8,50 ZP
C 3,9	x	9,5-H	S	1000	3,20 ZP
C 3,9	x	9,5-H	K	100	5,70 ZP
C 3,9	x	13 -H	S	1000	2,70 ZP
C 3,9	x	13 -H	K	100	5,20 ZP
C 3,9	x	16 -H	S	1000	2,95 ZP
C 3,9	x	16 -H	K	100	5,50 ZP
C 3,9	x	19 -H	S	1000	3,45 ZP
C 3,9	x	19 -H	K	100	5,90 ZP
C 3,9	x	22 -H	S	500	3,95 ZP
C 3,9	x	22 -H	K	100	6,40 ZP
C 3,9	x	25 -H	S	500	4,45 ZP
C 3,9	x	25 -H	K	100	7,00 ZP
C 3,9	x	32 -H	S	500	5,80 ZP
C 3,9	x	32 -H	K	100	8,30 ZP
C 3,9	x	38 -H	S	500	6,60 ZP
C 3,9	x	38 -H	K	100	9,10 ZP
C 4,2	x	9,5-H	S	1000	2,35 ZP
C 4,2	x	13 -H	S	1000	2,85 ZP
C 4,2	x	13 -H	K	100	5,30 ZP
C 4,2	x	16 -H	S	1000	3,15 ZP
C 4,2	x	16 -H	K	100	5,60 ZP
C 4,2	x	19 -H	S	500	3,65 ZP
C 4,2	x	19 -H	K	100	6,20 ZP

Dimensions				PU	Pieces	€/100/Mat.
C 4,2	x	22	-H	S	500	5,10 ZP
C 4,2	x	22	-H	K	100	7,60 ZP
C 4,2	x	25	-H	S	500	5,20 ZP
C 4,2	x	25	-H	K	100	7,70 ZP
C 4,2	x	32	-H	S	500	6,00 ZP
C 4,2	x	32	-H	K	100	8,50 ZP
C 4,2	x	38	-H	S	500	6,10 ZP
C 4,2	x	38	-H	K	100	8,50 ZP
C 4,2	x	45	-H	S	500	8,60 ZP
C 4,2	x	45	-H	K	100	11,10 ZP
C 4,2	x	50	-H	S	500	10,60 ZP
C 4,2	x	50	-H	K	100	13,10 ZP
C 4,8	x	9,5	-H	S	500	6,40 ZP
C 4,8	x	13	-H	S	500	4,00 ZP
C 4,8	x	13	-H	K	100	6,50 ZP
C 4,8	x	16	-H	S	500	4,20 ZP
C 4,8	x	16	-H	K	100	6,70 ZP
C 4,8	x	19	-H	S	500	5,10 ZP
C 4,8	x	19	-H	K	100	7,60 ZP
C 4,8	x	22	-H	S	500	5,80 ZP
C 4,8	x	22	-H	K	100	8,30 ZP
C 4,8	x	25	-H	S	500	6,90 ZP
C 4,8	x	25	-H	K	100	9,40 ZP
C 4,8	x	32	-H	S	250	7,40 ZP
C 4,8	x	32	-H	K	100	9,90 ZP
C 4,8	x	38	-H	S	250	8,00 ZP
C 4,8	x	38	-H	K	100	12,30 ZP
C 4,8	x	45	-H	S	250	8,80 ZP
C 4,8	x	45	-H	K	100	11,20 ZP
C 4,8	x	50	-H	S	250	11,20 ZP
C 4,8	x	50	-H	K	100	13,70 ZP
C 5,5	x	13	-H	S	500	7,20 ZP
C 5,5	x	13	-H	K	100	9,60 ZP
C 5,5	x	16	-H	S	500	7,80 ZP
C 5,5	x	16	-H	K	100	10,20 ZP
C 5,5	x	19	-H	S	500	8,40 ZP
C 5,5	x	19	-H	K	100	10,80 ZP
C 5,5	x	22	-H	S	500	9,30 ZP
C 5,5	x	22	-H	K	100	11,80 ZP
C 5,5	x	25	-H	S	250	10,00 ZP
C 5,5	x	25	-H	K	100	12,50 ZP
C 5,5	x	32	-H	S	250	11,50 ZP
C 5,5	x	32	-H	K	100	14,00 ZP
C 5,5	x	38	-H	S	250	12,10 ZP
C 5,5	x	38	-H	K	100	14,60 ZP
C 5,5	x	45	-H	S	250	14,80 ZP
C 5,5	x	45	-H	K	100	17,30 ZP
C 5,5	x	50	-H	S	250	17,10 ZP
C 5,5	x	50	-H	K	100	19,60 ZP
C 6,3	x	16	-H	S	250	9,70 ZP
C 6,3	x	16	-H	K	100	12,20 ZP
C 6,3	x	19	-H	S	250	10,10 ZP
C 6,3	x	19	-H	K	100	12,50 ZP
C 6,3	x	22	-H	S	250	11,70 ZP
C 6,3	x	22	-H	K	100	14,10 ZP
C 6,3	x	25	-H	S	250	11,80 ZP
C 6,3	x	25	-H	K	100	14,30 ZP
C 6,3	x	32	-H	S	250	14,20 ZP
C 6,3	x	32	-H	K	100	16,70 ZP
C 6,3	x	38	-H	S	250	14,80 ZP
C 6,3	x	38	-H	K	100	17,30 ZP
C 6,3	x	45	-H	S	250	15,90 ZP
C 6,3	x	45	-H	K	100	18,30 ZP
C 6,3	x	50	-H	S	250	21,00 ZP
C 6,3	x	50	-H	K	100	23,50 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN	07984.800		RAZ 700

7984

8.8



Hexagon socket head cap screws with low head

Dimensions → TI-13 Tightening torque → TI-230
Mech. properties → TI-220

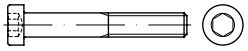
Stainless → S. 540

Dimensions				PU	Pieces	€/100/Mat.
M 3	x	5		S	500	30,55
M 3	x	5		K	100	33,60
M 3	x	6		S	500	25,40
M 3	x	6		K	100	28,40
M 3	x	8		S	500	20,55
M 3	x	8		K	100	23,55
M 3	x	10		S	500	20,55
M 3	x	10		K	100	23,55
M 3	x	12		S	500	21,85
M 3	x	12		K	100	24,85
M 3	x	16		S	500	26,25
M 3	x	16		K	100	29,25
M 3	x	18		S	500	27,45
M 3	x	20		S	500	27,65
M 3	x	20		K	100	30,70
M 3	x	25		S	500	31,70
M 3	x	25		K	100	34,80
M 3	x	30		S	500	36,45
M 4	x	6		S	500	39,10
M 4	x	6		K	100	42,15
M 4	x	8		S	500	22,60
M 4	x	8		K	100	25,80
M 4	x	10		S	500	18,55
M 4	x	10		K	100	21,75
M 4	x	12		S	500	21,10
M 4	x	12		K	100	24,30
M 4	x	16		S	500	19,15
M 4	x	16		K	100	22,40
M 4	x	20		S	500	20,65
M 4	x	20		K	100	23,90
M 4	x	25		S	500	26,85
M 4	x	25		K	100	30,05
M 4	x	30		S	500	31,10
M 4	x	30		K	100	34,35
M 4	x	35		S	500	40,20
M 4	x	40		S	500	45,70
M 4	x	40		K	100	48,75
M 4	x	45		S	500	58,65
M 4	x	50		S	500	61,85
M 5	x	6		S	500	32,70
M 5	x	6		K	100	35,75
M 5	x	8		S	500	24,10
M 5	x	8		K	100	27,25
M 5	x	10		S	500	12,00
M 5	x	10		K	100	15,10
M 5	x	12		S	500	11,60
M 5	x	12		K	100	14,65
M 5	x	14		S	500	26,45
M 5	x	16		S	500	12,85
M 5	x	16		K	100	15,90
M 5	x	18		S	500	28,40
M 5	x	20		S	500	12,95
M 5	x	20		K	100	16,00
M 5	x	25		S	500	15,65
M 5	x	25		K	100	18,65
M 5	x	30		S	500	30,30
M 5	x	30		K	100	33,35

Dimensions				PU	Pieces	€/100/Mat.
M 5	x	35		S	200	38,20
M 5	x	40		S	200	38,20
M 5	x	45		S	200	45,30
M 5	x	50		S	200	45,30
M 5	x	55		S	200	63,65
M 5	x	60		S	200	69,35
M 6	x	8		S	500	12,60
M 6	x	8		K	100	15,70
M 6	x	10		S	500	12,95
M 6	x	10		K	100	16,00
M 6	x	12		S	500	12,95
M 6	x	12		K	100	16,00
M 6	x	14		S	500	29,20
M 6	x	16		S	500	13,15
M 6	x	16		K	100	16,15
M 6	x	18		S	500	34,75
M 6	x	18		K	100	37,80
M 6	x	20		S	500	13,30
M 6	x	20		K	100	16,40
M 6	x	25		S	500	16,50
M 6	x	25		K	100	19,55
M 6	x	30		S	500	16,95
M 6	x	30		K	100	20,05
M 6	x	35		S	200	31,10
M 6	x	40		S	200	33,25
M 6	x	45		S	200	41,95
M 6	x	50		S	200	39,00
M 6	x	55		S	200	49,70
M 6	x	60		S	200	49,70
M 6	x	70		S	200	85,45
M 8	x	10		S	200	47,90
M 8	x	12		S	200	43,45
M 8	x	14		S	200	36,50
M 8	x	16		S	200	19,15
M 8	x	18		S	200	34,75
M 8	x	20		S	200	19,45
M 8	x	25		S	200	19,45
M 8	x	30		S	200	21,80
M 8	x	35		S	200	47,75
M 8	x	40		S	200	48,75
M 8	x	45		S	200	50,45
M 8	x	50		S	200	51,95
M 8	x	55		S	200	64,30
M 8	x	60		S	200	64,30
M 8	x	65		S	200	98,85
M 8	x	70		S	200	98,85
M 8	x	80		S	200	118,00
M 8	x	90		S	100	168,00
M 8	x	100		S	100	197,00
M 10	x	12		S	200	48,65
M 10	x	16		S	200	34,35
M 10	x	20		S	200	33,55
M 10	x	25		S	200	32,85
M 10	x	30		S	200	34,50
M 10	x	35		S	100	48,00
M 10	x	40		S	100	53,00
M 10	x	45		S	100	56,00
M 10	x	50		S	100	78,20
M 10	x	55		S	100	99,45
M 10	x	60		S	100	99,45
M 10	x	65		S	100	152,00
M 10	x	70		S	100	152,00
M 10	x	75		S	100	172,00
M 10	x	80		S	100	172,00
M 10	x	90		S	100	187,00
M 10	x	100		S	100	202,00
M 10	x	120		S	100	271,00
M 12	x	20		S	100	46,80
M 12	x	25		S	100	47,20
M 12	x	30		S	100	50,30
M 12	x	35		S	100	55,00
M 12	x	40		S	100	55,40
M 12	x	45		S	100	67,35
M 12	x	50		S	100	126,00
M 12	x	55		S	100	190,00

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	60	S	100	190,00
M 12	x	65	S	50	223,00
M 12	x	70	S	50	223,00
M 12	x	80	S	50	249,00
M 12	x	90	S	50	273,00
M 12	x	100	S	50	292,00
M 16	x	25	S	50	209,00
M 16	x	30	S	50	160,00
M 16	x	35	S	50	173,00
M 16	x	40	S	50	182,00
M 16	x	45	S	50	213,00
M 16	x	50	S	50	213,00
M 16	x	55	S	50	244,00
M 16	x	60	S	50	292,00
M 16	x	70	S	25	347,00
M 16	x	80	S	25	413,00
M 16	x	90	S	25	446,00
M 16	x	100	S	25	528,00
M 16	x	110	S	25	712,00
M 16	x	120	S	25	743,00
M 20	x	30	S	25	486,00
M 20	x	35	S	25	486,00
M 20	x	40	S	25	482,00
M 20	x	45	S	25	564,00
M 20	x	50	S	25	565,00
M 20	x	55	S	25	615,00
M 20	x	60	S	25	615,00
M 20	x	70	S	25	804,00
M 20	x	80	S	25	845,00
M 20	x	90	S	25	886,00
M 20	x	100	S	25	934,00
M 20	x	110	S	1	1006,00
M 20	x	120	S	1	1053,00
M 24	x	40	S	1	1164,00
M 24	x	45	S	1	1193,00
M 24	x	50	S	1	1235,00
M 24	x	60	S	1	1235,00
M 24	x	70	S	1	1342,00
M 24	x	80	S	1	1467,00
M 24	x	100	S	1	1928,00
M 24	x	120	S	1	2299,00

DIN	07984.810	RAZ 700
7984	**8.8** **zinc plated**	



Hexagon socket head cap screws with low head

Dimensions → TI-13 Tightening torque → TI-230
Mech. properties → TI-220

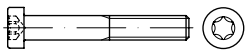
Stainless → S. 540

M 3	x	5	S	500	30,95 ZP
M 3	x	6	S	500	25,80 ZP
M 3	x	8	S	500	20,95 ZP
M 3	x	10	S	500	20,95 ZP
M 3	x	12	S	500	22,15 ZP
M 3	x	16	S	500	26,70 ZP
M 3	x	18	S	500	28,05 ZP
M 3	x	20	S	500	28,25 ZP
M 3	x	25	S	500	32,80 ZP
M 4	x	6	S	500	39,45 ZP
M 4	x	8	S	500	23,05 ZP
M 4	x	10	S	500	19,10 ZP
M 4	x	12	S	500	21,55 ZP
M 4	x	16	S	500	19,75 ZP
M 4	x	20	S	500	21,55 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	25	S	500	27,95 ZP
M 4	x	30	S	500	32,15 ZP
M 4	x	35	S	500	41,25 ZP
M 4	x	40	S	500	47,80 ZP
M 4	x	50	S	500	64,70 ZP
M 5	x	6	S	500	34,00 ZP
M 5	x	8	S	500	24,85 ZP
M 5	x	10	S	500	12,80 ZP
M 5	x	12	S	500	12,50 ZP
M 5	x	14	S	500	27,65 ZP
M 5	x	16	S	500	13,85 ZP
M 5	x	20	S	500	14,10 ZP
M 5	x	25	S	500	17,30 ZP
M 5	x	30	S	500	32,80 ZP
M 5	x	35	S	200	40,65 ZP
M 5	x	40	S	200	40,65 ZP
M 5	x	45	S	200	48,30 ZP
M 5	x	50	S	200	48,30 ZP
M 5	x	55	S	200	68,00 ZP
M 5	x	60	S	200	74,00 ZP
M 6	x	8	S	500	13,70 ZP
M 6	x	10	S	500	14,10 ZP
M 6	x	12	S	500	14,15 ZP
M 6	x	14	S	500	29,50 ZP
M 6	x	16	S	500	14,60 ZP
M 6	x	18	S	500	36,50 ZP
M 6	x	20	S	500	15,00 ZP
M 6	x	25	S	500	17,30 ZP
M 6	x	30	S	500	19,45 ZP
M 6	x	35	S	200	34,00 ZP
M 6	x	40	S	200	36,40 ZP
M 6	x	45	S	200	45,50 ZP
M 6	x	50	S	200	43,05 ZP
M 6	x	55	S	200	53,80 ZP
M 6	x	60	S	200	53,80 ZP
M 6	x	65	S	200	91,00 ZP
M 6	x	70	S	200	90,00 ZP
M 6	x	80	S	200	95,00 ZP
M 8	x	10	S	200	51,00 ZP
M 8	x	12	S	200	46,70 ZP
M 8	x	14	S	200	39,80 ZP
M 8	x	16	S	200	22,15 ZP
M 8	x	18	S	200	40,55 ZP
M 8	x	20	S	200	22,75 ZP
M 8	x	22	S	200	45,00 ZP
M 8	x	25	S	200	23,40 ZP
M 8	x	30	S	200	26,40 ZP
M 8	x	35	S	200	52,80 ZP
M 8	x	40	S	200	54,55 ZP
M 8	x	45	S	200	57,00 ZP
M 8	x	50	S	200	59,45 ZP
M 8	x	55	S	200	71,55 ZP
M 8	x	60	S	200	72,20 ZP
M 8	x	65	S	200	108,00 ZP
M 8	x	70	S	200	109,00 ZP
M 8	x	80	S	200	123,00 ZP
M 8	x	90	S	100	173,00 ZP
M 8	x	100	S	100	203,00 ZP
M 10	x	12	S	200	54,00 ZP
M 10	x	16	S	200	38,85 ZP
M 10	x	18	S	200	71,00 ZP
M 10	x	20	S	200	38,85 ZP
M 10	x	25	S	200	38,85 ZP
M 10	x	30	S	200	41,85 ZP
M 10	x	35	S	100	57,00 ZP
M 10	x	40	S	100	60,00 ZP
M 10	x	45	S	100	64,50 ZP
M 10	x	50	S	100	88,55 ZP
M 10	x	55	S	100	112,00 ZP
M 10	x	60	S	100	113,00 ZP
M 10	x	65	S	100	168,00 ZP
M 10	x	70	S	100	168,00 ZP
M 10	x	80	S	100	189,00 ZP
M 10	x	90	S	100	203,00 ZP
M 10	x	100	S	100	220,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	16	S	100	50,00 ZP
M 12	x	20	S	100	54,55 ZP
M 12	x	25	S	100	56,40 ZP
M 12	x	30	S	100	60,65 ZP
M 12	x	35	S	100	64,50 ZP
M 12	x	40	S	100	67,90 ZP
M 12	x	45	S	100	81,25 ZP
M 12	x	50	S	100	141,00 ZP
M 12	x	55	S	100	210,00 ZP
M 12	x	60	S	100	210,00 ZP
M 12	x	70	S	50	247,00 ZP
M 12	x	80	S	50	274,00 ZP
M 16	x	20	S	50	307,00 ZP
M 16	x	25	S	50	232,00 ZP
M 16	x	30	S	50	186,00 ZP
M 16	x	35	S	50	198,00 ZP
M 16	x	40	S	50	210,00 ZP
M 16	x	45	S	50	243,00 ZP
M 16	x	50	S	50	247,00 ZP
M 16	x	55	S	50	283,00 ZP
M 16	x	60	S	50	329,00 ZP
M 16	x	70	S	25	389,00 ZP
M 16	x	80	S	25	455,00 ZP
M 16	x	90	S	25	488,00 ZP
M 16	x	100	S	25	570,00 ZP
M 16	x	110	S	25	760,00 ZP
M 20	x	30	S	25	532,00 ZP
M 20	x	35	S	25	528,00 ZP
M 20	x	40	S	25	528,00 ZP
M 20	x	45	S	25	614,00 ZP
M 20	x	50	S	25	614,00 ZP
M 20	x	60	S	25	674,00 ZP
M 20	x	70	S	25	868,00 ZP
M 20	x	80	S	25	916,00 ZP
M 20	x	90	S	25	940,00 ZP
M 24	x	40	S	1	1214,00 ZP
M 24	x	50	S	1	1285,00 ZP
M 24	x	60	S	1	1300,00 ZP
M 24	x	70	S	1	1402,00 ZP
M 24	x	80	S	1	1527,00 ZP
M 24	x	100	S	1	1999,00 ZP

~DIN	07984.814	RAZ 1000
7984	**8.8** **zinc plated**	**ISR**



Hexalobular socket head cap screws with low head

Dimensions → TI-13 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

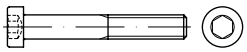
M 3	x	6 -T10	S	500	28,00 ZP
M 3	x	8 -T10	S	500	28,50 ZP
M 3	x	10 -T10	S	500	28,50 ZP
M 3	x	12 -T10	S	500	29,50 ZP
M 3	x	16 -T10	S	500	34,10 ZP
M 4	x	6 -T20	S	500	41,60 ZP
M 4	x	8 -T20	S	500	25,90 ZP
M 4	x	10 -T20	S	500	21,60 ZP
M 4	x	12 -T20	S	500	24,00 ZP
M 4	x	16 -T20	S	500	21,90 ZP
M 4	x	20 -T20	S	500	23,95 ZP
M 5	x	10 -T25	S	500	14,20 ZP
M 5	x	12 -T25	S	500	13,85 ZP
M 5	x	16 -T25	S	500	15,40 ZP
M 5	x	20 -T25	S	500	15,65 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	25 -T25	S	500	19,20 ZP
M 6	x	10 -T30	S	500	15,65 ZP
M 6	x	12 -T30	S	500	15,70 ZP
M 6	x	16 -T30	S	500	16,20 ZP
M 6	x	20 -T30	S	500	16,65 ZP
M 6	x	25 -T30	S	500	19,20 ZP
M 8	x	12 -T40	S	200	51,85 ZP
M 8	x	16 -T40	S	200	24,55 ZP
M 8	x	20 -T40	S	100	25,25 ZP
M 8	x	25 -T40	S	200	25,95 ZP
M 8	x	30 -T40	S	200	29,30 ZP

DIN 07984.100 RAZ 700

7984

10.9



Hexagon socket head cap screws with low head

Dimensions → TI-13 Tightening torque → TI-230
Mech. properties → TI-220

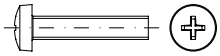
Stainless → S. 540

M 4	x	10	S	500	23,00
M 4	x	12	S	500	26,50
M 4	x	16	S	500	27,50
M 4	x	20	S	500	28,00
M 4	x	25	S	500	36,00
M 4	x	30	S	500	40,00
M 5	x	10	S	500	15,30
M 5	x	12	S	500	15,80
M 5	x	16	S	500	16,60
M 5	x	20	S	500	17,00
M 5	x	25	S	500	19,60
M 5	x	30	S	500	33,00
M 6	x	10	S	500	19,50
M 6	x	12	S	500	20,30
M 6	x	16	S	500	20,80
M 6	x	20	S	500	22,10
M 6	x	25	S	500	24,80
M 6	x	30	S	500	28,50
M 8	x	12	S	200	55,00
M 8	x	16	S	200	27,50
M 8	x	20	S	200	31,50
M 8	x	25	S	200	35,50
M 8	x	30	S	200	38,50
M 10	x	16	S	200	48,50
M 10	x	20	S	200	53,00
M 10	x	25	S	200	54,00
M 10	x	30	S	200	58,00
M 10	x	35	S	100	62,00
M 10	x	40	S	100	67,00
M 12	x	20	S	100	66,00
M 12	x	25	S	100	62,00
M 12	x	30	S	100	65,00
M 12	x	35	S	100	71,00
M 12	x	40	S	100	75,00

DIN 07985.404 RAZ 710

7985

4.8 **H**



Cheese head screws with Phillips cross recess H

Dimensions → TI-40 Standard conversion → TI-11

Stainless → p. 541

DIN 7985 → replaced by ISO 7045

M 3	x	5 -H	S	2000	5,00
M 3	x	6 -H	S	2000	2,85
M 3	x	8 -H	S	2000	1,90
M 3	x	10 -H	S	2000	1,95
M 3	x	12 -H	S	2000	2,00
M 3	x	16 -H	S	2000	2,25
M 3	x	20 -H	S	2000	2,55
M 4	x	6 -H	S	2000	4,20
M 4	x	8 -H	S	2000	2,70
M 4	x	10 -H	S	2000	2,80
M 4	x	12 -H	S	2000	2,85
M 4	x	16 -H	S	2000	3,35
M 4	x	20 -H	S	2000	3,45
M 4	x	25 -H	S	1000	3,60
M 4	x	30 -H	S	1000	4,90
M 5	x	8 -H	S	2000	3,95
M 5	x	10 -H	S	2000	4,00
M 5	x	12 -H	S	1000	4,20
M 5	x	16 -H	S	1000	4,60
M 5	x	20 -H	S	1000	4,90
M 5	x	25 -H	S	1000	5,70
M 6	x	10 -H	S	1000	5,90
M 6	x	12 -H	S	1000	5,90
M 6	x	16 -H	S	1000	6,50
M 6	x	20 -H	S	1000	6,70
M 6	x	25 -H	S	500	7,50
M 6	x	40 -H	S	500	11,20
M 8	x	16 -H	S	500	13,80
M 8	x	25 -H	S	200	17,00

DIN 07985.414 RAZ 710

7985

4.8 **H**

zinc plated

Cheese head screws with Phillips cross recess H

Dimensions → TI-40 Standard conversion → TI-11
Corrosion protection → TI-217

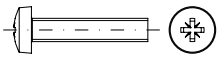
Stainless → S. 541

DIN 7985 → replaced by ISO 7045

M 2	x	4 -H	S	2000	6,90 ZP
M 2	x	4 -H	K	200	9,30 ZP
M 2	x	5 -H	S	2000	6,90 ZP
M 2	x	5 -H	K	200	9,30 ZP
M 2	x	6 -H	S	2000	3,80 ZP
M 2	x	6 -H	K	200	5,20 ZP
M 2	x	8 -H	S	2000	3,80 ZP
M 2	x	8 -H	K	200	6,20 ZP
M 2	x	10 -H	S	2000	3,90 ZP
M 2	x	10 -H	K	200	6,30 ZP
M 2	x	12 -H	S	2000	4,00 ZP
M 2	x	12 -H	K	200	6,40 ZP
M 2	x	16 -H	S	2000	4,10 ZP
M 2	x	16 -H	K	200	6,50 ZP
M 2	x	20 -H	S	2000	4,35 ZP
M 2	x	20 -H	K	200	6,75 ZP
M 2,5	x	4 -H	S	2000	7,60 ZP
M 2,5	x	4 -H	K	200	10,00 ZP
M 2,5	x	5 -H	S	2000	7,60 ZP
M 2,5	x	5 -H	K	200	10,00 ZP
M 2,5	x	6 -H	S	2000	3,85 ZP
M 2,5	x	6 -H	K	200	6,30 ZP
M 2,5	x	8 -H	S	2000	3,85 ZP
M 2,5	x	8 -H	K	200	6,30 ZP
M 2,5	x	10 -H	S	2000	3,95 ZP
M 2,5	x	10 -H	K	200	6,40 ZP
M 2,5	x	12 -H	S	2000	4,05 ZP
M 2,5	x	12 -H	K	200	6,50 ZP
M 2,5	x	14 -H	S	2000	8,00 ZP
M 2,5	x	16 -H	S	2000	4,40 ZP
M 2,5	x	16 -H	K	200	6,90 ZP
M 2,5	x	20 -H	S	2000	4,75 ZP
M 2,5	x	20 -H	K	200	7,15 ZP
M 2,5	x	25 -H	S	2000	5,60 ZP
M 2,5	x	25 -H	K	200	8,00 ZP
M 2,5	x	30 -H	S	2000	12,00 ZP
M 2,5	x	30 -H	K	200	14,40 ZP
M 3	x	3 -H	S	2000	10,00 ZP
M 3	x	3 -H	K	200	12,00 ZP
M 3	x	4 -H	S	2000	8,20 ZP
M 3	x	4 -H	K	200	10,60 ZP
M 3	x	5 -H	S	2000	5,50 ZP
M 3	x	5 -H	K	200	7,90 ZP
M 3	x	6 -H	S	2000	3,15 ZP
M 3	x	6 -H	K	200	5,60 ZP
M 3	x	8 -H	S	2000	2,15 ZP
M 3	x	8 -H	K	200	4,50 ZP
M 3	x	10 -H	S	2000	2,15 ZP
M 3	x	10 -H	K	200	4,50 ZP
M 3	x	12 -H	S	2000	2,25 ZP
M 3	x	12 -H	K	200	4,70 ZP
M 3	x	14 -H	S	2000	2,65 ZP
M 3	x	14 -H	K	200	5,10 ZP
M 3	x	16 -H	S	2000	2,45 ZP
M 3	x	16 -H	K	200	4,85 ZP
M 3	x	18 -H	S	2000	2,80 ZP
M 3	x	18 -H	K	200	5,20 ZP
M 3	x	20 -H	S	2000	2,80 ZP
M 3	x	20 -H	K	200	5,20 ZP
M 3	x	22 -H	S	2000	3,15 ZP
M 3	x	22 -H	K	200	5,60 ZP
M 3	x	25 -H	S	2000	3,45 ZP
M 3	x	25 -H	K	200	5,90 ZP
M 3	x	28 -H	S	2000	11,00 ZP
M 3	x	28 -H	K	200	13,45 ZP
M 3	x	30 -H	S	2000	4,30 ZP
M 3	x	30 -H	K	200	6,70 ZP
M 3	x	35 -H	S	2000	6,70 ZP
M 3	x	35 -H	K	200	9,10 ZP
M 3	x	40 -H	S	1000	7,00 ZP
M 3	x	40 -H	K	200	9,40 ZP
M 3	x	45 -H	S	1000	10,50 ZP
M 3	x	45 -H	K	200	12,47 ZP
M 3	x	50 -H	S	1000	12,00 ZP
M 3	x	50 -H	K	200	14,40 ZP
M 3	x	55 -H	S	200	25,00 ZP
M 3,5	x	5 -H	S	2000	9,00 ZP
M 3,5	x	6 -H	S	2000	9,20 ZP
M 4	x	4 -H	S	2000	10,00 ZP
M 4	x	4 -H	K	200	12,45 ZP
M 4	x	5 -H	S	2000	7,10 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 5 -H	K	200	9,50 ZP
M 4 x 6 -H	S	2000	4,60 ZP
M 4 x 6 -H	K	200	7,10 ZP
M 4 x 8 -H	S	2000	3,00 ZP
M 4 x 8 -H	K	200	5,50 ZP
M 4 x 10 -H	S	2000	3,10 ZP
M 4 x 10 -H	K	200	5,60 ZP
M 4 x 12 -H	S	2000	3,20 ZP
M 4 x 12 -H	K	200	5,60 ZP
M 4 x 14 -H	S	2000	4,45 ZP
M 4 x 14 -H	K	200	6,90 ZP
M 4 x 16 -H	S	2000	3,60 ZP
M 4 x 16 -H	K	200	6,00 ZP
M 4 x 18 -H	S	2000	4,20 ZP
M 4 x 18 -H	K	200	6,60 ZP
M 4 x 20 -H	S	2000	3,80 ZP
M 4 x 20 -H	K	200	6,30 ZP
M 4 x 22 -H	S	2000	6,00 ZP
M 4 x 25 -H	S	1000	4,00 ZP
M 4 x 25 -H	K	200	6,50 ZP
M 4 x 30 -H	S	1000	5,50 ZP
M 4 x 30 -H	K	200	7,90 ZP
M 4 x 35 -H	S	1000	6,40 ZP
M 4 x 35 -H	K	200	8,80 ZP
M 4 x 40 -H	S	1000	7,20 ZP
M 4 x 40 -H	K	200	9,60 ZP
M 4 x 45 -H	S	1000	11,10 ZP
M 4 x 45 -H	K	200	13,60 ZP
M 4 x 50 -H	S	1000	13,30 ZP
M 4 x 50 -H	K	200	15,80 ZP
M 4 x 55 -H	S	500	19,10 ZP
M 4 x 60 -H	S	500	19,10 ZP
M 4 x 65 -H	S	500	39,00 ZP
M 4 x 70 -H	S	500	24,70 ZP
M 4 x 80 -H	S	500	31,50 ZP
M 4 x 85 -H	S	500	40,00 ZP
M 4 x 90 -H	S	200	55,00 ZP
M 4 x 100 -H	S	200	65,00 ZP
M 5 x 6 -H	S	2000	8,80 ZP
M 5 x 6 -H	K	200	11,20 ZP
M 5 x 8 -H	S	2000	4,30 ZP
M 5 x 8 -H	K	200	6,70 ZP
M 5 x 10 -H	S	2000	4,40 ZP
M 5 x 10 -H	K	200	6,90 ZP
M 5 x 12 -H	S	1000	4,60 ZP
M 5 x 12 -H	K	200	7,10 ZP
M 5 x 14 -H	S	1000	5,00 ZP
M 5 x 14 -H	K	200	7,40 ZP
M 5 x 16 -H	S	1000	5,10 ZP
M 5 x 16 -H	K	200	7,50 ZP
M 5 x 18 -H	S	1000	6,00 ZP
M 5 x 18 -H	K	200	8,40 ZP
M 5 x 20 -H	S	1000	5,50 ZP
M 5 x 20 -H	K	200	7,90 ZP
M 5 x 25 -H	S	1000	6,40 ZP
M 5 x 25 -H	K	200	8,80 ZP
M 5 x 30 -H	S	1000	7,60 ZP
M 5 x 30 -H	K	200	10,00 ZP
M 5 x 35 -H	S	500	8,70 ZP
M 5 x 35 -H	K	200	11,00 ZP
M 5 x 40 -H	S	500	8,70 ZP
M 5 x 40 -H	K	200	11,10 ZP
M 5 x 45 -H	S	500	10,20 ZP
M 5 x 45 -H	K	200	12,70 ZP
M 5 x 50 -H	S	500	14,90 ZP
M 5 x 50 -H	K	200	17,30 ZP
M 5 x 60 -H	S	200	19,70 ZP
M 5 x 70 -H	S	200	27,50 ZP
M 5 x 80 -H	S	200	34,50 ZP
M 5 x 90 -H	S	200	40,00 ZP
M 5 x 100 -H	S	200	47,00 ZP
M 6 x 8 -H	S	1000	11,60 ZP
M 6 x 8 -H	K	200	14,00 ZP
M 6 x 10 -H	S	1000	6,60 ZP
M 6 x 10 -H	K	200	9,00 ZP
M 6 x 12 -H	S	1000	6,40 ZP
M 6 x 12 -H	K	200	8,90 ZP
M 6 x 14 -H	S	1000	8,00 ZP
M 6 x 14 -H	K	200	10,50 ZP
M 6 x 16 -H	S	1000	7,20 ZP
M 6 x 16 -H	K	200	9,70 ZP
M 6 x 18 -H	S	1000	8,00 ZP
M 6 x 20 -H	S	1000	7,50 ZP
M 6 x 20 -H	K	200	9,90 ZP
M 6 x 25 -H	S	500	8,30 ZP
M 6 x 25 -H	K	200	10,70 ZP
M 6 x 30 -H	S	500	9,70 ZP
M 6 x 30 -H	K	200	12,20 ZP
M 6 x 35 -H	S	500	11,70 ZP
M 6 x 35 -H	K	200	14,10 ZP
M 6 x 40 -H	S	500	12,50 ZP
M 6 x 40 -H	K	200	14,90 ZP
M 6 x 45 -H	S	500	13,00 ZP
M 6 x 45 -H	K	200	15,40 ZP
M 6 x 50 -H	S	200	14,80 ZP
M 6 x 55 -H	S	200	39,00 ZP
M 6 x 60 -H	S	200	18,30 ZP
M 6 x 70 -H	S	200	29,00 ZP
M 6 x 75 -H	S	200	33,50 ZP
M 6 x 80 -H	S	200	33,50 ZP
M 6 x 90 -H	S	100	40,50 ZP
M 6 x 100 -H	S	100	47,50 ZP
M 8 x 12 -H	S	500	21,90 ZP
M 8 x 12 -H	K	200	24,30 ZP
M 8 x 16 -H	S	500	15,30 ZP
M 8 x 16 -H	K	200	17,70 ZP
M 8 x 20 -H	S	500	16,20 ZP
M 8 x 20 -H	K	200	18,70 ZP
M 8 x 25 -H	S	200	18,70 ZP
M 8 x 30 -H	S	200	20,50 ZP
M 8 x 35 -H	S	200	22,80 ZP
M 8 x 40 -H	S	100	24,30 ZP
M 8 x 45 -H	S	100	28,50 ZP
M 8 x 50 -H	S	100	29,50 ZP
M 8 x 60 -H	S	100	36,50 ZP
M 8 x 70 -H	S	100	44,50 ZP
M 8 x 80 -H	S	100	56,00 ZP
M 8 x 90 -H	S	100	75,00 ZP
M 10 x 25 -H	S	100	95,00 ZP

DIN	07985.415	RAZ 710
7985	**4.8** zinc plated	**Z**



Cheese head screws with Pozidriv cross recess Z

Dimensions ➔ TI-40 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217

Stainless ➔ S. 542

DIN 7985 ➔ replaced by ISO 7045

Dimensions	PU	Pieces	€/100/Mat.
M 2,5 x 4 -Z	S	2000	7,60 ZP
M 2,5 x 5 -Z	S	2000	7,60 ZP
M 2,5 x 6 -Z	S	2000	3,85 ZP
M 2,5 x 8 -Z	S	2000	3,85 ZP
M 2,5 x 10 -Z	S	2000	3,95 ZP
M 2,5 x 12 -Z	S	2000	4,05 ZP
M 2,5 x 16 -Z	S	2000	4,40 ZP
M 3 x 4 -Z	S	2000	8,20 ZP
M 3 x 5 -Z	S	2000	5,50 ZP
M 3 x 6 -Z	S	2000	3,15 ZP
M 3 x 8 -Z	S	2000	2,15 ZP
M 3 x 10 -Z	S	2000	2,15 ZP
M 3 x 12 -Z	S	2000	2,25 ZP
M 3 x 16 -Z	S	2000	2,45 ZP
M 3 x 20 -Z	S	2000	2,80 ZP
M 3 x 25 -Z	S	2000	3,45 ZP
M 3 x 30 -Z	S	2000	4,30 ZP
M 3 x 35 -Z	S	2000	6,70 ZP
M 3 x 40 -Z	S	1000	7,00 ZP
M 4 x 5 -Z	S	2000	7,10 ZP
M 4 x 6 -Z	S	2000	4,60 ZP
M 4 x 8 -Z	S	2000	3,00 ZP
M 4 x 10 -Z	S	2000	3,10 ZP
M 4 x 12 -Z	S	2000	3,20 ZP
M 4 x 16 -Z	S	2000	3,60 ZP
M 4 x 18 -Z	S	2000	4,20 ZP
M 4 x 20 -Z	S	2000	3,80 ZP
M 4 x 25 -Z	S	1000	4,00 ZP
M 4 x 30 -Z	S	1000	5,50 ZP
M 4 x 35 -Z	S	1000	6,40 ZP
M 4 x 40 -Z	S	1000	7,20 ZP
M 4 x 45 -Z	S	1000	11,10 ZP
M 4 x 50 -Z	S	1000	13,30 ZP
M 4 x 60 -Z	S	500	19,10 ZP
M 4 x 70 -Z	S	500	24,70 ZP
M 5 x 6 -Z	S	2000	8,80 ZP
M 5 x 8 -Z	S	2000	4,30 ZP
M 5 x 10 -Z	S	2000	4,40 ZP
M 5 x 12 -Z	S	1000	4,60 ZP
M 5 x 16 -Z	S	1000	5,10 ZP
M 5 x 20 -Z	S	1000	5,50 ZP
M 5 x 25 -Z	S	1000	6,40 ZP
M 5 x 30 -Z	S	1000	7,60 ZP
M 5 x 35 -Z	S	500	8,70 ZP
M 5 x 40 -Z	S	500	8,70 ZP
M 5 x 45 -Z	S	500	10,20 ZP
M 5 x 50 -Z	S	500	14,90 ZP
M 5 x 60 -Z	S	200	19,70 ZP
M 5 x 70 -Z	S	200	27,50 ZP
M 5 x 80 -Z	S	200	34,50 ZP
M 6 x 8 -Z	S	1000	11,60 ZP
M 6 x 10 -Z	S	1000	6,60 ZP
M 6 x 12 -Z	S	1000	6,40 ZP
M 6 x 16 -Z	S	1000	7,20 ZP
M 6 x 20 -Z	S	1000	7,50 ZP
M 6 x 25 -Z	S	500	8,30 ZP
M 6 x 30 -Z	S	500	9,70 ZP
M 6 x 35 -Z	S	500	11,70 ZP
M 6 x 40 -Z	S	500	12,50 ZP
M 6 x 45 -Z	S	500	13,00 ZP
M 6 x 50 -Z	S	200	14,80 ZP
M 6 x 60 -Z	S	200	18,30 ZP

DIN	07985.436	RAZ 710
7985	**4.8** zinc plated 8 TLP	**H**

Cheese head screws with Phillips cross recess H

Dimensions ➔ TI-40 Standard conversion ➔ TI-11
Corrosion protection ➔ TI-217

Stainless ➔ S. 541

DIN 7985 ➔ replaced by ISO 7045

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 6-H	S	2000	4,20 ZP TLP
M 3 x 8-H	S	2000	2,90 ZP TLP
M 3 x 12-H	S	2000	3,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	16-H	S	2000	3,35 ZP TLP
M 4	x	8-H	S	2000	4,20 ZP TLP
M 4	x	10-H	S	2000	4,35 ZP TLP
M 4	x	12-H	S	2000	4,50 ZP TLP
M 4	x	16-H	S	2000	4,90 ZP TLP
M 4	x	20-H	S	2000	5,10 ZP TLP
M 4	x	25-H	S	1000	5,45 ZP TLP
M 4	x	30-H	S	1000	7,00 ZP TLP
M 5	x	8-H	S	2000	5,50 ZP TLP
M 5	x	10-H	S	2000	6,00 ZP TLP
M 5	x	12-H	S	1000	6,25 ZP TLP
M 5	x	16-H	S	1000	6,90 ZP TLP
M 5	x	20-H	S	1000	7,15 ZP TLP
M 6	x	10-H	S	1000	8,80 ZP TLP
M 6	x	12-H	S	1000	9,00 ZP TLP
M 6	x	25-H	S	500	11,00 ZP TLP

DIN 07985.464 RAZ 710

7985 4.8 H zinc plated yellow

Cheese head screws with Phillips cross recess H

Dimensions → TI-40 Standard conversion → TI-11
Corrosion protection → TI-217

Stainless → S. 541

DIN 7985 → replaced by ISO 7045

M 3	x	6-H	S	2000	3,35 YZP
M 3	x	8-H	S	2000	2,30 YZP
M 3	x	10-H	S	2000	2,30 YZP
M 3	x	12-H	S	2000	2,40 YZP
M 3	x	16-H	S	2000	2,65 YZP
M 4	x	6-H	S	2000	4,90 YZP
M 4	x	8-H	S	2000	3,35 YZP
M 4	x	10-H	S	2000	3,45 YZP
M 4	x	12-H	S	2000	3,60 YZP
M 4	x	16-H	S	2000	3,90 YZP
M 4	x	20-H	S	2000	4,05 YZP
M 4	x	25-H	S	1000	4,35 YZP
M 4	x	30-H	S	1000	5,60 YZP
M 5	x	8-H	S	2000	4,40 YZP
M 5	x	10-H	S	2000	4,80 YZP
M 5	x	12-H	S	1000	5,00 YZP
M 5	x	16-H	S	1000	5,50 YZP
M 5	x	20-H	S	1000	5,70 YZP
M 5	x	25-H	S	1000	6,70 YZP
M 5	x	30-H	S	1000	8,00 YZP
M 6	x	10-H	S	1000	7,00 YZP
M 6	x	12-H	S	1000	7,20 YZP
M 6	x	16-H	S	1000	7,50 YZP
M 6	x	20-H	S	1000	7,80 YZP
M 6	x	25-H	S	500	8,60 YZP

~DIN 07985.416 RAZ 710

7985 4.8 ISR zinc plated

Pan head screws, ISR = hexalobular socket

Bits → article 88655

Dimensions → TI-40 Standard conversion → TI-11
Corrosion protection → TI-217

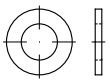
Stainless → S. 542

M 2	x	4 -T6	S	2000	10,60 ZP
M 2	x	6 -T6	S	2000	7,50 ZP
M 2	x	8 -T6	S	2000	7,50 ZP
M 2	x	10 -T6	S	2000	7,60 ZP
M 2	x	12 -T6	S	2000	7,70 ZP
M 2	x	16 -T6	S	2000	7,80 ZP
M 2,5	x	4 -T8	S	2000	11,30 ZP
M 2,5	x	5 -T8	S	2000	11,30 ZP
M 2,5	x	6 -T8	S	2000	7,55 ZP
M 2,5	x	8 -T8	S	2000	7,55 ZP
M 2,5	x	10 -T8	S	2000	7,65 ZP
M 2,5	x	12 -T8	S	2000	7,75 ZP
M 2,5	x	16 -T8	S	2000	8,10 ZP
M 2,5	x	20 -T8	S	2000	8,45 ZP
M 2,5	x	25 -T8	S	2000	9,30 ZP
M 3	x	4 -T10	S	2000	9,20 ZP
M 3	x	4 -T10	K	200	11,60 ZP
M 3	x	5 -T10	S	2000	9,20 ZP
M 3	x	5 -T10	K	200	11,60 ZP
M 3	x	6 -T10	S	2000	7,10 ZP
M 3	x	6 -T10	K	200	9,50 ZP
M 3	x	8 -T10	S	2000	7,10 ZP
M 3	x	8 -T10	K	200	9,50 ZP
M 3	x	10 -T10	S	2000	7,20 ZP
M 3	x	10 -T10	K	200	9,60 ZP
M 3	x	12 -T10	S	2000	7,20 ZP
M 3	x	12 -T10	K	200	9,60 ZP
M 3	x	16 -T10	S	2000	7,30 ZP
M 3	x	16 -T10	K	200	9,70 ZP
M 3	x	20 -T10	S	2000	7,70 ZP
M 3	x	20 -T10	K	200	10,10 ZP
M 3	x	25 -T10	S	2000	8,00 ZP
M 3	x	25 -T10	K	200	10,40 ZP
M 3	x	30 -T10	S	1000	8,50 ZP
M 3	x	30 -T10	K	200	10,90 ZP
M 3	x	40 -T10	S	1000	9,70 ZP
M 3	x	40 -T10	K	200	12,10 ZP
M 4	x	5 -T20	S	2000	9,80 ZP
M 4	x	5 -T20	K	200	12,20 ZP
M 4	x	6 -T20	S	2000	7,30 ZP
M 4	x	6 -T20	K	200	9,70 ZP
M 4	x	8 -T20	S	2000	7,70 ZP
M 4	x	8 -T20	K	200	10,10 ZP
M 4	x	10 -T20	S	2000	7,90 ZP
M 4	x	10 -T20	K	200	10,30 ZP
M 4	x	12 -T20	S	2000	8,00 ZP
M 4	x	12 -T20	K	200	10,40 ZP
M 4	x	16 -T20	S	2000	8,50 ZP
M 4	x	16 -T20	K	200	10,90 ZP
M 4	x	20 -T20	S	2000	9,10 ZP
M 4	x	20 -T20	K	200	11,50 ZP
M 4	x	25 -T20	S	1000	9,60 ZP
M 4	x	25 -T20	K	200	12,00 ZP
M 4	x	30 -T20	S	1000	10,10 ZP
M 4	x	30 -T20	K	200	12,50 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	32 -T20	S	1000	8,58 ZP
M 4	x	35 -T20	S	1000	10,50 ZP
M 4	x	35 -T20	K	200	12,90 ZP
M 5	x	6 -T25	S	2000	9,10 ZP
M 5	x	6 -T25	K	200	11,50 ZP
M 5	x	8 -T25	S	2000	9,20 ZP
M 5	x	8 -T25	K	200	11,60 ZP
M 5	x	10 -T25	S	2000	9,40 ZP
M 5	x	10 -T25	K	200	11,80 ZP
M 5	x	12 -T25	S	1000	9,70 ZP
M 5	x	12 -T25	K	200	12,10 ZP
M 5	x	16 -T25	S	1000	10,30 ZP
M 5	x	16 -T25	K	200	12,70 ZP
M 5	x	18 -T25	S	1000	11,20 ZP
M 5	x	20 -T25	S	1000	11,20 ZP
M 5	x	20 -T25	K	200	13,60 ZP
M 5	x	25 -T25	S	1000	11,80 ZP
M 5	x	25 -T25	K	200	14,20 ZP
M 5	x	30 -T25	S	1000	12,40 ZP
M 5	x	30 -T25	K	200	14,80 ZP
M 6	x	10 -T30	S	1000	12,50 ZP
M 6	x	10 -T30	K	200	14,90 ZP
M 6	x	12 -T30	S	1000	12,70 ZP
M 6	x	12 -T30	K	200	15,10 ZP
M 6	x	16 -T30	S	1000	13,00 ZP
M 6	x	16 -T30	K	200	13,00 ZP
M 6	x	20 -T30	S	1000	13,80 ZP
M 6	x	20 -T30	K	200	16,20 ZP
M 6	x	25 -T30	S	500	14,70 ZP
M 6	x	25 -T30	K	200	17,10 ZP
M 6	x	30 -T30	S	500	15,70 ZP
M 6	x	30 -T30	K	200	18,10 ZP

DIN 07989.001 RAZ 720

7989-1 Steel 100 HV PK C



Washers for steel structures, product grade C

(old: type A)

Dimensions → TI-85

Stainless → S. 543

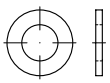
Nominal size/inside ∅ x outside ∅ x thickn. • ÜH products

10/11	x	20	x	8	S	100	19,70
12/13,5	x	24	x	8	S	100	23,20
16/17,5	x	30	x	8	S	100	31,00
20/22	x	37	x	8	S	100	39,00
22/24	x	39	x	8	S	100	52,00
24/26	x	44	x	8	S	100	61,00
27/30	x	50	x	8	S	50	104,00
30/33	x	56	x	8	S	50	124,00
33/36	x	60	x	8	S	50	149,00
36/39	x	66	x	8	S	50	170,00

Dimensions PU Pieces €/100/Mat.

DIN 07989.021 RAZ 720

7989-1 Steel 100 HV hot dip galvanized PK C



Washers for steel structures, product grade C

(old: type A)

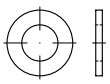
Dimensions ➔ TI-85 Corrosion protection ➔ TI-219

Stainless ➔ S. 543

Nominal size/inside ∅ x outside ∅ x thickn.						• ÜH products
10/11	x	20	x 8	S	100	27,50 HDG
12/13,5	x	24	x 8	S	100	32,50 HDG
16/17,5	x	30	x 8	S	100	44,50 HDG
20/22	x	37	x 8	S	100	61,00 HDG
22/24	x	39	x 8	S	100	76,00 HDG
24/26	x	44	x 8	S	100	92,00 HDG
27/30	x	50	x 8	S	50	151,00 HDG
30/33	x	56	x 8	S	50	184,00 HDG
33/36	x	60	x 8	S	50	217,00 HDG
36/39	x	66	x 8	S	50	255,00 HDG

DIN 07989.002 RAZ 720

7989-2 Steel 100 HV PK A



Washers for steel structures, product grade A

Preferably for DIN 7968, (old: type B)

Dimensions ➔ TI-85

Nominal size/inside ∅ x outside ∅ x thickn.						• ÜH products
12/13,5	x	24	x 8	S	100	85,00
16/17,5	x	30	x 8	S	100	108,00
20/22	x	37	x 8	S	100	181,00
22/24	x	39	x 8	S	100	230,00
24/26	x	44	x 8	S	100	310,00
27/30	x	50	x 8	S	50	465,00
30/33	x	56	x 8	S	50	690,00

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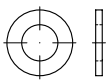
Dimensions PU Pieces €/100/Mat.

DIN 07989.022 RAZ 720

7989-2 Steel 100 HV hot dip galvanized PK A



Washers for steel structures, product grade A

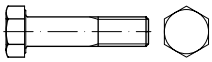
Preferably for DIN 7968, (old: type B)

Dimensions ➔ TI-85 Corrosion protection ➔ TI-219

Nominal size/inside ∅ x outside ∅ x thickn.						• ÜH products
12/13,5	x	24	x 8	S	100	207,00 HDG
16/17,5	x	30	x 8	S	100	218,00 HDG
20/22	x	37	x 8	S	100	295,00 HDG
22/24	x	39	x 8	S	100	335,00 HDG
24/26	x	44	x 8	S	100	345,00 HDG
27/30	x	50	x 8	S	50	910,00 HDG
30/33	x	56	x 8	S	50	1010,00 HDG

DIN 07990.400 RAZ 730

7990 Mu 4.6 SB



Hexagon head bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

Dimensions ➔ TI-56 Tightening torque ➔ TI-234
Mech. properties ➔ TI-220

Declaration of performance ➔ www.reyher.de

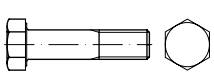
M 12	x	30	S	100	27,20
M 12	x	35	S	100	27,70
M 12	x	40	S	100	29,05
M 12	x	45	S	100	31,55
M 12	x	50	S	100	42,95
M 12	x	55	S	100	55,90
M 16	x	35	S	50	55,80
M 16	x	40	S	50	54,55
M 16	x	45	S	50	55,80
M 16	x	50	S	50	60,95
M 16	x	55	S	50	64,30
M 16	x	60	S	50	66,75
M 16	x	65	S	25	98,90
M 16	x	70	S	25	101,00
M 20	x	40	S	25	118,00
M 20	x	45	S	25	116,00
M 20	x	50	S	25	114,00
M 20	x	55	S	25	118,00
M 20	x	60	S	25	118,00
M 20	x	65	S	25	127,00
M 20	x	70	S	25	127,00
M 20	x	75	S	25	169,00
M 20	x	80	S	25	176,00
M 24	x	50	S	25	211,00
M 24	x	55	S	25	205,00
M 24	x	60	S	25	205,00

Dimensions PU Pieces €/100/Mat.

M 24	x	65	S	25	207,00
M 24	x	70	S	25	207,00
M 24	x	75	S	25	287,00
M 24	x	80	S	25	303,00

DIN 07990.420 RAZ 730

7990 Mu 4.6 SB hot dip galvanized



Hexagon head bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

Caution! See information box.

Dimensions ➔ TI-56 Tightening torque ➔ TI-234
Mech. properties ➔ TI-220 Corrosion protection ➔ TI-219

Declaration of performance ➔ www.reyher.de

M 12	x	30	S	100	43,55 HDG
M 12	x	35	S	100	45,35 HDG
M 12	x	40	S	100	47,90 HDG
M 12	x	45	S	100	51,65 HDG
M 12	x	50	S	100	64,90 HDG
M 12	x	55	S	100	79,15 HDG
M 12	x	60	S	100	111,00 HDG
M 12	x	65	S	50	121,00 HDG
M 12	x	70	S	50	134,00 HDG
M 12	x	75	S	50	150,00 HDG
M 12	x	80	S	50	151,00 HDG
M 12	x	85	S	50	162,00 HDG
M 12	x	90	S	50	158,00 HDG
M 12	x	95	S	50	181,00 HDG
M 12	x	100	S	50	175,00 HDG
M 12	x	105	S	50	205,00 HDG
M 12	x	110	S	50	191,00 HDG
M 12	x	115	S	50	243,00 HDG
M 12	x	120	S	50	227,00 HDG
M 12	x	130	S	50	265,00 HDG
M 16	x	35	S	50	89,60 HDG
M 16	x	40	S	50	90,25 HDG
M 16	x	45	S	50	93,95 HDG
M 16	x	50	S	50	102,00 HDG
M 16	x	55	S	50	107,00 HDG
M 16	x	60	S	50	112,00 HDG
M 16	x	65	S	25	146,00 HDG
M 16	x	70	S	25	150,00 HDG
M 16	x	75	S	25	208,00 HDG
M 16	x	80	S	25	216,00 HDG
M 16	x	85	S	25	234,00 HDG
M 16	x	90	S	25	265,00 HDG
M 16	x	95	S	25	281,00 HDG
M 16	x	100	S	25	283,00 HDG
M 16	x	105	S	25	323,00 HDG
M 16	x	110	S	25	306,00 HDG
M 16	x	115	S	25	353,00 HDG
M 16	x	120	S	25	337,00 HDG
M 16	x	130	S	25	378,00 HDG
M 16	x	140	S	25	446,00 HDG
M 16	x	150	S	25	478,00 HDG
M 20	x	40	S	25	182,00 HDG
M 20	x	45	S	25	182,00 HDG
M 20	x	50	S	25	184,00 HDG
M 20	x	55	S	25	192,00 HDG
M 20	x	60	S	25	195,00 HDG

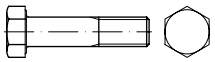
Dimensions			PU	Pieces	€/100/Mat.
M 20	x	65	S	25	208,00 HDG
M 20	x	70	S	25	211,00 HDG
M 20	x	75	S	25	258,00 HDG
M 20	x	80	S	25	267,00 HDG
M 20	x	85	S	25	278,00 HDG
M 20	x	90	S	25	373,00 HDG
M 20	x	95	S	25	387,00 HDG
M 20	x	100	S	25	390,00 HDG
M 20	x	105	S	25	525,00 HDG
M 20	x	110	S	25	491,00 HDG
M 20	x	115	S	25	559,00 HDG
M 20	x	120	S	25	528,00 HDG
M 20	x	130	S	25	594,00 HDG
M 20	x	140	S	25	620,00 HDG
M 20	x	150	S	25	726,00 HDG
M 20	x	160	S	10	795,00 HDG
M 24	x	50	S	25	322,00 HDG
M 24	x	55	S	25	320,00 HDG
M 24	x	60	S	25	325,00 HDG
M 24	x	65	S	25	331,00 HDG
M 24	x	70	S	25	337,00 HDG
M 24	x	75	S	25	422,00 HDG
M 24	x	80	S	25	443,00 HDG
M 24	x	85	S	10	614,00 HDG
M 24	x	90	S	10	586,00 HDG
M 24	x	95	S	10	781,00 HDG
M 24	x	100	S	10	743,00 HDG
M 24	x	105	S	10	854,00 HDG
M 24	x	110	S	10	808,00 HDG
M 24	x	115	S	10	890,00 HDG
M 24	x	120	S	10	840,00 HDG
M 24	x	130	S	10	956,00 HDG
M 24	x	140	S	10	1111,00 HDG
M 24	x	150	S	10	1139,00 HDG
M 24	x	160	S	10	1255,00 HDG
M 27	x	60	S	10	949,00 HDG
M 27	x	65	S	10	956,00 HDG
M 27	x	70	S	10	963,00 HDG
M 27	x	75	S	10	968,00 HDG
M 27	x	80	S	10	975,00 HDG
M 27	x	85	S	10	1021,00 HDG
M 27	x	90	S	10	1028,00 HDG
M 27	x	95	S	10	1093,00 HDG
M 27	x	100	S	1	1098,00 HDG
M 27	x	105	S	1	1282,00 HDG
M 27	x	110	S	1	1209,00 HDG
M 27	x	120	S	1	1221,00 HDG
M 27	x	130	S	1	1325,00 HDG
M 30	x	80	S	1	1361,00 HDG
M 30	x	90	S	1	1433,00 HDG
M 30	x	100	S	1	1495,00 HDG
M 30	x	120	S	1	1636,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions	PU	Pieces	€/100/Mat.
DIN 07990.520			RAZ 732

7990 Mu 5.6 SB hot dip galvanized



Hexagon head bolts for steel structures, Mu = with hexagon nut

For bolted fastenings by steel structures that are not preloaded

Caution! See information box.

Dimensions → TI-56 Tightening torque → TI-234
Mech. properties → TI-220 Corrosion protection → TI-219

M 12	x	35	S	100	84,00 HDG
M 12	x	40	S	100	88,00 HDG
M 12	x	45	S	100	105,00 HDG
M 12	x	50	S	100	110,00 HDG
M 12	x	55	S	100	150,00 HDG
M 12	x	60	S	100	183,00 HDG
M 16	x	35	S	50	221,00 HDG
M 16	x	40	S	50	193,00 HDG
M 16	x	45	S	50	181,00 HDG
M 16	x	50	S	50	190,00 HDG
M 16	x	55	S	50	217,00 HDG
M 16	x	60	S	50	239,00 HDG
M 16	x	65	S	25	300,00 HDG
M 16	x	70	S	25	285,00 HDG
M 16	x	75	S	25	335,00 HDG
M 16	x	80	S	25	355,00 HDG
M 20	x	40	S	25	390,00 HDG
M 20	x	45	S	25	375,00 HDG
M 20	x	50	S	25	380,00 HDG
M 20	x	55	S	25	410,00 HDG
M 20	x	60	S	25	410,00 HDG
M 20	x	65	S	25	430,00 HDG
M 20	x	70	S	25	440,00 HDG
M 20	x	75	S	25	450,00 HDG
M 20	x	80	S	25	465,00 HDG
M 24	x	55	S	25	810,00 HDG
M 24	x	60	S	25	830,00 HDG
M 24	x	65	S	25	840,00 HDG
M 24	x	70	S	25	850,00 HDG
M 24	x	75	S	25	860,00 HDG
M 24	x	80	S	25	870,00 HDG
M 24	x	85	S	10	970,00 HDG

DIN	07993.001	RAZ 741

7993 Spring steel type A

Snap rings, A = for shafts

Dimensions → TI-101

Nominal size = for shafts ∅

A 4	S	1000	3,90
A 5	S	1000	4,00
A 6	S	500	4,00
A 7	S	500	4,35
A 8	S	500	4,10
A 10	S	500	4,65
A 12	S	500	5,00
A 16	S	250	6,50
A 18	S	250	8,10
A 20	S	100	9,80
A 22	S	100	10,20
A 25	S	100	12,90
A 26	S	100	13,00
A 28	S	100	15,00
A 30	S	100	16,30
A 35	S	100	19,70
A 38	S	100	23,00
A 40	S	100	27,00
A 45	S	50	31,00
A 48	S	50	35,00
A 50	S	50	39,00
A 55	S	50	43,00
A 60	S	50	47,00
A 65	S	50	51,00
A 70	S	50	23,00

DIN	07993.002	RAZ 741

7993 Spring steel type B

Snap rings, B = for bores

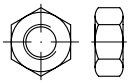
Dimensions → TI-101

Nominal size = for bore ∅

B 7	S	500	3,20
B 8	S	500	3,60
B 10	S	500	4,10
B 12	S	500	4,60
B 16	S	250	7,20
B 18	S	100	9,50

ISO	08673.300	*

8673 6 AU



Hexagon nuts, ISO type 1, with metric fine pitch thread

*M 5-M 39 = RAZ 3320 other ∅/M = RAZ 411, marking from ∅ M 12

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

ISO 8673 → replaces DIN 934 fine thread

M 8	x	1	S	100	83,20
M 10	x	1	S	100	134,00
M 10	x	1,25	S	100	134,00
M 12	x	1	S	100	174,00
M 12	x	1,25	S	100	43,50
M 12	x	1,5	S	100	174,00
M 14	x	1,5	S	100	63,00

BENZING

BENZING retaining ring
DIN 6799

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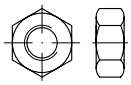
Dimensions			PU	Pieces	€/100/Mat.
M 16	x	1,5	S	100	80,00
M 18	x	1,5	S	50	121,00
M 18	x	2	S	50	121,00
M 20	x	1,5	S	50	152,00
M 20	x	2	S	50	152,00
M 22	x	1,5	S	25	203,00
M 22	x	2	S	25	203,00
M 24	x	1,5	S	25	265,00
M 24	x	2	S	25	265,00
M 26	x	1,5	S	25	425,00
M 27	x	1,5	S	25	425,00
M 27	x	2	S	25	425,00
M 28	x	1,5	S	10	610,00
M 30	x	1,5	S	10	610,00
M 30	x	2	S	10	610,00
M 32	x	1,5	S	10	860,00
M 33	x	1,5	S	10	860,00
M 33	x	2	S	10	860,00
M 35	x	1,5	S	5	1030,00
M 36	x	1,5	S	5	1030,00
M 36	x	3	S	5	1030,00
M 38	x	1,5	S	5	1290,00
M 39	x	1,5	S	5	1290,00
M 39	x	3	S	5	1290,00
M 40	x	1,5	S	1	6920,00
M 42	x	1,5	S	1	6920,00
M 42	x	3	S	1	6920,00
M 45	x	1,5	S	1	8520,00
M 45	x	3	S	1	8520,00
M 42	x	1,5	S	1	10200,00
M 48	x	3	S	1	10200,00
M 50	x	1,5	S	1	3150,00
M 52	x	1,5	S	1	3150,00
M 52	x	3	S	1	12600,00
M 56	x	2	S	1	17000,00
M 56	x	4	S	1	17000,00
M 58	x	2	S	1	5100,00
M 60	x	2	S	1	20400,00
M 60	x	4	S	1	20400,00
M 64	x	2	S	1	33600,00
M 64	x	4	S	1	33600,00
M 68	x	2	S	1	8400,00
M 68	x	4	S	1	8400,00
M 72	x	2	S	1	9900,00
M 72	x	4	S	1	39600,00
M 72	x	6	S	1	37600,00
M 76	x	2	S	1	10400,00
M 76	x	4	S	1	10400,00
M 76	x	6	S	1	40000,00
M 80	x	2	S	1	47200,00
M 80	x	4	S	1	47200,00
M 80	x	6	S	1	44800,00
M 85	x	2	S	1	13500,00
M 85	x	4	S	1	13500,00
M 85	x	6	S	1	12900,00
M 90	x	2	S	1	16000,00
M 90	x	4	S	1	16000,00
M 90	x	6	S	1	61200,00
M 95	x	2	S	1	21900,00
M 95	x	4	S	1	21900,00
M 95	x	6	S	1	20900,00
M 100	x	2	S	1	23000,00
M 100	x	4	S	1	92000,00
M 100	x	6	S	1	87600,00
M 105	x	4	S	1	30600,00
M 110	x	4	S	1	31200,00
M 120	x	4	S	1	36300,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	08673.304		RAZ 3320

8673

6 AU

left



Hexagon nuts, ISO type 1, with metric left hand fine pitch thread

*M 5-M 39 = RAZ 3320 other ∅/M = RAZ 411, marking from ∅ M 12

Dimensions → TI-61 Mech. properties → TI-221

ISO 8673 → replaces DIN 934 fine thread

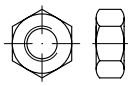
M 8	x	1	S	100	120,00
M 10	x	1	S	100	178,00
M 12	x	1,5	S	100	56,00
M 14	x	1,5	S	50	93,00
M 16	x	1,5	S	50	120,00
M 18	x	1,5	S	50	171,00
M 20	x	1,5	S	50	227,00
M 22	x	1,5	S	25	275,00
M 24	x	1,5	S	25	350,00
M 24	x	2	S	25	350,00
M 30	x	1,5	S	10	700,00
M 30	x	2	S	10	700,00

ISO	08673.830	*

8673

8

black**



Hexagon nuts, ISO type 1, with metric fine pitch thread

*M 5-M 39 = RAZ 3330 other ∅/M = RAZ 412,
**≥ M 22 = grey-black

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

ISO 8673 → replaces DIN 934 fine thread

M 8	x	1	S	100	12,60 black
M 10	x	1	S	100	19,40 black
M 12	x	1,25	S	100	26,00 black
M 12	x	1,5	S	100	24,80 black
M 14	x	1,5	S	100	43,00 black
M 16	x	1,5	S	100	54,00 black
M 18	x	1,5	S	100	76,00 black
M 18	x	2	S	100	83,00 black
M 20	x	1,5	S	50	88,00 black
M 20	x	2	S	50	88,00 black
M 22	x	1,5	S	50	93,00 black
M 22	x	2	S	50	93,00 black
M 24	x	1,5	S	50	112,00 black
M 24	x	2	S	50	112,00 black
M 27	x	2	S	50	192,00 black
M 30	x	1,5	S	10	260,00 black
M 30	x	2	S	10	260,00 black
M 33	x	2	S	10	310,00 black
M 36	x	1,5	S	5	650,00 black
M 36	x	3	S	5	650,00 black
M 39	x	3	S	5	780,00 black

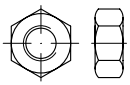
Dimensions			PU	Pieces	€/100/Mat.
M 42	x	1,5	S	1	1120,00 black
M 42	x	3	S	1	1040,00 black
M 45	x	3	S	1	1090,00 black
M 48	x	1,5	S	1	2440,00 black
M 48	x	3	S	1	1500,00 black
M 52	x	3	S	1	2350,00 black
M 56	x	4	S	1	3200,00 black
M 60	x	4	S	1	4250,00 black
M 64	x	4	S	1	5000,00 black
M 68	x	4	S	1	6500,00 black
M 72	x	4	S	1	7700,00 black
M 72	x	6	S	1	6800,00 black
M 80	x	4	S	1	11400,00 black
M 80	x	6	S	1	9500,00 black
M 100	x	6	S	1	20800,00 black

ISO	08673.810	*

8673

8

zinc plated



Hexagon nuts, ISO type 1, with metric fine pitch thread

*M 5-M 39 = RAZ 3330 other ∅/M = RAZ 412

Dimensions → TI-61 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

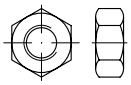
ISO 8673 → replaces DIN 934 fine thread

M 10	x	1	S	100	16,90 ZP
M 10	x	1,25	S	100	21,00 ZP
M 12	x	1	S	500	26,00 ZP
M 12	x	1,25	S	100	24,10 ZP
M 12	x	1,5	S	100	22,00 ZP
M 14	x	1,25	S	100	80,00 ZP
M 14	x	1,5	S	100	37,50 ZP
M 16	x	1,5	S	100	47,00 ZP
M 18	x	1,5	S	100	67,00 ZP
M 18	x	2	S	100	71,00 ZP
M 20	x	1,5	S	50	79,00 ZP
M 20	x	2	S	50	84,00 ZP
M 22	x	1,5	S	50	101,00 ZP
M 22	x	2	S	50	101,00 ZP
M 24	x	1,5	S	50	127,00 ZP
M 24	x	2	S	50	127,00 ZP
M 27	x	1,5	S	50	300,00 ZP
M 27	x	2	S	50	300,00 ZP
M 30	x	1,5	S	25	295,00 ZP
M 30	x	2	S	25	295,00 ZP
M 33	x	2	S	1	450,00 ZP
M 36	x	1,5	S	1	690,00 ZP
M 36	x	2	S	1	690,00 ZP
M 36	x	3	S	1	690,00 ZP
M 39	x	3	S	1	1100,00 ZP
M 42	x	3	S	1	1100,00 ZP
M 45	x	3	S	1	1800,00 ZP
M 48	x	1,5	S	1	2500,00 ZP
M 48	x	3	S	1	3000,00 ZP
M 48	x	3	S	1	1640,00 ZP
M 52	x	3	S	1	3500,00 ZP
M 72	x	6	S	1	6300,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	08673.100	*

8673

10



Hexagon nuts, ISO type 1, with metric fine pitch thread

*M 5-M 39 = RAZ 3320 other ∅/M = RAZ 411

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

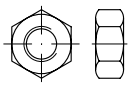
ISO 8673 → replaces DIN 934 fine thread

M 8	x	1	S	100	13,50
M 10	x	1	S	100	21,10
M 12	x	1,5	S	100	34,00
M 14	x	1,5	S	100	46,00
M 16	x	1,5	S	100	65,00
M 18	x	1,5	S	100	85,00
M 18	x	2	S	100	85,00
M 20	x	1,5	S	50	100,00
M 20	x	2	S	50	100,00
M 22	x	1,5	S	25	142,00
M 22	x	2	S	25	142,00
M 24	x	1,5	S	25	158,00
M 24	x	2	S	25	158,00
M 30	x	1,5	S	10	350,00
M 30	x	2	S	10	350,00
M 36	x	2	S	1	480,00
M 42	x	3	S	1	1180,00
M 48	x	3	S	1	2160,00

ISO	08673.110	*

8673

10
zinc plated



Hexagon nuts, ISO type 1, with metric fine pitch thread

*M 5-M 39 = RAZ 3320 other ∅/M = RAZ 411

Dimensions → TI-61 Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

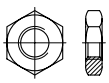
ISO 8673 → replaces DIN 934 fine thread

M 8	x	1	S	100	21,00 ZP
M 10	x	1	S	100	29,00 ZP
M 12	x	1,5	S	100	41,50 ZP
M 14	x	1,5	S	100	51,00 ZP
M 16	x	1,5	S	100	80,00 ZP
M 18	x	1,5	S	100	100,00 ZP
M 18	x	2	S	100	100,00 ZP
M 20	x	1,5	S	50	122,00 ZP
M 20	x	2	S	25	122,00 ZP
M 24	x	1,5	S	50	190,00 ZP
M 24	x	2	S	25	190,00 ZP
M 30	x	1,5	S	10	400,00 ZP
M 30	x	2	S	10	400,00 ZP
M 36	x	3	S	1	540,00 ZP
M 42	x	3	S	1	1300,00 ZP
M 48	x	3	S	1	2250,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	08675.400	*

8675

04



Hexagon thin nuts, chamfered, with metric fine pitch thread

*M 10/12/14 RAZ = 3370 other ∅ RAZ = 170

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

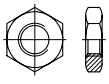
ISO 8675 → replaces DIN 439 fine thread

M 8	x	1	S	100	11,30
M 10	x	1	S	100	17,40
M 10	x	1,25	S	100	17,40
M 12	x	1	S	100	27,00
M 12	x	1,25	S	100	27,00
M 12	x	1,5	S	100	27,00
M 14	x	1,5	S	100	31,50
M 16	x	1,5	S	50	37,50
M 18	x	1,5	S	50	69,00
M 20	x	1,5	S	50	78,00
M 20	x	2	S	50	78,00
M 24	x	1,5	S	25	157,00
M 24	x	2	S	25	157,00
M 27	x	1,5	S	25	260,00
M 30	x	1,5	S	25	270,00
M 30	x	2	S	25	270,00
M 33	x	1,5	S	10	485,00
M 36	x	1,5	S	10	570,00
M 36	x	3	S	10	570,00
M 39	x	1,5	S	10	870,00
M 39	x	3	S	10	870,00
M 42	x	1,5	S	10	1140,00
M 42	x	2	S	10	1140,00
M 42	x	3	S	10	1140,00
M 48	x	1,5	S	10	2010,00
M 48	x	2	S	10	2100,00
M 48	x	3	S	10	2010,00

ISO	08675.410	*

8675

04
zinc plated



Hexagon thin nuts, chamfered, with metric fine pitch thread

*M 10/12/14 RAZ = 3370 other ∅ RAZ = 170

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 543
Brass → S. 594

ISO 8675 → replaces DIN 439 fine thread

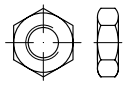
M 8	x	1	S	100	13,20 ZP
M 10	x	1	S	100	19,50 ZP
M 10	x	1,25	S	100	19,50 ZP
M 12	x	1	S	100	30,50 ZP

Dimensions	PU Pieces	€/100/Mat.
M 12	x 1,25	S 100 30,50 ZP
M 12	x 1,5	S 100 30,50 ZP
M 14	x 1,5	S 100 35,00 ZP
M 16	x 1	S 100 45,00 ZP
M 16	x 1,5	S 50 42,00 ZP
M 18	x 1,5	S 50 75,00 ZP
M 20	x 1,5	S 50 87,00 ZP
M 22	x 1,5	S 50 140,00 ZP
M 24	x 1,5	S 25 171,00 ZP
M 24	x 2	S 25 190,00 ZP
M 27	x 1,5	S 25 350,00 ZP
M 30	x 1,5	S 25 305,00 ZP
M 30	x 2	S 25 305,00 ZP
M 33	x 1,5	S 50 580,00 ZP
M 35	x 1,5	S 50 1250,00 ZP
M 36	x 1,5	S 10 640,00 ZP
M 36	x 2	S 10 640,00 ZP
M 36	x 3	S 10 640,00 ZP
M 39	x 2	S 10 970,00 ZP
M 42	x 1,5	S 10 1260,00 ZP
M 42	x 2	S 10 1260,00 ZP
M 42	x 3	S 10 1260,00 ZP

ISO	08675.500	RAZ 3370

8675

05



Hexagon thin nuts, chamfered, with metric fine pitch thread

Dimensions → TI-62 Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

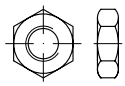
ISO 8675 → replaces DIN 439 fine thread

M 10	x	1	S	100	55,00
M 10	x	1,25	S	100	55,00
M 12	x	1	S	100	93,00
M 12	x	1,25	S	100	93,00
M 12	x	1,5	S	100	93,00
M 14	x	1,5	S	100	295,00
M 22	x	1,5	S	50	570,00

ISO	08675.510	RAZ 3370

8675

05
zinc plated



Hexagon thin nuts, chamfered, with metric fine pitch thread

Dimensions → TI-62 Corrosion protection → TI-217
Mech. properties → TI-221

Stainless → S. 543
Brass → S. 594

ISO 8675 → replaces DIN 439 fine thread

M 10	x	1	S	100	57,00 ZP
M 10	x	1,25	S	100	57,00 ZP
M 12	x	1,25	S	100	96,00 ZP
M 14	x	1,5	S	100	295,00 ZP
M 20	x	1,5	S	100	200,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO 08676.800			*

8676

8.8

Hexagon head screws with thread up to head, with metric fine pitch thread

*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220

ISO 8676 → replaces DIN 961

Dimensions						PU	Pieces	€/100/Mat.
M 8	x	1	x	20		S	200	16,00
M 8	x	1	x	25		S	200	18,90
M 8	x	1	x	30		S	200	19,95
M 8	x	1	x	35		S	200	21,80
M 8	x	1	x	40		S	200	23,50
M 8	x	1	x	45		S	200	26,45
M 8	x	1	x	50		S	200	28,75
M 8	x	1	x	60		S	100	50,75
M 8	x	1	x	70		S	100	66,70
M 8	x	1	x	80		S	100	79,70
M 8	x	1	x	90		S	50	107,00
M 8	x	1	x	100		S	50	121,00
M 10	x	1	x	16		S	200	29,65
M 10	x	1,25	x	16		S	200	29,75
M 10	x	1	x	20		S	200	27,95
M 10	x	1,25	x	20		S	200	27,95
M 10	x	1	x	25		S	200	29,50
M 10	x	1,25	x	25		S	200	29,90
M 10	x	1	x	30		S	200	31,70
M 10	x	1,25	x	30		S	200	31,85
M 10	x	1	x	35		S	100	33,40
M 10	x	1,25	x	35		S	100	35,45
M 10	x	1	x	40		S	100	36,90
M 10	x	1,25	x	40		S	100	39,10
M 10	x	1	x	45		S	100	40,95
M 10	x	1,25	x	45		S	100	42,05
M 10	x	1	x	50		S	100	44,50
M 10	x	1,25	x	50		S	100	44,70
M 10	x	1	x	60		S	100	80,35
M 10	x	1	x	70		S	100	112,00
M 10	x	1	x	80		S	100	121,00
M 10	x	1	x	90		S	50	150,00
M 10	x	1	x	100		S	50	160,00
M 12	x	1,25	x	20		S	100	45,75
M 12	x	1,5	x	20		S	100	44,15
M 12	x	1,25	x	25		S	100	45,75
M 12	x	1,5	x	25		S	100	44,15
M 12	x	1,25	x	30		S	100	47,00
M 12	x	1,5	x	30		S	100	44,80
M 12	x	1,25	x	35		S	100	49,25
M 12	x	1,5	x	35		S	100	48,25
M 12	x	1,25	x	40		S	100	54,15
M 12	x	1,5	x	40		S	100	51,45
M 12	x	1,25	x	45		S	100	59,75
M 12	x	1,5	x	45		S	100	56,45
M 12	x	1,25	x	50		S	100	62,40
M 12	x	1,5	x	50		S	100	60,85
M 12	x	1,5	x	55		S	100	93,00
M 12	x	1,25	x	60		S	100	93,95
M 12	x	1,5	x	60		S	100	92,70
M 12	x	1,25	x	65		S	50	177,00
M 12	x	1,25	x	70		S	50	125,00
M 12	x	1,5	x	70		S	50	127,00
M 12	x	1,25	x	80		S	50	152,00
M 12	x	1,5	x	80		S	50	152,00
M 12	x	1,25	x	100		S	50	235,00
M 12	x	1,5	x	100		S	50	234,00
M 14	x	1,5	x	20		S	100	83,45
M 14	x	1,5	x	25		S	100	83,45
M 14	x	1,5	x	30		S	100	83,45
M 14	x	1,5	x	35		S	100	91,45
M 14	x	1,5	x	40		S	100	101,00
M 14	x	1,5	x	45		S	50	104,00
M 14	x	1,5	x	50		S	50	110,00
M 14	x	1,5	x	55		S	50	127,00
M 14	x	1,5	x	60		S	50	127,00
M 14	x	1,5	x	70		S	50	161,00
M 14	x	1,5	x	80		S	50	225,00
M 14	x	1,5	x	90		S	50	272,00
M 14	x	1,5	x	100		S	50	329,00
M 16	x	1,5	x	20		S	50	115,00
M 16	x	1,5	x	25		S	100	101,00
M 16	x	1,5	x	30		S	50	101,00
M 16	x	1,5	x	35		S	50	105,00
M 16	x	1,5	x	40		S	50	105,00
M 16	x	1,5	x	45		S	50	119,00
M 16	x	1,5	x	50		S	50	120,00
M 16	x	1,5	x	55		S	50	136,00
M 16	x	1,5	x	60		S	50	136,00
M 16	x	1,5	x	65		S	50	158,00
M 16	x	1,5	x	70		S	50	172,00
M 16	x	1,5	x	80		S	25	241,00
M 16	x	1,5	x	90		S	25	369,00
M 16	x	1,5	x	100		S	25	401,00
M 18	x	1,5	x	30		S	50	248,00
M 18	x	1,5	x	40		S	50	256,00
M 18	x	1,5	x	45		S	50	260,00
M 18	x	1,5	x	50		S	50	263,00
M 18	x	1,5	x	55		S	25	282,00
M 18	x	1,5	x	60		S	25	284,00
M 18	x	1,5	x	70		S	25	306,00
M 18	x	1,5	x	75		S	25	330,00
M 18	x	1,5	x	80		S	25	350,00
M 18	x	1,5	x	100		S	25	596,00
M 20	x	1,5	x	30		S	25	238,00
M 20	x	1,5	x	35		S	25	238,00
M 20	x	1,5	x	40		S	25	238,00
M 20	x	1,5	x	45		S	25	238,00
M 20	x	1,5	x	50		S	25	246,00
M 20	x	2	x	50		S	25	337,00
M 20	x	1,5	x	55		S	25	265,00
M 20	x	2	x	55		S	25	433,00
M 20	x	1,5	x	60		S	25	267,00
M 20	x	2	x	60		S	25	433,00
M 20	x	1,5	x	65		S	25	296,00
M 20	x	2	x	65		S	25	482,00
M 20	x	1,5	x	70		S	25	289,00
M 20	x	1,5	x	80		S	25	333,00
M 20	x	1,5	x	90		S	25	433,00
M 20	x	1,5	x	100		S	25	533,00
M 22	x	1,5	x	50		S	25	542,00
M 22	x	1,5	x	60		S	25	576,00
M 22	x	1,50	x	70		S	25	630,00
M 24	x	1,5	x	50		S	25	568,00
M 24	x	2	x	50		S	25	568,00
M 24	x	1,5	x	55		S	25	744,00
M 24	x	1,5	x	60		S	25	811,00
M 24	x	2	x	60		S	25	811,00
M 24	x	1,5	x	70		S	25	900,00
M 24	x	2	x	70		S	25	900,00
M 24	x	1,5	x	80		S	25	964,00
M 24	x	2	x	80		S	25	964,00
M 24	x	1,5	x	90		S	10	1006,00
M 24	x	2	x	90		S	10	1006,00
M 24	x	1,5	x	100		S	10	1076,00
M 24	x	2	x	100		S	10	1076,00
M 30	x	2	x	60		S	1	1082,00
M 30	x	2	x	70		S	1	1175,00
M 30	x	2	x	80		S	1	1267,00
M 30	x	2	x	90		S	1	1346,00
M 30	x	2	x	100		S	1	1439,00
M 30	x	2	x	110		S	1	1544,00
M 30	x	2	x	120		S	1	1637,00
M 30	x	2	x	130		S	1	1756,00
M 30	x	2	x	140		S	1	1874,00
M 30	x	2	x	150		S	1	1967,00
M 36	x	3	x	80		S	1	1967,00
M 36	x	3	x	90		S	1	2112,00
M 36	x	3	x	100		S	1	2244,00
M 36	x	3	x	110		S	1	2376,00
M 36	x	3	x	120		S	1	2508,00
M 36	x	3	x	140		S	1	2851,00
M 36	x	3	x	150		S	1	3049,00

Dimensions	PU	Pieces	€/100/Mat.
ISO 08676.810			*

8676

8.8
zinc plated

Hexagon head screws with thread up to head, with metric fine pitch thread

*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Dimensions → TI-15 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

ISO 8676 → replaces DIN 961

Dimensions						PU	Pieces	€/100/Mat.
M 8	x	1	x	20		S	200	23,95 ZP
M 10	x	1	x	16		S	200	34,95 ZP
M 10	x	1	x	20		S	200	34,95 ZP
M 10	x	1,25	x	20		S	200	34,95 ZP
M 10	x	1	x	25		S	200	35,95 ZP
M 10	x	1,25	x	25		S	200	35,25 ZP
M 10	x	1	x	30		S	200	38,75 ZP
M 10	x	1,25	x	30		S	200	38,30 ZP
M 10	x	1,25	x	35		S	100	42,65 ZP
M 10	x	1	x	40		S	100	48,25 ZP
M 10	x	1,25	x	40		S	100	48,15 ZP
M 10	x	1,25	x	45		S	100	51,80 ZP
M 10	x	1	x	50		S	100	55,20 ZP
M 10	x	1,25	x	50		S	100	55,20 ZP
M 12	x	1,25	x	20		S	100	54,50 ZP
M 12	x	1,5	x	20		S	100	53,10 ZP
M 12	x	1,25	x	25		S	100	54,95 ZP
M 12	x	1,5	x	25		S	100	53,15 ZP
M 12	x	1,25	x	30		S	100	54,95 ZP
M 12	x	1,5	x	30		S	100	53,75 ZP
M 12	x	1,25	x	35		S	100	59,30 ZP
M 12	x	1,5	x	35		S	100	58,75 ZP
M 12	x	1,25	x	40		S	100	65,45 ZP
M 12	x	1,5	x	40		S	100	61,80 ZP
M 12	x	1,25	x	45		S	100	72,50 ZP
M 12	x	1,5	x	45		S	100	70,45 ZP
M 12	x	1,5	x	50		S	100	75,35 ZP
M 12	x	1,5	x	55		S	100	107,50 ZP
M 12	x	1,5	x	60		S	100	109,00 ZP
M 12	x	1,25	x	65		S	50	195,00 ZP
M 12	x	1,25	x	70		S	50	143,00 ZP
M 12	x	1,5	x	80		S	50	172,00 ZP
M 14	x	1,5	x	25		S	100	96,65 ZP
M 14	x	1,5	x	30		S	100	101,00 ZP
M 14	x	1,5	x	35		S	100	114,00 ZP
M 14	x	1,5	x	40		S	100	119,00 ZP
M 14	x	1,5	x	45		S	50	122,00 ZP
M 14	x	1,5	x	50		S	50	130,00 ZP
M 14	x	1,5	x	60		S	50	150,00 ZP

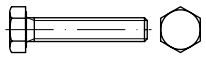
€/100 = price in € plus VAT when ordering full package unit

Dimensions							PU	Pieces	€/100/Mat.
M 14	x	1,5	x	70			S	50	187,00 ZP
M 14	x	1,5	x	80			S	50	253,00 ZP
M 14	x	1,5	x	90			S	50	360,00 ZP
M 14	x	1,5	x	100			S	50	365,00 ZP
M 16	x	1,5	x	30			S	50	120,00 ZP
M 16	x	1,5	x	35			S	50	127,00 ZP
M 16	x	1,5	x	40			S	50	126,00 ZP
M 16	x	1,5	x	45			S	50	142,00 ZP
M 16	x	1,5	x	50			S	50	144,00 ZP
M 16	x	1,5	x	60			S	50	160,00 ZP
M 16	x	1,5	x	70			S	50	205,00 ZP
M 16	x	1,5	x	80			S	25	241,00 ZP
M 16	x	1,5	x	90			S	25	410,00 ZP
M 16	x	1,5	x	100			S	25	445,00 ZP
M 18	x	1,5	x	40			S	50	290,00 ZP
M 18	x	1,5	x	50			S	50	300,00 ZP
M 18	x	1,50	x	55			S	25	320,00 ZP
M 18	x	1,5	x	60			S	25	300,00 ZP
M 18	x	1,5	x	70			S	25	350,00 ZP
M 18	x	1,5	x	80			S	25	400,00 ZP
M 20	x	1,5	x	30			S	50	270,00 ZP
M 20	x	1,5	x	35			S	50	275,00 ZP
M 20	x	1,5	x	40			S	50	280,00 ZP
M 20	x	1,5	x	45			S	50	285,00 ZP
M 20	x	1,5	x	50			S	25	307,00 ZP
M 20	x	1,5	x	55			S	25	310,00 ZP
M 20	x	1,5	x	60			S	25	336,00 ZP
M 20	x	1,5	x	70			S	25	360,00 ZP
M 20	x	1,5	x	80			S	25	413,00 ZP
M 20	x	1,5	x	90			S	25	500,00 ZP
M 20	x	1,5	x	100			S	25	605,00 ZP
M 20	x	1,5	x	110			S	10	700,00 ZP
M 24	x	2	x	50			S	25	675,00 ZP
M 24	x	1,5	x	60			S	25	930,00 ZP
M 24	x	1,5	x	80			S	25	1100,00 ZP
M 24	x	2	x	90			S	25	1150,00 ZP
M 24	x	2	x	100			S	25	1250,00 ZP

ISO	08676.100	*

8676

10.9



Hexagon head screws with thread up to head, with metric fine pitch thread

*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220

ISO 8676 → replaces DIN 961

M 8	x	1	x	20			S	200	23,95
M 8	x	1	x	25			S	200	24,85
M 8	x	1	x	30			S	200	25,65
M 8	x	1	x	35			S	200	30,70
M 8	x	1	x	40			S	200	32,75
M 10	x	1	x	20			S	200	36,95
M 10	x	1	x	25			S	200	39,25
M 10	x	1	x	30			S	200	41,30
M 10	x	1,25	x	30			S	200	90,90
M 10	x	1	x	35			S	100	44,60
M 10	x	1,25	x	35			S	100	94,55
M 10	x	1	x	40			S	100	47,00
M 10	x	1,25	x	40			S	100	101,00
M 10	x	1	x	45			S	100	66,15
M 10	x	1,25	x	45			S	100	115,00
M 10	x	1	x	50			S	100	84,60

Dimensions							PU	Pieces	€/100/Mat.
M 10	x	1,25	x	50			S	100	130,00
M 12	x	1,25	x	20			S	100	68,60
M 12	x	1,5	x	20			S	100	67,15
M 12	x	1,25	x	25			S	100	64,30
M 12	x	1,5	x	25			S	100	62,25
M 12	x	1,25	x	30			S	100	66,70
M 12	x	1,5	x	30			S	100	66,95
M 12	x	1,25	x	35			S	100	70,45
M 12	x	1,5	x	35			S	100	69,55
M 12	x	1,25	x	40			S	100	74,10
M 12	x	1,5	x	40			S	100	74,10
M 12	x	1,25	x	45			S	100	84,60
M 12	x	1,5	x	45			S	100	82,20
M 12	x	1,25	x	50			S	100	88,35
M 12	x	1,5	x	50			S	100	87,75
M 12	x	1,50	x	55			S	100	80,25
M 12	x	1,25	x	60			S	100	96,35
M 12	x	1,5	x	60			S	100	95,80
M 12	x	1,25	x	70			S	50	108,00
M 12	x	1,5	x	70			S	50	102,00
M 12	x	1,5	x	80			S	50	106,00
M 14	x	1,5	x	25			S	100	126,00
M 14	x	1,5	x	30			S	100	114,00
M 14	x	1,5	x	35			S	100	119,00
M 14	x	1,5	x	40			S	100	122,00
M 14	x	1,5	x	45			S	50	127,00
M 14	x	1,5	x	50			S	50	132,00
M 14	x	1,5	x	55			S	50	172,00
M 14	x	1,5	x	60			S	50	172,00
M 14	x	1,5	x	70			S	50	370,00
M 14	x	1,5	x	80			S	50	426,00
M 16	x	1,5	x	30			S	50	135,00
M 16	x	1,5	x	35			S	50	136,00
M 16	x	1,5	x	40			S	50	143,00
M 16	x	1,5	x	45			S	50	150,00
M 16	x	1,5	x	50			S	50	158,00
M 16	x	1,5	x	55			S	50	175,00
M 16	x	1,5	x	60			S	50	175,00
M 16	x	1,5	x	65			S	50	246,00
M 16	x	1,5	x	70			S	50	246,00
M 16	x	1,5	x	80			S	25	355,00
M 16	x	1,5	x	90			S	25	387,00
M 16	x	1,5	x	100			S	25	414,00
M 16	x	1,5	x	120			S	25	468,00
M 18	x	1,5	x	30			S	50	388,00
M 18	x	1,5	x	35			S	50	395,00
M 18	x	1,5	x	40			S	50	400,00
M 18	x	1,5	x	50			S	50	431,00
M 18	x	1,5	x	60			S	25	463,00
M 20	x	1,5	x	30			S	50	324,00
M 20	x	1,5	x	40			S	50	336,00
M 20	x	1,5	x	45			S	25	357,00
M 20	x	1,5	x	50			S	25	364,00
M 20	x	1,5	x	55			S	25	378,00
M 20	x	1,5	x	60			S	25	400,00
M 20	x	1,5	x	65			S	25	504,00
M 20	x	1,5	x	70			S	25	521,00
M 20	x	1,5	x	80			S	25	622,00
M 20	x	1,5	x	90			S	25	667,00
M 20	x	1,5	x	100			S	25	729,00
M 24	x	1,5	x	50			S	25	700,00
M 24	x	2	x	50			S	25	825,00
M 24	x	1,5	x	60			S	25	750,00
M 24	x	2	x	60			S	25	950,00
M 24	x	1,5	x	70			S	25	800,00
M 24	x	2	x	70			S	25	1075,00
M 24	x	1,5	x	80			S	25	875,00
M 24	x	2	x	80			S	25	1200,00
M 24	x	1,5	x	90			S	10	950,00
M 24	x	2	x	90			S	10	1325,00
M 24	x	1,5	x	100			S	10	1050,00
M 24	x	2	x	100			S	10	1450,00
M 30	x	2	x	60			S	1	1299,00
M 30	x	2	x	70			S	1	1410,00
M 30	x	2	x	80			S	1	1521,00

Dimensions							PU	Pieces	€/100/Mat.
M 30	x	2	x	90			S	1	1616,00
M 30	x	2	x	100			S	1	1727,00
M 30	x	2	x	110			S	1	1853,00
M 30	x	2	x	120			S	1	1964,00
M 30	x	2	x	130			S	1	2107,00
M 30	x	2	x	140			S	1	2249,00
M 30	x	2	x	150			S	1	2360,00
M 36	x	3	x	80			S	1	2360,00
M 36	x	3	x	90			S	1	2534,00
M 36	x	3	x	100			S	1	2693,00
M 36	x	3	x	110			S	1	2851,00
M 36	x	3	x	120			S	1	3010,00
M 36	x	3	x	140			S	1	3421,00
M 36	x	3	x	150			S	1	3659,00

ISO	08676.110	*

8676

10.9
zinc plated

Hexagon head screws with thread up to head, with metric fine pitch thread

baked,
*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

ISO 8676 → replaces DIN 961

M 8	x	1	x	20			S	200	51,50 ZP
M 8	x	1	x	25			S	200	53,75 ZP
M 8	x	1	x	30			S	200	55,00 ZP
M 8	x	1	x	35			S	200	57,50 ZP
M 10	x	1,00	x	20			S	200	47,50 ZP
M 10	x	1	x	30			S	200	50,10 ZP
M 10	x	1,25	x	30			S	200	102,00 ZP
M 10	x	1	x	35			S	100	53,75 ZP
M 10	x	1	x	40			S	200	61,00 ZP
M 10	x	1	x	45			S	100	66,50 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

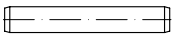
M 12	x	1,5	x	30			S	100	82,20 ZP
M 12	x	1,25	x	35			S	100	85,85 ZP
M 12	x	1,5	x	35			S	100	85,85 ZP
M 12	x	1,25	x	40			S	100	90,90 ZP
M 12	x	1,5	x	40			S	100	90,90 ZP
M 12	x	1,5	x	45			S	100	108,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 1,5 x 50	S	100	117,00 ZP
M 12 x 1,5 x 55	S	100	128,00 ZP
M 12 x 1,5 x 60	S	100	140,00 ZP
M 12 x 1,5 x 70	S	100	160,00 ZP
M 12 x 1,5 x 80	S	200	200,00 ZP
M 14 x 1,5 x 25	S	100	145,00 ZP
M 14 x 1,5 x 30	S	100	146,00 ZP
M 14 x 1,5 x 35	S	100	146,00 ZP
M 14 x 1,5 x 40	S	100	152,00 ZP
M 14 x 1,5 x 45	S	50	167,00 ZP
M 14 x 1,5 x 50	S	50	174,00 ZP
M 14 x 1,5 x 55	S	50	226,00 ZP
M 14 x 1,5 x 60	S	50	205,00 ZP
M 14 x 1,5 x 70	S	50	407,50 ZP
M 14 x 1,5 x 80	S	50	470,00 ZP
M 16 x 1,5 x 25	S	50	164,00 ZP
M 16 x 1,5 x 30	S	50	164,00 ZP
M 16 x 1,5 x 35	S	50	166,00 ZP
M 16 x 1,5 x 40	S	50	178,00 ZP
M 16 x 1,5 x 45	S	50	187,00 ZP
M 16 x 1,5 x 50	S	50	197,00 ZP
M 16 x 1,5 x 55	S	50	223,00 ZP
M 16 x 1,5 x 60	S	50	225,00 ZP
M 16 x 1,5 x 70	S	25	303,00 ZP
M 16 x 1,5 x 70	S	25	405,00 ZP
M 16 x 1,5 x 90	S	25	450,00 ZP
M 20 x 1,5 x 40	S	50	400,00 ZP
M 20 x 1,5 x 45	S	25	425,00 ZP
M 20 x 1,5 x 50	S	25	450,00 ZP
M 20 x 1,5 x 55	S	25	470,00 ZP
M 20 x 1,5 x 60	S	25	490,00 ZP

ISO	08734.001	RAZ 3645

8734

Steel, hard. **type A**



Parallel pins,
tolerance m6,
A = through-hardened

Dimensions ➔ TI-114

ISO 8734 ➔ replaces DIN 6325

1 m6 x 4	S	100	20,10
1 m6 x 5	S	100	20,70
1 m6 x 6	S	100	21,10
1 m6 x 8	S	100	21,60
1 m6 x 10	S	100	22,20
1 m6 x 12	S	100	23,10
1,5 m6 x 4	S	100	17,30
1,5 m6 x 5	S	100	17,30
1,5 m6 x 6	S	100	17,70
1,5 m6 x 8	S	100	18,40
1,5 m6 x 10	S	100	19,00
1,5 m6 x 12	S	100	19,70
1,5 m6 x 14	S	100	20,10
1,5 m6 x 16	S	100	20,70
2 m6 x 20	S	100	21,50
2 m6 x 4	S	100	18,20
2 m6 x 5	S	100	18,20
2 m6 x 6	S	100	18,40
2 m6 x 8	S	100	18,60
2 m6 x 10	S	100	19,20
2 m6 x 12	S	100	19,90
2 m6 x 14	S	100	20,30
2 m6 x 16	S	100	21,40
2 m6 x 18	S	100	21,60
2 m6 x 20	S	100	22,20
2 m6 x 24	S	100	26,80
2 m6 x 30	S	100	38,50
2 m6 x 32	S	100	39,50
2 m6 x 50	S	100	44,50
2,5 m6 x 6	S	100	18,60
2,5 m6 x 8	S	100	19,00
2,5 m6 x 10	S	100	19,70
2,5 m6 x 12	S	100	20,10
2,5 m6 x 14	S	100	20,70
2,5 m6 x 16	S	100	21,60
2,5 m6 x 18	S	100	22,20
2,5 m6 x 20	S	100	22,80
3 m6 x 24	S	100	31,50
2,5 m6 x 26	S	100	33,50
3 m6 x 28	S	100	36,00
3 m6 x 6	S	100	19,20
3 m6 x 8	S	100	19,20
3 m6 x 10	S	100	19,90
3 m6 x 12	S	100	20,30
3 m6 x 14	S	100	21,40
3 m6 x 16	S	100	22,20
3 m6 x 18	S	100	22,60
3 m6 x 20	S	100	23,30
3 m6 x 22	S	100	24,30
3 m6 x 24	S	100	25,50
3 m6 x 26	S	100	26,00
3 m6 x 28	S	100	26,50
3 m6 x 30	S	100	27,50
3 m6 x 32	S	100	28,00
3 m6 x 40	S	100	40,50
3 m6 x 45	S	100	47,00
3 m6 x 50	S	100	55,00
4 m6 x 6	S	100	19,20
4 m6 x 8	S	100	20,70
4 m6 x 10	S	100	22,20
4 m6 x 12	S	100	23,60
4 m6 x 14	S	100	25,50
4 m6 x 16	S	100	26,00
4 m6 x 18	S	100	27,50
4 m6 x 20	S	100	28,50
4 m6 x 22	S	100	29,50
4 m6 x 24	S	100	31,00
4 m6 x 26	S	100	32,00
4 m6 x 28	S	100	34,00
4 m6 x 30	S	100	35,00
4 m6 x 32	S	100	36,00
4 m6 x 36	S	100	38,50
4 m6 x 40	S	100	43,00
4 m6 x 45	S	100	52,00
4 m6 x 50	S	100	62,00
4 m6 x 60	S	100	87,00
5 m6 x 8	S	100	27,50
5 m6 x 10	S	100	27,50
5 m6 x 12	S	100	27,50
5 m6 x 14	S	100	28,50
5 m6 x 16	S	100	30,50
5 m6 x 18	S	100	32,50
5 m6 x 20	S	100	34,00
5 m6 x 22	S	100	50,30
5 m6 x 24	S	100	38,00
5 m6 x 26	S	100	39,00
5 m6 x 28	S	100	41,50
5 m6 x 30	S	100	43,00
5 m6 x 32	S	100	44,00
5 m6 x 36	S	100	47,50
5 m6 x 40	S	100	52,00
5 m6 x 45	S	100	56,00
5 m6 x 50	S	100	67,00
5 m6 x 55	S	50	73,00
5 m6 x 60	S	100	79,00
5 m6 x 70	S	50	92,00
6 m6 x 8	S	10	31,00
6 m6 x 10	S	100	31,00
6 m6 x 12	S	100	31,00
6 m6 x 14	S	100	33,50
6 m6 x 16	S	100	35,50
6 m6 x 18	S	100	38,00
6 m6 x 20	S	100	40,00
6 m6 x 22	S	100	42,00
6 m6 x 24	S	100	44,50
6 m6 x 26	S	100	47,00
6 m6 x 28	S	100	49,50
6 m6 x 30	S	100	52,00
6 m6 x 32	S	100	55,00
6 m6 x 36	S	100	60,00
6 m6 x 40	S	100	63,00
6 m6 x 45	S	100	69,00
6 m6 x 50	S	50	76,00
6 m6 x 55	S	50	86,00
6 m6 x 60	S	50	92,00
6 m6 x 70	S	50	103,00
6 m6 x 80	S	50	137,00
6 m6 x 90	S	50	156,00
6 m6 x 100	S	50	174,00
8 m6 x 10	S	50	63,00
8 m6 x 12	S	50	58,00
8 m6 x 14	S	50	58,00
8 m6 x 16	S	50	63,00
8 m6 x 18	S	50	67,00
8 m6 x 20	S	50	70,00
8 m6 x 22	S	50	74,00
8 m6 x 24	S	50	77,00
8 m6 x 26	S	50	79,00
8 m6 x 28	S	50	83,00
8 m6 x 30	S	50	87,00
8 m6 x 32	S	50	91,00
8 m6 x 36	S	50	96,00
8 m6 x 40	S	50	103,00
8 m6 x 45	S	50	112,00
8 m6 x 50	S	50	120,00
8 m6 x 55	S	50	128,00
8 m6 x 60	S	50	137,00
8 m6 x 70	S	50	157,00
8 m6 x 80	S	50	171,00
8 m6 x 90	S	50	189,00
8 m6 x 100	S	25	206,00
8 m6 x 120	S	25	242,00
10 m6 x 16	S	50	102,00
10 m6 x 20	S	50	104,00
10 m6 x 22	S	50	107,00
10 m6 x 24	S	50	108,00
10 m6 x 26	S	50	113,00
10 m6 x 28	S	50	118,00
10 m6 x 30	S	50	122,00
10 m6 x 32	S	50	128,00
10 m6 x 36	S	25	145,00
10 m6 x 40	S	25	153,00
10 m6 x 45	S	25	169,00
10 m6 x 50	S	25	178,00
10 m6 x 55	S	25	193,00
10 m6 x 60	S	25	203,00
10 m6 x 70	S	25	228,00
10 m6 x 80	S	25	255,00
10 m6 x 90	S	25	285,00
10 m6 x 100	S	25	310,00
10 m6 x 110	S	25	350,00
10 m6 x 120	S	50	425,00
12 m6 x 20	S	50	152,00
12 m6 x 24	S	25	165,00
12 m6 x 26	S	25	165,00
12 m6 x 28	S	25	165,00
12 m6 x 30	S	25	169,00
12 m6 x 32	S	25	176,00
12 m6 x 36	S	25	189,00
12 m6 x 40	S	25	201,00
12 m6 x 45	S	25	216,00
12 m6 x 50	S	25	233,00
12 m6 x 55	S	25	248,00
12 m6 x 60	S	25	265,00
12 m6 x 70	S	10	335,00

Dimensions				PU	Pieces	€/100/Mat.
12	m6	x	80	S	10	365,00
12	m6	x	90	S	10	400,00
12	m6	x	100	S	10	430,00
12	m6	x	110	S	10	485,00
12	m6	x	120	S	10	520,00
14	m6	x	50	S	25	480,00
14	m6	x	60	S	25	560,00
14	m6	x	70	S	10	650,00
14	m6	x	80	S	10	780,00
14	m6	x	100	S	10	910,00
14	m6	x	120	S	10	1080,00
16	m6	x	30	S	50	445,00
16	m6	x	40	S	10	465,00
16	m6	x	45	S	10	500,00
16	m6	x	50	S	10	530,00
16	m6	x	55	S	10	560,00
16	m6	x	60	S	10	610,00
16	m6	x	70	S	10	700,00
16	m6	x	80	S	10	810,00
16	m6	x	90	S	10	860,00
16	m6	x	100	S	1	940,00
16	m6	x	110	S	1	1040,00
16	m6	x	120	S	1	1110,00
20	m6	x	40	S	10	730,00
20	m6	x	50	S	10	750,00
20	m6	x	60	S	10	810,00
20	m6	x	80	S	10	1040,00
20	m6	x	100	S	10	1210,00
20	m6	x	120	S	10	1420,00

ISO	08736.001	RAZ 670

8736

Steel **type A**

Taper pins with internal thread, A = grounded, taper 1 : 50

ISO 8736 = EN 28736

Dimensions ➔ TI-116 Standard conversion ➔ TI-10

ISO 8736 ➔ replaces DIN 7978 (compatible)

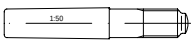
A 6	x	16	S	25	128,00
A 6	x	20	S	25	130,00
A 6	x	24	S	25	141,00
A 6	x	26	S	25	142,00
A 6	x	28	S	25	146,00
A 6	x	30	S	25	149,00
A 6	x	32	S	25	151,00
A 6	x	36	S	25	157,00
A 6	x	40	S	25	157,00
A 6	x	45	S	25	162,00
A 6	x	50	S	25	168,00
A 6	x	55	S	25	174,00
A 6	x	60	S	25	218,00
A 6	x	70	S	25	244,00
A 6	x	80	S	25	265,00
A 8	x	20	S	10	168,00
A 8	x	24	S	10	179,00
A 8	x	26	S	10	183,00
A 8	x	28	S	10	185,00
A 8	x	30	S	10	189,00
A 8	x	32	S	10	192,00
A 8	x	36	S	10	199,00
A 8	x	40	S	10	201,00
A 8	x	45	S	10	211,00
A 8	x	50	S	10	217,00

Dimensions				PU	Pieces	€/100/Mat.
A 8	x	55	S	10	224,00
A 8	x	60	S	10	231,00
A 8	x	70	S	10	260,00
A 8	x	80	S	10	275,00
A 8	x	90	S	10	300,00
A 8	x	100	S	10	395,00
A 10	x	28	S	10	226,00
A 10	x	30	S	10	231,00
A 10	x	32	S	10	233,00
A 10	x	36	S	10	240,00
A 10	x	40	S	10	247,00
A 10	x	45	S	10	260,00
A 10	x	50	S	10	265,00
A 10	x	55	S	10	275,00
A 10	x	60	S	10	280,00
A 10	x	70	S	10	325,00
A 10	x	80	S	10	355,00
A 10	x	90	S	10	385,00
A 10	x	100	S	10	415,00
A 10	x	120	S	5	570,00
A 12	x	36	S	10	305,00
A 12	x	40	S	10	315,00
A 12	x	45	S	10	325,00
A 12	x	50	S	10	340,00
A 12	x	55	S	10	350,00
A 12	x	60	S	10	365,00
A 12	x	70	S	10	395,00
A 12	x	80	S	10	445,00
A 12	x	90	S	10	475,00
A 12	x	100	S	10	510,00
A 16	x	40	S	10	460,00
A 16	x	45	S	10	485,00
A 16	x	50	S	10	510,00
A 16	x	55	S	10	530,00
A 16	x	60	S	10	560,00
A 16	x	70	S	5	600,00
A 16	x	80	S	5	640,00
A 16	x	90	S	5	690,00
A 16	x	100	S	5	760,00
A 16	x	120	S	5	2850,00
A 20	x	50	S	1	1020,00
A 20	x	55	S	1	1080,00
A 20	x	60	S	1	1130,00
A 20	x	70	S	1	1190,00
A 20	x	80	S	1	1270,00
A 20	x	90	S	1	1400,00
A 20	x	100	S	1	1520,00
A 20	x	120	S	1	1780,00

ISO	08737.000	RAZ 670

8737

Steel unhardened



Taper pins with external thread and constant threaded part, taper 1: 50

ISO 8737 = EN 28373

Dimensions ➔ TI-116 Standard conversion ➔ TI-10

ISO 8737 ➔ replaces DIN 7977 (compatible)
type with constant taper lengths ➔ DIN 258

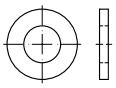
5	x	40	S	25	114,00
5	x	45	S	25	122,00
5	x	50	S	25	128,00
6	x	40	S	25	136,00
6	x	45	S	25	144,00

Dimensions				PU	Pieces	€/100/Mat.
6	x	50	S	25	144,00
6	x	55	S	10	185,00
6	x	60	S	10	157,00
8	x	50	S	10	194,00
8	x	55	S	10	194,00
8	x	60	S	10	198,00
8	x	65	S	10	206,00
8	x	75	S	10	222,00
8	x	85	S	10	280,00
8	x	100	S	10	355,00
10	x	50	S	10	260,00
10	x	60	S	10	270,00
10	x	65	S	10	270,00
10	x	75	S	10	285,00
10	x	85	S	10	315,00
10	x	100	S	10	345,00
10	x	120	S	1	480,00
12	x	75	S	10	375,00
12	x	80	S	10	485,00
12	x	85	S	10	385,00
12	x	100	S	10	440,00
12	x	120	S	10	610,00
12	x	140	S	5	620,00
13	x	75	S	10	560,00
13	x	85	S	10	540,00
13	x	100	S	10	590,00
13	x	140	S	10	920,00
14	x	85	S	10	445,00
14	x	100	S	10	510,00
16	x	85	S	5	590,00
16	x	100	S	5	620,00
16	x	120	S	5	790,00
16	x	140	S	1	1000,00
16	x	160	S	5	1050,00
20	x	100	S	1	1040,00
20	x	120	S	1	1080,00
20	x	140	S	1	1160,00
20	x	160	S	1	1270,00
20	x	190	S	1	4800,00

ISO	08738.000	RAZ 490

8738

Steel 160 HV



Washers for clevis pins, product grade

ISO 8738 = EN 28738,
for pins acc. to ISO 2340 and ISO 2341

Dimensions ➔ TI-85 Standard conversion ➔ TI-10

Stainless ➔ S. 544

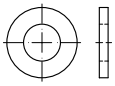
ISO 8738 ➔ replaces DIN 1440

Nominal diameter			
3	S	1000	2,76
4	S	1000	2,76
5	S	1000	3,18
6	S	1000	4,74
8	S	1000	9,00
10	S	1000	11,52
12	S	500	17,04
14	S	500	20,76
16	S	500	20,76
18	S	200	34,20
20	S	200	40,80
22	S	200	39,00
30	S	100	123,60
33	S	100	150,00

Dimensions	PU	Pieces	€/100/Mat.
36	S	100	190,80
40	S	50	220,80
45	S	50	267,60
50	S	50	408,00
55	S	10	864,00
60	S	10	996,00
70	S	1	2736,00
80	S	1	5040,00
90	S	1	5040,00
100	S	1	6480,00

ISO	08738.011	RAZ 490

8738 Steel 160 HV zinc plated



Washers for clevis pins, product grade

ISO 8738 = EN 28738,
for pins acc. to ISO 2340 and ISO 2341

Dimensions → TI-85 Standard conversion → TI-10
Corrosion protection → TI-217

Stainless → S. 544

ISO 8738 → replaces DIN 1440

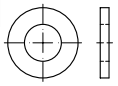
Nominal diameter

3	S	1000	2,82
4	S	1000	2,82
5	S	1000	3,30
6	S	1000	5,22
8	S	1000	9,72
10	S	1000	11,52
12	S	500	20,76
14	S	500	25,08
16	S	500	24,72
18	S	200	40,20
20	S	200	46,80
22	S	200	53,40
30	S	100	139,20
33	S	100	162,00
36	S	100	204,00
40	S	50	240,00
45	S	50	290,40
50	S	50	432,00
55	S	10	912,00
60	S	10	1032,00
70	S	1	2820,00
80	S	1	5100,00
100	S	1	6600,00

Dimensions	PU	Pieces	€/100/Mat.

ISO	08738.066	RAZ 490

8738 Steel 160 HV yellow ZP A3C



Washers for clevis pins, product grade

ISO 8738 = EN 28738,
for pins acc. to ISO 2340 and ISO 2341,
A3C = minimum coating thickness 8µm

Dimensions → TI-85 Standard conversion → TI-10
Corrosion protection → TI-217

Stainless → S. 544

ISO 8738 → replaces DIN 1440

Nominal diameter

8	S	100	14,04
10	S	100	19,32
12	S	100	25,32
16	S	100	30,60
18	S	100	46,20
20	S	100	55,80
30	S	100	211,20
40	S	50	256,80
45	S	50	342,00
50	S	50	456,00

ISO	08740.000	RAZ 3650

8740 Steel

Grooved pins, chamfered full length parallel grooved

Dimensions → TI-117

Stainless → S. 544

ISO 8740 → replaces DIN 1473

1,5	x	6	S	250	7,30
1,5	x	8	S	250	7,30
1,5	x	10	S	250	7,30
1,5	x	12	S	250	7,50
1,5	x	16	S	250	7,50
1,5	x	20	S	250	7,50
2	x	4	S	250	7,90
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	14	S	250	8,10
2	x	16	S	250	8,10
2	x	18	S	250	8,10
2	x	20	S	250	9,10
2	x	24	S	250	9,80
2	x	30	S	250	9,80
2,5	x	6	S	250	9,10
2,5	x	8	S	250	9,10
2,5	x	10	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	14	S	250	9,20
2,5	x	16	S	250	9,20
2,5	x	20	S	250	9,40

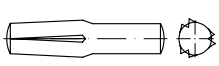
Dimensions			PU	Pieces	€/100/Mat.
2,5	x	24	S	250	9,40
2,5	x	30	S	250	9,70
3	x	6	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	18	S	250	9,50
3	x	20	S	250	10,10
3	x	22	S	250	10,10
3	x	24	S	250	10,10
3	x	26	S	250	10,40
3	x	28	S	250	11,90
3	x	30	S	100	11,90
3	x	32	S	100	12,20
3	x	36	S	100	12,50
3	x	40	S	100	12,60
4	x	6	S	100	11,70
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	45	S	100	15,10
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	8	S	100	13,30
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	18	S	100	14,10
5	x	20	S	100	14,10
5	x	22	S	100	14,20
5	x	24	S	100	14,50
5	x	26	S	100	15,10
5	x	28	S	100	15,10
5	x	30	S	100	15,40
5	x	32	S	100	15,80
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	45	S	100	18,20
5	x	50	S	100	19,00
5	x	55	S	100	35,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	12	S	100	17,50
6	x	14	S	100	17,50
6	x	16	S	100	17,70
6	x	18	S	100	17,80
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	45	S	100	23,90
6	x	50	S	100	24,70
6	x	55	S	100	26,00
6	x	60	S	100	28,00
6	x	65	S	100	73,00

Dimensions			PU	Pieces	€/100/Mat.
6	x	70	S	100	76,00
6	x	80	S	100	79,00
8	x	12	S	100	26,00
8	x	14	S	100	26,00
8	x	16	S	100	26,50
8	x	20	S	100	26,50
8	x	22	S	100	27,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	28	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
8	x	55	S	100	38,50
8	x	60	S	100	43,00
8	x	70	S	100	49,50
8	x	80	S	100	76,00
8	x	90	S	25	120,00
10	x	16	S	25	176,00
10	x	20	S	25	178,00
10	x	24	S	25	183,00
10	x	26	S	25	185,00
10	x	30	S	25	189,00
10	x	32	S	25	190,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	60	S	25	215,00
10	x	65	S	25	219,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
10	x	90	S	25	244,00
10	x	100	S	25	246,00
12	x	20	S	25	197,00
12	x	24	S	25	202,00
12	x	26	S	25	205,00
12	x	28	S	25	207,00
12	x	30	S	25	209,00
12	x	32	S	25	213,00
12	x	36	S	25	217,00
12	x	40	S	25	222,00
12	x	45	S	25	227,00
12	x	50	S	25	233,00
12	x	55	S	25	240,00
12	x	60	S	25	247,00
12	x	70	S	25	260,00
12	x	80	S	25	275,00
12	x	90	S	25	285,00
12	x	100	S	25	300,00

ISO	08741.000	RAZ 3650

8741

Steel



Grooved pins, half-length revers-taper grooved

Dimensions → TI-117

ISO 8741 → replaces DIN 1474

1,5	x	5	S	250	7,30
1,5	x	6	S	250	7,30
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	16	S	250	8,10
2	x	20	S	250	9,10
2,5	x	10	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
3	x	8	S	2000	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	16	S	250	9,50
3	x	20	S	250	10,10
3	x	30	S	100	11,90
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	24	S	100	12,20
4	x	30	S	100	12,50
4	x	40	S	100	13,60
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	20	S	100	14,10
5	x	24	S	100	14,50
5	x	28	S	100	15,10
5	x	36	S	100	16,30
5	x	40	S	100	17,10
6	x	12	S	100	17,50
6	x	14	S	100	17,50
6	x	16	S	100	17,70
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	40	S	100	21,90
6	x	60	S	100	28,00
6	x	70	S	100	76,00
8	x	16	S	100	26,50
8	x	20	S	100	26,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
10	x	20	S	25	178,00
10	x	24	S	25	183,00
10	x	25	S	25	185,00
10	x	30	S	25	189,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	60	S	25	215,00
12	x	32	S	25	213,00
12	x	40	S	25	222,00
12	x	50	S	25	233,00
12	x	55	S	25	240,00

ISO	08742.000	RAZ 3650

8742

Steel

Grooved pins, one-third-length centre grooved pins

Dimensions → TI-117

ISO 8742 → replaces DIN 1475

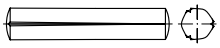
1,5	x	8	S	250	7,30
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	24	S	250	9,80
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
3	x	6	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	20	S	250	10,10
3	x	28	S	100	11,90
3	x	30	S	100	11,90
3	x	40	S	100	12,60
4	x	10	S	100	11,70
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	12	S	100	13,30
5	x	20	S	100	14,10
5	x	22	S	100	14,20
5	x	24	S	100	14,50
5	x	30	S	100	15,40
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	50	S	100	19,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	20	S	100	17,80
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	50	S	100	24,70
6	x	60	S	100	28,00
6	x	70	S	100	76,00
8	x	16	S	100	26,50
8	x	24	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	50	S	100	38,50
8	x	55	S	100	40,50

Dimensions			PU	Pieces	€/100/Mat.
8	x	60	S	100	43,00
8	x	80	S	100	76,00
8	x	100	S	25	132,00
10	x	36	S	25	194,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	55	S	25	210,00
10	x	60	S	25	215,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
12	x	40	S	25	222,00
12	x	45	S	25	227,00
12	x	60	S	25	247,00
12	x	100	S	25	300,00

ISO	08744.000	RAZ 3650

8744

Steel



Grooved pins, full-length taper grooved

Dimensions → TI-117

Stainless → S. 544

ISO 8744 → replaces DIN 1471

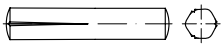
1,5	x	6	S	250	7,30
1,5	x	8	S	250	7,30
1,5	x	16	S	250	7,90
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	16	S	250	8,10
2	x	20	S	250	9,10
2	x	24	S	250	9,80
2	x	30	S	250	9,80
2,5	x	6	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
2,5	x	20	S	250	9,40
2,5	x	30	S	250	9,70
3	x	6	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	18	S	250	9,50
3	x	20	S	250	10,10
3	x	24	S	250	10,10
3	x	26	S	250	10,40
3	x	30	S	100	11,90
3	x	40	S	100	12,60
4	x	6	S	100	11,70
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60

Dimensions			PU	Pieces	€/100/Mat.
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	8	S	100	13,30
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30
5	x	16	S	100	13,30
5	x	18	S	100	14,10
5	x	20	S	100	14,10
5	x	24	S	100	14,50
5	x	26	S	100	15,10
5	x	30	S	100	15,40
5	x	32	S	100	15,80
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	45	S	100	18,20
5	x	50	S	100	19,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	12	S	100	17,50
6	x	16	S	100	17,50
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	45	S	100	23,90
6	x	50	S	100	24,70
6	x	55	S	100	26,00
6	x	60	S	100	28,00
6	x	70	S	100	76,00
6	x	80	S	100	79,00
8	x	12	S	100	26,00
8	x	16	S	100	26,50
8	x	20	S	100	26,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	28	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
8	x	55	S	100	40,50
8	x	60	S	100	43,00
8	x	70	S	100	49,50
8	x	80	S	100	76,00
10	x	20	S	25	178,00
10	x	30	S	25	189,00
10	x	32	S	25	190,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	60	S	25	215,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
10	x	90	S	25	244,00
10	x	100	S	25	246,00
12	x	26	S	25	205,00
12	x	60	S	25	247,00
12	x	70	S	25	260,00
12	x	90	S	25	285,00
12	x	100	S	25	300,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	08745.000		RAZ 3650

8745

Steel



Grooved pins, half-length taper grooved

Dimensions → TI-118

Stainless → S. 545

ISO 8745 → replaces DIN 1472

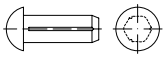
1,5	x	6	S	250	7,30
1,5	x	8	S	250	7,30
1,5	x	10	S	250	7,30
1,5	x	12	S	250	7,50
1,5	x	16	S	250	7,50
2	x	6	S	250	7,90
2	x	8	S	250	7,90
2	x	10	S	250	7,90
2	x	12	S	250	8,10
2	x	14	S	250	8,10
2	x	16	S	250	8,10
2	x	20	S	250	9,10
2	x	30	S	250	9,80
2,5	x	6	S	250	9,10
2,5	x	8	S	250	9,10
2,5	x	10	S	250	9,10
2,5	x	12	S	250	9,20
2,5	x	16	S	250	9,20
2,5	x	18	S	250	9,20
2,5	x	20	S	250	9,40
3	x	6	S	250	9,20
3	x	8	S	250	9,20
3	x	10	S	250	9,20
3	x	12	S	250	9,50
3	x	14	S	250	9,50
3	x	16	S	250	9,50
3	x	18	S	250	9,50
3	x	20	S	250	10,10
3	x	22	S	250	10,10
3	x	24	S	250	10,10
3	x	26	S	250	10,40
3	x	28	S	100	11,90
3	x	30	S	100	11,90
3	x	32	S	100	12,20
3	x	40	S	100	12,60
4	x	6	S	100	11,70
4	x	8	S	100	11,70
4	x	10	S	100	11,70
4	x	12	S	100	11,80
4	x	14	S	100	11,80
4	x	16	S	100	11,80
4	x	18	S	100	11,80
4	x	20	S	100	11,90
4	x	22	S	100	11,90
4	x	24	S	100	12,20
4	x	26	S	100	12,50
4	x	28	S	100	12,50
4	x	30	S	100	12,50
4	x	32	S	100	12,60
4	x	36	S	100	13,30
4	x	40	S	100	13,60
4	x	50	S	100	15,70
4	x	60	S	100	29,50
5	x	8	S	100	13,30
5	x	10	S	100	13,30
5	x	12	S	100	13,30
5	x	14	S	100	13,30

Dimensions			PU	Pieces	€/100/Mat.
5	x	16	S	100	13,30
5	x	18	S	100	14,10
5	x	20	S	100	14,10
5	x	22	S	100	14,20
5	x	24	S	100	14,50
5	x	26	S	100	15,10
5	x	28	S	100	15,10
5	x	30	S	100	15,40
5	x	32	S	100	15,80
5	x	36	S	100	16,30
5	x	40	S	100	17,10
5	x	50	S	100	19,00
5	x	60	S	100	36,50
6	x	10	S	100	17,50
6	x	12	S	100	17,50
6	x	14	S	100	17,50
6	x	16	S	100	17,70
6	x	18	S	100	17,80
6	x	20	S	100	17,80
6	x	22	S	100	18,10
6	x	24	S	100	18,20
6	x	26	S	100	18,70
6	x	28	S	100	18,70
6	x	30	S	100	19,00
6	x	32	S	100	19,50
6	x	36	S	100	21,20
6	x	40	S	100	21,90
6	x	45	S	100	23,90
6	x	50	S	100	24,70
6	x	60	S	100	28,00
6	x	80	S	100	79,00
8	x	12	S	100	26,00
8	x	14	S	100	26,00
8	x	16	S	100	26,50
8	x	18	S	100	26,50
8	x	20	S	100	26,50
8	x	22	S	100	27,50
8	x	24	S	100	27,50
8	x	26	S	100	27,50
8	x	28	S	100	27,50
8	x	30	S	100	28,50
8	x	32	S	100	29,50
8	x	36	S	100	31,50
8	x	40	S	100	32,50
8	x	45	S	100	36,00
8	x	50	S	100	38,50
8	x	55	S	100	38,50
8	x	60	S	100	43,00
8	x	70	S	100	49,50
8	x	80	S	100	76,00
8	x	100	S	25	132,00
10	x	16	S	25	176,00
10	x	20	S	25	178,00
10	x	24	S	25	183,00
10	x	26	S	25	185,00
10	x	30	S	25	189,00
10	x	32	S	25	190,00
10	x	36	S	25	194,00
10	x	40	S	25	197,00
10	x	45	S	25	202,00
10	x	50	S	25	206,00
10	x	55	S	25	210,00
10	x	60	S	25	215,00
10	x	70	S	25	224,00
10	x	80	S	25	235,00
10	x	90	S	25	244,00
12	x	20	S	25	197,00
12	x	30	S	25	209,00
12	x	32	S	25	213,00
12	x	36	S	25	217,00
12	x	40	S	25	222,00
12	x	45	S	25	227,00
12	x	50	S	25	233,00
12	x	55	S	25	240,00
12	x	60	S	25	247,00
12	x	70	S	25	260,00
12	x	80	S	25	275,00

ISO	08746.000	RAZ 500

8746

Steel **type A**



Grooved pins with round head, A = with chamfer

Dimensions → TI-118 Standard conversion → TI-10

Stainless → S. 545
Brass, aluminium → S. 594

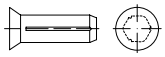
ISO 8746 → replaces DIN 1476 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
1,4	x	3	K	500	3,50
1,4	x	4	K	500	3,50
1,4	x	5	K	500	5,30
1,4	x	6	K	500	3,90
1,6	x	3	K	500	3,60
1,6	x	4	K	500	3,60
1,6	x	6	K	500	3,75
2	x	3	S	5000	2,80
2	x	3	K	500	3,60
2	x	4	S	5000	2,80
2	x	4	K	500	3,60
2	x	5	S	5000	2,80
2	x	5	K	500	3,60
2	x	6	S	5000	3,75
2	x	6	K	500	3,75
2	x	8	S	5000	2,85
2	x	8	K	500	3,75
2	x	10	K	500	3,85
2,3	x	4	K	500	3,75
2,3	x	5	K	500	3,75
2,3	x	6	K	500	3,75
2,3	x	8	K	500	3,85
2,3	x	10	K	500	4,00
2,5	x	3	K	500	3,85
2,5	x	4	K	500	3,85
2,5	x	5	K	500	3,85
2,5	x	6	S	5000	3,00
2,5	x	6	K	500	3,85
2,5	x	7	K	500	4,00
2,5	x	8	K	500	4,00
2,5	x	10	K	500	4,10
3	x	4	S	5000	3,25
3	x	4	K	500	4,10
3	x	5	S	5000	3,25
3	x	5	K	500	4,10
3	x	6	S	5000	3,25
3	x	6	K	500	4,10
3	x	7	K	500	4,25
3	x	8	S	5000	3,45
3	x	8	K	500	4,25
3	x	10	S	5000	3,45
3	x	10	K	500	4,25
3	x	12	S	2000	3,80
3	x	12	K	500	4,50
3	x	15	S	2000	3,80
3	x	15	K	500	4,50
3	x	18	K	500	5,40
4	x	6	S	2000	4,70
4	x	6	K	500	5,40
4	x	8	S	2000	4,70
4	x	8	K	500	5,40
4	x	10	S	2000	4,75
4	x	10	K	500	5,50
4	x	12	K	500	5,90
4	x	15	S	2000	5,40
4	x	15	K	500	6,20
4	x	20	K	500	6,40
5	x	8	K	250	7,60
5	x	10	S	1000	6,80
5	x	10	K	250	7,90
5	x	12	S	1000	7,50
5	x	12	K	250	8,60
5	x	15	S	1000	8,00
5	x	15	K	250	8,90
5	x	18	K	250	9,10
5	x	20	K	250	9,60
5	x	25	K	250	10,10
6	x	8	K	250	9,70
6	x	10	K	250	10,00
6	x	12	K	250	10,90
6	x	15	K	250	11,90
6	x	20	K	250	12,90
6	x	25	K	250	14,00
6	x	30	K	250	16,00

ISO	08747.000	RAZ 500

8747

Steel **type A**



Grooved pins with countersunk head, A = with chamfer

Standard conversion → TI-10

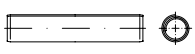
ISO 8747 → replaces DIN 1477 (compatible)

2	x	6	K	500	4,10
2	x	8	K	500	4,10
2	x	10	K	500	4,30
3	x	6	K	500	4,60
3	x	8	K	500	4,70
3	x	10	K	500	4,70
3	x	12	K	500	5,10
3	x	18	K	500	6,00
4	x	10	K	500	6,20
4	x	12	K	500	6,40
4	x	15	K	500	7,00
5	x	10	K	250	8,80
5	x	15	K	250	10,00
5	x	20	K	250	10,60
6	x	15	K	250	13,30
6	x	20	K	250	14,40

ISO	08748.000	RAZ 623

8748

Spring steel



Spring-type straight pins, coiled, heavy duty

Dimensions → TI-119 Standard conversion → TI-10

ISO 8748 → replaces DIN 7344 (compatible)

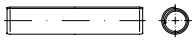
1,5	x	14	S	1000	6,80
2	x	8	S	1000	6,50
2	x	10	S	1000	6,70

Dimensions			PU	Pieces	€/100/Mat.
2	x	12	S	1000	6,80
2	x	16	S	1000	7,00
2	x	18	S	1000	7,10
2,5	x	12	S	1000	7,00
2,5	x	14	S	1000	7,20
2,5	x	16	S	1000	7,20
2,5	x	20	S	1000	7,30
2,5	x	24	S	1000	7,50
3	x	8	S	1000	7,90
3	x	10	S	1000	8,10
3	x	12	S	1000	8,10
3	x	14	S	1000	8,30
3	x	16	S	1000	8,60
3	x	18	S	1000	8,80
3	x	20	S	1000	8,90
3	x	24	S	1000	9,30
3	x	30	S	1000	10,00
3	x	32	S	1000	9,60
4	x	16	S	1000	9,70
4	x	18	S	500	10,10
4	x	20	S	500	10,60
4	x	24	S	500	11,40
4	x	26	S	500	12,80
4	x	30	S	500	13,20
5	x	12	S	1000	7,20
5	x	14	S	500	8,90
5	x	18	S	500	11,50
5	x	20	S	500	13,20
5	x	22	S	500	14,30
5	x	24	S	500	15,00
5	x	26	S	500	16,80
5	x	28	S	500	17,10
5	x	30	S	500	17,50
5	x	35	S	500	20,30
6	x	16	S	500	18,70
6	x	20	S	500	19,50
6	x	24	S	500	22,70
6	x	30	S	500	26,50
6	x	40	S	250	34,00
6	x	50	S	250	41,50
8	x	20	S	500	85,00
8	x	40	S	500	119,00
8	x	50	S	250	120,00

ISO	08750.000	RAZ 623

8750

Spring steel



Spring-type straight pins, coiled, standard duty

Dimensions → TI-119 Standard conversion → TI-10

Stainless → S. 545

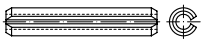
ISO 8750 → replaces DIN 7343 (compatible)

1,5	x	5	S	1000	5,30
1,5	x	6	S	1000	5,30
1,5	x	8	S	1000	5,70
1,5	x	10	S	1000	5,90
1,5	x	12	S	1000	5,90
2	x	6	S	1000	6,00
2	x	8	S	1000	6,10
2	x	10	S	1000	6,20
2	x	12	S	1000	6,30
2	x	14	S	1000	6,30
2	x	16	S	1000	6,30
2	x	18	S	1000	6,40
2	x	20	S	1000	7,10
2,5	x	10	S	1000	6,70
2,5	x	12	S	1000	6,90
2,5	x	16	S	1000	7,00
2.5	x	20	S	1000	7,50
3	x	8	S	1000	6,70
3	x	10	S	1000	7,00
3	x	12	S	1000	7,20
3	x	14	S	1000	7,30
3	x	16	S	1000	7,50
3	x	18	S	1000	7,70
3	x	20	S	1000	7,90
3	x	24	S	1000	8,30
3	x	26	S	1000	8,60
3	x	30	S	1000	8,60
3,5	x	20	S	1000	8,60
3,5	x	24	S	1000	9,30
4	x	10	S	500	8,60
4	x	12	S	500	8,60
4	x	14	S	500	8,80
4	x	16	S	500	9,10
4	x	18	S	500	9,30
4	x	20	S	500	9,50
4	x	24	S	500	10,00
4	x	26	S	500	10,30
4	x	30	S	500	11,20
4	x	32	S	500	12,20
4	x	36	S	500	13,20
4	x	40	S	500	14,10
4	x	50	S	500	16,80
5	x	20	S	500	12,80
5	x	22	S	500	13,40
5	x	24	S	500	13,70
5	x	26	S	500	14,40
5	x	30	S	500	15,40
5	x	32	S	500	16,00
5	x	40	S	500	18,10
6	x	14	S	500	16,00
6	x	18	S	500	16,50
6	x	20	S	500	17,00
6	x	24	S	500	19,40
6	x	26	S	500	18,70
6	x	30	S	500	23,10
6	x	35	S	500	26,00
6	x	40	S	250	27,50
6	x	45	S	250	30,50
6	x	50	S	250	33,50
8	x	20	S	500	32,00
8	x	24	S	500	33,50
8	x	30	S	250	41,50
8	x	35	S	250	46,50
8	x	40	S	500	49,50
8	x	45	S	500	55,00
8	x	50	S	250	59,00
10	x	40	S	250	76,00
10	x	50	S	250	93,00
10	x	70	S	100	135,00
12	x	40	S	50	174,00
12	x	50	S	100	186,00
12	x	60	S	50	198,00
12	x	80	S	50	232,00
14	x	50	S	25	221,00
14	x	70	S	25	255,00
16	x	60	S	25	250,00
16	x	90	S	25	570,00

Dimensions	PU	Pieces	€/100/Mat.
ISO 08752.000			RAZ 520

8752

Spring steel



Spring-type straight pins, slotted, heavy duty

Dimensions → TI-119

Stainless → S. 546

ISO 8752 → replaces DIN 1481

1	x	4	K	200	8,30
1	x	5	K	200	8,60
1	x	6	K	200	8,60
1	x	8	K	200	8,70
1	x	10	K	200	8,80
1	x	12	K	200	8,80
1	x	14	K	200	9,10
1	x	16	K	200	9,40
1	x	20	K	200	7,00
1,5	x	4	K	200	7,10
1,5	x	5	S	1000	6,40
1,5	x	5	K	200	7,10
1,5	x	6	S	1000	6,50
1,5	x	6	K	200	7,20
1,5	x	8	S	1000	6,80
1,5	x	8	K	200	7,50
1,5	x	10	S	1000	6,90
1,5	x	10	K	200	7,50
1,5	x	12	S	1000	6,90
1,5	x	12	K	200	7,60
1,5	x	14	S	1000	7,00
1,5	x	14	K	200	7,70
1,5	x	16	K	200	7,90
1,5	x	18	K	200	8,60
1,5	x	20	K	200	8,80
2	x	4	S	1000	6,40
2	x	4	K	200	7,10
2	x	5	S	1000	6,90
2	x	5	K	200	7,60
2	x	6	S	1000	7,00
2	x	6	K	200	7,70
2	x	8	S	1000	7,20
2	x	8	K	200	7,80
2	x	10	S	1000	7,20
2	x	10	K	200	7,90
2	x	12	S	1000	7,20
2	x	12	K	200	7,90
2	x	14	S	1000	7,30
2	x	14	K	200	8,00
2	x	16	S	1000	7,30
2	x	16	K	200	8,10
2	x	18	S	1000	7,30
2	x	18	K	200	8,10
2	x	20	S	1000	8,10
2	x	20	K	200	8,70
2	x	22	K	200	8,90
2	x	24	S	1000	8,50
2	x	24	K	200	9,20
2	x	26	S	1000	8,90
2	x	26	K	200	9,60
2	x	28	K	200	10,20
2	x	30	S	1000	9,80
2	x	30	K	200	10,60
2,5	x	4	S	1000	7,20
2,5	x	4	K	200	7,90
2,5	x	5	S	1000	7,30

Dimensions	PU	Pieces	€/100/Mat.
2,5 x 5	K	200	8,00
2,5 x 6	S	1000	7,40
2,5 x 6	K	200	8,10
2,5 x 8	S	1000	7,60
2,5 x 8	K	200	8,30
2,5 x 10	S	1000	7,80
2,5 x 10	K	200	8,50
2,5 x 12	S	1000	7,80
2,5 x 12	K	200	8,50
2,5 x 14	S	1000	7,90
2,5 x 14	K	200	8,60
2,5 x 16	S	1000	8,10
2,5 x 16	K	200	8,80
2,5 x 18	S	1000	8,20
2,5 x 18	K	200	8,80
2,5 x 20	S	1000	8,30
2,5 x 20	K	200	8,90
2,5 x 22	K	200	9,10
2,5 x 24	K	200	9,60
2,5 x 26	K	200	10,10
2,5 x 28	K	200	10,60
2,5 x 30	S	1000	10,70
2,5 x 30	K	200	11,30
3 x 4	K	200	6,40
3 x 5	S	1000	5,10
3 x 5	K	200	6,40
3 x 6	S	1000	5,30
3 x 6	K	200	6,70
3 x 8	S	1000	5,30
3 x 8	K	200	6,70
3 x 10	S	1000	5,40
3 x 10	K	200	6,80
3 x 12	S	1000	5,40
3 x 12	K	200	6,80
3 x 14	S	1000	5,50
3 x 14	K	200	6,90
3 x 16	S	1000	5,70
3 x 16	K	200	7,10
3 x 18	S	1000	5,90
3 x 18	K	200	7,20
3 x 20	S	1000	6,10
3 x 20	K	200	7,50
3 x 22	S	1000	4,80
3 x 22	K	200	6,20
3 x 24	S	1000	6,30
3 x 24	K	200	7,70
3 x 26	S	1000	6,40
3 x 26	K	200	7,80
3 x 28	S	1000	6,90
3 x 28	K	200	8,30
3 x 30	S	1000	7,20
3 x 30	K	200	8,60
3 x 32	S	1000	7,50
3 x 32	K	100	10,30
3 x 36	S	1000	8,50
3 x 36	K	100	11,30
3 x 40	S	1000	9,10
3 x 40	K	100	11,80
3 x 50	S	1000	11,70
3 x 50	K	100	14,40
3,5 x 4	K	200	7,50
3,5 x 5	K	200	7,50
3,5 x 6	K	200	7,60
3,5 x 8	K	200	7,80
3,5 x 10	K	200	7,80
3,5 x 12	K	200	8,00
3,5 x 14	K	200	8,30
3,5 x 16	S	1000	7,10
3,5 x 16	K	200	8,30
3,5 x 18	K	200	8,50
3,5 x 20	S	1000	7,50
3,5 x 20	K	200	8,70
3,5 x 22	K	200	8,70
3,5 x 24	K	200	8,80
3,5 x 26	K	200	9,40
3,5 x 28	K	200	10,00
3,5 x 30	K	200	10,40
3,5 x 32	K	100	11,90
3,5 x 36	K	100	12,20
3,5 x 40	K	100	13,30
4 x 4	S	500	6,20
4 x 4	K	200	7,30
4 x 5	K	200	7,50
4 x 6	S	500	6,40
4 x 6	K	200	7,60
4 x 8	S	500	6,50
4 x 8	K	200	7,20
4 x 10	S	500	6,70
4 x 10	K	200	7,70
4 x 12	S	500	6,80
4 x 12	K	200	7,90
4 x 14	S	500	7,00
4 x 14	K	200	8,10
4 x 16	S	500	7,10
4 x 16	K	200	8,30
4 x 18	S	500	7,20
4 x 18	K	200	8,30
4 x 20	S	500	7,30
4 x 20	K	200	8,40
4 x 22	S	500	7,60
4 x 22	K	200	8,70
4 x 24	S	500	7,70
4 x 24	K	200	8,80
4 x 26	S	500	7,80
4 x 26	K	200	8,90
4 x 28	S	500	8,40
4 x 28	K	200	9,50
4 x 30	S	500	8,90
4 x 30	K	200	9,80
4 x 32	S	500	9,30
4 x 32	K	200	10,30
4 x 36	S	500	9,70
4 x 36	K	200	10,80
4 x 40	S	500	10,60
4 x 40	K	200	11,80
4 x 45	S	500	12,40
4 x 45	K	100	13,50
4 x 50	S	500	12,70
4 x 50	K	100	14,60
4 x 55	S	500	18,40
4 x 55	K	100	20,40
4 x 60	S	500	18,30
4 x 60	K	100	20,20
4,5 x 10	K	100	9,70
4,5 x 12	K	100	10,20
4,5 x 20	S	500	10,00
4,5 x 20	K	100	11,90
4,5 x 22	K	100	12,10
4,5 x 24	K	100	12,60
4,5 x 26	K	100	13,00
4,5 x 28	K	100	13,50
4,5 x 30	S	500	11,90
4,5 x 30	K	100	13,80
4,5 x 32	K	100	14,20
4,5 x 36	K	100	15,10
4,5 x 40	S	500	14,00
4,5 x 40	K	100	15,90
4,5 x 45	K	100	17,10
4,5 x 50	K	100	18,10
5 x 5	K	100	9,60
5 x 6	S	500	7,80
5 x 6	K	100	9,70
5 x 8	S	500	7,80
5 x 8	K	100	9,70
5 x 10	S	500	7,80
5 x 10	K	100	9,70
5 x 12	S	500	8,30
5 x 12	K	100	10,20
5 x 14	S	500	8,60
5 x 14	K	100	10,50
5 x 16	S	500	9,10
5 x 16	K	100	11,00
5 x 18	S	500	9,60
5 x 18	K	100	11,60
5 x 20	S	500	9,80
5 x 20	K	100	11,80
5 x 22	S	500	10,60
5 x 22	K	100	12,60
5 x 24	S	500	10,60
5 x 24	K	100	12,60
5 x 26	S	500	11,10
5 x 26	K	100	13,00
5 x 28	S	500	11,60
5 x 28	K	100	13,50
5 x 30	S	500	11,90
5 x 30	K	100	13,80
5 x 32	S	500	12,20
5 x 32	K	100	15,20
5 x 36	S	500	13,20
5 x 36	K	100	15,10
5 x 40	S	500	14,00
5 x 40	K	100	15,90
5 x 45	S	500	15,20
5 x 45	K	100	17,10
5 x 50	S	250	16,00
5 x 50	K	100	18,10
5 x 55	K	100	20,20
5 x 60	S	250	19,70
5 x 60	K	100	21,70
5 x 65	K	100	23,30
5 x 70	S	250	23,90
5 x 70	K	100	26,00
5 x 75	K	100	28,50
5 x 80	K	100	31,50
6 x 10	S	500	9,20
6 x 10	K	100	11,10
6 x 12	S	500	9,40
6 x 12	K	100	11,30
6 x 14	S	500	9,60
6 x 14	K	100	11,60
6 x 16	S	500	10,30
6 x 16	K	100	12,20
6 x 18	S	500	10,90
6 x 18	K	100	12,90
6 x 20	S	500	11,80
6 x 20	K	100	13,80
6 x 22	S	500	12,60
6 x 22	K	100	14,50
6 x 24	S	500	13,30
6 x 24	K	100	15,30
6 x 26	S	500	14,30
6 x 26	K	100	16,20
6 x 28	S	500	15,20
6 x 28	K	100	17,10
6 x 30	S	500	16,00
6 x 30	K	100	17,90
6 x 32	S	500	16,90
6 x 32	K	100	18,90
6 x 36	S	500	17,80
6 x 36	K	100	19,90
6 x 40	S	250	18,90
6 x 40	K	100	20,90
6 x 45	S	250	21,10
6 x 45	K	100	23,20
6 x 50	S	250	22,70
6 x 50	K	100	24,80
6 x 55	S	250	24,60
6 x 55	K	100	27,00
6 x 60	S	250	27,00
6 x 60	K	100	29,50
6 x 65	K	100	31,50
6 x 70	S	250	32,00
6 x 70	K	100	34,50
6 x 75	K	100	36,50
6 x 80	S	250	37,50

Dimensions			PU	Pieces	€/100/Mat.
6	x	80	K	100	39,50
6	x	85	K	100	44,00
6	x	90	K	50	52,00
6	x	100	K	50	60,00
7	x	10	K	100	17,30
7	x	16	K	100	17,70
7	x	20	K	100	19,70
7	x	24	K	100	22,30
7	x	30	K	100	27,00
7	x	32	K	100	28,50
7	x	36	K	100	30,50
7	x	40	K	100	32,50
7	x	45	K	100	35,00
7	x	50	K	100	38,00
7	x	55	K	100	42,50
7	x	60	K	50	49,50
7	x	65	K	50	54,00
7	x	70	K	50	57,00
7	x	75	K	50	65,00
7	x	80	K	50	72,00
7	x	90	K	50	79,00
7	x	100	K	50	91,00
8	x	10	K	100	17,30
8	x	12	S	500	14,90
8	x	12	K	100	17,40
8	x	14	S	500	15,00
8	x	14	K	100	17,50
8	x	16	S	500	15,20
8	x	16	K	100	17,70
8	x	18	S	500	16,00
8	x	18	K	100	18,50
8	x	20	S	500	17,70
8	x	20	K	100	19,70
8	x	22	S	500	18,40
8	x	22	K	100	20,90
8	x	24	S	500	20,20
8	x	24	K	100	22,30
8	x	26	S	250	21,90
8	x	26	K	100	24,00
8	x	28	S	250	23,40
8	x	28	K	100	25,50
8	x	30	S	250	25,00
8	x	30	K	100	27,00
8	x	32	S	250	26,50
8	x	32	K	100	28,50
8	x	36	S	250	28,50
8	x	36	K	100	30,50
8	x	40	S	250	30,50
8	x	40	K	100	32,50
8	x	45	S	250	33,50
8	x	45	K	100	35,00
8	x	50	S	250	36,00
8	x	50	K	100	38,00
8	x	55	S	250	39,00
8	x	55	K	100	40,50
8	x	60	S	250	45,50
8	x	60	K	50	49,50
8	x	65	S	250	50,00
8	x	65	K	50	54,00
8	x	70	S	250	54,00
8	x	70	K	50	57,00
8	x	75	K	50	65,00
8	x	80	S	250	69,00
8	x	80	K	50	72,00
8	x	85	K	50	77,00
8	x	90	S	100	76,00
8	x	90	K	50	79,00
8	x	95	K	50	84,00
8	x	100	S	100	88,00
8	x	100	K	50	91,00
8	x	110	K	50	275,00
8	x	120	S	100	277,00
8	x	120	K	25	280,00
9	x	40	K	100	48,00
9	x	50	K	100	61,00
9	x	60	K	50	72,00
9	x	70	K	50	87,00
9	x	80	K	50	97,00
9	x	90	K	50	110,00
10	x	10	K	100	63,00
10	x	12	K	100	63,00
10	x	14	S	500	22,00
10	x	14	K	100	24,30
10	x	16	S	500	22,00
10	x	16	K	100	24,30
10	x	18	K	100	28,50
10	x	20	S	500	26,00
10	x	20	K	100	28,50
10	x	22	K	100	30,50
10	x	24	S	500	30,50
10	x	24	K	100	32,50
10	x	26	S	500	32,00
10	x	26	K	100	34,50
10	x	28	S	500	34,00
10	x	28	K	100	36,50
10	x	30	S	500	36,50
10	x	30	K	100	38,50
10	x	32	S	500	40,50
10	x	32	K	100	42,50
10	x	36	S	250	43,50
10	x	36	K	100	45,50
10	x	40	S	250	46,50
10	x	40	K	100	48,00
10	x	45	S	250	52,00
10	x	45	K	100	54,00
10	x	50	S	250	57,00
10	x	50	K	100	60,00
10	x	55	S	250	62,00
10	x	55	K	100	63,00
10	x	60	S	200	69,00
10	x	60	K	50	72,00
10	x	65	S	200	77,00
10	x	65	K	50	80,00
10	x	70	S	100	83,00
10	x	70	K	50	87,00
10	x	75	S	100	88,00
10	x	75	K	50	92,00
10	x	80	S	100	93,00
10	x	80	K	50	97,00
10	x	85	S	100	98,00
10	x	85	K	50	102,00
10	x	90	S	100	105,00
10	x	90	K	50	110,00
10	x	95	K	50	116,00
10	x	100	S	100	119,00
10	x	100	K	50	124,00
10	x	110	K	50	480,00
10	x	120	S	50	480,00
10	x	120	K	25	485,00
10	x	140	S	50	615,00
10	x	140	K	25	620,00
10	x	160	S	50	665,00
10	x	160	K	25	670,00
12	x	10	S	25	255,00
12	x	12	S	25	244,00
12	x	14	S	25	238,00
12	x	16	S	25	230,00
12	x	18	S	25	223,00
12	x	20	S	25	119,00
12	x	22	S	25	122,00
12	x	24	S	25	126,00
12	x	26	S	25	128,00
12	x	28	S	25	132,00
12	x	30	S	25	126,00
12	x	32	S	25	148,00
12	x	36	S	25	140,00
12	x	40	S	25	145,00
12	x	45	S	25	149,00
12	x	50	S	25	152,00
12	x	55	S	25	159,00
12	x	60	S	25	165,00
12	x	65	S	25	175,00
12	x	70	S	25	181,00
12	x	75	S	25	189,00
12	x	80	S	25	193,00
12	x	85	S	25	270,00
12	x	90	S	25	340,00
12	x	95	S	25	400,00
12	x	100	S	25	470,00
12	x	120	S	10	590,00
12	x	130	S	10	690,00
12	x	140	S	10	690,00
12	x	160	S	10	790,00
12	x	180	S	10	880,00
13	x	20	S	25	126,00
13	x	24	S	25	132,00
13	x	26	S	25	136,00
13	x	28	S	25	137,00
13	x	30	S	25	143,00
13	x	32	S	25	145,00
13	x	36	S	25	149,00
13	x	40	S	25	152,00
13	x	45	S	25	154,00
13	x	50	S	25	159,00
13	x	55	S	25	165,00
13	x	60	S	25	171,00
13	x	65	S	25	181,00
13	x	70	S	25	189,00
13	x	75	S	25	195,00
13	x	80	S	25	224,00
13	x	85	S	25	295,00
13	x	90	S	25	375,00
13	x	95	S	25	440,00
13	x	100	S	10	510,00
13	x	120	S	10	700,00
13	x	130	S	10	810,00
13	x	140	S	10	810,00
13	x	160	S	10	940,00
13	x	180	S	10	1090,00
14	x	12	S	25	260,00
14	x	18	S	25	241,00
14	x	20	S	25	151,00
14	x	24	S	25	157,00
14	x	28	S	25	166,00
14	x	30	S	25	169,00
14	x	32	S	25	171,00
14	x	36	S	25	175,00
14	x	40	S	25	177,00
14	x	45	S	25	181,00
14	x	50	S	25	186,00
14	x	55	S	25	190,00
14	x	60	S	25	195,00
14	x	65	S	25	208,00
14	x	70	S	25	214,00
14	x	75	S	25	219,00
14	x	80	S	25	235,00
14	x	85	S	25	380,00
14	x	90	S	25	445,00
14	x	100	S	10	590,00
14	x	120	S	10	770,00
14	x	140	S	10	910,00
14	x	160	S	10	1030,00
14	x	200	S	10	1210,00
16	x	10	S	25	295,00
16	x	16	S	25	260,00
16	x	18	S	25	255,00
16	x	20	S	25	173,00
16	x	22	S	25	176,00
16	x	24	S	25	179,00
16	x	26	S	25	183,00
16	x	28	S	25	185,00
16	x	30	S	25	191,00
16	x	32	S	25	194,00
16	x	36	S	25	198,00
16	x	40	S	25	201,00

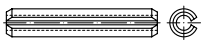
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
16	x	45	S	25	203,00
16	x	50	S	25	207,00
16	x	55	S	25	210,00
16	x	60	S	25	216,00
16	x	65	S	25	225,00
16	x	70	S	25	249,00
16	x	75	S	25	270,00
16	x	80	S	25	285,00
16	x	85	S	25	420,00
16	x	90	S	25	495,00
16	x	100	S	10	620,00
16	x	110	S	10	840,00
16	x	120	S	10	840,00
16	x	130	S	10	970,00
16	x	140	S	10	970,00
16	x	150	S	10	1120,00
16	x	160	S	10	1120,00
16	x	180	S	10	1260,00
16	x	200	S	10	1400,00
18	x	24	S	25	189,00
18	x	30	S	25	198,00
18	x	36	S	25	203,00
18	x	40	S	25	206,00
18	x	45	S	25	209,00
18	x	50	S	25	213,00
18	x	55	S	25	226,00
18	x	60	S	25	247,00
18	x	65	S	25	275,00
18	x	70	S	25	295,00
18	x	75	S	25	320,00
18	x	80	S	25	340,00
18	x	90	S	10	530,00
18	x	100	S	10	670,00
18	x	120	S	10	950,00
18	x	140	S	10	1120,00
18	x	160	S	10	1270,00
20	x	20	S	25	203,00
20	x	30	S	25	240,00
20	x	32	S	25	244,00
20	x	36	S	25	255,00
20	x	40	S	25	270,00
20	x	45	S	25	295,00
20	x	50	S	25	310,00
20	x	55	S	25	335,00
20	x	60	S	25	350,00
20	x	65	S	25	375,00
20	x	70	S	25	395,00
20	x	75	S	25	420,00
20	x	80	S	25	440,00
20	x	85	S	10	540,00
20	x	90	S	10	610,00
20	x	100	S	10	750,00
20	x	120	S	10	1090,00
20	x	130	S	10	1270,00
20	x	140	S	10	1270,00
20	x	160	S	10	1450,00
20	x	180	S	10	1890,00
20	x	200	S	10	2330,00
21	x	16	S	25	560,00
21	x	20	S	25	305,00
21	x	24	S	25	335,00
21	x	26	S	25	345,00
21	x	30	S	25	375,00
21	x	32	S	25	380,00
21	x	36	S	25	400,00
21	x	40	S	25	425,00
21	x	45	S	25	435,00
21	x	50	S	25	460,00
21	x	55	S	25	480,00
21	x	60	S	25	500,00
21	x	65	S	10	530,00
21	x	70	S	10	550,00
21	x	75	S	10	570,00
21	x	80	S	10	600,00
21	x	85	S	10	650,00

Dimensions			PU	Pieces	€/100/Mat.
21	x	90	S	10	720,00
21	x	95	S	10	790,00
21	x	100	S	10	800,00
21	x	120	S	10	1120,00
21	x	130	S	10	1270,00
21	x	140	S	10	1270,00
21	x	200	S	10	2280,00
25	x	32	S	10	970,00
25	x	36	S	10	990,00
25	x	40	S	10	1000,00
25	x	50	S	10	1050,00
25	x	55	S	10	1070,00
25	x	60	S	10	1090,00
25	x	65	S	10	1120,00
25	x	70	S	10	1160,00
25	x	80	S	10	1220,00
25	x	85	S	10	1380,00
25	x	90	S	10	1560,00
25	x	100	S	10	1870,00
25	x	120	S	1	2080,00
25	x	140	S	1	2280,00
25	x	160	S	1	2500,00
25	x	200	S	1	3400,00
28	x	26	S	10	1040,00
28	x	28	S	10	1140,00
28	x	30	S	10	1100,00
28	x	32	S	10	1120,00
28	x	36	S	10	1160,00
28	x	40	S	10	1180,00
28	x	45	S	10	1220,00
28	x	50	S	10	1260,00
28	x	55	S	10	1290,00
28	x	60	S	10	1340,00
28	x	65	S	10	1440,00
28	x	70	S	10	1540,00
28	x	75	S	10	1640,00
28	x	80	S	10	1740,00
28	x	90	S	10	2180,00
28	x	100	S	1	2650,00
28	x	120	S	1	2950,00
28	x	140	S	1	3250,00
28	x	160	S	1	3550,00
28	x	200	S	1	4650,00
30	x	30	S	10	1240,00
30	x	32	S	10	1250,00
30	x	36	S	10	1300,00
30	x	40	S	10	1350,00
30	x	50	S	10	1460,00
30	x	60	S	10	1680,00
30	x	65	S	10	1700,00
30	x	70	S	10	1830,00
30	x	80	S	10	2080,00
30	x	90	S	1	2550,00
30	x	100	S	1	3050,00
30	x	120	S	1	3550,00
30	x	140	S	1	4050,00
30	x	160	S	1	4600,00
30	x	180	S	1	5200,00
30	x	200	S	1	5700,00
35	x	50	S	1	1710,00
35	x	60	S	1	1870,00
35	x	80	S	1	3200,00
35	x	90	S	1	3600,00
35	x	100	S	1	4000,00
40	x	50	S	1	1980,00
40	x	55	S	1	2170,00
40	x	60	S	1	2170,00
40	x	70	S	1	2430,00
40	x	80	S	1	2650,00
40	x	90	S	1	2950,00
40	x	100	S	1	3250,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	08752.010		RAZ 520

8752 **Spring steel zinc plated**



Spring-type straight pins, slotted, heavy duty

Dimensions → TI-119 Corrosion protection → TI-217

Stainless → S. 546

ISO 8752 → replaces DIN 1481

3	x	10	S	200	27,50 ZP
3	x	12	S	200	27,50 ZP
3	x	14	S	200	28,00 ZP
3	x	16	S	200	28,50 ZP
3	x	20	S	1000	5,88 ZP
4	x	10	S	200	31,00 ZP
4	x	12	S	200	32,00 ZP
4	x	16	S	200	33,50 ZP
4	x	20	S	200	34,00 ZP
4	x	24	S	200	35,50 ZP
4	x	28	S	500	7,93 ZP
5	x	16	S	100	44,00 ZP
5	x	20	S	500	9,97 ZP
5	x	22	S	100	51,00 ZP
5	x	24	S	100	51,00 ZP
5	x	26	S	100	52,00 ZP
5	x	30	S	500	11,25 ZP
5	x	36	S	500	12,53 ZP
6	x	10	S	100	44,50 ZP
6	x	12	S	100	45,50 ZP
6	x	14	S	500	12,02 ZP
6	x	16	S	500	11,76 ZP
6	x	20	S	100	56,00 ZP
6	x	22	S	100	58,00 ZP
6	x	24	S	100	62,00 ZP
6	x	26	S	100	65,00 ZP
6	x	30	S	100	72,00 ZP
6	x	32	S	100	76,00 ZP
6	x	36	S	100	18,41 ZP
6	x	40	S	100	84,00 ZP
8	x	10	S	100	70,00 ZP
8	x	12	S	100	70,00 ZP
8	x	16	S	100	71,00 ZP
8	x	20	S	100	79,00 ZP
8	x	24	S	100	16,36 ZP

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Dimensions	PU Pieces	€/100/Mat.
ISO	08765.800	*

8765

8.8

Hexagon head bolts with shank, with metric fine pitch thread

Short dimensions in part thread up to head,
*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

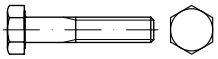
ISO 8765 → replaces DIN 960

M 8	x	1	x	35	S	200	23,50
M 8	x	1	x	40	S	200	26,25
M 10	x	1	x	40	S	100	40,95
M 10	x	1,25	x	40	S	100	43,10
M 10	x	1	x	45	S	100	44,50
M 10	x	1,25	x	45	S	100	45,05
M 10	x	1	x	50	S	100	48,25
M 10	x	1,25	x	50	S	100	47,95
M 10	x	1,25	x	55	S	100	51,30
M 10	x	1	x	60	S	100	51,60
M 10	x	1,25	x	60	S	100	52,25
M 10	x	1	x	65	S	100	57,35
M 10	x	1	x	70	S	100	57,35
M 10	x	1,25	x	70	S	100	57,35
M 10	x	1	x	80	S	100	64,90
M 10	x	1,25	x	80	S	100	64,30
M 10	x	1,25	x	90	S	100	74,10
M 10	x	1,25	x	100	S	100	85,85
M 10	x	1,25	x	110	S	50	118,00
M 10	x	1,25	x	120	S	50	130,00
M 10	x	1,25	x	130	S	50	165,00
M 12	x	1,25	x	45	S	100	67,05
M 12	x	1,5	x	45	S	100	60,80
M 12	x	1,25	x	50	S	100	68,60
M 12	x	1,5	x	50	S	100	60,80
M 12	x	1,25	x	60	S	100	76,05
M 12	x	1,5	x	60	S	100	75,35
M 12	x	1,5	x	65	S	100	79,40
M 12	x	1,25	x	70	S	50	83,45
M 12	x	1,5	x	70	S	50	83,45
M 12	x	1,25	x	80	S	50	92,10
M 12	x	1,5	x	80	S	50	88,95
M 12	x	1,25	x	90	S	50	107,00
M 12	x	1,5	x	90	S	50	104,00
M 12	x	1,25	x	100	S	50	117,00
M 12	x	1,5	x	100	S	50	113,00
M 12	x	1,25	x	110	S	50	158,00
M 12	x	1,5	x	110	S	50	129,00
M 12	x	1,25	x	120	S	50	173,00
M 12	x	1,5	x	120	S	50	145,00
M 12	x	1,25	x	130	S	50	192,00
M 12	x	1,25	x	130	S	50	186,00
M 12	x	1,5	x	140	S	50	214,00
M 14	x	1,5	x	50	S	50	118,00
M 14	x	1,5	x	55	S	50	126,00
M 14	x	1,5	x	60	S	50	126,00
M 14	x	1,5	x	65	S	50	138,00
M 14	x	1,5	x	70	S	50	138,00
M 14	x	1,5	x	75	S	50	158,00
M 14	x	1,5	x	80	S	50	158,00
M 14	x	1,5	x	90	S	50	177,00
M 14	x	1,5	x	100	S	50	198,00
M 14	x	1,5	x	110	S	50	233,00
M 14	x	1,5	x	120	S	50	266,00
M 14	x	1,5	x	130	S	50	305,00
M 14	x	1,5	x	140	S	25	335,00
M 16	x	1,5	x	55	S	50	134,00
M 16	x	1,5	x	60	S	50	143,00
M 16	x	1,5	x	65	S	25	168,00
M 16	x	1,5	x	70	S	25	168,00
M 16	x	1,5	x	75	S	25	172,00
M 16	x	1,5	x	80	S	25	172,00
M 16	x	1,5	x	85	S	25	191,00
M 16	x	1,5	x	90	S	25	191,00
M 16	x	1,5	x	100	S	25	208,00
M 16	x	1,5	x	110	S	25	272,00
M 16	x	1,5	x	120	S	25	272,00
M 16	x	1,5	x	130	S	25	337,00
M 16	x	1,5	x	140	S	25	366,00
M 16	x	1,5	x	150	S	25	371,00
M 16	x	1,5	x	160	S	25	550,00
M 18	x	1,5	x	60	S	25	362,00
M 18	x	1,5	x	65	S	25	362,00
M 18	x	1,5	x	70	S	25	325,00
M 18	x	1,5	x	80	S	25	335,00
M 18	x	1,5	x	90	S	25	368,00
M 18	x	1,5	x	100	S	25	396,00
M 20	x	1,5	x	65	S	25	380,00
M 20	x	1,5	x	70	S	25	333,00
M 20	x	2	x	70	S	25	606,00
M 20	x	1,5	x	75	S	25	340,00
M 20	x	1,5	x	80	S	25	340,00
M 20	x	2	x	80	S	25	616,00
M 20	x	1,5	x	90	S	25	371,00
M 20	x	1,5	x	100	S	25	400,00
M 20	x	2	x	100	S	25	685,00
M 20	x	1,5	x	110	S	25	444,00
M 20	x	1,5	x	120	S	25	474,00
M 20	x	2	x	120	S	25	815,00
M 20	x	1,5	x	140	S	25	582,00
M 20	x	1,5	x	150	S	25	593,00
M 20	x	1,5	x	160	S	10	1153,00
M 20	x	1,5	x	180	S	10	1220,00
M 20	x	1,5	x	200	S	10	1392,00
M 24	x	1,5	x	80	S	25	375,00
M 24	x	2	x	80	S	25	533,00
M 24	x	1,5	x	90	S	25	405,00
M 24	x	1,5	x	90	S	25	405,00
M 24	x	1,5	x	100	S	10	445,00
M 24	x	2	x	100	S	10	613,00
M 24	x	1,5	x	120	S	10	505,00
M 24	x	2	x	120	S	10	707,00
M 24	x	1,5	x	130	S	10	535,00
M 24	x	2	x	130	S	10	843,00
M 24	x	1,5	x	140	S	10	565,00
M 24	x	2	x	140	S	10	925,00
M 24	x	1,5	x	150	S	10	600,00
M 24	x	2	x	150	S	10	942,00
M 30	x	2	x	100	S	1	1276,00
M 30	x	2	x	120	S	1	1441,00
M 30	x	2	x	130	S	1	1518,00
M 30	x	2	x	140	S	1	1606,00
M 30	x	2	x	150	S	1	1694,00
M 30	x	2	x	160	S	1	1804,00
M 36	x	3	x	120	S	1	2200,00
M 36	x	3	x	130	S	1	2310,00
M 36	x	3	x	140	S	1	2409,00
M 36	x	3	x	150	S	1	2541,00
M 36	x	3	x	160	S	1	2706,00
M 42	x	3	x	140	S	1	3674,00
M 42	x	3	x	160	S	1	3982,00
M 42	x	3	x	180	S	1	4356,00
M 42	x	3	x	200	S	1	4730,00

Dimensions	PU Pieces	€/100/Mat.
ISO	08765.810	*

8765

8.8
zinc plated



Hexagon head bolts with shank, with metric fine pitch thread

Short dimensions in part thread up to head,
*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Dimensions → TI-15 Corrosion protection → TI-217
Mech. properties → TI-220 Standard conversion → TI-6
Tightening torque → TI-230

ISO 8765 → replaces DIN 960

M 12	x	1,5	x	45	S	100	80,50 ZP
M 12	x	1,25	x	50	S	100	83,50 ZP
M 12	x	1,5	x	50	S	100	83,50 ZP
M 12	x	1,25	x	60	S	100	93,00 ZP
M 12	x	1,5	x	60	S	100	93,00 ZP
M 12	x	1,5	x	65	S	50	101,00 ZP
M 12	x	1,25	x	70	S	50	103,00 ZP
M 12	x	1,5	x	70	S	50	103,00 ZP
M 12	x	1,25	x	80	S	50	115,00 ZP
M 12	x	1,5	x	80	S	50	115,00 ZP
M 12	x	1,25	x	90	S	50	130,00 ZP
M 12	x	1,5	x	90	S	50	130,00 ZP
M 12	x	1,25	x	100	S	50	145,00 ZP
M 12	x	1,5	x	100	S	50	143,00 ZP
M 12	x	1,25	x	110	S	50	186,50 ZP
M 12	x	1,5	x	110	S	50	186,50 ZP
M 12	x	1,25	x	120	S	50	205,00 ZP
M 12	x	1,5	x	120	S	50	205,00 ZP
M 12	x	1,25	x	130	S	50	225,00 ZP
M 12	x	1,5	x	130	S	50	225,00 ZP
M 12	x	1,5	x	140	S	50	250,00 ZP
M 14	x	1,5	x	50	S	50	140,00 ZP
M 14	x	1,5	x	60	S	50	150,00 ZP
M 14	x	1,5	x	65	S	50	163,00 ZP
M 14	x	1,5	x	70	S	50	164,75 ZP
M 14	x	1,5	x	75	S	50	186,00 ZP
M 14	x	1,5	x	80	S	50	187,50 ZP
M 14	x	1,5	x	90	S	50	209,25 ZP
M 14	x	1,5	x	100	S	50	233,00 ZP
M 16	x	1,5	x	55	S	50	165,00 ZP
M 16	x	1,5	x	60	S	50	175,00 ZP
M 16	x	1,5	x	65	S	25	205,00 ZP
M 16	x	1,5	x	70	S	25	207,00 ZP
M 16	x	1,5	x	75	S	25	210,00 ZP
M 16	x	1,5	x	80	S	25	215,00 ZP
M 16	x	1,5	x	85	S	25	235,00 ZP
M 16	x	1,5	x	90	S	25	236,00 ZP
M 16	x	1,5	x	100	S	25	260,00 ZP
M 16	x	1,5	x	110	S	25	325,00 ZP
M 16	x	1,5	x	120	S	25	330,00 ZP
M 16	x	1,5	x	130	S	25	400,00 ZP
M 16	x	1,5	x	140	S	25	435,00 ZP
M 16	x	1,5	x	150	S	25	445,00 ZP
M 16	x	1,5	x	160	S	25	620,00 ZP
M 20	x	1,5	x	65	S	25	390,00 ZP
M 20	x	1,5	x	70	S	25	393,00 ZP
M 20	x	1,5	x	75	S	25	405,00 ZP
M 20	x	1,5	x	80	S	25	407,00 ZP
M 20	x	1,5	x	90	S	25	445,00 ZP
M 20	x	1,5	x	100	S	25	475,00 ZP
M 20	x	1,5	x	110	S	25	530,00 ZP
M 20	x	1,5	x	120	S	25	565,00 ZP
M 20	x	1,5	x	140	S	25	685,00 ZP
M 20	x	1,5	x	150	S	25	705,00 ZP

Dimensions						PU	Pieces	€/100/Mat.
M 20	x	1,5	x	160		S	10	1270,00 ZP
M 20	x	1,5	x	180		S	10	1350,00 ZP
M 20	x	1,5	x	200		S	10	1550,00 ZP
M 24	x	2	x	80		S	25	690,00 ZP
M 24	x	2	x	90		S	25	745,00 ZP
M 24	x	2	x	100		S	10	795,00 ZP
M 24	x	2	x	120		S	10	915,00 ZP
M 24	x	2	x	130		S	10	1065,00 ZP
M 24	x	2	x	140		S	10	1160,00 ZP
M 24	x	2	x	150		S	10	1260,00 ZP
M 24	x	2	x	160		S	10	1390,00 ZP
M 24	x	2	x	170		S	10	1500,00 ZP

ISO	08765.100	*

8765 **10.9**

Hexagon head bolts with shank, with metric fine pitch thread

Short dimensions in part thread up to head, baked,
*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

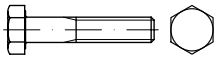
ISO 8765 → replaces DIN 960

M 10	x	1	x	45		S	100	95,80
M 10	x	1,25	x	45		S	100	95,80
M 10	x	1	x	50		S	100	60,55
M 10	x	1,25	x	50		S	100	61,20
M 10	x	1	x	55		S	100	62,40
M 10	x	1	x	60		S	100	64,90
M 10	x	1,25	x	60		S	100	64,90
M 10	x	1	x	70		S	100	102,00
M 10	x	1,25	x	70		S	100	102,00
M 10	x	1,25	x	80		S	100	130,00
M 10	x	1,25	x	90		S	100	140,00
M 10	x	1,25	x	100		S	100	165,00
M 10	x	1,25	x	110		S	100	178,00
M 12	x	1,5	x	45		S	100	79,70
M 12	x	1,5	x	50		S	100	85,85
M 12	x	1,5	x	55		S	100	88,35
M 12	x	1,5	x	60		S	100	93,95
M 12	x	1,5	x	65		S	50	95,80
M 12	x	1,5	x	70		S	50	101,00
M 12	x	1,5	x	75		S	50	118,00
M 12	x	1,5	x	80		S	50	119,00
M 12	x	1,5	x	90		S	50	174,00
M 12	x	1,5	x	100		S	50	192,00
M 12	x	1,5	x	120		S	25	240,00
M 14	x	1,5	x	50		S	50	119,00
M 14	x	1,5	x	55		S	50	125,00
M 14	x	1,5	x	60		S	50	129,00
M 14	x	1,5	x	65		S	50	151,00
M 14	x	1,5	x	70		S	50	151,00
M 14	x	1,5	x	75		S	50	166,00
M 14	x	1,5	x	80		S	50	166,00
M 14	x	1,5	x	90		S	50	240,00
M 14	x	1,5	x	100		S	25	252,00
M 14	x	1,5	x	110		S	25	279,00
M 14	x	1,5	x	120		S	25	305,00
M 14	x	1,5	x	130		S	25	335,00
M 14	x	1,5	x	140		S	25	348,00
M 14	x	1,5	x	160		S	25	386,00
M 16	x	1,5	x	50		S	25	168,00
M 16	x	1,5	x	55		S	50	175,00
M 16	x	1,5	x	60		S	50	187,00
M 16	x	1,5	x	65		S	25	203,00

Dimensions						PU	Pieces	€/100/Mat.
M 16	x	1,5	x	70		S	25	213,00
M 16	x	1,5	x	75		S	25	232,00
M 16	x	1,5	x	80		S	25	232,00
M 16	x	1,5	x	90		S	25	235,00
M 16	x	1,5	x	100		S	25	252,00
M 16	x	1,5	x	110		S	25	321,00
M 16	x	1,5	x	115		S	25	331,00
M 16	x	1,5	x	120		S	25	331,00
M 16	x	1,5	x	130		S	25	365,00
M 16	x	1,5	x	140		S	25	387,00
M 16	x	1,5	x	150		S	25	407,00
M 16	x	1,5	x	160		S	25	453,00
M 18	x	1,5	x	60		S	25	415,00
M 18	x	1,5	x	65		S	25	419,00
M 18	x	1,5	x	70		S	25	419,00
M 18	x	1,5	x	80		S	25	419,00
M 18	x	1,5	x	90		S	25	480,00
M 18	x	1,5	x	100		S	25	507,00
M 18	x	1,5	x	120		S	10	593,00
M 18	x	1,5	x	140		S	10	680,00
M 18	x	1,5	x	150		S	10	792,00
M 20	x	1,5	x	65		S	25	421,00
M 20	x	1,5	x	70		S	25	421,00
M 20	x	1,5	x	75		S	25	464,00
M 20	x	1,5	x	80		S	25	455,00
M 20	x	1,5	x	85		S	25	521,00
M 20	x	1,5	x	90		S	25	507,00
M 20	x	1,5	x	100		S	25	529,00
M 20	x	1,5	x	110		S	10	551,00
M 20	x	1,5	x	120		S	10	572,00
M 20	x	1,5	x	130		S	10	692,00
M 20	x	1,5	x	140		S	10	768,00
M 20	x	1,5	x	160		S	10	1367,00
M 20	x	1,5	x	170		S	10	1480,00
M 20	x	1,5	x	180		S	10	1513,00
M 20	x	1,5	x	200		S	10	1926,00
M 22	x	1,5	x	70		S	25	663,00
M 22	x	2	x	70		S	25	884,00
M 22	x	1,5	x	80		S	25	675,00
M 22	x	1,5	x	90		S	10	742,00
M 22	x	1,5	x	100		S	10	762,00
M 22	x	1,5	x	110		S	10	827,00
M 22	x	1,5	x	120		S	10	885,00
M 22	x	1,5	x	130		S	10	919,00
M 22	x	1,5	x	140		S	10	933,00
M 24	x	1,5	x	80		S	25	673,00
M 24	x	2	x	80		S	25	1275,00
M 24	x	1,5	x	90		S	10	742,00
M 24	x	2	x	90		S	25	1483,00
M 24	x	1,5	x	100		S	10	763,00
M 24	x	2	x	100		S	10	1528,00
M 24	x	1,5	x	110		S	10	830,00
M 24	x	2	x	110		S	10	1625,00
M 24	x	1,5	x	120		S	10	1030,00
M 24	x	2	x	120		S	10	1757,00
M 24	x	1,5	x	130		S	10	1850,00
M 24	x	2	x	130		S	10	1850,00
M 30	x	2	x	100		S	1	1900,00
M 30	x	2	x	120		S	1	2195,00
M 30	x	2	x	130		S	1	2315,00
M 30	x	2	x	140		S	1	2495,00
M 30	x	2	x	150		S	1	2675,00
M 30	x	2	x	160		S	1	2850,00
M 36	x	3	x	120		S	1	2650,00
M 36	x	3	x	130		S	1	2890,00
M 36	x	3	x	140		S	1	3115,00
M 36	x	3	x	150		S	1	3350,00
M 36	x	3	x	160		S	1	3575,00
M 42	x	3	x	140		S	1	3650,00
M 42	x	3	x	160		S	1	4200,00
M 42	x	3	x	180		S	1	4725,00
M 42	x	3	x	200		S	1	5250,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	08765.110		*

8765 **10.9 zinc plated**



Hexagon head bolts with shank, with metric fine pitch thread

Short dimensions in part thread up to head, baked,
*M 10/12/14/22 = RAZ 3600 other ∅ = RAZ 440

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-15 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6
Corrosion protection → TI-217

ISO 8765 → replaces DIN 960

M 10	x	1	x	45		S	100	110,00 ZP
M 12	x	1,5	x	45		S	100	100,50 ZP
M 12	x	1,5	x	50		S	100	112,00 ZP
M 12	x	1,5	x	60		S	100	122,00 ZP
M 12	x	1,5	x	65		S	50	123,00 ZP
M 12	x	1,5	x	70		S	50	138,00 ZP
M 14	x	1,5	x	50		S	50	169,00 ZP
M 14	x	1,5	x	55		S	50	173,00 ZP
M 14	x	1,5	x	60		S	50	178,00 ZP
M 14	x	1,5	x	65		S	50	188,50 ZP
M 14	x	1,5	x	70		S	50	206,00 ZP
M 14	x	1,5	x	75		S	50	208,00 ZP
M 14	x	1,5	x	80		S	50	223,00 ZP
M 14	x	1,5	x	90		S	50	288,00 ZP
M 14	x	1,5	x	100		S	50	304,00 ZP
M 14	x	1,5	x	110		S	25	336,00 ZP
M 16	x	1,5	x	60		S	50	235,00 ZP
M 16	x	1,5	x	70		S	25	128,00 ZP
M 16	x	1,5	x	75		S	25	288,00 ZP
M 16	x	1,5	x	80		S	25	296,00 ZP
M 16	x	1,5	x	90		S	25	307,00 ZP
M 16	x	1,5	x	100		S	25	329,00 ZP
M 16	x	1,5	x	110		S	25	411,00 ZP
M 16	x	1,5	x	120		S	25	418,00 ZP
M 16	x	1,5	x	130		S	25	455,00 ZP
M 20	x	1,5	x	80		S	25	568,00 ZP
M 20	x	1,5	x	90		S	25	629,00 ZP
M 20	x	1,5	x	100		S	25	658,00 ZP
M 20	x	1,5	x	120		S	10	721,00 ZP

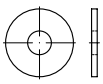
Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042).
Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions					PU	Pieces	€/100/Mat.
DIN	09021.000						RAZ 750

9021

Steel 140/100 HV**



**Washers,
Outside Ø ≈ 3 x nom. thread Ø,
product grade A/C***

*Ø ≤ 8,4 = A/Ø > 8,4 = C,
**Ø ≤ 17 = 140HV/Ø > 17 = 100 HV

Dimensions → TI-85

Stainless → S. 547
Brass, plastic → S. 595

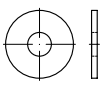
DIN 9021 → replaced by ISO 7093

Inside Ø x outside Ø x thickness							
2,7	x	8	x	0,8	S	10000	0,51
3,2	x	9	x	0,8	S	10000	0,55
3,2	x	9	x	0,8	K	500	0,75
4,3	x	12	x	1	S	5000	0,85
4,3	x	12	x	1	K	500	1,20
5,3	x	15	x	1,2	S	2500	1,60
5,3	x	15	x	1,2	K	250	1,85
6,4	x	18	x	1,6	S	2500	2,15
6,4	x	18	x	1,6	K	250	2,40
7,4	x	22	x	2	K	100	5,70
8,4	x	24	x	2	S	500	4,30
8,4	x	24	x	2	K	100	5,10
10,5	x	30	x	2,5	S	250	7,20
10,5	x	30	x	2,5	K	100	8,90
13	x	37	x	3	S	100	16,60
15	x	44	x	3	S	100	22,50
17	x	50	x	3	S	100	24,30
20	x	56	x	4	S	100	50,00
22	x	60	x	4	S	100	51,00

DIN	09021.010	RAZ 750

9021

Steel 140/100 HV**
zinc plated



**Washers,
Outside Ø ≈ 3 x nom. thread Ø,
product grade A/C***

*Ø ≤ 8,4 = A/Ø > 8,4 = C,
**Ø ≤ 17 = 140HV/Ø > 17 = 100 HV

Dimensions → TI-85 Corrosion protection → TI-217

Stainless → S. 547
Brass, plastic → S. 595

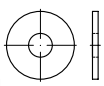
DIN 9021 → replaced by ISO 7093

Inside Ø x outside Ø x thickness							
3,2	x	9	x	0,8	S	10000	0,65 ZP
3,2	x	9	x	0,8	K	500	0,85 ZP
4,3	x	12	x	1	S	5000	1,05 ZP
4,3	x	12	x	1	K	500	1,40 ZP
5,3	x	15	x	1,2	S	2500	2,05 ZP
5,3	x	15	x	1,2	K	250	2,30 ZP
6,4	x	18	x	1,6	S	2500	2,80 ZP
6,4	x	18	x	1,6	K	250	3,10 ZP
7,4	x	22	x	2	K	100	7,70 ZP
8,4	x	24	x	2	S	500	6,10 ZP
8,4	x	24	x	2	K	100	6,90 ZP
10,5	x	30	x	2,5	S	250	10,20 ZP
10,5	x	30	x	2,5	K	100	12,40 ZP
13	x	37	x	3	S	100	24,00 ZP
15	x	44	x	3	S	100	32,00 ZP
17	x	50	x	3	S	100	36,00 ZP
20	x	56	x	4	S	100	69,00 ZP
22	x	60	x	4	S	100	72,00 ZP
26	x	72	x	5	S	50	285,00 ZP
33	x	92	x	6	S	25	375,00 ZP
39	x	110	x	8	S	25	359,69 ZP

DIN	09021.060	RAZ 750

9021

**Steel 140 HV
zinc plated yellow**



**Washers,
Outside Ø ≈ 3 x nom. thread Ø,
product grade A/C***

*Ø ≤ 8,4 = A/Ø > 8,4 = C

Dimensions → TI-85 Corrosion protection → TI-217

Stainless → S. 547
Brass, plastic → S. 595

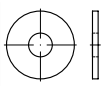
DIN 9021 → replaced by ISO 7093

Inside Ø x outside Ø x thickness							
3,2	x	9	x	0,8	S	1000	2,05 YZP
4,3	x	12	x	1	S	1000	2,45 YZP
5,3	x	15	x	1,2	S	1000	2,70 YZP
6,4	x	18	x	1,6	S	1000	2,95 YZP
8,4	x	24	x	2	S	500	8,10 YZP
10,5	x	30	x	2,5	S	250	13,30 YZP
13	x	37	x	3	S	100	28,00 YZP
15	x	44	x	3	S	100	41,50 YZP
17	x	50	x	3	S	100	47,00 YZP
22	x	60	x	4	S	100	78,00 YZP

DIN	09021.020	RAZ 750

9021

Steel 140/100 HV**
hot dip galvanized



**Washers,
Outside Ø ≈ 3 x nom. thread Ø,
product grade A/C***

*Ø ≤ 8,4 = A/Ø > 8,4 = C,
**Ø ≤ 17 = 140HV/Ø > 17 = 100 HV

Dimensions → TI-85 Corrosion protection → TI-219

Stainless → S. 547
Brass, plastic → S. 595

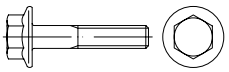
DIN 9021 → replaced by ISO 7093

Inside Ø x outside Ø x thickness							
6,4	x	18	x	1,6	S	1000	6,40 HDG
8,4	x	24	x	2	S	500	14,60 HDG
10,5	x	30	x	2,5	S	250	17,60 HDG
13	x	37	x	3	S	100	31,00 HDG
17	x	50	x	3	S	100	60,00 HDG
20	x	56	x	4	S	100	104,00 HDG
22	x	60	x	4	S	100	124,00 HDG
26	x	72	x	5	S	100	211,00 HDG

Article	10105.130	RAZ 980

10105

**10.9
zinc flake coated**



**Hexagon head bolt with flange
acc. to MBN 10105,
coating acc. to DBL 9440.40**

Matching flange nuts → article 13023

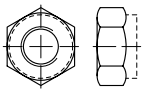
Mech. properties → TI-220 Corrosion protection → TI-218
Tightening torque → TI-230

M 10	x	25			S	100	124,00 flZn
M 10	x	30			S	100	135,00 flZn
M 10	x	40			S	100	138,00 flZn
M 12	x	1,5	x	35	S	100	269,00 flZn
M 12	x	1,5	x	40	S	100	272,00 flZn
M 12	x	1,5	x	45	S	100	280,00 flZn
M 12	x	1,5	x	50	S	100	287,00 flZn
M 12	x	1,5	x	60	S	100	345,00 flZn
M 12	x	1,5	x	90	S	100	325,00 flZn
M 14	x	1,5	x	30	S	50	335,00 flZn
M 14	x	1,5	x	35	S	50	304,00 flZn
M 14	x	1,5	x	40	S	50	295,00 flZn
M 14	x	1,5	x	45	S	50	314,00 flZn
M 14	x	1,5	x	50	S	50	324,00 flZn
M 14	x	1,5	x	55	S	50	334,00 flZn
M 14	x	1,5	x	60	S	50	343,00 flZn
M 14	x	1,5	x	80	S	50	414,00 flZn
M 14	x	1,5	x	90	S	50	436,00 flZn
M 16	x	1,5	x	40	S	50	447,00 flZn
M 16	x	1,5	x	45	S	50	467,00 flZn
M 16	x	1,5	x	50	S	50	496,00 flZn
M 16	x	1,5	x	55	S	50	510,00 flZn
M 16	x	1,5	x	60	S	50	710,00 flZn

ISO	10511.410	RAZ 3395

10511

**04
zinc plated**



**Prevailing torque type hexagon nuts
with non-metallic insert, low type**

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 547
Brass → S. 595

ISO 10511 → replaces DIN 985

Price and delivery reservation

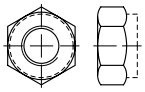
M 3	S	1000	6,10 ZP
M 4	S	1000	6,10 ZP
M 5	S	1000	6,10 ZP
M 6	S	1000	7,10 ZP
M 8	S	500	11,00 ZP
M 10	S	500	21,10 ZP

Dimensions	PU	Pieces	€/100/Mat.
M 12	S	250	30,00 ZP
M 14	S	100	50,00 ZP
M 16	S	100	60,00 ZP
M 18	S	50	96,00 ZP
M 20	S	50	116,00 ZP
M 22	S	25	178,00 ZP
M 24	S	25	211,00 ZP
M 30	S	10	445,00 ZP
M 36	S	10	830,00 ZP

ISO | 10511.411 | RAZ 3395

10511

04
zinc plated 8 TLP



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use under temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 547
Brass → S. 595

ISO 10511 → replaces DIN 985

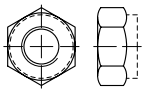
Price and delivery reservation

M 4	S	1000	8,65 ZP TLP
M 5	S	1000	8,65 ZP TLP
M 6	S	1000	11,40 ZP TLP
M 8	S	1000	17,20 ZP TLP
M 10	S	500	29,90 ZP TLP
M 14	S	100	72,00 ZP TLP
M 16	S	100	85,00 ZP TLP
M 20	S	50	163,00 ZP TLP
M 24	S	25	300,00 ZP TLP

ISO | 10511.461 | RAZ 3395

10511

04
yellow ZP A3C



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C,
A3C = minimum coating thickness 8µm

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 547
Brass → S. 595

ISO 10511 → replaces DIN 985

Price and delivery reservation

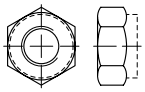
M 3	S	1000	6,80 YZP
M 4	S	1000	6,90 YZP
M 5	S	1000	6,90 YZP
M 6	S	1000	9,10 YZP
M 8	S	500	13,70 YZP
M 10	S	500	23,90 YZP
M 12	S	250	33,50 YZP

Dimensions	PU	Pieces	€/100/Mat.
M 14	S	100	57,00 YZP
M 16	S	100	68,00 YZP
M 20	S	50	130,00 YZP
M 24	S	25	240,00 YZP

ISO | 10511.510 | RAZ 3395

10511

05
zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Dimensions → TI-67 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

Stainless → S. 547
Brass → S. 595

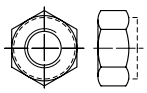
ISO 10511 → replaces DIN 985

M 6	S	1000	546,00 ZP
M 8	S	1000	429,00 ZP
M 10	S	500	42,00 ZP
M 12	S	250	60,00 ZP
M 14	S	100	94,00 ZP
M 16	S	100	1019,07 ZP
M 18	S	50	169,00 ZP
M 20	S	50	193,00 ZP
M 22	S	25	260,00 ZP
M 24	S	25	325,00 ZP
M 30	S	1	810,00 ZP
M 36	S	1	1750,00 ZP

ISO | 10512.110 | *

10512

10
zinc plated



Prevailing torque type hexagon nuts with non-metallic insert, high type with metric fine pitch thread

For use at temperatures from -50 to +120 °C,
*M 10/12/14 RAZ = 3395, other ∅ RAZ = 480

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

ISO 10512 → replaces DIN 982

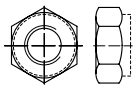
M 10	x	1	S	100	69,00 ZP
M 12	x	1,5	S	100	99,00 ZP
M 14	x	1,5	S	100	133,00 ZP
M 16	x	1,5	S	50	178,00 ZP
M 20	x	1,5	S	50	320,00 ZP
M 24	x	2	S	25	470,00 ZP

Dimensions	PU	Pieces	€/100/Mat.

ISO | 10513.810 | *

10513

8
zinc plated



Prevailing torque type hexagon nuts with metric fine pitch thread, all metal nuts

*M 10/12/14/22 RAZ = 3395, other ∅ RAZ = 480

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

ISO 10513 → replaces DIN 980

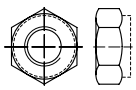
Price and delivery reservation

M 8	x	1	S	100	24,60 ZP
M 10	x	1	S	100	28,50 ZP
M 12	x	1,5	S	100	34,50 ZP
M 14	x	1,5	S	100	49,50 ZP
M 16	x	1,5	S	100	65,00 ZP
M 18	x	1,5	S	50	112,00 ZP
M 20	x	1,5	S	50	108,00 ZP
M 20	x	2	S	50	108,00 ZP
M 24	x	1,5	S	25	197,00 ZP
M 24	x	2	S	25	197,00 ZP
M 30	x	2	S	10	510,00 ZP

ISO | 10513.110 | *

10513

10
zinc plated



Prevailing torque type hexagon nuts with metric fine pitch thread, all metal nuts

*M 10/12/14/22 RAZ = 3395, other ∅ RAZ = 480

Dimensions → TI-66 Corrosion protection → TI-217
Mech. properties → TI-221 Standard conversion → TI-7

ISO 10513 → replaces DIN 980

Price and delivery reservation

M 8	x	1	S	100	28,00 ZP
M 10	x	1	S	100	44,00 ZP
M 10	x	1,25	S	100	43,00 ZP
M 12	x	1,25	S	100	53,00 ZP
M 12	x	1,5	S	100	53,00 ZP
M 14	x	1,5	S	100	76,00 ZP
M 16	x	1,5	S	50	92,00 ZP
M 18	x	1,5	S	50	140,00 ZP
M 20	x	1,5	S	50	162,00 ZP
M 24	x	1,5	S	25	260,00 ZP
M 24	x	2	S	25	260,00 ZP

Dimensions	PU Pieces	€/100/Mat.
ISO	10642.800	RAZ 3800

10642

08.8

Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions ➔ TI-14 Tightening torque ➔ TI-232
Mech. properties ➔ TI-220

Stainless ➔ S. 548

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6	S	500	50,70
M 3	x	6	K	100	54,90
M 3	x	8	S	500	30,40
M 3	x	8	K	100	34,55
M 3	x	10	S	500	26,00
M 3	x	10	K	100	30,25
M 3	x	12	S	500	26,00
M 3	x	12	K	100	30,25
M 3	x	16	S	500	26,00
M 3	x	16	K	100	30,25
M 3	x	18	S	500	28,05
M 3	x	20	S	500	33,10
M 3	x	20	K	100	37,25
M 3	x	22	S	500	38,40
M 3	x	25	S	500	32,40
M 3	x	25	K	100	36,55
M 3	x	30	S	500	34,90
M 3	x	30	K	100	39,10
M 4	x	6	S	500	35,65
M 4	x	6	K	100	39,65
M 4	x	8	S	500	29,10
M 4	x	8	K	100	33,00
M 4	x	10	S	500	22,40
M 4	x	10	K	100	26,30
M 4	x	12	S	500	22,65
M 4	x	12	K	100	26,60
M 4	x	16	S	500	25,50
M 4	x	16	K	100	29,45
M 4	x	18	S	500	26,15
M 4	x	20	S	500	26,15
M 4	x	20	K	100	30,05
M 4	x	22	S	500	31,90
M 4	x	25	S	500	29,10
M 4	x	25	K	100	33,00
M 4	x	30	S	500	32,70
M 4	x	30	K	100	36,65
M 4	x	35	S	500	37,80
M 4	x	35	K	100	41,75
M 4	x	40	S	500	63,05
M 4	x	40	K	100	67,35
M 4	x	45	S	500	64,30
M 4	x	50	S	500	64,30
M 5	x	6	S	500	29,20
M 5	x	8	S	500	25,75
M 5	x	8	K	100	29,65
M 5	x	10	S	500	13,35
M 5	x	10	K	100	17,30
M 5	x	12	S	500	14,25
M 5	x	12	K	100	18,20
M 5	x	16	S	500	14,65
M 5	x	16	K	100	18,60
M 5	x	18	S	500	15,10
M 5	x	18	K	100	19,00
M 5	x	20	S	500	15,10
M 5	x	20	K	100	19,00
M 5	x	22	S	500	35,80
M 5	x	25	S	500	17,50
M 5	x	25	K	100	21,45
M 5	x	30	S	500	18,55
M 5	x	30	K	100	22,50
M 5	x	35	S	200	38,55
M 5	x	40	S	200	38,55
M 5	x	45	S	200	44,65
M 5	x	50	S	200	45,85
M 5	x	55	S	200	71,55
M 5	x	60	S	200	78,20
M 5	x	70	S	200	101,00
M 6	x	8	S	500	47,65
M 6	x	8	K	100	51,70
M 6	x	10	S	500	14,65
M 6	x	10	K	100	18,60
M 6	x	12	S	500	13,10
M 6	x	12	K	100	17,05
M 6	x	14	S	500	22,00
M 6	x	16	S	500	12,75
M 6	x	16	K	100	16,65
M 6	x	18	S	500	13,60
M 6	x	18	K	100	17,60
M 6	x	20	S	500	13,60
M 6	x	20	K	100	17,60
M 6	x	22	S	500	47,40
M 6	x	22	K	100	51,55
M 6	x	25	S	500	15,10
M 6	x	25	K	100	19,00
M 6	x	30	S	500	16,60
M 6	x	30	K	100	20,55
M 6	x	35	S	200	19,95
M 6	x	40	S	200	39,70
M 6	x	45	S	200	40,25
M 6	x	50	S	200	44,95
M 6	x	55	S	200	55,40
M 6	x	60	S	200	55,40
M 6	x	70	S	200	107,00
M 6	x	80	S	200	151,00
M 8	x	10	S	200	107,00
M 8	x	12	S	200	31,20
M 8	x	14	S	200	19,40
M 8	x	16	S	200	19,70
M 8	x	18	S	200	17,10
M 8	x	20	S	200	17,10
M 8	x	22	S	200	40,05
M 8	x	25	S	200	18,05
M 8	x	30	S	200	19,80
M 8	x	35	S	200	22,65
M 8	x	40	S	200	23,45
M 8	x	45	S	200	27,60
M 8	x	50	S	200	47,85
M 8	x	55	S	200	56,60
M 8	x	60	S	200	63,70
M 8	x	70	S	200	118,00
M 8	x	80	S	200	151,00
M 8	x	90	S	100	168,00
M 8	x	100	S	100	201,00
M 8	x	110	S	100	234,00
M 8	x	120	S	100	293,00
M 8	x	130	S	100	418,00
M 8	x	140	S	100	501,00
M 8	x	150	S	100	667,00
M 8	x	160	S	100	835,00
M 10	x	12	S	200	118,00
M 10	x	16	S	200	45,00
M 10	x	18	S	200	39,20
M 10	x	20	S	200	39,20
M 10	x	25	S	200	39,60
M 10	x	30	S	200	40,80
M 10	x	35	S	100	46,30
M 10	x	40	S	100	46,30
M 10	x	45	S	100	50,35
M 10	x	50	S	100	65,50
M 10	x	55	S	100	74,00
M 10	x	60	S	100	102,00
M 10	x	70	S	100	130,00
M 10	x	80	S	100	140,00
M 10	x	90	S	100	208,00
M 10	x	100	S	100	251,00
M 10	x	110	S	100	377,00
M 10	x	120	S	100	418,00
M 10	x	130	S	50	501,00
M 10	x	140	S	50	585,00
M 10	x	150	S	50	835,00
M 10	x	160	S	50	918,00
M 12	x	20	S	100	56,90
M 12	x	25	S	100	48,15
M 12	x	30	S	100	48,15
M 12	x	35	S	100	52,80
M 12	x	40	S	100	55,50
M 12	x	45	S	100	63,05
M 12	x	50	S	100	67,90
M 12	x	55	S	100	76,40
M 12	x	60	S	100	113,00
M 12	x	65	S	100	160,00
M 12	x	70	S	50	184,00
M 12	x	80	S	50	213,00
M 12	x	90	S	50	251,00
M 12	x	100	S	50	292,00
M 12	x	110	S	50	333,00
M 12	x	120	S	50	362,00
M 12	x	130	S	50	464,00
M 12	x	140	S	50	516,00
M 12	x	150	S	50	568,00
M 12	x	160	S	50	1135,00
M 12	x	180	S	50	1186,00
M 12	x	200	S	50	1237,00
M 14	x	30	S	50	298,00
M 14	x	35	S	50	298,00
M 14	x	40	S	50	292,00
M 14	x	45	S	50	311,00
M 14	x	50	S	50	311,00
M 14	x	55	S	50	329,00
M 14	x	60	S	50	329,00
M 14	x	70	S	50	328,00
M 14	x	80	S	50	328,00
M 16	x	20	S	50	454,00
M 16	x	25	S	50	454,00
M 16	x	30	S	50	129,00
M 16	x	35	S	50	128,00
M 16	x	40	S	50	125,00
M 16	x	45	S	50	133,00
M 16	x	50	S	50	133,00
M 16	x	55	S	50	229,00
M 16	x	60	S	50	143,00
M 16	x	70	S	25	311,00
M 16	x	80	S	25	328,00
M 16	x	90	S	25	348,00
M 16	x	100	S	25	379,00
M 16	x	110	S	25	542,00
M 16	x	120	S	25	594,00
M 16	x	130	S	25	697,00
M 16	x	140	S	25	826,00
M 16	x	150	S	25	877,00
M 16	x	160	S	25	980,00
M 16	x	180	S	25	1084,00
M 16	x	200	S	25	1289,00
M 20	x	40	S	25	477,00
M 20	x	45	S	25	500,00
M 20	x	50	S	25	500,00
M 20	x	60	S	25	567,00
M 20	x	65	S	25	601,00
M 20	x	70	S	25	601,00
M 20	x	80	S	25	657,00
M 20	x	90	S	25	827,00
M 20	x	100	S	25	867,00
M 20	x	110	S	25	892,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	120	S	25	1001,00
M 20	x	130	S	25	1070,00
M 20	x	140	S	25	1093,00
M 20	x	180	S	10	1631,00
M 24	x	40	S	25	947,00
M 24	x	50	S	25	1001,00
M 24	x	60	S	25	1074,00
M 24	x	70	S	25	1111,00
M 24	x	80	S	25	1183,00
M 24	x	90	S	1	1219,00
M 24	x	100	S	1	1274,00

ISO	10642.810	RAZ 3800

10642

08.8
zinc plated

Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions ➔ TI-14 Corrosion protection ➔ TI-217
Mech. properties ➔ TI-220 Tightening torque ➔ TI-232

Stainless ➔ S. 548

Screws with hexalobular socket ➔ ISO 10642 ISR

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	S	500	51,00 ZP
M 3	x	6	S	500	51,00 ZP
M 3	x	8	S	500	30,95 ZP
M 3	x	10	S	500	26,40 ZP
M 3	x	12	S	500	26,40 ZP
M 3	x	16	S	500	26,70 ZP
M 3	x	18	S	500	28,50 ZP
M 3	x	20	S	500	34,00 ZP
M 3	x	25	S	500	33,35 ZP
M 3	x	30	S	500	35,80 ZP
M 4	x	6	S	500	36,40 ZP
M 4	x	8	S	500	29,45 ZP
M 4	x	8	K	100	33,35 ZP
M 4	x	10	S	500	22,75 ZP
M 4	x	10	K	100	26,70 ZP
M 4	x	12	S	500	23,05 ZP
M 4	x	12	K	100	27,05 ZP
M 4	x	14	S	500	22,90 ZP
M 4	x	16	S	500	26,15 ZP
M 4	x	16	K	100	30,05 ZP
M 4	x	18	S	500	26,70 ZP
M 4	x	20	S	500	26,70 ZP
M 4	x	22	S	500	32,80 ZP
M 4	x	25	S	500	30,05 ZP
M 4	x	30	S	500	34,00 ZP
M 4	x	35	S	500	39,45 ZP
M 4	x	40	S	500	64,90 ZP
M 4	x	45	S	500	66,15 ZP
M 4	x	50	S	100	68,00 ZP
M 5	x	6	S	500	30,05 ZP
M 5	x	8	S	500	26,40 ZP
M 5	x	8	K	100	30,35 ZP
M 5	x	10	S	500	14,00 ZP
M 5	x	10	K	100	17,90 ZP
M 5	x	12	S	500	14,95 ZP
M 5	x	12	K	100	19,10 ZP
M 5	x	14	S	500	15,30 ZP
M 5	x	16	S	500	15,45 ZP
M 5	x	16	K	100	19,45 ZP
M 5	x	18	S	500	16,10 ZP
M 5	x	20	S	500	16,10 ZP
M 5	x	20	K	100	20,05 ZP
M 5	x	22	S	500	37,65 ZP
M 5	x	25	S	500	18,85 ZP
M 5	x	30	S	500	20,05 ZP
M 5	x	35	S	200	41,25 ZP
M 5	x	40	S	200	41,85 ZP
M 5	x	45	S	200	47,90 ZP
M 5	x	50	S	200	49,70 ZP
M 5	x	55	S	200	76,40 ZP
M 5	x	60	S	200	83,10 ZP
M 5	x	70	S	200	107,00 ZP
M 5	x	80	S	100	120,00 ZP
M 6	x	8	S	500	49,15 ZP
M 6	x	10	S	500	15,45 ZP
M 6	x	10	K	100	19,45 ZP
M 6	x	12	S	500	14,05 ZP
M 6	x	12	K	100	18,20 ZP
M 6	x	14	S	500	23,40 ZP
M 6	x	16	S	500	13,95 ZP
M 6	x	16	K	100	17,90 ZP
M 6	x	18	S	500	14,90 ZP
M 6	x	20	S	500	15,00 ZP
M 6	x	20	K	100	19,10 ZP
M 6	x	22	S	500	49,00 ZP
M 6	x	25	S	500	16,70 ZP
M 6	x	25	K	100	20,65 ZP
M 6	x	30	S	500	18,55 ZP
M 6	x	30	K	100	22,50 ZP
M 6	x	35	S	200	22,15 ZP
M 6	x	40	S	200	43,70 ZP
M 6	x	45	S	200	44,90 ZP
M 6	x	50	S	200	50,35 ZP
M 6	x	55	S	200	61,25 ZP
M 6	x	60	S	200	61,85 ZP
M 6	x	65	S	200	72,75 ZP
M 6	x	70	S	200	116,00 ZP
M 6	x	75	S	100	161,00 ZP
M 6	x	80	S	200	161,00 ZP
M 6	x	90	S	200	206,00 ZP
M 6	x	100	S	100	251,00 ZP
M 6	x	120	S	100	340,00 ZP
M 8	x	10	S	200	110,00 ZP
M 8	x	12	S	200	33,35 ZP
M 8	x	14	S	200	21,85 ZP
M 8	x	16	S	200	22,15 ZP
M 8	x	18	S	200	19,75 ZP
M 8	x	20	S	200	20,05 ZP
M 8	x	22	S	200	21,30 ZP
M 8	x	25	S	200	21,30 ZP
M 8	x	30	S	200	23,70 ZP
M 8	x	35	S	200	27,05 ZP
M 8	x	40	S	200	28,25 ZP
M 8	x	45	S	200	33,35 ZP
M 8	x	50	S	200	57,00 ZP
M 8	x	55	S	200	66,70 ZP
M 8	x	60	S	200	74,60 ZP
M 8	x	65	S	100	86,65 ZP
M 8	x	70	S	200	132,00 ZP
M 8	x	80	S	200	170,00 ZP
M 8	x	90	S	200	189,00 ZP
M 8	x	100	S	200	225,00 ZP
M 8	x	110	S	100	262,00 ZP
M 8	x	120	S	100	322,00 ZP
M 8	x	130	S	100	442,00 ZP
M 8	x	140	S	100	526,00 ZP
M 8	x	150	S	100	697,00 ZP
M 10	x	12	S	200	124,00 ZP
M 10	x	16	S	200	49,15 ZP
M 10	x	18	S	200	43,70 ZP
M 10	x	20	S	200	43,70 ZP
M 10	x	25	S	200	44,90 ZP
M 10	x	30	S	200	46,70 ZP
M 10	x	35	S	100	53,35 ZP
M 10	x	40	S	100	54,00 ZP
M 10	x	45	S	100	58,85 ZP
M 10	x	50	S	100	78,20 ZP
M 10	x	55	S	100	89,75 ZP
M 10	x	60	S	100	119,00 ZP
M 10	x	70	S	100	149,00 ZP
M 10	x	80	S	100	161,00 ZP
M 10	x	90	S	100	234,00 ZP
M 10	x	100	S	100	283,00 ZP
M 10	x	110	S	100	413,00 ZP
M 10	x	120	S	100	455,00 ZP
M 10	x	130	S	50	542,00 ZP
M 10	x	140	S	50	628,00 ZP
M 10	x	150	S	50	878,00 ZP
M 10	x	160	S	50	970,00 ZP
M 12	x	20	S	100	63,70 ZP
M 12	x	25	S	100	55,80 ZP
M 12	x	30	S	100	57,00 ZP
M 12	x	35	S	100	63,05 ZP
M 12	x	40	S	100	66,70 ZP
M 12	x	45	S	100	75,20 ZP
M 12	x	50	S	100	81,25 ZP
M 12	x	55	S	100	91,55 ZP
M 12	x	60	S	100	141,00 ZP
M 12	x	65	S	100	189,00 ZP
M 12	x	70	S	50	214,00 ZP
M 12	x	80	S	50	247,00 ZP
M 12	x	90	S	50	286,00 ZP
M 12	x	100	S	50	335,00 ZP
M 12	x	110	S	50	382,00 ZP
M 12	x	120	S	50	413,00 ZP
M 12	x	130	S	50	523,00 ZP
M 12	x	140	S	50	577,00 ZP
M 12	x	150	S	50	632,00 ZP
M 12	x	160	S	50	1201,00 ZP
M 12	x	180	S	50	1262,00 ZP
M 12	x	200	S	50	1316,00 ZP
M 14	x	30	S	50	322,00 ZP
M 14	x	35	S	50	322,00 ZP
M 14	x	40	S	50	316,00 ZP
M 14	x	45	S	50	340,00 ZP
M 14	x	50	S	50	340,00 ZP
M 14	x	55	S	50	347,00 ZP
M 14	x	60	S	50	347,00 ZP
M 16	x	20	S	50	468,00 ZP
M 16	x	25	S	50	474,00 ZP
M 16	x	30	S	50	140,00 ZP
M 16	x	35	S	50	146,00 ZP
M 16	x	40	S	50	145,00 ZP
M 16	x	45	S	50	156,00 ZP
M 16	x	50	S	50	159,00 ZP
M 16	x	55	S	50	267,00 ZP
M 16	x	60	S	50	161,00 ZP
M 16	x	70	S	25	365,00 ZP
M 16	x	80	S	25	389,00 ZP
M 16	x	90	S	25	413,00 ZP
M 16	x	100	S	25	450,00 ZP
M 16	x	110	S	25	625,00 ZP
M 16	x	120	S	25	680,00 ZP
M 16	x	130	S	25	795,00 ZP
M 16	x	140	S	25	934,00 ZP
M 16	x	150	S	25	996,00 ZP
M 16	x	160	S	25	1104,00 ZP
M 16	x	180	S	25	1219,00 ZP
M 16	x	200	S	25	1444,00 ZP
M 20	x	35	S	25	541,00 ZP
M 20	x	40	S	25	523,00 ZP
M 20	x	45	S	25	552,00 ZP
M 20	x	50	S	25	559,00 ZP
M 20	x	55	S	25	632,00 ZP
M 20	x	60	S	25	632,00 ZP
M 20	x	70	S	25	680,00 ZP
M 20	x	80	S	25	747,00 ZP
M 20	x	90	S	25	928,00 ZP
M 20	x	100	S	25	983,00 ZP
M 20	x	110	S	25	1049,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	120	S	25	1177,00 ZP
M 20	x	130	S	25	1256,00 ZP
M 20	x	140	S	25	1292,00 ZP
M 20	x	150	S	25	1438,00 ZP
M 20	x	160	S	10	1729,00 ZP
M 20	x	180	S	10	1910,00 ZP
M 20	x	200	S	10	2032,00 ZP
M 24	x	40	S	25	1031,00 ZP
M 24	x	50	S	25	1104,00 ZP
M 24	x	60	S	25	1195,00 ZP
M 24	x	70	S	25	1244,00 ZP
M 24	x	80	S	25	1334,00 ZP
M 24	x	90	S	1	1389,00 ZP
M 24	x	100	S	1	1480,00 ZP

ISO | 10642.316 | RAZ 3800

10642 08.8 zinc plated 8 TLP

Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head

Caution! Screws have only a reduced loadability.

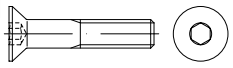
Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 548

M 4	x	10	S	500	28,90 ZP TLP
M 4	x	12	S	500	29,30 ZP TLP
M 4	x	16	S	500	33,40 ZP TLP
M 5	x	10	S	500	17,60 ZP TLP
M 5	x	12	S	500	19,00 ZP TLP
M 5	x	16	S	500	19,80 ZP TLP
M 5	x	20	S	500	20,50 ZP TLP
M 6	x	10	S	500	19,80 ZP TLP
M 6	x	12	S	500	17,80 ZP TLP
M 6	x	16	S	500	17,60 ZP TLP
M 6	x	20	S	500	18,80 ZP TLP
M 6	x	25	S	500	21,20 ZP TLP
M 8	x	12	S	200	42,50 ZP TLP
M 8	x	16	S	200	27,70 ZP TLP
M 8	x	20	S	200	25,10 ZP TLP
M 8	x	25	S	200	26,70 ZP TLP
M 8	x	30	S	200	29,70 ZP TLP
M 8	x	35	S	200	34,10 ZP TLP
M 8	x	40	S	200	35,90 ZP TLP
M 10	x	12	S	200	155,00 ZP TLP
M 10	x	20	S	200	54,70 ZP TLP
M 10	x	25	S	200	56,20 ZP TLP
M 10	x	30	S	200	58,40 ZP TLP
M 10	x	35	S	100	66,70 ZP TLP
M 10	x	40	S	100	67,50 ZP TLP
M 12	x	20	S	100	79,70 ZP TLP
M 12	x	25	S	100	69,80 ZP TLP
M 12	x	30	S	100	71,30 ZP TLP
M 12	x	35	S	100	78,90 ZP TLP
M 12	x	40	S	100	83,40 ZP TLP
M 12	x	50	S	100	88,00 ZP TLP

Dimensions			PU	Pieces	€/100/Mat.
ISO		10642.860			RAZ 3800

10642 08.8 zinc plated yellow



Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head

Caution! Screws have only a reduced loadability.

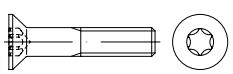
Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 548

M 4	x	10	S	500	23,05 YZP
M 4	x	12	S	500	23,40 YZP
M 4	x	16	S	500	26,70 YZP
M 5	x	10	S	500	14,05 YZP
M 5	x	12	S	500	15,20 YZP
M 5	x	16	S	500	15,80 YZP
M 5	x	20	S	500	16,40 YZP
M 6	x	10	S	500	15,80 YZP
M 6	x	12	S	500	14,20 YZP
M 6	x	16	S	500	14,05 YZP
M 6	x	20	S	500	15,00 YZP
M 6	x	25	S	500	16,95 YZP
M 8	x	12	S	200	34,00 YZP
M 8	x	16	S	200	22,15 YZP
M 8	x	20	S	200	20,05 YZP
M 8	x	25	S	200	21,30 YZP
M 8	x	30	S	200	23,70 YZP
M 8	x	35	S	200	27,25 YZP
M 8	x	40	S	200	28,65 YZP
M 10	x	12	S	200	124,00 YZP
M 10	x	16	S	200	49,15 YZP
M 10	x	20	S	200	43,70 YZP
M 10	x	25	S	200	44,90 YZP
M 10	x	30	S	200	46,70 YZP
M 10	x	35	S	100	53,35 YZP
M 10	x	40	S	100	54,00 YZP
M 12	x	20	S	100	63,70 YZP
M 12	x	25	S	100	55,80 YZP
M 12	x	30	S	100	57,00 YZP
M 12	x	35	S	100	63,05 YZP
M 12	x	40	S	100	66,70 YZP
M 12	x	50	S	100	70,35 YZP

~ISO | 10642.814 | RAZ 1000

10642 08.8 zinc plated ISR



Hexalobular socket countersunk head screws

Caution! Screws have only a reduced loadability.

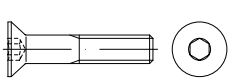
Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

M 4	x	8 -T20	S	500	25,00 ZP
M 4	x	10 -T20	S	500	25,25 ZP
M 4	x	12 -T20	S	500	25,60 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	16 -T20	S	500	29,00 ZP
M 4	x	20 -T20	S	500	29,65 ZP
M 4	x	22 -T20	S	500	31,00 ZP
M 4	x	25 -T20	S	500	30,30 ZP
M 5	x	8 -T25	S	500	15,00 ZP
M 5	x	10 -T25	S	500	15,65 ZP
M 5	x	12 -T25	S	500	16,60 ZP
M 5	x	16 -T25	S	500	17,15 ZP
M 5	x	20 -T25	S	500	17,85 ZP
M 5	x	25 -T25	S	500	20,90 ZP
M 6	x	10 -T30	S	500	17,15 ZP
M 6	x	12 -T30	S	500	15,60 ZP
M 6	x	16 -T30	S	500	15,45 ZP
M 6	x	20 -T30	S	500	16,65 ZP
M 6	x	25 -T30	S	500	18,55 ZP
M 6	x	30 -T30	S	200	20,55 ZP
M 6	x	35 -T30	S	200	22,55 ZP
M 8	x	16 -T40/45	S	200	24,55 ZP
M 8	x	20 -T40/45	S	200	22,25 ZP
M 8	x	25 -T40/45	S	200	23,60 ZP
M 8	x	30 -T40/45	S	200	26,25 ZP

ISO | 10642.100 | RAZ 3800

10642 010.9



Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 548

M 3	x	6	S	500	50,70
M 3	x	8	S	500	30,40
M 3	x	10	S	500	26,00
M 3	x	12	S	500	26,00
M 3	x	16	S	500	26,00
M 3	x	20	S	500	33,10
M 3	x	25	S	500	32,40
M 3	x	30	S	500	34,90
M 4	x	6	S	500	35,65
M 4	x	8	S	500	29,10
M 4	x	10	S	500	22,40
M 4	x	12	S	500	22,65
M 4	x	14	S	500	25,50
M 4	x	16	S	500	25,50
M 4	x	20	S	500	26,15
M 4	x	25	S	500	29,10
M 4	x	30	S	500	32,70
M 4	x	35	S	500	37,80
M 4	x	40	S	500	63,05
M 5	x	8	S	500	25,75
M 5	x	10	S	500	13,35
M 5	x	12	S	500	14,25
M 5	x	14	S	500	25,40
M 5	x	16	S	500	14,65
M 5	x	18	S	500	15,10
M 5	x	20	S	500	15,10
M 5	x	22	S	500	35,80
M 5	x	25	S	500	17,50
M 5	x	30	S	500	18,55
M 5	x	35	S	200	38,55
M 5	x	40	S	200	38,55

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	45	S	200	44,65
M 5	x	50	S	200	45,85
M 6	x	8	S	500	47,65
M 6	x	10	S	500	14,65
M 6	x	12	S	500	13,10
M 6	x	14	S	500	22,00
M 6	x	16	S	500	12,75
M 6	x	18	S	500	13,60
M 6	x	20	S	500	13,60
M 6	x	22	S	500	47,40
M 6	x	25	S	500	15,10
M 6	x	30	S	500	16,60
M 6	x	35	S	200	19,95
M 6	x	40	S	200	39,70
M 6	x	45	S	200	40,25
M 6	x	50	S	200	44,95
M 6	x	55	S	200	55,40
M 6	x	60	S	200	55,40
M 6	x	70	S	200	107,00
M 6	x	80	S	200	151,00
M 8	x	10	S	200	107,00
M 8	x	12	S	200	31,20
M 8	x	14	S	200	19,70
M 8	x	16	S	200	19,70
M 8	x	18	S	200	17,10
M 8	x	20	S	200	17,10
M 8	x	22	S	200	40,05
M 8	x	25	S	200	18,05
M 8	x	30	S	200	19,80
M 8	x	35	S	200	22,65
M 8	x	40	S	200	23,45
M 8	x	45	S	200	27,60
M 8	x	50	S	200	47,85
M 8	x	55	S	200	56,60
M 8	x	60	S	200	63,70
M 8	x	70	S	200	118,00
M 8	x	80	S	200	151,00
M 8	x	90	S	200	168,00
M 8	x	100	S	200	201,00
M 8	x	120	S	200	293,00
M 8	x	130	S	100	418,00
M 8	x	140	S	100	501,00
M 8	x	160	S	100	835,00
M 10	x	12	S	200	118,00
M 10	x	16	S	200	45,00
M 10	x	18	S	200	39,20
M 10	x	20	S	200	39,20
M 10	x	25	S	200	39,60
M 10	x	30	S	200	40,80
M 10	x	35	S	100	46,30
M 10	x	40	S	100	46,30
M 10	x	45	S	100	50,35
M 10	x	50	S	100	65,50
M 10	x	55	S	100	74,00
M 10	x	60	S	100	102,00
M 10	x	70	S	100	130,00
M 10	x	80	S	100	140,00
M 10	x	90	S	100	208,00
M 10	x	100	S	100	251,00
M 10	x	110	S	100	377,00
M 10	x	120	S	50	418,00
M 10	x	130	S	50	501,00
M 10	x	140	S	50	585,00
M 10	x	150	S	50	835,00
M 12	x	20	S	100	56,90
M 12	x	25	S	100	48,15
M 12	x	30	S	100	48,15
M 12	x	35	S	100	52,80
M 12	x	40	S	100	55,50
M 12	x	45	S	100	63,05
M 12	x	50	S	100	67,90
M 12	x	55	S	100	76,40
M 12	x	60	S	100	150,00
M 12	x	70	S	50	184,00
M 12	x	80	S	50	213,00

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	90	S	50	251,00
M 12	x	100	S	50	292,00
M 12	x	110	S	50	333,00
M 12	x	120	S	50	362,00
M 12	x	130	S	50	464,00
M 12	x	140	S	50	516,00
M 12	x	160	S	50	1135,00
M 12	x	180	S	50	1186,00
M 12	x	200	S	50	1237,00
M 14	x	30	S	50	298,00
M 14	x	35	S	50	298,00
M 14	x	40	S	50	292,00
M 14	x	45	S	50	311,00
M 14	x	50	S	50	311,00
M 14	x	55	S	50	329,00
M 14	x	60	S	50	329,00
M 14	x	80	S	50	328,00
M 16	x	20	S	50	454,00
M 16	x	25	S	50	454,00
M 16	x	30	S	50	129,00
M 16	x	35	S	50	128,00
M 16	x	40	S	50	125,00
M 16	x	45	S	50	133,00
M 16	x	50	S	50	133,00
M 16	x	55	S	50	229,00
M 16	x	60	S	50	143,00
M 16	x	70	S	25	311,00
M 16	x	80	S	25	328,00
M 16	x	90	S	25	348,00
M 16	x	100	S	25	379,00
M 16	x	110	S	25	542,00
M 16	x	120	S	25	594,00
M 16	x	130	S	25	697,00
M 16	x	140	S	25	826,00
M 16	x	180	S	25	1084,00
M 20	x	30	S	25	1001,00
M 20	x	35	S	25	500,00
M 20	x	40	S	25	477,00
M 20	x	45	S	25	500,00
M 20	x	50	S	25	500,00
M 20	x	55	S	25	567,00
M 20	x	60	S	25	567,00
M 20	x	70	S	25	601,00
M 20	x	80	S	25	657,00
M 20	x	90	S	25	827,00
M 20	x	100	S	25	867,00
M 20	x	110	S	25	892,00
M 20	x	120	S	25	1001,00
M 20	x	130	S	25	1070,00
M 20	x	140	S	25	1093,00
M 20	x	150	S	25	1223,00
M 20	x	160	S	10	1478,00
M 20	x	170	S	10	1631,00
M 20	x	180	S	10	1631,00
M 20	x	200	S	1	1732,00
M 20	x	220	S	1	2005,00
M 20	x	240	S	1	2278,00
M 22	x	60	S	25	3474,00
M 22	x	80	S	25	3892,00
M 22	x	100	S	10	4366,00
M 24	x	40	S	25	947,00
M 24	x	50	S	25	1001,00
M 24	x	60	S	25	1074,00
M 24	x	70	S	25	1111,00
M 24	x	80	S	25	1183,00
M 24	x	90	S	1	1219,00
M 24	x	100	S	1	1274,00
M 24	x	110	S	1	1604,00
M 24	x	120	S	1	1681,00
M 24	x	130	S	1	1860,00
M 24	x	140	S	1	1986,00
M 24	x	150	S	1	2089,00
M 24	x	160	S	1	2242,00
M 24	x	170	S	1	2547,00
M 24	x	180	S	1	2547,00

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	200	S	1	2801,00
M 24	x	240	S	1	3892,00

ISO	10642.110	RAZ 3800

10642 **010.9 zinc plated**

Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head, baked

Caution! Screws have only a reduced loadability. Note information about hydrogen embrittlement.

Dimensions → TI-14 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-232

Stainless → S. 548

M 3	x	6	S	500	51,00 ZP
M 3	x	8	S	500	30,75 ZP
M 3	x	10	S	500	26,50 ZP
M 3	x	12	S	500	26,50 ZP
M 3	x	16	S	500	26,60 ZP
M 3	x	20	S	500	33,80 ZP
M 3	x	25	S	500	33,25 ZP
M 3	x	30	S	500	36,50 ZP
M 4	x	6	S	500	36,15 ZP
M 4	x	8	S	500	29,60 ZP
M 4	x	10	S	500	23,10 ZP
M 4	x	12	S	500	23,40 ZP
M 4	x	14	S	500	26,35 ZP
M 4	x	16	S	500	26,35 ZP
M 4	x	20	S	500	27,20 ZP
M 4	x	25	S	500	30,60 ZP
M 4	x	30	S	500	34,60 ZP
M 4	x	35	S	500	50,00 ZP
M 4	x	40	S	500	65,20 ZP
M 5	x	8	S	500	26,50 ZP
M 5	x	10	S	500	14,40 ZP
M 5	x	12	S	500	15,25 ZP
M 5	x	14	S	500	26,50 ZP
M 5	x	16	S	500	15,90 ZP
M 5	x	20	S	500	16,55 ZP
M 5	x	25	S	500	19,30 ZP
M 5	x	30	S	500	20,75 ZP
M 5	x	35	S	200	41,30 ZP
M 5	x	40	S	200	41,70 ZP
M 5	x	45	S	200	48,20 ZP

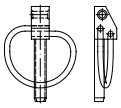
Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	8	S	500	48,75 ZP
M 6	x	10	S	500	15,85 ZP
M 6	x	12	S	500	14,55 ZP
M 6	x	14	S	500	23,60 ZP
M 6	x	16	S	500	14,95 ZP
M 6	x	18	S	500	15,60 ZP
M 6	x	20	S	500	15,70 ZP
M 6	x	22	S	500	49,50 ZP
M 6	x	25	S	500	17,65 ZP
M 6	x	30	S	500	19,50 ZP
M 6	x	35	S	200	23,40 ZP
M 6	x	40	S	200	43,90 ZP
M 6	x	45	S	200	44,45 ZP
M 6	x	50	S	200	49,25 ZP
M 6	x	55	S	200	59,90 ZP
M 6	x	60	S	200	74,85 ZP
M 6	x	70	S	200	130,00 ZP
M 6	x	80	S	200	166,00 ZP
M 8	x	10	S	200	111,20 ZP
M 8	x	12	S	200	34,60 ZP
M 8	x	16	S	200	23,90 ZP
M 8	x	18	S	200	22,10 ZP
M 8	x	20	S	200	22,00 ZP
M 8	x	25	S	200	23,85 ZP
M 8	x	30	S	200	26,45 ZP
M 8	x	35	S	200	30,10 ZP
M 8	x	40	S	200	31,80 ZP
M 8	x	45	S	200	37,40 ZP
M 8	x	50	S	200	59,00 ZP
M 8	x	55	S	200	69,00 ZP
M 8	x	60	S	200	77,70 ZP
M 8	x	70	S	200	132,00 ZP
M 8	x	80	S	200	165,00 ZP
M 10	x	16	S	200	51,80 ZP
M 10	x	20	S	200	47,30 ZP
M 10	x	25	S	200	49,10 ZP
M 10	x	30	S	200	51,60 ZP
M 10	x	35	S	100	58,40 ZP
M 10	x	40	S	100	59,90 ZP
M 10	x	45	S	100	65,00 ZP
M 10	x	50	S	100	82,40 ZP
M 10	x	60	S	100	122,00 ZP
M 10	x	70	S	100	150,00 ZP
M 10	x	80	S	100	160,00 ZP
M 10	x	90	S	100	230,00 ZP
M 10	x	100	S	100	285,00 ZP
M 10	x	110	S	100	427,00 ZP
M 12	x	20	S	100	69,00 ZP
M 12	x	25	S	100	62,00 ZP
M 12	x	30	S	100	64,00 ZP
M 12	x	35	S	100	70,80 ZP
M 12	x	40	S	100	75,50 ZP
M 12	x	45	S	100	85,00 ZP
M 12	x	50	S	100	92,00 ZP
M 12	x	60	S	100	180,00 ZP
M 12	x	65	S	50	190,00 ZP
M 12	x	70	S	50	219,00 ZP
M 12	x	80	S	50	253,00 ZP
M 12	x	90	S	50	291,00 ZP
M 16	x	25	S	50	480,00 ZP
M 16	x	30	S	50	160,00 ZP
M 16	x	35	S	50	165,00 ZP
M 16	x	40	S	50	165,00 ZP
M 16	x	45	S	50	175,00 ZP
M 16	x	50	S	50	180,00 ZP
M 16	x	55	S	50	280,00 ZP
M 16	x	60	S	50	200,00 ZP
M 16	x	70	S	25	375,00 ZP
M 16	x	80	S	25	400,00 ZP
M 16	x	90	S	25	430,00 ZP
M 16	x	100	S	25	470,00 ZP
M 16	x	110	S	25	633,00 ZP
M 20	x	30	S	25	1060,00 ZP
M 20	x	35	S	25	555,00 ZP
M 20	x	40	S	25	535,00 ZP
M 20	x	50	S	25	575,00 ZP
M 20	x	60	S	25	650,00 ZP
M 20	x	70	S	25	695,00 ZP
M 20	x	80	S	25	770,00 ZP
M 20	x	90	S	25	460,00 ZP
M 20	x	100	S	25	1010,00 ZP
M 20	x	110	S	25	1035,00 ZP
M 20	x	120	S	25	1146,00 ZP
M 20	x	130	S	25	1215,00 ZP

~DIN	11023.010	RAZ 770

11023 Steel zinc plated*



Linch pins, light type

*usually zinc plated yellow

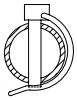
Dimensions → TI-121 Corrosion protection → TI-217

Standard type and safety type on request

4,5	x	42	S	50	65,00 ZP
6	x	42	S	50	70,00 ZP
8	x	42	S	50	71,00 ZP
10	x	42	S	50	76,00 ZP

Article	88023.010	RAZ 770

88023 Steel zinc plated



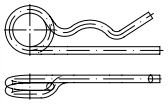
Linch pins for tubes

Dimensions → TI-121 Corrosion protection → TI-217

Pin ∅ A x pin length B x C							
6	x	40	x	22	S	50	250,00 ZP
6	x	45	x	0	S	50	255,00 ZP
8	x	40	x	22	S	50	260,00 ZP
8	x	50	x	25	S	50	265,00 ZP
10	x	50	x	25	S	50	275,00 ZP
10	x	60	x	32	S	25	285,00 ZP

DIN	11024.010	RAZ 770

11024 Steel zinc plated



Spring cotters for a bolt

Dimensions → TI-121 Corrosion protection → TI-217

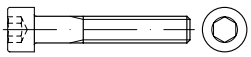
Stainless → S. 549

For hole ∅ (tol. H13)/shaft ∅ from-to			
2,5/ 9 -11,2	S	200	26,00 ZP
3,2/ 11,3-14	S	200	34,50 ZP
4 / 14,1-20	S	100	47,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
5 / 20,1-26	S	100	73,00 ZP
6,3/ 26,1-34	S	50	120,00 ZP
7 / 34,1-45	S	25	182,00 ZP
8 / 45,1-56	S	25	228,00 ZP

ISO	12474.800	RAZ 364

12474 8.8



Hexagon socket head cap screws with metrical fine pitch thread

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

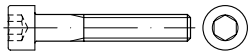
ISO 12474 → replaces DIN 912 fine thread (compatible)

M 8	x	1	x	12	S	200	114,00
M 8	x	1	x	16	S	200	118,00
M 8	x	1	x	20	S	200	122,00
M 8	x	1	x	25	S	200	125,00
M 8	x	1	x	30	S	200	130,00
M 10	x	1	x	16	S	200	84,00
M 10	x	1	x	20	S	200	90,10
M 10	x	1,25	x	20	S	200	70,10
M 10	x	1	x	25	S	200	99,20
M 10	x	1,25	x	25	S	200	99,20
M 10	x	1	x	30	S	200	104,00
M 10	x	1,25	x	30	S	200	104,00
M 10	x	1	x	40	S	100	114,00
M 10	x	1,25	x	40	S	100	114,00
M 10	x	1	x	50	S	100	123,00
M 10	x	1	x	60	S	100	132,00
M 10	x	1	x	70	S	100	141,00
M 10	x	1	x	80	S	100	152,00
M 10	x	1	x	90	S	100	164,00
M 10	x	1	x	100	S	100	172,00
M 12	x	1,5	x	20	S	100	115,00
M 12	x	1,5	x	25	S	100	129,00
M 12	x	1,5	x	30	S	100	138,00
M 12	x	1,5	x	35	S	100	150,00
M 12	x	1,25	x	40	S	100	200,00
M 12	x	1,5	x	40	S	100	161,00
M 12	x	1,5	x	50	S	100	175,00
M 14	x	1,5	x	30	S	100	184,00
M 14	x	1,5	x	35	S	100	208,00
M 14	x	1,5	x	40	S	100	222,00
M 14	x	1,5	x	45	S	50	232,00
M 16	x	1,5	x	30	S	50	274,00
M 16	x	1,5	x	35	S	50	291,00
M 16	x	1,5	x	40	S	50	320,00
M 16	x	1,5	x	45	S	50	337,00
M 16	x	1,5	x	50	S	50	371,00
M 16	x	1,5	x	55	S	50	400,00
M 16	x	1,5	x	60	S	50	422,00
M 16	x	1,5	x	70	S	25	479,00

Dimensions	PU	Pieces	€/100/Mat.
ISO	12474.200		RAZ 364

12474

12.9



Hexagon socket head cap screws with metric fine pitch thread

Dimensions → TI-12 Tightening torque → TI-230
Mech. properties → TI-220 Standard conversion → TI-6

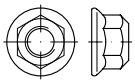
ISO 12474 → replaces DIN 912 fine thread (compatible)

M 8	x	1,25	x	20	S	200	136,00
M 8	x	1,25	x	25	S	200	140,00
M 8	x	1	x	30	S	200	168,00
M 8	x	1	x	35	S	200	195,00
M 10	x	1,25	x	20	S	200	105,00
M 10	x	1,25	x	25	S	200	110,00
M 10	x	1	x	30	S	200	134,00
M 10	x	1,25	x	30	S	200	134,00
M 10	x	1	x	35	S	100	176,00
M 10	x	1	x	40	S	100	169,00
M 10	x	1,25	x	40	S	100	169,00
M 10	x	1	x	45	S	100	184,00
M 10	x	1	x	50	S	100	194,00
M 10	x	1,25	x	50	S	100	194,00
M 10	x	1	x	60	S	100	210,00
M 10	x	1,25	x	60	S	100	235,00
M 10	x	1	x	70	S	100	218,00
M 10	x	1	x	80	S	100	226,00
M 10	x	1	x	90	S	100	231,00
M 10	x	1	x	100	S	100	290,00
M 12	x	1,5	x	30	S	100	169,00
M 12	x	1,5	x	35	S	100	184,00
M 12	x	1,5	x	40	S	100	194,00
M 12	x	1,5	x	50	S	100	227,00
M 12	x	1,5	x	60	S	100	262,00
M 10	x	1,5	x	65	S	100	285,00
M 12	x	1,5	x	70	S	50	285,00
M 12	x	1,5	x	80	S	50	305,00
M 14	x	1,5	x	35	S	100	246,00
M 14	x	1,5	x	40	S	100	267,00
M 14	x	1,5	x	45	S	50	291,00
M 14	x	1,5	x	50	S	50	315,00
M 14	x	1,5	x	60	S	50	340,00
M 14	x	1,5	x	80	S	50	366,00
M 14	x	1,5	x	100	S	25	400,00
M 16	x	1,5	x	30	S	50	320,00
M 16	x	1,5	x	35	S	50	337,00
M 16	x	1,5	x	40	S	50	371,00
M 16	x	1,5	x	45	S	50	400,00
M 16	x	1,5	x	50	S	50	428,00
M 16	x	1,5	x	60	S	50	496,00
M 16	x	1,5	x	70	S	25	571,00
M 16	x	1,5	x	80	S	25	620,00
M 16	x	1,5	x	90	S	25	710,00
M 16	x	1,5	x	100	S	25	710,00
M 16	x	1,5	x	110	S	25	750,00
M 16	x	1,5	x	120	S	25	770,00
M 16	x	1,5	x	130	S	25	830,00
M 16	x	1,5	x	140	S	25	870,00
M 16	x	1,5	x	150	S	25	910,00
M 16	x	1,5	x	160	S	25	950,00
M 20	x	1,5	x	40	S	25	628,00
M 20	x	1,5	x	45	S	25	696,00
M 20	x	1,5	x	50	S	25	696,00
M 20	x	1,5	x	55	S	25	776,00
M 20	x	1,5	x	60	S	25	776,00
M 20	x	1,5	x	70	S	25	867,00
M 20	x	1,5	x	80	S	25	935,00
M 20	x	1,5	x	90	S	25	1055,00
M 20	x	1,5	x	100	S	25	1163,00
M 24	x	1,5	x	50	S	25	1340,00
M 24	x	2	x	50	S	25	980,00
M 24	x	2	x	55	S	25	1120,00
M 24	x	1,5	x	60	S	25	1630,00
M 24	x	2	x	60	S	25	1120,00
M 24	x	1,5	x	70	S	25	1840,00
M 24	x	2	x	70	S	25	1240,00
M 24	x	2	x	80	S	25	1380,00
M 24	x	2	x	90	S	10	1520,00
M 24	x	2	x	100	S	10	1680,00

Article	13023.130	RAZ 980

13023

10
zinc flake coated



Prevailing torque type hexagon nuts with flange (all-metal), acc. to MBN 13023, coating acc. to DBL 9440.40

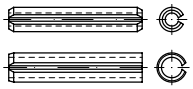
Matching hexagon head bolts with flange → article 10105
Mech. properties → TI-220 Corrosion protection → TI-218

M 12	x	1,5	S	200	116,00 flZn
M 14	x	1,5	S	50	164,00 flZn
M 16	x	1,5	S	50	227,00 flZn

ISO	13337.000	RAZ 620

13337

Spring steel



Spring-type straight pins, slotted, light duty

Dimensions → TI-120

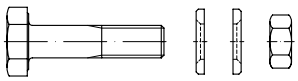
ISO 13337 → replaces DIN 7346

2	x	4	S	200	6,40
2	x	5	S	200	6,80
2	x	6	S	200	6,90
2	x	8	S	200	7,00
2	x	10	S	200	7,10
2	x	12	S	200	7,10
2	x	14	S	200	7,10
2	x	16	S	200	7,20
2	x	18	S	200	7,20
2	x	20	S	200	7,80
2	x	22	S	200	8,00
2	x	24	S	200	8,10
2	x	30	S	200	9,40
2,5	x	5	S	200	7,20
2,5	x	6	S	200	7,20
2,5	x	8	S	200	7,30
2,5	x	10	S	200	7,60
2,5	x	12	S	200	7,60
2,5	x	14	S	200	7,60
2,5	x	16	S	200	7,80
2,5	x	18	S	200	7,90
2,5	x	20	S	200	8,00
2,5	x	24	S	200	8,60
2,5	x	26	S	200	8,90
2,5	x	30	S	200	10,10
3	x	4	S	200	6,10
3	x	5	S	200	6,20
3	x	6	S	200	6,30
3	x	8	S	200	6,30
3	x	10	S	200	6,40
3	x	12	S	200	6,50
3	x	14	S	200	6,50
3	x	16	S	200	6,80
3	x	18	S	200	6,90
3	x	20	S	200	7,10
3	x	22	S	200	7,20
3	x	24	S	200	7,30
3	x	26	S	200	7,60
3	x	28	S	200	8,00
3	x	30	S	200	8,30
3	x	32	S	200	8,60
3	x	36	S	200	9,30
3	x	40	S	200	10,20
4	x	6	S	200	7,00
4	x	8	S	200	7,10
4	x	10	S	200	7,10
4	x	12	S	200	7,20
4	x	14	S	200	7,60
4	x	16	S	200	7,60
4	x	18	S	200	7,60
4	x	20	S	200	7,90
4	x	22	S	200	7,90
4	x	24	S	200	8,10
4	x	26	S	200	8,40
4	x	28	S	200	8,80
4	x	30	S	200	9,20
4	x	32	S	100	10,50
4	x	36	S	100	10,90
4	x	40	S	100	11,80
4	x	45	S	100	12,60
4	x	50	S	100	13,60
5	x	5	S	200	8,10
5	x	6	S	200	8,10
5	x	8	S	200	8,30
5	x	10	S	200	8,30
5	x	12	S	200	8,10
5	x	14	S	200	9,10
5	x	16	S	200	9,40
5	x	18	S	200	10,00
5	x	20	S	100	11,00
5	x	22	S	100	12,00
5	x	24	S	100	12,40
5	x	26	S	100	12,80
5	x	28	S	100	12,60
5	x	30	S	100	12,80
5	x	32	S	100	13,30
5	x	36	S	100	14,10
5	x	40	S	100	14,80
5	x	45	S	100	16,00
5	x	50	S	100	16,80
5	x	60	S	100	20,20
5	x	70	S	100	24,10
5	x	80	S	100	29,50
6	x	10	S	100	10,30
6	x	12	S	100	10,50
6	x	14	S	100	11,20
6	x	16	S	100	11,40
6	x	18	S	100	12,00
6	x	20	S	100	12,80
6	x	22	S	100	13,50
6	x	24	S	100	14,20
6	x	26	S	100	15,10
6	x	28	S	100	15,90
6	x	30	S	100	16,70

Dimensions			PU	Pieces	€/100/Mat.
6	x	32	S	100	17,60
6	x	36	S	100	18,40
6	x	40	S	100	19,40
6	x	45	S	100	21,50
6	x	50	S	100	23,00
6	x	55	S	100	24,80
6	x	60	S	100	27,00
6	x	70	S	100	32,00
6	x	80	S	100	36,50
6	x	100	S	100	59,00
8	x	10	S	100	16,10
8	x	12	S	100	16,10
8	x	14	S	100	16,20
8	x	16	S	100	16,50
8	x	18	S	100	17,30
8	x	20	S	100	18,30
8	x	22	S	100	19,40
8	x	24	S	100	20,70
8	x	26	S	100	22,30
8	x	28	S	100	23,50
8	x	30	S	100	26,50
8	x	32	S	100	26,50
8	x	36	S	100	28,50
8	x	40	S	100	30,50
8	x	45	S	100	32,00
8	x	50	S	100	35,00
8	x	55	S	100	39,50
8	x	60	S	100	44,00
8	x	65	S	100	47,50
8	x	70	S	100	51,00
8	x	80	S	100	65,00
8	x	100	S	50	84,00
10	x	10	S	50	61,00
10	x	12	S	50	61,00
10	x	14	S	100	21,10
10	x	16	S	100	22,60
10	x	20	S	100	26,50
10	x	22	S	100	28,00
10	x	24	S	100	30,50
10	x	26	S	100	32,00
10	x	30	S	100	35,50
10	x	36	S	100	42,00
10	x	40	S	100	44,50
10	x	45	S	50	52,00
10	x	50	S	50	57,00
10	x	60	S	50	68,00
10	x	70	S	50	80,00
10	x	80	S	50	91,00
10	x	90	S	50	102,00
10	x	100	S	50	114,00
12	x	10	S	50	255,00
12	x	16	S	50	216,00
12	x	20	S	50	122,00
12	x	24	S	50	129,00
12	x	26	S	50	132,00
12	x	28	S	50	135,00
12	x	30	S	50	129,00
12	x	32	S	50	143,00
12	x	36	S	50	143,00
12	x	40	S	50	149,00
12	x	45	S	50	152,00
12	x	50	S	50	156,00
12	x	55	S	50	162,00
12	x	60	S	50	168,00
12	x	65	S	50	178,00
12	x	70	S	50	184,00
12	x	80	S	50	197,00
12	x	100	S	25	475,00
13	x	10	S	25	246,00
13	x	12	S	25	239,00
13	x	14	S	25	233,00
13	x	16	S	25	226,00
13	x	20	S	50	129,00
13	x	22	S	50	132,00
13	x	24	S	50	135,00
13	x	26	S	50	138,00
13	x	28	S	50	141,00
13	x	30	S	50	146,00
13	x	36	S	50	152,00
13	x	40	S	50	165,00
13	x	50	S	50	162,00
13	x	70	S	50	191,00
16	x	10	S	25	275,00
16	x	18	S	25	241,00
16	x	20	S	50	162,00
16	x	22	S	50	165,00
16	x	24	S	50	168,00
16	x	26	S	50	170,00
16	x	28	S	50	173,00
16	x	30	S	50	178,00
16	x	32	S	50	182,00
16	x	36	S	50	184,00
16	x	40	S	50	187,00
16	x	45	S	50	190,00
16	x	50	S	50	192,00
16	x	55	S	50	195,00
16	x	60	S	25	205,00
16	x	70	S	25	235,00
16	x	120	S	25	780,00
21	x	30	S	50	360,00
21	x	36	S	25	365,00
21	x	40	S	25	390,00
21	x	45	S	25	420,00
21	x	50	S	25	420,00
21	x	60	S	25	460,00
21	x	85	S	25	600,00

EN | 14399 -4/-6 | RAZ 610

14399-4 10.9 assemblies



HV assemblies for high-strength structural bolting, with 1 nut EN 14399-4 and 2 washers EN 14399-6

k-Class: K1, brand Peiner

Dimensions → TI-57 HV-Mounting instructions →
Mech. properties → TI-220 TI-234

Dimensions M 39-M 48 acc. DAST-directive 021 on request.

CE

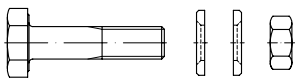
Declaration of performance → www.reyher.de

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	30	S	1	136,20
M 12	x	35	S	1	142,60
M 12	x	40	S	1	143,90
M 12	x	45	S	1	148,35
M 12	x	50	S	1	152,20
M 12	x	55	S	1	158,55
M 12	x	60	S	1	163,05
M 12	x	65	S	1	189,10
M 12	x	70	S	1	195,10
M 12	x	75	S	1	353,10
M 12	x	80	S	1	353,10
M 12	x	85	S	1	501,10
M 12	x	90	S	1	501,10
M 12	x	100	S	1	576,10
M 16	x	40	S	1	219,15
M 16	x	45	S	1	228,15
M 16	x	50	S	1	236,15
M 16	x	55	S	1	242,15
M 16	x	60	S	1	248,15
M 16	x	65	S	1	256,15
M 16	x	70	S	1	266,15
M 16	x	75	S	1	277,15
M 16	x	80	S	1	281,15
M 16	x	85	S	1	305,15
M 16	x	90	S	1	305,15
M 16	x	95	S	1	365,15
M 16	x	100	S	1	365,15
M 16	x	105	S	1	576,15
M 16	x	110	S	1	576,15
M 16	x	115	S	1	640,15
M 16	x	125	S	1	854,15
M 16	x	130	S	1	854,15
M 16	x	140	S	1	901,15
M 16	x	150	S	1	1015,15
M 20	x	40	S	1	384,80
M 20	x	45	S	1	384,80
M 20	x	50	S	1	375,80
M 20	x	55	S	1	375,80
M 20	x	60	S	1	385,80
M 20	x	65	S	1	396,80
M 20	x	70	S	1	406,80
M 20	x	75	S	1	414,80
M 20	x	80	S	1	424,80
M 20	x	85	S	1	445,80
M 20	x	90	S	1	445,80
M 20	x	95	S	1	456,80
M 20	x	100	S	1	456,80
M 20	x	105	S	1	491,80
M 20	x	110	S	1	491,80
M 20	x	115	S	1	506,80
M 20	x	120	S	1	574,80
M 20	x	125	S	1	594,80
M 20	x	130	S	1	594,80
M 20	x	135	S	1	880,80
M 20	x	140	S	1	880,80
M 20	x	150	S	1	1158,80
M 20	x	160	S	1	1253,80
M 20	x	170	S	1	1345,80
M 20	x	180	S	1	1441,80
M 20	x	190	S	1	1538,80
M 20	x	200	S	1	1739,80
M 20	x	240	S	1	2139,80
M 20	x	250	S	1	2240,80
M 22	x	50	S	1	677,30
M 22	x	55	S	1	677,30
M 22	x	60	S	1	677,30
M 22	x	65	S	1	692,30
M 22	x	70	S	1	705,30
M 22	x	75	S	1	726,30
M 22	x	80	S	1	742,30
M 22	x	85	S	1	774,30
M 22	x	90	S	1	774,30
M 22	x	95	S	1	804,30
M 22	x	100	S	1	804,30
M 22	x	105	S	1	836,30
M 22	x	110	S	1	836,30
M 22	x	120	S	1	882,30
M 24	x	50	S	1	607,70
M 24	x	55	S	1	607,70
M 24	x	60	S	1	597,70
M 24	x	65	S	1	597,70
M 24	x	65	S	1	612,70
M 24	x	75	S	1	624,70
M 24	x	80	S	1	635,70
M 24	x	85	S	1	658,70
M 24	x	90	S	1	658,70
M 24	x	95	S	1	681,70
M 24	x	100	S	1	681,70
M 24	x	105	S	1	704,70
M 24	x	110	S	1	704,70
M 24	x	115	S	1	731,70
M 24	x	120	S	1	731,70
M 24	x	125	S	1	761,70

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	130	S	1	761,70
M 24	x	135	S	1	790,70
M 24	x	140	S	1	898,70
M 24	x	145	S	1	931,70
M 24	x	150	S	1	931,70
M 24	x	155	S	1	1304,70
M 24	x	160	S	1	1304,70
M 24	x	165	S	1	1394,70
M 24	x	170	S	1	1688,70
M 24	x	180	S	1	1802,70
M 24	x	190	S	1	1914,70
M 24	x	200	S	1	2028,70
M 24	x	210	S	1	2277,70
M 24	x	220	S	1	2397,70
M 27	x	60	S	1	1014,30
M 27	x	65	S	1	1014,30
M 27	x	70	S	1	1021,30
M 27	x	75	S	1	1028,30
M 27	x	80	S	1	1049,30
M 27	x	85	S	1	1080,30
M 27	x	90	S	1	1080,30
M 27	x	95	S	1	1113,30
M 27	x	100	S	1	1113,30
M 27	x	105	S	1	1147,30
M 27	x	110	S	1	1147,30
M 27	x	115	S	1	1186,30
M 27	x	120	S	1	1186,30
M 27	x	125	S	1	1197,30
M 27	x	130	S	1	1197,30
M 27	x	135	S	1	1235,30
M 27	x	140	S	1	1235,30
M 27	x	145	S	1	1449,30
M 27	x	150	S	1	1449,30
M 27	x	160	S	1	1494,30
M 27	x	165	S	1	1987,30
M 27	x	170	S	1	1987,30
M 27	x	180	S	1	2544,30
M 27	x	190	S	1	2694,30
M 27	x	200	S	1	2848,30
M 30	x	80	S	1	1598,00
M 30	x	85	S	1	1632,00
M 30	x	90	S	1	1654,00
M 30	x	95	S	1	1678,00
M 30	x	100	S	1	1700,00
M 30	x	105	S	1	1736,00
M 30	x	110	S	1	1779,00
M 30	x	115	S	1	1815,00
M 30	x	120	S	1	1815,00
M 30	x	125	S	1	1863,00
M 30	x	130	S	1	1863,00
M 30	x	135	S	1	1909,00
M 30	x	140	S	1	1909,00
M 30	x	145	S	1	2191,00
M 30	x	150	S	1	2191,00
M 30	x	155	S	1	2246,00
M 30	x	160	S	1	2246,00
M 30	x	165	S	1	2783,00
M 30	x	170	S	1	2783,00
M 30	x	180	S	1	3420,00
M 30	x	190	S	1	3574,00
M 30	x	200	S	1	3726,00

Dimensions	PU	Pieces	€/100/Mat.
EN	14399 -4/-6		RAZ 610

14399-4 10.9 assemblies hot dip galvanized



HV assemblies for high-strength structural bolting, with 1 nut EN 14399-4 and 2 washers EN 14399-6

k-Class: K1,
Thread tolerance of bolts 6g + HDG,
brand Peiner or Friedberg

Dimensions → TI-57 Corrosion protection → TI-219
Mech. properties → TI-220 HV-Mounting instr. → TI-234

Dimensions M 39-M 48 acc. DAST-directive 021 on request.

Declaration of performance → www.reyher.de

M 12	x	30	S	1	157,85 HDG
M 12	x	35	S	1	166,85 HDG
M 12	x	40	S	1	169,35 HDG
M 12	x	45	S	1	174,50 HDG
M 12	x	50	S	1	180,25 HDG
M 12	x	55	S	1	187,25 HDG
M 12	x	60	S	1	193,25 HDG
M 12	x	65	S	1	219,25 HDG
M 12	x	70	S	1	227,25 HDG
M 12	x	75	S	1	388,25 HDG
M 12	x	80	S	1	388,25 HDG
M 12	x	85	S	1	538,25 HDG
M 12	x	90	S	1	539,25 HDG
M 12	x	95	S	1	616,25 HDG
M 12	x	100	S	1	617,25 HDG
M 12	x	110	S	1	745,25 HDG
M 12	x	120	S	1	836,25 HDG
M 16	x	35	S	1	266,05 HDG
M 16	x	40	S	1	267,05 HDG
M 16	x	45	S	1	278,05 HDG
M 16	x	50	S	1	289,05 HDG
M 16	x	55	S	1	298,05 HDG
M 16	x	60	S	1	306,05 HDG
M 16	x	65	S	1	315,05 HDG
M 16	x	70	S	1	327,05 HDG
M 16	x	75	S	1	338,05 HDG
M 16	x	80	S	1	345,05 HDG
M 16	x	85	S	1	371,05 HDG
M 16	x	90	S	1	374,05 HDG
M 16	x	95	S	1	436,05 HDG
M 16	x	100	S	1	438,05 HDG
M 16	x	105	S	1	653,05 HDG
M 16	x	110	S	1	655,05 HDG
M 16	x	115	S	1	722,05 HDG
M 16	x	120	S	1	859,05 HDG
M 16	x	125	S	1	940,05 HDG
M 16	x	130	S	1	942,05 HDG
M 16	x	140	S	1	993,05 HDG
M 16	x	150	S	1	1112,05 HDG
M 16	x	160	S	1	1194,05 HDG
M 16	x	170	S	1	1277,05 HDG
M 16	x	180	S	1	1364,05 HDG
M 16	x	190	S	1	1448,05 HDG
M 16	x	200	S	1	1623,05 HDG
M 16	x	210	S	1	1724,05 HDG
M 16	x	220	S	1	2003,05 HDG
M 20	x	40	S	1	460,40 HDG
M 20	x	45	S	1	463,40 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	50	S	1	458,40 HDG
M 20	x	55	S	1	461,40 HDG
M 20	x	60	S	1	475,40 HDG
M 20	x	65	S	1	489,40 HDG
M 20	x	70	S	1	502,40 HDG
M 20	x	75	S	1	514,40 HDG
M 20	x	80	S	1	528,40 HDG
M 20	x	85	S	1	553,40 HDG
M 20	x	90	S	1	554,40 HDG
M 20	x	95	S	1	568,40 HDG
M 20	x	100	S	1	572,40 HDG
M 20	x	105	S	1	610,40 HDG
M 20	x	110	S	1	613,40 HDG
M 20	x	115	S	1	630,40 HDG
M 20	x	120	S	1	702,40 HDG
M 20	x	125	S	1	727,40 HDG
M 20	x	130	S	1	730,40 HDG
M 20	x	135	S	1	1024,40 HDG
M 20	x	140	S	1	1027,40 HDG
M 20	x	145	S	1	1107,40 HDG
M 20	x	150	S	1	1313,40 HDG
M 20	x	155	S	1	1410,40 HDG
M 20	x	160	S	1	1413,40 HDG
M 20	x	165	S	1	1509,40 HDG
M 20	x	170	S	1	1514,40 HDG
M 20	x	180	S	1	1616,40 HDG
M 20	x	190	S	1	1720,40 HDG
M 20	x	200	S	1	1928,40 HDG
M 20	x	210	S	1	2032,40 HDG
M 20	x	220	S	1	2140,40 HDG
M 20	x	230	S	1	2250,40 HDG
M 20	x	240	S	1	2356,40 HDG
M 20	x	250	S	1	2465,40 HDG
M 20	x	260	S	1	2574,40 HDG
M 22	x	50	S	1	789,40 HDG
M 22	x	55	S	1	794,40 HDG
M 22	x	60	S	1	798,40 HDG
M 22	x	65	S	1	818,40 HDG
M 22	x	70	S	1	834,40 HDG
M 22	x	75	S	1	860,40 HDG
M 22	x	80	S	1	880,40 HDG
M 22	x	85	S	1	916,40 HDG
M 22	x	90	S	1	918,40 HDG
M 22	x	95	S	1	955,40 HDG
M 22	x	100	S	1	958,40 HDG
M 22	x	105	S	1	994,40 HDG
M 22	x	110	S	1	998,40 HDG
M 22	x	115	S	1	1048,40 HDG
M 22	x	120	S	1	1053,40 HDG
M 22	x	125	S	1	1092,40 HDG
M 22	x	130	S	1	1095,40 HDG
M 22	x	140	S	1	1564,40 HDG
M 22	x	150	S	1	1689,40 HDG
M 22	x	160	S	1	1817,40 HDG
M 22	x	170	S	1	1979,40 HDG
M 22	x	180	S	1	2105,40 HDG
M 22	x	190	S	1	2236,40 HDG
M 22	x	200	S	1	2533,40 HDG
M 24	x	50	S	1	754,20 HDG
M 24	x	55	S	1	755,20 HDG
M 24	x	60	S	1	749,20 HDG
M 24	x	65	S	1	755,20 HDG
M 24	x	70	S	1	773,20 HDG
M 24	x	75	S	1	792,20 HDG
M 24	x	80	S	1	807,20 HDG
M 24	x	85	S	1	835,20 HDG
M 24	x	90	S	1	836,20 HDG
M 24	x	95	S	1	864,20 HDG
M 24	x	100	S	1	868,20 HDG
M 24	x	105	S	1	897,20 HDG
M 24	x	110	S	1	901,20 HDG
M 24	x	115	S	1	934,20 HDG
M 24	x	120	S	1	939,20 HDG
M 24	x	125	S	1	975,20 HDG
M 24	x	130	S	1	978,20 HDG

€/100 = price in € plus VAT when ordering full package unit

FRIEDBERG

GET A GRIP.

WAY UP TO THE TOP ON A SOLID FOUNDATION.

Also that which is breath-taking is built on trust. Bridges, apartment blocks, or modern sports halls become a prominent event, architectural master stroke or supporting connection between worlds as a result of our safety components. The fastening technology is the supporting pillar of constructive designs. Accelerated by the technical developments of FRIEDBERG, a number of constructions, some exposed, have been built to date – from urban symbols through to lots of functional buildings. Steel construction bolts from FRIEDBERG make constructions possible.

FASTENING CONNECTIONS FOR:

- BUILDING AND STEEL CONSTRUCTION
- BRIDGE AND TUNNEL CONSTRUCTION
- STEEL GIRDER CONSTRUCTION
- SPECIAL CONSTRUCTIONS

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www.august-friedberg.com

WORLDWIDE

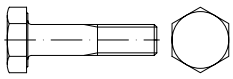
GERMANY USA KOREA BRAZIL

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	135	S	1	1012,20 HDG
M 24	x	140	S	1	1124,20 HDG
M 24	x	145	S	1	1162,20 HDG
M 24	x	150	S	1	1167,20 HDG
M 24	x	155	S	1	1554,20 HDG
M 24	x	165	S	1	1654,20 HDG
M 24	x	170	S	1	1953,20 HDG
M 24	x	175	S	1	2072,20 HDG
M 24	x	180	S	1	2077,20 HDG
M 24	x	190	S	1	2199,20 HDG
M 24	x	200	S	1	2323,20 HDG
M 24	x	210	S	1	2583,20 HDG
M 24	x	220	S	1	2713,20 HDG
M 24	x	230	S	1	2847,20 HDG
M 24	x	240	S	1	2979,20 HDG
M 24	x	250	S	1	3109,20 HDG
M 24	x	260	S	1	3239,20 HDG
M 27	x	60	S	1	1229,20 HDG
M 27	x	65	S	1	1236,20 HDG
M 27	x	70	S	1	1248,20 HDG
M 27	x	75	S	1	1262,20 HDG
M 27	x	80	S	1	1288,20 HDG
M 27	x	85	S	1	1325,20 HDG
M 27	x	90	S	1	1331,20 HDG
M 27	x	95	S	1	1372,20 HDG
M 27	x	100	S	1	1375,20 HDG
M 27	x	105	S	1	1415,20 HDG
M 27	x	110	S	1	1421,20 HDG
M 27	x	115	S	1	1464,20 HDG
M 27	x	120	S	1	1470,20 HDG
M 27	x	125	S	1	1487,20 HDG
M 27	x	130	S	1	1493,20 HDG
M 27	x	135	S	1	1536,20 HDG
M 27	x	140	S	1	1542,20 HDG
M 27	x	145	S	1	1763,20 HDG
M 27	x	150	S	1	1767,20 HDG
M 27	x	155	S	1	1817,20 HDG
M 27	x	160	S	1	1823,20 HDG
M 27	x	165	S	1	2334,20 HDG
M 27	x	170	S	1	2340,20 HDG
M 27	x	175	S	1	2467,20 HDG
M 27	x	180	S	1	2909,20 HDG
M 27	x	190	S	1	3069,20 HDG
M 27	x	200	S	1	3233,20 HDG
M 27	x	210	S	1	3585,20 HDG
M 27	x	220	S	1	3770,20 HDG
M 27	x	230	S	1	3929,20 HDG
M 27	x	240	S	1	4109,20 HDG
M 27	x	250	S	1	4281,20 HDG
M 27	x	260	S	1	4454,20 HDG
M 30	x	70	S	1	1864,00 HDG
M 30	x	75	S	1	1888,00 HDG
M 30	x	80	S	1	1907,00 HDG
M 30	x	85	S	1	1949,00 HDG
M 30	x	90	S	1	1979,00 HDG
M 30	x	95	S	1	2011,00 HDG
M 30	x	100	S	1	2038,00 HDG
M 30	x	105	S	1	2081,00 HDG
M 30	x	110	S	1	2132,00 HDG
M 30	x	115	S	1	2177,00 HDG
M 30	x	120	S	1	2184,00 HDG
M 30	x	125	S	1	2238,00 HDG
M 30	x	130	S	1	2245,00 HDG
M 30	x	135	S	1	2300,00 HDG
M 30	x	140	S	1	2307,00 HDG
M 30	x	145	S	1	2597,00 HDG
M 30	x	150	S	1	2604,00 HDG
M 30	x	155	S	1	2667,00 HDG
M 30	x	160	S	1	2675,00 HDG
M 30	x	165	S	1	3233,00 HDG
M 30	x	170	S	1	3241,00 HDG
M 30	x	180	S	1	3896,00 HDG
M 30	x	190	S	1	4066,00 HDG
M 30	x	200	S	1	4234,00 HDG
M 30	x	210	S	1	4630,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	220	S	1	4646,00 HDG
M 30	x	230	S	1	4991,00 HDG
M 30	x	240	S	1	5007,00 HDG
M 30	x	260	S	1	5363,00 HDG
M 36	x	100	S	1	5327,00 HDG
M 36	x	105	S	1	5465,00 HDG
M 36	x	110	S	1	5477,00 HDG
M 36	x	115	S	1	5618,00 HDG
M 36	x	120	S	1	5630,00 HDG
M 36	x	125	S	1	5763,00 HDG
M 36	x	130	S	1	5774,00 HDG
M 36	x	135	S	1	5884,00 HDG
M 36	x	140	S	1	5895,00 HDG
M 36	x	145	S	1	5995,00 HDG
M 36	x	150	S	1	6006,00 HDG
M 36	x	155	S	1	6157,00 HDG
M 36	x	160	S	1	6169,00 HDG
M 36	x	165	S	1	7546,00 HDG
M 36	x	170	S	1	7557,00 HDG
M 36	x	175	S	1	7687,00 HDG
M 36	x	180	S	1	7698,00 HDG
M 36	x	185	S	1	7826,00 HDG
M 36	x	190	S	1	7838,00 HDG
M 36	x	195	S	1	7998,00 HDG
M 36	x	200	S	1	8009,00 HDG
M 36	x	205	S	1	8094,00 HDG
M 36	x	210	S	1	8178,00 HDG
M 36	x	215	S	1	8261,00 HDG
M 36	x	220	S	1	8344,00 HDG
M 36	x	240	S	1	8660,00 HDG
M 36	x	250	S	1	8822,00 HDG
M 36	x	260	S	1	8981,00 HDG

EN	14399.104	RAZ 610

14399-4 10.9



Hexagon bolts with large head for high-strength structural bolting, system HV brand Peiner

Dimensions → TI-57 HV-Mounting instructions →
Mech. properties → TI-220 TI-234

Dimensions M 39-M 48 acc. DAST-directive 021 on request.

Declaration of performance → www.reyher.de

M 12	x	30	S	1	69,10
M 12	x	35	S	1	75,50
M 12	x	40	S	1	76,80
M 12	x	45	S	1	81,25
M 12	x	50	S	1	85,10
M 12	x	55	S	1	91,45
M 12	x	60	S	1	95,95
M 12	x	65	S	1	122,00
M 12	x	70	S	1	128,00
M 12	x	75	S	1	286,00
M 12	x	80	S	1	286,00
M 12	x	85	S	1	434,00
M 12	x	90	S	1	434,00
M 12	x	100	S	1	509,00
M 16	x	40	S	1	120,00
M 16	x	45	S	1	129,00
M 16	x	50	S	1	137,00
M 16	x	55	S	1	143,00
M 16	x	60	S	1	149,00

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	65	S	1	157,00
M 16	x	70	S	1	167,00
M 16	x	75	S	1	178,00
M 16	x	80	S	1	182,00
M 16	x	85	S	1	206,00
M 16	x	90	S	1	206,00
M 16	x	95	S	1	266,00
M 16	x	100	S	1	266,00
M 16	x	105	S	1	477,00
M 16	x	110	S	1	477,00
M 16	x	115	S	1	541,00
M 16	x	125	S	1	755,00
M 16	x	130	S	1	755,00
M 16	x	140	S	1	802,00
M 16	x	150	S	1	916,00
M 20	x	40	S	1	240,00
M 20	x	45	S	1	240,00
M 20	x	50	S	1	231,00
M 20	x	55	S	1	231,00
M 20	x	60	S	1	241,00
M 20	x	65	S	1	252,00
M 20	x	70	S	1	262,00
M 20	x	75	S	1	270,00
M 20	x	80	S	1	280,00
M 20	x	85	S	1	301,00
M 20	x	90	S	1	301,00
M 20	x	95	S	1	312,00
M 20	x	100	S	1	312,00
M 20	x	105	S	1	347,00
M 20	x	110	S	1	347,00
M 20	x	115	S	1	362,00
M 20	x	120	S	1	430,00
M 20	x	125	S	1	450,00
M 20	x	130	S	1	450,00
M 20	x	135	S	1	736,00
M 20	x	140	S	1	736,00
M 20	x	150	S	1	1014,00
M 20	x	160	S	1	1109,00
M 20	x	170	S	1	1201,00
M 20	x	180	S	1	1297,00
M 20	x	190	S	1	1394,00
M 20	x	200	S	1	1595,00
M 20	x	240	S	1	1995,00
M 20	x	250	S	1	2096,00
M 22	x	50	S	1	501,00
M 22	x	55	S	1	501,00
M 22	x	60	S	1	501,00
M 22	x	65	S	1	516,00
M 22	x	70	S	1	529,00
M 22	x	75	S	1	550,00
M 22	x	80	S	1	566,00
M 22	x	85	S	1	598,00
M 22	x	90	S	1	598,00
M 22	x	95	S	1	628,00
M 22	x	100	S	1	628,00
M 22	x	105	S	1	660,00
M 22	x	110	S	1	660,00
M 22	x	120	S	1	706,00
M 24	x	50	S	1	386,00
M 24	x	55	S	1	386,00
M 24	x	60	S	1	376,00
M 24	x	65	S	1	376,00
M 24	x	70	S	1	391,00
M 24	x	75	S	1	403,00
M 24	x	80	S	1	414,00
M 24	x	85	S	1	437,00
M 24	x	90	S	1	437,00
M 24	x	95	S	1	460,00
M 24	x	100	S	1	460,00
M 24	x	105	S	1	483,00
M 24	x	110	S	1	483,00
M 24	x	115	S	1	510,00
M 24	x	120	S	1	510,00
M 24	x	125	S	1	540,00
M 24	x	130	S	1	540,00

Peiner HV

Fasteners for steel construction and wind energy

Peiner Umformtechnik is a leading supplier for HV fasteners for steel construction and fastening elements for wind energy according to EN 14399-4.

We supply:

- Standard HV-Assemblies with extended range of dimensions up to M72
- Customer specific fasteners for wind energy

HV fasteners are safety relevant components for construction and need to comply with very high quality standards. Peiner manufactures HV fasteners with high precision and extraordinary effort to meet total quality management demands. Each Peiner HV fastener and HV nut carry a marking – the serial number. This marking ensures traceability from the end product, through the production process down to the raw material batch. Furthermore it reflects our commitment to Quality!

Peiner Umformtechnik GmbH | Woltorfer Straße 20-24 | 31224 Peine
www.peiner-ut.com | sales@peiner-ut.com
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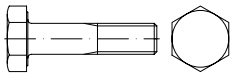
Dimensions			PU	Pieces	€/100/Mat.
M 24	x	135	S	1	569,00
M 24	x	140	S	1	677,00
M 24	x	145	S	1	710,00
M 24	x	150	S	1	710,00
M 24	x	155	S	1	1083,00
M 24	x	160	S	1	1083,00
M 24	x	165	S	1	1173,00
M 24	x	170	S	1	1467,00
M 24	x	180	S	1	1581,00
M 24	x	190	S	1	1693,00
M 24	x	200	S	1	1807,00
M 24	x	210	S	1	2056,00
M 24	x	220	S	1	2176,00
M 27	x	60	S	1	646,00
M 27	x	65	S	1	646,00
M 27	x	70	S	1	653,00
M 27	x	75	S	1	660,00
M 27	x	80	S	1	681,00
M 27	x	85	S	1	712,00
M 27	x	90	S	1	712,00
M 27	x	95	S	1	745,00
M 27	x	100	S	1	745,00
M 27	x	105	S	1	779,00
M 27	x	110	S	1	779,00
M 27	x	115	S	1	818,00
M 27	x	120	S	1	818,00
M 27	x	125	S	1	829,00
M 27	x	130	S	1	829,00
M 27	x	135	S	1	867,00
M 27	x	140	S	1	867,00
M 27	x	145	S	1	1081,00
M 27	x	150	S	1	1081,00
M 27	x	160	S	1	1126,00
M 27	x	165	S	1	1619,00
M 27	x	170	S	1	1619,00
M 27	x	180	S	1	2176,00
M 27	x	190	S	1	2326,00
M 27	x	200	S	1	2480,00
M 30	x	80	S	1	903,00
M 30	x	85	S	1	937,00
M 30	x	90	S	1	959,00
M 30	x	95	S	1	983,00
M 30	x	100	S	1	1005,00
M 30	x	105	S	1	1041,00
M 30	x	110	S	1	1084,00
M 30	x	115	S	1	1120,00
M 30	x	120	S	1	1120,00
M 30	x	125	S	1	1168,00
M 30	x	130	S	1	1168,00
M 30	x	135	S	1	1214,00
M 30	x	140	S	1	1214,00
M 30	x	145	S	1	1496,00
M 30	x	150	S	1	1496,00
M 30	x	155	S	1	1551,00
M 30	x	160	S	1	1551,00
M 30	x	165	S	1	2088,00
M 30	x	170	S	1	2088,00
M 30	x	180	S	1	2725,00
M 30	x	190	S	1	2879,00
M 30	x	200	S	1	3031,00

Dimensions	PU	Pieces	€/100/Mat.
EN	14399.*		RAZ 610

14399-4 10.9 hot dip galvanized



Hexagon bolts with large head for high-strength structural bolting, system HV

Thread tolerance 6g + HDG, *Brand Peiner = 124, brand Friedberg = 125

Dimensions → TI-57 Corrosion protection → TI-219
Mech. properties → TI-220 HV-Mounting instr. → TI-234

Dimensions M 39-M 48 acc. DAST-directive 021 on request.

Declaration of performance → www.reyher.de

M 12	x	30	S	1	80,60 HDG
M 12	x	35	S	1	89,60 HDG
M 12	x	40	S	1	92,10 HDG
M 12	x	45	S	1	97,25 HDG
M 12	x	50	S	1	103,00 HDG
M 12	x	55	S	1	110,00 HDG
M 12	x	60	S	1	116,00 HDG
M 12	x	65	S	1	142,00 HDG
M 12	x	70	S	1	150,00 HDG
M 12	x	75	S	1	311,00 HDG
M 12	x	80	S	1	311,00 HDG
M 12	x	85	S	1	461,00 HDG
M 12	x	90	S	1	462,00 HDG
M 12	x	95	S	1	539,00 HDG
M 12	x	100	S	1	540,00 HDG
M 12	x	110	S	1	668,00 HDG
M 12	x	120	S	1	759,00 HDG
M 16	x	35	S	1	147,00 HDG
M 16	x	40	S	1	148,00 HDG
M 16	x	45	S	1	159,00 HDG
M 16	x	50	S	1	170,00 HDG
M 16	x	55	S	1	179,00 HDG
M 16	x	60	S	1	187,00 HDG
M 16	x	65	S	1	196,00 HDG
M 16	x	70	S	1	208,00 HDG
M 16	x	75	S	1	219,00 HDG
M 16	x	80	S	1	226,00 HDG
M 16	x	85	S	1	252,00 HDG
M 16	x	90	S	1	255,00 HDG
M 16	x	95	S	1	317,00 HDG
M 16	x	100	S	1	319,00 HDG
M 16	x	105	S	1	534,00 HDG
M 16	x	110	S	1	536,00 HDG
M 16	x	115	S	1	603,00 HDG
M 16	x	120	S	1	740,00 HDG
M 16	x	125	S	1	821,00 HDG
M 16	x	130	S	1	823,00 HDG
M 16	x	140	S	1	874,00 HDG
M 16	x	150	S	1	993,00 HDG
M 16	x	160	S	1	1075,00 HDG
M 16	x	170	S	1	1158,00 HDG
M 16	x	180	S	1	1245,00 HDG
M 16	x	190	S	1	1329,00 HDG
M 16	x	200	S	1	1504,00 HDG
M 16	x	210	S	1	1605,00 HDG
M 16	x	220	S	1	1884,00 HDG
M 20	x	40	S	1	285,00 HDG
M 20	x	45	S	1	288,00 HDG
M 20	x	50	S	1	283,00 HDG
M 20	x	55	S	1	286,00 HDG
M 20	x	60	S	1	300,00 HDG

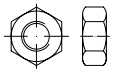
Dimensions			PU	Pieces	€/100/Mat.
M 20	x	65	S	1	314,00 HDG
M 20	x	70	S	1	327,00 HDG
M 20	x	75	S	1	339,00 HDG
M 20	x	80	S	1	353,00 HDG
M 20	x	85	S	1	378,00 HDG
M 20	x	90	S	1	379,00 HDG
M 20	x	95	S	1	393,00 HDG
M 20	x	100	S	1	397,00 HDG
M 20	x	105	S	1	435,00 HDG
M 20	x	110	S	1	438,00 HDG
M 20	x	115	S	1	455,00 HDG
M 20	x	120	S	1	527,00 HDG
M 20	x	125	S	1	552,00 HDG
M 20	x	130	S	1	555,00 HDG
M 20	x	135	S	1	849,00 HDG
M 20	x	140	S	1	852,00 HDG
M 20	x	145	S	1	932,00 HDG
M 20	x	150	S	1	1138,00 HDG
M 20	x	155	S	1	1235,00 HDG
M 20	x	160	S	1	1238,00 HDG
M 20	x	165	S	1	1334,00 HDG
M 20	x	170	S	1	1339,00 HDG
M 20	x	180	S	1	1441,00 HDG
M 20	x	190	S	1	1545,00 HDG
M 20	x	200	S	1	1753,00 HDG
M 20	x	210	S	1	1857,00 HDG
M 20	x	220	S	1	1965,00 HDG
M 20	x	230	S	1	2075,00 HDG
M 20	x	240	S	1	2181,00 HDG
M 20	x	250	S	1	2290,00 HDG
M 20	x	260	S	1	2399,00 HDG
M 22	x	50	S	1	570,00 HDG
M 22	x	55	S	1	575,00 HDG
M 22	x	60	S	1	579,00 HDG
M 22	x	65	S	1	599,00 HDG
M 22	x	70	S	1	615,00 HDG
M 22	x	75	S	1	641,00 HDG
M 22	x	80	S	1	661,00 HDG
M 22	x	85	S	1	697,00 HDG
M 22	x	90	S	1	699,00 HDG
M 22	x	95	S	1	736,00 HDG
M 22	x	100	S	1	739,00 HDG
M 22	x	105	S	1	775,00 HDG
M 22	x	110	S	1	779,00 HDG
M 22	x	115	S	1	829,00 HDG
M 22	x	120	S	1	834,00 HDG
M 22	x	125	S	1	873,00 HDG
M 22	x	130	S	1	876,00 HDG
M 22	x	140	S	1	1345,00 HDG
M 22	x	150	S	1	1470,00 HDG
M 22	x	160	S	1	1598,00 HDG
M 22	x	170	S	1	1760,00 HDG
M 22	x	180	S	1	1886,00 HDG
M 22	x	190	S	1	2017,00 HDG
M 22	x	200	S	1	2314,00 HDG
M 24	x	50	S	1	475,00 HDG
M 24	x	55	S	1	476,00 HDG
M 24	x	60	S	1	470,00 HDG
M 24	x	65	S	1	476,00 HDG
M 24	x	70	S	1	494,00 HDG
M 24	x	75	S	1	513,00 HDG
M 24	x	80	S	1	528,00 HDG
M 24	x	85	S	1	556,00 HDG
M 24	x	90	S	1	557,00 HDG
M 24	x	95	S	1	585,00 HDG
M 24	x	100	S	1	589,00 HDG
M 24	x	105	S	1	618,00 HDG
M 24	x	110	S	1	622,00 HDG
M 24	x	115	S	1	655,00 HDG
M 24	x	120	S	1	660,00 HDG
M 24	x	125	S	1	696,00 HDG
M 24	x	130	S	1	699,00 HDG
M 24	x	135	S	1	733,00 HDG
M 24	x	140	S	1	845,00 HDG
M 24	x	145	S	1	883,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	150	S	1	888,00 HDG
M 24	x	155	S	1	1275,00 HDG
M 24	x	160	S	1	1280,00 HDG
M 24	x	165	S	1	1375,00 HDG
M 24	x	170	S	1	1674,00 HDG
M 24	x	175	S	1	1793,00 HDG
M 24	x	180	S	1	1798,00 HDG
M 24	x	190	S	1	1920,00 HDG
M 24	x	200	S	1	2044,00 HDG
M 24	x	210	S	1	2304,00 HDG
M 24	x	220	S	1	2434,00 HDG
M 24	x	230	S	1	2568,00 HDG
M 24	x	240	S	1	2700,00 HDG
M 24	x	250	S	1	2830,00 HDG
M 24	x	260	S	1	2960,00 HDG
M 27	x	60	S	1	773,00 HDG
M 27	x	65	S	1	780,00 HDG
M 27	x	70	S	1	792,00 HDG
M 27	x	75	S	1	806,00 HDG
M 27	x	80	S	1	832,00 HDG
M 27	x	85	S	1	869,00 HDG
M 27	x	90	S	1	875,00 HDG
M 27	x	95	S	1	916,00 HDG
M 27	x	100	S	1	919,00 HDG
M 27	x	105	S	1	959,00 HDG
M 27	x	110	S	1	965,00 HDG
M 27	x	115	S	1	1008,00 HDG
M 27	x	120	S	1	1014,00 HDG
M 27	x	125	S	1	1031,00 HDG
M 27	x	130	S	1	1037,00 HDG
M 27	x	135	S	1	1080,00 HDG
M 27	x	140	S	1	1086,00 HDG
M 27	x	145	S	1	1307,00 HDG
M 27	x	150	S	1	1311,00 HDG
M 27	x	155	S	1	1361,00 HDG
M 27	x	160	S	1	1367,00 HDG
M 27	x	165	S	1	1878,00 HDG
M 27	x	170	S	1	1884,00 HDG
M 27	x	175	S	1	2011,00 HDG
M 27	x	180	S	1	2453,00 HDG
M 27	x	190	S	1	2613,00 HDG
M 27	x	200	S	1	2777,00 HDG
M 27	x	210	S	1	3129,00 HDG
M 27	x	220	S	1	3314,00 HDG
M 27	x	230	S	1	3473,00 HDG
M 27	x	240	S	1	3653,00 HDG
M 27	x	250	S	1	3825,00 HDG
M 27	x	260	S	1	3998,00 HDG
M 30	x	70	S	1	1054,00 HDG
M 30	x	75	S	1	1078,00 HDG
M 30	x	80	S	1	1097,00 HDG
M 30	x	85	S	1	1139,00 HDG
M 30	x	90	S	1	1169,00 HDG
M 30	x	95	S	1	1201,00 HDG
M 30	x	100	S	1	1228,00 HDG
M 30	x	105	S	1	1271,00 HDG
M 30	x	110	S	1	1322,00 HDG
M 30	x	115	S	1	1367,00 HDG
M 30	x	120	S	1	1374,00 HDG
M 30	x	125	S	1	1428,00 HDG
M 30	x	130	S	1	1435,00 HDG
M 30	x	135	S	1	1490,00 HDG
M 30	x	140	S	1	1497,00 HDG
M 30	x	145	S	1	1787,00 HDG
M 30	x	150	S	1	1794,00 HDG
M 30	x	155	S	1	1857,00 HDG
M 30	x	160	S	1	1865,00 HDG
M 30	x	165	S	1	2423,00 HDG
M 30	x	170	S	1	2431,00 HDG
M 30	x	180	S	1	3086,00 HDG
M 30	x	190	S	1	3256,00 HDG
M 30	x	200	S	1	3424,00 HDG
M 30	x	210	S	1	3820,00 HDG
M 30	x	220	S	1	3836,00 HDG
M 30	x	230	S	1	4181,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
M 30	x	240	S	1	4197,00 HDG
M 30	x	260	S	1	4553,00 HDG
M 36	x	100	S	1	3496,00 HDG
M 36	x	105	S	1	3634,00 HDG
M 36	x	110	S	1	3646,00 HDG
M 36	x	115	S	1	3787,00 HDG
M 36	x	120	S	1	3799,00 HDG
M 36	x	125	S	1	3932,00 HDG
M 36	x	130	S	1	3943,00 HDG
M 36	x	135	S	1	4053,00 HDG
M 36	x	140	S	1	4064,00 HDG
M 36	x	145	S	1	4164,00 HDG
M 36	x	150	S	1	4175,00 HDG
M 36	x	155	S	1	4326,00 HDG
M 36	x	160	S	1	4338,00 HDG
M 36	x	165	S	1	5715,00 HDG
M 36	x	170	S	1	5726,00 HDG
M 36	x	175	S	1	5856,00 HDG
M 36	x	180	S	1	5867,00 HDG
M 36	x	185	S	1	5995,00 HDG
M 36	x	190	S	1	6007,00 HDG
M 36	x	195	S	1	6167,00 HDG
M 36	x	200	S	1	6178,00 HDG
M 36	x	205	S	1	6263,00 HDG
M 36	x	210	S	1	6347,00 HDG
M 36	x	215	S	1	6430,00 HDG
M 36	x	220	S	1	6513,00 HDG
M 36	x	240	S	1	6829,00 HDG
M 36	x	250	S	1	6991,00 HDG
M 36	x	260	S	1	7150,00 HDG

EN	14399.106	RAZ 610

14399-4 10



Hexagon nuts
for high-strength structural bolting, system HV brand Peiner

Dimensions → TI-57 Mech. properties → TI-221

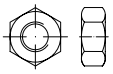
Dimensions M 39-M 48 acc. DAST-directive 021 on request.

Declaration of performance → www.reyher.de

M 12	S	1	36,50
M 16	S	1	52,45
M 20	S	1	85,10
M 22	S	1	103,00
M 24	S	1	140,00
M 27	S	1	216,00
M 30	S	1	333,00
M 36	S	1	1044,00

Dimensions	PU	Pieces	€/100/Mat.
EN	14399.*		RAZ 610

14399-4 10 hot dip galvanized



Hexagon nuts
for high-strength structural bolting, system HV

Thread tolerance 6AZ, dimensions M 42 acc. to DAST directive 021, *brand Peiner = 126, brand Friedberg = 127

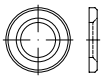
Dimensions → TI-57 Corrosion protection → TI-219
Mech. properties → TI-221

Declaration of performance → www.reyher.de

M 12	S	1	42,75 HDG
M 16	S	1	64,65 HDG
M 20	S	1	105,00 HDG
M 22	S	1	133,00 HDG
M 24	S	1	181,00 HDG
M 27	S	1	277,00 HDG
M 30	S	1	414,00 HDG
M 36	S	1	1183,00 HDG
M 42	S	1	2809,00 HDG

EN	14399.004	RAZ 610

14399-6 Steel 300 HV



Plain chamfered washers
for high-strength structural bolting, system HV brand Peiner, ∅ 33 not CE

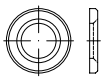
Dimensions → TI-58

Dimensions M 39-M 48 acc. DAST-directive 021 on request.

Nominal ∅ (inside ∅ x outside ∅ x thickness)						
12 (13	x	24	x	3)	S	1	15,30
16 (17	x	30	x	4)	S	1	23,35
20 (21	x	37	x	4)	S	1	29,85
22 (23	x	39	x	4)	S	1	36,65
24 (25	x	44	x	4)	S	1	40,85
27 (28	x	50	x	5)	S	1	76,15
30 (31	x	56	x	5)	S	1	181,00
33 (34	x	60	x	5)	S	1	293,00
36 (37	x	66	x	6)	S	1	293,00

Dimensions					PU	Pieces	€/100/Mat.
EN	14399.*						RAZ 610

14399-6 Steel 300 HV hot dip galvanized



Plain chamfered washers for high-strength structural bolting, system HV

Dimensions M 42 acc. to DAST directive 021,*brand Peiner = 024, brand Friedberg = 025

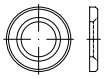
Dimensions ➔ TI-58 Corrosion protection ➔ TI-219

Nominal ∅ (inside ∅ x outside ∅ x thickness)

12 (13	x	24	x	3)	S	1	17,25	HDG
16 (17	x	30	x	4)	S	1	27,20	HDG
20 (21	x	37	x	4)	S	1	35,20	HDG
22 (23	x	39	x	4)	S	1	43,20	HDG
24 (25	x	44	x	4)	S	1	49,10	HDG
27 (28	x	50	x	5)	S	1	89,60	HDG
30 (31	x	56	x	5)	S	1	198,00	HDG
36 (37	x	66	x	6)	S	1	324,00	HDG
42 (43	x	78	x	8)	S	1	1192,00	HDG

EN	14399.034	RAZ 610

14399-6 Steel 300 HV HDG lubricated



Plain chamfered washers for high-strength structural bolting, system HV

For bolting about head, brand Peiner

Dimensions ➔ TI-58

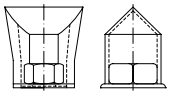
- dimensions M 39-M 48 acc. to DAST directive 021 on request
- certificates inside of the boxes

Nominal ∅ (inside ∅ x outside ∅ x thickness)

12 (13	x	24	x	3)	S	20	473,00	HDG
16 (17	x	30	x	4)	S	20	486,00	HDG
20 (21	x	37	x	4)	S	20	501,00	HDG
22 (23	x	39	x	4)	S	20	522,00	HDG
24 (25	x	44	x	4)	S	20	524,00	HDG
27 (28	x	50	x	5)	S	20	589,00	HDG
30 (31	x	56	x	5)	S	20	611,00	HDG
36 (37	x	66	x	6)	S	20	750,00	HDG

Dimensions					PU	Pieces	€/100/Mat.
Article	88916.000						RAZ 610

88916 Steel



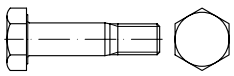
Safety sockets for high-strength structural bolting assemblies, system HV

Dimensions ➔ TI-58

M 12	S	10	1821,00	
M 16	S	10	1821,00	
M 20	S	10	1821,00	
M 24	S	10	1995,00	
M 27	S	5	2136,00	
M 30	S	5	2223,00	
M 36	S	5	3944,00	

EN	14399.138	RAZ 741

14399-8 10.9 hot dip galvanized



Hexagon fit bolts with large head for high-strength structural bolting, system HV

Thread tolerance 6g + HDG

- nuts ➔ EN 14399-4
- washers ➔ EN 14399-6

Dimensions ➔ TI-57 Corrosion protection ➔ TI-219
Mech. properties ➔ TI-220 HV-Mounting instr. ➔ TI-234

Declaration of performance ➔ www.reyher.de

M 16	x	45	S	1	1005,00	HDG		
M 16	x	50	S	1	1005,00	HDG		
M 16	x	55	S	1	1057,00	HDG		
M 16	x	60	S	1	1094,00	HDG		
M 16	x	65	S	1	1133,00	HDG		
M 16	x	70	S	1	1171,00	HDG		
M 16	x	75	S	1	1210,00	HDG		
M 16	x	80	S	1	1255,00	HDG		
M 16	x	85	S	1	1293,00	HDG		
M 16	x	90	S	1	1324,00	HDG		
M 20	x	50	S	1	1031,00	HDG		
M 20	x	55	S	1	1081,00	HDG		
M 20	x	60	S	1	1120,00	HDG		
M 20	x	65	S	1	1165,00	HDG		
M 20	x	70	S	1	1203,00	HDG		
M 20	x	75	S	1	1242,00	HDG		
M 20	x	80	S	1	1287,00	HDG		
M 20	x	85	S	1	1324,00	HDG		
M 20	x	90	S	1	1363,00	HDG		
M 20	x	95	S	1	1395,00	HDG		
M 20	x	100	S	1	1440,00	HDG		
M 20	x	105	S	1	1473,00	HDG		
M 20	x	110	S	1	1477,00	HDG		
M 20	x	115	S	1	1480,00	HDG		
M 20	x	130	S	1	1634,00	HDG		
M 22	x	55	S	1	1517,00	HDG		

Dimensions			PU	Pieces	€/100/Mat.
M 22	x	60	S	1	1575,00 HDG
M 22	x	65	S	1	1632,00 HDG
M 22	x	70	S	1	1696,00 HDG
M 22	x	75	S	1	1728,00 HDG
M 22	x	80	S	1	1792,00 HDG
M 22	x	85	S	1	1855,00 HDG
M 22	x	90	S	1	1919,00 HDG
M 22	x	95	S	1	1983,00 HDG
M 22	x	100	S	1	2048,00 HDG
M 22	x	110	S	1	2176,00 HDG
M 22	x	120	S	1	2284,00 HDG
M 24	x	60	S	1	1599,00 HDG
M 24	x	65	S	1	1664,00 HDG
M 24	x	70	S	1	1728,00 HDG
M 24	x	75	S	1	1760,00 HDG
M 24	x	80	S	1	1824,00 HDG
M 24	x	85	S	1	1887,00 HDG
M 24	x	90	S	1	1951,00 HDG
M 24	x	95	S	1	2016,00 HDG
M 24	x	100	S	1	2080,00 HDG
M 24	x	105	S	1	2143,00 HDG
M 24	x	110	S	1	2143,00 HDG
M 24	x	115	S	1	2271,00 HDG
M 24	x	120	S	1	2271,00 HDG
M 24	x	130	S	1	2399,00 HDG
M 24	x	135	S	1	2482,00 HDG
M 24	x	140	S	1	2489,00 HDG
M 24	x	150	S	1	2604,00 HDG
M 27	x	65	S	1	1979,00 HDG
M 27	x	70	S	1	2336,00 HDG
M 27	x	75	S	1	2399,00 HDG
M 27	x	80	S	1	2463,00 HDG
M 27	x	85	S	1	2559,00 HDG
M 27	x	90	S	1	2624,00 HDG
M 27	x	95	S	1	2687,00 HDG
M 27	x	100	S	1	2783,00 HDG
M 27	x	105	S	1	2910,00 HDG
M 27	x	110	S	1	2910,00 HDG
M 27	x	115	S	1	3039,00 HDG
M 27	x	120	S	1	3071,00 HDG
M 27	x	130	S	1	3263,00 HDG
M 27	x	140	S	1	3454,00 HDG
M 27	x	150	S	1	3579,00 HDG
M 27	x	180	S	1	4109,00 HDG
M 30	x	75	S	1	2719,00 HDG
M 30	x	80	S	1	2910,00 HDG
M 30	x	85	S	1	3071,00 HDG
M 30	x	90	S	1	3166,00 HDG
M 30	x	95	S	1	3263,00 HDG
M 30	x	100	S	1	3327,00 HDG
M 30	x	105	S	1	3518,00 HDG
M 30	x	110	S	1	3518,00 HDG
M 30	x	115	S	1	3582,00 HDG
M 30	x	120	S	1	3646,00 HDG
M 30	x	125	S	1	3753,00 HDG
M 30	x	130	S	1	3817,00 HDG
M 30	x	135	S	1	3880,00 HDG
M 30	x	140	S	1	3944,00 HDG
M 30	x	145	S	1	4008,00 HDG
M 30	x	150	S	1	4072,00 HDG

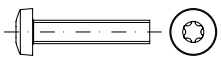
Dimensions	PU	Pieces	€/100/Mat.
ISO	14579.810		RAZ 1000
14579	**8.8 zinc plated**		

Hexalobular socket head cap screws

Dimensions → TI-12 Corrosion protection → TI-217
Mech. properties → TI-220 Tightening torque → TI-230

M 6	x	16	S	200	7,20 ZP
M 6	x	20	S	200	7,90 ZP
M 8	x	20	S	200	12,75 ZP
M 8	x	25	S	200	13,95 ZP
M 8	x	30	S	200	14,90 ZP
M 8	x	35	S	200	16,35 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	14583.410		RAZ 710
14583	**4.8 zinc plated**		



Pan head screws, ISR = hexalobular socket

Dimensions → TI-40 Corrosion protection → TI-217

Stainless → S. 549

M 2	x	4	S	2000	10,60 ZP
M 2	x	6	S	2000	7,50 ZP
M 2	x	8	S	2000	7,50 ZP
M 2	x	10	S	2000	7,60 ZP
M 2	x	12	S	2000	7,70 ZP
M 2	x	16	S	2000	7,80 ZP
M 2,5	x	4	S	2000	11,30 ZP
M 2,5	x	5	S	2000	11,30 ZP
M 2,5	x	6	S	2000	7,55 ZP
M 2,5	x	8	S	2000	7,55 ZP
M 2,5	x	10	S	2000	7,65 ZP
M 2,5	x	12	S	2000	7,75 ZP
M 2,5	x	16	S	2000	8,10 ZP
M 3	x	4	S	2000	9,20 ZP
M 3	x	4	K	200	11,60 ZP
M 3	x	5	S	2000	9,20 ZP
M 3	x	5	K	200	11,60 ZP
M 3	x	6	S	2000	7,10 ZP
M 3	x	6	K	200	9,50 ZP
M 3	x	8	S	2000	7,10 ZP
M 3	x	8	K	200	9,50 ZP
M 3	x	10	S	2000	7,20 ZP
M 3	x	10	K	200	9,60 ZP
M 3	x	12	S	2000	7,20 ZP
M 3	x	12	K	200	9,60 ZP
M 3	x	16	S	2000	7,30 ZP
M 3	x	16	K	200	9,70 ZP
M 3	x	20	S	2000	7,70 ZP
M 3	x	20	K	200	10,10 ZP
M 3	x	25	S	2000	8,00 ZP
M 3	x	25	K	200	10,40 ZP
M 3	x	30	S	1000	8,50 ZP
M 3	x	30	K	200	10,90 ZP
M 3	x	40	S	1000	9,70 ZP
M 3	x	40	K	200	12,10 ZP
M 4	x	5	S	2000	9,80 ZP
M 4	x	5	K	200	12,20 ZP
M 4	x	6	S	2000	7,30 ZP
M 4	x	6	K	200	9,70 ZP
M 4	x	8	S	2000	7,70 ZP
M 4	x	8	K	200	10,10 ZP
M 4	x	10	S	2000	7,90 ZP
M 4	x	10	K	200	10,30 ZP
M 4	x	12	S	2000	8,00 ZP
M 4	x	12	K	200	10,40 ZP
M 4	x	16	S	2000	8,50 ZP
M 4	x	16	K	200	10,90 ZP
M 4	x	20	S	2000	9,10 ZP
M 4	x	20	K	200	11,50 ZP
M 4	x	25	S	1000	9,60 ZP
M 4	x	25	K	200	12,00 ZP
M 4	x	30	S	1000	10,10 ZP
M 4	x	30	K	200	12,50 ZP
M 4	x	32	S	1000	8,58 ZP
M 4	x	35	S	1000	10,50 ZP
M 4	x	35	K	200	12,90 ZP
M 5	x	6	S	2000	9,10 ZP
M 5	x	6	K	200	11,50 ZP
M 5	x	8	S	2000	9,20 ZP
M 5	x	8	K	200	11,60 ZP
M 5	x	10	S	2000	9,40 ZP
M 5	x	10	K	200	11,80 ZP
M 5	x	12	S	1000	9,70 ZP
M 5	x	12	K	200	12,10 ZP
M 5	x	16	S	1000	10,30 ZP
M 5	x	16	K	200	12,70 ZP
M 5	x	18	S	1000	11,20 ZP
M 5	x	20	S	1000	11,20 ZP
M 5	x	20	K	200	13,60 ZP
M 5	x	25	S	1000	11,80 ZP
M 5	x	25	K	200	14,20 ZP
M 5	x	30	S	1000	12,40 ZP
M 5	x	30	K	200	14,80 ZP
M 6	x	10	S	1000	12,50 ZP
M 6	x	10	K	200	14,90 ZP
M 6	x	12	S	1000	12,70 ZP
M 6	x	12	K	200	15,10 ZP
M 6	x	16	S	1000	13,00 ZP
M 6	x	16	K	200	13,00 ZP
M 6	x	20	S	1000	13,80 ZP
M 6	x	20	K	200	16,20 ZP
M 6	x	25	S	500	14,70 ZP
M 6	x	25	K	200	17,10 ZP
M 6	x	30	S	500	15,70 ZP
M 6	x	30	K	200	18,10 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	14585.013		RAZ 690
14585	**Steel, hard. zinc plated**		**type C**

Pan head tapping screws with hexalobular socket, C = with cone end

Dimensions → TI-46 Mounting instructions → TI-237
Corrosion protection → TI-217

Stainless → S. 550

2,2	x	4,5-C	S	2000	8,50 ZP
2,2	x	6,5-C	S	2000	7,50 ZP
2,2	x	9,5-C	S	2000	8,95 ZP
2,2	x	13 -C	S	2000	9,75 ZP
2,2	x	16 -C	S	2000	10,95 ZP
2,9	x	6,5-C	S	2000	2,45 ZP
2,9	x	9,5-C	S	2000	2,20 ZP
2,9	x	13 -C	S	2000	2,30 ZP
2,9	x	16 -C	S	2000	2,40 ZP
2,9	x	19 -C	S	2000	3,50 ZP
2,9	x	22 -C	S	2000	4,35 ZP
2,9	x	25 -C	S	1000	4,65 ZP
3,5	x	9,5-C	S	1000	2,60 ZP
3,5	x	13 -C	S	1000	2,70 ZP
3,5	x	16 -C	S	1000	2,80 ZP
3,5	x	19 -C	S	1000	3,55 ZP
3,5	x	22 -C	S	1000	4,90 ZP
3,5	x	25 -C	S	500	5,20 ZP
3,5	x	32 -C	S	500	5,60 ZP
3,5	x	38 -C	S	500	6,30 ZP
3,5	x	45 -C	S	500	9,30 ZP
3,5	x	50 -C	S	500	10,10 ZP
3,9	x	9,5-C	S	1000	2,95 ZP
3,9	x	13 -C	S	1000	3,10 ZP
3,9	x	16 -C	S	1000	3,40 ZP
3,9	x	19 -C	S	1000	3,85 ZP
3,9	x	22 -C	S	500	5,10 ZP
3,9	x	25 -C	S	500	5,60 ZP
3,9	x	32 -C	S	500	5,90 ZP
3,9	x	38 -C	S	500	8,20 ZP
3,9	x	45 -C	S	500	8,40 ZP
3,9	x	50 -C	S	500	8,60 ZP
4,2	x	9,5-C	S	1000	3,20 ZP
4,2	x	13 -C	S	1000	3,25 ZP
4,2	x	16 -C	S	1000	3,65 ZP
4,2	x	19 -C	S	500	3,90 ZP
4,2	x	22 -C	S	500	5,40 ZP
4,2	x	25 -C	S	500	5,90 ZP
4,2	x	32 -C	S	500	6,00 ZP
4,2	x	38 -C	S	500	8,60 ZP
4,2	x	45 -C	S	500	9,80 ZP
4,2	x	50 -C	S	500	11,20 ZP
4,2	x	60 -C	S	500	19,10 ZP
4,2	x	70 -C	S	500	22,60 ZP
4,8	x	9,5-C	S	500	6,50 ZP
4,8	x	13 -C	S	500	4,60 ZP
4,8	x	16 -C	S	500	4,80 ZP
4,8	x	19 -C	S	500	5,50 ZP
4,8	x	22 -C	S	500	5,90 ZP
4,8	x	25 -C	S	500	6,90 ZP
4,8	x	32 -C	S	250	7,90 ZP
4,8	x	38 -C	S	250	9,10 ZP
4,8	x	45 -C	S	250	12,40 ZP
4,8	x	50 -C	S	250	13,70 ZP
4,8	x	60 -C	S	250	21,90 ZP
4,8	x	70 -C	S	250	29,00 ZP
4,8	x	80 -C	S	250	35,00 ZP
4,8	x	90 -C	S	250	44,50 ZP
4,8	x	100 -C	S	250	51,00 ZP
5,5	x	13 -C	S	500	12,50 ZP
5,5	x	16 -C	S	500	10,50 ZP
5,5	x	19 -C	S	500	7,10 ZP
5,5	x	22 -C	S	500	12,70 ZP
5,5	x	25 -C	S	250	10,50 ZP
5,5	x	32 -C	S	250	12,10 ZP
5,5	x	38 -C	S	250	15,60 ZP
5,5	x	45 -C	S	250	16,80 ZP
5,5	x	50 -C	S	250	19,90 ZP
5,5	x	60 -C	S	250	37,50 ZP
5,5	x	70 -C	S	250	46,50 ZP
5,5	x	80 -C	S	250	56,00 ZP
5,5	x	90 -C	S	250	60,00 ZP
5,5	x	100 -C	S	250	68,00 ZP
6,3	x	13 -C	S	250	18,75 ZP
6,3	x	16 -C	S	250	14,00 ZP
6,3	x	19 -C	S	250	11,70 ZP
6,3	x	22 -C	S	250	13,50 ZP
6,3	x	25 -C	S	250	13,50 ZP
6,3	x	32 -C	S	250	14,80 ZP

Dimensions				PU	Pieces	€/100/Mat.
6,3	x	38	-C	S	250	18,40 ZP
6,3	x	45	-C	S	250	22,60 ZP
6,3	x	50	-C	S	250	24,10 ZP
6,3	x	60	-C	S	250	42,50 ZP
6,3	x	70	-C	S	250	60,00 ZP
6,3	x	80	-C	S	250	67,00 ZP
6,3	x	90	-C	S	250	75,00 ZP
6,3	x	100	-C	S	250	81,00 ZP

ISO	14585.014	RAZ 690

14585 Steel, hard. zinc plated type F

Pan head tapping screws with hexalobular socket, F = with flat end

Dimensions → TI-46 Mounting instructions → TI-237
Corrosion protection → TI-217

2,9	x	4,5	-F	S	2000	5,20 ZP
2,9	x	6,5	-F	S	1000	4,60 ZP
2,9	x	9,5	-F	S	1000	4,10 ZP
2,9	x	13	-F	S	1000	4,30 ZP
2,9	x	16	-F	S	1000	5,50 ZP
2,9	x	19	-F	S	1000	6,50 ZP
2,9	x	22	-F	S	1000	8,05 ZP
2,9	x	25	-F	S	1000	8,60 ZP
3,5	x	9,5	-F	S	1000	4,85 ZP
3,5	x	13	-F	S	1000	5,00 ZP
3,5	x	16	-F	S	1000	5,20 ZP
3,5	x	19	-F	S	1000	6,60 ZP
3,5	x	22	-F	S	1000	9,10 ZP
3,5	x	25	-F	S	1000	9,65 ZP
3,5	x	32	-F	S	1000	10,50 ZP
3,5	x	38	-F	S	1000	11,75 ZP
3,5	x	45	-F	S	500	17,25 ZP
3,5	x	50	-F	S	500	18,75 ZP
3,9	x	9,5	-F	S	1000	5,50 ZP
3,9	x	13	-F	S	1000	5,75 ZP
3,9	x	16	-F	S	1000	6,30 ZP
3,9	x	19	-F	S	1000	7,20 ZP
3,9	x	22	-F	S	500	9,45 ZP
3,9	x	25	-F	S	500	10,40 ZP
3,9	x	32	-F	S	500	11,00 ZP
3,9	x	38	-F	S	500	15,20 ZP
3,9	x	45	-F	S	500	15,60 ZP
3,9	x	50	-F	S	500	15,95 ZP
4,2	x	9,5	-F	S	1000	6,00 ZP
4,2	x	13	-F	S	1000	6,05 ZP
4,2	x	16	-F	S	1000	6,75 ZP
4,2	x	19	-F	S	500	7,25 ZP
4,2	x	22	-F	S	500	10,00 ZP
4,2	x	25	-F	S	500	11,00 ZP
4,2	x	32	-F	S	500	12,20 ZP
4,2	x	38	-F	S	500	16,00 ZP
4,2	x	45	-F	S	500	18,20 ZP
4,2	x	50	-F	S	500	21,00 ZP
4,2	x	60	-F	S	500	36,00 ZP
4,2	x	70	-F	S	250	42,00 ZP
4,2	x	80	-F	S	250	55,00 ZP
4,8	x	9,5	-F	S	500	12,50 ZP
4,8	x	13	-F	S	500	8,75 ZP
4,8	x	16	-F	S	500	9,00 ZP
4,8	x	19	-F	S	500	10,50 ZP
4,8	x	22	-F	S	500	11,00 ZP
4,8	x	25	-F	S	500	13,00 ZP
4,8	x	32	-F	S	250	14,85 ZP
4,8	x	38	-F	S	250	16,95 ZP
4,8	x	45	-F	S	250	23,00 ZP
4,8	x	50	-F	S	250	25,50 ZP
4,8	x	55	-F	S	250	41,00 ZP
4,8	x	60	-F	S	250	44,00 ZP
4,8	x	70	-F	S	250	54,00 ZP
4,8	x	80	-F	S	250	65,00 ZP
4,8	x	90	-F	S	100	83,00 ZP
4,8	x	100	-F	S	100	95,00 ZP
5,5	x	13	-F	S	500	23,50 ZP
5,5	x	16	-F	S	500	20,00 ZP
5,5	x	19	-F	S	500	15,00 ZP
5,5	x	22	-F	S	500	23,00 ZP
5,5	x	25	-F	S	500	24,00 ZP
5,5	x	32	-F	S	250	25,50 ZP
5,5	x	38	-F	S	250	29,00 ZP
5,5	x	45	-F	S	250	31,50 ZP
5,5	x	50	-F	S	250	37,00 ZP
5,5	x	60	-F	S	250	70,00 ZP
5,5	x	70	-F	S	250	86,40 ZP
5,5	x	80	-F	S	100	104,00 ZP
5,5	x	90	-F	S	100	111,00 ZP
5,5	x	100	-F	S	100	126,00 ZP
6,3	x	13	-F	S	500	35,00 ZP
6,3	x	16	-F	S	500	26,00 ZP
6,3	x	19	-F	S	500	22,00 ZP
6,3	x	22	-F	S	500	25,00 ZP
6,3	x	25	-F	S	500	26,00 ZP
6,3	x	32	-F	S	250	27,50 ZP
6,3	x	38	-F	S	250	34,20 ZP
6,3	x	45	-F	S	250	42,00 ZP
6,3	x	50	-F	S	250	46,00 ZP
6,3	x	60	-F	S	250	79,00 ZP
6,3	x	70	-F	S	100	111,00 ZP
6,3	x	80	-F	S	100	124,00 ZP
6,3	x	90	-F	S	100	140,00 ZP
6,3	x	100	-F	S	100	155,00 ZP

ISO	14586.013	RAZ 690

14586 Steel, hard. zinc plated type C

Countersunk head tapping screws with hexalobular socket, C = with cone end

countersunk ⦟ = 90°

Dimensions → TI-47 Mounting instructions → TI-237
Corrosion protection → TI-217

Stainless → S. 550

Countersunk ⦟ = 80° → DIN 7982 ISR

2,9	x	6,5	-C	S	1000	10,00 ZP
2,9	x	9,5	-C	S	1000	4,20 ZP
2,9	x	13	-C	S	1000	4,50 ZP
2,9	x	16	-C	S	1000	5,00 ZP
2,9	x	19	-C	S	1000	6,60 ZP
2,9	x	22	-C	S	1000	8,10 ZP
2,9	x	25	-C	S	1000	8,60 ZP
3,5	x	9,5	-C	S	1000	4,85 ZP
3,5	x	13	-C	S	1000	5,00 ZP
3,5	x	16	-C	S	1000	5,20 ZP
3,5	x	19	-C	S	1000	6,75 ZP
3,5	x	22	-C	S	1000	8,15 ZP
3,5	x	25	-C	S	1000	10,00 ZP
3,5	x	32	-C	S	1000	12,40 ZP
3,5	x	38	-C	S	1000	11,75 ZP
3,5	x	45	-C	S	1000	17,25 ZP
3,5	x	50	-C	S	1000	18,70 ZP
3,9	x	9,5	-C	S	1000	5,65 ZP
3,9	x	13	-C	S	1000	5,75 ZP
3,9	x	16	-C	S	1000	6,30 ZP
3,9	x	19	-C	S	1000	7,35 ZP
3,9	x	22	-C	S	500	8,35 ZP
3,9	x	25	-C	S	500	10,00 ZP
3,9	x	25	-C	S	500	10,00 ZP
3,9	x	38	-C	S	500	15,20 ZP
3,9	x	45	-C	S	500	18,00 ZP
3,9	x	50	-C	S	500	22,00 ZP
4,2	x	9,5	-C	S	1000	6,00 ZP
4,2	x	13	-C	S	1000	6,10 ZP
4,2	x	16	-C	S	1000	6,75 ZP
4,2	x	19	-C	S	500	8,00 ZP
4,2	x	22	-C	S	500	8,70 ZP
4,2	x	25	-C	S	500	11,00 ZP
4,2	x	32	-C	S	500	14,00 ZP
4,2	x	38	-C	S	500	17,00 ZP
4,2	x	45	-C	S	500	20,50 ZP
4,2	x	50	-C	S	500	24,00 ZP
4,2	x	60	-C	S	500	40,00 ZP
4,2	x	70	-C	S	500	49,00 ZP
4,2	x	80	-C	S	500	62,00 ZP
4,8	x	9,5	-C	S	500	12,10 ZP
4,8	x	13	-C	S	500	9,00 ZP
4,8	x	16	-C	S	500	9,10 ZP
4,8	x	19	-C	S	500	10,20 ZP
4,8	x	22	-C	S	500	11,00 ZP
4,8	x	25	-C	S	500	13,00 ZP
4,8	x	32	-C	S	250	15,00 ZP
4,8	x	38	-C	S	250	17,00 ZP
4,8	x	45	-C	S	250	23,00 ZP
4,8	x	50	-C	S	250	26,00 ZP
4,8	x	55	-C	S	250	39,00 ZP
4,8	x	60	-C	S	250	42,00 ZP
4,8	x	70	-C	S	250	54,00 ZP
4,8	x	80	-C	S	250	65,00 ZP
4,8	x	90	-C	S	100	83,00 ZP
4,8	x	100	-C	S	100	95,00 ZP
5,5	x	13	-C	S	500	23,20 ZP
5,5	x	16	-C	S	500	19,50 ZP
5,5	x	19	-C	S	500	18,00 ZP
5,5	x	22	-C	S	500	23,50 ZP
5,5	x	25	-C	S	500	24,00 ZP
5,5	x	32	-C	S	250	28,00 ZP
5,5	x	38	-C	S	250	31,00 ZP
5,5	x	45	-C	S	250	35,00 ZP
5,5	x	50	-C	S	250	40,00 ZP
5,5	x	60	-C	S	250	70,00 ZP
5,5	x	70	-C	S	250	86,40 ZP
5,5	x	80	-C	S	250	105,00 ZP
5,5	x	90	-C	S	250	115,00 ZP
5,5	x	100	-C	S	250	130,00 ZP
6,3	x	13	-C	S	500	35,00 ZP
6,3	x	16	-C	S	500	26,00 ZP
6,3	x	19	-C	S	500	22,00 ZP
6,3	x	22	-C	S	500	25,00 ZP
6,3	x	25	-C	S	500	26,00 ZP
6,3	x	32	-C	S	250	29,00 ZP
6,3	x	38	-C	S	250	35,00 ZP
6,3	x	45	-C	S	250	42,00 ZP
6,3	x	50	-C	S	250	56,00 ZP
6,3	x	60	-C	S	250	80,00 ZP
6,3	x	70	-C	S	250	115,00 ZP
6,3	x	80	-C	S	250	125,00 ZP
6,3	x	90	-C	S	250	140,00 ZP
6,3	x	100	-C	S	250	155,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ISO	14586.014		RAZ 690

14586 Steel, hard. zinc plated type F

Countersunk head tapping screws with hexalobular socket, F = with flat end

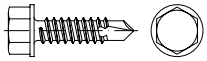
countersunk ⊀ = 90°

Dimensions → TI-47 Mounting instructions → TI-237
Corrosion protection → TI-217

Dimensions			PU	Pieces	€/100/Mat.
2,9	x 6,5	-F	S	1000	10,00 ZP
2,9	x 9,5	-F	S	1000	4,20 ZP
2,9	x 13	-F	S	1000	4,50 ZP
2,9	x 16	-F	S	1000	5,00 ZP
2,9	x 19	-F	S	1000	6,60 ZP
2,9	x 22	-F	S	1000	8,10 ZP
2,9	x 25	-F	S	1000	8,60 ZP
3,5	x 9,5	-F	S	1000	4,85 ZP
3,5	x 13	-F	S	1000	5,00 ZP
3,5	x 16	-F	S	1000	5,20 ZP
3,5	x 19	-F	S	1000	6,75 ZP
3,5	x 22	-F	S	1000	8,15 ZP
3,5	x 25	-F	S	1000	10,00 ZP
3,5	x 32	-F	S	1000	12,40 ZP
3,5	x 38	-F	S	1000	11,75 ZP
3,5	x 45	-F	S	1000	17,25 ZP
3,5	x 50	-F	S	500	18,70 ZP
3,9	x 9,5	-F	S	1000	5,65 ZP
3,9	x 13	-F	S	1000	5,75 ZP
3,9	x 16	-F	S	1000	6,30 ZP
3,9	x 19	-F	S	1000	7,35 ZP
3,9	x 22	-F	S	500	8,35 ZP
3,9	x 25	-F	S	500	10,00 ZP
3,9	x 32	-F	S	500	13,50 ZP
3,9	x 38	-F	S	500	15,20 ZP
3,9	x 45	-F	S	500	18,00 ZP
3,9	x 50	-F	S	500	22,00 ZP
4,2	x 9,5	-F	S	1000	6,00 ZP
4,2	x 13	-F	S	1000	6,10 ZP
4,2	x 16	-F	S	1000	6,75 ZP
4,2	x 19	-F	S	500	8,00 ZP
4,2	x 22	-F	S	500	8,70 ZP
4,2	x 25	-F	S	500	11,00 ZP
4,2	x 32	-F	S	500	14,00 ZP
4,2	x 38	-F	S	500	17,00 ZP
4,2	x 45	-F	S	500	20,50 ZP
4,2	x 50	-F	S	500	24,00 ZP
4,2	x 60	-F	S	500	40,00 ZP
4,2	x 70	-F	S	250	49,00 ZP
4,2	x 80	-F	S	250	62,00 ZP
4,8	x 9,5	-F	S	500	12,10 ZP
4,8	x 13	-F	S	500	9,00 ZP
4,8	x 16	-F	S	500	9,10 ZP
4,8	x 19	-F	S	500	10,20 ZP
4,8	x 22	-F	S	500	11,00 ZP
4,8	x 25	-F	S	500	13,00 ZP
4,8	x 32	-F	S	250	15,00 ZP
4,8	x 38	-F	S	250	17,00 ZP
4,8	x 45	-F	S	250	23,00 ZP
4,8	x 50	-F	S	250	26,00 ZP
4,8	x 55	-F	S	250	39,00 ZP
4,8	x 60	-F	S	250	42,00 ZP
4,8	x 70	-F	S	250	54,00 ZP
4,8	x 80	-F	S	250	65,00 ZP
4,8	x 90	-F	S	100	83,00 ZP
4,8	x 100	-F	S	100	95,00 ZP
5,5	x 13	-F	S	500	23,20 ZP
5,5	x 16	-F	S	500	19,50 ZP
5,5	x 19	-F	S	500	18,00 ZP
5,5	x 22	-F	S	500	23,50 ZP
5,5	x 25	-F	S	500	24,00 ZP
5,5	x 32	-F	S	250	28,00 ZP
5,5	x 38	-F	S	250	31,00 ZP
5,5	x 45	-F	S	250	35,00 ZP
5,5	x 50	-F	S	250	40,00 ZP
5,5	x 60	-F	S	250	70,00 ZP
5,5	x 70	-F	S	250	86,40 ZP
5,5	x 80	-F	S	100	105,00 ZP
5,5	x 90	-F	S	100	115,00 ZP
5,5	x 100	-F	S	100	130,00 ZP
6,3	x 13	-F	S	500	35,00 ZP
6,3	x 16	-F	S	500	26,00 ZP
6,3	x 19	-F	S	500	22,00 ZP
6,3	x 22	-F	S	500	25,00 ZP
6,3	x 25	-F	S	500	26,00 ZP
6,3	x 32	-F	S	250	29,00 ZP
6,3	x 38	-F	S	250	35,00 ZP
6,3	x 45	-F	S	250	42,00 ZP
6,3	x 50	-F	S	250	56,00 ZP
6,3	x 60	-F	S	250	80,00 ZP
6,3	x 70	-F	S	250	115,00 ZP
6,3	x 80	-F	S	100	125,00 ZP
6,3	x 90	-F	S	100	140,00 ZP
6,3	x 100	-F	S	100	155,00 ZP

~ISO	15480.010	RAZ 637

15480 Steel, hard. zinc plated



Hexagon washers head drilling screws with tapping screw thread

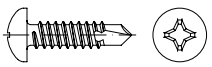
Dimensions → TI-42 Corrosion protection → TI-217

ISO 15480 → replaces DIN 7504 type K

Dimensions			PU	Pieces	€/100/Mat.
ST 3,5	x 9,5		S	1000	7,80 ZP
ST 3,5	x 13		S	1000	8,00 ZP
ST 3,5	x 16		S	1000	8,80 ZP
ST 3,5	x 19		S	1000	9,20 ZP
ST 3,5	x 22		S	1000	14,20 ZP
ST 3,5	x 25		S	1000	18,30 ZP
ST 3,9	x 13		S	1000	8,50 ZP
ST 3,9	x 16		S	1000	9,30 ZP
ST 3,9	x 19		S	1000	10,10 ZP
ST 3,9	x 22		S	1000	16,00 ZP
ST 3,9	x 25		S	1000	21,00 ZP
ST 3,9	x 32		S	1000	28,60 ZP
ST 4,2	x 13		S	1000	9,60 ZP
ST 4,2	x 13		K	100	13,60 ZP
ST 4,2	x 16		S	1000	10,10 ZP
ST 4,2	x 19		S	1000	10,30 ZP
ST 4,2	x 22		S	1000	11,80 ZP
ST 4,2	x 25		S	1000	12,50 ZP
ST 4,2	x 32		S	500	17,70 ZP
ST 4,2	x 38		S	500	22,90 ZP
ST 4,8	x 13		S	1000	11,80 ZP
ST 4,8	x 16		S	1000	12,40 ZP
ST 4,8	x 19		S	1000	12,90 ZP
ST 4,8	x 22		S	1000	14,80 ZP
ST 4,8	x 25		S	1000	15,80 ZP
ST 4,8	x 32		S	500	17,70 ZP
ST 4,8	x 38		S	500	19,80 ZP
ST 4,8	x 45		S	500	22,30 ZP
ST 4,8	x 50		S	500	23,50 ZP
ST 4,8	x 60		S	500	27,50 ZP
ST 4,8	x 70		S	250	30,20 ZP
ST 4,8	x 80		S	250	35,00 ZP
ST 5,5	x 16		S	500	17,70 ZP
ST 5,5	x 19		S	500	16,70 ZP
ST 5,5	x 22		S	500	18,90 ZP
ST 5,5	x 25		S	500	19,50 ZP
ST 5,5	x 32		S	250	21,70 ZP
ST 5,5	x 38		S	250	21,70 ZP
ST 5,5	x 45		S	250	22,00 ZP
ST 5,5	x 50		S	250	22,00 ZP
ST 5,5	x 60		S	250	32,00 ZP
ST 5,5	x 70		S	100	38,00 ZP
ST 5,5	x 80		S	100	45,00 ZP
ST 5,5	x 90		S	100	52,00 ZP
ST 5,5	x 100		S	100	64,00 ZP
ST 6,3	x 16		S	500	22,30 ZP
ST 6,3	x 19		S	500	23,20 ZP
ST 6,3	x 22		S	500	24,80 ZP
ST 6,3	x 25		S	500	26,00 ZP
ST 6,3	x 32		S	250	30,50 ZP
ST 6,3	x 38		S	250	32,50 ZP
ST 6,3	x 45		S	250	36,50 ZP
ST 6,3	x 50		S	250	40,50 ZP
ST 6,3	x 60		S	250	44,50 ZP
ST 6,3	x 70		S	100	49,00 ZP
ST 6,3	x 80		S	100	56,00 ZP
ST 6,3	x 90		S	100	68,00 ZP
ST 6,3	x 100		S	100	82,00 ZP
ST 6,3	x 110		S	100	98,00 ZP
ST 6,3	x 120		S	100	116,00 ZP
ST 6,3	x 130		S	100	136,00 ZP
ST 6,3	x 140		S	100	160,00 ZP
ST 6,3	x 150		S	100	190,00 ZP
ST 6,3	x 160		S	100	240,00 ZP

ISO	15481.014	RAZ 637

15481 Steel, hard. zinc plated H



Pan head drilling screws with tapping screw thread, H = with Phillips cross recess H

Dimensions → TI-42 Corrosion protection → TI-217

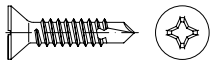
ISO 15481 → replaces DIN 7504 type N (compatible)

Dimensions			PU	Pieces	€/100/Mat.
ST 2,9	x 9	-H	S	1000	7,10 ZP
ST 2,9	x 13	-H	S	1000	7,20 ZP
ST 2,9	x 16	-H	S	1000	7,30 ZP
ST 2,9	x 19	-H	S	1000	7,90 ZP
ST 3,5	x 9	-H	S	1000	8,10 ZP
ST 3,5	x 13	-H	S	1000	8,30 ZP
ST 3,5	x 16	-H	S	1000	8,50 ZP
ST 3,5	x 19	-H	S	1000	8,80 ZP
ST 3,5	x 22	-H	S	1000	9,60 ZP
ST 3,5	x 25	-H	S	1000	9,90 ZP
ST 3,5	x 32	-H	S	1000	11,00 ZP
ST 3,9	x 9,5	-H	S	1000	8,30 ZP
ST 3,9	x 13	-H	S	1000	8,40 ZP
ST 3,9	x 16	-H	S	1000	8,90 ZP
ST 3,9	x 19	-H	S	1000	9,30 ZP
ST 3,9	x 22	-H	S	1000	9,60 ZP
ST 3,9	x 25	-H	S	1000	10,00 ZP
ST 3,9	x 32	-H	S	1000	10,60 ZP
ST 3,9	x 38	-H	S	500	11,30 ZP
ST 3,9	x 45	-H	S	500	12,00 ZP
ST 3,9	x 50	-H	S	500	13,20 ZP

Dimensions			PU	Pieces	€/100/Mat.
ST 4,2	x	13 -H	S	1000	10,10 ZP
ST 4,2	x	16 -H	S	1000	10,40 ZP
ST 4,2	x	19 -H	S	1000	10,60 ZP
ST 4,2	x	22 -H	S	1000	11,90 ZP
ST 4,2	x	25 -H	S	1000	12,60 ZP
ST 4,2	x	32 -H	S	500	13,60 ZP
ST 4,2	x	38 -H	S	500	14,70 ZP
ST 4,2	x	45 -H	S	500	15,90 ZP
ST 4,2	x	50 -H	S	500	17,20 ZP
ST 4,8	x	13 -H	S	1000	12,30 ZP
ST 4,8	x	16 -H	S	1000	12,60 ZP
ST 4,8	x	19 -H	S	1000	13,20 ZP
ST 4,8	x	22 -H	S	1000	14,00 ZP
ST 4,8	x	25 -H	S	1000	15,40 ZP
ST 4,8	x	32 -H	S	500	15,50 ZP
ST 4,8	x	38 -H	S	500	17,00 ZP
ST 4,8	x	45 -H	S	500	18,30 ZP
ST 4,8	x	50 -H	S	500	19,50 ZP
ST 4,8	x	60 -H	S	250	21,50 ZP
ST 4,8	x	70 -H	S	250	23,75 ZP
ST 4,8	x	80 -H	S	250	26,20 ZP
ST 4,8	x	90 -H	S	250	42,00 ZP
ST 4,8	x	100 -H	S	250	66,00 ZP
ST 4,8	x	110 -H	S	100	98,00 ZP
ST 4,8	x	120 -H	S	250	140,00 ZP
ST 5,5	x	16 -H	S	500	15,30 ZP
ST 5,5	x	19 -H	S	500	16,00 ZP
ST 5,5	x	22 -H	S	500	17,70 ZP
ST 5,5	x	25 -H	S	500	23,80 ZP
ST 5,5	x	32 -H	S	500	25,70 ZP
ST 5,5	x	38 -H	S	500	27,80 ZP
ST 5,5	x	45 -H	S	500	30,00 ZP
ST 5,5	x	50 -H	S	500	32,40 ZP
ST 5,5	x	60 -H	S	250	35,65 ZP
ST 5,5	x	70 -H	S	250	40,35 ZP
ST 5,5	x	80 -H	S	250	44,40 ZP
ST 6,3	x	16 -H	S	500	26,80 ZP
ST 6,3	x	19 -H	S	500	28,00 ZP
ST 6,3	x	22 -H	S	500	30,25 ZP
ST 6,3	x	25 -H	S	500	32,70 ZP
ST 6,3	x	32 -H	S	500	35,35 ZP
ST 6,3	x	38 -H	S	500	38,20 ZP
ST 6,3	x	45 -H	S	500	41,30 ZP
ST 6,3	x	50 -H	S	500	44,60 ZP
ST 6,3	x	60 -H	S	250	49,10 ZP
ST 6,3	x	70 -H	S	250	54,05 ZP
ST 6,3	x	80 -H	S	250	59,50 ZP
ST 6,3	x	90 -H	S	100	66,65 ZP
ST 6,3	x	100 -H	S	100	74,65 ZP

ISO | 15482.014 | RAZ 637

15482 Steel, hard. zinc plated H



Countersunk head drilling screws with tapping screw thread, H = with Phillips cross recess H

countersunk ⊀ = 90°

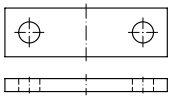
Dimensions → TI-42 Corrosion protection → TI-217

ISO 15482 → replaces DIN 7504 type P

ST 2,9	x	13 -H	S	1000	6,70 ZP
ST 2,9	x	16 -H	S	1000	6,90 ZP
ST 2,9	x	19 -H	S	1000	7,30 ZP
ST 3,5	x	13 -H	S	1000	7,70 ZP
ST 3,5	x	16 -H	S	1000	7,90 ZP
ST 3,5	x	19 -H	S	1000	8,10 ZP
ST 3,5	x	22 -H	S	1000	8,90 ZP
ST 3,5	x	25 -H	S	1000	9,20 ZP
ST 4,2	x	13 -H	S	1000	9,30 ZP
ST 4,2	x	16 -H	S	1000	9,60 ZP
ST 4,2	x	19 -H	S	1000	9,80 ZP
ST 4,2	x	22 -H	S	1000	11,10 ZP
ST 4,2	x	25 -H	S	1000	11,70 ZP
ST 4,2	x	32 -H	S	500	12,50 ZP
ST 4,2	x	38 -H	S	500	14,00 ZP
ST 4,2	x	45 -H	S	500	15,60 ZP
ST 4,2	x	50 -H	S	500	19,50 ZP
ST 4,8	x	16 -H	S	1000	10,00 ZP
ST 4,8	x	19 -H	S	1000	11,50 ZP
ST 4,8	x	22 -H	S	1000	12,10 ZP
ST 4,8	x	25 -H	S	500	12,20 ZP
ST 4,8	x	32 -H	S	500	13,30 ZP
ST 4,8	x	38 -H	S	500	14,60 ZP
ST 4,8	x	45 -H	S	500	17,40 ZP
ST 4,8	x	50 -H	S	250	19,90 ZP
ST 5,5	x	25 -H	S	250	14,90 ZP
ST 5,5	x	32 -H	S	250	16,20 ZP
ST 5,5	x	38 -H	S	250	17,50 ZP
ST 5,5	x	45 -H	S	250	19,60 ZP
ST 5,5	x	50 -H	S	250	21,60 ZP
ST 6,3	x	25 -H	S	250	21,40 ZP
ST 6,3	x	32 -H	S	250	22,70 ZP
ST 6,3	x	38 -H	S	250	24,00 ZP
ST 6,3	x	45 -H	S	250	27,50 ZP
ST 6,3	x	50 -H	S	250	30,00 ZP
ST 6,3	x	60 -H	S	250	31,50 ZP
ST 6,3	x	70 -H	S	250	53,00 ZP
ST 6,3	x	80 -H	S	250	72,00 ZP

DIN | 15058.000 | RAZ 770

15058 Steel



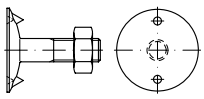
Axle holder (for lifting appliances)

Dimensions → TI-134

width a x thickness b					
20	x	5	S	50	425,00
25	x	6	S	50	480,00
30	x	8	S	25	590,00
40	x	10	S	25	1110,00
50	x	12	S	10	1660,00

DIN | 15237.000 | RAZ 770

15237 Mu 3.6



Seating screws with cupped washer, Mu = with hexagon nut

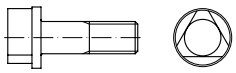
For attachment of components to belts

Dimensions → TI-35

M 6	x	20	S	200	81,00
M 8	x	20	S	100	86,00
M 8	x	25	S	100	88,00
M 8	x	30	S	100	94,00
M 8	x	35	S	100	96,00
M 8	x	40	S	100	99,00
M 8	x	50	S	100	104,00
M 10	x	30	S	100	109,00
M 10	x	35	S	100	109,00
M 10	x	40	S	100	110,00
M 10	x	45	S	100	116,00
M 10	x	50	S	100	118,00
M 12	x	35	S	100	218,00
M 12	x	40	S	100	224,00
M 12	x	50	S	100	234,00
M 12	x	60	S	100	249,00

DIN | 22424.801 | RAZ 770

22424 8.8 type A



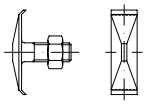
Triangle head bolts, A = with full shank

Dimensions → TI-35 Mech. properties → TI-220

AM 8	x	25	S	100	158,00
AM 8	x	30	S	100	167,00
AM 10	x	30	S	100	232,00

DIN | 25193.400 | RAZ 770

25193 Mu 4.6

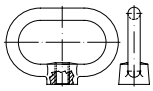


Mushroom head anchor screws, Mu = with hexagon nut

Dimensions → TI-35

M 8	x	30	S	100	91,00
M 8	x	35	S	100	92,00
M 8	x	40	S	100	93,00
M 8	x	45	S	100	94,00
M 8	x	50	S	100	95,00
M 8	x	60	S	100	108,00
M 8	x	70	S	100	110,00
M 10	x	60	S	100	149,00
M 10	x	70	S	100	164,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 28129.014			RAZ 782
28129	**C35E zinc plated**		**AD W7**



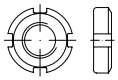
Clamp nuts (lifting nuts)

For pressure vessel const. according to AD regulation, TÜV accepted products

Dimensions → TI-127 Corrosion protection → TI-217

M 16	S	1	6400,00 ZP
M 20	S	1	7100,00 ZP
M 24	S	1	7500,00 ZP
M 27	S	1	7700,00 ZP

DIN	70852.800	RAZ 782
70852	**17 H**	



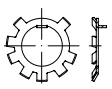
Locknuts for hook spanners

Dimensions → TI-74

Prevailing torque locknuts "GUK" → article 88081

M 10	x	1	S	25	480,00
M 12	x	1,5	S	25	520,00
M 14	x	1,5	S	25	530,00
M 16	x	1,5	S	25	590,00
M 18	x	1,5	S	10	620,00
M 20	x	1,5	S	10	640,00
M 22	x	1,5	S	10	710,00
M 24	x	1,5	S	10	730,00
M 26	x	1,5	S	10	780,00
M 28	x	1,5	S	1	850,00
M 30	x	1,5	S	1	850,00
M 32	x	1,5	S	1	990,00
M 35	x	1,5	S	1	1020,00
M 38	x	1,5	S	1	1170,00
M 40	x	1,5	S	1	1180,00
M 42	x	1,5	S	1	1360,00
M 45	x	1,5	S	1	1420,00
M 48	x	1,5	S	1	1530,00
M 50	x	1,5	S	1	1580,00
M 52	x	1,5	S	1	1770,00
M 55	x	1,5	S	1	1870,00
M 60	x	1,5	S	1	2090,00
M 65	x	1,5	S	1	2330,00
M 70	x	1,5	S	1	2650,00
M 75	x	1,5	S	1	2950,00
M 80	x	1,5	S	1	3350,00
M 85	x	1,5	S	1	3650,00
M 90	x	1,5	S	1	3900,00
M 95	x	1,5	S	1	4400,00

Dimensions	PU	Pieces	€/100/Mat.
DIN 70952.001			RAZ 782
70952	**Steel**		**type A**



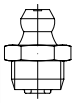
Lockwasher/safety plates

For locknuts acc. to DIN 70852

Dimensions → TI-102

A 10	S	100	103,00
A 12	S	50	113,00
A 14	S	50	114,00
A 16	S	50	119,00
A 18	S	50	120,00
A 20	S	50	124,00
A 22	S	50	127,00
A 24	S	50	129,00
A 26	S	50	137,00
A 28	S	50	142,00
A 30	S	50	153,00
A 32	S	50	157,00
A 35	S	50	161,00
A 38	S	25	168,00
A 40	S	25	174,00
A 42	S	25	182,00
A 45	S	25	185,00
A 48	S	25	199,00
A 50	S	25	213,00
A 52	S	25	221,00
A 55	S	25	228,00
A 60	S	25	265,00
A 65	S	25	300,00
A 70	S	25	320,00
A 75	S	10	355,00
A 80	S	10	510,00
A 90	S	10	540,00

DIN	71412.511	RAZ 782
71412	**5.8 zinc plated**	**type A-M**



Lubricating nipples, cone type, with hexagon, A = cone head straight/axial, M = with taper fine pitch thread

Dimensions → TI-25 Corrosion protection → TI-217

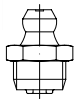
Stainless → S. 551

Lubricating nipples with button head → DIN 3404

Thread M x pitch/wrench size SW

AM 6	x	1 SW 7	S	100	68,00 ZP
AM 8	x	1 SW 9	S	100	84,00 ZP
AM 10	x	1 SW11	S	100	108,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
DIN 71412.514			RAZ 782
71412	**5.8 zinc plated**		**type A-R**



Lubricating nipples, cone type, with hexagon, A = cone head straight/axial, R = with inch pipe thread

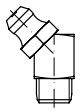
Dimensions → TI-25 Corrosion protection → TI-217

Lubricating nipples with button head → DIN 3404

Thread R/wrench size SW

AR 1/8 SW11	S	100	86,00 ZP
AR 1/4 SW14	S	50	171,00 ZP

DIN	71412.512	RAZ 782
71412	**5.8 zinc plated**	**type B-M**



Lubricating nipples, cone type, with hexagon or square, B = cone head 45° angled, M = with taper fine pitch thread

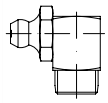
Dimensions → TI-25 Corrosion protection → TI-217

Lubricating nipples with button head → DIN 3404

Thread M x pitch/wrench size SW

BM 6	x	1 SW 9	S	100	189,00 ZP
BM 8	x	1 SW 9	S	100	189,00 ZP
BM 10	x	1 SW11	S	100	191,00 ZP

DIN	71412.513	RAZ 782
71412	**5.8 zinc plated**	**type C-M**



Lubricating nipples, cone type, with hexagon or square, C = cone head 90° angled, M = with taper fine pitch thread

Dimensions → TI-25 Corrosion protection → TI-217

Lubricating nipples with button head → DIN 3404

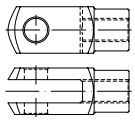
Thread M x pitch/wrench size SW

CM 6	x	1 SW 9	S	100	189,00 ZP
CM 8	x	1 SW 9	S	100	189,00 ZP
CM 8	x	1,25	S	100	150,00 ZP
CM10	x	1 SW11	S	100	191,00 ZP

Dimensions | PU Pieces | €/100/Mat.

DIN 71752.014 RAZ 782

71752 Steel zinc plated type G



Fork joints, G = yokes, for spring flap bolts (article 88752)

clevis pins → DIN 1444

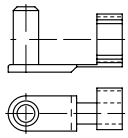
Dimensions → TI-122 Corrosion protection → TI-217

Hole ∅ x recess depth g (up to middle of hole)

G 6	x	12	S	10	186,00 ZP
G 6	x	24	S	10	213,00 ZP
G 8	x	16	S	10	232,00 ZP
G 8	x	32	S	10	315,00 ZP
G 10	x	20	S	10	355,00 ZP
G 10	x	40	S	10	510,00 ZP
G 12	x	24	S	10	540,00 ZP
G 12	x	48	S	10	860,00 ZP
G 16	x	32	S	5	1270,00 ZP
G 16	x	64	S	5	1890,00 ZP
G 20	x	40	S	5	2500,00 ZP

~DIN 88752.010 RAZ 782

71752 Steel zinc plated Article 88752



Spring flap bolts ("ES bolts") for yokes DIN 71752

clevis pins → DIN 1444

Dimensions → TI-122 Corrosion protection → TI-217

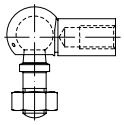
Nominal size = matching yoke DIN 71752

ES 6	x	12	S	10	88,00 ZP
ES 6	x	24	S	10	118,00 ZP
ES 8	x	16	S	10	103,00 ZP
ES 8	x	32	S	10	110,00 ZP
ES 10	x	20	S	10	130,00 ZP
ES 10	x	40	S	10	143,00 ZP
ES 12	x	24	S	10	182,00 ZP
ES 12	x	48	S	10	217,00 ZP
ES 16	x	32	S	5	325,00 ZP
ES 16	x	64	S	5	630,00 ZP
ES 20	x	40	S	5	570,00 ZP

Dimensions | PU Pieces | €/100/Mat.

DIN 71802.014 RAZ 782

71802 Steel zinc plated type AS



Angle joints (ball joints) with threaded shank, hexagon nuts and circlips

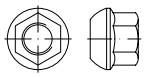
Corrosion protection → TI-217

Spherical ∅ x thread shank ∅ = internal thread

AS 8-M 5	S	25	310,00 ZP
AS 10-M 6	S	25	340,00 ZP
AS 13-M 8	S	25	485,00 ZP
AS 16-M 10	S	10	790,00 ZP
AS 16-M 12	S	10	880,00 ZP
AS 19-M 14 x 1,5	S	10	1790,00 ZP

DIN 74361.801 RAZ 790

74361 8 phosphated type A



Nuts with spherical collar

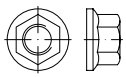
Dimensions → TI-63 Mech. properties → TI-221

Thread M x pitch/wrench size SW

AM 18	x 1,5 SW24	S	100	280,00
AM 20	x 1,5 SW27	S	100	365,00

DIN 74361.102 RAZ 790

74361 10 phosphated type B



Flat collar nuts

Dimensions → TI-64 Mech. properties → TI-221

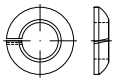
Thread M x pitch/wrench size SW

M14	x 1,5 SW19	S	100	195,00
M18	x 1,5 SW24	S	100	265,00
M20	x 1,5 SW27	S	100	280,00
M22	x 1,5 SW30	S	100	325,00

Dimensions | PU Pieces | €/100/Mat.

DIN 74361.013 RAZ 790

74361 Spring steel zinc plated type C



Spherical springwashers

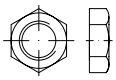
Dimensions → TI-102 Corrosion protection → TI-217

Inside ∅

C 12,5	S	100	28,00 ZP
C 14,5	S	100	39,50 ZP
C 16,5	S	100	38,00 ZP
C 18,5	S	100	46,00 ZP
C 20,5	S	100	64,00 ZP
C 22,5	S	100	63,00 ZP

DIN 80705.065 RAZ 790

80705 14 H fine zinc plated yellow



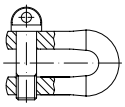
Thin hexagonal nuts with small wrench size, series 2 = metric fine pitch thread

Dimensions → TI-64 Corrosion protection → TI-217
Mech. properties → TI-221

M 14	x	1,5	S	100	57,00 YZP
M 16	x	1,5	S	100	63,00 YZP
M 18	x	1,5	S	100	78,00 YZP
M 20	x	1,5	S	100	87,00 YZP
M 22	x	1,5	S	100	120,00 YZP
M 26	x	1,5	S	50	169,00 YZP
M 30	x	2	S	25	285,00 YZP

DIN 82101.011 RAZ 790

82101 Steel zinc plated type A



D-shackles, forged

Dimensions → TI-131 Corrosion protection → TI-217

Nominal size (= lifting capacity - WLL in t)

A 0,16	S	50	315,00 ZP
A 0,25	S	50	345,00 ZP
A 0,4	S	25	510,00 ZP
A 0,6	S	25	680,00 ZP
A 1	S	25	1050,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
ASME B	83931.804		RAZ 2200

18.2.1 Grade 5 (~8.8) UNC

Hex cap screws with shank, with UNC thread

Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1 1/4	S	100	48,00
1/4	x	1 1/2	S	100	52,00
1/4	x	1 3/4	S	100	66,00
1/4	x	2	S	100	70,00
1/4	x	2 1/4	S	100	84,00
1/4	x	2 1/2	S	100	90,00
1/4	x	3	S	200	96,00
1/4	x	3 1/4	S	200	104,00
1/4	x	3 1/2	S	200	112,00
1/4	x	4	S	100	120,00
1/4	x	4 1/2	S	100	130,00
1/4	x	5	S	100	145,00
1/4	x	5 1/2	S	100	160,00
1/4	x	6	S	100	175,00
5/16	x	1 1/2	S	100	70,00
5/16	x	1 3/4	S	100	76,00
5/16	x	2	S	100	82,00
5/16	x	2 1/4	S	100	88,00
5/16	x	2 1/2	S	100	96,00
5/16	x	3	S	100	104,00
5/16	x	3 1/4	S	100	115,00
5/16	x	3 1/2	S	100	125,00
5/16	x	4	S	100	140,00
3/8	x	1 1/2	S	100	95,00
3/8	x	1 3/4	S	100	102,00
3/8	x	2	S	100	110,00
3/8	x	2 1/4	S	100	120,00
3/8	x	2 1/2	S	100	132,00
3/8	x	3	S	100	153,00
3/8	x	3 1/4	S	100	165,00
3/8	x	3 1/2	S	100	176,00
3/8	x	4	S	100	195,00
3/8	x	4 1/2	S	100	215,00
3/8	x	5	S	100	250,00
7/16	x	1 3/4	S	100	148,00
7/16	x	2	S	100	155,00
7/16	x	2 1/4	S	100	172,00
7/16	x	2 1/2	S	50	188,00
7/16	x	3	S	50	238,00
7/16	x	3 1/4	S	50	258,00
7/16	x	3 1/2	S	50	266,00
7/16	x	4	S	50	306,00
1/2	x	2	S	50	184,00
1/2	x	2 1/4	S	50	203,00
1/2	x	2 1/2	S	50	222,00
1/2	x	3	S	50	280,00
1/2	x	3 1/4	S	50	303,00
1/2	x	3 1/2	S	50	325,00
1/2	x	4	S	50	360,00
1/2	x	4 1/2	S	50	395,00
1/2	x	5	S	50	425,00
1/2	x	5 1/2	S	50	455,00
1/2	x	6	S	50	490,00
5/8	x	2 1/4	S	25	350,00
5/8	x	2 1/2	S	25	365,00
5/8	x	3	S	25	425,00
5/8	x	3 1/2	S	25	475,00
5/8	x	4	S	25	550,00
5/8	x	4 1/2	S	25	600,00
5/8	x	5	S	25	650,00
5/8	x	5 1/2	S	25	700,00
5/8	x	6	S	25	750,00
3/4	x	3	S	25	675,00
3/4	x	3 1/2	S	25	750,00
3/4	x	4	S	25	850,00
7/8	x	3	S	25	775,00
7/8	x	3 1/2	S	25	875,00
7/8	x	4	S	10	975,00
1	x	3 1/2	S	10	945,00
1	x	4	S	10	1055,00
1	x	4 1/2	S	10	1175,00
1	x	5	S	1	1300,00
1 1/4	x	4	S	1	1750,00
1 1/4	x	4 1/2	S	1	2000,00
1 1/4	x	5	S	1	2500,00
1 1/2	x	5	S	1	3250,00
1 1/2	x	5 1/2	S	1	3750,00
1 1/2	x	6	S	1	4250,00

ASME B	83931.814	RAZ 2200

18.2.1 Grade 5 (~8.8) zinc plated UNC

Hex cap screws with shank, with UNC thread

Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213
Corrosion protection → TI-217

∅ in inch x length in inch

1/4	x	1 1/4	S	100	63,00 ZP
1/4	x	1 1/2	S	100	68,00 ZP
1/4	x	1 3/4	S	100	86,00 ZP
1/4	x	2	S	100	92,00 ZP
1/4	x	2 1/2	S	100	118,00 ZP
5/16	x	1 1/2	S	100	92,00 ZP
5/16	x	1 3/4	S	100	99,00 ZP
5/16	x	2	S	100	107,00 ZP
5/16	x	2 1/4	S	100	115,00 ZP
5/16	x	2 1/2	S	100	125,00 ZP
3/8	x	1 1/2	S	100	124,00 ZP
3/8	x	1 3/4	S	100	133,00 ZP
3/8	x	2	S	100	144,00 ZP
3/8	x	2 1/4	S	100	157,00 ZP
3/8	x	2 1/2	S	100	172,00 ZP
3/8	x	3	S	100	199,00 ZP
1/2	x	2	S	50	240,00 ZP
1/2	x	2 1/4	S	50	265,00 ZP
1/2	x	2 1/2	S	50	290,00 ZP
1/2	x	2 3/4	S	50	340,00 ZP
1/2	x	3	S	50	365,00 ZP
1/2	x	3 1/4	S	50	395,00 ZP
1/2	x	3 1/2	S	50	425,00 ZP
1/2	x	4	S	50	470,00 ZP
5/8	x	2 1/4	S	25	455,00 ZP
5/8	x	2 1/2	S	25	475,00 ZP
5/8	x	2 3/4	S	25	545,00 ZP
5/8	x	3	S	25	560,00 ZP
5/8	x	3 1/4	S	25	610,00 ZP
5/8	x	3 1/2	S	25	620,00 ZP
5/8	x	4	S	25	720,00 ZP
5/8	x	4 1/2	S	25	790,00 ZP
3/4	x	2 3/4	S	25	850,00 ZP
3/4	x	3	S	25	880,00 ZP
3/4	x	3 1/4	S	25	930,00 ZP
3/4	x	3 1/2	S	25	980,00 ZP
3/4	x	4	S	25	1110,00 ZP
3/4	x	4 1/2	S	25	1220,00 ZP
3/4	x	5	S	25	1290,00 ZP
3/4	x	5 1/2	S	25	1485,00 ZP
3/4	x	6	S	25	1660,00 ZP

ASME B	83931.805	RAZ 2200

18.2.1 Grade 5 (~8.8) UNF

Hex cap screws with shank, with UNF thread

Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1 1/4	S	100	72,00
1/4	x	1 1/2	S	100	78,00
1/4	x	1 3/4	S	100	99,00
1/4	x	2	S	100	105,00
1/4	x	2 1/4	S	100	126,00
1/4	x	2 1/2	S	100	135,00
1/4	x	3	S	200	144,00
1/4	x	3 1/4	S	200	156,00
1/4	x	3 1/2	S	200	168,00
1/4	x	4	S	100	180,00
1/4	x	4 1/2	S	100	195,00
1/4	x	5	S	100	217,50
1/4	x	5 1/2	S	100	240,00
1/4	x	6	S	100	262,00
5/16	x	1 1/2	S	100	105,00
5/16	x	1 3/4	S	100	114,00
5/16	x	2	S	100	123,00
5/16	x	2 1/4	S	100	132,00
5/16	x	2 1/2	S	100	144,00
5/16	x	3	S	100	156,00
5/16	x	3 1/4	S	100	172,00
5/16	x	3 1/2	S	100	188,00
3/8	x	1 1/2	S	100	142,50
3/8	x	1 3/4	S	100	153,00
3/8	x	2	S	100	165,00
3/8	x	2 1/4	S	100	180,00
3/8	x	2 1/2	S	100	198,00
3/8	x	3	S	100	229,50
3/8	x	3 1/4	S	100	247,50
3/8	x	3 1/2	S	100	264,00
3/8	x	4	S	100	292,50
7/16	x	1 3/4	S	100	222,00
7/16	x	2	S	100	232,50
7/16	x	2 1/4	S	100	258,00
7/16	x	2 1/2	S	50	282,00
7/16	x	3	S	50	357,00
7/16	x	3 1/4	S	50	387,00
7/16	x	3 1/2	S	50	399,00
7/16	x	4	S	50	459,00
1/2	x	2	S	50	276,00
1/2	x	2 1/4	S	50	304,50
1/2	x	2 1/2	S	50	333,00
1/2	x	3	S	50	420,00
1/2	x	3 1/4	S	50	454,50
1/2	x	3 1/2	S	50	487,50
1/2	x	4	S	50	540,00
1/2	x	4 1/2	S	50	592,50
1/2	x	5	S	50	637,50
1/2	x	5 1/2	S	50	682,50

Dimensions			PU	Pieces	€/100/Mat.
1/2	x	6	S	50	735,00
5/8	x	2 1/2	S	25	548,00
5/8	x	3	S	25	638,00
5/8	x	3 1/2	S	25	712,00
5/8	x	4	S	25	825,00
5/8	x	4 1/2	S	25	900,00
3/4	x	3	S	25	1012,00
3/4	x	3 1/2	S	25	1125,00
1	x	3 1/2	S	10	1325,00
1	x	4	S	10	1475,00
1	x	4 1/2	S	10	1650,00
1 1/4	x	4	S	1	2450,00
1 1/2	x	5	S	1	3750,00

ASME B	83931.104	RAZ 2200

18.2.1

Grade 8 (~10.9) UNC

Hex cap screws with shank, with UNC thread

Dimensions → TI-16
Mech. properties → TI-222
Tightening torque → TI-232
Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1 1/4	S	100	84,00
1/4	x	1 1/2	S	100	91,00
1/4	x	1 3/4	S	100	116,00
1/4	x	2	S	100	123,00
1/4	x	2 1/4	S	100	147,00
1/4	x	2 1/2	S	100	158,00
1/4	x	3	S	200	168,00
1/4	x	3 1/4	S	200	182,00
1/4	x	3 1/2	S	200	196,00
1/4	x	4	S	100	210,00
1/4	x	4 1/2	S	100	228,00
1/4	x	5	S	100	254,00
1/4	x	5 1/2	S	100	280,00
1/4	x	6	S	100	306,00
5/16	x	1 1/2	S	100	122,00
5/16	x	1 3/4	S	100	133,00
5/16	x	2	S	100	143,50
5/16	x	2 1/4	S	100	154,00
5/16	x	2 1/2	S	100	168,00
5/16	x	3	S	100	182,00
5/16	x	3 1/4	S	100	202,00
5/16	x	3 1/2	S	100	220,00
3/8	x	1 1/2	S	100	142,50
3/8	x	1 3/4	S	100	153,00
3/8	x	2	S	100	165,00
3/8	x	2 1/4	S	100	180,00
3/8	x	2 1/2	S	100	198,00
3/8	x	3	S	100	229,50
3/8	x	3 1/4	S	100	247,50
3/8	x	3 1/2	S	100	264,00
3/8	x	4	S	100	292,50
7/16	x	1 3/4	S	100	222,00
7/16	x	2	S	100	232,50
7/16	x	2 1/4	S	100	258,00
7/16	x	2 1/2	S	50	282,00
7/16	x	3	S	50	357,00
7/16	x	3 1/2	S	50	399,00
7/16	x	4	S	50	459,00
1/2	x	2	S	50	276,00
1/2	x	2 1/4	S	50	304,50
1/2	x	2 1/2	S	50	333,00
1/2	x	3	S	50	420,00
1/2	x	3 1/4	S	50	454,50

Dimensions			PU	Pieces	€/100/Mat.
1/2	x	3 1/2	S	50	487,50
1/2	x	4	S	50	540,00
1/2	x	4 1/2	S	50	592,50
1/2	x	5	S	50	637,50
1/2	x	5 1/2	S	50	682,50
1/2	x	6	S	50	735,00
5/8	x	2 1/2	S	25	548,00
5/8	x	3	S	25	638,00
5/8	x	3 1/2	S	25	712,00
5/8	x	4	S	25	825,00
5/8	x	4 1/2	S	25	900,00
3/4	x	3	S	25	1012,00
3/4	x	3 1/2	S	25	1125,00
3/4	x	4	S	25	1275,00
3/4	x	4 1/2	S	25	1425,00
3/4	x	5	S	25	1600,00
7/8	x	3	S	25	1085,00
7/8	x	3 1/2	S	25	1225,00
7/8	x	4	S	10	1365,00
1	x	3 1/2	S	10	1325,00
1	x	4	S	10	1475,00
1	x	4 1/2	S	10	1650,00
1 1/4	x	4	S	1	2450,00
1 1/4	x	4 1/2	S	1	2800,00
1 1/4	x	5	S	1	3500,00
1 1/2	x	5	S	1	3750,00
1 1/2	x	5 1/2	S	1	4250,00
1 1/2	x	6	S	1	4750,00

ASME B	83931.105	RAZ 2200

18.2.1

Grade 8 (~10.9) UNF

Hex cap screws with shank, with UNF thread

Dimensions → TI-16
Mech. properties → TI-222
Tightening torque → TI-232
Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1 1/4	S	100	126,00
1/4	x	1 1/2	S	100	136,00
1/4	x	1 3/4	S	100	174,00
1/4	x	2	S	100	184,00
1/4	x	2 1/4	S	100	220,00
1/4	x	2 1/2	S	100	236,00
1/4	x	3	S	200	252,00
1/4	x	3 1/4	S	200	273,00
1/4	x	3 1/2	S	200	294,00
1/4	x	4	S	100	315,00
1/4	x	4 1/2	S	100	342,00
1/4	x	5	S	100	380,00
1/4	x	5 1/2	S	100	420,00
1/4	x	6	S	100	460,00
5/16	x	1 1/2	S	100	185,00
5/16	x	1 3/4	S	100	200,00
5/16	x	2	S	100	216,00
5/16	x	2 1/4	S	100	231,00
5/16	x	2 1/2	S	100	252,00
5/16	x	3	S	100	273,00
5/16	x	3 1/4	S	100	302,00
5/16	x	3 1/2	S	100	325,00
5/16	x	4	S	100	350,00
3/8	x	1 1/2	S	100	213,75
3/8	x	1 3/4	S	100	229,50
3/8	x	2	S	100	247,50
3/8	x	2 1/4	S	100	270,00
3/8	x	2 1/2	S	100	297,00

Dimensions			PU	Pieces	€/100/Mat.
3/8	x	3	S	100	344,25
3/8	x	3 1/4	S	100	371,25
3/8	x	3 1/2	S	100	396,00
3/8	x	4	S	100	438,75
7/16	x	1 3/4	S	100	333,00
7/16	x	2	S	100	348,75
7/16	x	2 1/4	S	100	387,00
7/16	x	2 1/2	S	50	423,00
7/16	x	3	S	50	535,50
7/16	x	3 1/4	S	50	580,50
7/16	x	3 1/2	S	50	598,50
1/2	x	2	S	50	414,00
1/2	x	2 1/4	S	50	456,75
1/2	x	2 1/2	S	50	499,50
1/2	x	3	S	50	630,00
1/2	x	3 1/4	S	50	681,75
1/2	x	3 1/2	S	50	731,25
1/2	x	4	S	50	810,00
5/8	x	2 1/2	S	25	822,00
5/8	x	3	S	25	956,00
5/8	x	3 1/2	S	25	1068,00
5/8	x	4	S	25	1238,00
5/8	x	4 1/2	S	25	1350,00
3/4	x	3 1/2	S	25	1685,00
3/4	x	4	S	25	1915,00
3/4	x	4 1/2	S	25	2135,00
3/4	x	5	S	25	2400,00
1	x	3 1/2	S	10	1850,00
1	x	4	S	10	2050,00
1	x	4 1/2	S	10	2300,00
1 1/4	x	4	S	1	2750,00
1 1/4	x	4 1/2	S	1	3250,00
1 1/4	x	5	S	1	4000,00

ASME B	83933.804	RAZ 2200

18.2.1

Grade 5 (~8.8) UNC

Hex cap screws with full thread, with UNC thread

Dimensions → TI-16
Mech. properties → TI-222
Tightening torque → TI-232
Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1/2	S	100	36,00
1/4	x	5/8	S	100	38,00
1/4	x	3/4	S	100	40,00
1/4	x	7/8	S	100	42,00
1/4	x	1	S	100	44,00
5/16	x	1/2	S	100	40,00
5/16	x	5/8	S	100	42,00
5/16	x	3/4	S	100	46,00
5/16	x	7/8	S	100	50,00
5/16	x	1	S	100	56,00
5/16	x	1 1/4	S	100	64,00
3/8	x	1/2	S	100	70,00
3/8	x	5/8	S	100	65,00
3/8	x	3/4	S	100	68,00
3/8	x	7/8	S	100	72,00
3/8	x	1	S	100	76,00
3/8	x	1 1/4	S	100	82,00
7/16	x	3/4	S	100	100,00
7/16	x	7/8	S	100	105,00
7/16	x	1	S	100	110,00
7/16	x	1 1/4	S	100	120,00
7/16	x	1 1/2	S	100	140,00
1/2	x	3/4	S	50	124,00

Dimensions			PU	Pieces	€/100/Mat.
1/2	x	7/8	S	50	128,00
1/2	x	1	S	50	130,00
1/2	x	1 1/4	S	50	136,00
1/2	x	1 1/2	S	50	150,00
1/2	x	1 3/4	S	50	175,00
5/8	x	1	S	25	200,00
5/8	x	1 1/4	S	25	225,00
5/8	x	1 1/2	S	25	250,00
5/8	x	1 3/4	S	25	290,00
5/8	x	2	S	25	340,00
3/4	x	1	S	25	300,00
3/4	x	1 1/4	S	25	350,00
3/4	x	1 1/2	S	25	400,00
3/4	x	1 3/4	S	25	475,00
3/4	x	2	S	25	550,00
3/4	x	2 1/2	S	25	625,00
7/8	x	5	S	10	1500,00
1	x	1 1/2	S	25	550,00
1	x	1 3/4	S	25	600,00
1	x	2	S	25	650,00
1	x	2 1/4	S	25	700,00
1	x	2 1/2	S	25	750,00
1	x	3	S	25	875,00
1 1/2	x	2 1/2	S	1	2200,00
1 1/2	x	4	S	1	3500,00

ASME B | 83933.814 | RAZ 2200

18.2.1 Grade 5 (~8.8) zinc plated UNC

Hex cap screws with full thread, with UNC thread

Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213
Corrosion protection → TI-217

∅ in inch x length in inch

1/4	x	1/2	S	100	47,00 ZP
1/4	x	5/8	S	100	49,50 ZP
1/4	x	3/4	S	100	53,00 ZP
1/4	x	7/8	S	100	55,00 ZP
1/4	x	1	S	100	58,00 ZP
5/16	x	1/2	S	100	53,00 ZP
5/16	x	5/8	S	100	55,00 ZP
5/16	x	3/4	S	100	60,00 ZP
5/16	x	7/8	S	100	66,00 ZP
5/16	x	1	S	100	73,00 ZP
5/16	x	1 1/4	S	100	84,00 ZP
3/8	x	1/2	S	100	92,00 ZP
3/8	x	5/8	S	100	85,00 ZP
3/8	x	3/4	S	100	89,00 ZP
3/8	x	7/8	S	100	94,00 ZP
3/8	x	1	S	100	99,00 ZP
3/8	x	1 1/4	S	100	107,00 ZP
1/2	x	3/4	S	50	162,00 ZP
1/2	x	7/8	S	50	167,00 ZP
1/2	x	1	S	50	170,00 ZP
1/2	x	1 1/4	S	50	177,00 ZP
1/2	x	1 1/2	S	50	196,00 ZP
1/2	x	1 3/4	S	50	228,00 ZP
5/8	x	1	S	25	260,00 ZP
5/8	x	1 1/4	S	25	295,00 ZP
5/8	x	1 1/2	S	25	325,00 ZP
5/8	x	1 3/4	S	25	380,00 ZP
5/8	x	2	S	25	445,00 ZP
3/4	x	1 1/2	S	25	530,00 ZP
3/4	x	1 3/4	S	25	620,00 ZP
3/4	x	2	S	25	720,00 ZP
3/4	x	2 1/4	S	25	760,00 ZP
3/4	x	2 1/2	S	25	820,00 ZP

ASME B | 83933.805 | RAZ 2200

18.2.1 Grade 5 (~8.8) UNF

Hex cap screws with full thread, with UNF thread

Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1/2	S	100	54,00
1/4	x	5/8	S	100	57,00
1/4	x	3/4	S	100	60,00
1/4	x	7/8	S	100	63,00
1/4	x	1	S	100	66,00
5/16	x	1/2	S	100	60,00
5/16	x	5/8	S	100	63,00
5/16	x	3/4	S	100	69,00
5/16	x	7/8	S	100	75,00
5/16	x	1	S	100	84,00
3/8	x	1/2	S	100	105,00
3/8	x	5/8	S	100	98,00
3/8	x	3/4	S	100	102,00
3/8	x	7/8	S	100	108,00
3/8	x	1	S	100	114,00
3/8	x	1 1/4	S	100	123,00
7/16	x	3/4	S	100	150,00
7/16	x	7/8	S	100	158,00
7/16	x	1	S	100	165,00
7/16	x	1 1/4	S	100	180,00
7/16	x	1 1/2	S	100	210,00
1/2	x	3/4	S	50	186,00
1/2	x	7/8	S	50	192,00
1/2	x	1	S	50	195,00
1/2	x	1 1/4	S	50	204,00
1/2	x	1 1/2	S	50	225,00
1/2	x	1 3/4	S	50	262,50
5/8	x	1	S	25	300,00
5/8	x	2	S	25	510,00
3/4	x	1	S	25	450,00
7/8	x	2	S	25	750,00

ASME B | 83933.104 | RAZ 2200

18.2.1 Grade 8 (~10.9) UNC

Hex cap screws with full thread, with UNC thread

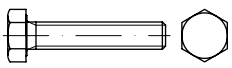
Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213

∅ in inch x length in inch

1/4	x	1/2	S	100	63,00
1/4	x	5/8	S	100	66,50
1/4	x	3/4	S	100	70,00
1/4	x	7/8	S	100	73,50
1/4	x	1	S	100	77,00
5/16	x	1/2	S	100	70,00
5/16	x	3/4	S	100	80,50
5/16	x	7/8	S	100	87,50
5/16	x	1	S	100	98,00
3/8	x	1/2	S	100	122,00
3/8	x	5/8	S	100	114,00
3/8	x	3/4	S	100	119,00
3/8	x	7/8	S	100	126,00
3/8	x	1	S	100	133,00
3/8	x	1 1/4	S	100	144,00
7/16	x	3/4	S	100	150,00
7/16	x	7/8	S	100	158,00
7/16	x	1	S	100	165,00
7/16	x	1 1/4	S	100	180,00
7/16	x	1 1/2	S	100	210,00
1/2	x	3/4	S	50	186,00
1/2	x	7/8	S	50	192,00
1/2	x	1	S	50	195,00
1/2	x	1 1/4	S	50	204,00
1/2	x	1 1/2	S	50	225,00
1/2	x	1 3/4	S	50	262,50
5/8	x	1	S	25	300,00
5/8	x	2	S	25	510,00
3/4	x	1	S	25	450,00
3/4	x	1 1/2	S	25	525,00
3/4	x	1 3/4	S	25	712,00
3/4	x	2	S	25	825,00
3/4	x	2 1/4	S	25	865,00
3/4	x	2 1/2	S	25	936,00
7/8	x	2	S	25	650,00
7/8	x	2 1/2	S	25	950,00
1	x	1 1/2	S	25	825,00
1	x	1 3/4	S	25	900,00
1	x	2	S	25	975,00
1	x	2 1/4	S	25	1050,00
1	x	2 1/2	S	25	1125,00
1	x	3	S	25	1312,00
1 1/2	x	3	S	1	3500,00
1 1/2	x	4	S	1	5000,00

ASME B | 83933.105 | RAZ 2200

18.2.1 Grade 8 (~10.9) UNF



Hex cap screws with full thread, with UNF thread

Dimensions → TI-16 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213

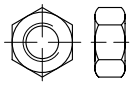
∅ in inch x length in inch

1/4	x	1/2	S	100	94,50
1/4	x	5/8	S	100	99,75
1/4	x	3/4	S	100	105,00
1/4	x	7/8	S	100	110,25
1/4	x	1	S	100	115,50
5/16	x	3/4	S	100	120,75
5/16	x	1	S	100	147,00
3/8	x	1/2	S	100	183,00
3/8	x	5/8	S	100	172,00
3/8	x	3/4	S	100	180,00
3/8	x	7/8	S	100	189,00
3/8	x	1	S	100	200,00
3/8	x	1 1/4	S	100	216,00

Dimensions			PU	Pieces	€/100/Mat.
7/16	x	3/4	S	100	225,00
7/16	x	7/8	S	100	237,00
7/16	x	1	S	100	248,00
7/16	x	1 1/4	S	100	270,00
7/16	x	1 1/2	S	100	315,00
1/2	x	3/4	S	50	279,00
1/2	x	7/8	S	50	288,00
1/2	x	1	S	50	292,00
1/2	x	1 1/4	S	50	306,00
1/2	x	1 1/2	S	50	338,00
1/2	x	1 3/4	S	50	395,00
5/8	x	1	S	25	450,00
5/8	x	1 1/2	S	25	562,50
5/8	x	2	S	25	765,00
3/4	x	1	S	25	675,00
3/4	x	1 1/2	S	25	900,00
3/4	x	2	S	25	1235,00
3/4	x	2 1/2	S	25	1400,00

ASME B | 83934.804 | RAZ 2200

18.2.2 Grade 5 (~8) UNC



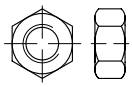
Hex nuts with UNC thread

Dimensions → TI-60 Thread pitch → TI-213
Mech. properties → TI-222

1/4	S	100	7,80
5/16	S	100	8,94
3/8	S	100	10,73
7/16	S	100	17,88
1/2	S	100	21,13
9/16	S	50	35,75
5/8	S	50	40,63
3/4	S	50	68,25
7/8	S	25	113,75
1	S	25	139,75
1 1/8	S	10	211,25
1 1/4	S	10	308,75
1 1/2	S	5	975,00
1 3/4	S	1	812,50

ASME B | 83934.814 | RAZ 2200

18.2.2 Grade 5 (~8) zinc plated UNC



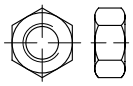
Hex nuts with UNC thread

Dimensions → TI-60 Corrosion protection → TI-217
Mech. properties → TI-222 Thread pitch → TI-213

1/4	S	100	10,20 ZP
5/16	S	100	11,70 ZP
3/8	S	100	14,00 ZP
7/16	S	100	23,30 ZP
1/2	S	100	27,50 ZP
5/8	S	50	53,00 ZP
3/4	S	50	89,00 ZP

ASME B | 83934.805 | RAZ 2200

18.2.2 Grade 5 (~8) UNF



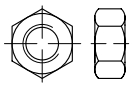
Hex nuts with UNF thread

Dimensions → TI-60 Thread pitch → TI-213
Mech. properties → TI-222

1/4	S	100	7,80
5/16	S	100	8,94
3/8	S	100	10,73
7/16	S	100	17,88
1/2	S	100	21,13
9/16	S	50	35,75
5/8	S	50	40,63
3/4	S	50	68,25
7/8	S	25	113,75
1	S	25	139,75
1 1/8	S	10	211,25
1 1/4	S	10	308,75
1 1/2	S	5	975,00
1 3/4	S	1	812,50

ASME B | 83934.104 | RAZ 2200

18.2.2 Grade 8 (~10) UNC



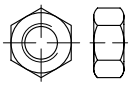
Hex nuts with UNC thread

Dimensions → TI-60 Thread pitch → TI-213
Mech. properties → TI-222

1/4 UNC	S	100	12,00
5/16	S	100	13,75
3/8	S	100	16,50
7/16	S	100	27,50
1/2	S	100	32,50
9/16	S	50	55,00
5/8	S	50	62,50
3/4	S	50	105,00
7/8	S	25	175,00
1	S	25	215,00
1 1/8	S	10	325,00
1 1/4	S	10	475,00
1 1/2	S	5	1500,00
1 3/4	S	1	1250,00

ASME B | 83934.105 | RAZ 2200

18.2.2 Grade 8 (~10) UNF



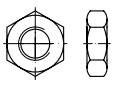
Hex nuts with UNF thread

Dimensions → TI-60 Thread pitch → TI-213
Mech. properties → TI-222

1/4	S	100	12,00
5/16	S	100	13,75
3/8	S	100	16,50
7/16	S	100	27,50
1/2	S	100	32,50
9/16	S	50	55,00
5/8	S	50	62,50
3/4	S	50	105,00
7/8	S	25	175,00
1	S	25	215,00
1 1/8	S	10	325,00
1 1/4	S	10	475,00
1 1/2	S	5	1500,00
1 3/4	S	1	1250,00

ASME B | 83936.804 | RAZ 2200

18.2.2 Grade 5 (~04) UNC



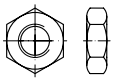
Hex jam nuts with UNC thread

Dimensions → TI-60 Thread pitch → TI-213
Mech. properties → TI-222

1/4	S	100	7,50
5/16	S	50	9,00
3/8	S	50	12,00
7/16	S	50	18,00
1/2	S	50	24,00
9/16	S	50	48,00
5/8	S	50	60,00
3/4	S	25	75,00

Dimensions	PU	Pieces	€/100/Mat.
ASME B	83936.805		RAZ 2200

18.2.2 Grade 5 (~04) UNF



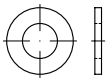
Hex jam nuts with UNF thread

Dimensions → TI-60 Thread pitch → TI-213
Mech. properties → TI-222

1/4	S	100	7,50
5/16	S	50	9,00
3/8	S	50	12,00
7/16	S	50	18,00
1/2	S	50	24,00
9/16	S	50	48,00
5/8	S	50	60,00
3/4	S	25	75,00

ANSI B	83125.004	RAZ 2200

18.22.1 Steel type A-N



Plain washers N = narrow/SAE

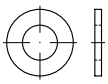
Dimensions → TI-85

For screw ∅ x outer ∅ in inch

1/4	x 0,625	S	500	10,00
5/16	x 0,688	S	500	15,00
3/8	x 0,812	S	500	20,00
7/16	x 0,922	S	200	35,00
1/2	x 1,062	S	200	42,00
9/16	x 1,156	S	200	48,00
5/8	x 1,312	S	100	54,00
3/4	x 1,469	S	100	60,00

ANSI B	83125.005	RAZ 2200

18.22.1 Steel type A-W



Plain washers W = wide

Dimensions → TI-85

For screw ∅ x outer ∅ in inch

1/4	x 0,734	S	500	12,50
5/16	x 0,875	S	500	17,50
3/8	x 1,000	S	500	25,00
7/16	x 1,250	S	200	40,00
1/2	x 1,375	S	200	48,00
9/16	x 1,469	S	200	54,00
5/8	x 1,750	S	100	60,00
3/4	x 2,000	S	100	72,00

ASME B	83912.204	RAZ 2200

18.3 ASTM A 574* UNC

Hexagon socket head cap screws with UNC thread

*~ property class 12.9

Dimensions → TI-13 Tightening torque → TI-232
Mech. properties → TI-222 Thread pitch → TI-213

∅ in inches/no. x length in inches

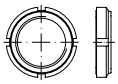
#2	x 1/4	S	200	62,00
#2	x 3/8	S	200	62,00
#2	x 1/2	S	200	63,00
#4	x 3/16	S	200	43,00
#4	x 1/4	S	200	38,00
#4	x 5/16	S	200	34,00
#4	x 3/8	S	200	35,50
#4	x 1/2	S	200	39,00
#4	x 5/8	S	200	43,00
#4	x 3/4	S	200	45,50
#4	x 7/8	S	200	49,50
#4	x 1	S	100	56,00
#4	x 1 1/4	S	100	58,00
#4	x 1 1/2	S	100	71,00
#4	x 2	S	100	159,00
#5	x 1/4	S	200	40,50
#5	x 5/16	S	200	40,50
#5	x 3/8	S	200	40,50
#5	x 1/2	S	200	42,00
#5	x 5/8	S	200	44,50
#5	x 3/4	S	200	45,50
#5	x 7/8	S	200	53,00
#5	x 1	S	100	63,00
#5	x 1 1/4	S	200	66,00
#6	x 1/4	S	200	42,00
#6	x 5/16	S	200	42,00
#6	x 3/8	S	200	42,00
#6	x 1/2	S	200	44,50
#6	x 5/8	S	200	45,50
#6	x 3/4	S	200	47,00
#6	x 7/8	S	200	49,50
#6	x 1	S	200	51,00
#6	x 1 1/4	S	100	55,00
#6	x 1 1/2	S	100	71,00
#6	x 2	S	100	101,00
#8	x 1/4	S	200	44,50
#8	x 3/8	S	200	44,50
#8	x 1/2	S	200	47,00
#8	x 5/8	S	200	49,50
#8	x 3/4	S	200	49,50
#8	x 7/8	S	100	53,00
#8	x 1	S	200	53,00
#8	x 1 1/4	S	200	59,00
#8	x 1 1/2	S	200	81,00
#8	x 1 3/4	S	100	89,00
#8	x 2	S	100	110,00
#8	x 2 1/2	S	100	310,00
#10	x 3/8	S	200	45,50
#10	x 1/2	S	200	42,00
#10	x 5/8	S	200	48,50
#10	x 3/4	S	200	53,00
#10	x 1	S	200	55,00
#10	x 1 1/4	S	200	71,00
#10	x 1 1/2	S	200	81,00
#10	x 2	S	200	116,00
1/4	x 1/2	S	100	43,00
1/4	x 5/8	S	100	51,00
1/4	x 3/4	S	100	53,00
1/4	x 7/8	S	100	62,00
1/4	x 1	S	100	63,00
1/4	x 1 1/4	S	100	72,00
1/4	x 1 1/2	S	100	86,00
1/4	x 1 3/4	S	100	95,00
1/4	x 2	S	100	114,00
1/4	x 2 1/4	S	100	133,00
1/4	x 2 1/2	S	100	151,00
1/4	x 2 3/4	S	100	163,00
1/4	x 3	S	100	177,00
5/16	x 3/8	S	100	124,00
5/16	x 1/2	S	100	111,00
5/16	x 5/8	S	100	110,00
5/16	x 3/4	S	100	98,00
5/16	x 7/8	S	100	123,00
5/16	x 1	S	100	128,00
5/16	x 1 1/4	S	100	131,00
5/16	x 1 1/2	S	100	160,00
5/16	x 1 3/4	S	100	201,00
5/16	x 2	S	100	222,00
5/16	x 2 1/2	S	100	275,00
5/16	x 2 3/4	S	100	315,00
5/16	x 3	S	100	340,00
5/16	x 3 1/2	S	100	380,00
5/16	x 4	S	100	430,00
5/16	x 4 1/2	S	100	600,00
5/16	x 5	S	50	660,00
3/8	x 3/4	S	100	157,00
3/8	x 7/8	S	100	164,00
3/8	x 1	S	100	166,00
3/8	x 1 1/4	S	100	186,00
3/8	x 1 1/2	S	100	211,00
3/8	x 1 3/4	S	100	241,00
3/8	x 2	S	100	270,00
3/8	x 2 1/4	S	100	325,00
3/8	x 2 1/2	S	100	325,00
3/8	x 3	S	100	385,00
1/2	x 1	S	50	275,00
1/2	x 1 1/4	S	50	300,00
1/2	x 1 1/2	S	50	325,00
1/2	x 1 3/4	S	50	365,00
1/2	x 2	S	50	390,00
1/2	x 2 1/4	S	50	445,00
1/2	x 2 1/2	S	50	510,00
1/2	x 2 3/4	S	50	550,00
1/2	x 3	S	50	560,00
1/2	x 3 1/4	S	50	680,00
1/2	x 3 1/2	S	50	700,00
1/2	x 4	S	50	720,00
5/8	x 1	S	25	570,00
5/8	x 1 1/4	S	25	580,00
5/8	x 1 1/2	S	25	580,00
5/8	x 1 3/4	S	25	640,00
5/8	x 2	S	25	650,00
5/8	x 2 1/4	S	25	740,00
5/8	x 2 1/2	S	25	810,00
5/8	x 2 3/4	S	25	990,00
5/8	x 3	S	25	1010,00
5/8	x 3 1/4	S	25	1130,00
5/8	x 3 1/2	S	25	1180,00
5/8	x 4	S	25	1220,00
5/8	x 4 1/2	S	25	1460,00
5/8	x 5	S	25	1630,00
5/8	x 6	S	25	1940,00
5/8	x 7	S	25	2900,00
7/8	x 2	S	10	1720,00
7/8	x 2 1/4	S	10	2250,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
7/8	x	2 1/2	S	10	2410,00
7/8	x	2 3/4	S	10	2550,00
7/8	x	3	S	10	2650,00
7/8	x	3 1/4	S	10	2850,00
7/8	x	3 1/2	S	10	3050,00
7/8	x	4	S	10	3450,00
7/8	x	4 1/2	S	10	3700,00
7/8	x	5	S	10	3950,00
7/8	x	6	S	10	4600,00
7/8	x	7	S	10	5600,00
1	x	2	S	10	2700,00
1	x	2 1/4	S	10	3100,00
1	x	2 1/2	S	10	3350,00
1	x	2 3/4	S	10	3450,00
1	x	3	S	10	3600,00
1	x	3 1/4	S	10	3850,00
1	x	3 1/2	S	10	3800,00
1	x	4	S	10	3900,00
1	x	4 1/2	S	10	4300,00
1	x	5	S	10	4700,00
1	x	5 1/2	S	10	5600,00
1	x	6	S	10	6000,00
1	x	7	S	10	6900,00
1	x	8	S	10	8200,00
1 1/4	x	2 1/2	S	10	7000,00
1 1/4	x	3	S	10	7500,00
1 1/4	x	3 1/2	S	10	7900,00
1 1/4	x	4	S	10	8400,00
1 1/4	x	4 1/2	S	10	9300,00
1 1/4	x	5	S	10	9800,00
1 1/4	x	5 1/2	S	10	10900,00
1 1/4	x	6	S	10	11700,00
1 1/4	x	7	S	10	14200,00
1 1/4	x	8	S	10	15800,00
1 1/2	x	2 1/2	S	10	11700,00
1 1/2	x	3	S	10	13100,00
1 1/2	x	3 1/2	S	10	14500,00
1 1/2	x	4	S	10	15600,00
1 1/2	x	4 1/2	S	5	16000,00
1 1/2	x	5	S	5	17600,00
1 1/2	x	5 1/2	S	5	19000,00
1 1/2	x	6	S	5	20200,00
1 1/2	x	7	S	5	21700,00
1 1/2	x	8	S	5	25600,00

Article 88081.010 RAZ 810

88081 14 H zinc plated GUK



Locknuts with non-metallic insert

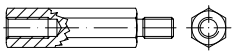
Dimensions → TI-74 Corrosion protection → TI-217
Mech. properties → TI-221

Type no./nominal size

GUK 1/M 12	x	1	S	10	350,00 ZP
GUK 2/M 15	x	1	S	10	380,00 ZP
GUK 3/M 17	x	1	S	10	425,00 ZP
GUK 4/M 20	x	1	S	10	495,00 ZP
GUK 5/M 25	x	1,5	S	10	630,00 ZP
GUK 6/M 30	x	1,5	S	10	780,00 ZP
GUK 7/M 35	x	1,5	S	10	930,00 ZP
GUK 8/M 40	x	1,5	S	10	1190,00 ZP
GUK 9/M 45	x	1,5	S	1	1440,00 ZP
GUK10/M 50	x	1,5	S	1	1680,00 ZP
GUK11/M 55	x	2	S	1	2750,00 ZP
GUK12/M 60	x	2	S	1	2950,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88086.010			RAZ 810

88086 Steel zinc plated



Spacers with thread, with hexagon, with inside and outside thread

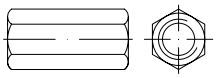
Dimensions → TI-35 Corrosion protection → TI-217

In/out thread M x hex. length/thread length

M 3	x	5 / 6	S	100	46,50 ZP
M 3	x	6 / 6	S	100	47,00 ZP
M 3	x	8 / 6	S	100	48,00 ZP
M 3	x	10/ 6	S	100	49,50 ZP
M 3	x	12/ 6	S	100	53,00 ZP
M 3	x	14/ 6	S	100	54,00 ZP
M 3	x	16/ 6	S	100	56,00 ZP
M 3	x	20/ 6	S	100	61,00 ZP
M 3	x	25/ 6	S	100	61,00 ZP
M 3	x	30/ 6	S	100	67,00 ZP
M 3	x	35/ 6	S	100	69,00 ZP
M 3	x	40/ 6	S	100	73,00 ZP
M 3	x	45/ 6	S	100	83,00 ZP
M 3	x	50/ 6	S	100	92,00 ZP
M 3	x	60/ 6	S	100	110,00 ZP
M 4	x	5 / 8	S	100	55,00 ZP
M 4	x	6 / 8	S	100	57,00 ZP
M 4	x	8 / 8	S	100	60,00 ZP
M 4	x	10/ 8	S	100	62,00 ZP
M 4	x	12/ 8	S	100	64,00 ZP
M 4	x	14/ 8	S	100	67,00 ZP
M 4	x	16/ 8	S	100	71,00 ZP
M 4	x	18/ 8	S	100	76,00 ZP
M 4	x	20/ 8	S	100	78,00 ZP
M 4	x	25/ 8	S	100	83,00 ZP
M 4	x	30/ 8	S	100	87,00 ZP
M 4	x	35/ 8	S	100	92,00 ZP
M 4	x	40/ 8	S	100	97,00 ZP
M 4	x	45/ 8	S	100	109,00 ZP
M 4	x	50/ 8	S	100	112,00 ZP
M 4	x	55/ 8	S	100	126,00 ZP
M 4	x	60/ 8	S	100	132,00 ZP
M 5	x	8 / 10	S	100	76,00 ZP
M 5	x	10/ 10	S	100	80,00 ZP
M 5	x	12/ 10	S	100	85,00 ZP
M 5	x	14/ 10	S	100	87,00 ZP
M 5	x	16/ 10	S	100	92,00 ZP
M 5	x	18/ 10	S	100	94,00 ZP
M 5	x	20/ 10	S	100	97,00 ZP
M 5	x	25/ 10	S	100	109,00 ZP
M 5	x	30/ 10	S	100	119,00 ZP
M 5	x	35/ 10	S	100	129,00 ZP
M 5	x	40/ 10	S	100	138,00 ZP
M 5	x	45/ 10	S	100	145,00 ZP
M 5	x	50/ 10	S	100	152,00 ZP
M 5	x	55/ 10	S	100	167,00 ZP
M 5	x	60/ 10	S	100	176,00 ZP
M 5	x	70/ 10	S	100	200,00 ZP
M 5	x	80/ 10	S	100	225,00 ZP
M 6	x	10/ 12	S	100	150,00 ZP
M 6	x	12/ 12	S	100	152,00 ZP
M 6	x	14/ 12	S	100	154,00 ZP
M 6	x	16/ 12	S	100	159,00 ZP
M 6	x	18/ 12	S	100	160,00 ZP
M 6	x	20/ 12	S	100	166,00 ZP
M 6	x	25/ 12	S	100	169,00 ZP
M 6	x	30/ 12	S	100	179,00 ZP
M 6	x	35/ 12	S	100	195,00 ZP
M 6	x	40/ 12	S	100	203,00 ZP
M 6	x	45/ 12	S	100	214,00 ZP
M 6	x	50/ 12	S	100	224,00 ZP
M 6	x	55/ 12	S	100	234,00 ZP
M 6	x	60/ 12	S	100	246,00 ZP
M 6	x	70/ 12	S	100	280,00 ZP
M 6	x	80/ 12	S	100	310,00 ZP
M 6	x	100/ 12	S	100	395,00 ZP

Article 88087.010 RAZ 810

88087 Steel zinc plated



Hexagon couplings with continuous internal thread

product grade C (g),
Thread screw-in depth: group N = max. 1.5d

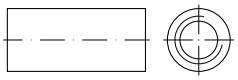
Dimensions → TI-64 Corrosion protection → TI-217

Internal thread x length/wrench sizes (SW)

M 6	x	20 SW10	S	100	70,00 ZP
M 6	x	25 SW10	S	100	63,00 ZP
M 6	x	30 SW10	S	100	80,00 ZP
M 6	x	40 SW10	S	100	95,00 ZP
M 8	x	30 SW13	S	100	114,00 ZP
M 10	x	30 SW17	S	100	167,00 ZP
M 10	x	40 SW13	S	100	175,00 ZP
M 12	x	40 SW19	S	50	295,00 ZP
M 12	x	50 SW19	S	50	320,00 ZP
M 16	x	50 SW24	S	25	520,00 ZP
M 20	x	50 SW30	S	25	780,00 ZP
M 24	x	50 SW36	S	10	1020,00 ZP
M 30	x	60 SW46	S	10	2220,00 ZP
M 30	x	90 SW46	S	5	3500,00 ZP

Article 88088.010 RAZ 810

88088 Steel zinc plated



Round couplings with continuous internal thread

Product grade C (g),
Thread screw-in depth: group N = max. 1.5d

Dimensions → TI-75 Corrosion protection → TI-217

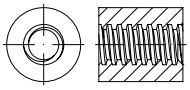
Internal thread x length x outside ∅

M 6	x	20	x	10	S	100	39,00 ZP
M 6	x	25	x	10	S	100	42,50 ZP
M 6	x	30	x	10	S	100	49,50 ZP
M 6	x	40	x	10	S	100	69,00 ZP
M 8	x	20	x	11	S	100	42,50 ZP
M 8	x	25	x	11	S	100	46,00 ZP
M 8	x	30	x	11	S	100	53,00 ZP
M 8	x	40	x	11	S	100	76,00 ZP
M 8	x	50	x	11	S	100	126,00 ZP
M 10	x	25	x	13	S	100	65,00 ZP
M 10	x	30	x	13	S	100	72,00 ZP
M 10	x	40	x	13	S	50	99,00 ZP
M 10	x	50	x	13	S	50	127,00 ZP
M 12	x	30	x	15	S	50	136,00 ZP

Dimensions					PU	Pieces	€/100/Mat.
M 12	x	40	x	15	S	50	173,00 ZP
M 12	x	50	x	15	S	50	250,00 ZP
M 16	x	40	x	20	S	25	280,00 ZP
M 20	x	50	x	25	S	25	480,00 ZP

Article 88089.004 RAZ 811

88089 Steel



Round nuts with trapezoidal thread, height = 1,5 d

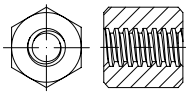
Threaded rods TR ➔ DIN 975 trapezoidal

Dimensions ➔ TI-75

Thread x pitch x outside ∅				
TR 12 x 3 -22	S	1	730,00
TR 14 x 4 -36	S	1	1070,00
TR 16 x 4 -36	S	1	1180,00
TR 18 x 4 -36	S	1	2420,00
TR 20 x 4 -36	S	1	1370,00
TR 22 x 5 -50	S	1	1980,00
TR 24 x 5 -50	S	1	1980,00
TR 26 x 5 -50	S	1	2030,00
TR 28 x 5 -60	S	1	2600,00
TR 30 x 6 -60	S	1	2800,00
TR 32 x 6 -60	S	1	4350,00
TR 36 x 6 -75	S	1	5500,00
TR 40 x 7 -75	S	1	5900,00
TR 44 x 7 -75	S	1	8600,00

Article 88090.004 RAZ 811

88090 Steel



Hexagon nuts with trapezoidal thread, height = 1,5 d

Threaded rods TR ➔ DIN 975 = trapezoidal

Dimensions ➔ TI-64

Thread x pitch x wrench size (SW) x height				
TR16 x 4-SW27 x 24	S	1	1000,00
TR20 x 4-SW30 x 30	S	1	1070,00
TR24 x 5-SW36 x 36	S	1	1400,00
TR30 x 6-SW46 x 45	S	1	3750,00

Dimensions					PU	Pieces	€/100/Mat.
3	x	12/10-T10			S	1000	1,75 ZP
3	x	12/10-T10			K	200	2,05 ZP
3	x	16/13-T10			S	1000	2,00 ZP
3	x	16/13-T10			K	200	2,15 ZP
3	x	20/16-T10			S	1000	2,10 ZP
3	x	20/16-T10			K	200	2,30 ZP
3	x	25/21-T10			S	1000	2,50 ZP
3	x	25/21-T10			K	200	2,20 ZP
3	x	30/26-T10			S	1000	2,95 ZP
3	x	30/26-T10			K	200	3,35 ZP
3,5	x	16/12-T15			S	1000	2,20 ZP
3,5	x	16/12-T15			S	1000	2,20 ZP
3,5	x	16/12-T15			K	200	2,50 ZP
3,5	x	20/15-T15			S	1000	2,55 ZP
3,5	x	20/15-T15			K	200	2,85 ZP
3,5	x	25/20-T15			S	1000	2,80 ZP
3,5	x	25/20-T15			K	200	3,10 ZP
3,5	x	30/25-T15			S	1000	3,00 ZP
3,5	x	30/25-T15			K	200	3,45 ZP
3,5	x	35/30-T15			S	1000	3,75 ZP
3,5	x	35/30-T15			K	200	4,15 ZP
3,5	x	40/35-T15			S	1000	4,30 ZP
3,5	x	40/35-T15			K	200	4,80 ZP
3,5	x	45/40-T15			S	1000	6,50 ZP
3,5	x	45/40-T15			K	200	7,40 ZP
4	x	15/11-T20			S	1000	2,75 ZP
4	x	16/12-T20			S	1000	2,70 ZP
4	x	20/15-T20			S	1000	2,95 ZP
4	x	25/20-T20			S	1000	3,00 ZP
4	x	25/20-T20			K	200	3,75 ZP
4	x	30/25-T20			S	1000	3,55 ZP
4	x	30/25-T20			K	200	4,00 ZP
4	x	35/30-T20			S	1000	4,10 ZP
4	x	35/30-T20			K	200	4,70 ZP
4	x	40/35-T20			S	1000	5,00 ZP
4	x	40/35-T20			K	200	5,55 ZP
4	x	45/40-T20			S	500	5,55 ZP
4	x	45/40-T20			K	200	6,30 ZP
4	x	50/45-T20			S	500	6,20 ZP
4	x	50/45-T20			K	200	6,75 ZP
4,5	x	16/13-T20			S	1000	3,55 ZP
4,5	x	20/16-T20			S	1000	3,90 ZP
4,5	x	25/21-T20			S	1000	4,35 ZP
4,5	x	30/25-T20			S	1000	4,70 ZP
4,5	x	35/29-T20			S	500	5,40 ZP
4,5	x	35/29-T20			K	200	6,20 ZP
4,5	x	40/34-T20			S	500	5,95 ZP
4,5	x	40/34-T20			K	200	6,60 ZP
4,5	x	45/39-T20			S	500	7,65 ZP

Article 88091.010 RAZ 816

88091 Steel zinc plated SPAX CSK-T

SPAX universal screws with SPAX 4CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus

case hardened, slide-coated

Bits ➔ article 88663, 88654,
Caps ➔ article 88006

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx. - bit size

Dimensions					PU	Pieces	€/100/Mat.
4,5	x	45/39-T20			K	200	8,60 ZP
4,5	x	50/44-T20			S	500	7,90 ZP
4,5	x	50/44-T20			K	200	8,80 ZP
4,5	x	60/54-T20			S	500	10,05 ZP
4,5	x	60/54-T20			K	100	11,20 ZP
4,5	x	70/59-T20			S	500	16,35 ZP
4,5	x	70/59-T20			K	100	18,55 ZP
5	x	20/16-T20			S	1000	5,25 ZP
5	x	25/21-T20			S	1000	5,30 ZP
5	x	30/20-T20			S	500	6,25 ZP
5	x	35/30-T20			S	500	7,05 ZP
5	x	40/34-T20			S	500	7,65 ZP
5	x	40/34-T20			K	200	8,65 ZP
5	x	45/39-T20			S	500	8,65 ZP
5	x	45/39-T20			K	200	9,70 ZP
5	x	50/44-T20			S	500	9,10 ZP
5	x	50/44-T20			K	200	10,15 ZP
5	x	60/54-T20			S	500	10,95 ZP
5	x	60/54-T20			K	100	12,35 ZP
5	x	70/60-T20			S	200	15,65 ZP
5	x	70/60-T20			K	100	17,20 ZP
5	x	80/60-T20			S	200	18,55 ZP
5	x	80/60-T20			K	100	20,05 ZP
6	x	50/43-T30			S	200	13,30 ZP
6	x	50/43-T30			K	100	14,75 ZP
6	x	60/53-T30			S	200	15,65 ZP
6	x	60/53-T30			K	100	17,80 ZP
6	x	70/60-T30			S	200	19,35 ZP
6	x	70/60-T30			K	100	21,50 ZP
6	x	80/60-T30			S	200	21,50 ZP
6	x	80/60-T30			K	100	23,75 ZP

Article 88091.019 RAZ 816

88091 Steel zinc plated SPAX CSK-T-P

SPAX universal screws with SPAX 4CUT point, CSK = SPAX MULTI counters. Head, T = T-STAR plus, P = partially threaded

Case hardened, slide-coated
from 6 x 160 with 4CUT cutter

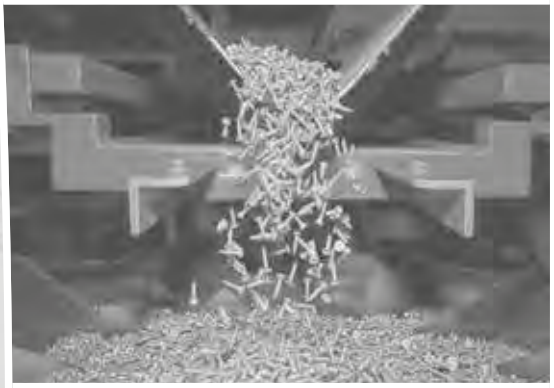
Bits ➔ article 88663, 88654,
Caps ➔ article 88006

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx. - bit size

3	x	30/18-T10			S	1000	2,95 ZP
3	x	35/23-T10			S	1000	3,45 ZP
3	x	40/23-T10			S	1000	4,65 ZP
3,5	x	30/17-T15			S	1000	3,00 ZP
3,5	x	30/17-T15			K	200	3,45 ZP
3,5	x	35/22-T15			S	1000	3,75 ZP
3,5	x	35/22-T15			K	200	4,15 ZP
3,5	x	40/22-T15			S	1000	4,30 ZP
3,5	x	40/22-T15			K	200	4,80 ZP
3,5	x	45/30-T15			S	1000	6,50 ZP
3,5	x	45/30-T15			K	200	7,40 ZP
3,5	x	50/32-T15			S	500	7,05 ZP
3,5	x	50/32-T15			K	200	7,95 ZP
4	x	30/17-T20			S	1000	3,55 ZP
4	x	30/17-T20			K	200	4,00 ZP



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Guaranteed by us, certified by TÜV.

Our SPAX brand product is globally available in the typical green packaging on which the origin can immediately be found on the address label: Ennepetal – the company headquarters and production location. And this is exactly where the TÜV certification “Made in Germany” for SPAX branded screws was conducted in the form of an elaborate testing procedure.

SPAX International is and remains connected to its location in Germany. And in doing precisely that it is guaranteeing its customers a high level of safety, quality and continuity with the SPAX brand.

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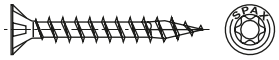
TEL + 49-(0) 23 33-799-0 · FAX + 49-(0) 23 33-799-199
info@spax.com · www.spax.com

Dimensions	PU	Pieces	€/100/Mat.
4 x 35/22-T20	S	1000	4,10 ZP
4 x 35/22-T20	K	200	4,70 ZP
4 x 40/22-T20	S	1000	5,00 ZP
4 x 40/22-T20	K	200	5,55 ZP
4 x 45/30-T20	S	500	5,55 ZP
4 x 45/30-T20	K	200	6,30 ZP
4 x 50/32-T20	S	500	6,20 ZP
4 x 50/32-T20	K	200	6,75 ZP
4 x 60/35-T20	S	500	10,25 ZP
4 x 60/35-T20	K	100	11,50 ZP
4 x 70/42-T20	S	500	16,35 ZP
4 x 70/42-T20	K	100	18,55 ZP
4 x 80/37-T20	S	200	18,55 ZP
4,5 x 30/17-T20	S	1000	5,00 ZP
4,5 x 30/17-T20	K	200	5,45 ZP
4,5 x 35/24-T20	S	500	5,40 ZP
4,5 x 35/24-T20	K	200	6,20 ZP
4,5 x 40/24-T20	S	500	5,95 ZP
4,5 x 40/24-T20	K	200	6,60 ZP
4,5 x 45/29-T20	S	500	7,65 ZP
4,5 x 45/29-T20	K	200	8,60 ZP
4,5 x 50/32-T20	S	500	7,90 ZP
4,5 x 50/32-T20	K	200	8,80 ZP
4,5 x 60/37-T20	S	500	10,05 ZP
4,5 x 60/37-T20	K	100	11,20 ZP
4,5 x 70/42-T20	S	500	16,35 ZP
4,5 x 70/42-T20	K	100	18,55 ZP
4,5 x 80/49-T20	S	200	18,55 ZP
4,5 x 80/49-T20	K	100	20,75 ZP
5 x 30/17-T20	S	500	6,25 ZP
5 x 30/17-T20	K	200	6,85 ZP
5 x 35/24-T20	S	500	7,05 ZP
5 x 35/24-T20	K	200	7,95 ZP
5 x 40/27-T20	S	500	7,65 ZP
5 x 40/27-T20	K	200	8,65 ZP
5 x 45/29-T20	S	500	8,65 ZP
5 x 45/29-T20	K	200	9,70 ZP
5 x 50/32-T20	S	500	9,10 ZP
5 x 50/32-T20	K	200	10,15 ZP
5 x 55/36-T20	S	500	10,25 ZP
5 x 60/36-T20	S	500	10,95 ZP
5 x 60/36-T20	K	100	12,35 ZP
5 x 70/41-T20	S	200	15,65 ZP
5 x 70/41-T20	K	100	17,20 ZP
5 x 80/46-T20	S	200	18,55 ZP
5 x 80/46-T20	K	100	20,05 ZP
5 x 90/60-T20	S	200	23,75 ZP
5 x 90/60-T20	K	100	26,50 ZP
5 x 100/60-T20	S	200	26,50 ZP
5 x 100/60-T20	K	100	29,50 ZP
5 x 120/69-T20	S	200	51,00 ZP
6 x 40/23-T30	S	500	11,70 ZP
6 x 50/32-T30	S	200	13,30 ZP
6 x 50/32-T30	K	100	14,75 ZP
6 x 60/36-T30	S	200	15,65 ZP
6 x 60/36-T30	K	100	17,80 ZP
6 x 70/41-T30	S	200	19,35 ZP
6 x 70/41-T30	K	100	21,50 ZP
6 x 80/46-T30	S	200	21,50 ZP
6 x 80/46-T30	K	100	23,75 ZP
6 x 90/60-T30	S	200	24,50 ZP
6 x 90/60-T30	K	100	27,50 ZP
6 x 100/60-T30	S	100	28,00 ZP
6 x 110/68-T30	S	100	37,50 ZP
6 x 120/68-T30	S	100	43,00 ZP
6 x 130/68-T30	S	100	47,50 ZP
6 x 140/68-T30	S	100	55,00 ZP
6 x 150/68-T30	S	100	63,00 ZP
6 x 160/68-T30	S	100	74,00 ZP
6 x 180/68-T30	S	100	100,00 ZP
6 x 200/68-T30	S	100	122,00 ZP
6 x 220/68-T30	S	100	155,00 ZP
6 x 240/68-T30	S	100	164,00 ZP
6 x 260/68-T30	S	100	178,00 ZP
6 x 280/68-T30	S	100	190,00 ZP
6 x 300/68-T30	S	100	213,00 ZP

Article	88091.060	RAZ 816
88091	**Steel zinc plated yellow**	**SPAX CSK-T**



SPAX universal screws with SPAX 4CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus

Case hardened, slide-coated from 6 x 160 with 4CUT cutter

Bits ➔ article 88663, 88654,
Caps ➔ article 88006

Corrosion protection ➔ TI-217

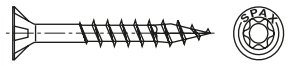
Approvals: Z-9.1-235, ETA-12/0114 from ∅8 Z-9.1-449, Z-9.1-511, ETA-12/0114

ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

3	x	12/ 10-T10	S	1000	1,75 YZP
3	x	12/ 10-T10	K	200	2,05 YZP
3	x	13/ 10-T10	S	1000	1,75 YZP
3	x	15/ 12-T10	S	1000	1,80 YZP
3	x	16/ 13-T10	S	1000	2,00 YZP
3	x	16/ 13-T10	K	200	2,15 YZP
3	x	17/ 13-T10	S	1000	2,00 YZP
3	x	20/ 16-T10	S	1000	2,10 YZP
3	x	20/ 16-T10	K	200	2,30 YZP
3	x	25/ 21-T10	S	1000	2,20 YZP
3	x	25/ 21-T10	K	200	2,50 YZP
3,5	x	15/ 11-T15	S	1000	2,20 YZP
3,5	x	16/ 12-T15	S	1000	2,20 YZP
3,5	x	16/ 12-T15	K	200	2,50 YZP
3,5	x	20/ 15-T15	S	1000	2,55 YZP
3,5	x	20/ 15-T15	K	200	2,85 YZP
3,5	x	25/ 20-T15	S	1000	2,80 YZP
3,5	x	25/ 20-T15	K	200	3,10 YZP
4	x	15/ 10-T20	S	1000	2,75 YZP
4	x	16/ 10-T20	S	1000	2,70 YZP
4	x	20/ 15-T20	S	1000	2,95 YZP
4	x	20/ 15-T20	K	200	3,20 YZP
4	x	25/ 20-T20	S	1000	3,45 YZP
4	x	25/ 20-T20	K	200	3,75 YZP
8	x	220/ 80-T40	S	50	182,00 YZP
8	x	240/ 80-T40	S	50	194,00 YZP
8	x	260/ 80-T40	S	50	210,00 YZP
8	x	280/ 80-T40	S	50	221,00 YZP
8	x	300/ 80-T40	S	50	249,00 YZP
8	x	320/ 80-T40	S	50	262,00 YZP
8	x	340/ 80-T40	S	50	286,00 YZP
8	x	360/ 80-T40	S	50	309,00 YZP
8	x	380/ 80-T40	S	50	324,00 YZP
8	x	400/ 80-T40	S	50	340,00 YZP
8	x	450/ 80-T40	S	50	521,00 YZP
10	x	80/ 50-T50	S	50	67,00 YZP
10	x	100/ 60-T50	S	50	74,00 YZP
10	x	120/ 70-T50	S	50	84,00 YZP
10	x	140/ 70-T50	S	50	96,00 YZP
10	x	160/ 80-T50	S	50	111,00 YZP
10	x	180/ 80-T50	S	50	124,00 YZP
10	x	200/ 80-T50	S	50	164,00 YZP
10	x	220/ 80-T50	S	50	210,00 YZP
10	x	240/ 80-T50	S	50	229,00 YZP
10	x	260/ 80-T50	S	50	277,00 YZP
10	x	280/ 80-T50	S	50	306,00 YZP
10	x	300/ 80-T50	S	50	325,00 YZP
10	x	320/ 80-T50	S	50	344,00 YZP
10	x	340/ 80-T50	S	50	373,00 YZP
10	x	360/ 80-T50	S	50	401,00 YZP
10	x	400/ 80-T50	S	50	457,00 YZP
10	x	450/ 80-T50	S	50	601,00 YZP
12	x	100/ 60-T50	S	25	87,00 YZP
12	x	120/ 80-T50	S	25	107,00 YZP
12	x	140/ 80-T50	S	25	117,00 YZP
12	x	160/100-T50	S	25	135,00 YZP
12	x	180/100-T50	S	25	155,00 YZP
12	x	200/100-T50	S	25	193,00 YZP
12	x	220/100-T50	S	25	251,00 YZP
12	x	240/100-T50	S	25	279,00 YZP
12	x	260/100-T50	S	25	336,00 YZP
12	x	280/100-T50	S	25	367,00 YZP
12	x	300/100-T50	S	25	397,00 YZP
12	x	350/100-T50	S	25	493,00 YZP
12	x	400/100-T50	S	25	559,00 YZP
12	x	450/100-T50	S	25	724,00 YZP
12	x	500/100-T50	S	25	952,00 YZP
12	x	550/100-T50	S	20	1099,00 YZP
12	x	600/100-T50	S	20	1214,00 YZP

Article	88091.069	RAZ 816
88091	**Steel zinc plated yellow**	**SPAX CSK-T-P**



SPAX universal screws with SPAX 4CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus, P = partially threaded

Case hardened, slide-coated from 6x160 with 4CUT cutter

bits ➔ article 88663, 88654,
caps ➔ article 88006

Corrosion protection ➔ TI-217

approvals: Z-9.1-235, ETA-12/0114 from ∅8 Z-9.1-449, Z-9.1-511, ETA-12/0114

ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

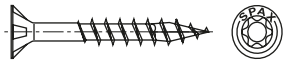
3	x	30/ 18-T10	S	1000	2,60 YZP
3	x	30/ 18-T10	K	200	3,35 YZP
3	x	35/ 23-T10	S	1000	3,45 YZP
3	x	35/ 23-T10	K	200	3,75 YZP
3	x	40/ 23-T10	S	1000	4,05 YZP
3	x	40/ 23-T10	K	200	5,15 YZP
3,5	x	30/ 18-T15	S	1000	2,65 YZP
3,5	x	30/ 17-T15	K	200	3,45 YZP
3,5	x	35/ 23-T15	S	1000	3,30 YZP
3,5	x	35/ 22-T15	K	200	4,15 YZP
3,5	x	40/ 23-T15	S	1000	3,75 YZP
3,5	x	40/ 22-T15	K	200	4,80 YZP
3,5	x	45/ 30-T15	S	1000	5,70 YZP
3,5	x	45/ 30-T15	K	200	7,40 YZP
3,5	x	50/ 32-T15	S	500	6,15 YZP
3,5	x	50/ 32-T15	K	200	7,95 YZP
4	x	30/ 18-T20	S	1000	3,10 YZP
4	x	30/ 17-T20	K	200	4,00 YZP
4	x	35/ 23-T20	S	1000	3,60 YZP
4	x	35/ 22-T20	K	200	4,70 YZP
4	x	40/ 23-T20	S	1000	4,35 YZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
4	x	40/ 22-T20	K	200	5,55 YZP
4	x	45/ 30-T20	S	500	4,85 YZP
4	x	45/ 30-T20	K	200	6,30 YZP
4	x	50/ 32-T20	S	500	5,40 YZP
4	x	50/ 32-T20	K	200	6,75 YZP
4	x	60/ 35-T20	S	500	8,95 YZP
4	x	60/ 35-T20	K	100	11,50 YZP
4	x	70/ 37-T20	S	500	14,30 YZP
4	x	70/ 42-T20	K	100	18,55 YZP
4	x	50/ 37-T20	S	200	16,25 YZP
4,5	x	30/ 17-T20	S	1000	4,35 YZP
4,5	x	30/ 17-T20	K	200	5,45 YZP
4,5	x	35/ 25-T20	S	500	4,70 YZP
4,5	x	35/ 24-T20	K	200	6,20 YZP
4,5	x	40/ 25-T20	S	500	5,20 YZP
4,5	x	40/ 24-T20	K	200	6,60 YZP
4,5	x	45 /30-T20	S	500	7,65 YZP
4,5	x	45/ 29-T20	K	200	8,60 YZP
4,5	x	50/ 32-T20	S	500	6,90 YZP
4,5	x	50/ 32-T20	K	200	8,80 YZP
4,5	x	60/ 37-T20	S	500	8,80 YZP
4,5	x	60/ 37-T20	K	100	11,20 YZP
4,5	x	70 /42-T20	S	500	16,35 YZP
4,5	x	70/ 42-T20	K	100	18,55 YZP
4,5	x	80/ 47-T20	S	200	16,25 YZP
4,5	x	80/ 49-T20	K	100	20,75 YZP
5	x	30/ 17-T20	S	500	5,45 YZP
5	x	30/ 17-T20	K	200	6,85 YZP
5	x	35/ 25-T20	S	500	6,15 YZP
5	x	35/ 24-T20	K	200	7,95 YZP
5	x	40/ 27-T20	S	500	6,70 YZP
5	x	40/ 27-T20	K	200	8,65 YZP
5	x	45/ 30-T20	S	500	7,55 YZP
5	x	45/ 29-T20	K	200	9,70 YZP
5	x	50/ 32-T20	S	500	7,95 YZP
5	x	50/ 32-T20	K	200	10,15 YZP
5	x	55/ 37-T20	S	500	8,95 YZP
5	x	60/ 37-T20	S	500	9,60 YZP
5	x	60/ 36-T20	K	100	12,35 YZP
5	x	70/ 41-T20	S	200	13,70 YZP
5	x	70/ 41-T20	K	100	17,20 YZP
5	x	80/ 46-T20	S	200	18,55 YZP
5	x	80/ 46-T20	K	100	20,05 YZP
5	x	90/ 61-T20	S	200	20,80 YZP
5	x	90/ 60-T20	K	100	26,50 YZP
5	x	100/ 61-T20	S	200	23,40 YZP
5	x	100/ 60-T20	K	100	29,50 YZP
5	x	120/ 69-T20	S	200	44,50 YZP
6	x	40/ 24-T30	S	500	10,25 YZP
6	x	50 /32-T30	S	200	11,65 YZP
6	x	50/ 32-T30	K	100	14,75 YZP
6	x	60/ 37-T30	S	200	13,70 YZP
6	x	60/ 36-T30	K	100	17,80 YZP
6	x	70/ 41-T30	S	200	16,95 YZP
6	x	70/ 41-T30	K	100	21,50 YZP
6	x	80/ 46-T30	S	200	18,85 YZP
6	x	80/ 46-T30	K	100	23,75 YZP
6	x	90/ 61-T30	S	200	21,45 YZP
6	x	90/ 60-T30	K	100	27,50 YZP
6	x	100/ 61-T30	S	100	24,70 YZP
6	x	110/ 68-T30	S	100	33,00 YZP
6	x	120/ 68-T30	S	100	37,50 YZP
6	x	130/ 68-T30	S	100	41,50 YZP
6	x	140/ 68-T30	S	100	48,00 YZP
6	x	150/ 68-T30	S	100	55,00 YZP
6	x	160/ 68-T30	S	100	65,00 YZP
6	x	180/ 68-T30	S	100	88,00 YZP
6	x	200/ 68-T30	S	100	107,00 YZP
6	x	220/ 68-T30	S	100	169,00 YZP
6	x	240/ 68-T30	S	100	176,00 YZP
6	x	260/ 68-T30	S	100	181,00 YZP
6	x	280/ 68-T30	S	100	194,00 YZP
6	x	300/ 68-T30	S	100	201,00 YZP
8	x	80/ 47-T40	S	50	43,50 YZP
8	x	100/ 57-T40	S	50	52,00 YZP
8	x	120/ 70-T40	S	50	67,00 YZP
8	x	140/ 80-T40	S	50	78,00 YZP
8	x	160/ 80-T40	S	50	104,00 YZP
8	x	180/ 80-T40	S	50	103,00 YZP
8	x	200/ 80-T40	S	50	123,00 YZP

Article	88091.039	RAZ 816

88091 Steel WIROX SPAX CSK-T-P



SPAX universal screws with SPAX 4CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus, P = partially threaded

Case hardened, slide-coated, from 8x160 with 4CUT cutter

Bits ➔ article 88663, 88654

WIROX = 10-fold corrosion resistance compared to zinc plated
Approvals: Z-9.1-449, Z-9.1-551, ETA-12/0114

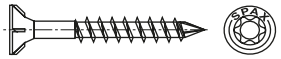
ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

8	x	80/47-T40	S	50	43,50 ZP
8	x	100/57-T40	S	50	52,00 ZP
8	x	120/70-T40	S	50	67,00 ZP
8	x	140/80-T40	S	50	78,00 ZP
8	x	160/80-T40	S	50	104,00 ZP
8	x	180/80-T40	S	50	117,00 ZP
8	x	200/80-T40	S	50	140,00 ZP
8	x	220/80-T40	S	50	182,00 ZP
8	x	240/80-T40	S	50	194,00 ZP
8	x	260/80-T40	S	50	210,00 ZP
8	x	280/80-T40	S	50	221,00 ZP
8	x	300/80-T40	S	50	249,00 ZP
8	x	320/80-T40	S	50	262,00 ZP
8	x	340/80-T40	S	50	286,00 ZP
8	x	360/80-T40	S	50	309,00 ZP
8	x	380/80-T40	S	50	324,00 ZP
8	x	400/80-T40	S	50	340,00 ZP
8	x	450/80-T40	S	50	521,00 ZP

Article	88196.060	RAZ 816

88196 Steel zinc plated yellow SPAX CSK-T



SPAX screws fully threaded, with SPAX CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus/T-STAR

Case hardened, slide-coated,
∅ 10/12 = countersunk head with milled ribs and T-STAR

Bits ➔ article 88663, 88654

Corrosion protection ➔ TI-217

Approvals: Z-9.1-519, ETA-12/0114

ETA CE

Nominal ∅ x nominal length - bit size

8	x	160-T40	S	50	249,00 YZP
8	x	180-T40	S	50	258,00 YZP
8	x	200-T40	S	50	264,50 YZP
8	x	220-T40	S	50	293,00 YZP
8	x	240-T40	S	50	308,00 YZP
8	x	260-T40	S	50	347,00 YZP
8	x	280-T40	S	50	352,00 YZP
8	x	300-T40	S	50	410,00 YZP
8	x	350-T40	S	50	470,00 YZP
8	x	400-T40	S	50	499,00 YZP
8	x	450-T40	S	50	835,00 YZP
8	x	500-T40	S	25	937,00 YZP
8	x	550-T40	S	25	1039,00 YZP
8	x	600-T40	S	25	1142,00 YZP
10	x	200-T50	S	50	277,00 YZP
10	x	220-T50	S	50	336,00 YZP
10	x	240-T50	S	50	367,00 YZP
10	x	260-T50	S	50	438,00 YZP
10	x	280-T50	S	50	493,00 YZP
10	x	300-T50	S	50	521,00 YZP
10	x	350-T50	S	50	615,00 YZP
10	x	400-T50	S	50	732,00 YZP
10	x	450-T50	S	50	997,00 YZP
10	x	500-T50	S	25	1288,00 YZP
10	x	550-T50	S	25	1434,00 YZP
12	x	200-T50	S	25	279,00 YZP
12	x	240-T50	S	25	410,00 YZP
12	x	260-T50	S	25	499,00 YZP
12	x	300-T50	S	25	571,00 YZP
12	x	350-T50	S	25	718,00 YZP
12	x	400-T50	S	25	835,00 YZP
12	x	450-T50	S	25	1055,00 YZP
12	x	500-T50	S	25	1317,00 YZP
12	x	550-T50	S	20	1537,00 YZP
12	x	600-T50	S	20	2050,00 YZP

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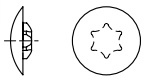
Dimensions	PU	Pieces	€/100/Mat.
Article	88006.(*)		RAZ 800

88006 Plastic T



Caps for countersunk head screws with hexalobular socket T

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650),
fawn brown RAL 8007 (*660)

T no. x caps ∅/for screws

15	x	12	/3,5	S	1000	2,30
20	x	12	/4-4,5	S	1000	2,30
25	x	13,5	/5	S	1000	2,30
30	x	16,5	/6	S	1000	2,30

Article	88092.010	RAZ 816

88092 Steel zinc plated SPAX RCSK-Z

SPAX universal screws with SPAX 4CUT point, RCSK = SPAX MULTI raised countersunk head, Z = Pozidriv cross recess

Case hardened, slide-coated,
bit size: ∅ 3,5 - 5,0 ➔ Z2

Corrosion protection ➔ TI-217

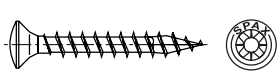
Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

3	x	12/10-Z	S	1000	2,10 ZP
3	x	13/10-Z	S	1000	2,10 ZP
3	x	15/12-Z	S	1000	2,15 ZP
3	x	16/13-Z	S	1000	2,15 ZP
3	x	17/13-Z	S	1000	2,15 ZP
3	x	20/16-Z	S	1000	2,35 ZP
3	x	25/21-Z	S	1000	2,60 ZP
3	x	30/26-Z	S	1000	3,45 ZP
3	x	35/31-Z	S	1000	3,95 ZP
3,5	x	12/ 9-Z	S	1000	2,70 ZP
3,5	x	15/11-Z	S	1000	2,60 ZP
3,5	x	16/12-Z	S	1000	2,60 ZP
3,5	x	17/12-Z	S	1000	2,55 ZP
3,5	x	20/15-Z	S	1000	2,95 ZP
3,5	x	25/20-Z	S	1000	3,20 ZP
3,5	x	30/25-Z	S	1000	3,50 ZP
3,5	x	35/30-Z	S	1000	4,35 ZP
3,5	x	40/35-Z	S	1000	5,00 ZP
4	x	15/10-Z	S	1000	3,20 ZP
4	x	16/12-Z	S	1000	3,20 ZP
4	x	17/12-Z	S	1000	3,20 ZP
4	x	20/15-Z	S	1000	3,45 ZP
4	x	25/20-Z	S	1000	3,95 ZP
4	x	30/25-Z	S	1000	4,10 ZP
4	x	35/30-Z	S	1000	4,80 ZP
4	x	40/35-Z	S	500	5,80 ZP
4	x	45/40-Z	S	500	6,40 ZP
4	x	50/45-Z	S	500	7,00 ZP
4,5	x	30/24-Z	S	1000	5,60 ZP
4,5	x	35/29-Z	S	500	6,30 ZP
4,5	x	40/34-Z	S	500	6,80 ZP
4,5	x	45/39-Z	S	500	8,75 ZP
4,5	x	50/44-Z	S	500	9,05 ZP
5	x	35/29-Z	S	500	8,10 ZP
5	x	40/34-Z	S	500	8,80 ZP
5	x	45/39-Z	S	200	9,90 ZP
5	x	50/44-Z	S	200	10,40 ZP
5	x	60/54-Z	S	200	12,55 ZP

Article	88092.030	RAZ 816

88092 Steel nickel plated SPAX RCSK-Z



SPAX universal screws with SPAX 4CUT point, RCSK = SPAX MULTI raised countersunk head, Z = Pozidriv cross recess

Case hardened, slide-coated,
bit sizes: ∅ 3 ➔ Z1, ∅ 3,5 - 5,0 ➔ Z2

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

3	x	16/13-Z	S	1000	2,85 NP
3	x	16/13-Z	S	1000	3,10 NP
3	x	25/21-Z	S	1000	3,30 NP
3	x	30/26-Z	S	1000	4,60 NP
3,5	x	16/12-Z	S	1000	3,30 NP
3,5	x	20/15-Z	S	1000	3,95 NP
3,5	x	25/20-Z	S	1000	4,15 NP
3,5	x	30/25-Z	S	1000	4,65 NP
3,5	x	35/30-Z	S	1000	5,60 NP
4	x	16/12-Z	S	1000	4,10 NP
4	x	17/12-Z	S	1000	4,10 NP
4	x	20/15-Z	S	1000	4,50 NP
4	x	25/20-Z	S	1000	5,10 NP
4	x	30/25-Z	S	1000	5,30 NP
4	x	35/30-Z	S	1000	6,30 NP
4	x	40/35-Z	S	500	7,45 NP
4	x	45/40-Z	S	500	8,35 NP
4	x	50/45-Z	S	500	9,05 NP
4,5	x	17/12-Z	S	1000	5,55 NP
4,5	x	35/29-Z	S	500	8,05 NP
4,5	x	40/34-Z	S	500	8,80 NP
4,5	x	50/44-Z	S	500	11,70 NP
4,5	x	60/54-Z	S	500	14,90 NP
5	x	50/44-Z	S	200	13,60 NP
5	x	60/54-Z	S	200	16,35 NP
5	x	70/60-Z	S	200	23,00 NP
5	x	80/60-Z	S	200	27,50 NP

Article	88092.014	RAZ 816

88092 Steel zinc plated SPAX RCSK-T

SPAX universal screws with SPAX 4CUT point, RCSK = SPAX MULTI raised countersunk head,T = T-STAR plus

Case hardened, slide-coated

Bits ➔ article 88663, 88654,
Caps ➔ article 88006

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx. - bit size

3	x	12/10-T10	S	1000	2,10 ZP
3	x	13/10-T10	S	1000	2,10 ZP
3	x	15/12-T10	S	1000	2,15 ZP
3	x	16/13-T10	S	1000	2,15 ZP
3	x	17/13-T10	S	1000	2,15 ZP
3	x	20/16-T10	S	1000	2,35 ZP
3	x	25/21-T10	S	1000	2,60 ZP
3	x	30/26-T10	S	1000	3,45 ZP
3	x	35/31-T10	S	1000	3,95 ZP
3,5	x	12/ 9-T15	S	1000	2,70 ZP
3,5	x	15/11-T15	S	1000	2,60 ZP
3,5	x	16/12-T15	S	1000	2,60 ZP
3,5	x	17/12-T15	S	1000	2,55 ZP
3,5	x	20/15-T15	S	1000	2,95 ZP
3,5	x	25/20-T15	S	1000	3,20 ZP
3,5	x	30/25-T15	S	1000	3,50 ZP
3,5	x	35/30-T15	S	1000	4,35 ZP
3,5	x	40/35-T15	S	1000	5,00 ZP
4	x	15/10-T20	S	1000	3,20 ZP
4	x	16/12-T20	S	1000	3,20 ZP
4	x	17/12-T20	S	1000	3,20 ZP
4	x	20/15-T20	S	1000	3,45 ZP
4	x	25/20-T20	S	1000	3,95 ZP
4	x	30/25-T20	S	1000	4,10 ZP
4	x	35/30-T20	S	1000	4,80 ZP
4	x	40/35-T20	S	500	5,80 ZP
4	x	45/40-T20	S	500	6,40 ZP
4	x	50/45-T20	S	500	7,00 ZP
4,5	x	30/24-T20	S	1000	5,60 ZP
4,5	x	35/29-T20	S	500	6,30 ZP
4,5	x	40/34-T20	S	500	6,80 ZP
4,5	x	45/39-T20	S	500	8,75 ZP
4,5	x	50/44-T20	S	500	9,05 ZP
5	x	35/29-T20	S	500	8,10 ZP
5	x	40/34-T20	S	500	8,80 ZP
5	x	45/39-T20	S	200	9,90 ZP
5	x	50/44-T20	S	200	10,40 ZP
5	x	60/54-T20	S	200	12,55 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88093.010			RAZ 816

88093 **Steel zinc plated** **SPAX PAN-Z**

SPAX universal screws with SPAX 4CUT point, PAN = pan head, Z = Pozidriv cross recess

Case hardened, slide-coated,
bit sizes: ∅ 3 ➔ Z1, ∅ 3,5 – 5,0 ➔ Z2, ∅ 6 ➔ 3

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

3	x	10/ 8-Z	S	1000	2,15 ZP
3	x	12/11-Z	S	1000	2,15 ZP
3	x	13/11-Z	S	1000	2,15 ZP
3	x	15/13-Z	S	1000	2,20 ZP
3	x	16/15-Z	S	1000	2,30 ZP
3	x	17/15-Z	S	1000	2,30 ZP
3	x	20/18-Z	S	1000	2,50 ZP
3	x	25/23-Z	S	1000	2,75 ZP
3	x	30/28-Z	S	1000	3,55 ZP
3,5	x	12/11-Z	S	1000	2,75 ZP
3,5	x	13/11-Z	S	1000	2,75 ZP
3,5	x	15/12-Z	S	1000	2,75 ZP
3,5	x	16/14-Z	S	1000	2,75 ZP
3,5	x	17/14-Z	S	1000	2,75 ZP
3,5	x	20/17-Z	S	1000	3,10 ZP
3,5	x	25/22-Z	S	1000	3,30 ZP
3,5	x	30/27-Z	S	1000	3,65 ZP
3,5	x	35/32-Z	S	1000	4,60 ZP
3,5	x	40/37-Z	S	1000	5,15 ZP
4	x	12/10-Z	S	1000	3,45 ZP
4	x	13/10-Z	S	1000	3,45 ZP
4	x	15/12-Z	S	1000	3,25 ZP
4	x	16/14-Z	S	1000	3,25 ZP
4	x	17/14-Z	S	1000	3,25 ZP
4	x	20/17-Z	S	1000	3,55 ZP
4	x	25/22-Z	S	1000	4,10 ZP
4	x	30/27-Z	S	1000	4,30 ZP
4	x	35/32-Z	S	1000	5,00 ZP
4	x	40/37-Z	S	500	5,95 ZP
4	x	45/42-Z	S	500	6,70 ZP
4	x	50/47-Z	S	500	7,30 ZP
4	x	60/50-Z	S	500	12,35 ZP
4,5	x	12/10-Z	S	1000	4,60 ZP
4,5	x	15/12-Z	S	1000	4,60 ZP
4,5	x	16/14-Z	S	1000	4,60 ZP
4,5	x	17/14-Z	S	1000	4,60 ZP
4,5	x	20/17-Z	S	1000	5,00 ZP
4,5	x	25/22-Z	S	1000	5,40 ZP
4,5	x	30/27-Z	S	500	5,95 ZP
4,5	x	35/32-Z	S	500	6,45 ZP
4,5	x	40/37-Z	S	500	7,20 ZP
4,5	x	45/42-Z	S	500	9,15 ZP
4,5	x	50/47-Z	S	500	9,50 ZP
4,5	x	60/57-Z	S	500	11,95 ZP
5	x	15/12-Z	S	1000	6,60 ZP
5	x	16/14-Z	S	1000	6,60 ZP
5	x	17/14-Z	S	1000	6,60 ZP
5	x	20/17-Z	S	1000	6,60 ZP
5	x	25/21-Z	S	500	6,75 ZP
5	x	30/26-Z	S	500	7,40 ZP
5	x	35/31-Z	S	500	8,50 ZP
5	x	40/36-Z	S	500	9,15 ZP
5	x	45/41-Z	S	200	10,30 ZP
5	x	50/46-Z	S	200	10,90 ZP
5	x	60/56-Z	S	200	13,30 ZP
5	x	70/60-Z	S	200	18,55 ZP
5	x	80/60-Z	S	200	22,25 ZP
5	x	90/60-Z	S	200	28,20 ZP
6	x	20/16-Z	S	500	12,80 ZP
6	x	25/21-Z	S	500	12,80 ZP
6	x	30/26-Z	S	500	14,05 ZP
6	x	35/31-Z	S	500	14,05 ZP
6	x	40/36-Z	S	500	14,05 ZP
6	x	45/41-Z	S	200	14,90 ZP
6	x	50/46-Z	S	200	13,70 ZP
6	x	60/56-Z	S	200	19,35 ZP
6	x	70/60-Z	S	200	23,00 ZP
6	x	80/60-Z	S	200	25,00 ZP
6	x	90/60-Z	S	200	29,00 ZP
6	x	100/60-Z	S	100	34,00 ZP

Article		88093.014			RAZ 816

88093 **Steel zinc plated** **SPAX PAN-T**

SPAX universal screws with SPAX 4CUT point, PAN = pan head, T = T-STAR plus

Case hardened, slide-coated

Bits ➔ article 88663, 88654,
Caps ➔ article 88006

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

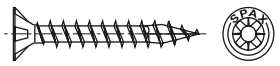
Nominal ∅ x nominal length/thread length approx. – bit size

3	x	10/ 8-T10	S	1000	2,15 ZP
3	x	10/ 8-T10	K	200	2,50 ZP
3	x	12/11-T10	S	1000	2,15 ZP
3	x	12/11-T10	K	200	2,50 ZP
3	x	13/11-T10	S	1000	2,15 ZP
3	x	15/13-T10	S	1000	2,20 ZP
3	x	16/15-T10	S	1000	2,30 ZP
3	x	16/15-T10	K	200	2,55 ZP
3	x	17/15-T10	S	1000	2,30 ZP
3	x	20/18-T10	S	1000	2,50 ZP
3	x	20/18-T10	K	200	2,80 ZP
3	x	25/23-T10	S	1000	2,75 ZP
3	x	25/23-T10	K	200	3,00 ZP
3	x	30/28-T10	S	1000	3,55 ZP
3	x	30/28-T10	K	200	4,05 ZP
3,5	x	12/11-T15	S	1000	2,75 ZP
3,5	x	12/11-T15	K	200	3,10 ZP
3,5	x	13/11-T15	S	1000	2,75 ZP
3,5	x	15/12-T15	S	1000	2,75 ZP
3,5	x	16/14-T15	S	1000	2,75 ZP
3,5	x	16/14-T15	K	200	3,00 ZP
3,5	x	17/14-T15	S	1000	2,75 ZP
3,5	x	20/17-T15	S	1000	3,10 ZP
3,5	x	20/18-T15	K	200	3,50 ZP
3,5	x	25/22-T15	S	1000	3,30 ZP
3,5	x	25/23-T15	K	200	3,70 ZP
3,5	x	30/27-T15	S	1000	3,65 ZP
3,5	x	30/27-T15	K	200	4,10 ZP
3,5	x	35/32-T15	S	1000	4,60 ZP
3,5	x	35/32-T15	K	200	5,10 ZP
3,5	x	40/37-T15	S	1000	5,15 ZP
4	x	12/10-T20	S	1000	3,45 ZP
4	x	12/11-T20	K	200	3,75 ZP
4	x	13/10-T20	S	1000	3,45 ZP
4	x	15/12-T20	S	1000	3,25 ZP
4	x	16/14-T20	S	1000	3,25 ZP
4	x	16/15-T20	K	200	3,70 ZP
4	x	17/14-T20	S	1000	3,25 ZP
4	x	20/17-T20	S	1000	3,55 ZP
4	x	20/18-T20	K	200	4,05 ZP
4	x	25/22-T20	S	1000	4,10 ZP
4	x	25/23-T20	K	200	4,60 ZP
4	x	30/27-T20	S	1000	4,30 ZP
4	x	30/27-T20	K	200	4,80 ZP
4	x	35/32-T20	S	1000	5,00 ZP
4	x	35/32-T20	K	200	5,55 ZP
4	x	40/37-T20	S	500	5,95 ZP
4	x	40/37-T20	K	200	6,70 ZP
4	x	45/42-T20	S	500	6,70 ZP
4	x	45/42-T20	K	200	7,45 ZP
4	x	50/47-T20	S	500	7,30 ZP
4	x	50/47-T20	K	200	8,05 ZP
4	x	60/50-T20	S	500	12,35 ZP
4,5	x	12/10-T20	S	1000	4,60 ZP
4,5	x	15/12-T20	S	1000	4,60 ZP
4,5	x	16/14-T20	S	1000	4,60 ZP
4,5	x	16/15-T20	K	200	5,10 ZP
4,5	x	17/14-T20	S	1000	4,60 ZP
4,5	x	20/17-T20	S	1000	5,00 ZP
4,5	x	20/17-T20	K	200	5,55 ZP
4,5	x	25/22-T20	S	1000	5,40 ZP
4,5	x	25/22-T20	K	200	6,20 ZP
4,5	x	30/27-T20	S	500	5,95 ZP
4,5	x	30/27-T20	K	200	6,60 ZP
4,5	x	35/32-T20	S	500	6,45 ZP
4,5	x	35/32-T20	K	200	7,30 ZP
4,5	x	40/37-T20	S	500	7,20 ZP
4,5	x	40/37-T20	K	200	7,95 ZP
4,5	x	45/42-T20	S	500	9,15 ZP
4,5	x	45/42-T20	K	200	10,25 ZP
4,5	x	50/47-T20	S	500	9,50 ZP
4,5	x	50/47-T20	K	200	10,50 ZP
4,5	x	60/57-T20	S	500	11,95 ZP
5	x	15/12-T20	S	1000	6,60 ZP
5	x	16/14-T20	S	1000	6,60 ZP
5	x	16/14-T20	K	200	7,45 ZP
5	x	17/14-T20	S	1000	6,60 ZP
5	x	20/17-T20	S	1000	6,60 ZP
5	x	20/17-T20	K	200	7,45 ZP
5	x	25/21-T20	S	500	6,75 ZP
5	x	25/22-T20	K	200	7,50 ZP
5	x	30/26-T20	S	500	7,40 ZP
5	x	30/27-T20	K	200	8,25 ZP
5	x	35/31-T20	S	500	8,50 ZP
5	x	35/32-T20	K	200	9,55 ZP
5	x	40/36-T20	S	500	9,15 ZP
5	x	40/37-T20	K	200	10,30 ZP
5	x	45/41-T20	S	200	10,30 ZP
5	x	50/46-T20	S	200	10,90 ZP
5	x	50/46-T20	K	100	12,20 ZP
5	x	60/56-T20	S	200	13,30 ZP
5	x	60/56-T20	K	100	14,75 ZP
5	x	70/60-T20	S	200	18,55 ZP
5	x	70/61-T20	K	100	20,75 ZP
5	x	80/60-T20	S	200	22,25 ZP
5	x	80/61-T20	K	100	24,50 ZP
5	x	90/60-T20	S	200	28,00 ZP
5	x	100/61-T20	S	100	29,40 ZP
5	x	110/69-T20	S	100	56,10 ZP
5	x	120/69-T20	S	100	56,10 ZP
6	x	20/16-T30	S	500	12,80 ZP
6	x	25/21-T30	S	500	12,80 ZP
6	x	30/26-T30	S	500	14,05 ZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	35/31-T30	S	500	14,05 ZP
6	x	40/36-T30	S	500	14,05 ZP
6	x	40/37-T30	K	200	15,65 ZP
6	x	45/41-T30	S	200	14,90 ZP
6	x	50/46-T30	S	200	15,65 ZP
6	x	50/46-T30	K	100	17,80 ZP
6	x	60/56-T30	S	200	19,35 ZP
6	x	70/60-T30	S	200	23,00 ZP
6	x	80/60-T30	S	200	25,00 ZP
6	x	90/60-T30	S	200	29,00 ZP
6	x	100/60-T30	S	100	34,00 ZP

Article	88094.040	RAZ 816

88094 Steel browned — SPAX CSK-Z



SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, Z = Pozidriv cross recess

Case hardened, slide-coated,
bit sizes: ∅ 2,5 – 3 ➔ Z1, ∅ 3,5 – 5,0 ➔ Z2, ∅ 6 ➔ 3

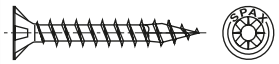
Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

2,5	x	12/10-Z	S	1000	2,35 browned
2,5	x	16/14-Z	S	1000	2,35 browned
2,5	x	20/17-Z	S	1000	2,70 browned
2,5	x	25/22-Z	S	1000	2,85 browned
3	x	12/10-Z	S	1000	2,35 browned
3	x	16/13-Z	S	1000	2,50 browned
3	x	17/13-Z	S	1000	2,50 browned
3	x	20/16-Z	S	1000	2,75 browned
3	x	25/21-Z	S	1000	2,95 browned
3	x	30/26-Z	S	1000	4,00 browned
3	x	35/31-Z	S	1000	4,35 browned
3	x	40/36-Z	S	1000	7,45 browned
3,5	x	12/ 9-Z	S	1000	2,95 browned
3,5	x	15/11-Z	S	1000	2,95 browned
3,5	x	16/12-Z	S	1000	2,95 browned
3,5	x	20/15-Z	S	1000	3,30 browned
3,5	x	25/20-Z	S	1000	3,65 browned
3,5	x	30/25-Z	S	1000	4,00 browned
3,5	x	35/30-Z	S	1000	4,90 browned
3,5	x	40/35-Z	S	1000	5,55 browned
3,5	x	45/40-Z	S	1000	8,50 browned
3,5	x	50/40-Z	S	500	9,15 browned
4	x	16 -Z	S	1000	3,55 browned
4	x	20/15-Z	S	1000	3,85 browned
4	x	25/20-Z	S	1000	4,30 browned
4	x	30/25-Z	S	1000	4,70 browned
4	x	35/30-Z	S	1000	5,40 browned
4	x	40/35-Z	S	1000	6,45 browned
4	x	45/40-Z	S	500	7,20 browned
4	x	50/45-Z	S	500	7,90 browned
4	x	60/50-Z	S	500	13,35 browned
4	x	70/50-Z	S	500	21,50 browned
4,5	x	25/19-Z	S	1000	5,85 browned
4,5	x	30/24-Z	S	1000	6,40 browned
4,5	x	35/29-Z	S	500	7,00 browned
4,5	x	40/34-Z	S	500	7,65 browned
4,5	x	45/39-Z	S	500	9,90 browned
4,5	x	50/44-Z	S	500	10,25 browned
4,5	x	60/54-Z	S	500	12,90 browned
4,5	x	70/59-Z	S	500	21,50 browned
4,5	x	80/59-Z	S	200	23,75 browned
5	x	30/24-Z	S	500	8,00 browned
5	x	35/29-Z	S	500	9,15 browned
5	x	40/34-Z	S	500	10,00 browned
5	x	45/39-Z	S	500	11,20 browned
5	x	50/44-Z	S	500	11,75 browned
5	x	60/54-Z	S	500	14,15 browned
5	x	70/60-Z	S	200	20,75 browned
5	x	80/60-Z	S	200	23,75 browned
5	x	90/60-Z	S	200	31,40 browned
6	x	50/43-Z	S	200	17,20 browned
6	x	60/53-Z	S	200	20,75 browned
6	x	70/60-Z	S	200	24,50 browned
6	x	80/60-Z	S	200	27,50 browned
6	x	100/60-Z	S	100	37,00 browned
6	x	120/68-Z	S	100	55,50 browned

Article	88094.010	RAZ 816

88094 Steel zinc plated — SPAX CSK-Z



SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, Z = Pozidriv cross recess

Case hardened, slide-coated,
bit sizes: ∅ 2,5 – 3 ➔ Z1, ∅ 3,5 – 5,0 ➔ Z2, ∅ 6 ➔ 3

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

2,5	x	10/ 8-Z	S	1000	1,75 ZP
2,5	x	12/10-Z	S	1000	1,75 ZP
2,5	x	15/12-Z	S	1000	1,75 ZP
2,5	x	16/14-Z	S	1000	1,80 ZP
2,5	x	20/17-Z	S	1000	2,05 ZP
2,5	x	25/22-Z	S	1000	2,15 ZP
3	x	10/ 7-Z	S	1000	1,75 ZP
3	x	12/10-Z	S	1000	1,75 ZP
3	x	12/10-Z	K	200	2,05 ZP
3	x	13/10-Z	S	1000	1,75 ZP
3	x	15/12-Z	S	1000	1,80 ZP
3	x	16/13-Z	S	1000	2,00 ZP
3	x	16/13-Z	K	200	2,15 ZP
3	x	17/13-Z	S	1000	2,00 ZP
3	x	20/16-Z	S	1000	2,10 ZP
3	x	20/16-Z	K	200	2,30 ZP
3	x	25/21-Z	S	1000	2,20 ZP
3	x	25/21-Z	K	200	2,50 ZP
3	x	30/26-Z	S	1000	2,95 ZP
3	x	30/26-Z	K	200	3,35 ZP
3	x	35/31-Z	S	1000	3,45 ZP
3	x	35/31-Z	K	200	3,75 ZP
3	x	40/36-Z	S	1000	4,65 ZP
3	x	40/36-Z	K	200	5,15 ZP
3	x	45/36-Z	S	1000	6,25 ZP
3,5	x	12/ 9-Z	S	1000	2,20 ZP
3,5	x	12/ 9-Z	K	200	2,50 ZP
3,5	x	13/ 9-Z	S	1000	2,20 ZP
3,5	x	15/11-Z	S	1000	2,20 ZP
3,5	x	16/12-Z	S	1000	2,20 ZP
3,5	x	16/12-Z	K	200	2,50 ZP
3,5	x	17/12-Z	S	1000	2,20 ZP
3,5	x	20/15-Z	S	1000	2,55 ZP
3,5	x	20/15-Z	K	200	2,85 ZP
3,5	x	25/20-Z	S	1000	2,80 ZP
3,5	x	25/20-Z	K	200	3,10 ZP
3,5	x	30/25-Z	S	1000	3,00 ZP
3,5	x	30/25-Z	K	200	3,45 ZP
3,5	x	35/30-Z	S	1000	3,75 ZP
3,5	x	35/30-Z	K	200	4,15 ZP
3,5	x	40/35-Z	S	1000	4,30 ZP
3,5	x	40/35-Z	K	200	4,80 ZP
3,5	x	45/40-Z	S	1000	7,40 ZP
3,5	x	45/40-Z	K	200	6,45 ZP
3,5	x	50/40-Z	S	500	7,05 ZP
3,5	x	50/40-Z	K	200	7,95 ZP
4	x	12/ 9-Z	S	1000	2,75 ZP
4	x	12/ 9-Z	K	200	3,20 ZP
4	x	15/10-Z	S	1000	2,75 ZP
4	x	16/12-Z	S	1000	2,70 ZP
4	x	16/12-Z	K	200	3,00 ZP
4	x	17/12-Z	S	1000	2,70 ZP
4	x	20/15-Z	S	1000	2,95 ZP
4	x	20/15-Z	K	200	3,20 ZP
4	x	25/20-Z	S	1000	3,45 ZP
4	x	25/20-Z	K	200	3,75 ZP
4	x	30/25-Z	S	1000	3,55 ZP
4	x	30/25-Z	K	200	4,00 ZP
4	x	35/30-Z	S	1000	4,10 ZP
4	x	35/30-Z	K	200	4,70 ZP
4	x	40/35-Z	S	1000	5,00 ZP
4	x	40/35-Z	K	200	5,55 ZP
4	x	45/40-Z	S	500	5,55 ZP
4	x	45/40-Z	K	200	6,30 ZP
4	x	50/45-Z	S	500	6,20 ZP
4	x	50/45-Z	K	200	6,75 ZP
4	x	55/50-Z	S	500	10,25 ZP
4	x	60/50-Z	S	500	10,25 ZP
4	x	60/50-Z	K	100	11,50 ZP
4	x	70/50-Z	S	500	16,35 ZP
4	x	70/50-Z	K	100	18,55 ZP
4	x	80/50-Z	S	200	18,55 ZP
4,5	x	16/12-Z	S	1000	3,55 ZP
4,5	x	16/12-Z	K	200	4,15 ZP
4,5	x	20/14-Z	S	1000	3,90 ZP
4,5	x	20/14-Z	K	200	4,65 ZP
4,5	x	25/19-Z	S	1000	4,35 ZP
4,5	x	25/19-Z	K	200	5,10 ZP
4,5	x	30/24-Z	S	1000	5,00 ZP
4,5	x	30/24-Z	K	200	5,45 ZP
4,5	x	35/29-Z	S	500	5,40 ZP
4,5	x	35/29-Z	K	200	6,20 ZP
4,5	x	40/34-Z	S	500	5,95 ZP
4,5	x	40/34-Z	K	200	6,60 ZP
4,5	x	45/39-Z	S	500	7,65 ZP
4,5	x	45/39-Z	K	200	8,60 ZP
4,5	x	50/44-Z	S	500	7,90 ZP
4,5	x	50/44-Z	K	200	8,80 ZP
4,5	x	55/49-Z	S	500	9,60 ZP
4,5	x	60/54-Z	S	500	10,05 ZP
4,5	x	60/54-Z	K	100	11,20 ZP
4,5	x	70/59-Z	S	500	16,35 ZP
4,5	x	70/59-Z	K	100	18,55 ZP
4,5	x	80/59-Z	S	200	18,55 ZP
4,5	x	80/59-Z	K	100	20,75 ZP
5	x	16/12-Z	S	1000	5,20 ZP
5	x	20/14-Z	S	1000	5,25 ZP
5	x	20/14-Z	K	200	6,25 ZP
5	x	25/19-Z	S	1000	5,30 ZP
5	x	25/19-Z	K	200	6,35 ZP
5	x	30/24-Z	S	500	6,25 ZP
5	x	30/24-Z	K	200	6,85 ZP
5	x	35/29-Z	S	500	7,05 ZP
5	x	35/29-Z	K	200	7,95 ZP
5	x	40/34-Z	S	500	7,65 ZP
5	x	40/34-Z	K	200	8,65 ZP
5	x	45/39-Z	S	500	8,65 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
5	x	45/39-Z	K	200	9,70 ZP
5	x	50/44-Z	S	500	9,10 ZP
5	x	50/44-Z	K	200	10,15 ZP
5	x	55/49-Z	S	500	10,25 ZP
5	x	55/49-Z	K	100	11,50 ZP
5	x	60/54-Z	S	500	10,95 ZP
5	x	60/54-Z	K	100	12,35 ZP
5	x	65/59-Z	S	200	15,65 ZP
5	x	70/60-Z	S	200	15,65 ZP
5	x	70/60-Z	K	100	17,20 ZP
5	x	80/60-Z	S	200	18,55 ZP
5	x	80/60-Z	K	100	20,05 ZP
5	x	90/60-Z	S	200	23,75 ZP
5	x	90/60-Z	K	100	26,50 ZP
5	x	100/60-Z	S	200	26,50 ZP
5	x	100/60-Z	K	100	29,50 ZP
5	x	110/69-Z	S	200	47,50 ZP
5	x	120/69-Z	S	200	51,00 ZP
6	x	30/23-Z	S	500	11,70 ZP
6	x	35/28-Z	S	500	11,70 ZP
6	x	40/33-Z	S	500	11,70 ZP
6	x	40/33-Z	K	200	13,10 ZP
6	x	45/38-Z	S	500	12,50 ZP
6	x	45/38-Z	K	200	14,00 ZP
6	x	50/43-Z	S	200	13,30 ZP
6	x	50/43-Z	K	100	14,75 ZP
6	x	55/48-Z	S	200	14,35 ZP
6	x	60/53-Z	S	200	15,65 ZP
6	x	60/53-Z	K	100	17,80 ZP
6	x	70/60-Z	S	200	19,35 ZP
6	x	70/60-Z	K	100	21,50 ZP
6	x	80/60-Z	S	200	21,50 ZP
6	x	80/60-Z	K	100	23,75 ZP
6	x	90/60-Z	S	200	24,50 ZP
6	x	90/60-Z	K	100	27,50 ZP
6	x	100/60-Z	S	100	28,00 ZP
6	x	110/68-Z	S	100	37,50 ZP
6	x	120/68-Z	S	100	43,00 ZP
6	x	130/68-Z	S	100	47,50 ZP
6	x	140/68-Z	S	100	55,00 ZP
6	x	150/68-Z	S	100	63,00 ZP
6	x	160/68-Z	S	100	74,00 ZP
6	x	180/68-Z	S	100	100,00 ZP
6	x	200/68-Z	S	100	122,00 ZP
6	x	220/68-Z	S	100	155,00 ZP
6	x	240/68-Z	S	100	164,00 ZP

Article	88478.010	RAZ 5012

88478 Assortment steel hard. ZP SPAX Z

SPAX assortment, countersunk head, with Pozidriv cross recess Z

Content: 17 frequent dimensions
of 2,5 x 16 – 6,0 x 100, approx. 3100 pieces
in metal box with bits Z 1, 2, 3

Tool box	S	1	14578,00

Dimensions			PU	Pieces	€/100/Mat.
Article		88094.060			RAZ 816

88094 Steel zinc plated yellow SPAX CSK-Z

SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, Z = Pozidriv cross recess

Case hardened, slide-coated,
bit sizes: ∅ 2 – 3 ➔ Z1, ∅ 3,5 – 5,0 ➔ Z2,
∅ 6 ➔ 3

Corrosion protection ➔ TI-217

Nominal ∅ x nominal length/thread length approx.

2	x	10/ 8-Z	S	1000	3,65 YZP
2	x	12/11-Z	S	1000	4,00 YZP
2	x	16/15-Z	S	1000	4,25 YZP
2,5	x	10/ 8-Z	S	1000	1,75 YZP
2,5	x	12/10-Z	S	1000	1,75 YZP
2,5	x	15/12-Z	S	1000	1,75 YZP
2,5	x	16/14-Z	S	1000	1,80 YZP
2,5	x	20/17-Z	S	1000	2,05 YZP
2,5	x	25/22-Z	S	1000	2,15 YZP
3	x	10/ 7-Z	S	1000	1,75 YZP
3	x	12/10-Z	S	1000	1,75 YZP
3	x	12/10-Z	K	200	2,55 YZP
3	x	13/10-Z	S	1000	1,75 YZP
3	x	15/12-Z	S	1000	1,80 YZP
3	x	16/13-Z	S	1000	2,00 YZP
3	x	16/13-Z	K	200	2,15 YZP
3	x	17/13-Z	S	1000	2,00 YZP
3	x	20/16-Z	S	1000	2,10 YZP
3	x	20/16-Z	K	200	2,30 YZP
3	x	25/21-Z	S	1000	2,20 YZP
3	x	25/21-Z	K	200	2,50 YZP
3	x	30/26-Z	S	1000	2,95 YZP
3	x	30/26-Z	K	200	3,35 YZP
3	x	35/31-Z	S	1000	3,45 YZP
3	x	35/31-Z	K	200	3,75 YZP
3	x	40/36-Z	S	1000	4,65 YZP
3	x	40/36-Z	K	200	5,15 YZP
3	x	45/36-Z	S	1000	6,25 YZP
3,5	x	12/ 9-Z	S	1000	2,20 YZP
3,5	x	12/ 9-Z	K	200	2,25 YZP
3,5	x	13/ 9-Z	S	1000	2,20 YZP
3,5	x	15/11-Z	S	1000	2,20 YZP
3,5	x	16/12-Z	S	1000	2,20 YZP
3,5	x	16/12-Z	K	200	2,50 YZP
3,5	x	17/13-Z	S	1000	2,20 YZP
3,5	x	20/15-Z	S	1000	2,55 YZP
3,5	x	20/15-Z	K	200	2,85 YZP
3,5	x	25/20-Z	S	1000	2,80 YZP
3,5	x	25/20-Z	K	200	3,10 YZP
3,5	x	30/25-Z	S	1000	3,00 YZP
3,5	x	30/25-Z	K	200	3,45 YZP
3,5	x	35/30-Z	S	1000	3,75 YZP
3,5	x	35/30-Z	K	200	4,15 YZP
3,5	x	40/35-Z	S	1000	4,30 YZP
3,5	x	40/35-Z	K	200	4,80 YZP
3,5	x	45/40-Z	S	1000	6,50 YZP
3,5	x	45/40-Z	K	200	7,40 YZP
3,5	x	50/40-Z	S	500	7,05 YZP
3,5	x	50/40-Z	K	200	7,95 YZP
4	x	12/ 9-Z	S	1000	2,75 YZP
4	x	15/11-Z	S	1000	2,75 YZP
4	x	16/12-Z	S	1000	2,70 YZP
4	x	16/12-Z	K	200	3,00 YZP
4	x	17/13-Z	S	1000	2,70 YZP
4	x	20/15-Z	S	1000	2,95 YZP
4	x	20/15-Z	K	200	3,20 YZP
4	x	25/20-Z	S	1000	3,45 YZP
4	x	25/20-Z	K	200	3,75 YZP
4	x	30/25-Z	S	1000	3,55 YZP
4	x	30/25-Z	K	200	4,00 YZP
4	x	35/30-Z	S	1000	4,10 YZP
4	x	35/30-Z	K	200	4,70 YZP
4	x	40/35-Z	S	1000	5,00 YZP
4	x	40/35-Z	K	200	5,55 YZP
4	x	45/40-Z	S	500	5,55 YZP
4	x	45/40-Z	K	200	6,30 YZP
4	x	50/45-Z	S	500	6,20 YZP
4	x	50/45-Z	K	200	6,75 YZP
4	x	55/50-Z	S	500	10,25 YZP
4	x	60/50-Z	S	500	10,25 YZP
4	x	60/50-Z	K	100	11,50 YZP
4	x	70/50-Z	S	500	16,35 YZP
4	x	70/50-Z	K	100	18,55 YZP
4	x	80/50-Z	S	200	18,55 YZP
4,5	x	16/12-Z	S	1000	3,55 YZP
4,5	x	16/12-Z	K	200	4,15 YZP
4,5	x	20/14-Z	S	1000	3,90 YZP
4,5	x	20/14-Z	K	200	4,65 YZP
4,5	x	25/19-Z	S	1000	4,35 YZP
4,5	x	25/19-Z	K	200	5,10 YZP
4,5	x	30/24-Z	S	1000	5,00 YZP
4,5	x	30/24-Z	K	200	5,45 YZP
4,5	x	35/29-Z	S	500	5,40 YZP
4,5	x	35/29-Z	K	200	6,20 YZP
4,5	x	40/34-Z	S	500	5,95 YZP
4,5	x	40/34-Z	K	200	6,60 YZP
4,5	x	45/39-Z	S	500	7,65 YZP
4,5	x	45/39-Z	K	200	8,60 YZP
4,5	x	50/44-Z	S	500	7,90 YZP
4,5	x	50/44-Z	K	200	8,80 YZP
4,5	x	55/49-Z	S	500	9,60 YZP
4,5	x	60/54-Z	S	500	10,05 YZP
4,5	x	60/54-Z	K	100	11,20 YZP
4,5	x	70/59-Z	S	500	16,35 YZP
4,5	x	70/59-Z	K	100	18,55 YZP
4,5	x	80/59-Z	S	200	18,55 YZP
4,5	x	80/59-Z	K	100	20,75 YZP
5	x	16/12-Z	S	1000	5,20 YZP
5	x	20/14-Z	S	1000	5,25 YZP
5	x	20/14-Z	K	200	6,25 YZP
5	x	25/19-Z	S	1000	5,30 YZP
5	x	25/19-Z	K	200	6,35 YZP
5	x	30/24-Z	S	500	6,25 YZP
5	x	30/24-Z	K	200	6,85 YZP
5	x	35/29-Z	S	500	7,05 YZP
5	x	35/29-Z	K	200	7,95 YZP
5	x	40/34-Z	S	500	7,65 YZP
5	x	40/34-Z	K	200	8,65 YZP
5	x	45/39-Z	S	500	8,65 YZP
5	x	45/39-Z	K	200	9,70 YZP
5	x	50/44-Z	S	500	9,10 YZP
5	x	50/44-Z	K	200	10,15 YZP
5	x	55/49-Z	S	500	10,25 YZP
5	x	55/49-Z	K	100	11,50 YZP
5	x	60/54-Z	S	500	10,95 YZP
5	x	60/54-Z	K	100	12,35 YZP
5	x	70/60-Z	S	200	15,65 YZP
5	x	70/60-Z	K	100	17,20 YZP
5	x	80/60-Z	S	200	18,55 YZP
5	x	80/60-Z	K	100	20,05 YZP
5	x	90/60-Z	S	200	23,75 YZP
5	x	90/60-Z	K	100	26,50 YZP
5	x	100/60-Z	S	200	26,50 YZP
5	x	100/60-Z	K	100	29,50 YZP
5	x	110/69-Z	S	200	47,00 YZP
5	x	120/69-Z	S	200	51,00 YZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	30/23-Z	S	500	11,70 YZP
6	x	35/28-Z	S	500	11,70 YZP
6	x	40/33-Z	S	500	11,70 YZP
6	x	40/33-Z	K	200	13,10 YZP
6	x	45/38-Z	S	500	12,50 YZP
6	x	45/38-Z	K	200	14,00 YZP
6	x	50/43-Z	S	200	13,30 YZP
6	x	50/43-Z	K	100	14,75 YZP
6	x	55/48-Z	S	200	14,35 YZP
6	x	60/53-Z	S	200	15,65 YZP
6	x	60/53-Z	K	100	17,80 YZP
6	x	70/60-Z	S	200	19,35 YZP
6	x	70/60-Z	K	100	21,50 YZP
6	x	80/60-Z	S	200	21,50 YZP
6	x	80/60-Z	K	100	23,75 YZP
6	x	90/60-Z	S	200	24,50 YZP
6	x	100/60-Z	S	100	28,00 YZP
6	x	110/68-Z	S	100	37,50 YZP
6	x	120/68-Z	S	100	43,00 YZP
6	x	130/68-Z	S	100	47,50 YZP
6	x	140/68-Z	S	100	55,00 YZP
6	x	150/68-Z	S	100	63,00 YZP
6	x	160/68-Z	S	100	74,00 YZP
6	x	180/68-Z	S	100	100,00 YZP
6	x	200/68-Z	S	100	122,00 YZP
6	x	220/68-Z	S	100	155,00 YZP
6	x	240/68-Z	S	100	164,00 YZP

Article	88479.060	RAZ 5012

88479 Assortment steel, hard. YZP SPAX Z

SPAX assortment, countersunk head, with Pozidriv cross recess Z

Content: 17 regular dimensions
of 2,5 x 16 – 6,0 x 100, approx. 3100 pieces
in metal box with bits Z 1, 2, 3

Tool box	S	1	15306,90

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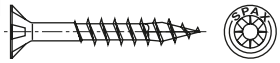
Dimensions			PU	Pieces	€/100/Mat.
Article		88094.019			RAZ 816

88094 Steel zinc plated SPAX CSK-Z-P



SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, Z = Pozidriv cross recess, P = partially threaded

Case hardened, slide-coated,
bit sizes: ∅ 3,5 – 5,0 ➔ Z2, ∅ 6 ➔ 3

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

3,5	x	30/17-Z	S	1000	3,00 ZP
3,5	x	30/18-Z	K	200	3,45 ZP
3,5	x	35/22-Z	S	1000	3,75 ZP
3,5	x	35/23-Z	K	200	4,15 ZP
3,5	x	40/22-Z	S	1000	4,30 ZP
3,5	x	40/23-Z	K	200	4,80 ZP
3,5	x	45/30-Z	S	1000	6,50 ZP
3,5	x	50/32-Z	S	1000	7,05 ZP
4	x	30/17-Z	S	1000	3,55 ZP
4,0	x	30/18-Z	K	200	4,00 ZP
4	x	35/22-Z	S	1000	4,10 ZP
4,0	x	35/23-Z	K	200	4,70 ZP
4	x	40/22-Z	S	1000	5,00 ZP
4,0	x	40/23-Z	K	200	5,55 ZP
4	x	45/30-Z	S	500	5,55 ZP
4,0	x	45/30-Z	K	200	6,30 ZP
4	x	50/35-Z	S	500	6,20 ZP
4,0	x	50/32-Z	K	200	6,75 ZP
4	x	55/32-Z	S	500	10,25 ZP
4	x	60/35-Z	S	500	10,25 ZP
4,0	x	60/35-Z	K	100	11,50 ZP
4,5	x	30/17-Z	S	1000	5,00 ZP
4,5	x	30/17-Z	K	200	5,45 ZP
4,5	x	35/24-Z	S	500	5,40 ZP
4,5	x	35/25-Z	K	200	6,20 ZP
4,5	x	40/24-Z	S	500	5,95 ZP
4,5	x	40/25-Z	K	200	6,60 ZP
4,5	x	45/29-Z	S	500	7,65 ZP
4,5	x	45/30-Z	K	200	8,60 ZP
4,5	x	50/32-Z	S	500	7,90 ZP
4,5	x	50/32-Z	K	200	8,80 ZP
4,5	x	55/37-Z	S	500	9,60 ZP
4,5	x	60/37-Z	S	500	10,05 ZP
4,5	x	60/37-Z	K	100	11,20 ZP
4,5	x	70/42-Z	S	500	16,35 ZP
4,5	x	70/42-Z	K	100	18,55 ZP
5	x	40/27-Z	S	500	7,65 ZP
5,0	x	40/27-Z	K	200	8,65 ZP
5	x	45/29-Z	S	500	8,65 ZP
5,0	x	45/30-Z	K	200	9,70 ZP
5	x	50/32-Z	S	500	9,10 ZP
5,0	x	50/32-Z	K	200	10,15 ZP
5	x	55/36-Z	S	500	10,25 ZP
5	x	60/37-Z	S	500	10,95 ZP
5,0	x	60/37-Z	K	100	12,35 ZP
5	x	65/41-Z	S	200	15,65 ZP
5	x	70/41-Z	S	200	15,65 ZP
5,0	x	70/41-Z	K	100	17,20 ZP
5	x	80/46-Z	S	200	18,55 ZP

Dimensions			PU	Pieces	€/100/Mat.
5,0	x	80/46-Z	K	100	20,05 ZP
6	x	50/32-Z	S	200	13,30 ZP
6,0	x	50/32-Z	K	100	17,80 ZP
6	x	60/36-Z	S	200	15,65 ZP
6,0	x	60/37-Z	K	100	15,60 ZP
6	x	70/41-Z	S	200	19,35 ZP
6,0	x	70/41-Z	K	100	21,50 ZP
6	x	80/46-Z	S	200	21,50 ZP
6,0	x	80/46-Z	K	100	23,75 ZP

Article	88094.069	RAZ 816

88094 Steel zinc plated yellow SPAX CSK-Z-P

SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, Z = Pozidriv cross recess, P = partially threaded

Case hardened, slide-coated,
bit sizes: ∅ 3,5 – 5,0 ➔ Z2, ∅ 6 ➔ 3

Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

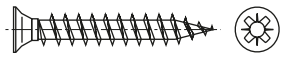
3,5	x	30/17-Z	S	1000	3,00 YZP
3,5	x	30/17-Z	K	200	3,45 YZP
3,5	x	35/22-Z	S	1000	3,75 YZP
3,5	x	35/22-Z	K	200	4,15 YZP
3,5	x	40/22-Z	S	1000	4,30 YZP
3,5	x	40/22-Z	K	200	4,80 YZP
3,5	x	45/30-Z	S	1000	6,50 YZP
3,5	x	50/32-Z	S	500	7,05 YZP
4	x	30/17-Z	S	1000	3,55 YZP
4	x	30/17-Z	K	200	4,00 YZP
4	x	35/22-Z	S	1000	4,10 YZP
4	x	35/22-Z	K	200	4,70 YZP
4	x	40/22-Z	S	1000	5,00 YZP
4	x	40/22-Z	K	200	5,55 YZP
4	x	45/30-Z	S	500	5,55 YZP
4	x	45/30-Z	K	200	6,30 YZP
4	x	50/32-Z	S	500	6,20 YZP
4	x	50/32-Z	K	200	6,75 YZP
4	x	55/35-Z	S	500	10,25 YZP
4	x	60/35-Z	S	500	10,25 YZP
4	x	60/35-Z	K	100	11,50 YZP
4,5	x	30/17-Z	S	1000	5,00 YZP
4,5	x	30/17-Z	K	200	5,45 YZP
4,5	x	35/24-Z	S	500	5,40 YZP
4,5	x	35/24-Z	K	200	6,20 YZP
4,5	x	40/24-Z	S	500	5,95 YZP
4,5	x	40/24-Z	K	200	6,60 YZP
4,5	x	45/29-Z	S	500	7,65 YZP
4,5	x	45/29-Z	K	200	8,60 YZP
4,5	x	50/32-Z	S	500	7,90 YZP
4,5	x	50/32-Z	K	200	8,80 YZP
4,5	x	55/37-Z	S	500	9,60 YZP
4,5	x	60/37-Z	S	500	10,05 YZP
4,5	x	60/37-Z	K	100	11,20 YZP
4,5	x	70/42-Z	S	500	16,35 YZP
4,5	x	70/42-Z	K	100	18,55 YZP
5	x	40/27-Z	S	500	7,65 YZP
5	x	40/27-Z	K	200	8,65 YZP
5	x	45/29-Z	S	500	8,65 YZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
5	x	45/29-Z	K	200	9,70 YZP
5	x	50/32-Z	S	500	9,10 YZP
5	x	50/32-Z	K	200	10,15 YZP
5	x	55/36-Z	S	500	10,25 YZP
5	x	60/36-Z	S	500	10,95 YZP
5	x	60/36-Z	K	100	12,35 YZP
5	x	70/41-Z	S	200	15,65 YZP
5	x	70/41-Z	K	100	17,20 YZP
5	x	80/46-Z	S	200	18,55 YZP
5	x	80/46-Z	K	100	20,05 YZP
6	x	50/32-Z	S	200	13,30 YZP
6	x	50/32-Z	K	100	14,75 YZP
6	x	60/36-Z	S	200	15,65 YZP
6	x	60/36-Z	K	100	17,80 YZP
6	x	70/41-Z	S	200	19,35 YZP
6	x	70/41-Z	K	100	21,50 YZP
6	x	80/46-Z	S	200	21,50 YZP
6	x	80/46-Z	K	100	23,75 YZP
6	x	90/61-Z	K	100	21,80 YZP

Article 88094.014 RAZ 816

88094 Steel zinc plated SPAX CSK S-Z



SPAX universal screws,
CSK S = small countersunk head,
Z = Pozidriv cross recess

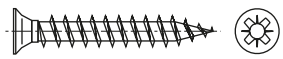
Case hardened, slide-coated,
countersunk head ∅ = 5mm,
bit size: ∅ 3 ➔ 1

Corrosion protection ➔ TI-217

3	x	10/ 7-Z	S	1000	2,05 ZP
3	x	12/10-Z	S	1000	2,05 ZP
3	x	13/10-Z	S	1000	2,05 ZP
3	x	15/12-Z	S	1000	2,05 ZP
3	x	16/13-Z	S	1000	2,10 ZP
3	x	17/13-Z	S	1000	2,10 ZP
3	x	20/16-Z	S	1000	2,20 ZP
3	x	25/21-Z	S	1000	2,50 ZP
3	x	30/26-Z	S	1000	3,30 ZP

Article 88094.064 RAZ 816

88094 Steel zinc plated yellow SPAX CSK S-Z



SPAX universal screws,
CSK S = small countersunk head,
Z = Pozidriv cross recess

Case hardened, slide-coated,
countersunk head ∅ = 5mm,
bit size: ∅ 3 ➔ 1

Corrosion protection ➔ TI-217

3	x	10/ 7-Z	S	1000	2,05 YZP
3	x	12/10-Z	S	1000	2,05 YZP
3	x	13/10-Z	S	1000	2,05 YZP
3	x	15/12-Z	S	1000	2,05 YZP
3	x	16/13-Z	S	1000	2,10 YZP

Dimensions			PU	Pieces	€/100/Mat.
3	x	17/13-Z	S	1000	2,10 YZP
3	x	20/16-Z	S	1000	2,20 YZP
3	x	25/21-Z	S	1000	2,50 YZP
3	x	30/26-Z	S	1000	3,30 YZP

Article 88099.014 RAZ 817

88099 Steel zinc plated SPAX CSK-Z-ch

SPAX universal screw,
CSK = countersunk head,
Z = Pozidriv cross recess,
ch = centre hole for caps

Case hardened, slide-coated,
centre hole ∅ = 2,5mm,
bit sizes: ∅ 4,5 - 5 ➔ 2, ∅ 6 ➔ 3

Caps ➔ article 88001, 89013

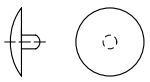
Corrosion protection ➔ TI-217

Approvals: Z-9.1-235, ETA-12/0114

4,5	x	20/10-Z	S	1000	11,95 ZP
4,5	x	25/14-Z	S	1000	12,40 ZP
4,5	x	30/19-Z	S	1000	13,10 ZP
4,5	x	35/24-Z	S	500	13,90 ZP
4,5	x	40/29-Z	S	500	14,80 ZP
4,5	x	45/34-Z	S	500	16,15 ZP
4,5	x	50/39-Z	S	500	16,55 ZP
4,5	x	55/44-Z	S	500	17,70 ZP
4,5	x	60/49-Z	S	500	19,35 ZP
4,5	x	70/59-Z	S	500	31,50 ZP
4,5	x	80/59-Z	S	200	33,50 ZP
5	x	60/49-Z	S	500	29,50 ZP
5	x	70/60-Z	S	200	36,00 ZP
5	x	80/60-Z	S	200	40,00 ZP
6	x	80/60-Z	S	200	44,50 ZP
6	x	90/60-Z	S	200	47,00 ZP
6	x	100/60-Z	S	100	55,00 ZP
6	x	120/68-Z	S	100	79,00 ZP

Article 88001(*) RAZ 800

88001 Plastic IL



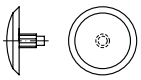
Caps with pin

For chipboard screws with inner hole,
white RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Pin ∅	x	caps ∅			
2,5	x	12	S	1000	2,40 plastic
2,5	x	15	S	1000	2,40 plastic

Dimensions			PU	Pieces	€/100/Mat.
Article		89013.(*)			RAZ 800

89013 Plastic



SPAX caps with pin

For SPAX screws with inner hole,
white (*630), black (*631), grey (*632),
beige (*633), ochre (*634), fawn brown (*635),
mahogany (*636)

white	S	500	4,85 plastic	

Article 88193.060 RAZ 816

88193 Steel zinc plated yellow SPAX-T-T

SPAX screws
with SPAX 4CUT point/cutter*,
T = with flange head,
T = T-STAR plus/T-STAR**

Case hardened, slide-coated,
*from ∅ 8 x 160 with 4CUT cutter,
*∅ 10 = without 4CUT point,
**∅10 with T-STAR

Bits ➔ article 88663, 88654

Corrosion protection ➔ TI-217

Approvals: Z-9.1-449, ETA-12/0114

Nominal ∅ x nominal length/thread length approx. - bit size

8	x	80/70-T40	S	50	48,50 YZP
8	x	100/80-T40	S	50	59,00 YZP
8	x	120/80-T40	S	50	74,00 YZP
8	x	140/80-T40	S	50	87,00 YZP
8	x	160/80-T40	S	50	114,00 YZP
8	x	180/80-T40	S	50	131,00 YZP
8	x	200/80-T40	S	50	157,00 YZP
8	x	220/80-T40	S	50	204,00 YZP
8	x	240/80-T40	S	50	214,00 YZP
8	x	260/80-T40	S	50	229,00 YZP
8	x	280/80-T40	S	50	243,00 YZP
8	x	300/80-T40	S	50	275,00 YZP
8	x	320/80-T40	S	50	292,00 YZP
8	x	340/80-T40	S	50	318,00 YZP
8	x	360/80-T40	S	50	344,00 YZP
8	x	380/80-T40	S	50	359,00 YZP
8	x	400/80-T40	S	50	379,00 YZP
8	x	450/80-T40	S	25	586,00 YZP
10	x	80/70-T50	S	50	74,00 YZP
10	x	100/80-T50	S	50	83,00 YZP
10	x	120/80-T50	S	50	94,00 YZP
10	x	140/80-T50	S	50	104,00 YZP
10	x	160/80-T50	S	25	120,00 YZP
10	x	180/80-T50	S	25	137,00 YZP
10	x	200/80-T50	S	25	176,00 YZP
10	x	220/80-T50	S	25	220,00 YZP
10	x	240/80-T50	S	25	247,00 YZP
10	x	260/80-T50	S	25	293,00 YZP

Dimensions			PU	Pieces	€/100/Mat.
10	x	280/80-T50	S	25	330,00 YZP
10	x	300/80-T50	S	25	350,00 YZP
10	x	320/80-T50	S	25	367,00 YZP
10	x	360/80-T50	S	25	430,00 YZP
10	x	380/80-T50	S	25	477,00 YZP
10	x	400/80-T50	S	25	496,00 YZP
10	x	450/80-T50	S	25	646,00 YZP

Article	88193.034	RAZ 816
88193	**Steel coating WIRO**	**SPAX-T-T**

SPAX screws
with SPAX 4CUT point/cutter*,
T = with flange head,
T = T-STAR plus

Case hardened, slide-coated,
*from lenght 160mm with 4CUT cutter

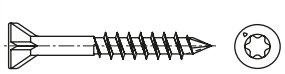
Bits ➔ article 88663, 88654

WIROX = 10-fold corrosion resistance compared to zinc plated
Approvals: Z-9.1-235, Z-9.1-511, ETA-12/0114

Nominal ∅ x nominal length/thread length approx. - bit size

6	x	60 -T30	S	200	17,40 ZP
6	x	80 -T30	S	200	23,70 ZP
6	x	100 -T30	S	100	31,50 ZP
6	x	120 -T30	S	100	46,50 ZP
6	x	140 -T30	S	100	60,00 ZP
6	x	160 -T30	S	100	82,00 ZP
6	x	180 -T30	S	100	111,00 ZP
8	x	80 -T40	S	50	48,50 ZP
8	x	100 -T40	S	50	59,00 ZP
8	x	120 -T40	S	50	74,00 ZP
8	x	140 -T40	S	50	87,00 ZP
8	x	160 -T40	S	50	114,00 ZP
8	x	180 -T40	S	50	131,00 ZP
8	x	200 -T40	S	50	157,00 ZP
8	x	220 -T40	S	50	204,00 ZP
8	x	240 -T40	S	50	214,00 ZP
8	x	260 -T40	S	50	229,00 ZP
8	x	280 -T40	S	50	243,00 ZP
8	x	300 -T40	S	50	275,00 ZP
8	x	320 -T40	S	50	292,00 ZP
8	x	340 -T40	S	50	318,00 ZP
8	x	360 -T40	S	50	344,00 ZP
8	x	380 -T40	S	50	359,00 ZP
8	x	400 -T40	S	50	379,00 ZP
8	x	450 -T40	S	25	586,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article	88195.060				RAZ 816
88195	**Steel zinc plated yellow**				**SPAX-MF-T**



SPAX screws
with SPAX CUT point,
with small 60° milling head,
MF = for solid timber floors,
T = T-STAR plus

Case hardened, slide-coated

Bits ➔ article 88663, 88654

Corrosion protection ➔ TI-217

Nominal ∅ x nominal length/thread length approx. - bit size

3,5	x	45/25-T10	S	500	11,90 YZP
3,5	x	55/36-T10	S	500	17,05 YZP

Article	88197.014	RAZ 816
88197	**Steel zinc plated**	**SPAX R-Z**

SPAX screws R
with SPAX 4CUT point,
R = with flange head,
Z = Pozidriv cross recess

Case hardened, slide-coated,
bit sizes: ∅ 3,5 - 5,0 ➔ Z2

Corrosion protection ➔ TI-217

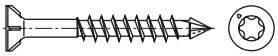
Approvals: Z-9.1-235, ETA-12/0114

Nominal ∅ x nominal length/thread length approx.

3,5	x	17/14-Z	S	3000	4,50 ZP
3,5	x	20/17-Z	S	3000	4,60 ZP
3,5	x	25/22-Z	S	2000	4,75 ZP
3,5	x	30/27-Z	S	3000	5,15 ZP
3,5	x	35/32-Z	S	2000	6,25 ZP
4	x	13/10-Z	S	3000	4,60 ZP
4	x	17/14-Z	S	2000	4,65 ZP
4	x	20/17-Z	S	2000	4,80 ZP
4	x	25/22-Z	S	3000	5,25 ZP
4	x	30/27-Z	S	2000	6,05 ZP
4	x	35/32-Z	S	2000	6,85 ZP
4	x	40/37-Z	S	1500	7,45 ZP
4	x	45/42-Z	S	1000	8,10 ZP
4,5	x	20/17-Z	S	3000	6,25 ZP
4,5	x	25/22-Z	S	2000	6,75 ZP
4,5	x	30/27-Z	S	2000	7,50 ZP
4,5	x	35/32-Z	S	1500	8,80 ZP
4,5	x	40/37-Z	S	1000	9,20 ZP
4,5	x	45/42-Z	S	1000	10,40 ZP
4,5	x	50/47-Z	S	1000	12,30 ZP
5	x	20/17-Z	S	2000	6,60 ZP
5	x	25/21-Z	S	1000	7,95 ZP
5	x	30/26-Z	S	1000	8,75 ZP
5	x	35/31-Z	S	1000	10,75 ZP
5	x	40/36-Z	S	1000	11,70 ZP

Dimensions			PU	Pieces	€/100/Mat.
5	x	45/41-Z	S	1000	13,35 ZP
5	x	50/46-Z	S	1000	14,05 ZP
5	x	60/56-Z	S	500	16,35 ZP

Article	88198.010	RAZ 816
88198	**Steel zinc plated**	**SPAX M-T**



SPAX screws M
for MDF boards,
with SPAX CUT point,
with small 75° milling head,
T = T-STAR plus

Case hardened, slide-coated

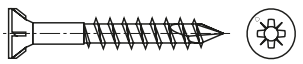
Bits ➔ article 88663, 88654

Corrosion protection ➔ TI-217

Nominal ∅ x nominal length/thread length approx. - bit size

3,5	x	40/28-T15	K	200	9,85 ZP
3,5	x	45/30-T15	K	200	11,40 ZP
3,5	x	50/35-T15	K	200	10,90 ZP
4	x	40/28-T20	K	200	8,35 ZP
4	x	45/30-T20	K	200	9,20 ZP
4	x	50/35-T20	K	200	10,10 ZP
4	x	60/40-T20	K	100	16,40 ZP
4,5	x	45/30-T20	K	200	12,75 ZP
4,5	x	50/35-T20	K	200	13,10 ZP

Article	88190.064	RAZ 816
88190	**Steel zinc plated yellow**	**SPAX CSK-Z**



SPAX glass strip screws with SPAX CUT point and milling ribs,
CSK = countersunk head,
Z = Pozidriv cross recess

Slide-coated

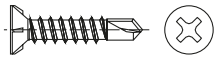
Corrosion protection ➔ TI-217

Nominal ∅ x nominal length/thread length approx. - bit size

3,5	x	40/23-Z2	S	200	13,15 YZP

Dimensions			PU	Pieces	€/100/Mat.
Article	88187.014				RAZ 816

88187 Steel special coating silver — SPAX FEX-A



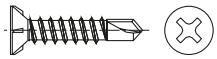
SPAX window lair screws FEX A, countersunk head with milling ribs and drillbit, with Phillips cross recess H2

Case hardened, slide-coated

3,9	x	13 -H	S	1000	2,00 ZP
3,9	x	16 -H	S	1000	2,00 ZP
3,9	x	19 -H	S	1000	2,00 ZP
3,9	x	25 -H	S	1000	2,00 ZP
3,9	x	32 -H	S	1000	2,00 ZP
3,9	x	38 -H	S	1000	2,00 ZP

Article	88187.064	RAZ 816

88187 Steel zinc plated yellow — SPAX FEX-A



SPAX window lair screws FEX A, countersunk head with milling ribs and drillbit, with Phillips cross recess H2

Case hardened, slide-coated

Corrosion protection → TI-217

3,9	x	13 -H	S	1000	2,00 YZP
3,9	x	16 -H	S	1000	2,00 YZP
3,9	x	19 -H	S	1000	2,00 YZP
3,9	x	25 -H	S	1000	2,00 YZP
3,9	x	32 -H	S	1000	2,00 YZP
3,9	x	38 -H	S	1000	2,00 YZP

Article	88188.014	RAZ 816

88188 Steel special coating silver — SPAX FEX-KS

SPAX window lair screws FEX-KS, countersunk head with breaking ribs, with Phillips cross recess H2

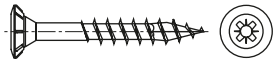
Case hardened, slide-coated

4	x	16 -H	S	1000	3,20 ZP
4	x	20 -H	S	1000	3,30 ZP
4	x	22 -H	S	1000	3,40 ZP
4	x	25 -H	S	1000	3,45 ZP
4	x	30 -H	S	1000	4,25 ZP
4	x	35 -H	S	1000	4,85 ZP
4	x	40 -H	S	1000	5,30 ZP

Dimensions			PU	Pieces	€/100/Mat.
4	x	45 -H	S	500	6,60 ZP
4	x	55 -H	S	500	8,25 ZP
5	x	25 -H	S	1000	17,00 ZP
5	x	40 -H	S	500	21,00 ZP

Article	88189.015	RAZ 816

88189 Steel special coating silver — SPAX FEX-H



SPAX window lair screws FEX-H with SPAX 4CUT point, countersunk head with breaking ribs, with Pozidriv cross recess Z2

Case hardened, slide-coated

4	x	30 -Z	S	1000	3,75 ZP
4	x	35 -Z	S	1000	4,40 ZP
4	x	40 -Z	S	1000	5,25 ZP

Article	88189.014	RAZ 816

88189 Steel special coating silver — SPAX FEX-H

SPAX window lair screws FEX-H with SPAX 4CUT point, countersunk head with breaking ribs, with T-STAR plus Case hardened, slide-coated

Bits → article 88663, 88654

4	x	30 -T15	S	1000	4,10 ZP
4	x	35 -T15	S	1000	4,65 ZP
4	x	40 -T15	S	1000	5,05 ZP

Article	89010.010	RAZ 816

89010 St. zinc plated — SPAX RA-CSK F-T

SPAX frame anchors RA, CSK F = flat countersunk head, with T-STAR plus

Case hardened, slide-coated

Bits → article 88663, 88654, caps → article 89012

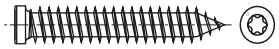
Corrosion protection → TI-217

Nominal ∅ x length x bit size

7,5	x	40 -T30	S	100	16,95 ZP
7,5	x	80 -T30	S	100	24,70 ZP
7,5	x	100 -T30	S	100	39,40 ZP
7,5	x	120 -T30	S	100	45,70 ZP
7,5	x	150 -T30	S	100	59,85 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article	89011.010				RAZ 816

89011 Steel zinc plated — SPAX RA-C-T



SPAX frame anchors RA, C = cylindric head, with T-STAR plus

Case hardened, slide-coated

Bits → article 88663, 88654, caps → article 89012

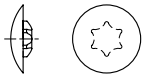
Corrosion protection → TI-217

Nominal ∅ x length x bit size

7,5	x	110 -T30	S	100	42,55 ZP
7,5	x	210 -T30	S	100	114,50 ZP

Article	89012.(*)	RAZ 800

89012 Plastic



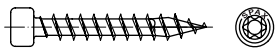
Caps for SPAX frame anchors RA with hexalobular socket

white (*630), black (*631)

weiss	S	500	4,85 plastic

articel	89014.034	RAZ 816

89014 Steel WIROX — SPAX C-T



SPAX screws for wood, glass and frames, with SPAX 4CUT point, C = cylindric head, T = T-STAR plus

Case hardened, slide-coated

Bits → article 88663, 88654

Approvals: Z-9.1-519, ETA-12/0114

ETA CE

Nominal ∅ x length - bit size

6	x	80 -T30	S	200	31,00 ZP
6	x	100 -T30	S	100	41,00 ZP
6	x	120 -T30	S	100	60,00 ZP
6	x	140 -T30	S	100	78,00 ZP
6	x	160 -T30	S	100	107,00 ZP
6	x	180 -T30	S	100	143,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	200 -T30	S	100	191,00 ZP
8	x	200 -T40	S	50	264,00 ZP
8	x	220 -T40	S	50	293,00 ZP
8	x	240 -T40	S	50	308,00 ZP
8	x	260 -T40	S	50	347,00 ZP
8	x	280 -T40	S	50	352,00 ZP
8	x	300 -T40	S	50	410,00 ZP
8	x	350 -T40	S	50	470,00 ZP
8	x	400 -T40	S	50	499,00 ZP
8	x	450 -T40	S	50	834,00 ZP

Article 89015.064 RAZ 816

89015 Steel zinc plated yellow SPAX CSK-T

**SPAX flooring screws,
with fixing thread and
SPAX 4CUT point,
CSK = SPAX MULTI counters. head,
T = T-STAR plus**

Case hardened, slide-coated

Bits ➔ article 88663, 88654

Corrosion protection ➔ TI-217

Nominal ∅ x length - bit size

4,5	x	50 -T20	S	500	10,15 YZP
4,5	x	60 -T20	S	500	13,15 YZP
4,5	x	70 -T20	S	500	17,45 YZP
4,5	x	80 -T20	S	200	19,85 YZP

Article 88096.010 RAZ 815

88096 Steel zinc plated PAN-Z

**Chipboard screws,
PAN = pan head,
Z = Pozidriv cross recess**

hardened,
Length ≥ 60mm mostly with partial thread

Dimensions ➔ TI-52 Corrosion protection ➔ TI-217

3	x	10 -Z	S	1000	1,60 ZP
3	x	12 -Z	S	1000	1,60 ZP
3	x	16 -Z	S	1000	1,65 ZP
3	x	20 -Z	S	1000	1,80 ZP
3	x	25 -Z	S	1000	1,95 ZP
3	x	30 -Z	S	1000	2,65 ZP
3,5	x	12 -Z	S	1000	2,00 ZP
3,5	x	16 -Z	S	1000	1,95 ZP
3,5	x	20 -Z	S	1000	2,25 ZP
3,5	x	25 -Z	S	1000	2,40 ZP
3,5	x	30 -Z	S	1000	2,65 ZP
3,5	x	35 -Z	S	1000	3,35 ZP
3,5	x	40 -Z	S	1000	3,80 ZP
4	x	12 -Z	S	1000	2,40 ZP
4	x	16 -Z	S	1000	2,40 ZP
4	x	17 -Z	S	1000	2,12 ZP
4	x	20 -Z	S	1000	2,60 ZP
4	x	25 -Z	S	1000	3,00 ZP
4	x	30 -Z	S	1000	3,15 ZP
4	x	35 -Z	S	1000	3,65 ZP
4	x	40 -Z	S	500	4,25 ZP
4	x	45 -Z	S	500	4,85 ZP
4	x	50 -Z	S	500	5,30 ZP
4	x	60 -Z	S	250	5,50 ZP
4,5	x	12 -Z	S	1000	3,60 ZP
4,5	x	16 -Z	S	1000	3,60 ZP
4,5	x	20 -Z	S	1000	3,60 ZP
4,5	x	25 -Z	S	1000	3,95 ZP
4,5	x	30 -Z	S	500	4,35 ZP
4,5	x	35 -Z	S	500	4,75 ZP
4,5	x	40 -Z	S	500	5,20 ZP
4,5	x	45 -Z	S	500	6,70 ZP
4,5	x	50 -Z	S	500	7,60 ZP
4,5	x	60 -Z	S	500	9,00 ZP
5	x	16 -Z	S	1000	4,20 ZP
5	x	20 -Z	S	1000	4,70 ZP
5	x	25 -Z	S	500	4,90 ZP
5	x	30 -Z	S	500	5,40 ZP
5	x	35 -Z	S	500	6,30 ZP
5	x	40 -Z	S	500	6,80 ZP
5	x	45 -Z	S	200	7,60 ZP
5	x	50 -Z	S	200	8,00 ZP
5	x	60 -Z	S	200	9,70 ZP
5	x	70 -Z	S	200	12,00 ZP
5	x	80 -Z	S	200	15,00 ZP
5	x	90 -Z	S	200	19,00 ZP
6	x	20 -Z	S	1000	6,10 ZP
6	x	25 -Z	S	1000	6,90 ZP
6	x	30 -Z	S	500	8,85 ZP
6	x	35 -Z	S	500	9,60 ZP
6	x	40 -Z	S	500	9,90 ZP
6	x	45 -Z	S	200	10,50 ZP
6	x	50 -Z	S	200	11,40 ZP
6	x	60 -Z	S	200	14,00 ZP
6	x	70 -Z	S	200	6,20 ZP
6	x	80 -Z	S	200	16,30 ZP
6	x	90 -Z	S	200	20,00 ZP
6	x	100 -Z	S	100	25,00 ZP

Article 88096.014 RAZ 815

88096 Steel zinc plated PAN-T

**Chipboard screws,
PAN = pan head,
T = hexalobular socket**

hardened,
Length ≥ 60mm mostly with partial thread

Dimensions ➔ TI-52 Corrosion protection ➔ TI-217

3	x	10 -T10	S	1000	2,20 ZP
3	x	12 -T10	S	1000	2,25 ZP
3	x	16 -T10	S	1000	2,25 ZP
3	x	20 -T10	S	1000	2,50 ZP
3	x	25 -T10	S	1000	2,65 ZP
3	x	30 -T10	S	1000	3,60 ZP
3,5	x	12 -T15	S	1000	2,70 ZP
3,5	x	16 -T15	S	1000	2,70 ZP
3,5	x	20 -T15	S	1000	3,05 ZP
3,5	x	25 -T15	S	1000	3,25 ZP
3,5	x	30 -T15	S	1000	3,60 ZP
3,5	x	35 -T15	S	1000	4,55 ZP
3,5	x	40 -T15	S	1000	5,20 ZP
4	x	12 -T20	S	1000	3,25 ZP
4	x	16 -T20	S	1000	3,25 ZP
4	x	17 -T20	S	1000	3,55 ZP
4	x	20 -T20	S	1000	3,55 ZP
4	x	25 -T20	S	1000	4,05 ZP
4	x	30 -T20	S	1000	4,25 ZP
4	x	35 -T20	S	1000	4,95 ZP
4	x	40 -T20	S	500	5,75 ZP
4	x	45 -T20	S	500	6,55 ZP
4	x	50 -T20	S	500	7,20 ZP
4	x	60 -T20	S	500	7,45 ZP
4,5	x	12 -T20	S	1000	4,90 ZP
4,5	x	16 -T20	S	1000	4,90 ZP
4,5	x	20 -T20	S	1000	4,90 ZP
4,5	x	25 -T20	S	1000	5,35 ZP
4,5	x	30 -T20	S	500	5,90 ZP
4,5	x	35 -T20	S	500	6,45 ZP
4,5	x	40 -T20	S	500	7,05 ZP
4,5	x	45 -T20	S	500	9,05 ZP
4,5	x	50 -T20	S	500	10,30 ZP
4,5	x	60 -T20	S	500	12,15 ZP
5	x	16 -T25	S	1000	5,70 ZP
5	x	20 -T25	S	1000	6,35 ZP
5	x	25 -T25	S	500	6,65 ZP
5	x	30 -T25	S	500	7,30 ZP
5	x	35 -T25	S	500	8,55 ZP
5	x	40 -T25	S	500	9,20 ZP
5	x	45 -T25	S	200	10,30 ZP
5	x	50 -T25	S	200	10,80 ZP
5	x	60 -T25	S	200	13,10 ZP
5	x	70 -T25	S	200	16,20 ZP
5	x	80 -T25	S	200	20,25 ZP
5	x	90 -T25	S	200	25,65 ZP
6	x	20 -T30	S	1000	8,25 ZP
6	x	25 -T30	S	500	9,35 ZP
6	x	30 -T30	S	500	12,00 ZP
6	x	35 -T30	S	500	13,00 ZP
6	x	40 -T30	S	500	13,40 ZP
6	x	45 -T30	S	200	14,20 ZP
6	x	50 -T30	S	200	15,40 ZP
6	x	60 -T30	S	200	18,90 ZP
6	x	70 -T30	S	200	21,60 ZP
6	x	80 -T30	S	200	22,05 ZP
6	x	90 -T30	S	200	27,00 ZP
6	x	100 -T30	S	100	34,00 ZP

Article 88097.010 RAZ 815

88097 Steel zinc plated CSK-Z

**Chipboard screws,
CSK = countersunk head,
Z = Pozidriv cross recess**

hardened

Dimensions ➔ TI-52 Corrosion protection ➔ TI-217

3	x	10 -Z	S	1000	1,35 ZP
3	x	12 -Z	S	1000	1,35 ZP
3	x	16 -Z	S	1000	1,40 ZP
3	x	20 -Z	S	1000	1,50 ZP
3	x	25 -Z	S	1000	1,65 ZP
3	x	30 -Z	S	1000	2,20 ZP
3	x	35 -Z	S	1000	2,45 ZP
3	x	40 -Z	S	1000	3,35 ZP
3	x	45 -Z	S	1000	4,40 ZP
3,5	x	12 -Z	S	1000	1,65 ZP
3,5	x	16 -Z	S	1000	1,65 ZP
3,5	x	20 -Z	S	1000	1,90 ZP
3,5	x	25 -Z	S	1000	2,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
3,5	x	30 -Z	S	1000	2,25 ZP
3,5	x	35 -Z	S	1000	2,75 ZP
3,5	x	40 -Z	S	1000	3,15 ZP
3,5	x	45 -Z	S	1000	4,80 ZP
3,5	x	50 -Z	S	500	5,20 ZP
4	x	16 -Z	S	1000	2,00 ZP
4	x	20 -Z	S	1000	2,20 ZP
4	x	25 -Z	S	1000	2,45 ZP
4	x	30 -Z	S	1000	2,60 ZP
4	x	35 -Z	S	1000	3,05 ZP
4	x	40 -Z	S	1000	3,60 ZP
4	x	45 -Z	S	500	4,05 ZP
4	x	50 -Z	S	500	4,40 ZP
4	x	55 -Z	S	500	7,60 ZP
4	x	60 -Z	S	500	7,60 ZP
4,5	x	16 -Z	S	1000	2,75 ZP
4,5	x	20 -Z	S	1000	3,05 ZP
4,5	x	25 -Z	S	1000	3,35 ZP
4,5	x	30 -Z	S	1000	3,60 ZP
4,5	x	35 -Z	S	500	3,95 ZP
4,5	x	40 -Z	S	500	4,35 ZP
4,5	x	45 -Z	S	500	5,60 ZP
4,5	x	50 -Z	S	500	5,80 ZP
4,5	x	55 -Z	S	500	7,10 ZP
4,5	x	60 -Z	S	500	7,30 ZP
4,5	x	70 -Z	S	500	12,30 ZP
5	x	20 -Z	S	1000	4,00 ZP
5	x	25 -Z	S	1000	4,05 ZP
5	x	30 -Z	S	500	4,50 ZP
5	x	35 -Z	S	500	5,20 ZP
5	x	40 -Z	S	500	5,60 ZP
5	x	45 -Z	S	500	6,30 ZP
5	x	50 -Z	S	500	6,70 ZP
5	x	55 -Z	S	500	7,50 ZP
5	x	60 -Z	S	500	8,10 ZP
5	x	70 -Z	S	200	11,40 ZP
6	x	30 -Z	S	500	8,60 ZP
6	x	40 -Z	S	500	8,60 ZP
6	x	50 -Z	S	200	9,70 ZP
6	x	60 -Z	S	200	11,70 ZP
6	x	70 -Z	S	200	14,20 ZP

Article	88097.019	RAZ 815
88097	**Steel zinc plated**	**CSK-Z-P**

Chipboard screws,
CSK = countersunk head,
P = partially threaded,
Z = Pozidriv cross recess

hardened

Dimensions → TI-52 Corrosion protection → TI-217

Nominal ∅ x nominal length/thread length approx.

3	x	30/18-Z	S	1000	2,20 ZP
3	x	35/21-Z	S	1000	1,65 ZP
3	x	40/24-Z	S	1000	3,35 ZP
3	x	45/27-Z	S	1000	4,40 ZP
3,5	x	30/18-Z	S	1000	2,25 ZP
3,5	x	35/21-Z	S	1000	2,75 ZP
3,5	x	40/24-Z	S	1000	3,20 ZP
3,5	x	45/27-Z	S	1000	5,10 ZP
3,5	x	50/30-Z	S	500	5,30 ZP
4	x	30/18-Z	S	1000	2,60 ZP
4	x	35/21-Z	S	1000	3,05 ZP
4	x	40/24-Z	S	1000	3,60 ZP
4	x	45/27-Z	S	500	4,20 ZP
4	x	50/30-Z	S	500	4,45 ZP

Dimensions			PU	Pieces	€/100/Mat.
4	x	55/33-Z	S	500	7,60 ZP
4	x	60/36-Z	S	500	7,90 ZP
4	x	70/42-Z	S	200	12,50 ZP
4	x	80/48-Z	S	200	15,60 ZP
4,5	x	30/18-Z	S	1000	3,60 ZP
4,5	x	35/21-Z	S	500	3,95 ZP
4,5	x	40/24-Z	S	500	4,40 ZP
4,5	x	45/27-Z	S	500	5,60 ZP
4,5	x	50/30-Z	S	500	5,80 ZP
4,5	x	60/36-Z	S	500	7,30 ZP
4,5	x	70/42-Z	S	200	12,40 ZP
4,5	x	80/48-Z	S	200	21,00 ZP
5	x	30/18-Z	S	500	4,50 ZP
5	x	35/21-Z	S	500	5,20 ZP
5	x	40/24-Z	S	500	5,70 ZP
5	x	45/27-Z	S	500	6,70 ZP
5	x	50/30-Z	S	500	6,70 ZP
5	x	55/33-Z	S	500	8,10 ZP
5	x	60/36-Z	S	500	8,10 ZP
5	x	70/42-Z	S	200	11,60 ZP
5	x	80/48-Z	S	200	14,10 ZP
5	x	90/54-Z	S	200	18,20 ZP
5	x	100/60-Z	S	200	20,30 ZP
5	x	120/70-Z	S	200	29,80 ZP
6	x	40/24-Z	S	500	8,60 ZP
6	x	50/30-Z	S	200	9,50 ZP
6	x	60/36-Z	S	200	11,60 ZP
6	x	70/42-Z	S	200	14,40 ZP
6	x	80/48-Z	S	200	16,10 ZP
6	x	90/54-Z	S	200	18,60 ZP
6	x	100/60-Z	S	100	21,50 ZP
6	x	110/70-Z	S	100	28,50 ZP
6	x	120/70-Z	S	100	33,00 ZP
6	x	130/70-Z	S	100	36,50 ZP
6	x	140/70-Z	S	100	42,00 ZP
6	x	150/70-Z	S	100	48,00 ZP
6	x	160/70-Z	S	100	57,00 ZP
6	x	180/70-Z	S	100	70,00 ZP
6	x	200/70-Z	S	100	88,00 ZP
6	x	220/70-Z	S	100	148,00 ZP
6	x	240/70-Z	S	100	166,00 ZP
6	x	280/70-Z	S	100	185,00 ZP
6	x	300/70-Z	S	100	193,00 ZP

Article	88097.060	RAZ 815
88097	**Steel zinc plated yellow**	**CSK-Z**

Chipboard screws,
CSK = countersunk head,
Z = Pozidriv cross recess

hardened

Dimensions → TI-52 Corrosion protection → TI-217

3	x	12 -Z	S	1000	1,35 YZP
3	x	16 -Z	S	1000	1,40 YZP
3	x	20 -Z	S	1000	1,50 YZP
3	x	25 -Z	S	1000	1,65 YZP
3	x	30 -Z	S	1000	2,20 YZP
3	x	35 -Z	S	1000	2,45 YZP
3	x	40 -Z	S	1000	3,35 YZP
3,5	x	12 -Z	S	1000	1,65 YZP
3,5	x	16 -Z	S	1000	1,65 YZP
3,5	x	20 -Z	S	1000	1,90 YZP
3,5	x	25 -Z	S	1000	2,00 YZP
3,5	x	30 -Z	S	1000	2,25 YZP
3,5	x	35 -Z	S	1000	2,75 YZP

Dimensions			PU	Pieces	€/100/Mat.
3,5	x	40 -Z	S	1000	3,15 YZP
3,5	x	45 -Z	S	1000	4,80 YZP
3,5	x	50 -Z	S	500	5,20 YZP
4	x	16 -Z	S	1000	2,00 YZP
4	x	20 -Z	S	1000	2,20 YZP
4	x	25 -Z	S	1000	2,45 YZP
4	x	30 -Z	S	1000	2,60 YZP
4	x	35 -Z	S	1000	3,05 YZP
4	x	40 -Z	S	1000	3,60 YZP
4	x	45 -Z	S	500	4,05 YZP
4	x	50 -Z	S	500	4,40 YZP
4	x	60 -Z	S	500	7,60 YZP
4,5	x	20 -Z	S	1000	3,05 YZP
4,5	x	25 -Z	S	1000	3,35 YZP
4,5	x	30 -Z	S	1000	3,60 YZP
4,5	x	35 -Z	S	500	3,95 YZP
4,5	x	40 -Z	S	500	4,35 YZP
4,5	x	45 -Z	S	500	5,60 YZP
4,5	x	50 -Z	S	500	5,80 YZP
4,5	x	55 -Z	S	500	7,10 YZP
4,5	x	60 -Z	S	500	7,30 YZP
4,5	x	70 -Z	S	500	12,30 YZP
5	x	25 -Z	S	1000	4,05 YZP
5	x	30 -Z	S	500	4,50 YZP
5	x	35 -Z	S	500	5,20 YZP
5	x	40 -Z	S	500	5,60 YZP
5	x	45 -Z	S	500	6,30 YZP
5	x	50 -Z	S	500	6,70 YZP
5	x	55 -Z	S	500	7,50 YZP
5	x	60 -Z	S	500	8,10 YZP
5	x	70 -Z	S	200	11,40 YZP
6	x	40 -Z	S	500	8,60 YZP
6	x	50 -Z	S	200	9,70 YZP
6	x	60 -Z	S	200	11,70 YZP
6	x	70 -Z	S	200	14,20 YZP

Article	88097.069	RAZ 815
88097	**Steel zinc plated yellow**	**CSK-Z-P**

Chipboard screws,
CSK = countersunk head,
P = partially threaded,
Z = Pozidriv cross recess

hardened

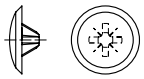
Dimensions → TI-52 Corrosion protection → TI-217

Nominal ∅ x nominal length/thread length approx.

3	x	30/18-Z	S	1000	2,20 YZP
3	x	35/21-Z	S	1000	1,65 YZP
3	x	40/24-Z	S	1000	3,35 YZP
3	x	45/27-Z	S	1000	4,40 YZP
3,5	x	30/18-Z	S	1000	2,25 YZP
3,5	x	35 -Z	S	1000	0,80 YZP
3,5	x	40/24-Z	S	1000	3,20 YZP
3,5	x	45/27-Z	S	1000	5,10 YZP
3,5	x	50/30-Z	S	500	5,30 YZP
4	x	30/18-Z	S	1000	2,60 YZP
4	x	35/21-Z	S	1000	3,05 YZP
4	x	40/24-Z	S	1000	3,60 YZP
4	x	45/27-Z	S	500	4,20 YZP
4	x	50/30-Z	S	500	4,45 YZP
4	x	55/33-Z	S	500	7,60 YZP
4	x	60/36-Z	S	500	7,90 YZP
4	x	70/42-Z	S	200	12,50 YZP
4	x	80/48-Z	S	200	15,60 YZP
4,5	x	30/18-Z	S	1000	3,60 YZP
4,5	x	35/21-Z	S	500	3,95 YZP

Dimensions			PU	Pieces	€/100/Mat.
4,5	x	40/24-Z	S	500	4,40 YZP
4,5	x	45/27-Z	S	500	5,60 YZP
4,5	x	50/30-Z	S	500	5,80 YZP
4,5	x	60/36-Z	S	500	7,30 YZP
4,5	x	70/42-Z	S	200	12,40 YZP
4,5	x	80/48-Z	S	200	21,00 YZP
5	x	30/18-Z	S	500	4,50 YZP
5	x	35/21-Z	S	500	5,20 YZP
5	x	40/24-Z	S	500	5,70 YZP
5	x	45/27-Z	S	500	6,70 YZP
5	x	50/30-Z	S	500	6,70 YZP
5	x	55/33-Z	S	500	8,10 YZP
5	x	60/36-Z	S	500	8,10 YZP
5	x	70/42-Z	S	200	11,60 YZP
5	x	80/48-Z	S	200	14,10 YZP
5	x	90/54-Z	S	200	18,20 YZP
5	x	90/54-Z	S	200	20,30 YZP
5	x	120/70-Z	S	200	29,80 YZP
6	x	40/24-Z	S	500	8,60 YZP
6	x	50/30-Z	S	200	9,50 YZP
6	x	60/36-Z	S	200	11,60 YZP
6	x	70/42-Z	S	200	14,40 YZP
6	x	80/48-Z	S	200	16,10 YZP
6	x	90/54-Z	S	200	18,60 YZP
6	x	100/60-Z	S	100	21,50 YZP
6	x	110/70-Z	S	100	28,50 YZP
6	x	120/70-Z	S	100	33,00 YZP
6	x	130/70-Z	S	100	36,50 YZP
6	x	140/70-Z	S	100	42,00 YZP
6	x	150/70-Z	S	100	48,00 YZP
6	x	160/70-Z	S	100	57,00 YZP
6	x	180/70-Z	S	100	70,00 YZP
6	x	200/70-Z	S	100	88,00 YZP
6	x	220/70-Z	S	100	148,00 YZP
6	x	240/70-Z	S	100	166,00 YZP

Article	88002.(*)	RAZ 800
88002	**Plastic**	**Z**



Caps for countersunk head screws with Pozidriv cross recess Z

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Cross recess no. x caps ∅	for screws ∅			
1	x	8 / 3	S 1000	1,40 plastic
2	x	12 / 3,5-5	S 1000	1,40 plastic
3	x	13 / 5,5-6	S 1000	1,50 plastic

Dimensions			PU	Pieces	€/100/Mat.
Article		88098.010			RAZ 815
88098		**Steel zinc plated**			**CSK-T**

Chipboard screws with thread up to head, CSK = countersunk head, T = hexalobular socket

hardened

Caps ➔ article 88006

Dimensions ➔ TI-52

3	x	12 -T10	S	1000	1,35 ZP
3	x	16 -T10	S	1000	1,40 ZP
3	x	20 -T10	S	1000	1,50 ZP
3	x	25 -T10	S	1000	1,65 ZP
3	x	30 -T10	S	1000	2,20 ZP
3	x	35 -T10	S	1000	2,45 ZP
3	x	40 -T10	S	1000	3,35 ZP
3	x	45 -T10	S	1000	4,40 ZP
3,5	x	15 -T15	S	1000	1,65 ZP
3,5	x	16 -T15	S	1000	1,65 ZP
3,5	x	20 -T15	S	1000	1,90 ZP
3,5	x	25 -T15	S	1000	2,00 ZP
3,5	x	30 -T15	S	1000	2,25 ZP
3,5	x	35 -T15	S	1000	2,75 ZP
3,5	x	40 -T15	S	1000	3,15 ZP
3,5	x	45 -T15	S	1000	4,80 ZP
3,5	x	50 -T15	S	500	5,20 ZP
4	x	16 -T20	S	1000	2,00 ZP
4	x	20 -T20	S	1000	2,20 ZP
4	x	25 -T20	S	1000	2,45 ZP
4	x	30 -T20	S	1000	2,60 ZP
4	x	35 -T20	S	1000	3,05 ZP
4	x	40 -T20	S	1000	3,60 ZP
4	x	45 -T20	S	1000	4,05 ZP
4	x	50 -T20	S	1000	4,40 ZP
4	x	60 -T20	S	500	7,60 ZP
4	x	70 -T20	S	500	12,30 ZP
4,5	x	16 -T20	S	1000	2,75 ZP
4,5	x	20 -T20	S	1000	3,05 ZP
4,5	x	25 -T20	S	1000	3,35 ZP
4,5	x	30 -T20	S	1000	3,60 ZP
4,5	x	35 -T20	S	500	3,95 ZP
4,5	x	40 -T20	S	500	4,35 ZP
4,5	x	45 -T20	S	500	5,60 ZP
4,5	x	50 -T20	S	500	5,80 ZP
4,5	x	60 -T20	S	500	7,30 ZP
4,5	x	70 -T20	S	500	12,30 ZP
5	x	20 -T25	S	1000	4,00 ZP
5	x	25 -T25	S	1000	4,05 ZP
5	x	30 -T25	S	1000	4,50 ZP
5	x	35 -T25	S	1000	5,20 ZP
5	x	40 -T25	S	1000	5,60 ZP
5	x	50 -T25	S	1000	6,70 ZP
5	x	60 -T25	S	500	8,10 ZP
5	x	70 -T25	S	500	11,40 ZP
6	x	30 -T30	S	500	8,60 ZP
6	x	40 -T30	S	500	8,60 ZP
6	x	50 -T30	S	200	9,70 ZP
6	x	60 -T30	S	200	11,70 ZP
8	x	70 -T40	S	100	40,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88098.019			RAZ 815
88098		**Steel zinc plated**			**CSK-T P**

Chipboard screws, CSK = countersunk head, P = partially threaded, T = hexalobular socket

hardened

Caps ➔ article 88006

Dimensions ➔ TI-52 Corrosion protection ➔ TI-217

Nominal ∅ x nominal length/thread length approx.

3	x	30/18	S	1000	2,20 ZP
3	x	35/21	S	1000	1,65 ZP
3	x	40/24	S	1000	3,35 ZP
3	x	45/27	S	1000	4,40 ZP
3,5	x	30/18	S	1000	2,25 ZP
3,5	x	35/21	S	1000	2,75 ZP
3,5	x	40/24	S	1000	3,20 ZP
3,5	x	45/27	S	1000	5,10 ZP
3,5	x	50/30	S	500	5,30 ZP
4	x	30/18	S	1000	2,60 ZP
4	x	35/21	S	1000	3,05 ZP
4	x	40/24	S	1000	3,60 ZP
4	x	45/27	S	500	4,20 ZP
4	x	50/30	S	500	4,45 ZP
4	x	55/33	S	500	7,60 ZP
4	x	60/36	S	500	7,90 ZP
4	x	70/42	S	200	12,50 ZP
4	x	80/48	S	500	15,60 ZP
4,5	x	30/18	S	1000	3,60 ZP
4,5	x	35/21	S	500	3,95 ZP
4,5	x	40/24	S	500	4,40 ZP
4,5	x	45/27	S	500	5,60 ZP
4,5	x	50/30	S	500	5,80 ZP
4,5	x	60/36	S	500	7,30 ZP
4,5	x	70/42	S	200	12,40 ZP
4,5	x	80/48	S	200	21,00 ZP
5	x	30/18	S	500	4,50 ZP
5	x	35/21	S	500	5,20 ZP
5	x	40/24	S	500	5,70 ZP
5	x	45/27	S	500	6,70 ZP
5	x	50/30	S	500	6,70 ZP
5	x	55/33	S	500	8,10 ZP
5	x	60/36	S	500	8,10 ZP
5	x	70/42	S	500	11,60 ZP
5	x	80/48	S	500	14,10 ZP
5	x	90/54	S	200	18,20 ZP
5	x	100/60	S	200	20,30 ZP
5	x	120/70	S	200	29,80 ZP
6	x	40/24	S	500	8,60 ZP
6	x	50/30	S	200	9,50 ZP
6	x	60/36	S	200	11,60 ZP
6	x	70/42	S	200	14,40 ZP
6	x	80/48	S	200	16,10 ZP
6	x	90/54	S	200	18,60 ZP
6	x	100/60	S	100	21,50 ZP
6	x	110/70	S	100	28,50 ZP
6	x	120/70	S	100	33,00 ZP
6	x	130/70	S	100	36,50 ZP
6	x	140/70	S	100	42,00 ZP
6	x	150/70	S	100	48,00 ZP
6	x	160/70	S	100	57,00 ZP
6	x	180/70	S	100	70,00 ZP
6	x	200/70	S	100	88,00 ZP
6	x	220/70	S	100	148,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	240/70	S	100	166,00 ZP
6	x	260/70	S	100	171,00 ZP
6	x	280/70	S	100	185,00 ZP
6	x	300/70	S	100	193,00 ZP
8	x	80/52	S	100	55,00 ZP
8	x	90/60	S	100	65,00 ZP
8	x	100/52	S	100	65,00 ZP

Article	88098.060	RAZ 815

88098 Steel zinc plated yellow CSK-T

Chipboard screws with thread up to head, CSK = countersunk head, T = hexalobular socket

hardened

Caps ➔ article 88006

Dimensions ➔ TI-52 Corrosion protection ➔ TI-217

3	x	12 -T10	S	1000	1,35 YZP
3	x	13 -T10	S	1000	1,40 YZP
3	x	15 -T10	S	1000	1,40 YZP
3	x	16 -T10	S	1000	1,40 YZP
3	x	17 -T10	S	1000	1,50 YZP
3	x	20 -T10	S	1000	1,50 YZP
3	x	25 -T10	S	1000	1,65 YZP
3,5	x	15 -T15	S	1000	1,65 YZP
3,5	x	16 -T15	S	1000	1,65 YZP
3,5	x	20 -T15	S	1000	1,90 YZP
3,5	x	25 -T15	S	1000	2,00 YZP
3,5	x	30 -T15	S	1000	2,55 YZP
3,5	x	35 -T15	S	1000	3,05 YZP
3,5	x	40 -T15	S	1000	3,20 YZP
3,5	x	45 -T15	S	1000	5,10 YZP
3,5	x	50 -T15	S	500	5,30 YZP
4	x	15 -T20	S	1000	2,00 YZP
4	x	16 -T20	S	1000	2,00 YZP
4	x	20 -T20	S	1000	2,20 YZP
4	x	25 -T20	S	1000	2,45 YZP
4	x	30 -T20	S	1000	2,90 YZP
4	x	35 -T20	S	1000	3,35 YZP
4	x	40 -T20	S	1000	3,60 YZP
4	x	45 -T20	S	500	4,20 YZP
4	x	50 -T20	S	500	4,45 YZP
4	x	60 -T20	S	500	7,90 YZP
4,5	x	20 -T20	S	1000	2,80 YZP
4,5	x	25 -T20	S	1000	3,35 YZP
4,5	x	30 -T20	S	1000	3,90 YZP
4,5	x	35 -T20	S	500	4,25 YZP
4,5	x	40 -T20	S	500	4,40 YZP
4,5	x	45 -T20	S	500	5,60 YZP
4,5	x	50 -T20	S	500	5,80 YZP
4,5	x	60 -T20	S	500	7,30 YZP
5	x	25 -T25	S	1000	4,05 YZP
5	x	30 -T25	S	500	4,80 YZP
5	x	35 -T25	S	500	5,50 YZP
5	x	40 -T25	S	500	5,70 YZP
5	x	45 -T25	S	500	6,70 YZP
5	x	50 -T25	S	500	6,70 YZP
5	x	60 -T25	S	500	8,10 YZP
6	x	40 -T30	S	500	9,00 YZP
6	x	50 -T30	S	200	9,50 YZP
6	x	60 -T30	S	200	11,60 YZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88098.069			RAZ 815

88098 Steel zinc plated yellow CSK-T P

Chipboard screws, CSK = countersunk head, P = partially threaded, T = hexalobular socket

hardened

Caps ➔ article 88006

Dimensions ➔ TI-52 Corrosion protection ➔ TI-217

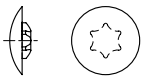
Nominal ∅ x nominal length/thread length approx.

3	x	30/18	S	1000	2,20 YZP
3	x	35/21	S	1000	1,65 YZP
3	x	40/24	S	1000	3,35 YZP
3	x	45/27	S	1000	4,40 YZP
3,5	x	30/18	S	1000	2,25 YZP
3,5	x	35/21	S	1000	2,75 YZP
3,5	x	40/24	S	1000	3,20 YZP
3,5	x	45/27	S	1000	5,10 YZP
3,5	x	50/30	S	500	5,30 YZP
4	x	30/18	S	1000	2,60 YZP
4	x	35/21	S	1000	3,05 YZP
4	x	40/24	S	1000	3,60 YZP
4	x	45/27	S	500	4,20 YZP
4	x	50/30	S	500	4,45 YZP
4	x	55/33	S	500	7,60 YZP
4	x	60/36	S	500	7,90 YZP
4	x	70/42	S	200	12,50 YZP
4	x	80/48	S	200	15,60 YZP
4,5	x	30/18	S	1000	3,60 YZP
4,5	x	35/21	S	500	3,95 YZP
4,5	x	40/24	S	500	4,40 YZP
4,5	x	45/27	S	500	5,60 YZP
4,5	x	50/30	S	500	5,80 YZP
4,5	x	60/36	S	500	7,30 YZP
4,5	x	70/42	S	200	12,40 YZP
4,5	x	80/48	S	200	21,00 YZP
5	x	30/18	S	500	4,50 YZP
5	x	35/21	S	500	5,20 YZP
5	x	40/24	S	500	5,70 YZP
5	x	45/27	S	500	6,70 YZP
5	x	50/30	S	500	6,70 YZP
5	x	55/33	S	500	8,10 YZP
5	x	60/36	S	500	8,10 YZP
5	x	70/42	S	200	11,60 YZP
5	x	80/48	S	200	14,10 YZP
5	x	90/54	S	200	18,20 YZP
5	x	100/60	S	200	20,30 YZP
5	x	120/70	S	200	29,80 YZP
6	x	40/24	S	500	8,60 YZP
6	x	50/30	S	200	9,50 YZP
6	x	60/36	S	200	11,60 YZP
6	x	70/42	S	200	14,40 YZP
6	x	80/48	S	200	16,10 YZP
6	x	90/54	S	200	18,60 YZP
6	x	100/60	S	100	21,50 YZP
6	x	110/70	S	100	28,50 YZP
6	x	120/70	S	100	33,00 YZP
6	x	130/70	S	100	36,50 YZP
6	x	140/70	S	100	42,00 YZP
6	x	150/70	S	100	48,00 YZP
6	x	160/70	S	100	57,00 YZP
6	x	180/70	S	100	70,00 YZP
6	x	200/70	S	100	88,00 YZP
6	x	220/70	S	100	148,00 YZP

Dimensions			PU	Pieces	€/100/Mat.
6	x	240/70	S	100	166,00 YZP
6	x	260/70	S	100	171,00 YZP
6	x	280/70	S	100	185,00 YZP
6	x	300/70	S	100	193,00 YZP

Article	88006.(*)	RAZ 800

88006 Plastic T



Caps for countersunk head screws with hexalobular socket

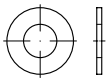
white RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650),
fawn brown RAL 8007 (*660)

T no. x caps ∅/for screws

15	x	12 /3,5	S	1000	2,30
20	x	12 /4-4,5	S	1000	2,30
25	x	13,5/5	S	1000	2,30
30	x	16,5/6	S	1000	2,30

Article	88100.000	RAZ 820

88100 Steel



Washers "article 1" (~ DIN 134), product grade C (g)

Dimensions ➔ TI-84

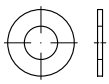
Inside ∅ x outside ∅ x thickness

3,2	x	8	x	0,5	S	200	1,30
4,3	x	10	x	0,8	S	200	1,30
5,3	x	12	x	1	S	200	1,30
6,5	x	13	x	1,25	S	200	1,15
8	x	16	x	1,25	S	200	1,50
10	x	20	x	1,5	S	200	2,20
11,5	x	23	x	1,5	S	200	2,40
14,5	x	29	x	1,75	S	200	4,00
16	x	32	x	2	S	200	6,10
17,5	x	35	x	2	S	200	6,70
19,5	x	39	x	2,5	S	100	10,80
21	x	42	x	2,5	S	100	10,50
23	x	46	x	3	S	100	14,50
24,5	x	49	x	3	S	100	16,20
27,5	x	55	x	3,5	S	100	21,60
29	x	58	x	3,5	S	100	31,50
31	x	62	x	3,5	S	100	36,00
34	x	68	x	4	S	100	47,00
36	x	72	x	5	S	50	70,00
40	x	80	x	5	S	50	89,00
43	x	85	x	5	S	50	96,00
46	x	90	x	6	S	50	132,00
50	x	97	x	6	S	50	149,00
54	x	105	x	7	S	25	210,00

Dimensions | PU Pieces | €/100/Mat.

Article 88100.010 RAZ 820

88100 Steel zinc plated



Washers "article 1" (~ DIN 134) product grade C (g)

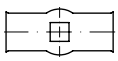
Dimensions → TI-84 Corrosion protection → TI-217

Inside ∅ x outside ∅ x thickness

3,2	x	8	x	0,5	S	200	1,40 ZP
4,3	x	10	x	0,8	S	200	1,40 ZP
5,3	x	12	x	1	S	200	1,45 ZP
6,5	x	13	x	1,25	S	200	1,40 ZP
8	x	16	x	1,25	S	200	1,90 ZP
10	x	20	x	1,5	S	200	2,80 ZP
11,5	x	23	x	1,5	S	200	3,25 ZP
13	x	26	x	1,75	S	200	4,45 ZP
14,5	x	29	x	1,75	S	200	5,60 ZP
16	x	32	x	2	S	200	8,70 ZP
17,5	x	35	x	2	S	200	9,50 ZP
19,5	x	39	x	2,5	S	100	15,10 ZP
21	x	42	x	2,5	S	100	15,40 ZP
23	x	46	x	3	S	100	21,70 ZP
24,5	x	49	x	3	S	100	24,40 ZP
27,5	x	55	x	3,5	S	100	34,50 ZP
29	x	58	x	3,5	S	100	44,50 ZP
31	x	62	x	3,5	S	100	52,00 ZP
34	x	68	x	4	S	100	69,00 ZP
36	x	72	x	5	S	50	99,00 ZP
40	x	80	x	5	S	50	126,00 ZP
43	x	85	x	5	S	50	136,00 ZP
46	x	90	x	6	S	50	186,00 ZP
50	x	97	x	6	S	50	211,00 ZP
54	x	105	x	7	S	25	300,00 ZP

Article 88102.010 RAZ 830

88102 Steel zinc plated



Joint washers

For cup head square neck bolts acc. to DIN 603

Dimensions → TI-112 Corrosion protection → TI-217

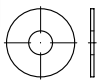
Square hole size

9	S	100	52,00 ZP
11	S	100	70,00 ZP

Dimensions | PU Pieces | €/100/Mat.

Article 88104.000 RAZ 840

88104 Steel



Washers with large outside diameter, product grade C (g)

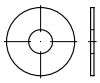
Dimensions → TI-85

Inside ∅ x outside ∅ x thickness

5,3	x	20	x	1,5	S	200	2,65
5,3	x	25	x	1,5	S	200	3,80
5,3	x	30	x	1,5	S	200	5,70
6,4	x	20	x	1,5	S	200	2,80
6,4	x	25	x	1,5	S	200	3,80
6,4	x	30	x	1,5	S	200	5,70
6,4	x	35	x	1,5	S	200	7,20
8,4	x	20	x	1,5	S	200	2,80
8,4	x	25	x	1,5	S	200	3,80
8,4	x	30	x	1,5	S	200	5,70
8,4	x	35	x	1,5	S	200	7,20
10,5	x	30	x	1,5	S	200	5,70
10,5	x	35	x	1,5	S	200	7,20
12,5	x	30	x	1,5	S	200	5,70
12,5	x	35	x	1,5	S	200	7,20

Article 88104.010 RAZ 840

88104 Steel zinc plated



Washers with large outside diameter, product grade C (g)

Dimensions → TI-85 Corrosion protection → TI-217

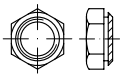
Inside ∅ x outside ∅ x thickness

3,2	x	20	x	1,25	S	200	3,55 ZP
4,3	x	15	x	1,25	S	200	2,85 ZP
4,3	x	20	x	1,25	S	200	3,55 ZP
4,3	x	25	x	1,25	S	200	5,10 ZP
5,3	x	20	x	1,5	S	200	3,45 ZP
5,3	x	25	x	1,5	S	200	5,00 ZP
5,3	x	30	x	1,5	S	200	7,50 ZP
6,4	x	20	x	1,5	S	200	3,65 ZP
6,4	x	25	x	1,5	S	200	5,00 ZP
6,4	x	30	x	1,5	S	200	7,50 ZP
6,4	x	35	x	1,5	S	200	9,40 ZP
8,4	x	20	x	1,5	S	200	3,40 ZP
8,4	x	25	x	1,5	S	200	4,90 ZP
8,4	x	30	x	1,5	S	200	7,50 ZP
8,4	x	35	x	1,5	S	200	9,50 ZP
8,4	x	40	x	1,5	S	200	21,00 ZP
10,5	x	25	x	1,5	S	200	5,20 ZP
10,5	x	30	x	1,5	S	200	7,30 ZP
10,5	x	35	x	1,5	S	200	9,50 ZP
10,5	x	40	x	1,5	S	200	21,00 ZP
12,5	x	30	x	1,5	S	200	7,20 ZP
12,5	x	35	x	1,5	S	200	9,40 ZP
12,5	x	40	x	1,5	S	200	20,90 ZP

Dimensions | PU Pieces | €/100/Mat.

Article 88106.010 RAZ 850

88106 Steel, hardened zinc plated



Rivet nuts

Dimensions → TI-76 Corrosion protection → TI-217

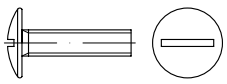
other collar heights on request

Thread M/collar height

M 3 / 0,9	S	1000	17,50 ZP
M 3 / 0,9	K	100	20,30 ZP
M 4 / 0,9	S	1000	20,00 ZP
M 4 / 0,9	K	100	23,10 ZP
M 5 / 0,9	S	1000	27,00 ZP
M 5 / 0,9	K	100	30,50 ZP
M 6 / 0,9	S	1000	32,50 ZP
M 6 / 0,9	K	100	36,50 ZP
M 8 / 1,9	S	500	40,50 ZP
M 8 / 1,9	K	100	44,50 ZP
M 10 / 1,9	S	100	101,00 ZP
M 12 / 2,9	S	100	137,00 ZP
M 16 / 2,4	S	100	265,00 ZP

Article 88107.410 RAZ 851

88107 Steel zinc plated



Slotted mushroom head screws with thread up to head

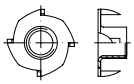
Nuts → DIN 934/ISO 4032

Dimensions → TI-41 Corrosion protection → TI-217

M 6	x	10	S	500	10,60 ZP
M 6	x	16	S	500	11,00 ZP
M 6	x	20	S	500	11,60 ZP
M 6	x	25	S	500	12,20 ZP
M 6	x	30	S	500	14,10 ZP
M 6	x	35	S	200	15,70 ZP
M 6	x	40	S	200	16,90 ZP
M 6	x	45	S	200	18,60 ZP
M 6	x	50	S	200	20,80 ZP
M 8	x	16	S	200	22,70 ZP
M 8	x	20	S	200	23,90 ZP
M 8	x	25	S	200	24,60 ZP
M 8	x	30	S	200	26,00 ZP
M 8	x	35	S	200	27,50 ZP
M 8	x	40	S	200	30,50 ZP
M 8	x	45	S	200	33,50 ZP
M 8	x	50	S	200	35,00 ZP
M 8	x	55	S	200	38,50 ZP
M 8	x	60	S	200	32,72 ZP

Dimensions					PU	Pieces	€/100/Mat.
Article		88108.010					RAZ 850

88108 Steel, zinc plated



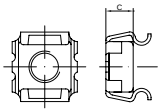
Tee nuts with pronge

Dimensions → TI-76 Corrosion protection → TI-217

internal thread x overall height x neck (~ drill) ∅							
M 4	x	6	x	5	S	200	27,00 ZP
M 5	x	8	x	6,3	S	200	33,50 ZP
M 6	x	9	x	7,3	S	200	41,50 ZP
M 6	x	12	x	7,5	S	200	46,50 ZP
M 8	x	11	x	9,7	S	100	60,00 ZP
M 8	x	15	x	9,9	S	100	68,00 ZP
M 10	x	13	x	11,9	S	100	75,00 ZP

Article		88109.010					RAZ 850

88109 Steel, zinc plated



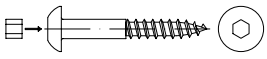
Square caged nuts, type SMG

Dimensions → TI-76 Corrosion protection → TI-217

Internal thread - index no./square hole			
M 4 - 8 / 9,5	S	1000	46,50 ZP
M 5 - 8 / 9,5	S	1000	46,00 ZP
M 6 - 6 / 9,5	S	1000	47,00 ZP
M 6 - 8 / 9,5	S	1000	47,00 ZP
M 8 - 8 /12,5	S	1000	57,00 ZP
M 10 - 8 /12,5	S	1000	56,00 ZP

Article		88110.010					RAZ 855

88110 Steel, zinc plated



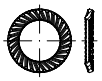
Theft resistant screws with pan head, wood screw thread, hexagon socket, rivet pin (unscrewable)

Corrosion protection → TI-217

8	x	50	S	50	520,00 ZP
8	x	70	S	50	540,00 ZP
8	x	80	S	50	550,00 ZP
8	x	90	S	50	550,00 ZP
10	x	80	S	50	570,00 ZP
10	x	100	S	50	610,00 ZP
10	x	130	S	50	700,00 ZP

Dimensions					PU	Pieces	€/100/Mat.
Article		88120.004					RAZ 860

88120 Spring steel type S



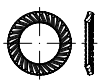
SCHNORR safety washers with serrations on both sides, S = standard, for screws with property class ≤ 5.8

Dimensions → TI-103 Tightening torque → TI-233

For screw M x outside ∅ x thickness							
S 2	x	4	x	0,35	S	2000	0,75
S 2	x	4	x	0,35	K	500	1,35
S 2,5	x	4,8	x	0,45	S	2000	0,75
S 2,5	x	4,8	x	0,45	K	500	1,35
S 3	x	5,5	x	0,45	S	2000	0,75
S 3	x	5,5	x	0,45	K	500	1,35
S 3,5	x	6	x	0,45	K	500	1,35
S 4	x	7	x	0,5	S	1000	0,80
S 4	x	7	x	0,5	K	250	1,95
S 5	x	9	x	0,6	S	1000	1,10
S 5	x	9	x	0,6	K	250	2,30
S 6	x	10	x	0,7	S	1000	1,25
S 6	x	10	x	0,7	K	250	2,40
S 7	x	12	x	0,7	K	250	2,65
S 8	x	13	x	0,8	S	1000	1,75
S 8	x	13	x	0,8	K	250	2,85
S10	x	16	x	1	S	1000	2,55
S10	x	16	x	1	K	250	3,75
S12	x	18	x	1,1	S	500	3,45
S12	x	18	x	1,1	K	100	5,80
S14	x	22	x	1,2	S	500	4,70
S14	x	22	x	1,2	K	100	7,10
S16	x	24	x	1,3	S	500	6,00
S16	x	24	x	1,3	K	100	8,30
S18	x	27	x	1,5	S	250	11,70
S18	x	27	x	1,5	K	100	14,00
S20	x	30	x	1,5	S	250	13,30
S20	x	30	x	1,5	K	100	15,70
S22	x	33	x	1,5	S	100	15,70
S24	x	36	x	1,8	S	100	21,50
S27	x	39	x	2	S	100	25,00
S30	x	45	x	2	S	100	35,00
S36	x	54	x	2,5	S	50	67,00

Article		88120.014					RAZ 860

88120 Spring steel type S, mech. zinc plated*



SCHNORR safety washers with serrations on both sides, S = standard, for screws with property class ≤ 5.8

*up to nominal size 3,5 → zinc plated

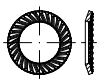
Dimensions → TI-103 Tightening torque → TI-233
Corrosion protection → TI-217

For screw M x outside ∅ x thickness							
S2,5	x	4,8	x	0,45	S	2000	0,80 mech ZP
S2,5	x	4,8	x	0,45	K	500	1,40 mech ZP
S 3	x	5,5	x	0,45	S	2000	0,80 mech ZP

Dimensions					PU	Pieces	€/100/Mat.
S 3	x	5,5	x	0,45	K	500	1,40 mech ZP
S 4	x	7	x	0,5	S	1000	0,95 mech ZP
S 4	x	7	x	0,5	K	250	2,05 mech ZP
S 5	x	9	x	0,6	S	1000	1,25 mech ZP
S 5	x	9	x	0,6	K	250	2,40 mech ZP
S 6	x	10	x	0,7	S	1000	1,45 mech ZP
S 6	x	10	x	0,7	K	250	2,65 mech ZP
S 8	x	13	x	0,8	S	1000	2,00 mech ZP
S 8	x	13	x	0,8	K	250	3,15 mech ZP
S10	x	16	x	1	S	1000	3,05 mech ZP
S10	x	16	x	1	K	250	4,20 mech ZP
S12	x	18	x	1,1	S	500	4,05 mech ZP
S12	x	18	x	1,1	K	100	6,40 mech ZP
S14	x	22	x	1,2	S	500	5,80 mech ZP
S14	x	22	x	1,2	K	100	8,10 mech ZP
S16	x	24	x	1,3	S	500	7,20 mech ZP
S16	x	24	x	1,3	K	100	9,60 mech ZP
S18	x	27	x	1,5	S	250	13,40 mech ZP
S18	x	27	x	1,5	K	100	15,80 mech ZP
S20	x	30	x	1,5	S	250	15,80 mech ZP
S20	x	30	x	1,5	K	100	18,20 mech ZP
S22	x	33	x	1,5	S	100	18,50 mech ZP
S24	x	36	x	1,8	S	100	25,50 mech ZP
S27	x	39	x	2	S	100	29,50 mech ZP
S30	x	45	x	2	S	100	41,50 mech ZP

Article		88121.004					RAZ 860

88121 Spring steel type VS



SCHNORR safety washers with serrations on both sides, VS = extra strong f. screws with property class 8.8/10.9

Dimensions → TI-103 Tightening torque → TI-233

For screw M x outside ∅ x thickness							
VS 5	x	9	x	1	S	1000	1,55
VS 5	x	9	x	1	K	250	2,70
VS 6	x	10	x	1	S	1000	1,85
VS 6	x	10	x	1	K	250	3,00
VS 8	x	13	x	1,2	S	1000	2,55
VS 8	x	13	x	1,2	K	250	3,65
VS 10	x	16	x	1,5	S	1000	3,90
VS 10	x	16	x	1,5	K	250	5,10
VS 12	x	18	x	1,5	S	500	5,10
VS 12	x	18	x	1,5	K	100	7,40
VS 14	x	22	x	1,5	S	500	6,70
VS 14	x	22	x	1,5	K	100	9,00
VS 16	x	24	x	2	S	250	10,20
VS 16	x	24	x	2	K	100	12,60
VS 18	x	27	x	2	S	250	17,20
VS 18	x	27	x	2	K	100	19,50
VS 20	x	30	x	2	S	250	20,20
VS 20	x	30	x	2	K	100	22,50
VS 22	x	33	x	2	S	100	23,80
VS 24	x	36	x	2,5	S	100	34,00
VS 27	x	39	x	2,5	S	100	40,00
VS 30	x	45	x	2,5	S	100	48,50

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Original SCHNORR® Disc Springs

- universally applicable
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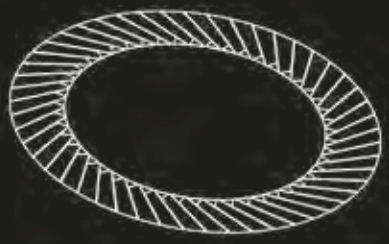
- tailor-made solutions

Original SCHNORR® Safety Washers

- maximum locking performance
- patented technology
- comprehensive range

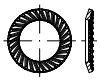


SCHNORR®
DISC SPRING ENGINEERING

Dimensions | PU Pieces | €/100/Mat.

Article 88121.014 RAZ 860

88121 Spring steel mech. zinc plated* type VS



SCHNORR safety washers with serrations on both sides, VS = extra strong f. screws with property class 8.8/10.9

*up to nominal size 4 → zinc plated

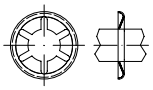
Dimensions → TI-103 Tightening torque → TI-233
Corrosion protection → TI-217

For screw M x outside ∅ x thickness

VS	5	x	9	x	1	S 1000	1,80 mech ZP
VS	5	x	9	x	1	K 250	2,95 mech ZP
VS	6	x	10	x	1	S 1000	2,05 mech ZP
VS	6	x	10	x	1	K 250	3,25 mech ZP
VS	8	x	13	x	1,2	S 1000	2,85 mech ZP
VS	8	x	13	x	1,2	K 250	4,05 mech ZP
VS	10	x	16	x	1,5	S 1000	4,65 mech ZP
VS	10	x	16	x	1,5	K 250	5,80 mech ZP
VS	12	x	18	x	1,5	S 500	5,80 mech ZP
VS	12	x	18	x	1,5	K 100	8,10 mech ZP
VS	14	x	22	x	1,5	S 500	7,90 mech ZP
VS	14	x	22	x	1,5	K 100	10,20 mech ZP
VS	16	x	24	x	2	S 250	11,80 mech ZP
VS	16	x	24	x	2	K 100	14,20 mech ZP
VS	18	x	27	x	2	S 250	19,50 mech ZP
VS	18	x	27	x	2	K 100	21,80 mech ZP
VS	20	x	30	x	2	S 250	23,00 mech ZP
VS	20	x	30	x	2	K 100	25,50 mech ZP
VS	22	x	33	x	2	S 100	27,50 mech ZP
VS	24	x	36	x	2,5	S 100	39,00 mech ZP
VS	27	x	39	x	2,5	S 100	45,00 mech ZP
VS	30	x	45	x	2,5	S 100	60,00 mech ZP

Article 88122.030 RAZ 865

88122 Spring steel browned



Axle locking rings (quick fixing elements for shafts)

Dimensions → TI-112

other measurements and types on request

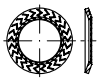
For shafts ∅ x outside ∅ x height

FF	3	x	11,2	x	1,5	S 1000	8,10
FF	4	x	11,2	x	1,5	S 1000	8,50
FF	5	x	11,2	x	1,5	S 1000	9,10
FC	6	x	15,0	x	1,4	S 1000	9,60
FC	8	x	15,0	x	1,4	S 500	10,10
FD	10	x	18,0	x	1,8	S 500	12,20
FE	12	x	21,0	x	1,8	S 250	15,10

Dimensions | PU Pieces | €/100/Mat.

Article 88123.030 RAZ 865

88123 Spring steel zinc flake coated type S



TECKENTRUP lock washers, S (narrow) = for normal and small connecting surfaces, for screws of property class ≤ 5.8

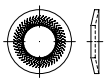
Dimensions → TI-104 Tightening torque → TI-233
Corrosion protection → TI-218

For screw ∅ x outside ∅ x thickness

S	4	x	8,2	x	0,8	S 1000	3,50 flZn
S	4	x	8,2	x	0,8	K 250	4,00 flZn
S	5	x	10,2	x	1	S 1000	4,35 flZn
S	5	x	10,2	x	1	K 250	5,10 flZn
S	6	x	12,2	x	1,2	S 1000	4,90 flZn
S	6	x	12,2	x	1,2	K 250	5,60 flZn
S	8	x	16,2	x	1,4	S 1000	7,70 flZn
S	8	x	16,2	x	1,4	K 250	8,40 flZn
S	10	x	20,25	x	1,6	S 1000	12,20 flZn
S	10	x	20,25	x	1,6	K 250	12,80 flZn
S	12	x	24,25	x	1,6	S 500	20,20 flZn
S	12	x	24,25	x	1,6	K 100	21,60 flZn

Article 88124.030 RAZ 865

88124 Spring steel zinc flake coated type M



TECKENTRUP lock washers, M (medium) = for normal connecting surfaces, for screws of property class 8.8/10.9

Dimensions → TI-104 Tightening torque → TI-233
Corrosion protection → TI-218

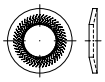
For screw ∅ x outside ∅ x thickness

M	4	x	10,2	x	1	S 1000	4,35 flZn
M	4	x	10,2	x	1	K 250	4,90 flZn
M	5	x	12,2	x	1,2	S 1000	5,20 flZn
M	5	x	12,2	x	1,2	K 250	5,90 flZn
M	6	x	14,2	x	1,4	S 1000	5,90 flZn
M	6	x	14,2	x	1,4	K 250	7,00 flZn
M	8	x	18,2	x	1,4	S 1000	9,30 flZn
M	8	x	18,2	x	1,4	K 250	9,80 flZn
M	10	x	22,25	x	1,6	S 1000	16,30 flZn
M	10	x	22,25	x	1,6	K 250	16,80 flZn
M	12	x	27,25	x	1,8	S 500	26,50 flZn
M	12	x	27,25	x	1,8	K 100	28,00 flZn
M	14	x	30,25	x	2,4	S 500	47,00 flZn
M	14	x	30,25	x	2,4	K 100	48,00 flZn
M	16	x	32,5	x	2,5	S 500	54,00 flZn
M	16	x	32,5	x	2,5	K 100	55,00 flZn
M	20	x	40	x	3	S 100	120,00 flZn

Dimensions | PU Pieces | €/100/Mat.

Article 88125.030 RAZ 865

88125 Spring steel zinc flake coated type B



TECKENTRUP lock washers, B (wide) = for large connecting surface, f. screws of property class 10.9/12.9

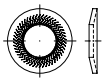
Dimensions → TI-104 Tightening torque → TI-233
Corrosion protection → TI-218

For screw ∅ x outside ∅ x thickness

B	6	x	18,2	x	1,4	S 1000	9,30 flZnnc
B	6	x	18,2	x	1,4	K 250	9,80 flZnnc
B	8	x	22,25	x	1,9	S 1000	16,30 flZnnc
B	8	x	22,25	x	1,9	K 250	17,00 flZnnc
B	10	x	27,25	x	2,4	S 1000	31,00 flZnnc
B	10	x	27,25	x	2,4	K 250	32,00 flZnnc
B	12	x	32,3	x	2,8	S 500	50,00 flZnnc
B	12	x	32,3	x	2,8	K 100	51,00 flZnnc

Article 88126.030 RAZ 865

88126 Spring steel zinc flake coated type Z



TECKENTRUP lock washers, Z = for cylindrical head screws of property class 8.8/10.9

Dimensions → TI-104 Tightening torque → TI-233
Corrosion protection → TI-218

For screw ∅ x outside ∅ x thickness

Z	6	x	9,9	x	1,4	S 1000	5,20 flZn
Z	6	x	9,9	x	1,4	K 250	5,90 flZn
Z	8	x	12,7	x	1,4	S 1000	7,70 flZn
Z	8	x	12,7	x	1,4	K 250	8,40 flZn
Z	10	x	16,1	x	1,6	S 1000	11,80 flZn
Z	10	x	16,1	x	1,6	K 250	12,50 flZn
Z	12	x	18,3	x	1,8	S 500	20,00 flZn
Z	12	x	18,3	x	1,8	K 100	21,20 flZn
Z	16	x	24,6	x	2,5	S 500	44,50 flZn
Z	16	x	24,6	x	2,5	K 100	46,00 flZn

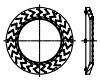
E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions	PU Pieces	€/100/Mat.
Article	88129.030	RAZ 865

88129 Spring steel zinc flake coated type K



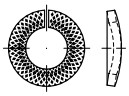
TECKENTRUP lock washers, K = with contact serrations, for screws of property class ≤ 10.9

Dimensions → TI-104 Tightening torque → TI-233
Corrosion protection → TI-218

For screw ∅	x outside ∅	x thickness			
K 4	x 8,2	x 0,8	S	1000	4,45 flZn
K 4	x 8,2	x 0,8	K	250	5,10 flZn
K 5	x 10,2	x 1	S	1000	5,10 flZn
K 5	x 10,2	x 1	K	250	5,60 flZn
K 6	x 12,2	x 1,2	S	1000	5,60 flZn
K 6	x 12,2	x 1,2	K	250	6,10 flZn
K 8	x 16,2	x 1,4	S	1000	8,70 flZn
K 8	x 16,2	x 1,4	K	250	9,30 flZn
K 10	x 20,25	x 1,6	S	1000	13,20 flZn
K 10	x 20,25	x 1,6	K	250	13,70 flZn
K 12	x 24,25	x 1,6	S	500	23,90 flZn
K 12	x 24,25	x 1,6	K	100	25,50 flZn

Article	88130.030	RAZ 870

88130 Spring steel zinc flake coated VSK



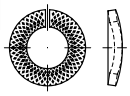
Lock rings, VSK = standard type, for screws of property class ≤ 8.8

Dimensions → TI-104 Corrosion protection → TI-218

For screw ∅	x outside ∅	x thickness			
4	x 7,6	x 0,8	S	10000	2,45 flZn
5	x 9,2	x 1	S	5000	2,95 flZn
6	x 11,8	x 1,3	S	2000	4,70 flZn
8	x 14	x 1,6	S	1000	8,00 flZn
10	x 18,1	x 1,8	S	500	11,70 flZn
12	x 21,1	x 2,1	S	500	17,50 flZn
14	x 24,1	x 2,4	S	250	23,50 flZn
16	x 27,4	x 2,8	S	200	35,50 flZn
18	x 29,4	x 2,8	S	150	51,00 flZn
20	x 33,6	x 3,2	S	100	59,00 flZn
22	x 35,9	x 3,2	S	100	91,00 flZn
24	x 40	x 4	S	50	100,00 flZn
27	x 43	x 4	S	50	110,00 flZn
30	x 48,2	x 6	S	25	177,00 flZn

Dimensions	PU Pieces	€/100/Mat.
Article	88130.060	RAZ 870

88130 Spring steel mech. YZP VSK



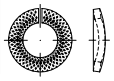
Lock rings, VSK = standard type, for screws of property class ≤ 8.8

Dimensions → TI-104 Corrosion protection → TI-217

For screw ∅	x outside ∅	x thickness			
4	x 7,6	x 0,8	S	10000	2,25 mech YZP
5	x 9,2	x 1	S	5000	2,65 mech YZP
6	x 11,8	x 1,3	S	2000	4,45 mech YZP
8	x 14	x 1,6	S	1000	7,50 mech YZP
10	x 18,1	x 1,8	S	500	11,00 mech YZP
12	x 21,1	x 2,1	S	500	16,50 mech YZP
16	x 27,4	x 2,8	S	200	33,50 mech YZP
20	x 33,6	x 3,2	S	100	53,00 mech YZP
24	x 40	x 4	S	50	94,00 mech YZP
30	x 48,2	x 6	S	25	177,00 mech YZP

Article	88131.030	RAZ 870

88131 Spring steel zinc flake coated VSK-Z



Lock rings, VSK-Z = f. screws with cyl. head, for screws of property class ≤ 8.8

Dimensions → TI-105 Corrosion protection → TI-217

For screw ∅	x outside ∅	x thickness			
4	x 7	x 1,2	S	10000	2,65 flZn
5	x 8,8	x 1,6	S	5000	3,55 flZn
6	x 9,9	x 1,6	S	2000	4,05 flZn
8	x 12,7	x 2	S	1000	8,10 flZn
10	x 16,1	x 2,5	S	500	12,20 flZn
12	x 18,3	x 2,5	S	500	14,90 flZn
16	x 24,6	x 3,5	S	200	32,00 flZn
20	x 30,6	x 4,5	S	100	68,00 flZn

Article	88119.030	RAZ 870

88119 Steel hardened zinc-nickle plated

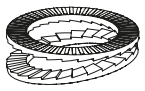
LOCKTIX washers

Dimensions → TI-103 Corrosion protection → TI-217

For screw ∅			
8	S	200	48,50 ZNP
10	S	200	64,00 ZNP
12	S	200	90,00 ZNP
16	S	100	146,00 ZNP

Dimensions	PU Pieces	€/100/Mat.
Article	88132.030	RAZ 870

88132 Steel QT zinc flake coated



NORD-LOCK washers, standard, preassembled pairs

For screws of property class ≤ 12.9

Caution! When assembling take care to position the washer pairs correctly.

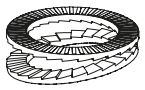
Dimensions → TI-105 Tightening torque → TI-233
Corrosion protection → TI-218

assembly tip: for usage with screws of property class 12.9 not reusable!

For screw ∅			
NL 5	S	200	73,00
NL 6	S	200	73,00
NL 8	S	200	93,00
NL 10	S	200	100,00
NL 12	S	200	170,00
NL 14	S	100	246,00
NL 16	S	100	255,00
NL 18	S	100	405,00
NL 20	S	100	375,00
NL 22	S	100	560,00
NL 24	S	100	590,00
NL 27	S	50	1040,00
NL 30	S	50	1110,00
NL 33	S	25	1130,00
NL 36	S	25	1560,00

Article	88132.034	RAZ 870

88132 Steel QT zinc flake coated SP



NORD-LOCK washers, preassembled pairs, SP = with enlarged outer diameter

For screws of property class ≤ 12.9

Caution! When assembling take care to position the washer pairs correctly.

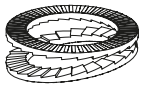
Dimensions → TI-105 Tightening torque → TI-233
Corrosion protection → TI-218

Assembly tip: for usage with screws of property class 12.9 not reusable!

For screw ∅			
NL 5 SP	S	200	82,00 flZn
NL 6 SP	S	200	103,00 flZn
NL 8 SP	S	200	110,00 flZn
NL 10 SP	S	200	190,00 flZn
NL 12 SP	S	100	283,00 flZn
NL 14 SP	S	100	418,00 flZn
NL 16 SP	S	100	420,00 flZn
NL 18 SP	S	100	592,00 flZn
NL 20 SP	S	100	596,00 flZn
NL 22 SP	S	50	995,00 flZn
NL 24 SP	S	50	1230,00 flZn
NL 27 SP	S	25	1250,00 flZn
NL 30 SP	S	25	1784,00 flZn

Dimensions	PU	Pieces	€/100/Mat.
NL 33 SP	S	25	1790,00 flZn
NL 36 SP	S	25	1852,00 flZn

Article	88132.035	RAZ 870
88132	**Steel QT**	**SC**



NORD-LOCK washers, preassembled pairs, SC = to usage with HV-assemblies acc. to EN 14399-4

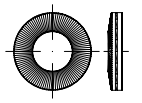
Caution! When assembling take care to position the washer pairs correctly.

Dimensions → TI-105

German technical approval Z-14.4-629

For screw ∅					
NL 12 SC			S	100	234,80
NL 16 SC			S	100	353,60
NL 20 SC			S	100	609,20
NL 22 SC			S	50	913,20
NL 24 SC			S	50	1092,80
NL 27 SC			S	25	1180,00
NL 30 SC			S	25	1496,80
NL 36 SC			S	25	1594,40

Article	88132.044	RAZ 870
88132	**Steel QT**	**NL X**
	zinc flake coated	



NORD-LOCK X-series washers, preassembled pairs, for screws of property class ≤ 12.9

600h salt spray test,
temperature range -40 to +150 °C,
suitable for screws to property class 12.9

Caution! When assembling take care to position the washer pairs correctly.

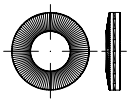
Dimensions → TI-105 Tightening torque → TI-233
Corrosion protection → TI-218

Assembly tip: for usage with screws of property class 12.9 not reusable!

For screw ∅					
NL	x	6	S	200	130,00 flZn
NL	x	8	S	200	140,00 flZn
NL	x	10	S	200	150,00 flZn
NL	x	12	S	200	250,00 flZn
NL	x	14	S	100	330,00 flZn
NL	x	16	S	100	360,00 flZn
NL	x	20	S	100	550,00 flZn
NL	x	22	S	50	820,00 flZn
NL	x	24	S	50	960,00 flZn
NL	x	27	S	25	1480,00 flZn
NL	x	30	S	25	1590,00 flZn

Dimensions	PU	Pieces	€/100/Mat.

Article	88132.045	RAZ 870
88132	**Steel QT**	**NL X-SP**
	zinc flake coated	



NORD-LOCK X-series washers, preassembled pairs, SP = with enlarged outer diameter

600h salt spray test,
temperature range -40 to +150 °C,
for screws to property class ≤ 12.9

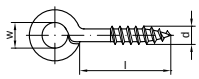
Caution! When assembling take care to position the washer pairs correctly.

Dimensions → TI-105 Tightening torque → TI-233
Corrosion protection → TI-218

Assembly tip: for usage with screws of property class 12.9 not reusable!

For screw ∅					
NL	x	6 SP	S	200	140,00 flZn
NL	x	8 SP	S	200	140,00 flZn
NL	x	10 SP	S	200	260,00 flZn
NL	x	12 SP	S	100	360,00 flZn
NL	x	16 SP	S	100	550,00 flZn
NL	x	20 SP	S	50	940,00 flZn
NL	x	22 SP	S	50	1430,00 flZn
NL	x	24 SP	S	50	1710,00 flZn
NL	x	30 SP	S	25	2340,00 flZn

Article	88133.010	RAZ 872
88133	**Steel**	**type 1**
	zinc plated	



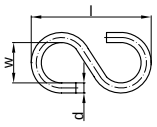
Screw eyes type 1, with wood screw thread

Dimensions → TI-53 Corrosion protection → TI-217

l x D (d/for plugs)					
6	x	3(1,8/4)	S	100	15,30 ZP
8	x	3(1,8/4)	S	100	15,30 ZP
8	x	4(2,3/4)	S	100	15,90 ZP
10	x	3(1,8/4)	S	100	15,30 ZP
10	x	4(2,3/4)	S	100	15,90 ZP
10	x	6(2,9/4)	S	100	18,10 ZP
12	x	3(1,8/4)	S	100	15,30 ZP
12	x	4(2,3/4)	S	100	15,90 ZP
12	x	6(2,9/4)	S	100	18,30 ZP
12	x	8(3,3/5)	S	100	22,00 ZP
12	x	10(3,5/5)	S	100	23,90 ZP
16	x	4(2,3/4)	S	100	16,20 ZP
16	x	6(2,9/4)	S	100	18,30 ZP
16	x	8(3,3/5)	S	100	23,00 ZP
16	x	10(3,3/5)	S	100	24,30 ZP
16	x	12(3,8/6)	S	100	28,00 ZP
20	x	6(2,9/4)	S	100	20,20 ZP
20	x	8(3,3/5)	S	100	23,00 ZP
20	x	10(3,3/5)	S	100	24,90 ZP
20	x	12(3,8/6)	S	100	28,00 ZP
25	x	8(3,3/5)	S	100	11,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
25 x 10(3,3/5)	S	100	26,00 ZP
25 x 12(3,8/6)	S	100	29,50 ZP
25 x 16(4,3/6)	S	100	38,50 ZP
30 x 8(3,3/5)	S	100	24,30 ZP
30 x 10(3,3/5)	S	100	26,00 ZP
30 x 12(3,8/6)	S	100	30,00 ZP
30 x 14(3,8/6)	S	100	31,50 ZP
30 x 16(4,3/6)	S	100	41,50 ZP
30 x 18(4,7/6)	S	100	46,50 ZP
40 x 12(3,8/6)	S	100	31,50 ZP
40 x 14(3,8/6)	S	100	35,50 ZP
40 x 16(4,3/6)	S	100	44,00 ZP
40 x 18(4,7/6)	S	100	51,00 ZP
40 x 20(5,2/7)	S	100	56,00 ZP
50 x 14(3,9/6)	S	100	39,00 ZP
50 x 16(4,3/6)	S	100	47,00 ZP
50 x 18(4,7/6)	S	100	55,00 ZP
50 x 20(5,2/7)	S	100	69,00 ZP

Article	88135.010	RAZ 872
88135	**Steel**	**type 45**
	zinc plated	

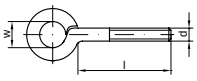


S-hooks type 45

Dimensions → TI-134 Corrosion protection → TI-217

l x w x d							
25	x	8	x	2,3	S	100	24,30 ZP
30	x	9	x	2,8	S	100	24,90 ZP
40	x	11	x	3,8	S	100	34,20 ZP
50	x	16	x	4,7	S	100	52,20 ZP
60	x	18	x	5,8	S	100	81,30 ZP
70	x	20	x	6,8	S	100	131,70 ZP
80	x	22	x	7,6	S	100	209,10 ZP

Article	88136.010	RAZ 872
88136	**Steel**	**type 48**
	zinc plated	



Screw eyes type 48, with metric thread

Dimensions → TI-36 Corrosion protection → TI-217

d x l x D							
M 3	x	10 D 5	S	100	17,50 ZP
M 3	x	15 D 5	S	100	17,80 ZP
M 4	x	10 D 6	S	100	17,90 ZP
M 4	x	15 D 6	S	100	21,00 ZP
M 4	x	20 D 6	S	100	22,80 ZP
M 4	x	25 D 6	S	100	23,10 ZP
M 4	x	30 D 6	S	100	24,30 ZP
M 4	x	40 D 6	S	100	24,80 ZP
M 5	x	15 D 8	S	100	29,50 ZP
M 5	x	20 D 8	S	100	30,00 ZP
M 5	x	25 D 8	S	100	31,50 ZP
M 5	x	30 D 8	S	100	32,50 ZP
M 5	x	40 D 8	S	100	34,50 ZP
M 5	x	50 D 8	S	100	36,00 ZP
M 5	x	60 D 8	S	100	38,00 ZP
M 6	x	10 D 10	S	100	35,50 ZP

Nord-Lock

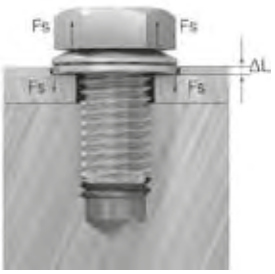
– bolt security without compromise

For decades the **Nord-Lock wedge-locking technology** has been the world's most effective bolt securing solution. The Nord-Lock original washers, meeting DIN 25 201, use tension instead of friction to secure bolted joints exposed to severe vibration and dynamic loads. With the next generation of Nord-Lock washers, the X-series adds a new dimension of safety to bolt security.

The **new Nord-Lock X-series washers** combine the unrivaled wedge locking principle (to prevent spontaneous loosening) with an exceptional spring effect (to compensate for loss of preload due to settlement and relaxation). Now you can count on one solution to meet all your bolt securing needs. With its unique, multifunctional design, Nord-Lock X-series is the only product on the market that can secure bolts from both critical loosening factors at once – bolt security without compromise.

How it works

Each washer pair has cams on one side and radial teeth on the opposite. Upon tightening the fastener, the washers flatten and the serrations engage the contact surfaces. Since the cam angle (α) is greater than the thread pitch (β), the wedge-locking effect will prevent any rotation of the fastener. Directly after tightening, the joint settles and the fastener sinks into the surface material. The washers immediately deflect and the spring effect (Fs) counteracts the slackening movement (ΔL) of the bolt, thereby preventing loss of preload on the joint. These multiple functions continuously act on the bolted joint to maintain preload and prevent spontaneous bolt loosening – serving as an effective solution for vibration, dynamic loads, settlement and relaxation.



Advantages

- Maximum bolt security
- Secures with tension instead of friction
- Maintains high clamp load and thereby ensures the function of the joint
- Locking function not affected by lubrication
- Quick and easy to install and remove
- Secures fasteners at both high and low preloads
- Same temperature characteristics as standard bolt / nut

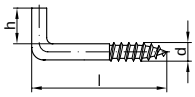
Nord-Lock GmbH
Tel +49 7363 9660 0
info@nord-lock.de
www.nord-lock.de

NORD-LOCK®
Bolt securing systems

Dimensions					PU	Pieces	€/100/Mat.
M 6	x	15	D	10	S	100	36,50 ZP
M 6	x	20	D	10	S	100	37,50 ZP
M 6	x	25	D	10	S	100	39,50 ZP
M 6	x	30	D	10	S	100	40,50 ZP
M 6	x	40	D	10	S	100	44,00 ZP
M 6	x	50	D	10	S	100	48,00 ZP
M 6	x	60	D	10	S	100	51,00 ZP
M 6	x	70	D	10	S	100	55,00 ZP
M 6	x	80	D	10	S	100	60,00 ZP
M 8	x	20	D	12	S	50	68,00 ZP
M 8	x	25	D	12	S	50	71,00 ZP
M 8	x	30	D	12	S	50	77,00 ZP
M 8	x	40	D	12	S	50	83,00 ZP
M 8	x	50	D	12	S	50	88,00 ZP
M 8	x	60	D	12	S	50	99,00 ZP
M 8	x	80	D	12	S	50	99,00 ZP
M 8	x	100	D	12	S	50	109,00 ZP
M 10	x	30	D	14	S	50	130,00 ZP
M 10	x	40	D	14	S	50	135,00 ZP
M 10	x	50	D	14	S	50	149,00 ZP
M 10	x	60	D	14	S	50	160,00 ZP
M 10	x	80	D	14	S	50	185,00 ZP
M 10	x	100	D	14	S	50	211,00 ZP
M 12	x	100	D	18	S	25	390,00 ZP

Article 88137.010 RAZ 872

88137 Steel zinc plated type 4



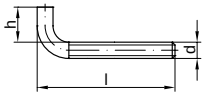
Square bend screw hooks type 4, with wood screw thread

Dimensions → TI-53 Corrosion protection → TI-217

l	x	d	x	h			
20	x	2,8	x	8	S	200	12,60 ZP
25	x	2,8	x	10	S	100	13,60 ZP
30	x	3,3	x	11	S	100	17,10 ZP
40	x	4,1	x	11	S	100	20,18 ZP
50	x	4,8	x	13	S	100	22,50 ZP
60	x	4,8	x	13	S	100	27,00 ZP
80	x	5,5	x	18	S	100	48,00 ZP
100	x	6,0	x	18	S	100	75,00 ZP

Article 88138.010 RAZ 872

88138 Steel zinc plated type 4E



Straight screw hooks type 4E, with metric thread

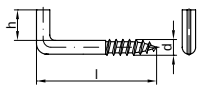
Dimensions → TI-36 Corrosion protection → TI-217

d	x	l	x	h			
M 4	x	40	x	10	S	100	44,00 ZP
M 5	x	50	x	12	S	100	64,20 ZP
M 6	x	60	x	14	S	100	90,00 ZP
M 8	x	60	x	18	S	100	162,00 ZP

Dimensions					PU	Pieces	€/100/Mat.

Article 88139.010 RAZ 872

88139 Steel zinc plated type 7



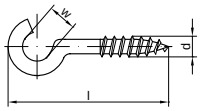
Square bend slotted screw hooks type 7, with wood screw thread

Dimensions → TI-54 Corrosion protection → TI-217

l	x	d				
40	x	4,4	x	9	S	100	31,20 ZP
50	x	4,4	x	9	S	100	32,40 ZP
30	x	5,2	x	10	S	100	35,10 ZP
40	x	5,2	x	10	S	100	37,80 ZP
50	x	5,2	x	10	S	100	41,10 ZP
60	x	5,2	x	10	S	100	43,60 ZP
80	x	5,8	x	12	S	100	52,50 ZP
100	x	5,8	x	12	S	100	59,10 ZP

Article 88140.010 RAZ 872

88140 Steel zinc plated type 11



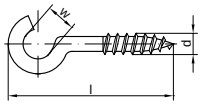
Cup hooks type 11, with wood screw thread

Dimensions → TI-54 Corrosion protection → TI-217

l	x	d	x	D			
20	x	2,3	x	6	S	100	15,00 ZP
25	x	2,3	x	8	S	100	16,90 ZP
30	x	2,3	x	10	S	100	17,60 ZP
40	x	2,9	x	12	S	100	20,20 ZP
50	x	3,3	x	16	S	100	23,30 ZP
60	x	3,3	x	16	S	100	27,00 ZP
70	x	3,8	x	22	S	100	46,50 ZP
80	x	4,3	x	25	S	100	54,00 ZP
100	x	4,8	x	25	S	100	73,00 ZP

Article 88141.030 RAZ 872

88141 Steel coated white type 11 K



Cup hooks type 11 K, with wood screw thread

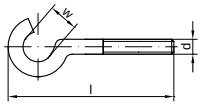
Dimensions → TI-54 Corrosion protection → TI-217

l	x	d	x	D			
25	x	2,3	x	8	S	100	68,00
30	x	2,3	x	10	S	100	68,00
40	x	2,9	x	12	S	100	73,00
50	x	3,3	x	16	S	100	79,00
60	x	3,3	x	16	S	100	86,00
80	x	4,3	x	25	S	100	94,00

Dimensions					PU	Pieces	€/100/Mat.

Article 88142.010 RAZ 872

88142 Steel zinc plated type 11 E



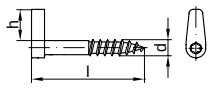
Cup hooks type 11 E, with metric thread

Dimensions → TI-36 Corrosion protection → TI-217

d	x	l	x	D			
M 4	x	40	D	16	S	100	26,50 ZP
M 4	x	50	D	16	S	100	27,50 ZP
M 5	x	50	D	16	S	100	39,00 ZP
M 5	x	60	D	16	S	100	40,00 ZP
M 6	x	50	D	18	S	100	53,00 ZP
M 6	x	60	D	18	S	100	56,00 ZP
M 8	x	70	D	22	S	100	92,00 ZP
M 8	x	80	D	22	S	100	97,00 ZP

Article 88143.010 RAZ 872

88143 Steel zinc plated type 10



Right angle screw hooks type 10, with wood screw thread, with hexalobular socket

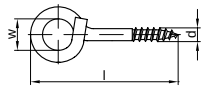
Dimensions → TI-54 Corrosion protection → TI-217

Suitable for machine assembly

l	x	d				
50	x	5,2	x	9	S	100	67,50 ZP
65	x	5,8	x	10	S	100	78,30 ZP
80	x	5,8	x	10	S	100	85,20 ZP

Article 88144.010 RAZ 872

88144 Steel zinc plated type 18



Heavy duty screw eyes type 18, spiral type, with wood screw thread

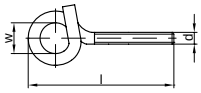
unfit for swings

Dimensions → TI-55 Corrosion protection → TI-217

l	x	d	x	w			
100	x	8,2	x	22	S	20	430,50 ZP
120	x	8,9	x	22	S	20	526,00 ZP
140	x	8,9	x	22	S	20	555,00 ZP
140	x	9,9	x	22	S	20	654,00 ZP

Article 88145

Dimensions	PU	Pieces	€/100/Mat.
Article	88145.010		RAZ 872
88145	**Mu steel zinc plated**		**type 18E**

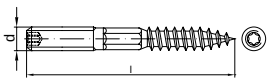


Heavy duty screw eyes type 18 E, spiral type, with metric thread, Mu = with 2 hexagon nuts

Dimensions → TI-37 Corrosion protection → TI-217

d x l x w						
M10	x	120	x 22	S	20	714,00 ZP
M10	x	140	x 22	S	20	744,00 ZP
M12	x	160	x 22	S	10	1100,00 ZP
M12	x	180	x 22	S	10	1200,00 ZP

Article	88149.010	RAZ 874
88149	**Steel zinc plated**	



Hanger bolts one side = metric thread other side = wood screw thread

Dimensions → TI-55 Corrosion protection → TI-217

∅ M x overall length						
M 5	x	40		S	100	35,00 ZP
M 5	x	50		S	100	40,00 ZP
M 6	x	40		S	100	45,50 ZP
M 6	x	50		S	100	45,50 ZP
M 6	x	60		S	100	51,00 ZP
M 6	x	70		S	100	53,00 ZP
M 6	x	80		S	100	54,00 ZP
M 6	x	100		S	100	57,00 ZP
M 6	x	120		S	100	60,00 ZP
M 8	x	50		S	100	59,00 ZP
M 8	x	60		S	100	63,00 ZP
M 8	x	70		S	100	69,00 ZP
M 8	x	80		S	100	78,00 ZP
M 8	x	100		S	100	88,00 ZP
M 8	x	120		S	100	118,00 ZP
M 8	x	140		S	100	136,00 ZP
M 8	x	150		S	100	153,00 ZP
M 8	x	160		S	100	164,00 ZP
M 8	x	200		S	50	210,00 ZP
M 10	x	60		S	100	99,00 ZP
M 10	x	80		S	50	99,00 ZP
M 10	x	100		S	50	113,00 ZP
M 10	x	120		S	50	128,00 ZP
M 10	x	130		S	50	138,00 ZP
M 10	x	140		S	50	144,00 ZP
M 10	x	180		S	50	211,00 ZP
M 12	x	80		S	50	128,00 ZP
M 12	x	100		S	50	141,00 ZP
M 12	x	120		S	50	170,00 ZP
M 12	x	160		S	50	335,00 ZP
M 12	x	200		S	50	425,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
Article	88200.016		RAZ 637
88200	**Steel, hard. zinc plated**		**RST-Z**

Pan head screws with screw thread for plastic (thermoplastics), Z = Pozidriv cross recess

Dimensions → TI-48 Corrosion protection → TI-217

2,2	x	6 -Z		S	1000	7,30 ZP
2,2	x	8 -Z		S	1000	7,50 ZP
2,5	x	8 -Z		S	1000	7,60 ZP
2,5	x	10 -Z		S	1000	6,50 ZP
3	x	6 -Z		S	1000	6,50 ZP
3	x	8 -Z		S	1000	6,60 ZP
3	x	10 -Z		S	1000	6,70 ZP
3	x	12 -Z		S	1000	7,80 ZP
3,5	x	10 -Z		S	500	7,30 ZP
3,5	x	12 -Z		S	500	7,20 ZP
3,5	x	16 -Z		S	500	8,60 ZP
4	x	12 -Z		S	500	8,30 ZP
4	x	16 -Z		S	500	9,10 ZP
4	x	20 -Z		S	500	9,80 ZP
5	x	12 -Z		S	500	9,40 ZP
5	x	16 -Z		S	500	10,50 ZP
5	x	20 -Z		S	500	11,90 ZP
6	x	16 -Z		S	250	15,10 ZP
6	x	20 -Z		S	250	15,90 ZP
6	x	25 -Z		S	250	17,10 ZP

Article	88200.014	RAZ 637
88200	**Steel, hard. zinc plated**	**RST-ISR**

Pan head screws with screw thread for plastic (thermoplastics), ISR = hexalobular socket

Dimensions → TI-48 Corrosion protection → TI-217

2,2	x	5 -T6		S	1000	7,80 ZP
2,2	x	6 -T6		S	1000	7,30 ZP
2,2	x	8 -T6		S	1000	7,50 ZP
2,2	x	10 -T6		S	1000	6,40 ZP
2,5	x	5 -T8		S	1000	7,30 ZP
2,5	x	6 -T8		S	1000	7,40 ZP
2,5	x	8 -T8		S	1000	7,60 ZP
2,5	x	10 -T8		S	1000	6,50 ZP
2,5	x	12 -T8		S	1000	7,40 ZP
3	x	6 -T10		S	1000	6,50 ZP
3	x	8 -T10		S	1000	6,60 ZP
3	x	10 -T10		S	1000	6,70 ZP
3	x	12 -T10		S	1000	7,80 ZP
3	x	14 -T10		S	1000	7,70 ZP
3	x	16 -T10		S	1000	7,80 ZP
3,5	x	8 -T10		S	500	7,30 ZP
3,5	x	10 -T10		S	500	7,30 ZP
3,5	x	12 -T10		S	500	7,20 ZP
3,5	x	16 -T10		S	500	8,60 ZP
4	x	8 -T20		S	500	7,90 ZP

Dimensions	PU	Pieces	€/100/Mat.
4	x 10 -T20	S	500	7,80 ZP
4	x 12 -T20	S	500	8,30 ZP
4	x 14 -T20	S	500	8,50 ZP
4	x 16 -T20	S	500	9,10 ZP
4	x 20 -T20	S	500	9,80 ZP
5	x 10 -T20	S	500	9,90 ZP
5	x 12 -T20	S	500	10,40 ZP
5	x 14 -T20	S	500	10,80 ZP
5	x 16 -T20	S	500	11,40 ZP
5	x 20 -T20	S	500	11,90 ZP
6	x 16 -T25	S	250	15,10 ZP
6	x 20 -T25	S	250	15,90 ZP
6	x 25 -T25	S	250	17,10 ZP

Article	88202.016	RAZ 637
88202	**Steel, hard. zinc plated**	**RST-Z**

Pan head screws with collar, with screw thread for plastic (thermoplastics), Z = Pozidriv cross recess

Dimensions → TI-49 Corrosion protection → TI-217

2,2	x	6 -Z		S	1000	7,40 ZP
2,2	x	8 -Z		S	1000	7,60 ZP
2,5	x	8 -Z		S	1000	8,10 ZP
2,5	x	10 -Z		S	1000	8,10 ZP
3	x	8 -Z		S	1000	7,10 ZP
3	x	10 -Z		S	1000	7,20 ZP
3	x	12 -Z		S	1000	8,10 ZP
3,5	x	10 -Z		S	500	7,80 ZP
3,5	x	12 -Z		S	500	7,60 ZP
3,5	x	16 -Z		S	500	9,00 ZP
4	x	12 -Z		S	500	8,80 ZP
4	x	16 -Z		S	500	9,70 ZP
4	x	20 -Z		S	500	10,30 ZP
5	x	12 -Z		S	500	9,90 ZP
5	x	16 -Z		S	500	11,00 ZP
5	x	20 -Z		S	500	12,60 ZP
6	x	16 -Z		S	250	15,20 ZP
6	x	20 -Z		S	250	16,00 ZP
6	x	25 -Z		S	250	17,20 ZP

Article	88202.014	RAZ 637
88202	**Steel, hard. zinc plated**	**RST-ISR**

Pan head screws with collar, with screw thread for plastic (thermoplastics), ISR = hexalobular socket

Dimensions → TI-49 Corrosion protection → TI-217

2,2	x	6 -T6		S	1000	7,30 ZP
2,2	x	8 -T6		S	1000	7,50 ZP
2,5	x	8 -T8		S	1000	7,60 ZP
2,5	x	10 -T8		S	1000	6,50 ZP
3	x	8 -T10		S	1000	6,60 ZP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
3	x	10 -T10	S	1000	6,70 ZP
3	x	12 -T10	S	1000	7,80 ZP
3,5	x	10 -T10	S	500	7,30 ZP
3,5	x	12 -T10	S	500	7,20 ZP
3,5	x	16 -T10	S	500	8,60 ZP
4	x	12 -T20	S	500	8,30 ZP
4	x	16 -T20	S	500	9,10 ZP
4	x	20 -T20	S	500	11,70 ZP
5	x	12 -T20	S	500	13,50 ZP
5	x	20 -T20	S	500	12,20 ZP
6	x	16 -T25	S	250	15,20 ZP
6	x	20 -T25	S	250	16,00 ZP
6	x	25 -T25	S	250	17,20 ZP

Article 88203.014 RAZ 637

88203 St. hard. zinc plated RSTplus

Pan head screws with screw thread for plastic (thermoplastics), RSTplus = higher preloads ISR = hexalobular socket

Dimensions → TI-49 Corrosion protection → TI-217

2,2	x	6 -T6	S	1000	9,10 ZP
2,2	x	8 -T6	S	1000	9,40 ZP
2,5	x	8 -T8	S	1000	8,90 ZP
2,5	x	10 -T8	S	1000	9,00 ZP
3	x	8 -T10	S	1000	7,60 ZP
3	x	10 -T10	S	1000	7,80 ZP
3	x	12 -T10	S	1000	8,90 ZP
3,5	x	10 -T15	S	500	8,40 ZP
3,5	x	12 -T15	S	500	8,30 ZP
3,5	x	16 -T15	S	500	9,90 ZP
4	x	12 -T20	S	500	9,60 ZP
4	x	16 -T20	S	500	10,60 ZP
4	x	20 -T20	S	500	13,40 ZP
5	x	12 -T25	S	500	11,30 ZP
5	x	16 -T25	S	500	12,90 ZP
5	x	20 -T25	S	500	15,00 ZP
6	x	16 -T30	S	250	16,20 ZP
6	x	20 -T30	S	250	17,60 ZP
6	x	25 -T30	S	250	18,90 ZP

Article 88204.014 RAZ 637

88204 Steel, hard. zinc plated RSTplus

Pan head screws with collar, with screw thread for plastic (thermoplastics), RSTplus = higher preloads ISR = hexalobular socket

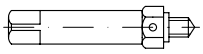
Dimensions → TI-49 Corrosion protection → TI-217

2,2	x	6 -T6	S	1000	9,10 ZP
2,2	x	8 -T6	S	1000	9,40 ZP
2,5	x	8 -T8	S	1000	8,90 ZP
2,5	x	10 -T8	S	1000	9,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
3	x	8 -T10	S	1000	7,60 ZP
3	x	10 -T10	S	1000	7,80 ZP
3	x	12 -T10	S	1000	8,90 ZP
3,5	x	10 -T15	S	500	8,40 ZP
3,5	x	12 -T15	S	500	8,30 ZP
3,5	x	16 -T15	S	500	9,90 ZP
4	x	12 -T20	S	500	9,60 ZP
4	x	16 -T20	S	500	10,60 ZP
4	x	20 -T20	S	500	13,40 ZP
5	x	12 -T25	S	500	11,30 ZP
5	x	16 -T25	S	500	12,90 ZP
5	x	20 -T25	S	500	15,00 ZP
6	x	16 -T30	S	250	17,00 ZP
6	x	20 -T30	S	250	18,10 ZP
6	x	25 -T30	S	250	19,40 ZP

Article 88301.000 RAZ 899

88301 Steel tool 610



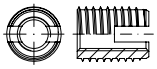
ENSAT driving tool type 610 for manual assembly, for flush installation

For internal thread

M 3	S	1	9300,00
M 4	S	1	9600,00
M 5	S	1	10000,00
M 6	S	1	10300,00
M 8	S	1	10700,00
M 10	S	1	13700,00
M 12	S	1	16500,00
M 14	S	1	20600,00

Article 88302.060 RAZ 899

88302 Steel, hard. zinc plated yellow type 302



ENSAT threaded inserts type 302, self tapping with cutting slot, Inside = metric thread

Product information → TI-152 Corrosion protection → TI-217

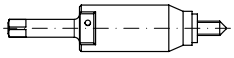
Internal thread M x length

M 2,5	x	6	S	250	55,00 YZP
M 3	x	6	S	50	59,00 YZP
M 4	x	8	S	250	65,00 YZP
M 4	x	8	K	50	73,00 YZP
M 5	x	10	S	250	73,00 YZP
M 5	x	10	K	50	81,00 YZP
M 6	x	14	S	250	94,00 YZP
M 6	x	14	K	25	102,00 YZP
M 8	x	15	S	250	119,00 YZP
M 8	x	15	K	25	127,00 YZP
M 10	x	18	S	250	173,00 YZP
M 10	x	18	K	25	183,00 YZP
M 12	x	22	S	25	285,00 YZP
M 14	x	24	S	10	385,00 YZP
M 16	x	22	S	10	455,00 YZP
M 18	x	24	S	10	930,00 YZP
M 20	x	27	S	1	1200,00 YZP

Dimensions			PU	Pieces	€/100/Mat.
M 22	x	30	S	2	1580,00 YZP
M 24	x	30	S	2	2020,00 YZP
M 27	x	30	S	2	2430,00 YZP

Article 88305.000 RAZ 899

88305 Steel tool 620



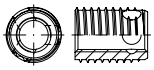
ENSAT driving tool type 620 for machine assembly, for flush installation

For internal thread

M 3	S	1	23300,00
M 4	S	1	23300,00
M 5	S	1	29600,00
M 6	S	1	29600,00
M 8	S	1	29600,00
M 10	S	1	38200,00
M 12	S	1	38200,00
M 14	S	1	68700,00
M 16	S	1	68700,00
M 20	S	1	125700,00

Article 88307.060 RAZ 899

88307 Steel, hard. zinc plated yellow type 307



ENSAT threaded inserts type 307, short, self tapping with cutting bores

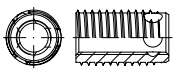
Product information → TI-152 Corrosion protection → TI-217

Internal thread M x length

M 4	x	6	S	100	101,00 YZP
M 5	x	7	S	100	110,00 YZP
M 6	x	8	S	100	127,00 YZP
M 8	x	9	S	100	138,00 YZP
M 10	x	10	S	50	186,00 YZP
M 12	x	12	S	50	295,00 YZP

Article 88308.060 RAZ 899

88308 Steel, hard. zinc plated yellow type 308



ENSAT threaded inserts type 308, long, self tapping with cutting bores

Product information → TI-152 Corrosion protection → TI-217

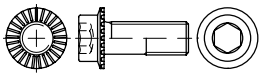
Internal thread M x length

M 4	x	8	S	100	104,00 YZP
M 5	x	10	S	100	112,00 YZP
M 6	x	12	S	100	145,00 YZP

Article 88308

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	14	S	100	169,00 YZP
M 10	x	18	S	50	214,00 YZP
M 12	x	22	S	50	325,00 YZP

Article	88912.100	RAZ 980
88912	**100**	**RIPP**

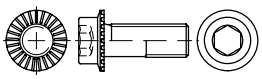


Hexagon socket head cap screws with flange, with lock ribs under the flange, surface hardened

Dimensions → TI-28 Tightening torque → TI-233

M 5	x	10	S	500	32,00
M 5	x	12	S	500	32,40
M 5	x	16	S	500	32,70
M 5	x	20	S	500	34,45
M 6	x	10	S	500	30,90
M 6	x	12	S	500	31,45
M 6	x	16	S	500	32,00
M 6	x	20	S	500	32,90
M 6	x	25	S	500	36,05
M 6	x	30	S	500	39,10
M 8	x	12	S	200	44,90
M 8	x	16	S	200	44,90
M 8	x	20	S	200	46,55
M 8	x	25	S	200	49,40
M 8	x	30	S	200	51,95
M 8	x	40	S	200	57,00
M 10	x	20	S	200	74,20
M 10	x	25	S	200	74,80
M 10	x	30	S	200	77,90
M 10	x	35	S	100	82,85
M 10	x	40	S	100	86,55
M 12	x	20	S	100	102,00
M 12	x	25	S	100	106,00
M 12	x	30	S	100	111,00
M 12	x	35	S	100	118,00
M 12	x	40	S	100	125,00
M 12	x	45	S	100	132,00
M 12	x	50	S	100	136,00

Article	88912.110	RAZ 980
88912	**100** zinc plated	**RIPP**



Hexagon socket cap screws with flange, with lock ribs under the flange, surface hardened

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-217

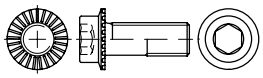
M 6	x	12	S	500	35,25 ZP
M 6	x	16	S	500	35,85 ZP
M 6	x	20	S	500	37,15 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	12	S	200	50,70 ZP
M 8	x	16	S	200	51,30 ZP
M 8	x	20	S	200	53,15 ZP
M 8	x	25	S	200	56,90 ZP
M 10	x	20	S	200	84,65 ZP
M 10	x	25	S	200	86,55 ZP
M 10	x	30	S	200	90,90 ZP
M 12	x	30	S	100	129,00 ZP
M 12	x	40	S	100	144,00 ZP
M 12	x	45	S	100	153,00 ZP
M 12	x	50	S	100	161,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Article	88912.191	RAZ 980
88912	**100** zinc flake coated	**RIPP**



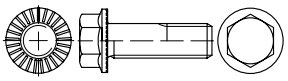
Hexagon socket cap screws with flange, with lock ribs under the flange, surface hardened

480h salt spray test, Cr(VI)-free

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-218

M 6	x	12	S	500	33,50 flZn
M 6	x	16	S	500	34,10 flZn
M 6	x	20	S	500	35,30 flZn
M 8	x	12	S	200	48,20 flZn
M 8	x	16	S	200	48,80 flZn
M 8	x	20	S	200	50,50 flZn
M 8	x	25	S	200	54,10 flZn
M 10	x	20	S	200	80,50 flZn
M 10	x	25	S	200	82,30 flZn
M 10	x	30	S	200	86,40 flZn
M 12	x	30	S	100	122,60 flZn
M 12	x	40	S	100	136,80 flZn
M 12	x	45	S	100	145,40 flZn
M 12	x	50	S	100	153,00 flZn

Dimensions	PU	Pieces	€/100/Mat.
Article	88913.100		RAZ 980
88913	**100**		**RIPP**

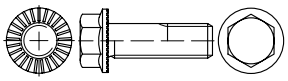


Hexagon head screws with flange, with lock ribs under the flange, with thread up to head, surface hardened

Dimensions → TI-28 Tightening torque → TI-233

M 5	x	10	S	500	21,30
M 5	x	12	S	500	21,70
M 5	x	16	S	500	21,90
M 5	x	20	S	500	24,45
M 6	x	10	S	500	20,70
M 6	x	12	S	500	20,90
M 6	x	14	S	500	21,30
M 6	x	16	S	500	21,30
M 6	x	20	S	500	22,10
M 6	x	25	S	500	24,10
M 8	x	12	S	200	30,25
M 8	x	16	S	200	30,25
M 8	x	20	S	200	30,90
M 8	x	25	S	200	32,70
M 8	x	30	S	200	34,55
M 8	x	35	S	200	39,10
M 8	x	40	S	200	39,10
M 10	x	16	S	200	48,20
M 10	x	20	S	200	48,20
M 10	x	25	S	200	48,70
M 10	x	30	S	200	51,15
M 10	x	35	S	100	59,20
M 10	x	40	S	100	59,20
M 10	x	45	S	100	65,00
M 10	x	50	S	100	85,00
M 12	x	20	S	100	66,75
M 12	x	25	S	100	69,85
M 12	x	30	S	100	72,35
M 12	x	35	S	100	77,90
M 12	x	40	S	100	81,60
M 12	x	45	S	100	91,50
M 12	x	50	S	100	93,95
M 12	x	55	S	100	175,00
M 12	x	60	S	100	189,00
M 12	x	75	S	50	349,00
M 16	x	25	S	50	198,00
M 16	x	30	S	50	198,00
M 16	x	35	S	50	202,00
M 16	x	40	S	50	209,00
M 16	x	45	S	50	227,00
M 16	x	50	S	50	235,00
M 16	x	55	S	50	282,00
M 16	x	60	S	50	292,00
M 16	x	65	S	50	675,00
M 16	x	70	S	50	316,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88913.105		RAZ 980
88913	**100**		**RIPP fine**

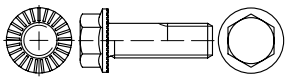


Hexagon head screws with flange, with lock ribs under the flange, with fine pitch thread up to head, surface hardened

Dimensions → TI-28 Tightening torque → TI-233

M14	x	1,5	x	30	S	100	197,00
M14	x	1,5	x	35	S	100	202,00
M14	x	1,5	x	40	S	100	213,00
M14	x	1,5	x	45	S	100	222,00
M14	x	1,5	x	50	S	100	229,00
M14	x	1,5	x	55	S	50	246,00
M14	x	1,5	x	60	S	50	272,00

Article	88913.110	RAZ 980
88913	**100** zinc plated	**RIPP**



Hexagon head screws with flange, with lock ribs under the flange, with thread up to head, surface hardened

Caution! Note information about hydrogen embrittlement.

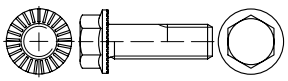
Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-217

M 5	x	10			S	500	23,50 ZP
M 5	x	12			S	500	23,20 ZP
M 5	x	16			S	500	23,60 ZP
M 5	x	20			S	500	26,30 ZP
M 6	x	10			S	500	23,85 ZP
M 6	x	12			S	500	24,15 ZP
M 6	x	14			S	500	24,40 ZP
M 6	x	16			S	500	24,75 ZP
M 6	x	20			S	500	25,65 ZP
M 6	x	25			S	500	28,05 ZP
M 8	x	12			S	200	35,85 ZP
M 8	x	16			S	200	36,50 ZP
M 8	x	20			S	200	37,75 ZP
M 8	x	25			S	200	39,60 ZP
M 8	x	30			S	200	42,65 ZP
M 8	x	40			S	200	47,15 ZP
M 10	x	16			S	200	57,60 ZP
M 10	x	20			S	200	58,75 ZP
M 10	x	25			S	200	60,00 ZP
M 10	x	30			S	200	63,70 ZP
M 10	x	35			S	100	72,90 ZP
M 10	x	40			S	100	74,00 ZP
M 10	x	50			S	100	99,80 ZP
M 12	x	20			S	100	82,00 ZP
M 12	x	25			S	100	87,75 ZP
M 12	x	30			S	100	90,25 ZP
M 12	x	35			S	100	97,05 ZP
M 12	x	40			S	100	103,00 ZP
M 12	x	45			S	100	113,00 ZP
M 12	x	50			S	100	117,00 ZP
M 12	x	60			S	100	217,00 ZP
M 12	x	75			S	50	385,00 ZP
M 16	x	25			S	50	239,00 ZP
M 16	x	35			S	50	246,00 ZP
M 16	x	40			S	50	255,00 ZP
M 16	x	45			S	50	277,00 ZP
M 16	x	50			S	50	286,00 ZP
M 16	x	55			S	50	335,00 ZP
M 16	x	60			S	50	353,00 ZP
M 16	x	70			S	50	378,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Article	88913.115	RAZ 980
88913	**100** zinc plated	**RIPP fine**



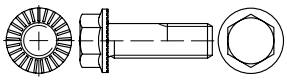
Hexagon head screws with flange, with lock ribs under the flange, with fine pitch thread up to head, surface hardened

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-217

M14	x	1,5	x	30	S	100	217,00 ZP
M14	x	1,5	x	35	S	100	224,00 ZP
M14	x	1,5	x	40	S	100	235,00 ZP
M14	x	1,5	x	45	S	100	246,00 ZP
M14	x	1,5	x	50	S	100	257,00 ZP
M14	x	1,5	x	60	S	100	308,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
Article	88913.160		RAZ 980
88913	**100** zinc plated yellow		**RIPP**



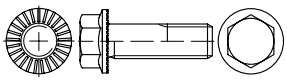
Hexagon head screws with flange, with lock ribs under the flange, with thread up to head, surface hardened

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-217

M 6	x	10			S	500	23,85 YZP
M 6	x	12			S	500	24,15 YZP
M 6	x	16			S	500	24,75 YZP
M 8	x	16			S	200	36,50 YZP
M 8	x	20			S	200	37,75 YZP
M 8	x	25			S	200	39,60 YZP
M 10	x	20			S	200	58,75 YZP
M 10	x	25			S	200	60,00 YZP
M 10	x	30			S	200	63,70 YZP
M 10	x	35			S	100	72,90 YZP
M 12	x	35			S	100	97,05 YZP
M 12	x	40			S	100	103,00 YZP

Article	88913.191	RAZ 980
88913	**100** zinc flake coated	**RIPP**



Hexagon head screws with flange, with lock ribs under the flange, with thread up to head, surface hardened

480h salt spray test, Cr(VI)-free

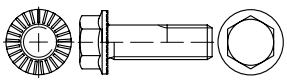
Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-218

M 5	x	10			S	500	22,40 flZn
M 5	x	12			S	500	22,10 flZn
M 5	x	16			S	500	22,50 flZn
M 5	x	20			S	500	25,00 flZn
M 6	x	10			S	500	22,70 flZn
M 6	x	12			S	500	23,00 flZn
M 6	x	14			S	500	23,20 flZn
M 6	x	16			S	500	23,60 flZn
M 6	x	20			S	500	24,40 flZn
M 6	x	25			S	500	26,70 flZn
M 8	x	12			S	200	34,10 flZn
M 8	x	16			S	200	34,70 flZn
M 8	x	20			S	200	35,90 flZn
M 8	x	25			S	200	37,70 flZn
M 8	x	30			S	200	40,60 flZn
M 8	x	40			S	200	44,80 flZn
M 8	x	45			S	200	49,00 flZn
M 10	x	16			S	200	54,80 flZn
M 10	x	20			S	200	55,90 flZn
M 10	x	25			S	200	57,00 flZn
M 10	x	30			S	200	60,60 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	35	S	100	69,30 flZn
M 10	x	40	S	100	70,30 flZn
M 10	x	50	S	100	94,90 flZn
M 12	x	20	S	100	77,90 flZn
M 12	x	25	S	100	85,20 flZn
M 12	x	30	S	100	87,60 flZn
M 12	x	35	S	100	94,20 flZn
M 12	x	40	S	100	100,00 flZn
M 12	x	45	S	100	109,70 flZn
M 12	x	50	S	100	113,50 flZn
M 12	x	60	S	100	210,50 flZn
M 12	x	75	S	50	373,50 flZn
M 16	x	25	S	50	231,90 flZn
M 16	x	30	S	50	233,00 flZn
M 16	x	35	S	50	238,70 flZn
M 16	x	40	S	50	247,40 flZn
M 16	x	45	S	50	268,70 flZn
M 16	x	50	S	50	277,50 flZn
M 16	x	55	S	50	325,00 flZn
M 16	x	60	S	50	342,50 flZn
M 16	x	70	S	50	366,70 flZn

Article 88913.192 RAZ 980

88913 100 RIPP fine zinc flake coated



Hexagon head screws with flange, with lock ribs under the flange, with fine pitch thread up to head, surface hardened

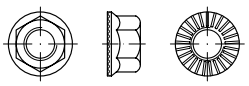
480h salt spray test, Cr(VI)-free

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-218

M 14	x	1,5	x	30	S	100	210,50 flZn
M 14	x	1,5	x	35	S	100	217,30 flZn
M 14	x	1,5	x	40	S	100	228,00 flZn
M 14	x	1,5	x	45	S	100	238,70 flZn
M 14	x	1,5	x	50	S	100	249,30 flZn
M 14	x	1,5	x	60	S	100	298,80 flZn

Article 88914.100 RAZ 980

88914 10 RIPP



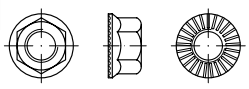
Hexagon nuts with flange, with lock ribs under the flange, surface hardened

Dimensions → TI-68 Tightening torque → TI-233

M 5	S	500	14,85
M 6	S	500	16,60
M 8	S	200	22,70
M 10	S	200	29,15
M 12	S	100	48,70
M 16	S	50	82,85

Dimensions	PU	Pieces	€/100/Mat.
Article	88914.110		RAZ 980

88914 10 RIPP zinc plated



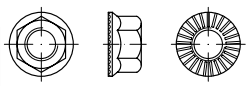
Hexagon nuts with flange, with lock ribs under the flange, surface hardened

Dimensions → TI-68 Tightening torque → TI-233
Corrosion protection → TI-217

M 5	S	500	15,85 ZP
M 6	S	500	18,75 ZP
M 8	S	200	27,20 ZP
M 10	S	200	35,80 ZP
M 12	S	100	58,15 ZP
M 16	S	50	102,00 ZP

Article 88914.105 RAZ 980

88914 10 RIPP fine



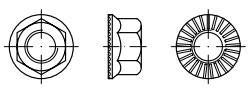
Hexagon nuts with flange, with lock ribs under the flange, with fine pitch thread, surface hardened

Dimensions → TI-68 Tightening torque → TI-233

M 14	x	1,5	S	100	385,00

Article 88914.115 RAZ 980

88914 10 RIPP fine zinc plated



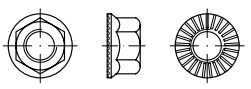
Hexagon nuts with flange, with lock ribs under the flange, with fine pitch thread, surface hardened

Dimensions → TI-68 Tightening torque → TI-233
Corrosion protection → TI-217

M 14	x	1,5	S	100	420,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
Article	88914.170		RAZ 980

88914 10 RIPP zinc flake coated



Hexagon nuts with flange, with lock ribs under the flange, surface hardened

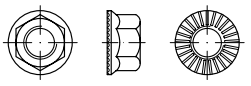
480h salt spray test, Cr(VI)-free

Dimensions → TI-68 Tightening torque → TI-233
Corrosion protection → TI-218

M 5	S	500	15,00 flZn
M 6	S	500	17,50 flZn
M 8	S	200	24,50 flZn
M 10	S	200	32,50 flZn
M 12	S	100	55,00 flZn
M 16	S	50	95,00 flZn

Article 88914.145 RAZ 980

88914 10 RIPP-fine zinc flake coated



Hexagon nuts with flange, with metric fine pitch thread, with lock ribs under the flange, surface hardened

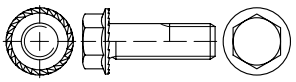
480h salt spray test, Cr(VI)-free

Dimensions → TI-68 Tightening torque → TI-233
Corrosion protection → TI-218

M 14	x	1,5	S	100	375,00 flZn

Article 88933.(*) RAZ 990

88933 90/100* locking



Hexagon head locking screws, with flange, with thread up to head, surface hardened

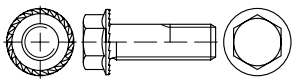
*Property class 90 ≤ M 10 (*800),
*property class 100 ≥ M 12 (*100)

Dimensions → TI-28 Tightening torque → TI-233

M 5	x	8	S	500	16,80
M 5	x	10	S	500	16,80
M 5	x	12	S	500	17,30
M 5	x	14	S	500	17,60
M 5	x	16	S	500	17,60
M 5	x	20	S	500	19,90
M 6	x	10	S	500	15,90

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	12	S	500	15,90
M 6	x	14	S	500	16,80
M 6	x	16	S	500	16,80
M 6	x	18	S	500	17,45
M 6	x	20	S	500	17,45
M 6	x	25	S	500	20,45
M 6	x	30	S	500	23,95
M 8	x	12	S	200	23,70
M 8	x	14	S	200	24,95
M 8	x	16	S	200	24,95
M 8	x	18	S	200	26,15
M 8	x	20	S	200	26,15
M 8	x	25	S	200	28,45
M 8	x	30	S	200	31,90
M 8	x	35	S	200	33,35
M 8	x	40	S	200	37,70
M 10	x	16	S	200	39,85
M 10	x	20	S	200	40,65
M 10	x	22	S	200	43,00
M 10	x	25	S	200	43,00
M 10	x	30	S	200	46,25
M 10	x	35	S	100	51,85
M 10	x	40	S	100	54,00
M 12	x	20	S	100	60,95
M 12	x	25	S	100	63,05
M 12	x	30	S	100	64,90
M 12	x	35	S	100	69,85
M 12	x	40	S	100	75,45
M 12	x	45	S	100	82,85
M 12	x	50	S	100	89,00
M 16	x	25	S	50	193,00
M 16	x	30	S	50	193,00
M 16	x	35	S	50	198,00
M 16	x	40	S	50	205,00
M 16	x	45	S	50	221,00
M 16	x	50	S	50	227,00
M 16	x	55	S	50	278,00
M 16	x	60	S	50	287,00
M 16	x	70	S	50	309,00

Article	88933.(*)	RAZ 990
88933	**90/100* zinc plated**	**locking**



Hexagon head locking screws, with flange, with thread up to head, surface hardened

*Property class 90 ≤ M 10 (*810),
*property class 100 ≥ M 12 (*110)

Caution! Note information about hydrogen embrittlement.

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-217

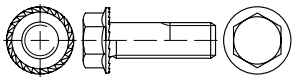
M 5	x	8	S	500	18,55 ZP
M 5	x	10	S	500	18,60 ZP
M 5	x	14	S	500	19,85 ZP
M 5	x	16	S	500	19,85 ZP
M 5	x	20	S	500	22,35 ZP
M 6	x	10	S	500	17,80 ZP
M 6	x	12	S	500	17,90 ZP
M 6	x	16	S	500	18,95 ZP
M 6	x	20	S	500	19,85 ZP
M 6	x	25	S	500	23,10 ZP
M 8	x	12	S	200	27,65 ZP
M 8	x	16	S	200	29,30 ZP

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	20	S	200	30,90 ZP
M 8	x	25	S	200	33,65 ZP
M 8	x	30	S	200	37,55 ZP
M 10	x	16	S	200	45,55 ZP
M 10	x	20	S	200	48,65 ZP
M 10	x	25	S	200	51,70 ZP
M 10	x	30	S	200	55,75 ZP
M 12	x	20	S	100	77,05 ZP
M 12	x	25	S	100	79,75 ZP
M 12	x	30	S	100	82,20 ZP
M 12	x	35	S	100	91,20 ZP
M 12	x	40	S	100	95,80 ZP
M 12	x	45	S	100	105,00 ZP
M 12	x	50	S	100	113,00 ZP
M 16	x	25	S	50	225,00 ZP
M 16	x	30	S	50	228,00 ZP
M 16	x	35	S	50	235,00 ZP
M 16	x	40	S	50	246,00 ZP

Important Note!

Hydrogen embrittlement might occur on high strength and spring parts with electroplated coatings (≥1000 N/mm² or ≥320 HV) and can not be excluded (ISO 4042). Through timely initiated baking process the risk of hydrogen embrittlement can usually be reduced. But since a residual risk can not be eliminated, electroplated coatings on such parts are only done by specific demand and the risk is assumend by the customer.

Article	88933.(*)	RAZ 990
88933	**90/100* zinc flake coated**	**locking**



Hexagon head locking screws, with flange, with thread up to head, surface hardened

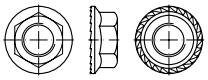
480h salt spray test, Cr(VI)-free,
*property class 90 ≤ M 10 (*891),
*property class 100 ≥ M 12 (*191)

Dimensions → TI-28 Tightening torque → TI-233
Corrosion protection → TI-218

M 5	x	8	S	500	18,00 flZn
M 5	x	10	S	500	18,10 flZn
M 5	x	16	S	500	19,30 flZn
M 5	x	20	S	500	21,70 flZn
M 6	x	10	S	500	17,30 flZn
M 6	x	12	S	500	17,40 flZn
M 6	x	16	S	500	18,40 flZn
M 6	x	20	S	500	19,30 flZn
M 6	x	25	S	500	22,50 flZn
M 8	x	12	S	200	26,90 flZn
M 8	x	16	S	200	28,50 flZn
M 8	x	20	S	200	30,00 flZn
M 8	x	25	S	200	32,70 flZn
M 8	x	30	S	200	36,50 flZn
M 10	x	16	S	200	44,20 flZn

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	20	S	200	47,20 flZn
M 10	x	25	S	200	50,20 flZn
M 10	x	30	S	200	54,10 flZn
M 12	x	20	S	100	74,80 flZn
M 12	x	25	S	100	77,40 flZn
M 12	x	30	S	100	79,80 flZn
M 12	x	35	S	100	88,50 flZn
M 12	x	40	S	100	93,00 flZn
M 12	x	45	S	100	101,90 flZn
M 12	x	50	S	100	109,70 flZn
M 16	x	25	S	50	218,30 flZn
M 16	x	30	S	50	221,20 flZn
M 16	x	35	S	50	228,00 flZn
M 16	x	40	S	50	238,70 flZn

Article	88934.(*)	RAZ 990
88934	**8/10***	**locking**



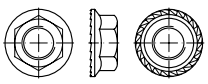
Hexagon locking nuts with flange surface hardened

Property class 8 = ≤ M 10 (*800),
property class 10 = ≥ M 12 (*100)

Dimensions → TI-69 Tightening torque → TI-233

M 5	S	500	12,45
M 6	S	500	12,75
M 8	S	200	18,20
M 10	S	200	23,35
M 12	S	100	43,55
M 16	S	50	76,65

Article	88934.(*)	RAZ 990
88934	**8/10* zinc plated**	**locking**



Hexagon locking nuts with flange surface hardened

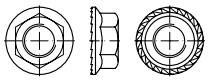
Property class 8 = ≤ M 10 (*810),
property class 10 = ≥ M 12 (*110)

Dimensions → TI-69 Tightening torque → TI-233
Corrosion protection → TI-217

M 5	S	500	12,95 ZP
M 6	S	500	14,10 ZP
M 8	S	200	20,70 ZP
M 10	S	200	29,45 ZP
M 12	S	100	44,55 ZP
M 16	S	50	92,70 ZP

Dimensions	PU Pieces	€/100/Mat.
Article	88934.(*)	RAZ 990

88934 8/10* locking zinc flake coated



Hexagon locking nuts with flange surface hardened

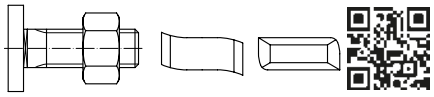
480h salt spray test, Cr(VI)-free,
*property class 8 ≤ M 10 (*850),
*property class 10 ≥ M 12 (*130)

Dimensions → TI-69 Tightening torque → TI-233
Corrosion protection → TI-218

M 5	S	500	12,00 flZn
M 6	S	500	13,50 flZn
M 8	S	200	18,50 flZn
M 10	S	200	26,50 flZn
M 12	S	100	42,00 flZn
M 16	S	50	85,00 flZn

Article	88928.410	RAZ 985

88928 Mu 4.6 HS 28/15 zinc plated



T-head bolts for Halfen channels, Mu = with hexagon nut

For profiles 28/15, 28/12, 28/28, 26/26,
head types subject to confirmation,
head width ~22,5 mm

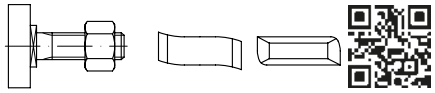
Mech. properties → TI-220 Corrosion protection → TI-217
Stainless → S. 563

ETA
CE

M 6	x	15	S	100	102,00 ZP
M 6	x	20	S	100	105,00 ZP
M 6	x	25	S	100	108,00 ZP
M 6	x	30	S	100	109,00 ZP
M 6	x	40	S	100	112,00 ZP
M 6	x	60	S	100	122,00 ZP
M 8	x	15	S	100	89,00 ZP
M 8	x	20	S	100	93,00 ZP
M 8	x	25	S	100	94,00 ZP
M 8	x	30	S	100	96,00 ZP
M 8	x	40	S	100	102,00 ZP
M 8	x	50	S	100	109,00 ZP
M 8	x	60	S	100	125,00 ZP
M 8	x	80	S	100	217,00 ZP
M 8	x	100	S	100	275,00 ZP
M 10	x	15	S	100	116,00 ZP
M 10	x	20	S	100	119,00 ZP
M 10	x	25	S	100	122,00 ZP
M 10	x	30	S	100	125,00 ZP
M 10	x	40	S	100	134,00 ZP
M 10	x	50	S	100	159,00 ZP
M 10	x	60	S	100	171,00 ZP
M 10	x	80	S	100	223,00 ZP
M 10	x	100	S	50	300,00 ZP
M 10	x	125	S	50	445,00 ZP
M 10	x	150	S	50	540,00 ZP
M 12	x	30	S	100	222,00 ZP
M 12	x	50	S	50	239,00 ZP

Article	88938.410	RAZ 985

88938 Mu 4.6 HS 38/17 zinc plated



T-head bolts for Halfen channels, Mu = with hexagon nut

For profiles 38/17, 36/20, 36/36, 35/50,
head types subject to confirmation,
head width ~30,5 mm

Mech. properties → TI-220 Corrosion protection → TI-217
Stainless → S. 564

ETA
CE

M 10	x	20	S	100	187,00 ZP
M 10	x	30	S	100	191,00 ZP
M 10	x	40	S	100	201,00 ZP
M 10	x	50	S	100	213,00 ZP
M 10	x	60	S	100	221,00 ZP
M 10	x	80	S	50	247,00 ZP
M 10	x	100	S	50	310,00 ZP
M 10	x	150	S	50	530,00 ZP
M 12	x	20	S	100	193,00 ZP
M 12	x	30	S	100	205,00 ZP
M 12	x	40	S	50	217,00 ZP
M 12	x	50	S	50	221,00 ZP
M 12	x	60	S	50	235,00 ZP
M 12	x	80	S	50	260,00 ZP
M 12	x	100	S	50	360,00 ZP
M 16	x	30	S	50	265,00 ZP
M 16	x	40	S	50	280,00 ZP
M 16	x	50	S	50	300,00 ZP
M 16	x	60	S	50	315,00 ZP
M 16	x	80	S	25	350,00 ZP
M 16	x	100	S	25	445,00 ZP
M 16	x	125	S	25	620,00 ZP
M 16	x	150	S	25	730,00 ZP
M 16	x	200	S	25	1090,00 ZP

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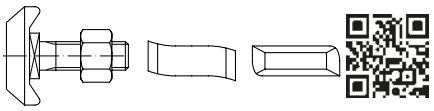
Dimensions	PU Pieces	€/100/Mat.
Article	88940.410	RAZ 985

88940 Mu 4.6 HS 40/22 zinc plated



Hook bolts/suspension bolts, Mu = with hexagon nut

For profiles 40/22, 40/25, 422,
head types subject to confirmation,
head width ~32,5 mm

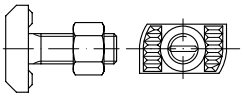
Mech. properties → TI-220 Corrosion protection → TI-217
Stainless → S. 564

ETA
CE

M 10	x	20	S	100	210,00 ZP
M 10	x	30	S	100	223,00 ZP
M 10	x	40	S	100	227,00 ZP
M 10	x	60	S	100	255,00 ZP
M 10	x	80	S	50	480,00 ZP
M 10	x	100	S	50	520,00 ZP
M 12	x	20	S	100	225,00 ZP
M 12	x	30	S	100	232,00 ZP
M 12	x	40	S	50	255,00 ZP
M 12	x	50	S	50	275,00 ZP
M 12	x	60	S	50	300,00 ZP
M 12	x	80	S	50	345,00 ZP
M 12	x	100	S	50	400,00 ZP
M 12	x	125	S	50	520,00 ZP
M 12	x	150	S	50	650,00 ZP
M 12	x	200	S	25	720,00 ZP
M 16	x	30	S	50	310,00 ZP
M 16	x	40	S	50	325,00 ZP
M 16	x	50	S	50	345,00 ZP
M 16	x	60	S	25	360,00 ZP
M 16	x	80	S	25	420,00 ZP
M 16	x	100	S	25	500,00 ZP
M 16	x	125	S	25	650,00 ZP
M 16	x	150	S	25	770,00 ZP
M 16	x	200	S	25	960,00 ZP

Article	88941.820	RAZ 985

88941 Mu 8.8 HZS 41/22 hot dip galvanized



T-head bolts, Mu = with hexagon nut, T-head with ribs

For profiles HZA/HZM 41/22, head width ~34,5 mm

Mech. properties → TI-220 Corrosion protection → TI-219
Stainless → S. 564

M 12	x	35	S	100	550,00 HDG
M 12	x	50	S	100	600,00 HDG
M 16	x	50	S	25	920,00 HDG
M 16	x	100	S	25	1380,00 HDG

€/100 = price in € plus VAT when ordering full package unit

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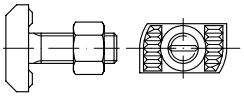
Dimensions			PU	Pieces	€/100/Mat.
Article		88943.810			RAZ 985
88943		**Mu 8.8 zinc plated**			**HZS 38/23**



T-head/Halfen bolts, Mu = with hexagon nut, T-head with ribs

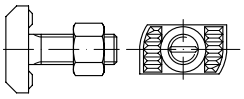
For profile 38/23 DYNAGRIP, head width ~28,8 mm

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 564

M 16	x	80	S	25	815,00 ZP
M 16	x	100	S	25	865,00 ZP
M 16	x	125	S	25	1145,00 ZP
M 16	x	150	S	25	2160,00 ZP
M 16	x	200	S	25	2580,00 ZP
M 16	x	300	S	25	3595,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88943.820			RAZ 985
88943		**Mu 8.8 hot dip galvanized**			**HZS 38/23**



T-head/Halfen bolts, Mu = with hexagon nut, T-head with ribs

For profile 38/23 DYNAGRIP, head width ~28,8 mm

Mech. properties → TI-220 Corrosion protection → TI-219

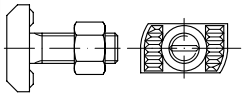
Stainless → S. 564

M 16	x	60	S	25	740,00 HDG

Attention!

Hot dip galvanized screw/nut assemblies can only be fastened with each other because the thread tolerances of these sets, according to ISO 10684 (DIN 267-10), match each other. The use with other screw or nut thread tolerances can lead to problems or failure of the fastening.

Dimensions			PU	Pieces	€/100/Mat.
Article		88944.810			RAZ 985
88944		**Mu 8.8 zinc plated**			**HZS 53/34**



T-head/Halfen bolts, Mu = with hexagon nut, T-head with ribs

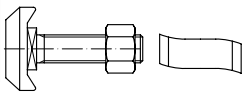
For profile HZA 53/34, head width ~41,6 mm

Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 564

M 16	x	60	S	25	2040,00 ZP
M 16	x	100	S	25	2120,00 ZP
M 20	x	65	S	25	2340,00 ZP
M 20	x	100	S	25	2480,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88950.410			RAZ 985
88950		**Mu 4.6 zinc plated**			**HS 50/30**



Hook bolts/suspension bolts, Mu = with hexagon nut

For profiles 50/30, 50/40, 49/30, 52/34, 54/33, 486, head types subject to confirmation, head width ~41 mm

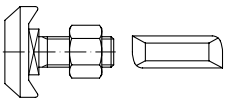
Mech. properties → TI-220 Corrosion protection → TI-217

Stainless → S. 564

ETA
CE

M 10	x	30	S	100	355,00 ZP
M 10	x	40	S	100	360,00 ZP
M 10	x	50	S	100	365,00 ZP
M 12	x	30	S	100	315,00 ZP
M 12	x	40	S	50	325,00 ZP
M 12	x	50	S	50	340,00 ZP
M 12	x	60	S	50	355,00 ZP
M 12	x	80	S	50	405,00 ZP
M 12	x	100	S	50	495,00 ZP
M 12	x	125	S	50	710,00 ZP
M 16	x	30	S	50	380,00 ZP
M 16	x	40	S	50	395,00 ZP
M 16	x	50	S	50	415,00 ZP
M 16	x	60	S	25	430,00 ZP
M 16	x	80	S	25	485,00 ZP
M 16	x	100	S	25	590,00 ZP
M 16	x	125	S	25	730,00 ZP
M 16	x	150	S	25	830,00 ZP
M 16	x	200	S	25	1050,00 ZP
M 16	x	300	S	25	1350,00 ZP
M 20	x	35	S	25	480,00 ZP
M 20	x	45	S	25	510,00 ZP
M 20	x	55	S	25	550,00 ZP
M 20	x	65	S	25	590,00 ZP
M 20	x	75	S	25	620,00 ZP
M 20	x	100	S	25	710,00 ZP
M 20	x	125	S	25	870,00 ZP
M 20	x	150	S	25	990,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88972.420			RAZ 985
88972		**Mu 4.6 hot dip galvanized**			**HS 72/48**



Hook bolts/suspension bolts, Mu = with hexagon nut

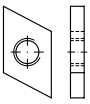
For profiles 72/48, 72/49, head width ~58 mm

Mech. properties → TI-220 Corrosion protection → TI-219

ETA
CE

M 20	x	50	S	20	1040,00 HDG
M 20	x	75	S	20	1120,00 HDG
M 20	x	100	S	15	1280,00 HDG
M 24	x	75	S	15	1090,00 HDG
M 24	x	100	S	10	1220,00 HDG

Dimensions			PU	Pieces	€/100/Mat.
Article		88951.010			RAZ 995
88951		**Steel zinc plated**			**type 28/15**



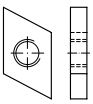
T-head thread plates/slide nuts

For profiles 28/15, 28/12, 28/28, 26/26, 26/18

Dimensions → TI-77 Corrosion protection → TI-217

M 6	S	100	64,00 ZP
M 8	S	100	64,00 ZP
M 10	S	100	129,00 ZP

Dimensions			PU	Pieces	€/100/Mat.
Article		88952.010			RAZ 995
88952		**Steel zinc plated**			**type 38/17**



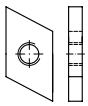
T-head thread plates/slide nuts

For profiles 38/17, 36/20, 35/50, 36/36

Dimensions → TI-78 Corrosion protection → TI-217

M 6	S	100	129,00 ZP
M 8	S	100	129,00 ZP
M 10	S	100	129,00 ZP
M 12	S	100	129,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
Article	88953.010		RAZ 995
88953	**Steel zinc plated**		**type 50/40**



T-head thread plates/slide nuts

For profiles 50/40, 486

Dimensions	→ TI-78	Corrosion protection	→ TI-217	
M 6	S	100		129,00 ZP
M 8	S	100		160,00 ZP
M 10	S	100		160,00 ZP
M 12	S	100		160,00 ZP
M 16	S	100		160,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
Article	88954.010		RAZ 995
88954	**Steel zinc plated**		**type 40/22**

T-head thread plates/slide nuts

For profiles 40/22, 40/25

Dimensions	→ TI-78	Corrosion protection	→ TI-217	
M 5	S	100		280,00 ZP
M 6	S	100		280,00 ZP
M 8	S	100		280,00 ZP
M 10	S	100		280,00 ZP
M 12	S	100		315,00 ZP

Dimensions	PU	Pieces	€/100/Mat.
Article	88955.010		RAZ 995
88955	**Steel zinc plated**		**type 50/30**

T-head thread plates/slide nuts

For profiles 50/30, 50/40, 52/34, 54/33, 49/30

Dimensions	→ TI-78	Corrosion protection	→ TI-217	
M 8	S	50		355,00 ZP
M 10	S	50		355,00 ZP
M 12	S	50		355,00 ZP
M 16	S	50		380,00 ZP

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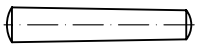
Dimensions	PU Pieces	€/100/Mat.
DIN	00001.912	RAZ 10
1	A 1	type B



Taper pins, taper 1 : 50, B = turned

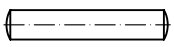
Dimensions ➔ TI-115 Standard conversion ➔ TI-10

Steel ➔ S. 59

DIN 1 ➔ replaced by ISO 2339 (DIN EN ISO 22339)

∅ x length (without cone)					
B 3	x 16	S	50	39,00	A1
B 3	x 20	S	50	48,50	A1
B 3	x 24	S	50	59,00	A1
B 3	x 30	S	50	72,00	A1
B 3	x 50	S	50	92,00	A1
B 4	x 20	S	50	65,00	A1
B 4	x 24	S	50	78,00	A1
B 4	x 26	S	25	84,00	A1
B 4	x 30	S	25	96,00	A1
B 4	x 50	S	25	144,00	A1
B 4	x 60	S	25	174,00	A1
B 5	x 20	S	25	88,00	A1
B 5	x 26	S	25	108,00	A1
B 5	x 30	S	25	121,00	A1
B 5	x 32	S	25	127,00	A1
B 5	x 36	S	25	138,00	A1
B 5	x 40	S	25	147,00	A1
B 5	x 50	S	10	176,00	A1
B 5	x 70	S	10	225,00	A1
B 6	x 24	S	10	130,00	A1
B 6	x 26	S	10	136,00	A1
B 6	x 30	S	10	149,00	A1
B 6	x 36	S	10	170,00	A1
B 6	x 40	S	10	186,00	A1
B 6	x 50	S	10	224,00	A1
B 6	x 60	S	10	265,00	A1
B 8	x 30	S	10	255,00	A1
B 8	x 40	S	10	350,00	A1
B 8	x 45	S	10	385,00	A1
B 8	x 50	S	10	420,00	A1
B 8	x 60	S	10	475,00	A1
B 8	x 90	S	1	630,00	A1
B 8	x 100	S	1	680,00	A1
B 10	x 36	S	10	410,00	A1
B 10	x 40	S	10	430,00	A1
B 10	x 55	S	1	530,00	A1
B 10	x 60	S	1	570,00	A1
B 10	x 70	S	1	620,00	A1
B 10	x 80	S	1	670,00	A1
B 10	x 100	S	1	820,00	A1

Dimensions	PU Pieces	€/100/Mat.
DIN	00007.910	RAZ 10
7	A 1	m6



Parallel pins, tolerance zone m6

Dimensions ➔ TI-114 Standard conversion ➔ TI-10
Mech. properties ➔ TI-224

Steel ➔ S. 60

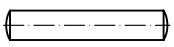
DIN 7 ➔ replaced by ISO 2338

∅ - tol. x length (without cone)					
0,8 m6	x 4	S	100	9,70	A1
0,8 m6	x 8	S	100	10,70	A1
0,8 m6	x 10	S	100	11,10	A1
1 m6	x 3	S	100	7,00	A1
1 m6	x 4	S	100	7,20	A1
1 m6	x 5	S	100	7,60	A1
1 m6	x 6	S	100	7,80	A1
1 m6	x 8	S	100	8,00	A1
1 m6	x 10	S	100	8,30	A1
1 m6	x 12	S	100	8,70	A1
1,5 m6	x 3	S	100	7,80	A1
1,5 m6	x 4	S	100	8,00	A1
1,5 m6	x 5	S	100	8,20	A1
1,5 m6	x 6	S	100	8,40	A1
1,5 m6	x 8	S	100	8,90	A1
1,5 m6	x 10	S	100	9,30	A1
1,5 m6	x 12	S	100	9,70	A1
1,5 m6	x 14	S	100	10,10	A1
1,5 m6	x 16	S	100	10,70	A1
1,5 m6	x 20	S	100	17,50	A1
2 m6	x 3	S	100	8,20	A1
2 m6	x 4	S	100	8,60	A1
2 m6	x 5	S	100	8,80	A1
2 m6	x 6	S	100	9,00	A1
2 m6	x 8	S	100	9,90	A1
2 m6	x 10	S	100	10,30	A1
2 m6	x 12	S	100	10,70	A1
2 m6	x 14	S	100	11,10	A1
2 m6	x 16	S	100	11,60	A1
2 m6	x 18	S	100	12,10	A1
2 m6	x 20	S	100	13,10	A1
2,5 m6	x 4	S	100	9,70	A1
2,5 m6	x 5	S	100	10,00	A1
2,5 m6	x 6	S	100	10,30	A1
2,5 m6	x 8	S	100	10,70	A1
2,5 m6	x 10	S	100	11,10	A1
2,5 m6	x 12	S	100	11,70	A1
2,5 m6	x 14	S	100	13,50	A1
2,5 m6	x 16	S	100	14,60	A1
2,5 m6	x 18	S	100	16,00	A1
2,5 m6	x 20	S	100	16,60	A1
2,5 m6	x 24	S	100	19,70	A1
3 m6	x 4	S	100	12,10	A1
3 m6	x 5	S	100	12,50	A1
3 m6	x 6	S	100	12,90	A1
3 m6	x 8	S	100	13,70	A1
3 m6	x 10	S	100	14,20	A1
3 m6	x 12	S	100	14,80	A1
3 m6	x 14	S	100	15,60	A1
3 m6	x 16	S	100	16,00	A1
3 m6	x 18	S	50	18,70	A1
3 m6	x 20	S	50	19,80	A1
3 m6	x 24	S	50	22,50	A1
3 m6	x 28	S	50	26,00	A1
3 m6	x 30	S	50	29,00	A1

Dimensions			PU Pieces	€/100/Mat.
3 m6	x 32	S	50	31,00 A1
3 m6	x 40	S	50	55,00 A1
3 m6	x 45	S	50	66,00 A1
3 m6	x 50	S	50	78,00 A1
3 m6	x 60	S	50	200,00 A1
4 m6	x 5	S	50	17,30 A1
4 m6	x 6	S	50	17,70 A1
4 m6	x 8	S	50	18,80 A1
4 m6	x 10	S	50	21,50 A1
4 m6	x 12	S	50	23,50 A1
4 m6	x 14	S	50	26,50 A1
4 m6	x 16	S	50	27,50 A1
4 m6	x 18	S	50	29,00 A1
4 m6	x 20	S	50	32,00 A1
4 m6	x 24	S	50	33,50 A1
4 m6	x 26	S	50	36,00 A1
4 m6	x 28	S	25	40,00 A1
4 m6	x 32	S	25	45,50 A1
4 m6	x 36	S	25	53,00 A1
4 m6	x 40	S	25	56,00 A1
4 m6	x 50	S	25	90,00 A1
4 m6	x 60	S	25	132,00 A1
5 m6	x 5	S	50	19,10 A1
5 m6	x 6	S	50	19,20 A1
5 m6	x 8	S	50	25,50 A1
5 m6	x 10	S	50	26,00 A1
5 m6	x 12	S	50	28,00 A1
5 m6	x 14	S	50	29,50 A1
5 m6	x 16	S	50	30,50 A1
5 m6	x 18	S	25	36,00 A1
5 m6	x 20	S	25	37,50 A1
5 m6	x 24	S	25	40,50 A1
5 m6	x 28	S	25	43,50 A1
5 m6	x 30	S	25	46,00 A1
5 m6	x 32	S	25	51,00 A1
5 m6	x 36	S	25	56,00 A1
5 m6	x 40	S	25	64,00 A1
5 m6	x 45	S	25	74,00 A1
5 m6	x 50	S	25	83,00 A1
6 m6	x 6	S	50	32,50 A1
6 m6	x 8	S	50	34,00 A1
6 m6	x 10	S	50	36,00 A1
6 m6	x 12	S	25	40,50 A1
6 m6	x 14	S	25	42,00 A1
6 m6	x 16	S	25	43,50 A1
6 m6	x 18	S	25	44,50 A1
6 m6	x 20	S	25	46,00 A1
6 m6	x 24	S	25	59,00 A1
6 m6	x 28	S	25	62,00 A1
6 m6	x 30	S	25	71,00 A1
6 m6	x 32	S	25	65,00 A1
6 m6	x 36	S	25	69,00 A1
6 m6	x 40	S	10	86,00 A1
6 m6	x 45	S	10	92,00 A1
6 m6	x 50	S	10	97,00 A1
6 m6	x 55	S	10	105,00 A1
6 m6	x 60	S	10	111,00 A1
8 m6	x 10	S	10	61,00 A1
8 m6	x 12	S	10	63,00 A1
8 m6	x 14	S	10	66,00 A1
8 m6	x 16	S	10	72,00 A1
8 m6	x 18	S	10	76,00 A1
8 m6	x 20	S	10	79,00 A1
8 m6	x 24	S	10	83,00 A1
8 m6	x 28	S	10	86,00 A1
8 m6	x 30	S	10	94,00 A1
8 m6	x 32	S	10	95,00 A1
8 m6	x 36	S	10	120,00 A1
8 m6	x 40	S	10	128,00 A1
8 m6	x 45	S	10	136,00 A1
8 m6	x 50	S	10	151,00 A1
8 m6	x 55	S	10	167,00 A1
8 m6	x 60	S	10	178,00 A1
8 m6	x 70	S	1	209,00 A1
8 m6	x 80	S	1	255,00 A1

Dimensions	PU	Pieces	€/100/Mat.
10 m6 x 10	S	10	91,00 A1
10 m6 x 12	S	10	94,00 A1
10 m6 x 14	S	10	97,00 A1
10 m6 x 16	S	10	100,00 A1
10 m6 x 18	S	10	105,00 A1
10 m6 x 20	S	10	130,00 A1
10 m6 x 24	S	10	140,00 A1
10 m6 x 28	S	10	157,00 A1
10 m6 x 32	S	10	171,00 A1
10 m6 x 36	S	10	182,00 A1
10 m6 x 40	S	10	193,00 A1
10 m6 x 45	S	10	208,00 A1
10 m6 x 50	S	10	236,00 A1
10 m6 x 55	S	10	260,00 A1
10 m6 x 60	S	10	275,00 A1
10 m6 x 70	S	10	310,00 A1
10 m6 x 80	S	10	350,00 A1
10 m6 x 90	S	10	390,00 A1
10 m6 x 100	S	10	480,00 A1
12 m6 x 16	S	10	198,00 A1
12 m6 x 18	S	10	220,00 A1
12 m6 x 20	S	10	236,00 A1
12 m6 x 24	S	10	243,00 A1
12 m6 x 30	S	10	305,00 A1
12 m6 x 32	S	10	345,00 A1
12 m6 x 40	S	10	415,00 A1
12 m6 x 45	S	10	470,00 A1
12 m6 x 50	S	10	510,00 A1
12 m6 x 55	S	10	560,00 A1
12 m6 x 60	S	10	600,00 A1
12 m6 x 70	S	10	710,00 A1
12 m6 x 80	S	10	780,00 A1
12 m6 x 90	S	10	870,00 A1
12 m6 x 100	S	10	950,00 A1
16 m6 x 20	S	10	590,00 A1
16 m6 x 24	S	10	610,00 A1
16 m6 x 28	S	10	680,00 A1
16 m6 x 32	S	10	840,00 A1
16 m6 x 36	S	10	1160,00 A1
16 m6 x 40	S	10	1250,00 A1
16 m6 x 45	S	10	1410,00 A1
16 m6 x 50	S	10	1540,00 A1
16 m6 x 55	S	10	1700,00 A1
16 m6 x 60	S	10	1820,00 A1
16 m6 x 70	S	10	2010,00 A1
16 m6 x 80	S	10	2150,00 A1
16 m6 x 90	S	10	2290,00 A1
16 m6 x 100	S	10	2410,00 A1

DIN	00007.940	RAZ 10
7	A 4	m6



Parallel pins, tolerance zone m6

Dimensions → TI-114 Standard conversion → TI-10
Mech. properties → TI-224

Steel → S. 60

DIN 7 → replaced by ISO 2338

∅ – tol. x length (without cone)

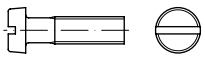
Dimensions	PU	Pieces	€/100/Mat.
1 m6 x 3	S	100	11,40 A4
1 m6 x 4	S	100	11,40 A4
1 m6 x 5	S	100	11,40 A4
1 m6 x 6	S	100	11,90 A4
1 m6 x 8	S	100	12,60 A4
1 m6 x 10	S	100	12,70 A4
1 m6 x 12	S	100	12,70 A4
1,5 m6 x 3	S	100	12,80 A4
1,5 m6 x 4	S	100	12,80 A4
1,5 m6 x 5	S	100	12,80 A4
1,5 m6 x 6	S	100	13,20 A4
1,5 m6 x 8	S	100	13,20 A4
1,5 m6 x 10	S	100	14,10 A4
1,5 m6 x 12	S	100	14,60 A4
1,5 m6 x 14	S	100	15,30 A4
1,5 m6 x 16	S	100	15,80 A4
1,5 m6 x 18	S	100	22,30 A4
1,5 m6 x 20	S	100	24,10 A4
2 m6 x 4	S	100	13,50 A4
2 m6 x 5	S	100	14,00 A4
2 m6 x 6	S	100	14,10 A4
2 m6 x 8	S	100	14,70 A4
2 m6 x 10	S	100	15,60 A4
2 m6 x 12	S	100	16,70 A4
2 m6 x 14	S	100	17,70 A4
2 m6 x 16	S	100	19,00 A4
2 m6 x 18	S	100	22,30 A4
2 m6 x 20	S	100	24,10 A4
2 m6 x 24	S	100	27,50 A4
2,5 m6 x 5	S	100	14,70 A4
2,5 m6 x 6	S	100	15,60 A4
2,5 m6 x 8	S	100	16,70 A4
2,5 m6 x 10	S	100	17,70 A4
2,5 m6 x 12	S	100	19,00 A4
2,5 m6 x 14	S	100	19,90 A4
2,5 m6 x 16	S	100	21,00 A4
2,5 m6 x 20	S	100	24,10 A4
2,5 m6 x 24	S	100	27,50 A4
3 m6 x 4	S	100	16,40 A4
3 m6 x 5	S	100	14,10 A4
3 m6 x 6	S	100	18,30 A4
3 m6 x 8	S	100	19,90 A4
3 m6 x 10	S	100	21,30 A4
3 m6 x 12	S	100	23,30 A4
3 m6 x 14	S	100	26,00 A4
3 m6 x 16	S	100	27,50 A4
3 m6 x 18	S	50	31,00 A4
3 m6 x 20	S	50	33,50 A4
3 m6 x 24	S	50	36,50 A4
3 m6 x 28	S	50	38,50 A4
3 m6 x 30	S	50	41,00 A4
3 m6 x 32	S	50	42,00 A4
4 m6 x 5	S	50	24,70 A4
4 m6 x 6	S	50	27,50 A4
4 m6 x 8	S	50	31,00 A4
4 m6 x 10	S	50	34,50 A4
4 m6 x 12	S	50	38,00 A4
4 m6 x 14	S	50	41,00 A4
4 m6 x 16	S	50	44,00 A4
4 m6 x 18	S	25	51,00 A4
4 m6 x 20	S	25	54,00 A4
4 m6 x 24	S	25	61,00 A4
4 m6 x 28	S	25	68,00 A4
4 m6 x 30	S	25	71,00 A4
4 m6 x 32	S	25	74,00 A4
4 m6 x 36	S	25	82,00 A4
4 m6 x 40	S	25	91,00 A4
5 m6 x 6	S	50	30,50 A4
5 m6 x 8	S	50	34,50 A4
5 m6 x 10	S	50	39,00 A4
5 m6 x 12	S	50	41,00 A4
5 m6 x 14	S	25	44,50 A4
5 m6 x 16	S	25	47,00 A4
5 m6 x 18	S	25	51,00 A4
5 m6 x 20	S	25	54,00 A4
5 m6 x 24	S	25	61,00 A4
5 m6 x 28	S	25	68,00 A4
5 m6 x 30	S	25	71,00 A4
5 m6 x 32	S	25	75,00 A4
5 m6 x 36	S	25	81,00 A4
5 m6 x 40	S	25	89,00 A4
5 m6 x 45	S	25	98,00 A4
5 m6 x 50	S	25	106,00 A4
6 m6 x 6	S	50	58,00 A4
6 m6 x 8	S	25	47,50 A4
6 m6 x 10	S	25	49,00 A4
6 m6 x 12	S	25	53,00 A4
6 m6 x 14	S	25	58,00 A4
6 m6 x 16	S	25	61,00 A4
6 m6 x 18	S	10	75,00 A4
6 m6 x 20	S	10	79,00 A4
6 m6 x 24	S	10	87,00 A4
6 m6 x 28	S	10	99,00 A4
6 m6 x 30	S	10	100,00 A4
6 m6 x 32	S	10	105,00 A4
6 m6 x 36	S	10	115,00 A4
6 m6 x 40	S	10	125,00 A4
6 m6 x 45	S	10	135,00 A4
6 m6 x 50	S	10	146,00 A4
6 m6 x 55	S	10	156,00 A4
6 m6 x 60	S	10	167,00 A4
8 m6 x 10	S	10	82,00 A4
8 m6 x 12	S	10	88,00 A4
8 m6 x 14	S	10	96,00 A4
8 m6 x 16	S	10	102,00 A4
8 m6 x 18	S	10	109,00 A4
8 m6 x 20	S	10	116,00 A4
8 m6 x 24	S	10	129,00 A4
8 m6 x 28	S	10	142,00 A4
8 m6 x 30	S	10	147,00 A4
8 m6 x 32	S	10	155,00 A4
8 m6 x 36	S	10	169,00 A4
8 m6 x 40	S	10	185,00 A4
8 m6 x 45	S	10	202,00 A4
8 m6 x 50	S	10	218,00 A4
8 m6 x 55	S	10	236,00 A4
8 m6 x 60	S	1	265,00 A4
8 m6 x 70	S	1	315,00 A4
8 m6 x 80	S	1	350,00 A4
10 m6 x 12	S	10	156,00 A4
10 m6 x 14	S	10	156,00 A4
10 m6 x 16	S	10	157,00 A4
10 m6 x 18	S	10	160,00 A4
10 m6 x 20	S	10	168,00 A4
10 m6 x 24	S	10	188,00 A4
10 m6 x 28	S	10	210,00 A4
10 m6 x 30	S	10	220,00 A4
10 m6 x 32	S	10	231,00 A4
10 m6 x 36	S	10	270,00 A4
10 m6 x 40	S	10	290,00 A4
10 m6 x 45	S	10	315,00 A4
10 m6 x 50	S	10	345,00 A4
10 m6 x 55	S	10	370,00 A4
10 m6 x 60	S	10	395,00 A4
10 m6 x 70	S	10	475,00 A4
10 m6 x 80	S	1	520,00 A4
10 m6 x 90	S	1	580,00 A4
10 m6 x 100	S	1	620,00 A4
12 m6 x 14	S	10	350,00 A4
12 m6 x 16	S	10	280,00 A4
12 m6 x 18	S	10	300,00 A4
12 m6 x 20	S	10	325,00 A4
12 m6 x 24	S	10	350,00 A4
12 m6 x 28	S	10	395,00 A4
12 m6 x 32	S	10	440,00 A4
12 m6 x 36	S	10	485,00 A4
12 m6 x 40	S	10	550,00 A4
12 m6 x 45	S	10	600,00 A4
12 m6 x 50	S	10	650,00 A4
12 m6 x 55	S	10	720,00 A4
12 m6 x 60	S	10	760,00 A4
12 m6 x 70	S	10	880,00 A4
12 m6 x 80	S	10	1040,00 A4
12 m6 x 100	S	10	1270,00 A4
16 m6 x 20	S	10	580,00 A4
16 m6 x 24	S	10	640,00 A4

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
16 m6 x 28	S	10	750,00 A4
16 m6 x 32	S	10	830,00 A4
16 m6 x 36	S	10	890,00 A4
16 m6 x 40	S	10	950,00 A4
16 m6 x 45	S	10	1040,00 A4
16 m6 x 50	S	10	1110,00 A4
16 m6 x 55	S	10	1190,00 A4
16 m6 x 60	S	10	1290,00 A4
16 m6 x 70	S	10	1410,00 A4
16 m6 x 80	S	10	1560,00 A4
16 m6 x 90	S	10	1720,00 A4
16 m6 x 100	S	10	1870,00 A4

DIN 00084.914 RAZ 30

84 A 1 turned



Slotted cheese head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-11
Mech. properties ➔ TI-224

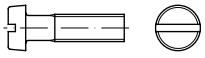
Steel ➔ S. 61
Brass ➔ S. 565

DIN 84 ➔ replaced by ISO 1207 (compatible)

M 1,4	x	3	S	100	55,20	A1
M 1,4	x	4	S	100	56,20	A1
M 1,4	x	5	S	100	58,20	A1
M 1,4	x	6	S	100	61,80	A1
M 1,4	x	8	S	100	64,40	A1
M 1,4	x	10	S	100	68,50	A1
M 1,6	x	3	S	100	15,80	A1
M 1,6	x	4	S	100	11,90	A1
M 1,6	x	5	S	100	11,00	A1
M 1,6	x	6	S	100	10,40	A1
M 1,6	x	8	S	100	11,50	A1
M 1,6	x	10	S	100	12,70	A1
M 1,6	x	12	S	100	17,30	A1

DIN 00084.920 RAZ 30

84 A 2



Slotted cheese head screws

Partly from l = 60mm partial thread

Dimensions ➔ TI-37 Standard conversion ➔ TI-11
Mech. properties ➔ TI-224

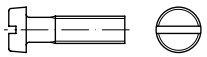
Steel ➔ S. 61
Brass, plastic ➔ S. 565

DIN 84 ➔ replaced by ISO 1207 (compatible)

M 1	x	2	S	2000	150,00	A2
M 1	x	3	S	2000	150,00	A2
M 1	x	4	S	2000	150,00	A2
M 1	x	5	S	2000	150,00	A2
M 1	x	6	S	2000	150,00	A2
M 1	x	8	S	2000	175,00	A2
M 1	x	10	S	2000	195,00	A2
M 1,2	x	2	S	2000	150,00	A2
M 1,2	x	3	S	2000	150,00	A2
M 1,2	x	4	S	2000	150,00	A2
M 1,2	x	5	S	2000	150,00	A2
M 1,2	x	6	S	2000	175,00	A2
M 1,2	x	6	S	2000	195,00	A2
M 1,2	x	10	S	2000	225,00	A2
M 1,2	x	12	S	2000	255,00	A2
M 1,4	x	2	S	2000	150,00	A2
M 1,4	x	3	S	2000	150,00	A2
M 1,4	x	4	S	2000	150,00	A2
M 1,4	x	5	S	2000	150,00	A2
M 1,4	x	6	S	2000	175,00	A2
M 1,4	x	8	S	2000	195,00	A2
M 1,4	x	10	S	2000	225,00	A2
M 1,4	x	12	S	2000	255,00	A2
M 1,6	x	2	S	2000	150,00	A2
M 1,6	x	3	S	2000	150,00	A2
M 1,6	x	4	S	2000	150,00	A2
M 1,6	x	5	S	2000	150,00	A2
M 1,6	x	6	S	2000	175,00	A2
M 1,6	x	8	S	2000	195,00	A2
M 1,6	x	10	S	2000	225,00	A2
M 1,6	x	12	S	2000	255,00	A2
M 1,6	x	16	S	2000	295,00	A2
M 2	x	3	S	1000	3,90	A2
M 2	x	4	S	1000	3,80	A2
M 2	x	5	S	1000	3,85	A2
M 2	x	6	S	1000	3,90	A2
M 2	x	8	S	1000	4,10	A2
M 2	x	10	S	1000	4,45	A2
M 2	x	12	S	1000	5,00	A2
M 2	x	16	S	1000	5,40	A2
M 2	x	20	S	1000	9,00	A2
M 2,5	x	3	S	1000	3,90	A2
M 2,5	x	4	S	1000	3,80	A2
M 2,5	x	5	S	1000	3,85	A2
M 2,5	x	6	S	1000	3,90	A2
M 2,5	x	8	S	1000	4,10	A2
M 2,5	x	10	S	1000	4,45	A2
M 2,5	x	12	S	1000	5,00	A2
M 2,5	x	16	S	1000	5,40	A2
M 2,5	x	18	S	1000	10,00	A2
M 2,5	x	20	S	1000	7,75	A2
M 2,5	x	22	S	1000	13,29	A2
M 2,5	x	25	S	1000	9,30	A2
M 2,5	x	30	S	1000	15,00	A2
M 2,5	x	35	S	1000	27,00	A2
M 2,5	x	40	S	1000	51,00	A2
M 3	x	3	S	1000	10,00	A2
M 3	x	4	S	1000	6,10	A2
M 3	x	5	S	1000	4,10	A2
M 3	x	5	K	200	5,10	A2
M 3	x	6	S	1000	2,75	A2
M 3	x	6	K	200	3,75	A2
M 3	x	8	S	1000	2,40	A2
M 3	x	8	K	200	3,40	A2
M 3	x	10	S	1000	2,50	A2
M 3	x	10	K	200	3,50	A2
M 3	x	12	S	1000	2,70	A2
M 3	x	12	K	200	3,70	A2
M 3	x	14	S	1000	3,90	A2
M 3	x	14	K	200	4,90	A2
M 3	x	16	S	1000	3,00	A2
M 3	x	16	K	200	4,00	A2
M 3	x	18	S	1000	4,30	A2
M 3	x	18	K	200	5,30	A2
M 3	x	20	S	1000	3,30	A2
M 3	x	20	K	200	4,30	A2
M 3	x	22	S	1000	5,85	A2
M 3	x	22	K	200	6,85	A2
M 3	x	25	S	1000	3,80	A2
M 3	x	25	K	200	4,80	A2
M 3	x	30	S	1000	6,35	A2
M 3	x	30	K	200	7,35	A2
M 3	x	35	S	1000	9,25	A2
M 3	x	40	K	200	12,55	A2
M 3	x	45	S	500	18,00	A2
M 3	x	50	K	200	36,00	A2
M 3	x	55	K	200	70,00	A2
M 3,5	x	6	K	200	20,00	A2
M 3,5	x	8	K	200	16,15	A2
M 3,5	x	10	K	200	15,95	A2
M 3,5	x	12	K	200	16,85	A2
M 3,5	x	16	K	200	17,85	A2
M 3,5	x	20	K	200	21,65	A2
M 3,5	x	25	K	200	32,50	A2
M 4	x	4	K	200	11,50	A2
M 4	x	5	S	1000	6,60	A2
M 4	x	5	K	200	7,60	A2
M 4	x	6	S	1000	4,30	A2
M 4	x	6	K	200	5,30	A2
M 4	x	8	S	1000	4,30	A2
M 4	x	8	K	200	5,30	A2
M 4	x	10	S	1000	3,50	A2
M 4	x	10	K	200	4,50	A2
M 4	x	12	S	1000	3,80	A2
M 4	x	12	K	200	4,80	A2
M 4	x	14	S	1000	5,60	A2
M 4	x	16	S	1000	4,30	A2
M 4	x	16	K	200	5,30	A2
M 4	x	18	S	1000	6,15	A2
M 4	x	18	K	200	7,15	A2
M 4	x	20	S	1000	4,70	A2
M 4	x	20	K	200	5,70	A2
M 4	x	22	K	200	9,15	A2
M 4	x	25	S	500	5,75	A2
M 4	x	25	K	200	6,75	A2
M 4	x	30	S	500	6,60	A2
M 4	x	30	K	200	7,60	A2
M 4	x	35	S	500	11,50	A2
M 4	x	35	K	100	12,15	A2
M 4	x	40	K	100	15,05	A2
M 4	x	45	K	100	15,05	A2
M 4	x	50	K	100	21,45	A2
M 4	x	55	K	100	30,00	A2
M 4	x	60	K	100	29,05	A2
M 4	x	70	K	100	34,75	A2
M 4	x	80	K	100	43,00	A2
M 4	x	90	K	100	60,50	A2
M 4	x	100	K	100	87,00	A2
M 5	x	6	S	500	9,00	A2
M 5	x	8	S	500	6,35	A2
M 5	x	8	K	200	7,35	A2
M 5	x	10	S	500	5,25	A2
M 5	x	10	K	200	6,25	A2
M 5	x	12	S	500	5,75	A2
M 5	x	12	K	200	6,75	A2
M 5	x	14	K	200	8,40	A2
M 5	x	16	S	500	6,40	A2
M 5	x	16	K	200	7,40	A2
M 5	x	18	S	500	9,45	A2
M 5	x	18	K	200	10,45	A2
M 5	x	20	S	500	7,25	A2
M 5	x	20	K	200	8,25	A2
M 5	x	22	K	200	8,95	A2
M 5	x	25	S	500	8,10	A2
M 5	x	25	K	200	9,10	A2
M 5	x	30	S	500	9,95	A2
M 5	x	30	K	200	10,95	A2
M 5	x	35	S	200	10,90	A2
M 5	x	35	K	100	12,95	A2
M 5	x	40	S	200	14,80	A2
M 5	x	40	K	100	16,85	A2
M 5	x	45	K	100	19,05	A2
M 5	x	50	K	100	23,65	A2
M 5	x	55	K	100	37,45	A2
M 5	x	60	K	100	37,45	A2
M 5	x	70	K	100	40,35	A2
M 5	x	80	K	100	43,45	A2
M 5	x	90	K	100	62,00	A2

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	100	S	100	127,00 A 2
M 6	x	8	K	100	10,30 A 2
M 6	x	10	S	200	8,25 A 2
M 6	x	10	K	100	10,30 A 2
M 6	x	12	S	200	7,05 A 2
M 6	x	12	K	100	9,10 A 2
M 6	x	16	S	200	7,95 A 2
M 6	x	16	K	100	10,00 A 2
M 6	x	18	S	200	11,40 A 2
M 6	x	18	K	100	13,45 A 2
M 6	x	20	S	200	8,70 A 2
M 6	x	20	K	100	10,75 A 2
M 6	x	25	S	200	9,95 A 2
M 6	x	25	K	100	12,00 A 2
M 6	x	30	S	200	11,30 A 2
M 6	x	30	K	100	13,35 A 2
M 6	x	35	S	100	12,80 A 2
M 6	x	35	K	50	16,90 A 2
M 6	x	40	S	100	14,40 A 2
M 6	x	40	K	50	18,50 A 2
M 6	x	45	S	100	17,80 A 2
M 6	x	45	K	50	21,90 A 2
M 6	x	50	K	50	35,20 A 2
M 6	x	60	K	50	43,00 A 2
M 6	x	70	K	50	47,50 A 2
M 6	x	75	K	50	78,00 A 2
M 6	x	80	K	50	52,10 A 2
M 6	x	90	K	50	56,70 A 2
M 6	x	100	K	50	61,30 A 2
M 8	x	10	K	50	35,00 A 2
M 8	x	12	S	100	22,90 A 2
M 8	x	12	K	50	27,00 A 2
M 8	x	16	S	100	20,90 A 2
M 8	x	16	K	50	25,00 A 2
M 8	x	20	S	100	21,50 A 2
M 8	x	20	K	50	25,60 A 2
M 8	x	25	S	100	22,90 A 2
M 8	x	25	K	50	27,00 A 2
M 8	x	30	S	100	25,60 A 2
M 8	x	30	K	50	29,70 A 2
M 8	x	35	S	100	30,30 A 2
M 8	x	35	K	50	34,40 A 2
M 8	x	40	S	100	35,00 A 2
M 8	x	40	K	50	39,10 A 2
M 8	x	50	S	100	45,80 A 2
M 8	x	50	K	50	49,90 A 2
M 8	x	60	K	50	60,80 A 2
M 8	x	70	K	50	71,00 A 2
M 8	x	80	K	50	77,65 A 2
M 8	x	90	K	50	85,90 A 2
M 8	x	100	K	50	93,00 A 2
M 10	x	12	K	50	50,00 A 2
M 10	x	16	K	50	51,60 A 2
M 10	x	20	K	50	38,30 A 2
M 10	x	25	K	50	42,40 A 2
M 10	x	30	K	50	46,00 A 2
M 10	x	35	K	50	51,60 A 2
M 10	x	40	K	50	55,70 A 2
M 10	x	45	K	50	55,70 A 2
M 10	x	50	K	50	78,20 A 2
M 10	x	60	K	50	102,00 A 2
M 10	x	70	K	25	115,00 A 2
M 10	x	80	K	25	124,00 A 2
M 10	x	90	K	25	135,00 A 2
M 10	x	100	K	25	147,00 A 2

DIN	00084.940	RAZ 30
84	**A 4**	



Slotted cheese head screws

Partly from l = 60mm partial thread

Dimensions → TI-37 Standard conversion → TI-11
Mech. properties → TI-224

Steel → S. 61
Brass, plastic → S. 565

DIN 84 → replaced by ISO 1207 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	3	S	1000	3,90 A 4
M 2	x	3	K	200	4,90 A 4
M 2	x	4	S	1000	3,80 A 4
M 2	x	4	K	200	4,80 A 4
M 2	x	5	S	1000	3,85 A 4
M 2	x	5	K	200	4,85 A 4
M 2	x	6	S	1000	3,90 A 4
M 2	x	6	K	200	4,90 A 4
M 2	x	8	S	1000	4,10 A 4
M 2	x	8	K	200	5,10 A 4
M 2	x	10	S	1000	4,45 A 4
M 2	x	10	K	200	5,45 A 4
M 2	x	12	S	1000	5,00 A 4
M 2	x	12	K	200	6,00 A 4
M 2	x	16	S	1000	5,45 A 4
M 2	x	16	K	200	6,45 A 4
M 2	x	20	S	1000	7,80 A 4
M 2	x	20	K	200	8,80 A 4
M 2	x	25	K	200	15,00 A 4
M 2,5	x	3	S	1000	3,90 A 4
M 2,5	x	3	K	200	4,90 A 4
M 2,5	x	4	S	1000	3,80 A 4
M 2,5	x	4	K	200	4,80 A 4
M 2,5	x	5	S	1000	3,85 A 4
M 2,5	x	5	K	200	4,85 A 4
M 2,5	x	6	S	1000	3,90 A 4
M 2,5	x	6	K	200	4,90 A 4
M 2,5	x	8	S	1000	4,10 A 4
M 2,5	x	8	K	200	5,10 A 4
M 2,5	x	10	S	1000	4,45 A 4
M 2,5	x	10	K	200	5,45 A 4
M 2,5	x	12	S	1000	5,00 A 4
M 2,5	x	12	K	200	6,00 A 4
M 2,5	x	14	K	200	9,10 A 4
M 2,5	x	16	S	1000	5,45 A 4
M 2,5	x	16	K	200	6,45 A 4
M 2,5	x	18	K	200	8,75 A 4
M 2,5	x	20	S	1000	7,75 A 4
M 2,5	x	20	K	200	8,75 A 4
M 2,5	x	22	K	200	16,85 A 4
M 2,5	x	25	K	200	17,75 A 4
M 3	x	3	S	1000	10,70 A 4
M 3	x	3	K	200	11,70 A 4
M 3	x	4	S	1000	6,85 A 4
M 3	x	4	K	200	7,85 A 4
M 3	x	5	S	1000	5,45 A 4
M 3	x	5	K	200	6,45 A 4
M 3	x	6	S	1000	3,45 A 4
M 3	x	6	K	200	4,45 A 4
M 3	x	8	S	1000	3,15 A 4
M 3	x	8	K	200	4,15 A 4
M 3	x	10	S	1000	2,90 A 4
M 3	x	10	K	200	3,90 A 4
M 3	x	12	S	1000	3,20 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	12	K	200	4,20 A 4
M 3	x	14	K	200	4,50 A 4
M 3	x	16	S	1000	3,50 A 4
M 3	x	16	K	200	4,50 A 4
M 3	x	18	K	200	5,95 A 4
M 3	x	20	S	1000	3,95 A 4
M 3	x	20	K	200	4,95 A 4
M 3	x	22	K	200	8,95 A 4
M 3	x	25	S	1000	5,30 A 4
M 3	x	25	K	200	6,30 A 4
M 3	x	30	S	1000	7,40 A 4
M 3	x	30	K	200	8,40 A 4
M 3	x	35	S	500	13,20 A 4
M 3	x	35	K	100	15,25 A 4
M 3	x	40	S	500	15,90 A 4
M 3	x	40	K	100	17,95 A 4
M 3	x	50	S	500	28,90 A 4
M 3	x	50	K	100	30,95 A 4
M 3	x	55	K	100	46,45 A 4
M 3	x	60	K	100	46,45 A 4
M 3,5	x	6	K	100	25,00 A 4
M 3,5	x	8	K	200	19,55 A 4
M 3,5	x	10	K	200	19,25 A 4
M 3,5	x	20	S	500	28,00 A 4
M 3,5	x	20	K	200	30,00 A 4
M 4	x	4	K	200	12,75 A 4
M 4	x	5	S	1000	7,55 A 4
M 4	x	5	K	200	8,55 A 4
M 4	x	6	S	1000	5,05 A 4
M 4	x	6	K	200	6,05 A 4
M 4	x	8	S	1000	4,90 A 4
M 4	x	8	K	200	5,90 A 4
M 4	x	10	S	1000	4,30 A 4
M 4	x	10	K	200	5,30 A 4
M 4	x	12	S	1000	4,60 A 4
M 4	x	12	K	200	5,60 A 4
M 4	x	16	S	1000	5,30 A 4
M 4	x	16	K	200	6,30 A 4
M 4	x	18	S	1000	7,50 A 4
M 4	x	18	K	200	8,50 A 4
M 4	x	20	S	1000	5,75 A 4
M 4	x	20	K	200	6,75 A 4
M 4	x	22	K	200	11,20 A 4
M 4	x	25	S	500	7,05 A 4
M 4	x	25	K	200	8,05 A 4
M 4	x	30	S	500	8,00 A 4
M 4	x	30	K	200	9,00 A 4
M 4	x	35	S	500	11,40 A 4
M 4	x	35	K	100	13,45 A 4
M 4	x	40	S	500	14,10 A 4
M 4	x	40	K	100	16,15 A 4
M 4	x	45	K	100	18,85 A 4
M 4	x	50	S	500	19,90 A 4
M 4	x	50	K	100	21,95 A 4
M 4	x	55	K	100	34,25 A 4
M 4	x	60	K	100	34,25 A 4
M 4	x	70	K	100	42,15 A 4
M 4	x	80	K	100	44,95 A 4
M 5	x	6	S	500	8,70 A 4
M 5	x	6	K	200	9,70 A 4
M 5	x	8	S	500	8,40 A 4
M 5	x	8	K	200	9,40 A 4
M 5	x	10	S	500	7,40 A 4
M 5	x	10	K	200	8,40 A 4
M 5	x	12	S	500	7,25 A 4
M 5	x	12	K	200	8,25 A 4
M 5	x	16	S	500	8,10 A 4
M 5	x	16	K	200	9,10 A 4
M 5	x	18	K	200	13,95 A 4
M 5	x	20	S	500	9,15 A 4
M 5	x	20	K	200	10,15 A 4
M 5	x	25	S	500	10,20 A 4
M 5	x	25	K	200	11,20 A 4
M 5	x	30	S	500	12,50 A 4
M 5	x	30	K	200	13,50 A 4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	35	S	200	13,80 A4
M 5	x	35	K	100	15,85 A4
M 5	x	40	S	200	20,60 A4
M 5	x	40	K	100	22,65 A4
M 5	x	45	K	100	23,95 A4
M 5	x	50	S	200	23,30 A4
M 5	x	50	K	100	25,35 A4
M 5	x	60	K	100	44,35 A4
M 5	x	70	K	100	51,05 A4
M 5	x	80	K	100	57,75 A4
M 5	x	100	K	100	71,05 A4
M 6	x	8	S	200	10,90 A4
M 6	x	8	K	100	12,95 A4
M 6	x	10	S	200	10,40 A4
M 6	x	10	K	100	12,45 A4
M 6	x	12	S	200	9,30 A4
M 6	x	12	K	100	11,35 A4
M 6	x	16	S	200	10,40 A4
M 6	x	16	K	100	12,45 A4
M 6	x	18	K	100	17,05 A4
M 6	x	20	S	200	11,50 A4
M 6	x	20	K	100	13,55 A4
M 6	x	22	K	100	19,15 A4
M 6	x	25	S	200	13,10 A4
M 6	x	25	K	100	15,15 A4
M 6	x	30	S	200	15,00 A4
M 6	x	30	K	100	17,05 A4
M 6	x	35	S	100	17,10 A4
M 6	x	35	K	50	21,20 A4
M 6	x	40	S	100	25,10 A4
M 6	x	40	K	50	29,20 A4
M 6	x	45	K	50	33,00 A4
M 6	x	50	S	100	31,70 A4
M 6	x	50	K	50	35,80 A4
M 6	x	60	K	50	47,40 A4
M 6	x	70	K	50	60,80 A4
M 6	x	75	K	50	71,00 A4
M 6	x	80	K	50	71,00 A4
M 8	x	10	S	100	35,80 A4
M 8	x	10	K	50	39,90 A4
M 8	x	12	S	100	27,90 A4
M 8	x	12	K	50	32,00 A4
M 8	x	16	S	100	24,50 A4
M 8	x	16	K	50	28,60 A4
M 8	x	20	S	100	25,70 A4
M 8	x	20	K	50	29,80 A4
M 8	x	25	S	100	28,20 A4
M 8	x	25	K	50	32,30 A4
M 8	x	30	S	100	31,20 A4
M 8	x	30	K	50	35,30 A4
M 8	x	35	S	100	37,40 A4
M 8	x	35	K	50	41,50 A4
M 8	x	40	S	100	41,70 A4
M 8	x	40	K	50	45,80 A4
M 8	x	45	K	50	54,85 A4
M 8	x	50	S	100	59,30 A4
M 8	x	50	K	50	63,40 A4
M 8	x	55	K	50	76,10 A4
M 8	x	60	K	50	76,10 A4
M 8	x	70	K	50	103,00 A4
M 10	x	16	K	50	70,30 A4
M 10	x	20	K	50	48,00 A4
M 10	x	25	K	50	52,10 A4
M 10	x	30	K	50	57,20 A4
M 10	x	35	K	50	63,40 A4
M 10	x	40	K	50	69,00 A4
M 10	x	50	K	50	98,10 A4
M 10	x	60	K	50	119,00 A4
M 10	x	65	K	50	165,00 A4
M 10	x	70	K	50	165,00 A4

Dimensions			PU	Pieces	€/100/Mat.
DIN		00085.920			RAZ 30
85		A 2			
M 3	x	4	S	1000	9,00 A2
M 3	x	5	S	1000	6,10 A2
M 3	x	6	S	1000	3,35 A2
M 3	x	6	K	200	4,35 A2
M 3	x	8	S	1000	3,10 A2
M 3	x	8	K	200	4,10 A2
M 3	x	10	S	1000	2,95 A2
M 3	x	10	K	200	3,95 A2
M 3	x	12	S	1000	3,20 A2
M 3	x	12	K	200	4,20 A2
M 3	x	14	S	1000	3,50 A2
M 3	x	16	S	1000	3,60 A2
M 3	x	16	K	200	4,60 A2
M 3	x	20	S	1000	4,00 A2
M 3	x	20	K	200	5,00 A2
M 3	x	25	K	200	4,85 A2
M 3	x	30	S	500	9,00 A2
M 3	x	35	K	200	6,90 A2
M 4	x	5	S	1000	9,00 A2
M 4	x	5	K	200	10,95 A2
M 4	x	6	S	1000	6,00 A2
M 4	x	8	S	1000	4,80 A2
M 4	x	8	K	200	5,80 A2
M 4	x	10	S	1000	4,35 A2
M 4	x	10	K	200	5,35 A2
M 4	x	12	S	1000	4,35 A2
M 4	x	12	K	200	5,35 A2
M 4	x	16	S	1000	4,80 A2
M 4	x	16	K	200	5,80 A2
M 4	x	20	S	1000	5,00 A2
M 4	x	20	K	200	6,00 A2
M 4	x	25	S	500	6,00 A2
M 4	x	25	K	200	7,00 A2
M 4	x	30	S	500	6,70 A2
M 4	x	35	S	500	9,00 A2
M 4	x	40	S	500	11,00 A2
M 4	x	50	S	500	18,85 A2
M 4	x	60	S	500	22,20 A2
M 5	x	6	S	500	11,70 A2
M 5	x	6	K	100	13,75 A2
M 5	x	8	S	500	10,20 A2
M 5	x	8	K	200	11,20 A2
M 5	x	10	S	500	8,00 A2
M 5	x	10	K	200	9,00 A2
M 5	x	12	S	500	6,00 A2
M 5	x	12	K	200	7,00 A2
M 5	x	16	S	500	6,70 A2
M 5	x	16	K	200	7,70 A2
M 5	x	20	S	500	7,45 A2
M 5	x	20	K	200	8,45 A2
M 5	x	25	S	500	8,50 A2
M 5	x	25	K	100	10,55 A2
M 5	x	30	S	500	10,10 A2
M 5	x	30	K	100	12,15 A2
M 5	x	35	S	500	14,10 A2
M 5	x	40	K	100	18,15 A2

Slotted pan head screws

Dimensions → TI-37 Standard conversion → TI-11
Mech. properties → TI-224

Steel → S. 63
Brass, plastic → S. 566

DIN 85 → replaced by ISO 1580 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	45	S	500	19,65 A2
M 5	x	50	S	500	24,30 A2
M 5	x	60	S	500	28,80 A2
M 5	x	70	S	200	35,00 A2
M 5	x	80	S	200	50,00 A2
M 6	x	8	S	500	12,00 A2
M 6	x	10	S	200	8,95 A2
M 6	x	10	K	100	11,00 A2
M 6	x	12	S	200	8,20 A2
M 6	x	12	K	100	10,25 A2
M 6	x	16	S	200	8,80 A2
M 6	x	16	K	100	10,85 A2
M 6	x	20	S	200	9,75 A2
M 6	x	20	K	100	11,80 A2
M 6	x	25	S	200	10,90 A2
M 6	x	25	K	100	12,95 A2
M 6	x	30	S	200	12,70 A2
M 6	x	30	K	100	14,75 A2
M 6	x	35	S	200	17,50 A2
M 6	x	40	K	100	18,25 A2
M 6	x	45	K	100	20,95 A2
M 6	x	50	K	50	42,70 A2
M 6	x	60	S	200	65,00 A2
M 6	x	70	S	200	78,00 A2
M 6	x	80	S	200	95,00 A2
DIN		00085.940			RAZ 30
85		A 4			
M 2	x	3	S	1000	35,00 A4
M 2	x	4	S	1000	20,00 A4
M 2	x	5	S	1000	21,00 A4
M 2	x	6	S	1000	17,00 A4
M 2	x	8	S	1000	18,00 A4
M 2	x	10	S	1000	19,00 A4
M 2	x	12	S	1000	20,00 A4
M 2	x	16	S	1000	25,00 A4
M 2	x	20	S	1000	28,00 A4
M 2	x	25	S	1000	36,00 A4
M 2	x	30	S	1000	45,00 A4
M 2,5	x	3	S	1000	40,00 A4
M 2,5	x	4	S	1000	32,00 A4
M 2,5	x	5	S	1000	28,00 A4
M 2,5	x	6	S	1000	29,00 A4
M 2,5	x	8	S	1000	30,00 A4
M 2,5	x	10	S	1000	31,00 A4
M 2,5	x	12	S	1000	32,00 A4
M 2,5	x	16	S	1000	35,00 A4
M 2,5	x	20	S	1000	42,00 A4
M 2,5	x	25	S	1000	50,00 A4
M 2,5	x	30	S	1000	65,00 A4
M 3	x	5	S	1000	6,90 A4
M 3	x	5	K	200	7,90 A4
M 3	x	6	S	1000	4,30 A4
M 3	x	6	K	200	5,30 A4
M 3	x	8	S	1000	4,00 A4
M 3	x	8	K	200	5,00 A4
M 3	x	10	S	1000	3,80 A4
M 3	x	10	K	200	4,80 A4

Slotted pan head screws

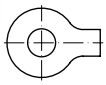
Dimensions → TI-37 Standard conversion → TI-11
Mech. properties → TI-224

Steel → S. 63
Brass, plastic → S. 566

DIN 85 → replaced by ISO 1580 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	12	S	1000	4,00 A4
M 3	x	12	K	200	5,00 A4
M 3	x	16	S	1000	4,60 A4
M 3	x	16	K	200	5,60 A4
M 3	x	20	S	1000	4,90 A4
M 3	x	20	K	200	5,90 A4
M 3	x	25	K	100	6,30 A4
M 3	x	30	K	100	8,35 A4
M 4	x	5	S	1000	11,30 A4
M 4	x	5	K	200	12,30 A4
M 4	x	6	S	1000	6,40 A4
M 4	x	6	K	200	7,40 A4
M 4	x	8	S	1000	6,10 A4
M 4	x	8	K	200	7,10 A4
M 4	x	10	S	1000	5,60 A4
M 4	x	10	K	200	6,60 A4
M 4	x	12	S	1000	5,50 A4
M 4	x	12	K	200	6,50 A4
M 4	x	16	S	1000	6,25 A4
M 4	x	16	K	200	7,25 A4
M 4	x	20	S	1000	7,15 A4
M 4	x	20	K	200	8,15 A4
M 4	x	25	K	200	9,20 A4
M 4	x	30	K	100	11,65 A4
M 4	x	35	K	100	17,45 A4
M 4	x	40	K	100	19,65 A4
M 4	x	45	K	100	25,65 A4
M 4	x	50	K	100	23,60 A4
M 5	x	8	S	500	11,50 A4
M 5	x	8	K	200	13,55 A4
M 5	x	10	S	500	9,30 A4
M 5	x	10	K	200	10,30 A4
M 5	x	12	S	500	8,85 A4
M 5	x	12	K	200	9,85 A4
M 5	x	16	S	500	9,80 A4
M 5	x	16	K	200	10,80 A4
M 5	x	20	S	500	11,20 A4
M 5	x	20	K	200	12,20 A4
M 5	x	25	S	500	12,60 A4
M 5	x	25	K	100	14,65 A4
M 5	x	30	S	500	15,10 A4
M 5	x	30	K	100	17,15 A4
M 5	x	40	K	100	23,25 A4
M 5	x	50	K	100	48,35 A4
M 6	x	8	K	100	19,85 A4
M 6	x	10	S	200	12,60 A4
M 6	x	10	K	100	14,65 A4
M 6	x	12	S	200	11,40 A4
M 6	x	12	K	100	13,45 A4
M 6	x	16	S	200	12,50 A4
M 6	x	16	K	100	14,55 A4
M 6	x	20	S	200	14,10 A4
M 6	x	20	K	100	16,15 A4
M 6	x	25	S	200	15,50 A4
M 6	x	25	K	100	17,55 A4
M 6	x	30	S	200	19,60 A4
M 6	x	30	K	100	21,65 A4
M 6	x	35	K	50	22,85 A4
M 6	x	40	K	50	24,90 A4
M 6	x	50	K	50	55,20 A4
M 8	x	10	K	50	46,40 A4
M 8	x	12	K	50	44,50 A4
M 8	x	16	K	50	44,50 A4
M 8	x	20	K	50	44,50 A4
M 8	x	25	K	50	48,80 A4

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00093.920		RAZ 40
93	**A 2**		



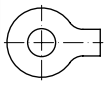
Tap washers with a long tap

Dimensions → TI-88

Steel → S. 64

4,3	S	50	63,00 A2
5,3	S	50	49,00 A2
6,4	S	50	57,00 A2
8,4	S	25	75,00 A2
10,5	S	25	95,00 A2
13	S	25	118,00 A2
17	S	10	172,00 A2
21	S	10	207,00 A2
25	S	10	265,00 A2
28	S	1	375,00 A2
31	S	1	475,00 A2
37	S	1	780,00 A2

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00093.940		RAZ 40
93	**A 4**		



Tap washers with a long tap

Dimensions → TI-88

Steel → S. 64

5,3	S	50	67,00 A4
6,4	S	50	77,00 A4
8,4	S	25	101,00 A4
10,5	S	25	130,00 A4
13	S	25	164,00 A4
17	S	10	255,00 A4
21	S	10	295,00 A4
25	S	10	370,00 A4
28	S	1	460,00 A4
31	S	1	660,00 A4
37	S	1	1010,00 A4
43	S	1	1170,00 A4

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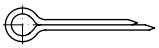
Dimensions	PU	Pieces	€/100/Mat.
DIN	00094.300		RAZ 40
94	**1.4300/A 2**		



Split pins

Dimensions → TI-120 Standard conversion → TI-10

Steel → S. 65
Brass, copper → S. 566

DIN 94 → replaced by ISO 1234

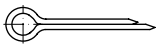
Nominal ∅ (= drilling ∅) x length

1	x	8	S	1000	3,60 A2
1	x	10	S	1000	3,60 A2
1	x	16	S	1000	3,60 A2
1	x	20	S	1000	3,75 A2
1	x	25	S	1000	4,40 A2
1	x	32	S	1000	6,00 A2
1,6	x	8	S	1000	4,25 A2
1,6	x	10	S	1000	4,25 A2
1,6	x	12	S	1000	4,25 A2
1,6	x	16	S	1000	4,25 A2
1,6	x	20	S	1000	4,45 A2
1,6	x	25	S	1000	5,20 A2
1,6	x	32	S	1000	6,00 A2
2	x	10	S	1000	5,80 A2
2	x	12	S	1000	5,80 A2
2	x	14	S	1000	5,80 A2
2	x	16	S	1000	5,80 A2
2	x	20	S	1000	6,20 A2
2	x	25	S	1000	7,20 A2
2	x	32	S	1000	8,60 A2
2	x	40	S	1000	10,00 A2
2,5	x	12	S	500	9,70 A2
2,5	x	16	S	500	9,70 A2
2,5	x	20	S	500	10,50 A2
2,5	x	25	S	500	12,30 A2
2,5	x	32	S	500	14,80 A2
2,5	x	36	S	500	16,30 A2
2,5	x	40	S	500	17,80 A2
2,5	x	45	S	500	19,60 A2
2,5	x	50	S	500	21,40 A2
3,2	x	16	S	500	13,60 A2
3,2	x	20	S	500	14,60 A2
3,2	x	25	S	500	16,90 A2
3,2	x	32	S	500	20,30 A2
3,2	x	36	S	500	22,20 A2
3,2	x	40	S	500	24,20 A2
3,2	x	45	S	500	27,00 A2
3,2	x	50	S	500	29,00 A2
4	x	20	S	500	23,00 A2
4	x	25	S	500	27,00 A2
4	x	28	S	500	28,00 A2
4	x	32	S	500	32,50 A2
4	x	36	S	500	35,50 A2
4	x	40	S	500	38,50 A2
4	x	45	S	500	42,00 A2
4	x	50	S	500	46,00 A2
4	x	63	S	500	60,00 A2
5	x	25	S	250	39,50 A2
5	x	28	S	250	40,00 A2
5	x	32	S	250	47,50 A2
5	x	36	S	250	52,00 A2
5	x	40	S	250	56,00 A2
5	x	45	S	250	62,00 A2
5	x	50	S	250	67,00 A2
5	x	56	S	250	74,00 A2
5	x	63	S	250	82,00 A2
5	x	71	S	250	91,00 A2

Dimensions			PU	Pieces	€/100/Mat.
5	x	80	S	250	95,00 A 2
6,3	x	32	S	250	68,00 A 2
6,3	x	36	S	250	74,00 A 2
6,3	x	40	S	250	80,00 A 2
6,3	x	45	S	250	95,00 A 2
6,3	x	50	S	250	95,00 A 2
6,3	x	56	S	250	105,00 A 2
6,3	x	63	S	250	116,00 A 2
6,3	x	71	S	250	128,00 A 2
6,3	x	80	S	250	142,00 A 2
8	x	36	S	100	148,00 A 2
8	x	45	S	100	162,00 A 2
8	x	50	S	100	175,00 A 2
8	x	56	S	100	191,00 A 2
8	x	63	S	100	210,00 A 2
8	x	71	S	100	231,00 A 2
8	x	80	S	100	255,00 A 2
10	x	63	S	50	310,00 A 2
10	x	71	S	50	370,00 A 2
10	x	80	S	50	405,00 A 2
10	x	100	S	25	490,00 A 2

DIN 00094.940 RAZ 40

94 A 4



Split pins

Dimensions → TI-120 Corrosion protection → TI-217

Steel → S. 65
Brass, copper → S. 566

DIN 94 → replaced by ISO 1234

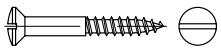
Nominal ∅ (= drilling ∅) x length

1	x	16	K	100	6,40 A 4
1	x	20	K	100	7,40 A 4
1,6	x	10	K	100	6,60 A 4
1,6	x	12	K	100	7,10 A 4
1,6	x	16	K	100	9,00 A 4
1,6	x	20	K	100	11,30 A 4
1,6	x	25	K	100	12,90 A 4
1,6	x	32	K	100	14,70 A 4
2	x	10	K	100	9,20 A 4
2	x	16	K	100	11,00 A 4
2	x	20	K	100	13,00 A 4
2	x	25	K	100	15,10 A 4
2	x	32	K	100	18,00 A 4
2	x	40	K	100	22,10 A 4
2,5	x	20	K	100	20,20 A 4
2,5	x	25	K	100	25,50 A 4
2,5	x	32	K	100	28,50 A 4
3,2	x	16	K	100	21,90 A 4
3,2	x	20	K	100	26,00 A 4
3,2	x	25	K	100	29,50 A 4
3,2	x	32	K	100	33,00 A 4
3,2	x	36	K	100	37,00 A 4
3,2	x	40	K	100	41,00 A 4
3,2	x	45	K	100	45,00 A 4
3,2	x	50	K	100	51,00 A 4
3,2	x	63	K	100	61,00 A 4
4	x	20	K	100	41,00 A 4
4	x	25	K	100	47,00 A 4
4	x	32	K	100	56,00 A 4
4	x	40	K	100	68,00 A 4
4	x	50	K	100	80,00 A 4
4	x	63	K	100	89,48 A 4
5	x	32	K	50	88,00 A 4
5	x	36	K	50	97,00 A 4
5	x	40	K	50	106,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
5	x	50	K	50	124,00 A 4
5	x	63	K	50	141,00 A 4
6,3	x	36	K	50	137,00 A 4
6,3	x	40	K	50	150,00 A 4
6,3	x	50	K	50	175,00 A 4
6,3	x	63	K	50	201,00 A 4
6,3	x	80	K	25	227,00 A 4
8	x	40	K	25	305,00 A 4
8	x	45	K	25	320,00 A 4
8	x	50	K	25	335,00 A 4
8	x	56	S	25	350,00 A 4
8	x	80	K	25	435,00 A 4
8	x	100	K	25	475,00 A 4
8	x	140	K	25	515,00 A 4
10	x	71	K	25	400,00 A 4
10	x	80	K	25	410,00 A 4
10	x	90	K	25	415,00 A 4
10	x	100	K	25	420,00 A 4
10	x	112	K	25	430,00 A 4
10	x	125	K	25	435,00 A 4
13	x	71	K	25	600,00 A 4
13	x	100	K	25	620,00 A 4
13	x	125	K	25	650,00 A 4
13	x	140	K	25	680,00 A 4
13	x	160	K	25	700,00 A 4
13	x	180	K	25	720,00 A 4
13	x	200	K	25	750,00 A 4

DIN 00095.920 RAZ 50

95 A 2



Slotted raised countersunk head wood screws

Dimensions → TI-51

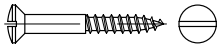
Steel → S. 66
Brass → S. 567

2,5	x	10	S	200	7,80 A 2
2,5	x	12	S	200	8,20 A 2
2,5	x	16	S	200	8,65 A 2
2,5	x	20	S	200	9,15 A 2
2,5	x	25	S	200	10,15 A 2
3	x	10	S	200	8,05 A 2
3	x	12	S	200	8,20 A 2
3	x	16	S	200	8,65 A 2
3	x	20	S	200	9,15 A 2
3	x	25	S	200	10,15 A 2
3	x	30	S	200	12,25 A 2
3	x	35	S	200	12,90 A 2
3	x	40	S	200	14,60 A 2
3,5	x	12	S	200	9,10 A 2
3,5	x	16	S	200	9,55 A 2
3,5	x	20	S	200	10,40 A 2
3,5	x	25	S	200	13,20 A 2
3,5	x	30	S	200	13,75 A 2
3,5	x	35	S	200	15,15 A 2
3,5	x	40	S	200	17,10 A 2
4	x	10	S	200	12,00 A 2
4	x	12	S	200	10,70 A 2
4	x	16	S	200	11,25 A 2
4	x	20	S	200	12,10 A 2
4	x	25	S	200	13,20 A 2
4	x	30	S	200	15,15 A 2
4	x	35	S	200	17,15 A 2
4	x	40	S	200	18,70 A 2
4	x	45	S	200	22,15 A 2

Dimensions			PU	Pieces	€/100/Mat.
4	x	50	S	200	24,85 A 2
4	x	60	S	200	28,50 A 2
4	x	70	S	500	32,00 A 2
4,5	x	20	S	200	16,90 A 2
4,5	x	25	S	200	16,60 A 2
4,5	x	30	S	200	20,20 A 2
4,5	x	35	S	200	21,75 A 2
4,5	x	40	S	200	23,80 A 2
4,5	x	45	S	200	27,10 A 2
4,5	x	50	S	200	28,65 A 2
4,5	x	60	S	200	31,50 A 2
5	x	20	S	200	19,25 A 2
5	x	25	S	200	19,75 A 2
5	x	30	S	200	21,25 A 2
5	x	35	S	200	23,85 A 2
5	x	40	S	200	26,10 A 2
5	x	45	S	200	30,15 A 2
5	x	50	S	200	32,90 A 2
5	x	60	S	200	40,45 A 2
5	x	70	S	200	50,00 A 2
5	x	80	S	200	91,55 A 2
5	x	90	S	200	101,00 A 2
5	x	100	S	200	112,00 A 2
6	x	20	S	200	32,50 A 2
6	x	25	S	200	28,00 A 2
6	x	30	S	200	30,15 A 2
6	x	35	S	200	34,50 A 2
6	x	40	S	200	37,70 A 2
6	x	45	S	200	42,15 A 2
6	x	50	S	200	46,35 A 2
6	x	60	S	100	55,75 A 2
6	x	70	S	100	70,05 A 2
6	x	80	S	100	91,55 A 2
6	x	90	S	100	101,00 A 2
6	x	100	S	100	112,00 A 2
6	x	120	S	100	125,00 A 2
8	x	50	S	100	86,00 A 2
8	x	60	S	100	101,00 A 2
8	x	70	S	100	116,00 A 2
8	x	80	S	100	133,00 A 2
8	x	100	S	100	167,00 A 2

DIN 00095.940 RAZ 50

95 A 4



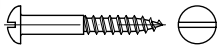
Slotted raised countersunk head wood screws

Dimensions → TI-51

Steel → S. 66
Brass → S. 567

4	x	30	S	200	22,90 A 4
4	x	35	S	200	26,00 A 4
4	x	40	S	200	28,00 A 4
4	x	50	S	200	38,00 A 4
5	x	30	S	200	32,00 A 4
5	x	40	S	200	39,50 A 4
5	x	50	S	200	50,00 A 4
5	x	60	S	200	62,00 A 4
6	x	50	S	200	70,00 A 4
6	x	60	S	100	85,00 A 4
6	x	70	S	100	107,00 A 4

Dimensions	PU Pieces	€/100/Mat.
DIN	00096.920	RAZ 50
96	A 2	



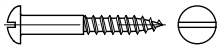
Slotted round head wood screws

Dimensions → TI-51

Steel → S. 66
Brass → S. 568

2,5	x	10	S	200	7,80	A 2
2,5	x	12	S	200	8,20	A 2
2,5	x	16	S	200	8,65	A 2
2,5	x	20	S	200	9,15	A 2
2,5	x	25	S	200	10,15	A 2
3	x	10	S	200	8,05	A 2
3	x	12	S	200	8,20	A 2
3	x	16	S	200	8,65	A 2
3	x	20	S	200	9,15	A 2
3	x	25	S	200	10,15	A 2
3	x	30	S	200	12,25	A 2
3	x	35	S	200	12,90	A 2
3	x	40	S	200	14,60	A 2
3,5	x	16	S	200	9,55	A 2
3,5	x	20	S	200	10,40	A 2
3,5	x	25	S	200	13,20	A 2
3,5	x	30	S	200	13,75	A 2
3,5	x	35	S	200	15,15	A 2
3,5	x	40	S	200	17,10	A 2
4	x	12	S	200	10,70	A 2
4	x	16	S	200	11,25	A 2
4	x	20	S	200	12,10	A 2
4	x	25	S	200	13,20	A 2
4	x	30	S	200	15,15	A 2
4	x	35	S	200	17,15	A 2
4	x	40	S	200	18,70	A 2
4	x	45	S	200	22,15	A 2
4	x	50	S	200	24,85	A 2
4	x	60	S	200	34,00	A 2
4,5	x	20	S	200	16,90	A 2
4,5	x	25	S	200	16,60	A 2
4,5	x	30	S	200	20,20	A 2
4,5	x	35	S	200	21,75	A 2
4,5	x	40	S	200	23,80	A 2
4,5	x	45	S	200	27,10	A 2
4,5	x	50	S	200	28,65	A 2
4,5	x	60	S	200	31,50	A 2
5	x	20	S	200	19,25	A 2
5	x	25	S	200	19,75	A 2
5	x	30	S	200	21,25	A 2
5	x	35	S	200	23,85	A 2
5	x	40	S	200	26,10	A 2
5	x	45	S	200	30,15	A 2
5	x	50	S	200	32,90	A 2
5	x	60	S	200	40,45	A 2
5	x	70	S	200	50,00	A 2
5	x	80	S	200	91,55	A 2
6	x	20	S	200	32,50	A 2
6	x	25	S	200	28,00	A 2
6	x	30	S	200	30,15	A 2
6	x	35	S	200	34,60	A 2
6	x	40	S	200	37,70	A 2
6	x	50	S	200	46,35	A 2
6	x	60	S	100	55,75	A 2
6	x	70	S	100	70,05	A 2
6	x	80	S	100	91,55	A 2
6	x	90	S	100	101,00	A 2
6	x	100	S	100	112,00	A 2

Dimensions	PU Pieces	€/100/Mat.
DIN	00096.940	RAZ 50
96	A 4	



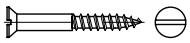
Slotted round head wood screws

Dimensions → TI-51

Steel → S. 66
Brass → S. 568

4	x	20	S	200	17,40	A 4
4	x	25	S	200	19,60	A 4
4	x	30	S	200	22,30	A 4
4	x	35	S	200	25,00	A 4
4	x	40	S	200	27,50	A 4
4	x	50	S	200	37,00	A 4
5	x	20	S	200	28,50	A 4
5	x	25	S	200	29,50	A 4
5	x	30	S	200	31,00	A 4
5	x	40	S	200	38,50	A 4
5	x	50	S	200	48,50	A 4
5	x	60	S	200	60,00	A 4
5	x	70	S	200	74,00	A 4
6	x	30	S	200	44,50	A 4
6	x	40	S	200	56,00	A 4
6	x	50	S	200	69,00	A 4
6	x	60	S	200	83,00	A 4
6	x	70	S	100	104,00	A 4
6	x	100	S	100	145,00	A 4

DIN	00097.920	RAZ 50
97	A 2	



Slotted countersunk head wood screws

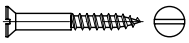
Dimensions → TI-51

Steel → S. 66
Brass → S. 569

2,5	x	10	S	200	7,80	A 2
2,5	x	12	S	200	8,20	A 2
2,5	x	16	S	200	8,65	A 2
2,5	x	20	S	200	9,15	A 2
2,5	x	25	S	200	10,15	A 2
3	x	10	S	200	8,05	A 2
3	x	12	S	200	8,20	A 2
3	x	16	S	200	8,65	A 2
3	x	20	S	200	9,15	A 2
3	x	25	S	200	10,15	A 2
3	x	30	S	200	12,25	A 2
3	x	35	S	200	12,90	A 2
3	x	40	S	200	14,60	A 2
3,5	x	12	S	200	9,10	A 2
3,5	x	16	S	200	9,55	A 2
3,5	x	20	S	200	10,40	A 2
3,5	x	25	S	200	13,20	A 2
3,5	x	30	S	200	13,75	A 2
3,5	x	35	S	200	15,15	A 2
3,5	x	40	S	200	17,10	A 2
4	x	12	S	200	10,70	A 2
4	x	16	S	200	11,25	A 2

Dimensions	PU Pieces	€/100/Mat.
4 x 20	S 200	12,10 A 2
4 x 25	S 200	13,20 A 2
4 x 30	S 200	15,15 A 2
4 x 35	S 200	17,15 A 2
4 x 40	S 200	18,70 A 2
4 x 45	S 200	22,15 A 2
4 x 50	S 200	24,85 A 2
4 x 60	S 200	28,50 A 2
4 x 70	S 200	47,50 A 2
4,5 x 20	S 200	16,90 A 2
4,5 x 25	S 200	16,60 A 2
4,5 x 30	S 200	20,20 A 2
4,5 x 35	S 200	21,75 A 2
4,5 x 40	S 200	23,80 A 2
4,5 x 45	S 200	27,10 A 2
4,5 x 50	S 200	28,65 A 2
4,5 x 60	S 200	31,50 A 2
5 x 20	S 200	19,25 A 2
5 x 25	S 200	19,75 A 2
5 x 30	S 200	21,25 A 2
5 x 35	S 200	23,85 A 2
5 x 40	S 200	26,10 A 2
5 x 45	S 200	30,15 A 2
5 x 50	S 200	32,90 A 2
5 x 60	S 200	40,45 A 2
5 x 70	S 200	50,00 A 2
5 x 80	S 200	91,55 A 2
5 x 100	S 200	112,00 A 2
6 x 20	S 200	32,50 A 2
6 x 25	S 200	28,00 A 2
6 x 30	S 200	30,15 A 2
6 x 35	S 200	34,50 A 2
6 x 40	S 200	37,70 A 2
6 x 45	S 200	42,15 A 2
6 x 50	S 200	46,35 A 2
6 x 60	S 100	55,75 A 2
6 x 70	S 100	70,05 A 2
6 x 80	S 100	91,55 A 2
6 x 90	S 100	101,00 A 2
6 x 100	S 100	112,00 A 2
8 x 50	S 100	86,00 A 2
8 x 60	S 100	101,00 A 2
8 x 70	S 100	116,00 A 2
8 x 80	S 100	133,00 A 2
8 x 90	S 100	167,00 A 2
8 x 100	S 100	167,00 A 2

DIN	00097.940	RAZ 50
97	A 4	



Slotted countersunk head wood screws

Dimensions → TI-51

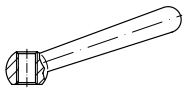
Steel → S. 66
Brass → S. 569

3	x	10	S	200	10,60	A 4
3	x	16	S	200	11,90	A 4
3	x	20	S	200	12,70	A 4
3	x	25	S	200	14,00	A 4
3	x	30	S	200	15,80	A 4
3,5	x	20	S	200	14,30	A 4
3,5	x	30	S	200	18,70	A 4
3,5	x	40	S	200	23,50	A 4
4	x	16	S	200	15,40	A 4
4	x	20	S	200	16,10	A 4
4	x	25	S	200	18,30	A 4
4	x	30	S	200	20,70	A 4

Dimensions				PU	Pieces	€/100/Mat.
4	x	35		S	200	23,30 A4
4	x	40		S	200	25,50 A4
4	x	50		S	200	34,50 A4
4	x	60		S	200	50,00 A4
4,5	x	25		S	200	23,20 A4
4,5	x	30		S	200	26,00 A4
4,5	x	40		S	200	32,50 A4
4,5	x	50		S	200	38,50 A4
5	x	20		S	200	26,50 A4
5	x	25		S	200	27,50 A4
5	x	30		S	200	29,00 A4
5	x	35		S	200	33,00 A4
5	x	40		S	200	36,00 A4
5	x	50		S	200	45,50 A4
5	x	60		S	200	56,00 A4
6	x	25		S	200	39,00 A4
6	x	35		S	200	47,50 A4
6	x	40		S	200	52,00 A4
6	x	50		S	200	64,00 A4
6	x	60		S	100	77,00 A4
6	x	70		S	100	97,00 A4
6	x	80		S	100	110,00 A4
8	x	40		S	100	108,00 A4
8	x	50		S	100	125,00 A4
8	x	60		S	100	145,00 A4
8	x	70		S	100	168,00 A4
8	x	80		S	100	192,00 A4
8	x	100		S	100	241,00 A4

DIN 00099.927 RAZ 80

99 A 2 type N



Tapered handles with handle bracket via thread, N = tilted griffith

Dimensions → TI-123

Steel → S. 67

Length / internal thread M

N 80	M 10	S	1	3300,00 A2
N 100	M 12	S	1	4300,00 A2
N 125	M 16	S	1	6400,00 A2
N 160	M 20	S	1	7200,00 A2

DIN 00125.921 RAZ 90

125-1 A 2 140 HV type A

Plain washers, A = without chamfer

Dimensions → TI-84

Steel → S. 67
Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

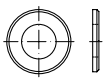
Inside ∅ x outside ∅ x thickness

1,7	x	4	x	0,3	S	1000	12,00 A2
2,2	x	5	x	0,3	S	1000	2,25 A2
2,2	x	5	x	0,3	K	200	4,00 A2

Dimensions					PU	Pieces	€/100/Mat.
2,5	x	6	x	0,5	S	1000	2,25 A2
2,5	x	6	x	0,5	K	200	4,00 A2
2,7	x	6	x	0,5	S	1000	2,25 A2
2,7	x	6	x	0,5	K	200	4,00 A2
2,8	x	7	x	0,5	S	1000	2,25 A2
2,8	x	7	x	0,5	K	200	4,00 A2
3,2	x	7	x	0,5	S	1000	0,99 A2
3,2	x	7	x	0,5	K	200	2,25 A2
3,7	x	8	x	0,5	S	1000	1,40 A2
3,7	x	8	x	0,5	K	200	2,80 A2
4,3	x	9	x	0,8	S	1000	1,15 A2
4,3	x	9	x	0,8	K	200	2,35 A2
5,3	x	10	x	1	S	1000	1,40 A2
5,3	x	10	x	1	K	100	3,60 A2
6,4	x	12	x	1,6	S	1000	2,60 A2
6,4	x	12	x	1,6	K	100	5,10 A2
7,4	x	14	x	1,6	S	1000	5,70 A2
8,4	x	16	x	1,6	S	1000	4,30 A2
8,4	x	16	x	1,6	K	100	7,60 A2
10,5	x	20	x	2	S	1000	7,80 A2
10,5	x	20	x	2	K	100	11,90 A2
13	x	24	x	2,5	S	500	13,20 A2
13	x	24	x	2,5	K	100	17,80 A2
15	x	28	x	2,5	S	500	26,50 A2
15	x	28	x	2,5	K	50	35,00 A2
17	x	30	x	3	S	500	26,50 A2
17	x	30	x	3	K	50	35,00 A2
19	x	34	x	3	S	200	36,00 A2
19	x	34	x	3	K	25	53,00 A2
21	x	37	x	3	S	200	36,00 A2
21	x	37	x	3	K	25	53,00 A2
23	x	39	x	3	S	200	80,00 A2
23	x	39	x	3	K	25	97,00 A2
25	x	44	x	4	S	200	80,00 A2
25	x	44	x	4	K	25	97,00 A2
28	x	50	x	4	S	100	162,00 A2
28	x	50	x	4	K	10	204,00 A2
31	x	56	x	4	S	100	220,00 A2
31	x	56	x	4	K	10	265,00 A2
34	x	60	x	5	S	100	231,00 A2
34	x	60	x	5	K	10	305,00 A2
37	x	66	x	5	S	100	290,00 A2
37	x	66	x	5	K	10	315,00 A2
40	x	72	x	6	S	10	340,00 A2
43	x	78	x	7	S	10	880,00 A2
46	x	85	x	7	S	10	1400,00 A2
50	x	92	x	8	S	1	3900,00 A2
54	x	98	x	8	S	1	5200,00 A2
58	x	105	x	9	S	1	9700,00 A2

DIN 00125.922 RAZ 90

125-1 A 2 140 HV type B



Plain washers, B = with chamfer

Dimensions → TI-84

Steel → S. 69
Brass → S. 570

DIN 125-1 type B → replaced by ISO 7090

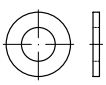
Inside ∅ x outside ∅ x thickness

4,3	x	9	x	0,8	S	1000	27,00 A2
5,3	x	10	x	1	S	1000	8,40 A2
6,4	x	12	x	1,6	S	1000	9,70 A2
8,4	x	16	x	1,6	S	500	12,70 A2
10,5	x	20	x	2	S	250	20,60 A2

Dimensions					PU	Pieces	€/100/Mat.
13	x	24	x	2,5	S	250	32,00 A2
17	x	30	x	3	S	100	61,00 A2
21	x	37	x	3	S	50	93,00 A2

DIN 00125.941 RAZ 90

125-1 A 4 140 HV type A



Plain washers, A = without chamfer

Dimensions → TI-84

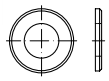
Steel → S. 67
Brass, copper, plastic, aluminium → S. 569

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness

2,2	x	5	x	0,3	S	1000	5,88 A4
2,5	x	6	x	0,5	S	1000	5,88 A4
2,7	x	6	x	0,5	S	1000	4,80 A4
3,2	x	7	x	0,5	S	1000	1,15 A4
3,2	x	7	x	0,5	K	200	2,35 A4
4,3	x	9	x	0,8	S	1000	1,30 A4
4,3	x	9	x	0,8	K	200	2,50 A4
5,3	x	10	x	1	S	1000	1,70 A4
5,3	x	10	x	1	K	100	3,95 A4
6,4	x	12	x	1,6	S	1000	4,55 A4
6,4	x	12	x	1,6	K	100	7,60 A4
8,4	x	16	x	1,6	S	1000	6,50 A4
8,4	x	16	x	1,6	K	100	9,40 A4
10,5	x	20	x	2	S	1000	13,80 A4
10,5	x	20	x	2	K	100	18,00 A4
13	x	24	x	2,5	S	500	18,60 A4
13	x	24	x	2,5	K	100	23,20 A4
15	x	28	x	2,5	S	500	35,50 A4
15	x	28	x	2,5	K	50	44,00 A4
17	x	30	x	3	S	500	35,50 A4
17	x	30	x	3	K	50	44,00 A4
19	x	34	x	3	S	200	51,00 A4
19	x	34	x	3	K	25	68,00 A4
21	x	37	x	3	S	200	51,00 A4
21	x	37	x	3	K	25	68,00 A4
23	x	39	x	3	K	25	122,00 A4
25	x	44	x	4	S	200	105,00 A4
25	x	44	x	4	K	25	122,00 A4
28	x	50	x	4	S	100	218,00 A4
28	x	50	x	4	K	10	260,00 A4
31	x	56	x	4	S	100	290,00 A4
31	x	56	x	4	K	10	330,00 A4
34	x	60	x	5	S	10	385,00 A4
37	x	66	x	5	S	10	420,00 A4
40	x	72	x	6	S	10	820,00 A4
43	x	78	x	7	S	10	840,00 A4

Dimensions	PU	Pieces	€/100/Mat.
DIN	00125.942		RAZ 90
125-1	**A 4 140 HV**		**type B**



Plain washers, B = with chamfer

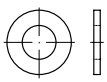
Dimensions ➔ TI-84

Steel ➔ S. 69
Brass ➔ S. 570

DIN 125-1 type B ➔ replaced by ISO 7090

Inside ∅ x outside ∅ x thickness								
4,3					S	1000	28,00	A4
5,3	x	10	x	1	S	1000	11,10	A4
6,4	x	12	x	1,6	S	1000	12,90	A4
8,4	x	16	x	1,6	S	500	18,40	A4
10,5	x	20	x	2	S	250	27,00	A4
13	x	24	x	2,5	S	250	36,00	A4
17	x	30	x	3	S	100	68,00	A4
19	x	34	x	3	S	50	80,00	A4
21	x	37	x	3	S	50	102,00	A4
25	x	44	x	4	S	25	225,00	A4
28	x	50	x	4	S	25	230,00	A4
31	x	56	x	4	S	25	285,00	A4
34	x	60	x	5	S	25	820,00	A4
37	x	66	x	5	S	10	2200,00	A4
43	x	78	x	7	S	10	2950,00	A4
46	x	85	x	7	S	10	4320,00	A4
50	x	92	x	8	S	10	4900,00	A4
54	x	98	x	8	S	1	5100,00	A4
58	x	105	x	9	S	1	5900,00	A4

DIN	00125.951	RAZ 91
125-1	**1.4571 (A 5)**	**type A**



Plain washer, A = without chamfer

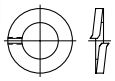
Dimensions ➔ TI-84

Steel ➔ S. 67
Brass, copper, plastic, aluminium ➔ S. 569

DIN 125-1 type A ➔ replaced by ISO 7089

Inside ∅ x outside ∅ x thickness								
6,4	x	12	x	1,6	S	100	45,00	A5
8,4	x	16	x	1,6	S	100	49,50	A5
10,5	x	20	x	2	S	100	95,00	A5
13	x	24	x	2,5	S	50	107,00	A5
17	x	30	x	3	S	50	155,00	A5
21	x	37	x	3	S	25	230,00	A5
25	x	44	x	4	S	25	880,00	A5
31	x	56	x	4	S	10	1050,00	A5

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00127.961		RAZ 110
127	**1.4310**		**type A**



Spring lock washers, A = bent end

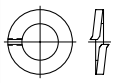
Caution! Reduced spring load.

Dimensions ➔ TI-88

Spring steel ➔ S. 70

A 3	S	1000	1,50
A 3	K	100	2,75
A 4	S	1000	2,05
A 4	K	100	3,55
A 5	S	1000	2,55
A 5	K	100	4,30
A 6	S	1000	5,10
A 6	K	100	8,10
A 8	S	1000	8,80
A 8	K	100	13,70
A 10	S	1000	13,40
A 10	K	100	20,60
A 12	S	500	19,30
A 12	K	100	29,50
A 16	S	100	44,00
A 20	S	100	75,00

~DIN	00127.941	RAZ 110
127	**A 4**	**type A**



Spring lock washers, A = bent end

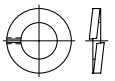
Caution! Reduced spring load.

Dimensions ➔ TI-88

Spring steel ➔ S. 70

A 3	S	1000	1,65	A4
A 3	K	100	3,10	A4
A 4	S	1000	2,15	A4
A 4	K	100	3,85	A4
A 5	S	1000	3,10	A4
A 5	K	100	5,10	A4
A 6	S	1000	5,90	A4
A 6	K	100	9,20	A4
A 8	S	1000	10,20	A4
A 8	K	100	15,80	A4
A 10	S	1000	15,70	A4
A 10	K	100	24,10	A4
A 12	S	500	22,00	A4
A 12	K	100	33,50	A4
A 16	S	100	54,00	A4
A 20	S	100	86,00	A4

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00127.962		RAZ 110
127	**1.4310**		**type B**



Spring lock washers, B = flat end

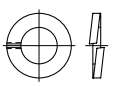
Caution! Reduced spring load.

Dimensions ➔ TI-88

Spring steel ➔ S. 71
Bronze ➔ S. 571

B 2	S	1000	1,80
B 2	K	100	3,60
B 2,3	S	1000	1,80
B 2,5	S	1000	1,80
B 2,5	K	100	3,60
B 2,6	S	1000	1,80
B 3	S	1000	0,92
B 3	K	100	2,35
B 3,5	S	1000	1,40
B 4	S	1000	0,99
B 4	K	100	2,55
B 5	S	1000	1,30
B 5	K	100	2,80
B 6	S	1000	2,45
B 6	K	100	4,05
B 8	S	1000	4,15
B 8	K	100	6,50
B 10	S	1000	7,40
B 10	K	100	10,20
B 12	S	500	11,40
B 12	K	100	14,50
B 14	K	50	27,00
B 16	S	100	23,70
B 16	K	50	38,50
B 18	K	50	35,50
B 20	S	100	32,50
B 20	K	25	42,50
B 22	K	25	85,00
B 24	K	25	85,00
B 27	K	10	155,00
B 30	K	10	290,00
B 33	K	10	360,00
B 36	K	10	480,00

~DIN	00127.942	RAZ 110
127	**A 4**	**type B**



Spring lock washers, B = flat end

Caution! Reduced spring load.

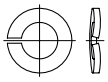
Dimensions ➔ TI-88

Spring steel ➔ S. 71
Bronze ➔ S. 571

B 2	S	1000	1,95	A4
B 2	K	100	3,80	A4
B 2,5	S	1000	1,95	A4

Dimensions	PU	Pieces	€/100/Mat.
B 2,5	K	100	3,80 A4
B 3	S	1000	1,07 A4
B 3	K	100	2,55 A4
B 3,5	S	1000	1,55 A4
B 4	S	1000	1,22 A4
B 4	K	100	2,70 A4
B 5	S	1000	1,65 A4
B 5	K	100	3,15 A4
B 6	S	1000	3,30 A4
B 6	K	100	4,85 A4
B 8	S	1000	5,90 A4
B 8	K	100	8,20 A4
B 10	S	1000	12,20 A4
B 10	K	100	15,50 A4
B 12	S	500	17,40 A4
B 12	K	100	20,60 A4
B 14	K	50	36,50 A4
B 16	S	100	32,50 A4
B 16	K	50	46,50 A4
B 18	K	50	53,00 A4
B 20	K	25	56,00 A4
B 22	K	25	106,00 A4
B 24	K	25	106,00 A4
B 27	K	10	227,00 A4
B 30	K	10	385,00 A4

~DIN	00128.961	RAZ 100
128	1.4310	type A



Spring lock washers, A = curved

Caution! Reduced spring load.

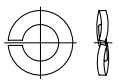
Dimensions → TI-89

Spring steel → S. 72

A 3	S	1000	3,05
A 3	K	100	4,50
A 4	S	1000	3,50
A 4	K	100	4,90
A 5	S	1000	4,90
A 5	K	100	6,80
A 6	S	1000	7,70
A 6	K	100	8,80
A 8	S	1000	12,50
A 8	K	100	13,60
A 10	S	1000	19,20
A 10	K	100	20,10
A 12	S	500	27,00
A 12	K	100	28,00
A 16	S	250	91,00
A 16	K	50	93,00
A 18	K	25	100,00
A 20	K	25	151,00

Dimensions	PU	Pieces	€/100/Mat.

~DIN	00128.962	RAZ 100
128	1.4310	type B



Spring lock washers, B = waved

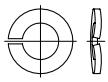
Caution! Reduced spring load.

Dimensions → TI-89

Spring steel → S. 73

B 4	S	1000	6,40
B 5	S	1000	6,80
B 6	S	1000	9,60
B 8	S	1000	14,60
B 10	S	1000	23,50
B 12	S	500	32,00
B 14	S	500	21,00
B 16	S	500	60,00

~DIN	00128.941	RAZ 100
128	A 4	type A



Spring lock washers, A = curved

Caution! Reduced spring load.

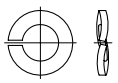
Dimensions → TI-89

Spring steel → S. 72

A 2,2	S	1000	9,50 A4
A 2,5	S	1000	9,50 A4
A 3	S	1000	10,20 A4
A 4	S	1000	11,60 A4
A 5	S	1000	12,60 A4
A 6	S	1000	13,50 A4
A 6	K	100	14,40 A4
A 8	S	1000	19,70 A4
A 8	K	100	20,80 A4
A 10	S	1000	32,50 A4
A 10	K	100	33,50 A4
A 12	S	500	43,50 A4
A 12	K	100	45,00 A4
A 16	S	250	153,00 A4
A 16	K	50	154,00 A4
A 20	S	100	176,00 A4
A 20	K	50	177,00 A4
A 24	S	25	180,00 A4
A 27	S	10	185,00 A4
A 30	S	10	250,00 A4

Dimensions	PU	Pieces	€/100/Mat.

~DIN	00128.942	RAZ 100
128	A 4	type B



Spring lock washers, B = waved

Caution! Reduced spring load.

Dimensions → TI-89

Spring steel → S. 73

B 3	S	1000	5,05 A4
B 5	S	1000	6,90 A4
B 6	S	1000	9,70 A4
B 8	S	1000	14,50 A4
B 10	S	500	23,00 A4
B 12	S	500	30,00 A4
B 16	S	250	94,00 A4
B 20	S	100	154,00 A4

~DIN	00137.961	RAZ 100
137	1.4310	type A

Spring washers, A = curved

Caution! Reduced spring load.

Dimensions → TI-89

Spring steel → S. 73

A 2	S	1000	2,70
A 2	K	100	4,30
A 2,3	S	1000	2,90
A 2,6	S	1000	1,80
A 2,6	K	100	3,70
A 3	S	1000	2,35
A 3	K	100	4,50
A 3,5	S	1000	4,65
A 3,5	K	100	7,40
A 4	S	1000	3,60
A 5	S	1000	5,10
A 5	K	100	8,60
A 6	S	1000	5,60
A 6	K	100	9,00
A 8	S	1000	7,90
A 8	K	100	12,90
A 10	S	1000	17,20
A 10	K	100	22,10

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00137.941		RAZ 100
137	A 4		type A

Spring washers, A = curved

Caution! Reduced spring load.

Dimensions ➔ TI-89

Spring steel ➔ S. 73

A 4	S	1000	9,00 A 4
A 5	S	1000	13,10 A 4
A 6	S	1000	16,10 A 4
A 8	S	1000	23,00 A 4
A 10	S	1000	51,00 A 4

~DIN	00137.962	RAZ 100
137	1.4310	type B

Spring washers, B = waved

Caution! Reduced spring load.

Dimensions ➔ TI-89

Spring steel ➔ S. 73

B 3	S	1000	5,10
B 3	K	100	7,00
B 4	S	1000	2,95
B 4	K	100	4,85
B 5	S	1000	3,95
B 5	K	100	6,10
B 6	S	1000	4,65
B 6	K	100	7,00
B 8	S	1000	10,00
B 8	K	100	13,80
B 10	S	1000	22,30
B 10	K	100	29,50
B 12	S	500	35,50
B 12	K	50	37,50
B 16	S	250	76,00
B 16	K	25	77,00
B 20	S	25	150,00
B 24	S	100	285,00
B 30	S	100	640,00

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00137.942		RAZ 100
137	A 4		type B

Spring washers, B = waved

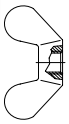
Caution! Reduced spring load.

Dimensions ➔ TI-89

Spring steel ➔ S. 73

B 3	S	1000	8,00 A 4
B 4	S	1000	12,00 A 4
B 5	S	1000	13,10 A 4
B 6	S	1000	16,10 A 4
B 8	S	1000	23,00 A 4
B 10	S	1000	51,00 A 4
B 12	S	500	78,00 A 4
B 14	S	250	151,00 A 4
B 16	S	250	164,00 A 4
B 20	S	25	320,00 A 4

DIN	00315.920	RAZ 130
315	A 2	



Wing nuts, product grade C (g)

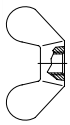
Dimensions ➔ TI-70

Malleable cast iron ➔ S. 75
Brass ➔ S. 571

Small type ➔ article 88215

M 4	S	50	360,00 A 2
M 5	S	50	370,00 A 2
M 6	S	50	375,00 A 2
M 8	S	25	390,00 A 2
M 10	S	25	450,00 A 2
M 12	S	10	680,00 A 2
M 16	S	10	910,00 A 2
M 20	S	10	1300,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
DIN	00315.940		RAZ 130
315	A 4		



Wing nuts, product grade C (g)

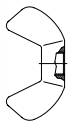
Dimensions ➔ TI-70

Malleable cast iron ➔ S. 75
Brass ➔ S. 571

Small type ➔ article 88215

M 5	S	10	390,00 A 4
M 6	S	10	415,00 A 4
M 8	S	1	490,00 A 4
M 10	S	1	610,00 A 4
M 12	S	1	880,00 A 4
M 16	S	1	1170,00 A 4

~DIN	88215.920	RAZ 878
315	A 2	article 88215



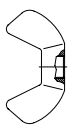
Wing nuts, small "American" type, product grade C (g)

Dimensions ➔ TI-70

Steel ➔ S. 75

M 4	S	100	38,00 A 2
M 5	S	100	44,50 A 2
M 6	S	100	63,00 A 2
M 8	S	100	75,00 A 2
M 10	S	100	116,00 A 2
M 12	S	50	270,00 A 2

~DIN	88215.940	RAZ 878
315	A 4	article 88215



Wing nuts, small "American" type, product grade C (g)

Dimensions ➔ TI-70

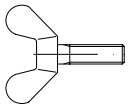
Steel ➔ S. 75

M 4	S	100	50,00 A 4
M 5	S	50	51,00 A 4
M 6	S	50	69,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 8			S	25	92,00 A 4
M 10			S	25	150,00 A 4
M 12			S	10	350,00 A 4

~DIN 00316.920 RAZ 130

316 A 2



Wing screws, small "American" type, product grade C (g)

Dimensions → TI-29

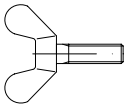
Steel → S. 75
Brass → S. 571

M 4	x	10	S	100	135,00 A 2
M 4	x	20	S	50	142,00 A 2
M 4	x	30	S	100	146,00 A 2
M 5	x	10	S	100	128,00 A 2
M 5	x	16	S	50	134,00 A 2
M 5	x	20	S	50	139,00 A 2
M 5	x	25	S	50	143,00 A 2
M 5	x	30	S	50	147,00 A 2
M 6	x	10	S	25	188,00 A 2
M 6	x	12	S	25	191,00 A 2
M 6	x	16	S	25	191,00 A 2
M 6	x	20	S	25	194,00 A 2
M 6	x	25	S	25	200,00 A 2
M 6	x	30	S	25	206,00 A 2
M 6	x	40	S	100	216,00 A 2
M 6	x	50	S	100	243,00 A 2
M 8	x	10	S	100	275,00 A 2
M 8	x	16	S	25	285,00 A 2
M 8	x	20	S	10	300,00 A 2
M 8	x	25	S	10	300,00 A 2
M 8	x	30	S	10	315,00 A 2
M 8	x	35	S	100	305,00 A 2
M 8	x	40	S	10	335,00 A 2
M 8	x	45	S	50	325,00 A 2
M 8	x	50	S	50	345,00 A 2
M 8	x	60	S	50	395,00 A 2
M 10	x	16	S	50	370,00 A 2
M 10	x	20	S	10	390,00 A 2
M 10	x	25	S	10	395,00 A 2
M 10	x	30	S	10	410,00 A 2
M 10	x	40	S	10	430,00 A 2
M 10	x	50	S	20	475,00 A 2
M 10	x	60	S	20	520,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	16	S	100	239,00 A 4
M 6	x	20	S	100	247,00 A 4
M 6	x	25	S	100	255,00 A 4
M 6	x	30	S	100	265,00 A 4
M 8	x	16	S	100	360,00 A 4
M 8	x	20	S	100	360,00 A 4
M 8	x	25	S	100	375,00 A 4
M 8	x	30	S	100	390,00 A 4
M 10	x	25	S	50	510,00 A 4
M 10	x	30	S	50	530,00 A 4
M 12	x	30	S	25	1100,00 A 4
M 12	x	35	S	25	1130,00 A 4

~DIN 00316.940 RAZ 130

316 A 4



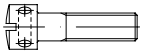
Wing screws, small "American" type, product grade C (g)

Dimensions → TI-29

Steel → S. 75
Brass → S. 571

DIN 00404.910 RAZ 131

404 A 1



Slotted capstan screws

Dimensions → TI-29

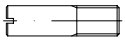
Steel → S. 76

M 3	x	6	S	100	160,00 A 1
M 3	x	8	S	100	165,00 A 1
M 3	x	10	S	100	169,00 A 1
M 4	x	10	S	100	196,00 A 1
M 4	x	16	S	100	202,00 A 1
M 4	x	20	S	100	205,00 A 1
M 4	x	25	S	100	208,00 A 1
M 4	x	30	S	100	210,00 A 1
M 5	x	10	S	100	275,00 A 1
M 5	x	12	S	100	285,00 A 1
M 5	x	16	S	100	290,00 A 1
M 5	x	30	S	100	295,00 A 1

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6	S	100	47,00 A 1
M 3	x	8	S	100	52,00 A 1
M 4	x	8	S	100	55,00 A 1
M 4	x	10	S	100	58,00 A 1
M 4	x	12	S	100	62,00 A 1
M 4	x	16	S	100	67,00 A 1
M 4	x	20	S	100	72,00 A 1
M 5	x	10	S	100	62,00 A 1
M 5	x	12	S	100	64,00 A 1
M 5	x	16	S	100	85,00 A 1
M 5	x	20	S	100	106,00 A 1
M 6	x	12	S	100	136,00 A 1
M 6	x	16	S	100	139,00 A 1
M 6	x	20	S	100	142,00 A 1
M 6	x	30	S	100	148,00 A 1
M 8	x	16	S	100	188,00 A 1
M 8	x	20	S	100	198,00 A 1
M 10	x	20	S	100	260,00 A 1
M 10	x	25	S	100	285,00 A 1
M 10	x	30	S	100	300,00 A 1
M 10	x	50	S	100	345,00 A 1

DIN 00427.910 RAZ 140

427 A 1



Slotted headless screws, with chamfered end

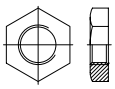
Dimensions → TI-19

Steel → S. 76

DIN 427 → replaced by ISO 2342 (compatible)

DIN 00431.942 RAZ 140

431 A 4 type B



Pipe nuts with inch pipe thread G, B = thread one-sided countersunk

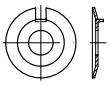
Dimensions → TI-59

Steel → S. 77
Brass → S. 572

Nominal size - wrench sizes

BG 1/8 SW19	S	25	102,00 A 4
BG 1/4 SW22	S	25	157,00 A 4
BG 3/8	S	25	198,00 A 4
BG 1/2 SW32	S	10	290,00 A 4
BG 3/4	S	10	430,00 A 4
BG 1	S	1	810,00 A 4
BG 1 1/4	S	1	2160,00 A 4
BG 1 1/2	S	1	2850,00 A 4

Dimensions					PU	Pieces	€/100/Mat.
~DIN	00432.920						RAZ 140
432	**A 2**						



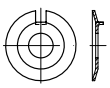
Washers with external tap

Dimensions → TI-90

Steel → S. 77

5,3	S	50	94,00 A 2
6,4	S	50	98,00 A 2
10,5	S	50	148,00 A 2
13	S	100	188,00 A 2
17	S	50	245,00 A 2
21	S	25	305,00 A 2

					PU	Pieces	€/100/Mat.
~DIN	00432.940						RAZ 140
432	**A 4**						



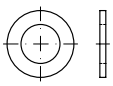
Washers with external tap

Dimensions → TI-90

Steel → S. 77

4,3	S	25	102,00 A 4
5,3	S	25	106,00 A 4
6,4	S	25	164,00 A 4
8,4	S	25	125,00 A 4
10,5	S	25	162,00 A 4
13	S	25	205,00 A 4
15	S	25	231,00 A 4
17	S	25	290,00 A 4
19	S	10	325,00 A 4
21	S	10	355,00 A 4
25	S	10	465,00 A 4
31	S	1	810,00 A 4
37	S	1	1200,00 A 4

					PU	Pieces	€/100/Mat.
DIN	00433.920						RAZ 140
433-1	**A 2**						



Washers

Primarily for cheese head screws

Dimensions → TI-84

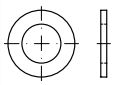
Steel → S. 78
Brass → S. 572

DIN 433 → replaced by ISO 7092

Inside ∅ x outside ∅ x thickness

2,2	x	4,5	x	0,3	S	2000	3,40 A 2
2,2	x	4,5	x	0,3	K	200	5,60 A 2
2,5	x	5	x	0,5	S	2000	2,85 A 2
2,7	x	5	x	0,5	S	2000	2,25 A 2
3,2	x	6	x	0,5	S	2000	1,10 A 2
3,2	x	6	x	0,5	K	200	2,35 A 2
4,3	x	8	x	0,5	S	2000	1,24 A 2
4,3	x	8	x	0,5	K	200	2,35 A 2
5,3	x	9	x	1	S	2000	1,75 A 2
5,3	x	9	x	1	K	200	3,25 A 2
6,4	x	11	x	1,6	S	1000	2,60 A 2
6,4	x	11	x	1,6	K	100	4,40 A 2
8,4	x	15	x	1,6	S	1000	5,20 A 2
8,4	x	15	x	1,6	K	100	8,30 A 2
10,5	x	18	x	1,6	S	1000	6,40 A 2
10,5	x	18	x	1,6	K	100	9,70 A 2
13	x	20	x	2	S	100	10,60 A 2
15	x	24	x	2,5	S	100	16,60 A 2
17	x	28	x	2,5	S	50	21,20 A 2

					PU	Pieces	€/100/Mat.
DIN	00433.940						RAZ 140
433-1	**A 4**						



Washers

Primarily for cheese head screws

Dimensions → TI-84

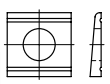
Steel → S. 78
Brass → S. 572

DIN 433 → replaced by ISO 7092

Inside ∅ x outside ∅ x thickness

3,2	x	6	x	0,5	S	2000	1,55 A 4
3,2	x	6	x	0,5	K	200	2,80 A 4
4,3	x	8	x	0,5	S	2000	2,05 A 4
4,3	x	8	x	0,5	K	200	3,65 A 4
5,3	x	9	x	1	S	2000	2,50 A 4
5,3	x	9	x	1	K	200	4,15 A 4
6,4	x	11	x	1,6	S	1000	3,85 A 4
6,4	x	11	x	1,6	K	100	6,90 A 4
8,4	x	15	x	1,6	S	1000	7,00 A 4
8,4	x	15	x	1,6	K	100	10,30 A 4
10,5	x	18	x	1,6	S	1000	9,50 A 4
10,5	x	18	x	1,6	K	100	13,70 A 4
13	x	20	x	2	S	100	17,20 A 4
17	x	28	x	2,5	S	50	30,50 A 4
21	x	34	x	3	S	25	44,50 A 4
25	x	39	x	4	S	25	178,00 A 4

					PU	Pieces	€/100/Mat.
DIN	00434.920						RAZ 150
434	**A 2**						



Square taper washers for U beams, taper 8 %

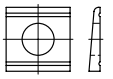
Dimensions → TI-86

Steel → S. 78

Inside ∅

9	S	50	233,00 A 2
11	S	50	233,00 A 2
13,5	S	50	390,00 A 2
17,5	S	25	455,00 A 2
22	S	10	680,00 A 2
26	S	10	1020,00 A 2

					PU	Pieces	€/100/Mat.
DIN	00434.940						RAZ 150
434	**A 4**						



Square taper washers for U beams, taper 8 %

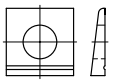
Dimensions → TI-86

Steel → S. 78

Inside ∅

9	S	50	320,00 A 4
11	S	50	320,00 A 4
13,5	S	50	430,00 A 4
17,5	S	25	510,00 A 4
22	S	10	820,00 A 4
26	S	10	1220,00 A 4

					PU	Pieces	€/100/Mat.
DIN	00435.920						RAZ 150
435	**A 2**						



Square taper washers for double-T beams, taper 14 %

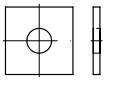
Dimensions → TI-86

Steel → S. 78

Inside ∅

9	S	50	610,00 A 2
11	S	50	650,00 A 2
13,5	S	50	680,00 A 2
17,5	S	25	740,00 A 2
22	S	10	980,00 A 2

					PU	Pieces	€/100/Mat.
DIN	00436.920						RAZ 160
436	**A 2**						



Square washers

Especially for wood constructions

Dimensions → TI-86

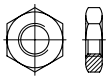
Steel → S. 79

Inside ∅ x outside dimension x thickness • ÜH products

11	x	30	x	3	S	100	28,50 A 2
13,5	x	40	x	4	S	100	62,00 A 2
17,5	x	50	x	5	S	50	118,00 A 2
22	x	60	x	5	S	50	197,00 A 2
26	x	80	x	6	S	50	510,00 A 2
30	x	90	x	6	S	25	610,00 A 2

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
DIN	00439.922		RAZ 170
439	**A 2**		**type B**



Hexagon thin nuts, B = with chamfers

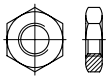
Dimensions ➔ TI-62 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

Steel ➔ S. 79
Brass ➔ S. 572

DIN 439 ➔ replaced by ISO 4035

BM 2	S	100	20,00 A 2
BM 2,5	S	100	17,40 A 2
BM 3	S	1000	12,80 A 2
BM 3	K	100	14,90 A 2
BM 4	S	1000	12,30 A 2
BM 4	K	100	14,40 A 2
BM 5	S	1000	12,30 A 2
BM 5	K	100	14,40 A 2
BM 6	S	1000	17,70 A 2
BM 6	K	100	19,70 A 2
BM 8	S	1000	32,50 A 2
BM 8	K	100	35,00 A 2
BM 10	S	500	65,00 A 2
BM 10	K	50	69,00 A 2
BM 12	S	250	73,00 A 2
BM 12	K	50	77,00 A 2
BM 14	S	25	208,00 A 2
BM 16	S	100	255,00 A 2
BM 16	K	25	260,00 A 2
BM 18	S	10	365,00 A 2
BM 20	S	10	465,00 A 2
BM 22	S	10	590,00 A 2
BM 24	S	10	790,00 A 2
BM 27	S	10	1070,00 A 2
BM 30	S	10	1490,00 A 2
BM 36	S	1	2650,00 A 2

DIN	00439.942	RAZ 170
439	**A 4**	**type B**



Hexagon thin nuts, B = with chamfers

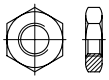
Dimensions ➔ TI-62 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

Steel ➔ S. 79
Brass ➔ S. 572

DIN 439 ➔ replaced by ISO 4035

BM 2	S	100	30,00 A 4
BM 2,5	S	100	30,00 A 4
BM 3	S	100	17,40 A 4
BM 4	S	100	16,90 A 4
BM 5	S	100	19,50 A 4
BM 6	S	100	22,50 A 4
BM 8	S	100	42,00 A 4
BM 10	S	50	79,00 A 4
BM 12	S	50	169,00 A 4
BM 14	S	25	249,00 A 4
BM 16	S	25	320,00 A 4
BM 18	S	10	440,00 A 4
BM 20	S	10	580,00 A 4
BM 24	S	10	970,00 A 4
BM 27	S	10	1340,00 A 4
BM 30	S	10	1860,00 A 4
BM 36	S	1	3350,00 A 4
BM 42	S	1	5300,00 A 4

DIN	00439.927	RAZ 170
439	**A 2**	**type B – fine**



Hexagon thin nuts, with metric fine pitch thread B = with chamfers

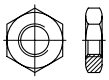
Dimensions ➔ TI-62 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

Steel ➔ S. 80

DIN 439 fine thread ➔ replaced by ISO 8676

BM 8	x	1	S	100	68,00 A 2
BM 10	x	1	S	50	122,00 A 2
BM 10	x	1,25	S	50	122,00 A 2
BM 12	x	1,25	S	50	161,00 A 2
BM 12	x	1,5	S	50	161,00 A 2
BM 14	x	1,5	S	25	237,00 A 2
BM 16	x	1,5	S	25	295,00 A 2
BM 18	x	1	S	10	300,00 A 2
BM 18	x	1,5	S	10	415,00 A 2
BM 20	x	1,5	S	10	530,00 A 2
BM 24	x	1,5	S	10	900,00 A 2
BM 30	x	1,5	S	10	1690,00 A 2
BM 30	x	2	S	10	1690,00 A 2
BM 36	x	1,5	S	1	3050,00 A 2

DIN	00439.947	RAZ 170
439	**A 4**	**type B – fine**



Hexagon thin nuts, with metric fine pitch thread B = with chamfers

Dimensions ➔ TI-62 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

Steel ➔ S. 80

DIN 439 fine thread ➔ replaced by ISO 8676

BM 10	x	1	S	50	146,00 A 4
BM 10	x	1,25	S	50	146,00 A 4
BM 12	x	1,25	S	50	192,00 A 4
BM 12	x	1,5	S	50	192,00 A 4
BM 16	x	1,5	S	25	365,00 A 4
BM 18	x	1,5	S	10	495,00 A 4
BM 20	x	1,5	S	10	650,00 A 4
BM 22	x	1,5	S	10	940,00 A 4
BM 24	x	1,5	S	10	1100,00 A 4
BM 24	x	2	S	10	1100,00 A 4
BM 30	x	1,5	S	10	2120,00 A 4
BM 30	x	2	S	10	2120,00 A 4
BM 33	x	2	S	1	2750,00 A 4
BM 36	x	3	S	1	3380,00 A 4

DIN	00440.928	RAZ 170
440	**A 2**	**type R**

Washers, R = with round hole

Especially for wood constructions

Dimensions ➔ TI-84

Steel ➔ S. 81

DIN 440 type R ➔ replaced by ISO 7094

Inside ∅ x outside ∅ x thickness

R 5,5	x	18	x	2	S	100	8,00 A 2
R 6,6	x	22	x	2	S	100	11,00 A 2
R 9	x	28	x	3	S	100	26,00 A 2
R 11	x	34	x	3	S	50	38,00 A 2
R 13,5	x	44	x	4	S	50	84,00 A 2
R 17,5	x	56	x	5	S	50	160,00 A 2
R 22	x	72	x	6	S	50	335,00 A 2

DIN	00440.948	RAZ 170
440	**A 4**	**type R**

Washers, R = with round hole

Especially for wood constructions

Dimensions ➔ TI-84

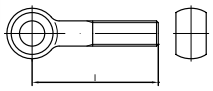
Steel ➔ S. 81

DIN 440 type R ➔ replaced by ISO 7094

Inside ∅ x outside ∅ x thickness

R 5,5	x	18	x	2	S	100	30,50 A 4
R 6,6	x	22	x	2	S	100	42,00 A 4
R 9	x	28	x	3	S	100	93,00 A 4
R 11	x	34	x	3	S	50	144,00 A 4
R 13,5	x	44	x	4	S	50	226,00 A 4
R 17,5	x	56	x	5	S	50	720,00 A 4
R 22	x	72	x	6	S	50	1060,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
DIN	00444.922				RAZ 180
444	**A 2**				**type B**



Eye bolts, B = product grade B (mg)

Dimensions → TI-30 Mech. properties → TI-224

Steel → S. 82
Brass → S. 572

Thread M x length l					
BM 5	x	40	S	10	300,00 A 2
BM 6	x	30	S	10	310,00 A 2
BM 6	x	35	S	10	340,00 A 2
BM 6	x	40	S	10	340,00 A 2
BM 6	x	45	S	10	380,00 A 2
BM 6	x	50	S	10	380,00 A 2
BM 6	x	55	S	10	410,00 A 2
BM 6	x	60	S	10	410,00 A 2
BM 8	x	30	S	10	400,00 A 2
BM 8	x	35	S	10	430,00 A 2
BM 8	x	40	S	10	430,00 A 2
BM 8	x	45	S	10	435,00 A 2
BM 8	x	50	S	10	435,00 A 2
BM 8	x	55	S	10	470,00 A 2
BM 8	x	60	S	10	470,00 A 2
BM 8	x	70	S	10	510,00 A 2
BM 8	x	75	S	10	540,00 A 2
BM 8	x	80	S	10	540,00 A 2
BM 8	x	90	S	10	570,00 A 2
BM 8	x	100	S	10	600,00 A 2
BM 10	x	40	S	10	570,00 A 2
BM 10	x	45	S	10	580,00 A 2
BM 10	x	50	S	10	580,00 A 2
BM 10	x	55	S	10	590,00 A 2
BM 10	x	60	S	10	590,00 A 2
BM 10	x	65	S	10	600,00 A 2
BM 10	x	70	S	10	600,00 A 2
BM 10	x	75	S	10	630,00 A 2
BM 10	x	80	S	10	630,00 A 2
BM 10	x	90	S	10	700,00 A 2
BM 10	x	100	S	10	720,00 A 2
BM 10	x	110	S	10	740,00 A 2
BM 10	x	120	S	10	770,00 A 2
BM 12	x	50	S	10	760,00 A 2
BM 12	x	55	S	10	780,00 A 2
BM 12	x	60	S	10	780,00 A 2
BM 12	x	65	S	10	790,00 A 2
BM 12	x	70	S	10	790,00 A 2
BM 12	x	75	S	10	800,00 A 2
BM 12	x	80	S	10	800,00 A 2
BM 12	x	90	S	10	820,00 A 2
BM 12	x	100	S	10	850,00 A 2
BM 12	x	110	S	10	870,00 A 2
BM 12	x	120	S	10	890,00 A 2
BM 12	x	130	S	10	965,00 A 2
BM 12	x	140	S	10	940,00 A 2
BM 12	x	150	S	10	960,00 A 2
BM 16	x	60	S	1	1140,00 A 2
BM 16	x	65	S	1	1180,00 A 2
BM 16	x	70	S	1	1180,00 A 2
BM 16	x	75	S	1	1200,00 A 2
BM 16	x	80	S	1	1200,00 A 2
BM 16	x	90	S	1	1230,00 A 2
BM 16	x	100	S	1	1260,00 A 2
BM 16	x	110	S	1	1280,00 A 2
BM 16	x	120	S	1	1310,00 A 2
BM 16	x	130	S	1	1330,00 A 2
BM 16	x	140	S	1	1360,00 A 2
BM 16	x	150	S	1	1380,00 A 2
BM 16	x	160	S	1	1410,00 A 2
BM 20	x	70	S	1	1790,00 A 2
BM 20	x	80	S	1	1790,00 A 2
BM 20	x	90	S	1	1790,00 A 2
BM 20	x	100	S	1	1870,00 A 2
BM 20	x	110	S	1	1910,00 A 2
BM 20	x	120	S	1	1960,00 A 2
BM 20	x	130	S	1	1970,00 A 2
BM 20	x	140	S	1	2010,00 A 2
BM 20	x	150	S	1	2060,00 A 2
BM 20	x	160	S	1	2100,00 A 2
BM 24	x	80	S	1	2320,00 A 2
BM 24	x	90	S	1	2320,00 A 2
BM 24	x	100	S	1	2490,00 A 2
BM 24	x	120	S	1	2650,00 A 2
BM 24	x	130	S	1	2750,00 A 2
BM 24	x	140	S	1	2800,00 A 2
BM 24	x	150	S	1	2900,00 A 2
BM 24	x	160	S	1	3000,00 A 2

DIN	00444.942	RAZ 180
444	**A 4**	**type B**

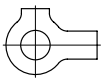
Eye bolts, B = product grade B (mg)

Dimensions → TI-30 Mech. properties → TI-224

Steel → S. 82
Brass → S. 572

Thread M x length l					
BM 6	x	30	S	10	355,00 A 4
BM 6	x	35	S	10	390,00 A 4
BM 6	x	40	S	10	390,00 A 4
BM 6	x	45	S	10	435,00 A 4
BM 6	x	50	S	10	435,00 A 4
BM 6	x	60	S	10	470,00 A 4
BM 8	x	30	S	10	460,00 A 4
BM 8	x	35	S	10	495,00 A 4
BM 8	x	40	S	10	495,00 A 4
BM 8	x	45	S	10	510,00 A 4
BM 8	x	50	S	10	510,00 A 4
BM 8	x	55	S	10	540,00 A 4
BM 8	x	60	S	10	540,00 A 4
BM 8	x	70	S	10	580,00 A 4
BM 8	x	75	S	10	610,00 A 4
BM 8	x	80	S	10	610,00 A 4
BM 8	x	90	S	10	650,00 A 4
BM 8	x	100	S	10	680,00 A 4
BM 10	x	40	S	10	650,00 A 4
BM 10	x	45	S	10	660,00 A 4
BM 10	x	50	S	10	660,00 A 4
BM 10	x	55	S	10	670,00 A 4
BM 10	x	60	S	10	670,00 A 4
BM 10	x	65	S	10	680,00 A 4
BM 10	x	70	S	10	680,00 A 4
BM 10	x	75	S	10	720,00 A 4
BM 10	x	80	S	10	720,00 A 4
BM 10	x	90	S	10	800,00 A 4
BM 10	x	100	S	10	840,00 A 4
BM 10	x	110	S	10	860,00 A 4
BM 10	x	120	S	10	880,00 A 4
BM 12	x	50	S	10	880,00 A 4
BM 12	x	55	S	10	890,00 A 4
BM 12	x	60	S	10	890,00 A 4
BM 12	x	65	S	10	910,00 A 4
BM 12	x	70	S	10	910,00 A 4
BM 12	x	80	S	10	920,00 A 4
BM 12	x	90	S	10	940,00 A 4
BM 12	x	100	S	10	980,00 A 4
BM 12	x	110	S	10	1000,00 A 4
BM 12	x	120	S	10	1020,00 A 4
BM 12	x	130	S	10	1040,00 A 4
BM 12	x	140	S	10	1070,00 A 4
BM 12	x	150	S	10	1100,00 A 4
BM 16	x	60	S	1	1310,00 A 4
BM 16	x	70	S	1	1350,00 A 4
BM 16	x	80	S	1	1390,00 A 4
BM 16	x	90	S	1	1410,00 A 4
BM 16	x	100	S	1	1440,00 A 4
BM 16	x	110	S	1	1470,00 A 4
BM 16	x	120	S	1	1500,00 A 4
BM 16	x	130	S	1	1530,00 A 4
BM 16	x	140	S	1	1560,00 A 4
BM 16	x	150	S	1	1590,00 A 4
BM 16	x	160	S	1	1620,00 A 4
BM 20	x	70	S	1	2040,00 A 4
BM 20	x	80	S	1	2040,00 A 4
BM 20	x	90	S	1	2040,00 A 4
BM 20	x	100	S	1	2150,00 A 4
BM 20	x	110	S	1	2200,00 A 4
BM 20	x	120	S	1	2250,00 A 4
BM 20	x	130	S	1	2270,00 A 4
BM 20	x	140	S	1	2310,00 A 4
BM 20	x	150	S	1	2360,00 A 4
BM 20	x	160	S	1	2410,00 A 4
BM 24	x	80	S	1	2750,00 A 4
BM 24	x	90	S	1	2800,00 A 4
BM 24	x	100	S	1	2900,00 A 4
BM 24	x	110	S	1	2950,00 A 4
BM 24	x	120	S	1	3050,00 A 4
BM 24	x	130	S	1	3150,00 A 4
BM 24	x	150	S	1	3350,00 A 4
BM 24	x	160	S	1	3450,00 A 4

~DIN	00463.940	RAZ 180
463	**A 4**	



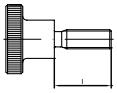
Washers with 2 taps

Dimensions → TI-91

Steel → S. 83
Brass → S. 573

4,3	S	25	166,00 A 4
5,3	S	25	166,00 A 4
6,4	S	25	134,00 A 4
8,4	S	25	159,00 A 4
10,5	S	25	189,00 A 4
13	S	25	245,00 A 4
17	S	25	360,00 A 4
21	S	10	430,00 A 4
23	S	10	560,00 A 4
25	S	10	710,00 A 4
31	S	1	1280,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
DIN	00464.910				RAZ 190
464	**A 1/A 2**				



Knurled thumb screws, high type

Dimensions → TI-30

Steel → S. 84
Brass → S. 573

Thread M x length l

M 3	x	6	S	25	250,00 A 1/A 2
M 3	x	8	S	25	250,00 A 1/A 2
M 3	x	10	S	25	275,00 A 1/A 2
M 3	x	12	S	25	290,00 A 1/A 2
M 3	x	16	S	25	300,00 A 1/A 2
M 4	x	8	S	25	250,00 A 1/A 2
M 4	x	10	S	25	275,00 A 1/A 2
M 4	x	12	S	25	305,00 A 1/A 2
M 4	x	16	S	25	310,00 A 1/A 2
M 4	x	20	S	25	335,00 A 1/A 2
M 5	x	8	S	25	330,00 A 1/A 2
M 5	x	10	S	25	345,00 A 1/A 2
M 5	x	12	S	25	360,00 A 1/A 2
M 5	x	16	S	25	425,00 A 1/A 2
M 5	x	20	S	25	550,00 A 1/A 2
M 5	x	25	S	25	660,00 A 1/A 2
M 5	x	30	S	25	750,00 A 1/A 2
M 6	x	10	S	10	480,00 A 1/A 2
M 6	x	12	S	10	500,00 A 1/A 2
M 6	x	16	S	10	510,00 A 1/A 2
M 6	x	20	S	10	580,00 A 1/A 2
M 6	x	25	S	10	650,00 A 1/A 2
M 6	x	30	S	10	760,00 A 1/A 2
M 6	x	40	S	10	960,00 A 1/A 2
M 8	x	16	S	10	1100,00 A 1/A 2
M 8	x	20	S	10	1250,00 A 1/A 2
M 8	x	25	S	10	1400,00 A 1/A 2
M 8	x	30	S	10	1500,00 A 1/A 2

DIN	00466.910	RAZ 190
466	**A 1/A 2**	

Knurled nuts, high type

Dimensions → TI-70

Steel → S. 84
Brass → S. 573

M 3	S	25	80,00 A 1/A 2
M 4	S	25	144,00 A 1/A 2
M 5	S	25	243,00 A 1/A 2
M 6	S	25	400,00 A 1/A 2
M 8	S	10	700,00 A 1/A 2
M 10	S	10	1800,00 A 1/A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN	00467.910				RAZ 190
467	**A 1/A 2**				

Knurled nuts, low type

Dimensions → TI-70

Steel → S. 85
Brass → S. 573

M 3	S	25	114,00 A 1/A 2
M 4	S	25	114,00 A 1/A 2
M 5	S	25	142,00 A 1/A 2
M 6	S	25	222,00 A 1/A 2
M 8	S	10	375,00 A 1/A 2
M 10	S	10	750,00 A 1/A 2

~DIN	00471.300	RAZ 200
471	**1.4122**	**normal**

Retaining rings for shafts, normal type

Caution!
Reduced spring load and modified mechanical properties compared to spring steel.

Dimensions → TI-91

Nominal size = for shafts ∅ x thickness

3	x	0,4	S	100	10,50
4	x	0,4	S	100	10,50
5	x	0,6	S	100	11,70
6	x	0,7	S	100	15,30
7	x	0,8	S	100	15,80
8	x	0,8	S	100	16,90
9	x	1	S	100	36,50
10	x	1	S	100	36,50
12	x	1	S	100	41,00
14	x	1	S	100	56,00
15	x	1	S	100	84,00
16	x	1	S	100	81,00
17	x	1	S	100	83,00
18	x	1,2	S	50	92,00
19	x	1,2	S	50	109,00
20	x	1,2	S	50	95,00
22	x	1,2	S	50	117,00
24	x	1,2	S	50	139,00
25	x	1,2	S	50	142,00
26	x	1,2	S	25	270,00
28	x	1,5	S	25	265,00
29	x	1,5	S	25	270,00
30	x	1,5	S	25	270,00
32	x	1,5	S	25	390,00
34	x	1,5	S	25	405,00
35	x	1,5	S	25	310,00
38	x	1,75	S	25	760,00
40	x	1,75	S	25	600,00
42	x	1,75	S	25	740,00
45	x	1,75	S	10	760,00
47	x	1,75	S	10	790,00
48	x	1,75	S	10	790,00

Dimensions			PU	Pieces	€/100/Mat.
50	x	2	S	1	780,00
52	x	2	S	1	820,00
55	x	2	S	1	890,00
56	x	2	S	1	900,00
58	x	2	S	1	910,00
60	x	2	S	1	1090,00
65	x	2,5	S	1	1130,00
68	x	2,5	S	1	1150,00
70	x	2,5	S	1	1230,00
75	x	2,5	S	1	1285,00
80	x	2,5	S	1	3450,00
90	x	3	S	1	3500,00
95	x	3	S	1	3550,00
100	x	3	S	1	4100,00

~DIN	00472.300	RAZ 200
472	**1.4122/1.4310**	**normal**

Retaining rings for bores, normal type

∅ ≤ 100 → 1.4122,
∅ > 100 → 1.4310

Caution!
Reduced spring load and modified mechanical properties compared to spring steel.

Dimensions → TI-95

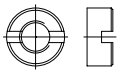
Nominal size = for drillings ∅ x thickness

8	x	0,8	S	100	22,70
9	x	0,8	S	100	31,50
10	x	1	S	100	31,50
12	x	1	S	100	40,00
13	x	1	S	100	45,00
14	x	1	S	100	49,50
15	x	1	S	100	60,00
16	x	1	S	100	49,50
17	x	1	S	100	58,00
19	x	1	S	50	93,00
20	x	1	S	50	93,00
21	x	1	S	50	100,00
22	x	1	S	50	106,00
24	x	1,2	S	50	104,00
25	x	1,2	S	50	112,00
26	x	1,2	S	50	156,00
28	x	1,2	S	50	150,00
30	x	1,2	S	25	148,00
32	x	1,2	S	25	157,00
35	x	1,5	S	25	232,00
36	x	1,5	S	25	360,00
37	x	1,5	S	25	415,00
38	x	1,5	S	25	370,00
40	x	1,75	S	25	380,00
42	x	1,75	S	25	465,00
45	x	1,75	S	10	495,00
47	x	1,75	S	10	600,00
48	x	1,75	S	10	610,00
50	x	2	S	1	630,00
52	x	2	S	1	640,00
54	x	2	S	1	690,00
55	x	2	S	1	690,00
56	x	2	S	1	850,00
60	x	2	S	1	900,00
62	x	2	S	1	930,00
65	x	2,5	S	1	960,00
68	x	2,5	S	1	1610,00
70	x	2,5	S	1	1720,00
72	x	2,5	S	1	1930,00

Dimensions			PU	Pieces	€/100/Mat.
75	x	2,5	S	1	1960,00
80	x	2,5	S	1	3100,00
82	x	2,5	S	1	3500,00
85	x	3	S	1	3323,40
90	x	3	S	1	3750,00
95	x	3	S	1	3840,00
100	x	3	S	1	3650,00
120	x	4	S	1	3850,00
130	x	4	S	1	4020,00
140	x	4	S	1	4210,00
165	x	4	S	1	4400,00

DIN 00546.940 RAZ 230

546 A 4



Slotted round nuts

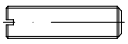
Dimensions → TI-70 Mech. properties → TI-224

Steel → S. 88
Brass → S. 573

M 3			S	100	77,00 A4
M 4			S	100	88,00 A4
M 5			S	100	91,00 A4
M 6			S	100	107,00 A4
M 8			S	50	144,00 A4

DIN 00551.910 RAZ 230

551 A 1



Slotted grub screws with flat point

Dimensions → TI-19

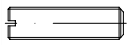
Steel → S. 89
Brass, plastic → S. 573

DIN 551 → replaced by ISO 4766 (compatible)

M 3	x	3	S	50	15,00 A1
M 3	x	4	S	50	15,20 A1
M 3	x	5	S	50	16,00 A1
M 3	x	6	S	50	17,10 A1
M 3	x	8	S	50	18,00 A1
M 3	x	10	S	50	18,80 A1
M 4	x	4	S	50	16,60 A1
M 4	x	5	S	50	16,60 A1
M 4	x	6	S	50	17,40 A1
M 4	x	8	S	50	18,50 A1
M 4	x	10	S	50	19,50 A1
M 4	x	12	S	50	20,50 A1
M 4	x	16	S	50	21,70 A1
M 5	x	5	S	50	18,00 A1
M 5	x	6	S	50	19,00 A1
M 5	x	8	S	50	20,30 A1
M 5	x	10	S	50	21,40 A1
M 5	x	12	S	50	22,70 A1
M 5	x	16	S	50	24,90 A1
M 5	x	20	S	25	32,50 A1
M 5	x	25	S	25	38,00 A1
M 6	x	6	S	25	22,80 A1
M 6	x	8	S	25	23,80 A1
M 6	x	10	S	25	25,50 A1
M 6	x	12	S	25	27,50 A1
M 6	x	16	S	25	29,00 A1
M 6	x	20	S	25	33,00 A1
M 6	x	25	S	25	38,00 A1
M 6	x	30	S	25	44,50 A1
M 6	x	40	S	25	51,00 A1
M 8	x	8	S	50	30,00 A1
M 8	x	10	S	25	36,50 A1
M 8	x	12	S	25	40,00 A1
M 8	x	16	S	25	44,50 A1
M 8	x	20	S	25	53,00 A1
M 8	x	25	S	25	63,00 A1
M 8	x	30	S	25	69,00 A1
M 8	x	35	S	25	73,00 A1
M 8	x	40	S	25	79,00 A1
M 10	x	10	S	10	64,00 A1
M 10	x	12	S	10	64,00 A1
M 10	x	16	S	10	68,00 A1
M 10	x	20	S	10	84,00 A1
M 10	x	25	S	10	95,00 A1
M 10	x	30	S	10	101,00 A1
M 10	x	35	S	10	108,00 A1
M 10	x	40	S	10	114,00 A1

DIN 00551.940 RAZ 230

551 A 4



Slotted grub screws with flat point

Dimensions → TI-19

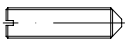
Steel → S. 89
Brass, plastic → S. 573

DIN 551 → replaced by ISO 4766 (compatible)

M 3	x	4	S	50	59,00 A4
M 3	x	6	S	50	67,00 A4
M 3	x	8	S	50	70,00 A4
M 3	x	10	S	50	74,00 A4
M 4	x	5	S	50	41,50 A4
M 4	x	6	S	50	43,50 A4
M 4	x	10	S	50	49,00 A4
M 4	x	16	S	50	55,00 A4
M 4	x	20	S	50	64,00 A4
M 4	x	25	S	50	77,00 A4
M 4	x	30	S	50	88,00 A4
M 5	x	5	S	50	166,00 A4
M 5	x	6	S	50	47,50 A4
M 5	x	8	S	50	51,00 A4
M 5	x	10	S	50	54,00 A4
M 5	x	12	S	25	62,00 A4
M 5	x	16	S	25	67,00 A4
M 5	x	20	S	25	80,00 A4
M 6	x	5	S	25	52,00 A4
M 6	x	6	S	25	56,00 A4
M 6	x	8	S	25	58,00 A4
M 6	x	10	S	25	62,00 A4
M 6	x	12	S	25	67,00 A4
M 6	x	16	S	25	71,00 A4
M 6	x	20	S	25	82,00 A4
M 6	x	25	S	25	95,00 A4
M 6	x	30	S	25	111,00 A4
M 8	x	6	S	25	80,00 A4
M 8	x	8	S	25	80,00 A4
M 8	x	10	S	25	91,00 A4
M 8	x	12	S	25	100,00 A4
M 8	x	16	S	25	111,00 A4
M 8	x	20	S	25	132,00 A4
M 8	x	30	S	25	174,00 A4
M 8	x	40	S	25	200,00 A4

DIN 00553.910 RAZ 230

553 A 1



Slotted grub screws with cone point

Dimensions → TI-19

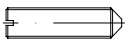
Steel → S. 90
Brass → S. 574

DIN 553 → replaced by ISO 7434 (compatible)

M 2	x	3	S	50	15,10 A1
M 2	x	4	S	50	15,90 A1
M 2,5	x	5	S	50	16,50 A1
M 2,5	x	6	S	50	17,00 A1
M 2,5	x	8	S	50	17,40 A1
M 3	x	4	S	50	15,70 A1
M 3	x	5	S	50	16,50 A1
M 3	x	6	S	50	17,70 A1
M 3	x	8	S	50	18,60 A1
M 4	x	5	S	50	17,20 A1
M 4	x	6	S	50	18,00 A1
M 4	x	8	S	50	19,10 A1
M 4	x	10	S	50	20,20 A1
M 4	x	12	S	50	21,20 A1
M 4	x	16	S	50	22,40 A1
M 5	x	5	S	50	18,60 A1
M 5	x	6	S	50	19,60 A1
M 5	x	8	S	50	21,00 A1
M 5	x	10	S	50	22,10 A1
M 5	x	12	S	50	23,50 A1
M 5	x	16	S	50	26,00 A1
M 6	x	6	S	25	23,60 A1
M 6	x	8	S	25	24,50 A1
M 6	x	10	S	25	26,50 A1
M 6	x	12	S	25	28,00 A1
M 6	x	16	S	25	30,00 A1
M 6	x	20	S	25	34,00 A1
M 6	x	25	S	25	39,50 A1

DIN 00553.940 RAZ 230

553 A 4



Slotted grub screws with cone point

Dimensions → TI-19

Steel → S. 90
Brass → S. 574

DIN 553 → replaced by ISO 7434 (compatible)

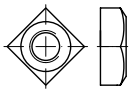
M 4	x	6	S	50	46,50 A4
M 4	x	8	S	50	49,50 A4
M 4	x	10	S	50	53,00 A4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	5	S	50	48,00 A 4
M 5	x	6	S	50	51,00 A 4
M 5	x	8	S	50	55,00 A 4
M 5	x	10	S	50	58,00 A 4
M 5	x	16	S	25	72,00 A 4
M 6	x	6	S	25	60,00 A 4
M 6	x	8	S	25	62,00 A 4
M 6	x	10	S	25	67,00 A 4
M 6	x	12	S	25	72,00 A 4
M 6	x	16	S	25	76,00 A 4
M 8	x	12	S	25	108,00 A 4
M 8	x	16	S	25	119,00 A 4
M 8	x	20	S	25	142,00 A 4
M 8	x	25	S	25	169,00 A 4

DIN 00557.920 RAZ 245

557 A 2



Square nuts

Dimensions → TI-81

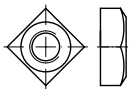
Steel → S. 91

SW = wrench size

M 5	S	100	40,00 A 2
M 6	S	100	55,00 A 2
M 8	S	100	70,00 A 2
M 10 SW 17	S	100	175,00 A 2
M 12 SW 19	S	50	260,00 A 2
M 16	S	25	550,00 A 2

DIN 00557.940 RAZ 245

557 A 4



Square nuts

Dimensions → TI-81

Steel → S. 91

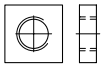
SW = wrench size

M 5	S	100	50,00 A 4
M 6	S	100	62,00 A 4
M 8	S	100	83,00 A 4
M 10 SW 17	S	100	242,00 A 4
M 12 SW 19	S	50	405,00 A 4
M 16	S	25	760,00 A 4

Dimensions	PU	Pieces	€/100/Mat.

DIN 00562.940 RAZ 260

562 A 4



Square thin nuts product grade B

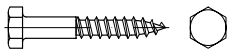
Dimensions → TI-82 Mech. properties → TI-224

Steel → S. 92

M 3	S	100	47,50 A 4
M 4	S	100	49,50 A 4
M 5	S	100	73,00 A 4
M 6	S	100	116,00 A 4
M 8	S	50	146,00 A 4

DIN 00571.920 RAZ 270

571 A 2



Hexagon head wood screws

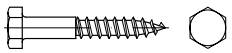
Dimensions → TI-51

Steel → S. 93

5	x	25	S	100	19,95 A 2
5	x	30	S	100	23,80 A 2
5	x	35	S	100	26,60 A 2
5	x	40	S	100	29,65 A 2
5	x	45	S	100	31,20 A 2
5	x	50	S	50	32,75 A 2
5	x	60	S	50	65,95 A 2
5	x	70	S	50	77,20 A 2
6	x	20	S	25	55,25 A 2
6	x	25	S	25	29,15 A 2
6	x	30	S	200	25,60 A 2
6	x	30	K	25	30,70 A 2
6	x	35	S	25	32,25 A 2
6	x	40	S	200	29,15 A 2
6	x	40	K	25	33,75 A 2
6	x	45	S	25	36,85 A 2
6	x	50	S	200	33,75 A 2
6	x	50	K	25	38,85 A 2
6	x	60	S	100	38,85 A 2
6	x	60	K	25	44,00 A 2
6	x	70	S	100	46,05 A 2
6	x	70	K	25	51,15 A 2
6	x	80	S	100	52,15 A 2
6	x	80	K	25	56,75 A 2
6	x	90	S	25	65,45 A 2
6	x	100	S	25	75,70 A 2
6	x	110	S	25	92,55 A 2
6	x	120	S	25	109,00 A 2
6	x	130	S	25	119,00 A 2
8	x	25	S	25	47,55 A 2
8	x	30	S	25	56,75 A 2
8	x	35	S	25	56,75 A 2
8	x	40	S	100	51,65 A 2
8	x	40	K	10	63,95 A 2
8	x	45	S	10	66,50 A 2
8	x	50	S	100	58,30 A 2

Dimensions			PU	Pieces	€/100/Mat.
8	x	50	K	10	70,55 A 2
8	x	55	S	100	62,30 A 2
8	x	55	K	10	74,30 A 2
8	x	60	S	100	67,50 A 2
8	x	60	K	10	79,80 A 2
8	x	70	S	100	79,25 A 2
8	x	70	K	10	91,55 A 2
8	x	80	S	100	90,00 A 2
8	x	80	K	10	103,00 A 2
8	x	90	S	10	115,00 A 2
8	x	100	S	100	116,00 A 2
8	x	100	K	10	128,00 A 2
8	x	110	S	10	146,00 A 2
8	x	120	S	10	173,00 A 2
8	x	130	S	1	195,00 A 2
8	x	140	S	10	210,00 A 2
8	x	150	S	10	225,00 A 2
8	x	160	S	10	241,00 A 2
8	x	180	S	10	271,00 A 2
10	x	40	S	10	125,00 A 2
10	x	50	S	100	117,00 A 2
10	x	50	K	10	131,00 A 2
10	x	60	S	100	136,00 A 2
10	x	60	K	10	146,00 A 2
10	x	70	S	100	151,00 A 2
10	x	70	K	10	164,00 A 2
10	x	80	S	100	169,00 A 2
10	x	80	K	10	182,00 A 2
10	x	90	S	10	202,00 A 2
10	x	100	S	100	225,00 A 2
10	x	100	K	10	238,00 A 2
10	x	110	S	10	246,00 A 2
10	x	120	S	10	266,00 A 2
10	x	130	S	10	282,00 A 2
10	x	140	S	1	297,00 A 2
10	x	150	S	10	323,00 A 2
10	x	160	S	1	343,00 A 2
10	x	180	S	10	389,00 A 2
10	x	200	S	1	471,00 A 2
12	x	50	S	10	430,00 A 2
12	x	60	S	10	333,00 A 2
12	x	70	S	10	338,00 A 2
12	x	80	S	10	364,00 A 2
12	x	90	S	10	410,00 A 2
12	x	100	S	10	456,00 A 2
12	x	110	S	10	502,00 A 2
12	x	120	S	10	548,00 A 2
12	x	130	S	10	594,00 A 2
12	x	140	S	10	640,00 A 2
12	x	150	S	10	686,00 A 2
12	x	160	S	10	727,00 A 2
12	x	180	S	10	819,00 A 2
12	x	200	S	10	911,00 A 2
16	x	70	S	10	568,00 A 2
16	x	80	S	10	650,00 A 2
16	x	90	S	10	732,00 A 2
16	x	100	S	10	813,00 A 2
16	x	110	S	10	895,00 A 2
16	x	120	S	10	977,00 A 2
16	x	130	S	10	1059,00 A 2
16	x	140	S	10	1136,00 A 2
16	x	150	S	10	1217,00 A 2
16	x	160	S	10	1304,00 A 2
16	x	180	S	10	1483,00 A 2
16	x	200	S	10	1637,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN	00571.940				RAZ 270
571	A 4				



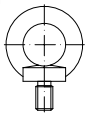
Hexagon head wood screws

Dimensions → TI-51

Steel → S. 93

5	x	25	S	200	33,50 A4
5	x	30	S	200	40,00 A4
5	x	35	S	200	47,00 A4
5	x	40	S	200	54,00 A4
5	x	45	S	200	60,00 A4
5	x	50	S	200	67,00 A4
5	x	60	S	200	80,00 A4
5	x	70	S	200	94,00 A4
6	x	25	S	200	40,00 A4
6	x	30	S	200	42,00 A4
6	x	35	S	200	43,00 A4
6	x	40	S	200	43,00 A4
6	x	45	S	200	49,00 A4
6	x	50	S	200	54,00 A4
6	x	60	S	200	64,00 A4
6	x	70	S	200	75,00 A4
6	x	80	S	200	86,00 A4
6	x	90	S	100	97,00 A4
6	x	100	S	100	107,00 A4
6	x	110	S	100	118,00 A4
6	x	120	S	100	128,00 A4
6	x	130	S	100	141,00 A4
8	x	25	S	100	64,00 A4
8	x	30	S	100	77,00 A4
8	x	35	S	100	78,00 A4
8	x	40	S	100	79,00 A4
8	x	45	S	100	86,00 A4
8	x	50	S	100	89,00 A4
8	x	60	S	100	100,00 A4
8	x	70	S	100	116,00 A4
8	x	80	S	100	138,00 A4
8	x	90	S	100	182,00 A4
8	x	100	S	100	225,00 A4
8	x	110	S	100	255,00 A4
8	x	120	S	100	275,00 A4
8	x	130	S	100	295,00 A4
8	x	140	S	100	320,00 A4
8	x	150	S	100	340,00 A4
8	x	160	S	100	365,00 A4
8	x	180	S	100	410,00 A4
10	x	40	S	100	164,00 A4
10	x	50	S	100	205,00 A4
10	x	60	S	100	208,00 A4
10	x	70	S	100	231,00 A4
10	x	80	S	100	246,00 A4
10	x	90	S	100	290,00 A4
10	x	100	S	100	330,00 A4
10	x	120	S	50	435,00 A4
10	x	130	S	50	475,00 A4
10	x	140	S	50	520,00 A4
10	x	150	S	50	560,00 A4
10	x	160	S	50	590,00 A4
10	x	180	S	50	990,00 A4
12	x	50	S	50	350,00 A4
12	x	60	S	50	370,00 A4
12	x	70	S	50	425,00 A4
12	x	80	S	50	440,00 A4
12	x	90	S	50	495,00 A4
12	x	100	S	50	560,00 A4
12	x	110	S	50	600,00 A4
12	x	120	S	25	640,00 A4
12	x	130	S	50	740,00 A4
12	x	140	S	25	800,00 A4
12	x	150	S	25	880,00 A4
12	x	160	S	25	1480,00 A4
12	x	180	S	25	2650,00 A4
12	x	200	S	25	3700,00 A4
16	x	70	S	10	770,00 A4
16	x	80	S	10	880,00 A4
16	x	90	S	10	1000,00 A4
16	x	100	S	10	1100,00 A4
16	x	110	S	10	1230,00 A4
16	x	120	S	10	1330,00 A4
16	x	130	S	10	1440,00 A4
16	x	140	S	10	1540,00 A4
16	x	150	S	10	1670,00 A4
16	x	160	S	10	1770,00 A4
16	x	180	S	10	2020,00 A4
16	x	200	S	10	2230,00 A4

DIN	00580.920	RAZ 280
580	A 2	



Lifting eye bolts

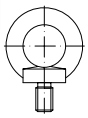
Caution! See user information.
→ attachment B DIN 580-2003 or TI

Dimensions → TI-32 Product information → TI-148

Steel → S. 94

M 6 - small	S	1	1080,00 A2
M 6	S	1	1080,00 A2
M 8	S	1	970,00 A2
M 10	S	1	1450,00 A2
M 12	S	1	2420,00 A2
M 16	S	1	4150,00 A2
M 20	S	1	5600,00 A2
M 24	S	1	8500,00 A2
M 30	S	1	14500,00 A2

DIN	00580.940	RAZ 280
580	A 4	



Lifting eye bolts

Caution! See user information.
→ attachment B DIN 580-2003 or TI

Dimensions → TI-32 Product information → TI-148

Steel → S. 94

M 6	S	1	1230,00 A4
M 8	S	1	1230,00 A4
M 10	S	1	1650,00 A4
M 12	S	1	2800,00 A4
M 16	S	1	4600,00 A4
M 20	S	1	6300,00 A4
M 24	S	1	9700,00 A4
M 30	S	1	14500,00 A4

DIN	00582.920	RAZ 280
582	A 2	

Lifting eye nuts

Caution! See user information.
→ attachment B DIN 582-2003 or TI

Dimensions → TI-75 Product information → TI-148

Steel → S. 95

M 6	S	1	1030,00 A2
M 8	S	1	990,00 A2
M 10	S	1	1420,00 A2
M 12	S	1	2230,00 A2
M 16	S	1	3400,00 A2
M 20	S	1	6100,00 A2
M 24	S	1	7000,00 A2
M 30	S	1	13400,00 A2

DIN	00582.940	RAZ 280
582	A 4	

Lifting eye nuts

Caution! See user information.
→ attachment B DIN 582-2003 or TI

Dimensions → TI-75 Product information → TI-148

Steel → S. 95

M 8	S	1	1240,00 A4
M 10	S	1	1670,00 A4
M 12	S	1	2700,00 A4
M 16	S	1	4400,00 A4
M 20	S	1	6900,00 A4
M 24	S	1	7700,00 A4
M 30	S	1	13400,00 A4

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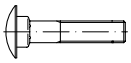
Dimensions			PU	Pieces	€/100/Mat.
DIN	00603.924				RAZ 300
603	A 2				



Cup head square neck bolts

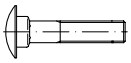
Full or partial thread depending on manufacturer

Dimensions → TI-32 Mech. properties → TI-224

Steel → S. 99
Brass → S. 574

M 5	x	16	S	100	38,85 A 2
M 5	x	20	S	100	40,40 A 2
M 5	x	25	S	100	42,95 A 2
M 5	x	30	S	100	45,50 A 2
M 5	x	35	S	100	47,55 A 2
M 5	x	40	S	100	49,10 A 2
M 5	x	45	S	100	66,50 A 2
M 5	x	50	S	100	69,55 A 2
M 5	x	55	S	100	101,00 A 2
M 5	x	60	S	100	81,80 A 2
M 5	x	65	S	100	133,00 A 2
M 5	x	70	S	100	123,00 A 2
M 5	x	80	S	100	146,00 A 2
M 6	x	12	S	100	41,45 A 2
M 6	x	16	S	100	42,95 A 2
M 6	x	20	S	100	45,00 A 2
M 6	x	25	S	100	47,55 A 2
M 6	x	30	S	100	49,60 A 2
M 6	x	35	S	100	55,25 A 2
M 6	x	40	S	100	60,85 A 2
M 6	x	45	S	100	61,90 A 2
M 6	x	50	S	100	64,45 A 2
M 6	x	55	S	100	73,15 A 2
M 6	x	60	S	100	73,15 A 2
M 6	x	65	S	100	84,90 A 2
M 6	x	70	S	100	106,00 A 2
M 6	x	75	S	100	121,00 A 2
M 6	x	80	S	100	128,00 A 2
M 6	x	90	S	100	149,00 A 2
M 6	x	100	S	100	172,00 A 2
M 6	x	110	S	100	187,00 A 2
M 6	x	120	S	100	248,00 A 2
M 8	x	16	S	100	79,80 A 2
M 8	x	20	S	100	83,85 A 2
M 8	x	25	S	100	86,40 A 2
M 8	x	30	S	100	90,00 A 2
M 8	x	35	S	100	92,55 A 2
M 8	x	40	S	100	95,65 A 2
M 8	x	45	S	100	104,00 A 2
M 8	x	50	S	100	110,00 A 2
M 8	x	55	S	100	146,00 A 2
M 8	x	60	S	100	125,00 A 2
M 8	x	65	S	100	169,00 A 2
M 8	x	70	S	100	146,00 A 2
M 8	x	75	S	100	167,00 A 2
M 8	x	80	S	100	195,00 A 2
M 8	x	90	S	100	185,00 A 2
M 8	x	100	S	100	225,00 A 2
M 8	x	110	S	100	241,00 A 2
M 8	x	120	S	100	266,00 A 2
M 8	x	130	S	100	486,00 A 2
M 8	x	140	S	50	537,00 A 2
M 8	x	150	S	50	594,00 A 2
M 8	x	160	S	50	967,00 A 2
M 8	x	180	S	50	1064,00 A 2
M 8	x	200	S	50	1207,00 A 2
M 10	x	20	S	100	220,00 A 2
M 10	x	25	S	100	233,00 A 2
M 10	x	30	S	100	243,00 A 2
M 10	x	35	S	100	256,00 A 2
M 10	x	40	S	100	271,00 A 2
M 10	x	45	S	100	282,00 A 2
M 10	x	50	S	100	292,00 A 2
M 10	x	55	S	100	302,00 A 2
M 10	x	60	S	100	317,00 A 2
M 10	x	65	S	100	410,00 A 2
M 10	x	70	S	100	348,00 A 2
M 10	x	75	S	100	364,00 A 2
M 10	x	80	S	100	374,00 A 2
M 10	x	90	S	100	399,00 A 2
M 10	x	100	S	100	430,00 A 2
M 10	x	110	S	50	634,00 A 2
M 10	x	120	S	50	640,00 A 2
M 10	x	130	S	50	810,00 A 2
M 10	x	140	S	50	916,00 A 2
M 10	x	150	S	50	987,00 A 2
M 12	x	25	S	100	446,00 A 2
M 12	x	30	S	100	466,00 A 2
M 12	x	35	S	100	486,00 A 2
M 12	x	40	S	100	512,00 A 2
M 12	x	45	S	100	542,00 A 2
M 12	x	50	S	100	563,00 A 2
M 12	x	55	S	100	594,00 A 2
M 12	x	60	S	100	609,00 A 2
M 12	x	65	S	50	624,00 A 2
M 12	x	70	S	50	655,00 A 2
M 12	x	75	S	50	686,00 A 2
M 12	x	80	S	50	706,00 A 2
M 12	x	90	S	50	757,00 A 2
M 12	x	100	S	50	803,00 A 2
M 12	x	110	S	50	849,00 A 2
M 12	x	120	S	50	900,00 A 2
M 12	x	130	S	50	951,00 A 2
M 12	x	140	S	50	1003,00 A 2
M 12	x	150	S	25	1105,00 A 2
M 12	x	160	S	25	1222,00 A 2
M 12	x	180	S	25	1483,00 A 2
M 12	x	200	S	25	1611,00 A 2
M 16	x	40	S	50	798,00 A 2
M 16	x	45	S	50	834,00 A 2
M 16	x	50	S	50	875,00 A 2
M 16	x	55	S	50	926,00 A 2
M 16	x	60	S	50	951,00 A 2
M 16	x	65	S	25	1003,00 A 2
M 16	x	70	S	25	1054,00 A 2
M 16	x	75	S	25	1079,00 A 2
M 16	x	80	S	25	1105,00 A 2
M 16	x	90	S	25	1171,00 A 2
M 16	x	100	S	25	1263,00 A 2
M 16	x	110	S	25	1330,00 A 2
M 16	x	120	S	25	1432,00 A 2
M 16	x	130	S	1	2071,00 A 2
M 16	x	140	S	1	2225,00 A 2
M 16	x	150	S	1	2327,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN	00603.944				RAZ 300
603	A 4				



Cup head square neck bolts

Full or partial thread depending on manufacturer

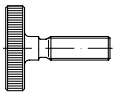
Dimensions → TI-32 Mech. properties → TI-224

Steel → S. 99
Brass → S. 574

M 6	x	16	S	25	104,00 A 4
M 6	x	20	S	25	114,00 A 4
M 6	x	25	S	25	131,00 A 4
M 6	x	30	S	25	136,00 A 4
M 6	x	35	S	25	139,00 A 4
M 6	x	40	S	25	141,00 A 4
M 6	x	45	S	25	141,00 A 4
M 6	x	50	S	25	144,00 A 4
M 6	x	55	S	25	151,00 A 4
M 6	x	60	S	25	159,00 A 4
M 6	x	65	S	10	200,00 A 4
M 6	x	70	S	10	200,00 A 4
M 6	x	75	S	10	223,00 A 4
M 6	x	80	S	10	233,00 A 4
M 6	x	90	S	10	266,00 A 4
M 6	x	100	S	10	343,00 A 4
M 8	x	16	S	25	179,00 A 4
M 8	x	20	S	25	187,00 A 4
M 8	x	25	S	25	200,00 A 4
M 8	x	30	S	25	210,00 A 4
M 8	x	35	S	25	228,00 A 4
M 8	x	40	S	25	228,00 A 4
M 8	x	45	S	10	236,00 A 4
M 8	x	50	S	10	246,00 A 4
M 8	x	55	S	10	266,00 A 4
M 8	x	60	S	10	271,00 A 4
M 8	x	65	S	10	302,00 A 4
M 8	x	70	S	10	312,00 A 4
M 8	x	75	S	10	410,00 A 4
M 8	x	80	S	10	328,00 A 4
M 8	x	90	S	10	364,00 A 4
M 8	x	100	S	10	404,00 A 4
M 8	x	110	S	10	456,00 A 4
M 8	x	120	S	10	481,00 A 4
M 8	x	130	S	10	793,00 A 4
M 8	x	140	S	10	859,00 A 4
M 8	x	150	S	10	905,00 A 4
M 10	x	20	S	10	297,00 A 4
M 10	x	25	S	10	297,00 A 4
M 10	x	30	S	10	317,00 A 4
M 10	x	35	S	10	343,00 A 4
M 10	x	40	S	10	389,00 A 4
M 10	x	45	S	10	425,00 A 4
M 10	x	50	S	10	445,00 A 4
M 10	x	55	S	10	456,00 A 4
M 10	x	60	S	10	466,00 A 4
M 10	x	65	S	10	507,00 A 4
M 10	x	70	S	10	537,00 A 4
M 10	x	75	S	1	706,00 A 4
M 10	x	80	S	1	568,00 A 4
M 10	x	90	S	1	614,00 A 4
M 10	x	100	S	1	629,00 A 4
M 10	x	110	S	1	737,00 A 4
M 10	x	120	S	1	793,00 A 4
M 10	x	130	S	1	854,00 A 4
M 10	x	140	S	1	905,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	150	S	1	967,00 A4
M 12	x	25	S	1	640,00 A4
M 12	x	30	S	1	640,00 A4
M 12	x	35	S	1	711,00 A4
M 12	x	40	S	1	747,00 A4
M 12	x	45	S	1	778,00 A4
M 12	x	50	S	1	808,00 A4
M 12	x	55	S	1	829,00 A4
M 12	x	60	S	1	839,00 A4
M 12	x	65	S	1	865,00 A4
M 12	x	70	S	1	875,00 A4
M 12	x	75	S	1	885,00 A4
M 12	x	80	S	1	905,00 A4
M 12	x	90	S	1	972,00 A4
M 12	x	100	S	1	1156,00 A4
M 12	x	110	S	1	1192,00 A4
M 12	x	120	S	1	1228,00 A4
M 12	x	130	S	1	1304,00 A4
M 12	x	140	S	1	1355,00 A4
M 12	x	150	S	1	1534,00 A4
M 12	x	160	S	1	1611,00 A4
M 16	x	50	S	1	1156,00 A4
M 16	x	55	S	1	1202,00 A4
M 16	x	60	S	1	1253,00 A4
M 16	x	65	S	1	1355,00 A4
M 16	x	70	S	1	1381,00 A4
M 16	x	75	S	1	1432,00 A4
M 16	x	80	S	1	1483,00 A4
M 16	x	90	S	1	1560,00 A4
M 16	x	100	S	1	1688,00 A4
M 16	x	110	S	1	2225,00 A4
M 16	x	120	S	1	2327,00 A4
M 16	x	130	S	1	2429,00 A4
M 16	x	140	S	1	2531,00 A4
M 16	x	150	S	1	2557,00 A4

DIN 653 | 00653.910 | RAZ 320 | A 1



Knurled thumb screws, low type

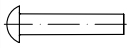
Dimensions → TI-33

Steel → S. 104

M 3	x	10	S	10	260,00 A1
M 3	x	12	S	10	275,00 A1
M 3	x	16	S	10	290,00 A1
M 4	x	8	S	10	260,00 A1
M 4	x	10	S	10	290,00 A1
M 4	x	12	S	10	305,00 A1
M 4	x	16	S	10	330,00 A1
M 4	x	20	S	10	360,00 A1
M 5	x	10	S	10	350,00 A1
M 5	x	12	S	10	370,00 A1
M 5	x	16	S	10	425,00 A1
M 5	x	20	S	10	550,00 A1
M 5	x	25	S	10	650,00 A1
M 5	x	30	S	10	750,00 A1
M 5	x	40	S	10	1000,00 A1
M 5	x	50	S	10	1200,00 A1
M 6	x	12	S	10	490,00 A1
M 6	x	16	S	10	510,00 A1
M 6	x	20	S	10	570,00 A1
M 6	x	25	S	10	650,00 A1
M 6	x	30	S	10	760,00 A1
M 6	x	35	S	10	875,00 A1
M 6	x	40	S	10	960,00 A1

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	10	S	10	850,00 A1
M 8	x	16	S	10	1000,00 A1
M 8	x	20	S	10	1200,00 A1
M 8	x	25	S	10	1350,00 A1
M 8	x	30	S	10	1500,00 A1
M 8	x	35	S	10	1700,00 A1

DIN 660 | 00660.920 | RAZ 330 | A 2



Round head rivets

Dimensions → TI-131

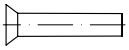
Steel → S. 105

Brass, copper, aluminium → S. 574

2	x	4	S	200	7,90 A2
2	x	5	S	200	7,90 A2
2	x	6	S	200	7,90 A2
2	x	8	S	200	8,50 A2
2	x	20	S	200	10,50 A2
3	x	4	S	200	9,70 A2
3	x	5	S	200	9,70 A2
3	x	6	S	200	9,70 A2
3	x	8	S	200	10,20 A2
3	x	10	S	200	11,30 A2
3	x	12	S	200	12,00 A2
3	x	16	S	200	13,50 A2
3	x	20	S	200	15,70 A2
3	x	25	S	200	17,80 A2
4	x	5	S	100	15,90 A2
4	x	6	S	100	15,90 A2
4	x	8	S	100	17,10 A2
4	x	10	S	100	18,80 A2
4	x	12	S	100	20,70 A2
4	x	16	S	100	23,30 A2
4	x	20	S	100	26,50 A2
4	x	25	S	100	29,50 A2
5	x	8	S	100	24,20 A2
5	x	10	S	100	27,50 A2
5	x	12	S	100	30,00 A2
5	x	16	S	100	34,00 A2
5	x	20	S	100	41,00 A2
5	x	25	S	100	47,50 A2
6	x	12	S	100	43,00 A2
6	x	16	S	100	49,00 A2
6	x	20	S	100	60,00 A2
6	x	25	S	100	66,00 A2
6	x	30	S	100	72,00 A2
8	x	16	S	50	81,00 A2
8	x	20	S	50	91,00 A2
8	x	25	S	50	100,00 A2
8	x	30	S	50	108,00 A2

Dimensions			PU	Pieces	€/100/Mat.
DIN	00661.920				RAZ 330

661 A 2



Countersunk head rivets

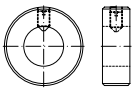
Dimensions → TI-131

Steel → S. 105

Brass, copper, aluminium → S. 575

2	x	5	S	200	7,60 A2
2	x	6	S	200	7,60 A2
3	x	6	S	200	9,20 A2
3	x	8	S	200	9,80 A2
3	x	10	S	200	10,80 A2
3	x	12	S	200	11,40 A2
3	x	16	S	200	12,80 A2
3	x	20	S	200	15,00 A2
4	x	6	S	100	15,10 A2
4	x	8	S	100	16,30 A2
4	x	10	S	100	17,90 A2
4	x	12	S	100	19,70 A2
4	x	16	S	100	22,20 A2
4	x	20	S	100	25,50 A2
5	x	8	S	100	23,00 A2
5	x	10	S	100	26,00 A2
5	x	12	S	100	28,50 A2
5	x	16	S	100	32,50 A2
5	x	20	S	100	39,00 A2
5	x	25	S	100	45,50 A2
6	x	12	S	100	41,00 A2
6	x	16	S	100	46,50 A2
6	x	30	S	100	69,00 A2
8	x	20	S	50	86,00 A2
8	x	25	S	50	95,00 A2

DIN 705 | 00705.911 | RAZ 340 | A 1 | type A



Adjusting rings, light range, A = with grub screw

Until ∅ 75 with grub screw DIN 553/ISO 7434,
from ∅ 75 with set screw DIN 914/ISO 4027

Dimensions → TI-110

Steel → S. 106

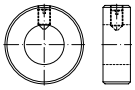
Inside / nominal ∅ x outside ∅ x width

A 6	x	12	x	8	S	10	161,00 A1
A 8	x	16	x	8	S	10	171,00 A1
A 9	x	18	x	10	S	10	210,00 A1
A 10	x	20	x	10	S	10	229,00 A1
A 12	x	22	x	12	S	10	285,00 A1
A 13	x	22	x	12	S	10	285,00 A1
A 14	x	25	x	12	S	10	325,00 A1
A 15	x	25	x	12	S	10	325,00 A1
A 16	x	28	x	12	S	10	400,00 A1
A 18	x	32	x	14	S	10	520,00 A1
A 20	x	32	x	14	S	10	520,00 A1
A 22	x	36	x	14	S	1	650,00 A1
A 25	x	40	x	16	S	1	740,00 A1

Dimensions					PU	Pieces	€/100/Mat.
A 26	x	40	x	16	S	1	740,00 A 1
A 28	x	45	x	16	S	1	880,00 A 1
A 30	x	45	x	16	S	1	880,00 A 1
A 32	x	50	x	16	S	1	1210,00 A 1
A 35	x	56	x	16	S	1	1360,00 A 1
A 40	x	63	x	18	S	1	1970,00 A 1
A 45	x	70	x	18	S	1	2600,00 A 1
A 50	x	80	x	18	S	1	3450,00 A 1
A 60	x	90	x	20	S	1	6600,00 A 1
A 65	x	100	x	20	S	1	9000,00 A 1
A 70	x	100	x	20	S	1	9900,00 A 1
A 80	x	110	x	22	S	1	13500,00 A 1
A120	x	160	x	25	S	1	35000,00 A 1

DIN 00705.951 RAZ 340

705 1.4571 (A 5) type A



Adjusting rings, light range, A = with grub screw

Grub screw DIN 553/ISO 7434

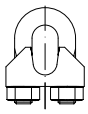
Dimensions → TI-110

Steel → S. 106

Inside / nominal ∅	x	outside ∅	x	width			
A 8	x	16	x	8	S	10	330,00 A 5
A 10	x	20	x	10	S	10	445,00 A 5
A 12	x	22	x	12	S	10	550,00 A 5
A 14	x	25	x	12	S	10	620,00 A 5
A 15	x	25	x	12	S	10	620,00 A 5
A 16	x	28	x	12	S	10	770,00 A 5
A 20	x	32	x	14	S	10	990,00 A 5
A 25	x	40	x	16	S	5	1420,00 A 5
A 30	x	45	x	16	S	5	1680,00 A 5
A 35	x	56	x	16	S	5	2600,00 A 5
A 40	x	63	x	18	S	1	3800,00 A 5
A 50	x	80	x	18	S	1	6700,00 A 5
A 60	x	90	x	20	S	1	10000,00 A 5

~DIN 00741.920 RAZ 341

741 A 2



Clips for free ends of wire ropes

Thimbles → DIN 6899

Dimensions → TI-130

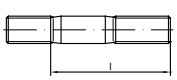
Safety wire rope grips
→ DIN 1142/EN 13411-5 on request

For rope ∅ max.	/ thread ∅			
3 MM	/ M 4	S	50	255,00 A 2
5 MM	/ M 5	S	50	365,00 A 2
6 MM	/ M 5	S	50	440,00 A 2
8 MM	/ M 6	S	25	510,00 A 2

Dimensions					PU	Pieces	€/100/Mat.
M 6	x	16			S	25	144,00 A 4
M 6	x	20			S	25	149,00 A 4
M 6	x	25			S	25	154,00 A 4
M 8	x	30			S	10	152,00 A 4
M 8	x	35			S	10	195,00 A 4
M 8	x	40			S	10	200,00 A 4
M 10	x	30			S	10	246,00 A 4
M 10	x	35			S	10	260,00 A 4
M 10	x	40			S	10	270,00 A 4
M 12	x	25			S	10	295,00 A 4
M 12	x	30			S	10	305,00 A 4
M 12	x	35			S	10	325,00 A 4
M 12	x	40			S	10	340,00 A 4
M 12	x	45			S	10	355,00 A 4
M 12	x	50			S	10	370,00 A 4
M 12	x	60			S	10	400,00 A 4
M 16	x	40			S	10	510,00 A 4
M 16	x	50			S	10	560,00 A 4

DIN 00835.940 RAZ 340

835 A 4



Studs, metal end ≈ 2 d

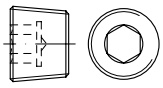
Dimensions → TI-18 Mech. properties → TI-224

Steel → S. 107

Dimensions					PU	Pieces	€/100/Mat.
M 8	x	1			S	100	187,00 A 4
M 10	x	1			S	100	208,00 A 4
M 12	x	1,5			S	100	237,00 A 4
M 14	x	1,5			S	100	295,00 A 4
M 16	x	1,5			S	100	415,00 A 4
M 18	x	1,5			S	100	470,00 A 4
M 20	x	1,5			S	100	520,00 A 4
M 22	x	1,5			S	50	580,00 A 4

DIN 00906.940 RAZ 350

906 A 4 taper fine



Hexagon socket pipe plugs with taper fine pitch thread

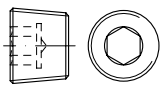
Dimensions → TI-22

Steel → S. 107
Brass → S. 576

Dimensions					PU	Pieces	€/100/Mat.
M 8	x	1			S	100	187,00 A 4
M 10	x	1			S	100	208,00 A 4
M 12	x	1,5			S	100	237,00 A 4
M 14	x	1,5			S	100	295,00 A 4
M 16	x	1,5			S	100	415,00 A 4
M 18	x	1,5			S	100	470,00 A 4
M 20	x	1,5			S	100	520,00 A 4
M 22	x	1,5			S	50	580,00 A 4

DIN 00906.944 RAZ 350

906 A 4 taper pipe R



Hexagon socket pipe plugs, R = with taper pipe thread

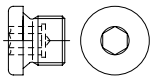
Dimensions → TI-22

Steel → S. 108
Brass → S. 577

Dimensions					PU	Pieces	€/100/Mat.
R 1/8					S	50	154,00 A 4
R 1/4					S	50	305,00 A 4
R 3/8					S	100	440,00 A 4
R 1/2					S	100	485,00 A 4
R 3/4					S	25	3445,00 A 4
R 1					S	1	5915,00 A 4

DIN 00908.940 RAZ 350

908 A 4 cyl. fine



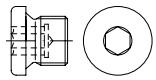
Hexagon socket screw plugs with cylindrical fine pitch thread

Dimensions → TI-22

Steel → S. 108

Dimensions					PU	Pieces	€/100/Mat.
M 8	x	1			S	100	850,00 A 4
M 10	x	1			S	100	305,00 A 4
M 12	x	1,5			S	100	510,00 A 4
M 14	x	1,5			S	100	670,00 A 4
M 16	x	1,5			S	100	720,00 A 4
M 18	x	1,5			S	100	860,00 A 4
M 20	x	1,5			S	100	990,00 A 4
M 22	x	1,5			S	50	1170,00 A 4
M 24	x	1,5			S	50	1350,00 A 4
M 30	x	1,5			S	50	1690,00 A 4
M 30	x	2			S	50	1790,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
DIN	00908.944		RAZ 350
908	**A 4**		**cyl. pipe G**



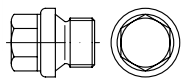
Hexagon socket screw plugs,
G = with cylindrical pipe thread

Dimensions → TI-22

Steel → S. 108
Brass → S. 577

G 1/8	A	S	1	221,00 A4
G 1/4	A	S	1	420,00 A4
G 3/8	A	S	1	490,00 A4
G 1/2	A	S	1	610,00 A4
G 3/4	A	S	1	1170,00 A4
G 1	A	S	1	1580,00 A4
G 1 1/4	A	S	1	4550,00 A4
G 1 1/2	A	S	1	5800,00 A4
G 2	A	S	1	8000,00 A4

DIN	00910.940	RAZ 350
910	**A 4**	**cyl. fine**



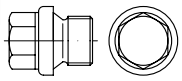
Hexagon head screw plugs,
heavy type,
with cylindrical fine pitch thread

Dimensions → TI-23

Steel → S. 109
Brass → S. 577

M 10	x	1	S	10	430,00 A4
M 12	x	1,5	S	10	620,00 A4
M 14	x	1,5	S	10	620,00 A4
M 16	x	1,5	S	1	650,00 A4
M 18	x	1,5	S	1	910,00 A4
M 20	x	1,5	S	1	1040,00 A4
M 22	x	1,5	S	1	1140,00 A4
M 24	x	1,5	S	1	1610,00 A4
M 30	x	1,5	S	1	6800,00 A4
M 42	x	1,5	S	1	12500,00 A4

Dimensions	PU	Pieces	€/100/Mat.
DIN	00910.944		RAZ 350
910	**A 4**		**cyl. pipe G**



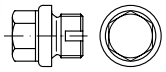
Hexagon head screw plugs,
heavy type,
G = cylindrical pipe thread

Dimensions → TI-23

Steel → S. 109
Brass → S. 577

G 1/8	A	S	10	315,00 A4
G 1/4	A	S	10	335,00 A4
G 3/8	A	S	10	425,00 A4
G 1/2	A	S	1	840,00 A4
G 5/8	A	S	1	1970,00 A4
G 3/4	A	S	1	1260,00 A4
G 1	A	S	1	1970,00 A4
G 1 1/4	A	S	1	5700,00 A4
G 1 1/2	A	S	1	6300,00 A4
G 2	A	S	1	9800,00 A4

~DIN	00910.954	RAZ 350
910	**1.4571 (A 5)**	**cyl. pipe EG**

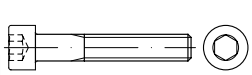


Hexagon head screw plugs,
heavy type,
E = with ventilation,
G = cylindrical pipe thread
(~ DIN 5586 type A)

Dimensions → TI-23 Mech. properties → TI-224

EG 1/4	A	S	10	1350,00 A5
EG 3/8	A	S	10	1330,00 A5
EG 1/2	A	S	1	1670,00 A5
EG 3/4	A	S	1	2180,00 A5
EG 1	A	S	1	3200,00 A5

DIN	00912.920	RAZ 360
912	**A 2 – 70**	



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 110

DIN 912 → replaced by ISO 4762

*Prop. class for dimensions different depending on production

M 1,6	x	4	S	100	85,80 A2
M 1,6	x	5	S	100	92,00 A2
M 1,6	x	6	S	100	98,10 A2

Dimensions			PU	Pieces	€/100/Mat.
M 1,6	x	8	S	100	106,00 A2
M 2	x	3	S	100	42,40 A2
M 2	x	4	S	100	26,50 A2
M 2	x	5	S	100	26,50 A2
M 2	x	6	S	100	26,50 A2
M 2	x	8	S	100	26,50 A2
M 2	x	10	S	100	27,60 A2
M 2	x	12	S	100	29,10 A2
M 2	x	16	S	100	33,20 A2
M 2	x	20	S	100	39,80 A2
M 2,5	x	4	S	100	26,50 A2
M 2,5	x	5	S	100	26,50 A2
M 2,5	x	6	S	100	26,50 A2
M 2,5	x	8	S	100	26,50 A2
M 2,5	x	10	S	100	27,60 A2
M 2,5	x	12	S	100	29,10 A2
M 2,5	x	14	S	100	41,40 A2
M 2,5	x	16	S	100	33,20 A2
M 2,5	x	20	S	100	39,80 A2
M 2,5	x	25	S	100	53,10 A2
M 3	x	4	S	100	19,90 A2
M 3	x	5	S	100	16,30 A2
M 3	x	6	S	100	12,20 A2
M 3	x	8	S	100	10,70 A2
M 3	x	10	S	100	9,20 A2
M 3	x	12	S	100	9,20 A2
M 3	x	14	S	100	7,75 A2
M 3	x	16	S	100	6,15 A2
M 3	x	18	S	100	8,40 A2
M 3	x	20	S	100	6,70 A2
M 3	x	22	S	100	8,75 A2
M 3	x	25	S	100	7,05 A2
M 3	x	30	S	100	9,10 A2
M 3	x	35	S	100	10,70 A2
M 3	x	40	S	100	11,70 A2
M 3	x	45	S	100	20,90 A2
M 3	x	50	S	100	20,90 A2
M 4	x	5	S	100	19,40 A2
M 4	x	6	S	200	13,20 A2
M 4	x	8	S	500	10,70 A2
M 4	x	8	K	200	11,95 A2
M 4	x	10	S	500	9,95 A2
M 4	x	10	K	200	12,00 A2
M 4	x	12	S	500	9,95 A2
M 4	x	12	K	200	12,00 A2
M 4	x	14	S	500	7,75 A2
M 4	x	14	K	200	9,00 A2
M 4	x	16	S	500	6,15 A2
M 4	x	16	K	200	8,20 A2
M 4	x	18	S	500	8,40 A2
M 4	x	18	K	200	9,65 A2
M 4	x	20	S	500	6,70 A2
M 4	x	20	K	200	8,80 A2
M 4	x	22	S	500	8,75 A2
M 4	x	22	K	200	10,00 A2
M 4	x	25	S	500	7,05 A2
M 4	x	25	K	200	8,30 A2
M 4	x	30	S	500	9,10 A2
M 4	x	30	K	200	10,35 A2
M 4	x	35	S	500	9,40 A2
M 4	x	35	K	200	10,65 A2
M 4	x	40	S	500	10,50 A2
M 4	x	40	K	200	11,75 A2
M 4	x	45	S	200	20,90 A2
M 4	x	50	S	200	20,90 A2
M 4	x	55	S	200	124,00 A2
M 4	x	60	S	200	136,00 A2
M 4	x	70	S	200	177,00 A2
M 4	x	80	S	200	450,00 A2
M 5	x	6*	S	100	23,50 A2
M 5	x	8*	S	100	10,70 A2
M 5	x	10	S	500	9,95 A2
M 5	x	10	K	100	12,00 A2
M 5	x	12	S	500	9,95 A2
M 5	x	12	K	100	12,00 A2

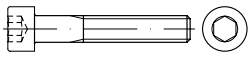
Dimensions	PU	Pieces	€/100/Mat.
M 5 x 14	S	500	8,85 A 2
M 5 x 14	K	100	11,35 A 2
M 5 x 16	S	500	6,95 A 2
M 5 x 16	K	100	9,00 A 2
M 5 x 18	S	500	8,70 A 2
M 5 x 18	K	100	11,20 A 2
M 5 x 20	S	500	7,15 A 2
M 5 x 20	K	100	9,20 A 2
M 5 x 22	S	500	9,80 A 2
M 5 x 22	K	100	12,30 A 2
M 5 x 25	S	500	7,75 A 2
M 5 x 25	K	100	9,80 A 2
M 5 x 30	S	500	9,10 A 2
M 5 x 30	K	100	11,20 A 2
M 5 x 35	S	500	10,10 A 2
M 5 x 35	K	100	12,60 A 2
M 5 x 40	S	500	11,00 A 2
M 5 x 40	K	100	13,50 A 2
M 5 x 45	S	100	14,70 A 2
M 5 x 50	S	100	16,30 A 2
M 5 x 55	S	100	23,50 A 2
M 5 x 60	S	100	30,60 A 2
M 5 x 65*	S	100	43,90 A 2
M 5 x 70*	S	100	35,20 A 2
M 5 x 75*	S	100	94,10 A 2
M 5 x 80*	S	100	72,00 A 2
M 5 x 90*	S	100	246,00 A 2
M 5 x 100*	S	100	363,00 A 2
M 6 x 6*	S	100	24,50 A 2
M 6 x 8*	S	100	13,80 A 2
M 6 x 10	S	500	12,20 A 2
M 6 x 10	K	100	14,30 A 2
M 6 x 12	S	500	12,20 A 2
M 6 x 12	K	100	14,30 A 2
M 6 x 14	S	500	12,30 A 2
M 6 x 14	K	100	14,80 A 2
M 6 x 16	S	500	8,60 A 2
M 6 x 16	K	100	10,70 A 2
M 6 x 18	S	500	11,70 A 2
M 6 x 18	K	100	14,20 A 2
M 6 x 20	S	500	9,55 A 2
M 6 x 20	K	100	11,60 A 2
M 6 x 22	S	100	12,20 A 2
M 6 x 25	S	500	10,30 A 2
M 6 x 25	K	100	12,40 A 2
M 6 x 30	S	500	11,10 A 2
M 6 x 30	K	100	13,20 A 2
M 6 x 35	S	500	12,60 A 2
M 6 x 35	K	100	14,70 A 2
M 6 x 40	S	500	13,70 A 2
M 6 x 40	K	100	15,80 A 2
M 6 x 45	S	500	18,40 A 2
M 6 x 45	K	100	20,90 A 2
M 6 x 50	S	500	21,90 A 2
M 6 x 50	K	100	24,40 A 2
M 6 x 55	S	500	26,30 A 2
M 6 x 55	K	100	28,80 A 2
M 6 x 60	S	500	28,60 A 2
M 6 x 60	K	100	31,10 A 2
M 6 x 65	S	500	46,50 A 2
M 6 x 65	K	100	49,00 A 2
M 6 x 70	S	500	37,30 A 2
M 6 x 70	K	100	39,80 A 2
M 6 x 75	S	100	64,40 A 2
M 6 x 80	S	100	51,10 A 2
M 6 x 85	S	100	333,00 A 2
M 6 x 90	S	100	86,90 A 2
M 6 x 95	S	100	369,00 A 2
M 6 x 100	S	100	97,10 A 2
M 6 x 110	S	100	107,00 A 2
M 6 x 120	S	100	127,00 A 2
M 6 x 130*	S	50	138,00 A 2
M 6 x 140*	S	50	158,00 A 2
M 6 x 150*	S	50	178,00 A 2
M 8 x 8*	S	100	102,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 10*	S	100	24,00 A 2
M 8 x 12	S	200	22,40 A 2
M 8 x 14	S	200	27,00 A 2
M 8 x 16	S	200	19,40 A 2
M 8 x 16	K	100	21,50 A 2
M 8 x 18	S	200	22,40 A 2
M 8 x 20	S	200	16,60 A 2
M 8 x 20	K	100	18,70 A 2
M 8 x 22	S	200	19,90 A 2
M 8 x 25	S	200	15,50 A 2
M 8 x 25	K	100	17,60 A 2
M 8 x 30	S	200	17,30 A 2
M 8 x 30	K	100	19,40 A 2
M 8 x 35	S	200	18,90 A 2
M 8 x 35	K	100	21,00 A 2
M 8 x 40	S	200	20,70 A 2
M 8 x 40	K	100	22,80 A 2
M 8 x 45	S	200	23,50 A 2
M 8 x 50	S	200	25,50 A 2
M 8 x 55	S	200	34,50 A 2
M 8 x 60	S	200	35,50 A 2
M 8 x 65	S	200	72,00 A 2
M 8 x 70	S	200	54,70 A 2
M 8 x 75	S	200	107,00 A 2
M 8 x 80	S	200	71,00 A 2
M 8 x 85	S	100	135,00 A 2
M 8 x 90	S	200	78,20 A 2
M 8 x 100	S	200	87,40 A 2
M 8 x 110	S	50	117,00 A 2
M 8 x 120	S	50	138,00 A 2
M 8 x 130	S	50	153,00 A 2
M 8 x 140	S	50	168,00 A 2
M 8 x 150	S	50	184,00 A 2
M 8 x 160*	S	50	485,00 A 2
M 8 x 170*	S	50	639,00 A 2
M 8 x 180*	S	50	894,00 A 2
M 10 x 12*	S	100	65,40 A 2
M 10 x 16	S	100	36,80 A 2
M 10 x 18	S	100	43,90 A 2
M 10 x 20	S	100	28,80 A 2
M 10 x 25	S	100	26,30 A 2
M 10 x 30	S	100	27,80 A 2
M 10 x 35	S	100	28,60 A 2
M 10 x 40	S	100	31,10 A 2
M 10 x 45	S	100	37,30 A 2
M 10 x 50	S	100	39,30 A 2
M 10 x 55	S	100	51,60 A 2
M 10 x 60	S	100	55,20 A 2
M 10 x 65	S	100	81,80 A 2
M 10 x 70	S	100	65,40 A 2
M 10 x 75	S	100	120,00 A 2
M 10 x 80	S	100	80,20 A 2
M 10 x 90	S	100	91,00 A 2
M 10 x 100	S	100	111,00 A 2
M 10 x 110	S	50	153,00 A 2
M 10 x 120	S	50	168,00 A 2
M 10 x 130	S	50	204,00 A 2
M 10 x 140	S	50	245,00 A 2
M 10 x 150	S	50	276,00 A 2
M 10 x 160*	S	50	818,00 A 2
M 10 x 170*	S	50	920,00 A 2
M 10 x 180*	S	50	1175,00 A 2
M 12 x 16*	S	100	93,50 A 2
M 12 x 20	S	100	46,00 A 2
M 12 x 25	S	100	43,40 A 2
M 12 x 30	S	100	40,30 A 2
M 12 x 35	S	100	42,90 A 2
M 12 x 40	S	100	46,50 A 2
M 12 x 45	S	100	51,60 A 2
M 12 x 50	S	100	55,70 A 2
M 12 x 55	S	100	73,10 A 2
M 12 x 60	S	100	75,60 A 2
M 12 x 65	S	100	120,00 A 2
M 12 x 70	S	100	96,10 A 2
M 12 x 75	S	100	184,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 12 x 80	S	100	100,00 A 2
M 12 x 85	S	100	317,00 A 2
M 12 x 90	S	100	125,00 A 2
M 12 x 100	S	100	144,00 A 2
M 12 x 110	S	10	214,00 A 2
M 12 x 120	S	10	235,00 A 2
M 12 x 130	S	10	276,00 A 2
M 12 x 140	S	1	332,00 A 2
M 12 x 150	S	1	373,00 A 2
M 12 x 160	S	1	1073,00 A 2
M 12 x 170*	S	1	1175,00 A 2
M 12 x 180*	S	1	1431,00 A 2
M 14 x 20	S	50	460,00 A 2
M 14 x 25	S	50	327,00 A 2
M 14 x 30	S	50	243,00 A 2
M 14 x 35	S	50	243,00 A 2
M 14 x 40	S	50	243,00 A 2
M 14 x 45	S	50	255,00 A 2
M 14 x 50	S	50	279,00 A 2
M 14 x 55	S	50	325,00 A 2
M 14 x 60	S	50	337,00 A 2
M 14 x 65	S	50	472,00 A 2
M 14 x 70	S	50	472,00 A 2
M 14 x 80	S	50	485,00 A 2
M 14 x 90	S	1	547,00 A 2
M 14 x 100	S	1	644,00 A 2
M 14 x 110	S	1	1018,00 A 2
M 14 x 120	S	1	1150,00 A 2
M 14 x 130	S	1	1334,00 A 2
M 14 x 140	S	1	1518,00 A 2
M 14 x 150	S	1	1702,00 A 2
M 16 x 20*	S	50	291,00 A 2
M 16 x 25*	S	25	181,00 A 2
M 16 x 30	S	25	135,00 A 2
M 16 x 35	S	25	135,00 A 2
M 16 x 40	S	25	135,00 A 2
M 16 x 45	S	25	142,00 A 2
M 16 x 50	S	25	155,00 A 2
M 16 x 55	S	25	180,00 A 2
M 16 x 60	S	25	187,00 A 2
M 16 x 65	S	25	262,00 A 2
M 16 x 70	S	25	262,00 A 2
M 16 x 75	S	25	388,00 A 2
M 16 x 80	S	25	269,00 A 2
M 16 x 90	S	25	304,00 A 2
M 16 x 100	S	25	359,00 A 2
M 16 x 110	S	25	566,00 A 2
M 16 x 120	S	25	639,00 A 2
M 16 x 130	S	25	741,00 A 2
M 16 x 140	S	1	843,00 A 2
M 16 x 150	S	1	945,00 A 2
M 16 x 160	S	1	1942,00 A 2
M 16 x 170*	S	1	2096,00 A 2
M 16 x 180*	S	1	2249,00 A 2
M 16 x 190*	S	1	2403,00 A 2
M 16 x 200*	S	1	2709,00 A 2
M 20 x 30	S	10	480,00 A 2
M 20 x 35	S	25	480,00 A 2
M 20 x 40	S	25	311,00 A 2
M 20 x 45	S	25	311,00 A 2
M 20 x 50	S	25	311,00 A 2
M 20 x 55	S	25	343,00 A 2
M 20 x 60	S	25	352,00 A 2
M 20 x 65	S	25	488,00 A 2
M 20 x 70	S	25	399,00 A 2
M 20 x 75	S	25	560,00 A 2
M 20 x 80	S	1	455,00 A 2
M 20 x 90	S	1	614,00 A 2
M 20 x 100	S	1	711,00 A 2
M 20 x 110	S	1	1095,00 A 2
M 20 x 120	S	1	1248,00 A 2
M 20 x 130	S	1	1559,00 A 2
M 20 x 140	S	1	1758,00 A 2
M 20 x 150	S	1	1994,00 A 2
M 20 x 160*	S	1	2965,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 20 x 170*	S	1	3170,00 A 2
M 20 x 180*	S	1	3425,00 A 2
M 20 x 190*	S	1	3681,00 A 2
M 20 x 200*	S	1	3936,00 A 2
M 24 x 40*	S	1	1406,00 A 2
M 24 x 45*	S	1	1406,00 A 2
M 24 x 50*	S	1	1098,00 A 2
M 24 x 55*	S	1	1585,00 A 2
M 24 x 60*	S	1	1149,00 A 2
M 24 x 65*	S	1	1641,00 A 2
M 24 x 70*	S	1	1171,00 A 2
M 24 x 75*	S	1	1712,00 A 2
M 24 x 80*	S	1	1262,00 A 2
M 24 x 90*	S	1	1416,00 A 2
M 24 x 100*	S	1	1518,00 A 2
M 24 x 110*	S	1	1825,00 A 2
M 24 x 120*	S	1	1994,00 A 2
M 24 x 130*	S	1	2147,00 A 2
M 24 x 140*	S	1	2300,00 A 2
M 24 x 150*	S	1	2454,00 A 2
M 24 x 160*	S	1	3834,00 A 2
M 24 x 170*	S	1	4141,00 A 2
M 24 x 180*	S	1	4397,00 A 2
M 24 x 200*	S	1	4908,00 A 2
M 30 x 50*	S	1	2965,00 A 2
M 30 x 60*	S	1	3016,00 A 2
M 30 x 70*	S	1	3221,00 A 2
M 30 x 80*	S	1	3374,00 A 2
M 30 x 90*	S	1	3579,00 A 2
M 30 x 100*	S	1	3732,00 A 2
M 30 x 110*	S	1	3936,00 A 2
M 30 x 120*	S	1	4090,00 A 2
M 30 x 130*	S	1	4294,00 A 2
M 30 x 140*	S	1	4448,00 A 2
M 30 x 150*	S	1	4652,00 A 2

DIN	00912.940	RAZ 360
912	**A 4 - 70**	



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 110

DIN 912 → replaced by ISO 4762

*Prop. class for dimensions different depending on production

M 2	x	3	S	100	55,20	A 4
M 2	x	4	S	100	30,60	A 4
M 2	x	5	S	100	30,60	A 4
M 2	x	6	S	100	30,60	A 4
M 2	x	8	S	100	30,60	A 4
M 2	x	10	S	100	32,20	A 4
M 2	x	12	S	100	33,70	A 4
M 2	x	16	S	100	38,30	A 4
M 2,5	x	4	S	100	30,60	A 4
M 2,5	x	5	S	100	30,60	A 4
M 2,5	x	6	S	100	30,60	A 4
M 2,5	x	8	S	100	30,60	A 4
M 2,5	x	10	S	100	32,20	A 4
M 2,5	x	12	S	100	33,70	A 4
M 2,5	x	14	S	100	47,00	A 4
M 2,5	x	16	S	100	38,30	A 4
M 2,5	x	20	S	100	47,50	A 4
M 3	x	4	S	100	24,50	A 4
M 3	x	5	S	100	23,50	A 4
M 3	x	6	S	100	17,80	A 4
M 3	x	8	S	100	14,80	A 4
M 3	x	10	S	100	12,70	A 4
M 3	x	12	S	100	12,70	A 4
M 3	x	14	S	100	12,70	A 4
M 3	x	16	S	100	8,70	A 4
M 3	x	18	S	100	11,20	A 4
M 3	x	20	S	100	9,20	A 4
M 3	x	22	S	100	11,80	A 4
M 3	x	25	S	100	9,80	A 4
M 3	x	30	S	100	11,40	A 4
M 3	x	35	S	100	15,30	A 4
M 3	x	40	S	100	16,80	A 4
M 3	x	45	S	100	29,60	A 4
M 3	x	50	S	100	29,60	A 4
M 4	x	5	S	100	31,10	A 4
M 4	x	6	S	200	18,40	A 4
M 4	x	8	S	500	14,80	A 4
M 4	x	8	K	200	16,05	A 4
M 4	x	10	S	500	13,60	A 4
M 4	x	10	K	200	14,85	A 4
M 4	x	12	S	500	13,60	A 4
M 4	x	12	K	200	14,85	A 4
M 4	x	14	S	500	13,60	A 4
M 4	x	14	K	200	14,85	A 4
M 4	x	16	S	500	8,70	A 4
M 4	x	16	K	200	9,95	A 4
M 4	x	18	S	500	11,20	A 4
M 4	x	18	K	200	12,45	A 4
M 4	x	20	S	500	9,20	A 4
M 4	x	20	K	200	10,45	A 4
M 4	x	22	S	500	11,80	A 4
M 4	x	25	S	500	9,80	A 4
M 4	x	25	K	200	11,05	A 4
M 4	x	30	S	500	11,40	A 4
M 4	x	30	K	200	12,65	A 4
M 4	x	35	S	500	15,20	A 4
M 4	x	35	K	200	16,45	A 4
M 4	x	40	S	500	18,20	A 4
M 4	x	40	K	200	19,45	A 4
M 4	x	45	S	200	29,60	A 4
M 4	x	50	S	200	29,60	A 4
M 4	x	55	S	200	111,00	A 4
M 4	x	60	S	200	146,00	A 4
M 4	x	70	S	200	187,00	A 4
M 5	x	6*	S	100	30,60	A 4
M 5	x	8*	S	100	17,60	A 4
M 5	x	10	S	500	13,60	A 4
M 5	x	10	K	100	16,10	A 4
M 5	x	12	S	500	13,60	A 4
M 5	x	12	K	100	16,10	A 4
M 5	x	14	S	500	13,60	A 4
M 5	x	14	K	100	16,10	A 4
M 5	x	16	S	500	9,55	A 4
M 5	x	16	K	100	12,05	A 4
M 5	x	18	S	500	13,20	A 4
M 5	x	18	K	100	15,70	A 4
M 5	x	20	S	500	10,40	A 4
M 5	x	20	K	100	12,90	A 4
M 5	x	22	S	500	13,60	A 4
M 5	x	22	K	100	16,10	A 4
M 5	x	25	S	500	10,60	A 4
M 5	x	25	K	100	13,10	A 4
M 5	x	30	S	500	12,70	A 4
M 5	x	30	K	100	15,20	A 4
M 5	x	35	S	500	15,80	A 4
M 5	x	35	K	100	18,30	A 4
M 5	x	40	S	500	17,30	A 4
M 5	x	40	K	100	19,80	A 4
M 5	x	45	S	100	18,90	A 4
M 5	x	50	S	100	21,40	A 4
M 5	x	55	S	100	29,60	A 4
M 5	x	60	S	100	37,80	A 4
M 5	x	70*	S	100	44,90	A 4
M 5	x	80*	S	100	101,00	A 4
M 5	x	90*	S	100	276,00	A 4
M 5	x	100*	S	100	483,00	A 4
M 6	x	8*	S	100	17,60	A 4
M 6	x	10	S	500	15,80	A 4
M 6	x	10	K	100	18,30	A 4
M 6	x	12	S	500	16,10	A 4
M 6	x	12	K	100	18,60	A 4
M 6	x	14	S	500	17,60	A 4
M 6	x	14	K	100	20,10	A 4
M 6	x	16	S	500	11,90	A 4
M 6	x	16	K	100	14,40	A 4
M 6	x	18	S	500	16,00	A 4
M 6	x	18	K	100	18,50	A 4
M 6	x	20	S	500	12,80	A 4
M 6	x	20	K	100	15,30	A 4
M 6	x	22	S	500	17,20	A 4
M 6	x	22	K	100	19,70	A 4
M 6	x	25	S	500	14,10	A 4
M 6	x	25	K	100	16,60	A 4
M 6	x	30	S	500	15,10	A 4
M 6	x	30	K	100	17,60	A 4
M 6	x	35	S	500	15,90	A 4
M 6	x	35	K	100	18,40	A 4
M 6	x	40	S	500	18,30	A 4
M 6	x	40	K	100	20,80	A 4
M 6	x	45	S	500	24,10	A 4
M 6	x	45	K	100	26,60	A 4
M 6	x	50	S	500	27,60	A 4
M 6	x	50	K	100	30,10	A 4
M 6	x	55	S	500	34,20	A 4
M 6	x	60	S	500	35,70	A 4
M 6	x	60	K	100	38,20	A 4
M 6	x	65	S	500	61,30	A 4
M 6	x	65	K	100	63,80	A 4
M 6	x	70	S	500	41,40	A 4
M 6	x	70	K	100	43,90	A 4
M 6	x	75	S	100	74,60	A 4
M 6	x	80	S	100	64,90	A 4
M 6	x	90	S	100	132,00	A 4
M 6	x	100	S	100	148,00	A 4
M 6	x	110	S	100	161,00	A 4
M 6	x	120	S	100	191,00	A 4
M 6	x	130*	S	100	219,00	A 4
M 6	x	140*	S	100	250,00	A 4
M 6	x	150*	S	100	281,00	A 4
M 8	x	10*	S	100	29,10	A 4
M 8	x	12	S	200	27,30	A 4
M 8	x	14	S	200	31,90	A 4
M 8	x	16	S	200	23,70	A 4
M 8	x	18	S	200	26,80	A 4
M 8	x	20	S	200	18,40	A 4
M 8	x	22	S	200	25,00	A 4
M 8	x	25	S	200	19,90	A 4
M 8	x	30	S	200	20,90	A 4
M 8	x	35	S	200	23,00	A 4
M 8	x	40	S	200	29,10	A 4
M 8	x	45	S	200	34,20	A 4
M 8	x	50	S	200	38,80	A 4
M 8	x	55	S	200	43,90	A 4
M 8	x	60	S	200	46,00	A 4
M 8	x	65	S	200	89,90	A 4
M 8	x	70	S	200	72,00	A 4
M 8	x	75	S	200	138,00	A 4
M 8	x	80	S	200	89,90	A 4
M 8	x	90	S	200	102,00	A 4
M 8	x	100	S	200	115,00	A 4
M 8	x	110	S	50	184,00	A 4
M 8	x	120	S	50	214,00	A 4
M 8	x	130	S	50	235,00	A 4
M 8	x	140	S	50	265,00	A 4
M 8	x	150	S	50	296,00	A 4
M 8	x	160*	S	50	728,00	A 4
M 8	x	170*	S	50	920,00	A 4
M 8	x	180*	S	50	1227,00	A 4
M 10	x	10*	S	100	225,00	A 4
M 10	x	12*	S	100	72,00	A 4
M 10	x	16	S	100	43,40	A 4

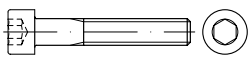
€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	18	S	100	57,20 A4
M 10	x	20	S	100	34,70 A4
M 10	x	25	S	100	33,20 A4
M 10	x	30	S	100	34,70 A4
M 10	x	35	S	100	37,30 A4
M 10	x	40	S	100	39,80 A4
M 10	x	45	S	100	47,50 A4
M 10	x	50	S	100	53,60 A4
M 10	x	55	S	100	63,40 A4
M 10	x	60	S	100	68,50 A4
M 10	x	65	S	100	98,60 A4
M 10	x	70	S	100	79,20 A4
M 10	x	75	S	100	139,00 A4
M 10	x	80	S	100	93,50 A4
M 10	x	90	S	100	115,00 A4
M 10	x	100	S	100	141,00 A4
M 10	x	110	S	50	245,00 A4
M 10	x	120	S	50	265,00 A4
M 10	x	130	S	1	317,00 A4
M 10	x	140	S	1	383,00 A4
M 10	x	150	S	1	424,00 A4
M 10	x	160*	S	1	1145,00 A4
M 10	x	170*	S	1	1288,00 A4
M 10	x	180*	S	1	1636,00 A4
M 12	x	16*	S	100	104,00 A4
M 12	x	20	S	100	73,60 A4
M 12	x	25	S	100	70,50 A4
M 12	x	30	S	100	53,10 A4
M 12	x	35	S	100	57,20 A4
M 12	x	40	S	100	61,30 A4
M 12	x	45	S	100	69,50 A4
M 12	x	50	S	100	74,60 A4
M 12	x	55	S	100	93,50 A4
M 12	x	60	S	100	100,00 A4
M 12	x	65	S	100	133,00 A4
M 12	x	70	S	100	111,00 A4
M 12	x	75	S	100	199,00 A4
M 12	x	80	S	100	134,00 A4
M 12	x	90	S	100	156,00 A4
M 12	x	100	S	100	184,00 A4
M 12	x	110	S	10	332,00 A4
M 12	x	120	S	10	363,00 A4
M 12	x	130	S	10	434,00 A4
M 12	x	140	S	1	511,00 A4
M 12	x	150	S	1	587,00 A4
M 12	x	160	S	1	1431,00 A4
M 12	x	170*	S	1	1533,00 A4
M 12	x	180*	S	1	1661,00 A4
M 14	x	20	S	50	541,00 A4
M 14	x	25	S	50	403,00 A4
M 14	x	30	S	50	353,00 A4
M 14	x	35	S	50	353,00 A4
M 14	x	40	S	50	353,00 A4
M 14	x	45	S	50	386,00 A4
M 14	x	50	S	50	407,00 A4
M 14	x	55	S	50	467,00 A4
M 14	x	60	S	50	522,00 A4
M 14	x	65	S	50	681,00 A4
M 14	x	70	S	1	570,00 A4
M 14	x	80	S	1	784,00 A4
M 14	x	90	S	1	889,00 A4
M 14	x	100	S	1	1007,00 A4
M 14	x	110	S	1	1564,00 A4
M 14	x	120	S	1	1840,00 A4
M 14	x	130	S	1	2116,00 A4
M 14	x	140	S	1	2392,00 A4
M 14	x	150	S	1	2760,00 A4
M 16	x	20*	S	50	331,00 A4
M 16	x	25*	S	25	224,00 A4
M 16	x	30	S	25	196,00 A4
M 16	x	35	S	25	196,00 A4
M 16	x	40	S	25	196,00 A4
M 16	x	45	S	25	214,00 A4
M 16	x	50	S	25	226,00 A4
M 16	x	55	S	25	259,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	60	S	25	290,00 A4
M 16	x	65	S	25	378,00 A4
M 16	x	70	S	25	317,00 A4
M 16	x	75	S	1	613,00 A4
M 16	x	80	S	25	436,00 A4
M 16	x	90	S	25	494,00 A4
M 16	x	100	S	25	560,00 A4
M 16	x	110	S	1	869,00 A4
M 16	x	120	S	1	1022,00 A4
M 16	x	130	S	1	1175,00 A4
M 16	x	140	S	1	1329,00 A4
M 16	x	150	S	1	1533,00 A4
M 16	x	160	S	1	2198,00 A4
M 16	x	170*	S	1	2351,00 A4
M 16	x	180*	S	1	2505,00 A4
M 16	x	190*	S	1	2658,00 A4
M 16	x	200*	S	1	2863,00 A4
M 16	x	220*	S	1	4450,00 A4
M 16	x	240*	S	1	5250,00 A4
M 16	x	250*	S	1	5750,00 A4
M 16	x	260*	S	1	6400,00 A4
M 16	x	280*	S	1	7700,00 A4
M 16	x	300*	S	1	9250,00 A4
M 18	x	40*	S	1	935,00 A4
M 18	x	45*	S	1	935,00 A4
M 18	x	50*	S	1	1058,00 A4
M 18	x	55*	S	1	1140,00 A4
M 18	x	60*	S	1	1232,00 A4
M 18	x	65*	S	1	1595,00 A4
M 18	x	70*	S	1	1339,00 A4
M 18	x	75*	S	1	2060,00 A4
M 18	x	80*	S	1	1717,00 A4
M 18	x	90*	S	1	1968,00 A4
M 18	x	100*	S	1	2208,00 A4
M 18	x	110*	S	1	3420,00 A4
M 18	x	120*	S	1	3844,00 A4
M 20	x	30	S	1	766,00 A4
M 20	x	35	S	1	766,00 A4
M 20	x	40	S	10	495,00 A4
M 20	x	45	S	10	536,00 A4
M 20	x	50	S	10	572,00 A4
M 20	x	55	S	1	608,00 A4
M 20	x	60	S	1	659,00 A4
M 20	x	65	S	1	1073,00 A4
M 20	x	70	S	1	710,00 A4
M 20	x	75	S	1	1329,00 A4
M 20	x	80	S	1	920,00 A4
M 20	x	90	S	1	1073,00 A4
M 20	x	100	S	1	1227,00 A4
M 20	x	110	S	1	1789,00 A4
M 20	x	120	S	1	1942,00 A4
M 20	x	130	S	1	2403,00 A4
M 20	x	140	S	1	2709,00 A4
M 20	x	150	S	1	3067,00 A4
M 20	x	160*	S	1	3323,00 A4
M 20	x	170*	S	1	3476,00 A4
M 20	x	180*	S	1	3630,00 A4
M 20	x	190*	S	1	3834,00 A4
M 20	x	200*	S	1	4090,00 A4
M 24	x	40*	S	1	2045,00 A4
M 24	x	45*	S	1	2045,00 A4
M 24	x	50*	S	1	1789,00 A4
M 24	x	55*	S	1	2351,00 A4
M 24	x	60*	S	1	1789,00 A4
M 24	x	65*	S	1	2454,00 A4
M 24	x	70*	S	1	1994,00 A4
M 24	x	75*	S	1	2607,00 A4
M 24	x	80*	S	1	2147,00 A4
M 24	x	90*	S	1	2300,00 A4
M 24	x	100*	S	1	2556,00 A4
M 24	x	110*	S	1	2812,00 A4
M 24	x	120*	S	1	3067,00 A4
M 24	x	130*	S	1	3323,00 A4
M 24	x	140*	S	1	3579,00 A4
M 24	x	150*	S	1	3834,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	160*	S	1	4141,00 A4
M 24	x	180*	S	1	4550,00 A4
M 24	x	190*	S	1	4806,00 A4
M 24	x	200*	S	1	5010,00 A4
M 24	x	210*	S	1	7900,00 A4
M 24	x	220*	S	1	8700,00 A4
M 24	x	230*	S	1	9800,00 A4
M 24	x	240*	S	1	11300,00 A4
M 30	x	50*	S	1	3374,00 A4
M 30	x	60*	S	1	3425,00 A4
M 30	x	70*	S	1	3681,00 A4
M 30	x	80*	S	1	3885,00 A4
M 30	x	90*	S	1	4090,00 A4
M 30	x	100*	S	1	4294,00 A4
M 30	x	110*	S	1	4499,00 A4
M 30	x	120*	S	1	4703,00 A4
M 30	x	130*	S	1	4908,00 A4
M 30	x	140*	S	1	5112,00 A4
M 30	x	150*	S	1	5317,00 A4
M 30	x	160*	S	1	6800,00 A4
M 30	x	170*	S	1	8300,00 A4
M 30	x	180*	S	1	10200,00 A4
M 30	x	200*	S	1	13100,00 A4

DIN	00912.948	RAZ 361
912	A 4 - 80	



Hexagon socket head cap screws

High strength (strongly cold worked)

Dimensions ➔ TI-12 Tightening torque ➔ TI-235
Mech. properties ➔ TI-224 Standard conversion ➔ TI-6

Steel ➔ S. 110

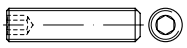
DIN 912 ➔ replaced by ISO 4762

M 6	x	8	S	100	59,00 A4-80
M 6	x	10	S	100	59,00 A4-80
M 6	x	12	S	100	48,50 A4-80
M 6	x	14	S	100	60,00 A4-80
M 6	x	16	S	100	36,00 A4-80
M 6	x	20	S	100	39,50 A4-80
M 6	x	25	S	100	43,00 A4-80
M 6	x	30	S	100	46,50 A4-80
M 6	x	35	S	100	48,50 A4-80
M 6	x	40	S	100	56,00 A4-80
M 6	x	45	S	100	89,00 A4-80
M 6	x	50	S	100	83,00 A4-80
M 6	x	55	S	100	103,00 A4-80
M 6	x	60	S	100	108,00 A4-80
M 6	x	70	S	100	125,00 A4-80
M 8	x	10	S	100	99,00 A4-80
M 8	x	12	S	100	116,00 A4-80
M 8	x	16	S	100	72,00 A4-80
M 8	x	20	S	100	56,00 A4-80
M 8	x	25	S	100	60,00 A4-80
M 8	x	30	S	100	63,00 A4-80
M 8	x	35	S	100	70,00 A4-80
M 8	x	40	S	100	88,00 A4-80
M 8	x	45	S	100	103,00 A4-80
M 8	x	50	S	100	117,00 A4-80
M 8	x	55	S	100	132,00 A4-80
M 8	x	60	S	100	139,00 A4-80
M 8	x	70	S	100	217,00 A4-80
M 8	x	80	S	50	270,00 A4-80
M 8	x	90	S	50	310,00 A4-80
M 8	x	100	S	50	350,00 A4-80

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	16	S	100	131,00 A 4-80
M 10	x	20	S	100	132,00 A 4-80
M 10	x	25	S	100	100,00 A 4-80
M 10	x	30	S	100	105,00 A 4-80
M 10	x	35	S	100	114,00 A 4-80
M 10	x	40	S	100	120,00 A 4-80
M 10	x	45	S	100	143,00 A 4-80
M 10	x	50	S	100	162,00 A 4-80
M 10	x	55	S	50	191,00 A 4-80
M 10	x	60	S	50	206,00 A 4-80
M 10	x	70	S	50	238,00 A 4-80
M 10	x	80	S	50	285,00 A 4-80
M 10	x	90	S	50	350,00 A 4-80
M 10	x	100	S	50	430,00 A 4-80
M 12	x	20	S	100	221,00 A 4-80
M 12	x	25	S	100	212,00 A 4-80
M 12	x	30	S	100	160,00 A 4-80
M 12	x	35	S	50	172,00 A 4-80
M 12	x	40	S	50	185,00 A 4-80
M 12	x	45	S	50	209,00 A 4-80
M 12	x	50	S	50	224,00 A 4-80
M 12	x	55	S	50	285,00 A 4-80
M 12	x	60	S	50	305,00 A 4-80
M 12	x	70	S	50	335,00 A 4-80
M 12	x	80	S	50	410,00 A 4-80
M 12	x	90	S	50	480,00 A 4-80
M 12	x	100	S	50	560,00 A 4-80
M 16	x	20	S	50	1450,00 A 4-80
M 16	x	25	S	50	680,00 A 4-80
M 16	x	30	S	50	600,00 A 4-80
M 16	x	35	S	50	600,00 A 4-80
M 16	x	40	S	50	600,00 A 4-80
M 16	x	45	S	50	650,00 A 4-80
M 16	x	50	S	50	690,00 A 4-80
M 16	x	55	S	25	790,00 A 4-80
M 16	x	60	S	25	880,00 A 4-80
M 16	x	70	S	25	960,00 A 4-80
M 16	x	80	S	1	1320,00 A 4-80
M 16	x	90	S	1	1490,00 A 4-80
M 16	x	100	S	1	1690,00 A 4-80
M 20	x	30	S	1	2310,00 A 4-80
M 20	x	35	S	1	2030,00 A 4-80
M 20	x	40	S	1	1490,00 A 4-80
M 20	x	45	S	1	1620,00 A 4-80
M 20	x	50	S	1	1720,00 A 4-80
M 20	x	60	S	1	1980,00 A 4-80
M 20	x	70	S	1	2140,00 A 4-80
M 20	x	80	S	1	2800,00 A 4-80
M 20	x	90	S	1	3250,00 A 4-80
M 20	x	100	S	1	3700,00 A 4-80

DIN 913 | 00913.910 | RAZ 370

A 1/A 2



Hexagon socket set screws with flat point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 128

DIN 913 → replaced by ISO 4026 (compatible)

M 2	x	2	S	50	85,00 A 1/A 2
M 2	x	3	S	50	59,00 A 1/A 2
M 2	x	4	S	50	60,00 A 1/A 2
M 2	x	5	S	50	60,00 A 1/A 2
M 2	x	6	S	50	60,00 A 1/A 2
M 2	x	8	S	50	61,00 A 1/A 2
M 2,5	x	3	S	50	46,50 A 1/A 2
M 2,5	x	4	S	50	45,00 A 1/A 2
M 2,5	x	5	S	50	45,00 A 1/A 2
M 2,5	x	6	S	50	45,00 A 1/A 2
M 3	x	2	S	50	45,60 A 1/A 2
M 3	x	3	S	50	22,80 A 1/A 2
M 3	x	4	S	50	24,80 A 1/A 2
M 3	x	5	S	50	24,50 A 1/A 2
M 3	x	6	S	50	26,50 A 1/A 2
M 3	x	8	S	50	27,50 A 1/A 2
M 3	x	10	S	50	28,50 A 1/A 2
M 3	x	12	S	50	31,50 A 1/A 2
M 3	x	16	S	50	23,40 A 1/A 2
M 3	x	20	S	50	30,50 A 1/A 2
M 3	x	25	S	50	52,00 A 1/A 2
M 4	x	4	S	50	17,40 A 1/A 2
M 4	x	5	S	50	17,40 A 1/A 2
M 4	x	6	S	50	17,70 A 1/A 2
M 4	x	8	S	50	18,20 A 1/A 2
M 4	x	10	S	50	19,30 A 1/A 2
M 4	x	12	S	50	20,50 A 1/A 2
M 4	x	16	S	50	22,30 A 1/A 2
M 4	x	20	S	25	24,00 A 1/A 2
M 4	x	25	S	25	41,00 A 1/A 2
M 4	x	30	S	25	45,00 A 1/A 2
M 5	x	4	S	50	19,00 A 1/A 2
M 5	x	5	S	50	19,30 A 1/A 2
M 5	x	6	S	50	19,70 A 1/A 2
M 5	x	8	S	50	20,20 A 1/A 2
M 5	x	10	S	50	20,70 A 1/A 2
M 5	x	12	S	50	21,70 A 1/A 2
M 5	x	16	S	50	24,00 A 1/A 2
M 5	x	20	S	25	28,50 A 1/A 2
M 5	x	25	S	25	31,50 A 1/A 2
M 5	x	30	S	25	55,00 A 1/A 2
M 5	x	35	S	25	78,50 A 1/A 2
M 5	x	40	S	25	80,00 A 1/A 2
M 5	x	45	S	25	85,00 A 1/A 2
M 6	x	5	S	25	22,40 A 1/A 2
M 6	x	6	S	25	22,40 A 1/A 2
M 6	x	8	S	25	23,40 A 1/A 2
M 6	x	10	S	25	23,90 A 1/A 2
M 6	x	12	S	25	25,00 A 1/A 2
M 6	x	16	S	25	28,50 A 1/A 2
M 6	x	20	S	25	32,50 A 1/A 2
M 6	x	25	S	25	37,00 A 1/A 2
M 6	x	30	S	25	43,00 A 1/A 2
M 6	x	35	S	25	53,00 A 1/A 2
M 6	x	40	S	25	58,00 A 1/A 2
M 6	x	45	S	25	134,00 A 1/A 2
M 6	x	50	S	25	156,00 A 1/A 2
M 6	x	60	S	25	178,00 A 1/A 2
M 8	x	6	S	25	48,00 A 1/A 2
M 8	x	8	S	25	32,50 A 1/A 2
M 8	x	10	S	25	32,50 A 1/A 2
M 8	x	12	S	25	35,50 A 1/A 2
M 8	x	16	S	25	39,00 A 1/A 2
M 8	x	20	S	25	46,00 A 1/A 2
M 8	x	25	S	25	53,00 A 1/A 2
M 8	x	30	S	25	61,00 A 1/A 2
M 8	x	35	S	25	74,00 A 1/A 2
M 8	x	40	S	25	86,00 A 1/A 2
M 8	x	45	S	25	94,00 A 1/A 2
M 8	x	50	S	10	118,00 A 1/A 2
M 8	x	60	S	10	212,00 A 1/A 2
M 8	x	70	S	10	270,00 A 1/A 2
M 8	x	80	S	10	328,00 A 1/A 2
M 8	x	100	S	10	388,00 A 1/A 2
M 10	x	10	S	25	48,00 A 1/A 2
M 10	x	12	S	25	49,00 A 1/A 2
M 10	x	16	S	25	52,00 A 1/A 2
M 10	x	18	S	25	60,00 A 1/A 2
M 10	x	20	S	25	63,00 A 1/A 2
M 10	x	25	S	25	75,00 A 1/A 2
M 10	x	30	S	10	87,00 A 1/A 2
M 10	x	35	S	10	106,00 A 1/A 2
M 10	x	40	S	10	112,00 A 1/A 2
M 10	x	45	S	10	119,00 A 1/A 2
M 10	x	50	S	10	130,00 A 1/A 2
M 10	x	60	S	10	181,00 A 1/A 2
M 10	x	70	S	10	232,00 A 1/A 2
M 10	x	80	S	10	283,00 A 1/A 2
M 10	x	100	S	10	345,00 A 1/A 2
M 12	x	10	S	10	100,00 A 1/A 2
M 12	x	12	S	10	101,00 A 1/A 2
M 12	x	16	S	10	101,00 A 1/A 2
M 12	x	20	S	10	115,00 A 1/A 2
M 12	x	25	S	10	126,00 A 1/A 2
M 12	x	30	S	10	137,00 A 1/A 2
M 12	x	35	S	10	148,00 A 1/A 2
M 12	x	40	S	10	164,00 A 1/A 2
M 12	x	45	S	10	186,00 A 1/A 2
M 12	x	50	S	10	202,00 A 1/A 2
M 12	x	60	S	10	295,00 A 1/A 2
M 12	x	70	S	10	547,00 A 1/A 2
M 12	x	80	S	10	566,00 A 1/A 2
M 12	x	90	S	10	635,00 A 1/A 2
M 16	x	16	S	10	221,00 A 1/A 2
M 16	x	20	S	10	321,00 A 1/A 2
M 16	x	25	S	10	596,00 A 1/A 2
M 16	x	30	S	10	348,00 A 1/A 2
M 16	x	40	S	10	564,00 A 1/A 2
M 16	x	50	S	10	964,00 A 1/A 2
M 16	x	60	S	10	1020,00 A 1/A 2
M 16	x	70	S	10	1200,00 A 1/A 2
M 16	x	80	S	10	1430,00 A 1/A 2
M 16	x	90	S	10	1545,00 A 1/A 2
M 16	x	100	S	10	1730,00 A 1/A 2
M 20	x	20	S	10	981,00 A 1/A 2
M 20	x	25	S	10	1020,00 A 1/A 2
M 20	x	30	S	10	1200,00 A 1/A 2
M 20	x	35	S	10	1510,00 A 1/A 2
M 20	x	40	S	10	1580,00 A 1/A 2
M 20	x	50	S	10	1660,00 A 1/A 2
M 20	x	60	S	10	2050,00 A 1/A 2
M 20	x	70	S	10	2150,00 A 1/A 2
M 20	x	80	S	10	2360,00 A 1/A 2
M 20	x	90	S	10	2600,00 A 1/A 2
M 20	x	100	S	10	2825,00 A 1/A 2

DIN 913 | 00913.940 | RAZ 370

A 4

Hexagon socket set screws with flat point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 128

DIN 913 → replaced by ISO 4026 (compatible)

M 3	x	4	S	50	40,00 A 4
M 3	x	5	S	50	42,00 A 4
M 3	x	6	S	50	46,50 A 4
M 3	x	8	S	50	53,00 A 4
M 4	x	5	S	50	52,00 A 4
M 4	x	6	S	50	54,00 A 4
M 4	x	8	S	50	57,00 A 4
M 4	x	10	S	50	60,00 A 4
M 4	x	12	S	50	64,00 A 4
M 4	x	16	S	25	74,00 A 4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	20	S	25	78,00 A 4
M 5	x	5	S	50	61,00 A 4
M 5	x	6	S	50	61,00 A 4
M 5	x	8	S	50	62,00 A 4
M 5	x	10	S	50	67,00 A 4
M 5	x	12	S	25	73,00 A 4
M 5	x	16	S	25	78,00 A 4
M 5	x	20	S	25	88,00 A 4
M 5	x	25	S	25	92,00 A 4
M 5	x	30	S	25	100,00 A 4
M 6	x	6	S	25	68,00 A 4
M 6	x	8	S	25	69,00 A 4
M 6	x	10	S	25	73,00 A 4
M 6	x	12	S	25	77,00 A 4
M 6	x	16	S	25	88,00 A 4
M 6	x	20	S	25	99,00 A 4
M 6	x	25	S	25	118,00 A 4
M 6	x	30	S	25	129,00 A 4
M 6	x	35	S	25	137,00 A 4
M 6	x	40	S	25	149,00 A 4
M 6	x	45	S	25	160,00 A 4
M 6	x	50	S	25	182,00 A 4
M 8	x	8	S	25	94,00 A 4
M 8	x	10	S	25	94,00 A 4
M 8	x	12	S	25	105,00 A 4
M 8	x	16	S	25	116,00 A 4
M 8	x	20	S	25	139,00 A 4
M 8	x	25	S	25	170,00 A 4
M 8	x	30	S	25	185,00 A 4
M 8	x	35	S	10	207,00 A 4
M 8	x	40	S	10	222,00 A 4
M 8	x	50	S	10	275,00 A 4
M 8	x	60	S	10	320,00 A 4
M 10	x	10	S	25	149,00 A 4
M 10	x	12	S	25	149,00 A 4
M 10	x	16	S	25	160,00 A 4
M 10	x	20	S	10	205,00 A 4
M 10	x	25	S	10	235,00 A 4
M 10	x	30	S	10	220,00 A 4
M 10	x	35	S	10	235,00 A 4
M 10	x	40	S	10	249,00 A 4
M 10	x	45	S	10	270,00 A 4
M 10	x	50	S	10	305,00 A 4
M 10	x	60	S	10	395,00 A 4
M 10	x	70	S	10	485,00 A 4
M 12	x	12	S	10	170,00 A 4
M 12	x	16	S	10	170,00 A 4
M 12	x	20	S	10	210,00 A 4
M 12	x	25	S	10	235,00 A 4
M 12	x	30	S	10	255,00 A 4
M 12	x	35	S	10	285,00 A 4
M 12	x	40	S	10	305,00 A 4
M 12	x	45	S	10	330,00 A 4
M 12	x	50	S	10	355,00 A 4
M 12	x	60	S	10	475,00 A 4
M 16	x	16	S	10	710,00 A 4
M 16	x	20	S	10	1150,00 A 4
M 16	x	25	S	10	355,00 A 4
M 16	x	30	S	10	415,00 A 4
M 16	x	35	S	10	460,00 A 4
M 16	x	40	S	10	480,00 A 4
M 16	x	50	S	10	1910,00 A 4
M 20	x	20	S	10	1850,00 A 4
M 20	x	25	S	10	2000,00 A 4
M 20	x	30	S	10	2150,00 A 4
M 20	x	35	S	10	2400,00 A 4
M 20	x	40	S	10	2750,00 A 4
M 20	x	50	S	10	3250,00 A 4
M 24	x	25	S	10	3075,00 A 4
M 24	x	30	S	10	3250,00 A 4
M 24	x	35	S	10	3600,00 A 4
M 24	x	40	S	10	3750,00 A 4
M 24	x	45	S	10	3900,00 A 4
M 24	x	50	S	10	4150,00 A 4

DIN 914 | 00914.910 | RAZ 370

914 A 1/A 2

Hexagon socket set screws with cone point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 131

DIN 914 → replaced by ISO 4027 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	2	S	50	75,00 A 1/A 2
M 2	x	3	S	50	57,00 A 1/A 2
M 2	x	4	S	50	57,00 A 1/A 2
M 2	x	5	S	50	58,00 A 1/A 2
M 2	x	6	S	50	58,00 A 1/A 2
M 2	x	8	S	50	58,00 A 1/A 2
M 2,5	x	4	S	50	43,50 A 1/A 2
M 2,5	x	5	S	50	44,00 A 1/A 2
M 2,5	x	6	S	50	44,00 A 1/A 2
M 3	x	3	S	50	29,00 A 1/A 2
M 3	x	4	S	50	24,00 A 1/A 2
M 3	x	5	S	50	23,70 A 1/A 2
M 3	x	6	S	50	25,50 A 1/A 2
M 3	x	8	S	50	26,50 A 1/A 2
M 3	x	10	S	50	28,00 A 1/A 2
M 3	x	12	S	50	31,00 A 1/A 2
M 3	x	16	S	50	34,00 A 1/A 2
M 4	x	4	S	50	24,20 A 1/A 2
M 4	x	5	S	50	22,40 A 1/A 2
M 4	x	6	S	50	22,80 A 1/A 2
M 4	x	8	S	50	23,10 A 1/A 2
M 4	x	10	S	50	24,80 A 1/A 2
M 4	x	12	S	50	26,50 A 1/A 2
M 4	x	16	S	50	29,00 A 1/A 2
M 4	x	20	S	25	34,50 A 1/A 2
M 4	x	25	S	25	53,00 A 1/A 2
M 4	x	30	S	25	58,00 A 1/A 2
M 5	x	5	S	50	30,00 A 1/A 2
M 5	x	6	S	50	28,00 A 1/A 2
M 5	x	8	S	50	28,50 A 1/A 2
M 5	x	10	S	50	29,50 A 1/A 2
M 5	x	12	S	50	31,00 A 1/A 2
M 5	x	16	S	50	34,00 A 1/A 2
M 5	x	20	S	25	40,50 A 1/A 2
M 5	x	25	S	25	44,50 A 1/A 2
M 5	x	30	S	25	78,00 A 1/A 2
M 6	x	6	S	25	31,00 A 1/A 2
M 6	x	8	S	25	30,50 A 1/A 2
M 6	x	10	S	25	31,00 A 1/A 2
M 6	x	12	S	25	32,50 A 1/A 2
M 6	x	16	S	25	37,00 A 1/A 2
M 6	x	20	S	25	42,00 A 1/A 2
M 6	x	25	S	25	47,00 A 1/A 2
M 6	x	30	S	25	55,00 A 1/A 2
M 6	x	35	S	25	67,00 A 1/A 2
M 6	x	40	S	25	75,00 A 1/A 2
M 6	x	45	S	25	172,00 A 1/A 2
M 6	x	50	S	25	201,00 A 1/A 2
M 8	x	8	S	25	45,00 A 1/A 2
M 8	x	10	S	25	41,50 A 1/A 2
M 8	x	12	S	25	45,50 A 1/A 2
M 8	x	16	S	25	50,00 A 1/A 2
M 8	x	20	S	25	59,00 A 1/A 2
M 8	x	25	S	25	68,00 A 1/A 2
M 8	x	30	S	25	78,00 A 1/A 2
M 8	x	35	S	25	95,00 A 1/A 2

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	40	S	25	110,00 A 1/A 2
M 8	x	45	S	25	120,00 A 1/A 2
M 8	x	50	S	10	151,00 A 1/A 2
M 8	x	60	S	10	275,00 A 1/A 2
M 10	x	10	S	25	67,00 A 1/A 2
M 10	x	12	S	25	63,00 A 1/A 2
M 10	x	16	S	25	67,00 A 1/A 2
M 10	x	20	S	25	81,00 A 1/A 2
M 10	x	25	S	10	107,00 A 1/A 2
M 10	x	30	S	10	112,00 A 1/A 2
M 10	x	35	S	10	136,00 A 1/A 2
M 10	x	40	S	10	143,00 A 1/A 2
M 10	x	50	S	10	167,00 A 1/A 2
M 10	x	60	S	10	232,00 A 1/A 2
M 12	x	16	S	10	109,00 A 1/A 2
M 12	x	20	S	10	124,00 A 1/A 2
M 12	x	25	S	10	136,00 A 1/A 2
M 12	x	30	S	10	147,00 A 1/A 2
M 12	x	35	S	10	159,00 A 1/A 2
M 12	x	40	S	10	177,00 A 1/A 2
M 12	x	50	S	10	218,00 A 1/A 2
M 12	x	60	S	10	285,00 A 1/A 2

DIN | 00914.940 | RAZ 370

914 A 4

Hexagon socket set screws with cone point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 131

DIN 914 → replaced by ISO 4027 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	8	S	50	114,00 A 4
M 3	x	4	S	50	35,00 A 4
M 3	x	5	S	50	44,00 A 4
M 3	x	6	S	50	44,00 A 4
M 3	x	8	S	50	50,00 A 4
M 3	x	10	S	50	56,00 A 4
M 4	x	4	S	50	49,50 A 4
M 4	x	5	S	50	49,50 A 4
M 4	x	6	S	50	51,00 A 4
M 4	x	8	S	50	54,00 A 4
M 4	x	10	S	50	57,00 A 4
M 4	x	12	S	50	61,00 A 4
M 4	x	16	S	25	70,00 A 4
M 4	x	20	S	25	74,00 A 4
M 5	x	5	S	50	58,00 A 4
M 5	x	6	S	50	58,00 A 4
M 5	x	8	S	50	59,00 A 4
M 5	x	10	S	50	63,00 A 4
M 5	x	12	S	25	69,00 A 4
M 5	x	16	S	25	74,00 A 4
M 5	x	20	S	25	84,00 A 4
M 5	x	25	S	25	87,00 A 4
M 5	x	30	S	25	95,00 A 4
M 6	x	6	S	25	64,00 A 4
M 6	x	8	S	25	65,00 A 4
M 6	x	10	S	25	69,00 A 4
M 6	x	12	S	25	73,00 A 4
M 6	x	16	S	25	83,00 A 4
M 6	x	20	S	25	94,00 A 4
M 6	x	25	S	25	112,00 A 4
M 6	x	30	S	25	123,00 A 4
M 6	x	35	S	25	130,00 A 4
M 6	x	45	S	25	152,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	50	S	25	173,00 A4
M 8	x	8	S	25	90,00 A4
M 8	x	10	S	25	90,00 A4
M 8	x	12	S	25	100,00 A4
M 8	x	16	S	25	110,00 A4
M 8	x	20	S	25	132,00 A4
M 8	x	25	S	25	161,00 A4
M 8	x	30	S	25	175,00 A4
M 8	x	35	S	10	197,00 A4
M 8	x	40	S	10	211,00 A4
M 8	x	45	S	10	233,00 A4
M 8	x	50	S	10	265,00 A4
M 8	x	60	S	10	305,00 A4
M 10	x	10	S	25	141,00 A4
M 10	x	12	S	25	141,00 A4
M 10	x	16	S	25	152,00 A4
M 10	x	20	S	10	195,00 A4
M 10	x	25	S	10	223,00 A4
M 10	x	30	S	10	250,00 A4
M 10	x	35	S	10	270,00 A4
M 10	x	40	S	10	285,00 A4
M 10	x	45	S	10	310,00 A4
M 10	x	50	S	10	350,00 A4
M 10	x	60	S	10	450,00 A4
M 12	x	12	S	10	194,00 A4
M 12	x	16	S	10	194,00 A4
M 12	x	20	S	10	239,00 A4
M 12	x	25	S	10	270,00 A4
M 12	x	30	S	10	290,00 A4
M 12	x	35	S	10	325,00 A4
M 12	x	40	S	10	350,00 A4
M 12	x	45	S	10	375,00 A4
M 12	x	50	S	10	405,00 A4
M 12	x	60	S	10	540,00 A4
M 16	x	25	S	10	405,00 A4
M 16	x	30	S	10	475,00 A4
M 16	x	40	S	10	550,00 A4
M 16	x	50	S	10	560,00 A4
M 16	x	60	S	10	580,00 A4

DIN 00915.910 RAZ 370

915 A 1/A 2

Hexagon socket set screws with full dog point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 132

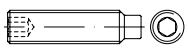
DIN 915 → replaced by ISO 4028 (compatible)

M 2	x	6	S	50	45,00 A1/A2
M 2	x	10	S	50	58,00 A1/A2
M 3	x	4	S	50	31,00 A1/A2
M 3	x	5	S	50	31,00 A1/A2
M 3	x	6	S	50	32,00 A1/A2
M 3	x	8	S	50	37,00 A1/A2
M 3	x	10	S	50	38,00 A1/A2
M 3	x	12	S	50	41,00 A1/A2
M 4	x	5	S	50	23,80 A1/A2
M 4	x	6	S	50	24,20 A1/A2
M 4	x	8	S	50	24,50 A1/A2
M 4	x	10	S	50	26,50 A1/A2
M 4	x	12	S	50	28,00 A1/A2
M 4	x	16	S	50	30,50 A1/A2
M 4	x	20	S	25	36,50 A1/A2
M 4	x	25	S	25	56,00 A1/A2

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	5	S	50	31,50 A1/A2
M 5	x	6	S	50	30,00 A1/A2
M 5	x	8	S	50	30,50 A1/A2
M 5	x	10	S	50	31,50 A1/A2
M 5	x	12	S	50	33,00 A1/A2
M 5	x	16	S	50	36,00 A1/A2
M 5	x	20	S	25	43,00 A1/A2
M 5	x	25	S	25	47,00 A1/A2
M 5	x	30	S	25	82,00 A1/A2
M 5	x	35	S	25	85,00 A1/A2
M 6	x	6	S	25	33,00 A1/A2
M 6	x	8	S	25	32,00 A1/A2
M 6	x	10	S	25	33,00 A1/A2
M 6	x	12	S	25	34,50 A1/A2
M 6	x	16	S	25	39,00 A1/A2
M 6	x	20	S	25	44,50 A1/A2
M 6	x	25	S	25	50,00 A1/A2
M 6	x	30	S	25	59,00 A1/A2
M 6	x	35	S	25	72,00 A1/A2
M 6	x	40	S	25	80,00 A1/A2
M 6	x	50	S	25	213,00 A1/A2
M 8	x	8	S	25	47,50 A1/A2
M 8	x	10	S	25	44,50 A1/A2
M 8	x	12	S	25	48,50 A1/A2
M 8	x	16	S	25	53,00 A1/A2
M 8	x	20	S	25	63,00 A1/A2
M 8	x	25	S	25	72,00 A1/A2
M 8	x	30	S	25	83,00 A1/A2
M 8	x	35	S	25	101,00 A1/A2
M 8	x	40	S	25	117,00 A1/A2
M 8	x	45	S	25	128,00 A1/A2
M 8	x	60	S	10	290,00 A1/A2
M 10	x	10	S	25	72,00 A1/A2
M 10	x	12	S	25	67,00 A1/A2
M 10	x	16	S	25	71,00 A1/A2
M 10	x	20	S	25	86,00 A1/A2
M 10	x	25	S	25	103,00 A1/A2
M 10	x	30	S	10	119,00 A1/A2
M 10	x	35	S	10	144,00 A1/A2
M 10	x	40	S	10	152,00 A1/A2
M 10	x	45	S	10	162,00 A1/A2
M 10	x	50	S	10	178,00 A1/A2
M 10	x	60	S	10	247,00 A1/A2
M 12	x	16	S	10	115,00 A1/A2
M 12	x	20	S	10	132,00 A1/A2
M 12	x	25	S	10	144,00 A1/A2
M 12	x	30	S	10	157,00 A1/A2
M 12	x	40	S	10	188,00 A1/A2
M 12	x	50	S	10	231,00 A1/A2
M 12	x	60	S	10	305,00 A1/A2

DIN 00915.940 RAZ 370

915 A 4



Hexagon socket set screws with full dog point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 132

DIN 915 → replaced by ISO 4028 (compatible)

M 4	x	6	S	50	48,50 A4
M 4	x	8	S	50	51,00 A4
M 4	x	10	S	50	55,00 A4
M 4	x	16	S	25	67,00 A4
M 4	x	20	S	25	71,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	6	S	50	55,00 A4
M 5	x	8	S	50	56,00 A4
M 5	x	10	S	50	61,00 A4
M 5	x	12	S	25	66,00 A4
M 5	x	16	S	25	71,00 A4
M 5	x	20	S	25	80,00 A4
M 5	x	25	S	25	84,00 A4
M 6	x	6	S	25	62,00 A4
M 6	x	8	S	25	63,00 A4
M 6	x	10	S	25	66,00 A4
M 6	x	12	S	25	70,00 A4
M 6	x	16	S	25	80,00 A4
M 6	x	20	S	25	90,00 A4
M 6	x	30	S	25	117,00 A4
M 6	x	35	S	25	125,00 A4
M 6	x	40	S	25	135,00 A4
M 6	x	45	S	25	145,00 A4
M 6	x	50	S	25	165,00 A4
M 8	x	8	S	25	86,00 A4
M 8	x	10	S	25	86,00 A4
M 8	x	12	S	25	95,00 A4
M 8	x	16	S	25	105,00 A4
M 8	x	20	S	25	126,00 A4
M 8	x	25	S	25	154,00 A4
M 8	x	30	S	25	168,00 A4
M 8	x	40	S	10	201,00 A4
M 8	x	50	S	10	250,00 A4
M 10	x	10	S	25	162,00 A4
M 10	x	12	S	25	162,00 A4
M 10	x	16	S	25	145,00 A4
M 10	x	20	S	10	186,00 A4
M 10	x	25	S	10	213,00 A4
M 10	x	30	S	10	239,00 A4
M 10	x	40	S	10	275,00 A4
M 12	x	12	S	10	226,00 A4
M 12	x	16	S	10	185,00 A4
M 12	x	20	S	10	229,00 A4
M 12	x	25	S	10	260,00 A4
M 12	x	30	S	10	280,00 A4
M 12	x	35	S	10	310,00 A4
M 12	x	40	S	10	335,00 A4
M 12	x	50	S	10	390,00 A4
M 12	x	60	S	10	600,00 A4
M 16	x	25	S	10	390,00 A4
M 16	x	30	S	10	455,00 A4
M 16	x	35	S	10	500,00 A4
M 16	x	40	S	10	530,00 A4

DIN 00916.910 RAZ 370

916 A 1/A 2

Hexagon socket set screws with cup point

Dimensions → TI-21 Standard conversion → TI-6

Steel → S. 133

DIN 916 → replaced by ISO 4029 (compatible)

M 2	x	2	S	50	74,00 A1/A2
M 2	x	3	S	50	60,00 A1/A2
M 2	x	4	S	50	61,00 A1/A2
M 2	x	5	S	50	61,00 A1/A2
M 2	x	6	S	50	61,00 A1/A2
M 3	x	4	S	50	25,50 A1/A2
M 3	x	5	S	50	24,90 A1/A2
M 3	x	6	S	50	27,00 A1/A2

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	8	S	50	28,00 A 1/A 2
M 3	x	10	S	50	29,00 A 1/A 2
M 3	x	12	S	50	32,00 A 1/A 2
M 3	x	16	S	50	63,00 A 1/A 2
M 3	x	20	S	50	69,00 A 1/A 2
M 4	x	3	S	50	17,70 A 1/A 2
M 4	x	4	S	50	17,70 A 1/A 2
M 4	x	5	S	50	17,70 A 1/A 2
M 4	x	6	S	50	18,00 A 1/A 2
M 4	x	8	S	50	18,50 A 1/A 2
M 4	x	10	S	50	19,60 A 1/A 2
M 4	x	12	S	50	20,80 A 1/A 2
M 4	x	16	S	50	22,60 A 1/A 2
M 4	x	20	S	25	27,00 A 1/A 2
M 4	x	25	S	25	42,00 A 1/A 2
M 4	x	30	S	25	46,00 A 1/A 2
M 5	x	5	S	50	19,60 A 1/A 2
M 5	x	6	S	50	20,00 A 1/A 2
M 5	x	8	S	50	20,50 A 1/A 2
M 5	x	10	S	50	21,10 A 1/A 2
M 5	x	12	S	50	22,10 A 1/A 2
M 5	x	16	S	50	24,30 A 1/A 2
M 5	x	20	S	25	29,00 A 1/A 2
M 5	x	25	S	25	32,00 A 1/A 2
M 5	x	30	S	25	56,00 A 1/A 2
M 6	x	6	S	25	22,80 A 1/A 2
M 6	x	8	S	25	23,80 A 1/A 2
M 6	x	10	S	25	24,20 A 1/A 2
M 6	x	12	S	25	25,50 A 1/A 2
M 6	x	16	S	25	29,00 A 1/A 2
M 6	x	20	S	25	33,00 A 1/A 2
M 6	x	25	S	25	37,50 A 1/A 2
M 6	x	30	S	25	43,50 A 1/A 2
M 6	x	35	S	25	53,00 A 1/A 2
M 6	x	40	S	25	59,00 A 1/A 2
M 6	x	45	S	25	136,00 A 1/A 2
M 6	x	50	S	25	159,00 A 1/A 2
M 6	x	60	S	25	182,00 A 1/A 2
M 8	x	8	S	25	33,00 A 1/A 2
M 8	x	10	S	25	33,00 A 1/A 2
M 8	x	12	S	25	36,00 A 1/A 2
M 8	x	16	S	25	39,50 A 1/A 2
M 8	x	20	S	25	46,50 A 1/A 2
M 8	x	25	S	25	54,00 A 1/A 2
M 8	x	30	S	25	62,00 A 1/A 2
M 8	x	35	S	25	75,00 A 1/A 2
M 8	x	40	S	25	87,00 A 1/A 2
M 8	x	45	S	25	95,00 A 1/A 2
M 8	x	50	S	10	119,00 A 1/A 2
M 8	x	60	S	10	215,00 A 1/A 2
M 8	x	70	S	10	220,00 A 1/A 2
M 10	x	10	S	25	49,00 A 1/A 2
M 10	x	12	S	25	49,50 A 1/A 2
M 10	x	16	S	25	53,00 A 1/A 2
M 10	x	20	S	25	64,00 A 1/A 2
M 10	x	25	S	25	76,00 A 1/A 2
M 10	x	30	S	10	89,00 A 1/A 2
M 10	x	35	S	10	107,00 A 1/A 2
M 10	x	40	S	10	113,00 A 1/A 2
M 10	x	45	S	10	121,00 A 1/A 2
M 10	x	50	S	10	132,00 A 1/A 2
M 10	x	60	S	10	184,00 A 1/A 2
M 12	x	12	S	10	168,00 A 1/A 2
M 12	x	16	S	10	102,00 A 1/A 2
M 12	x	20	S	10	117,00 A 1/A 2
M 12	x	25	S	10	128,00 A 1/A 2
M 12	x	30	S	10	139,00 A 1/A 2
M 12	x	35	S	10	150,00 A 1/A 2
M 12	x	40	S	10	167,00 A 1/A 2
M 12	x	50	S	10	205,00 A 1/A 2
M 12	x	60	S	10	270,00 A 1/A 2
M 16	x	16	S	10	437,50 A 1/A 2
M 16	x	20	S	10	340,00 A 1/A 2
M 16	x	25	S	10	410,00 A 1/A 2
M 16	x	30	S	10	495,00 A 1/A 2
M 16	x	40	S	10	630,00 A 1/A 2
M 16	x	50	S	10	785,00 A 1/A 2
M 16	x	60	S	10	950,00 A 1/A 2
M 20	x	25	S	10	1500,00 A 1/A 2
M 20	x	30	S	10	1600,00 A 1/A 2
M 20	x	35	S	10	1700,00 A 1/A 2
M 20	x	50	S	10	1800,00 A 1/A 2

DIN 00916.940 RAZ 370

916 A 4

Hexagon socket set screws with cup point

Dimensions → TI-21 Standard conversion → TI-6

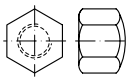
Steel → S. 133

DIN 916 → replaced by ISO 4029 (compatible)

M 2	x	2	S	50	136,00 A 4
M 2	x	4	S	50	146,00 A 4
M 2	x	5	S	50	155,00 A 4
M 2	x	6	S	50	159,00 A 4
M 3	x	5	S	50	59,00 A 4
M 3	x	6	S	50	68,00 A 4
M 3	x	8	S	50	80,00 A 4
M 3	x	10	S	50	96,00 A 4
M 3	x	12	S	50	105,00 A 4
M 3	x	16	S	50	113,00 A 4
M 3	x	20	S	50	127,00 A 4
M 4	x	5	S	50	49,00 A 4
M 4	x	6	S	50	51,00 A 4
M 4	x	8	S	50	53,00 A 4
M 4	x	10	S	50	57,00 A 4
M 4	x	12	S	50	61,00 A 4
M 4	x	16	S	25	69,00 A 4
M 4	x	20	S	25	74,00 A 4
M 5	x	5	S	50	57,00 A 4
M 5	x	6	S	50	57,00 A 4
M 5	x	8	S	50	59,00 A 4
M 5	x	10	S	50	63,00 A 4
M 5	x	12	S	25	69,00 A 4
M 5	x	16	S	25	74,00 A 4
M 5	x	20	S	25	83,00 A 4
M 5	x	25	S	25	87,00 A 4
M 5	x	30	S	25	94,00 A 4
M 6	x	6	S	25	64,00 A 4
M 6	x	8	S	25	65,00 A 4
M 6	x	10	S	25	69,00 A 4
M 6	x	12	S	25	73,00 A 4
M 6	x	16	S	25	83,00 A 4
M 6	x	20	S	25	93,00 A 4
M 6	x	25	S	25	111,00 A 4
M 6	x	30	S	25	122,00 A 4
M 6	x	35	S	25	129,00 A 4
M 6	x	40	S	25	140,00 A 4
M 6	x	50	S	25	171,00 A 4
M 8	x	8	S	25	89,00 A 4
M 8	x	10	S	25	89,00 A 4
M 8	x	12	S	25	99,00 A 4
M 8	x	16	S	25	109,00 A 4
M 8	x	20	S	25	130,00 A 4
M 8	x	25	S	25	160,00 A 4
M 8	x	30	S	25	174,00 A 4
M 8	x	35	S	10	195,00 A 4
M 8	x	40	S	10	209,00 A 4
M 8	x	50	S	10	260,00 A 4
M 8	x	60	S	10	305,00 A 4
M 10	x	8	S	25	208,00 A 4
M 10	x	10	S	25	140,00 A 4
M 10	x	12	S	25	140,00 A 4
M 10	x	16	S	25	151,00 A 4
M 10	x	20	S	10	193,00 A 4
M 10	x	25	S	10	221,00 A 4
M 10	x	30	S	10	248,00 A 4
M 10	x	35	S	10	265,00 A 4
M 10	x	40	S	10	285,00 A 4
M 10	x	50	S	10	345,00 A 4
M 10	x	60	S	10	445,00 A 4
M 12	x	16	S	10	192,00 A 4
M 12	x	20	S	10	237,00 A 4
M 12	x	25	S	10	265,00 A 4
M 12	x	30	S	10	290,00 A 4
M 12	x	35	S	10	325,00 A 4
M 12	x	40	S	10	345,00 A 4
M 12	x	50	S	10	400,00 A 4
M 12	x	60	S	10	540,00 A 4
M 16	x	16	S	10	480,00 A 4
M 16	x	20	S	10	525,00 A 4
M 16	x	25	S	10	450,00 A 4
M 16	x	30	S	10	470,00 A 4
M 16	x	35	S	10	520,00 A 4
M 16	x	40	S	10	540,00 A 4

DIN 00917.910 RAZ 380

917 A 1/A 2



Hexagon cap nuts, low type

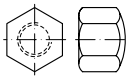
Dimensions → TI-61 Mech. properties → TI-224

Steel → S. 135
Brass → S. 577

M 4	S	50	28,50 A 1/A 2
M 5	S	50	31,00 A 1/A 2
M 6	S	500	34,50 A 1/A 2
M 6	K	50	38,50 A 1/A 2
M 8	S	250	58,00 A 1/A 2
M 8	K	50	62,00 A 1/A 2

DIN 00917.920 RAZ 380

917 A 2



Hexagon cap nuts, low type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-61 Mech. properties → TI-224

Steel → S. 135
Brass → S. 577

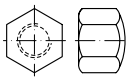
SW = wrench size

M 10 SW 17	S	250	93,00 A 2
M 10 SW 17	K	25	101,00 A 2
M 12 SW 19	S	200	164,00 A 2
M 12 SW 19	K	25	172,00 A 2
M 16	S	100	330,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 16	K	10	340,00 A 2
M 20	S	1	580,00 A 2
M 24	S	1	1220,00 A 2
M 30	S	1	2000,00 A 2

DIN 00917.940 RAZ 380

917 A 4



Hexagon cap nuts, low type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-61 Mech. properties → TI-224

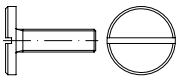
Steel → S. 135
Brass → S. 577

SW = wrench size

M 4	S	100	46,00 A 4
M 5	S	100	45,50 A 4
M 6	S	50	53,00 A 4
M 8	S	50	82,00 A 4
M 10 SW 17	S	25	159,00 A 4
M 12 SW 19	S	25	246,00 A 4
M 16	S	10	415,00 A 4
M 20	S	1	660,00 A 4

DIN 00921.910 RAZ 380

921 A 1



Slotted large cheese head screws

Dimensions → TI-38

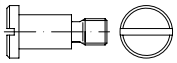
Steel → S. 135

M 3	x	6	S	100	93,00 A 1
M 3	x	8	S	100	96,00 A 1
M 3	x	10	S	100	99,00 A 1
M 4	x	5	S	100	136,00 A 1
M 4	x	6	S	100	139,00 A 1
M 4	x	8	S	100	141,00 A 1
M 4	x	10	S	100	156,00 A 1
M 4	x	16	S	100	201,00 A 1
M 5	x	6	S	100	172,00 A 1
M 5	x	8	S	100	178,00 A 1
M 5	x	10	S	100	195,00 A 1
M 5	x	12	S	100	212,00 A 1
M 5	x	16	S	100	246,00 A 1
M 6	x	8	S	100	198,00 A 1
M 6	x	10	S	100	217,00 A 1
M 6	x	12	S	100	229,00 A 1
M 6	x	16	S	100	275,00 A 1
M 6	x	20	S	100	290,00 A 1
M 8	x	16	S	100	315,00 A 1
M 8	x	20	S	50	335,00 A 1

Dimensions	PU	Pieces	€/100/Mat.

DIN 00923.910 RAZ 380

923 A 1



Slotted cheese head shoulder screws

Turned finish = with undercut
pressed = without undercut

Dimensions → TI-38

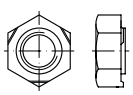
Steel → S. 136

Thread ∅ x shank length x thread length

M 3	x	3	x	4,5	S	100	173,00 A 1
M 3	x	4	x	4,5	S	100	177,00 A 1
M 3	x	5	x	4,5	S	100	182,00 A 1
M 3	x	6	x	4,5	S	100	186,00 A 1
M 3	x	10	x	4,5	S	100	190,00 A 1
M 4	x	2	x	6,0	S	100	187,00 A 1
M 4	x	4	x	6,0	S	100	189,00 A 1
M 4	x	5	x	6,0	S	100	193,00 A 1
M 4	x	6	x	6,0	S	100	197,00 A 1
M 4	x	10	x	6,0	S	100	205,00 A 1
M 4	x	12	x	6,0	S	100	209,00 A 1
M 4	x	16	x	6,0	S	100	215,00 A 1
M 5	x	2,5	x	7,0	S	100	205,00 A 1
M 5	x	3	x	7,0	S	100	210,00 A 1
M 5	x	4	x	7,0	S	100	214,00 A 1
M 5	x	5	x	7,0	S	100	218,00 A 1
M 5	x	6	x	7,0	S	100	226,00 A 1
M 5	x	8	x	7,0	S	100	234,00 A 1
M 5	x	10	x	7,0	S	100	242,00 A 1
M 5	x	12	x	7,0	S	100	250,00 A 1
M 5	x	16	x	7,0	S	100	258,00 A 1
M 6	x	3	x	9,0	S	100	255,00 A 1
M 6	x	4	x	9,0	S	100	258,00 A 1
M 6	x	5	x	9,0	S	100	260,00 A 1
M 6	x	6	x	9,0	S	100	260,00 A 1
M 6	x	8	x	9,0	S	100	270,00 A 1
M 6	x	10	x	9,0	S	100	290,00 A 1
M 6	x	12	x	9,0	S	100	310,00 A 1
M 6	x	16	x	9,0	S	100	330,00 A 1
M 6	x	20	x	9,0	S	100	350,00 A 1
M 6	x	25	x	9,0	S	100	149,43 A 1
M 8	x	6	x	11,0	S	100	270,00 A 1
M 8	x	8	x	11,0	S	100	285,00 A 1
M 8	x	10	x	11,0	S	100	305,00 A 1
M 8	x	12	x	11,0	S	100	335,00 A 1
M 8	x	16	x	11,0	S	100	370,00 A 1
M 8	x	20	x	11,0	S	100	405,00 A 1

DIN 00929.920 RAZ 390

929 A 2



Hexagon weld nuts

Dimensions → TI-69

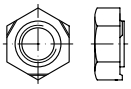
Steel → S. 137

M 3	S	100	17,90 A 2
M 4	S	100	19,50 A 2
M 5	S	100	29,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 6	S	100	53,00 A 2
M 8	S	100	64,00 A 2
M 10	S	100	106,00 A 2
M 12	S	50	227,00 A 2
M 16	S	50	340,00 A 2

DIN 00929.940 RAZ 390

929 A 4



Hexagon weld nuts

Dimensions → TI-69

Steel → S. 137

M 3	S	100	30,00 A 4
M 4	S	100	34,00 A 4
M 5	S	100	40,00 A 4
M 6	S	100	60,00 A 4
M 8	S	100	80,00 A 4
M 10	S	100	130,00 A 4
M 12	S	50	250,00 A 4
M 16	S	25	380,00 A 4

DIN 00931.920 RAZ 401

931 A 2 – 70

Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 137
Brass → S. 577

DIN 931 → replaced by ISO 4014

*Prop. class for dimensions different depending on production

M 5	x	30	S	100	8,20 A 2
M 5	x	35	S	100	9,90 A 2
M 5	x	40	S	100	10,40 A 2
M 5	x	45	S	100	12,20 A 2
M 5	x	50	S	100	14,20 A 2
M 5	x	55	S	100	27,60 A 2
M 5	x	60	S	100	27,60 A 2
M 5	x	65	S	200	60,30 A 2
M 5	x	70	S	100	61,80 A 2
M 5	x	80	S	100	208,00 A 2
M 5	x	90	S	100	278,00 A 2
M 5	x	100	S	100	350,00 A 2
M 6	x	30	S	200	7,90 A 2
M 6	x	35	S	100	8,85 A 2
M 6	x	40	S	100	10,20 A 2
M 6	x	45	S	100	11,90 A 2
M 6	x	50	S	100	14,20 A 2
M 6	x	55	S	100	20,90 A 2
M 6	x	60	S	100	23,70 A 2
M 6	x	65	S	100	29,60 A 2
M 6	x	70	S	100	32,20 A 2
M 6	x	75	S	100	46,40 A 2
M 6	x	80	S	100	38,80 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	85	S	100	63,90 A 2
M 6	x	90	S	100	51,10 A 2
M 6	x	100	S	100	59,80 A 2
M 6	x	110	S	50	75,10 A 2
M 6	x	120	S	50	88,40 A 2
M 6	x	130	S	50	143,00 A 2
M 6	x	140	S	50	151,00 A 2
M 6	x	150	S	50	180,00 A 2
M 6	x	160*	S	50	194,00 A 2
M 6	x	170*	S	50	236,00 A 2
M 6	x	180*	S	50	239,00 A 2
M 8	x	35	S	100	14,80 A 2
M 8	x	40	S	100	17,30 A 2
M 8	x	45	S	100	18,40 A 2
M 8	x	50	S	100	19,60 A 2
M 8	x	55	S	100	21,90 A 2
M 8	x	60	S	100	22,40 A 2
M 8	x	65	S	100	31,10 A 2
M 8	x	70	S	100	32,70 A 2
M 8	x	75	S	100	63,40 A 2
M 8	x	80	S	100	50,10 A 2
M 8	x	85	S	100	76,60 A 2
M 8	x	90	S	100	61,30 A 2
M 8	x	100	S	100	74,10 A 2
M 8	x	110	S	50	88,90 A 2
M 8	x	120	S	50	101,00 A 2
M 8	x	130	S	50	114,00 A 2
M 8	x	140	S	50	126,00 A 2
M 8	x	150	S	50	138,00 A 2
M 8	x	160	S	25	192,00 A 2
M 8	x	170	S	25	233,00 A 2
M 8	x	180	S	25	233,00 A 2
M 8	x	190	S	25	309,00 A 2
M 8	x	200	S	25	309,00 A 2
M 8	x	220*	S	25	466,00 A 2
M 10	x	40	S	100	31,10 A 2
M 10	x	45	S	100	32,20 A 2
M 10	x	50	S	100	34,20 A 2
M 10	x	55	S	100	36,80 A 2
M 10	x	60	S	100	39,30 A 2
M 10	x	65	S	100	44,90 A 2
M 10	x	70	S	100	46,00 A 2
M 10	x	75	S	50	82,30 A 2
M 10	x	80	S	50	56,20 A 2
M 10	x	85	S	50	107,00 A 2
M 10	x	90	S	50	86,40 A 2
M 10	x	100	S	50	109,00 A 2
M 10	x	110	S	50	134,00 A 2
M 10	x	120	S	50	165,00 A 2
M 10	x	130	S	50	202,00 A 2
M 10	x	140	S	50	234,00 A 2
M 10	x	150	S	50	264,00 A 2
M 10	x	160	S	50	309,00 A 2
M 10	x	170	S	1	378,00 A 2
M 10	x	180	S	1	382,00 A 2
M 10	x	190	S	1	502,00 A 2
M 10	x	200	S	1	502,00 A 2
M 10	x	210	S	1	649,00 A 2
M 10	x	220	S	1	726,00 A 2
M 12	x	40	S	50	42,10 A 2
M 12	x	45	S	50	44,90 A 2
M 12	x	50	S	50	48,50 A 2
M 12	x	55	S	50	52,10 A 2
M 12	x	60	S	50	55,70 A 2
M 12	x	65	S	50	62,30 A 2
M 12	x	70	S	50	66,90 A 2
M 12	x	75	S	50	117,00 A 2
M 12	x	80	S	50	80,70 A 2
M 12	x	85	S	50	136,00 A 2
M 12	x	90	S	50	109,00 A 2
M 12	x	100	S	50	121,00 A 2
M 12	x	105	S	50	250,00 A 2
M 12	x	110	S	50	147,00 A 2
M 12	x	120	S	25	174,00 A 2
M 12	x	130	S	1	214,00 A 2
M 12	x	140	S	1	253,00 A 2
M 12	x	150	S	1	290,00 A 2
M 12	x	160	S	1	347,00 A 2
M 12	x	170	S	1	436,00 A 2
M 12	x	180	S	1	436,00 A 2
M 12	x	190	S	1	593,00 A 2
M 12	x	200	S	1	593,00 A 2
M 12	x	210	S	1	764,00 A 2
M 12	x	220	S	1	834,00 A 2
M 12	x	230	S	1	881,00 A 2
M 12	x	240	S	1	929,00 A 2
M 12	x	250	S	1	976,00 A 2
M 12	x	260*	S	1	1078,00 A 2
M 12	x	280*	S	1	1170,00 A 2
M 12	x	300*	S	1	1252,00 A 2
M 12	x	320*	S	1	1500,00 A 2
M 14	x	50	S	50	103,00 A 2
M 14	x	55	S	50	103,00 A 2
M 14	x	60	S	50	105,00 A 2
M 14	x	65	S	50	114,00 A 2
M 14	x	70	S	50	120,00 A 2
M 14	x	80	S	50	133,00 A 2
M 14	x	90	S	50	146,00 A 2
M 14	x	100	S	50	159,00 A 2
M 14	x	110	S	50	232,00 A 2
M 14	x	120	S	1	251,00 A 2
M 14	x	130	S	1	307,00 A 2
M 14	x	140	S	1	334,00 A 2
M 14	x	150	S	1	367,00 A 2
M 14	x	160	S	1	472,00 A 2
M 14	x	170*	S	1	524,00 A 2
M 14	x	180*	S	1	558,00 A 2
M 14	x	200*	S	1	644,00 A 2
M 16	x	55	S	50	103,00 A 2
M 16	x	60	S	50	105,00 A 2
M 16	x	65	S	50	114,00 A 2
M 16	x	70	S	25	120,00 A 2
M 16	x	75	S	25	133,00 A 2
M 16	x	80	S	25	133,00 A 2
M 16	x	85	S	25	182,00 A 2
M 16	x	90	S	25	146,00 A 2
M 16	x	95	S	25	210,00 A 2
M 16	x	100	S	25	159,00 A 2
M 16	x	110	S	25	232,00 A 2
M 16	x	120	S	25	251,00 A 2
M 16	x	130	S	1	307,00 A 2
M 16	x	140	S	1	334,00 A 2
M 16	x	150	S	1	367,00 A 2
M 16	x	160	S	1	472,00 A 2
M 16	x	170	S	1	524,00 A 2
M 16	x	180	S	1	558,00 A 2
M 16	x	190	S	1	644,00 A 2
M 16	x	200	S	1	644,00 A 2
M 16	x	210	S	1	764,00 A 2
M 16	x	220	S	1	764,00 A 2
M 16	x	230	S	1	885,00 A 2
M 16	x	240	S	1	885,00 A 2
M 16	x	250	S	1	1055,00 A 2
M 16	x	260*	S	1	1055,00 A 2
M 16	x	270*	S	1	1185,00 A 2
M 16	x	280*	S	1	1185,00 A 2
M 16	x	290*	S	1	1316,00 A 2
M 16	x	300*	S	1	1316,00 A 2
M 18	x	65	S	1	267,00 A 2
M 18	x	70	S	25	282,00 A 2
M 18	x	75	S	1	311,00 A 2
M 18	x	80	S	25	311,00 A 2
M 18	x	90	S	25	341,00 A 2
M 18	x	100	S	25	370,00 A 2
M 18	x	110	S	25	524,00 A 2
M 18	x	120	S	25	574,00 A 2
M 18	x	130	S	25	674,00 A 2
M 18	x	140	S	25	739,00 A 2
M 18	x	150	S	25	803,00 A 2
M 18	x	160	S	25	841,00 A 2
M 20	x	65	S	1	178,00 A 2
M 20	x	70	S	1	188,00 A 2
M 20	x	75	S	1	208,00 A 2
M 20	x	80	S	1	208,00 A 2
M 20	x	85	S	1	284,00 A 2
M 20	x	90	S	1	227,00 A 2
M 20	x	100	S	1	246,00 A 2
M 20	x	110	S	1	349,00 A 2
M 20	x	120	S	1	382,00 A 2
M 20	x	130	S	1	449,00 A 2
M 20	x	140	S	1	493,00 A 2
M 20	x	150	S	1	535,00 A 2
M 20	x	160	S	1	687,00 A 2
M 20	x	170	S	1	747,00 A 2
M 20	x	180	S	1	790,00 A 2
M 20	x	190	S	1	893,00 A 2
M 20	x	200	S	1	893,00 A 2
M 20	x	210	S	1	1089,00 A 2
M 20	x	220	S	1	1089,00 A 2
M 20	x	230	S	1	1242,00 A 2
M 20	x	240	S	1	1242,00 A 2
M 20	x	250	S	1	1395,00 A 2
M 20	x	260*	S	1	1395,00 A 2
M 20	x	270*	S	1	1549,00 A 2
M 20	x	280*	S	1	1549,00 A 2
M 20	x	290*	S	1	1702,00 A 2
M 20	x	300*	S	1	1702,00 A 2
M 22	x	80	S	1	526,00 A 2
M 22	x	90	S	1	558,00 A 2
M 22	x	100	S	1	598,00 A 2
M 22	x	110	S	1	678,00 A 2
M 22	x	120	S	1	730,00 A 2
M 22	x	130	S	1	816,00 A 2
M 22	x	140	S	1	885,00 A 2
M 22	x	150	S	1	954,00 A 2
M 22	x	160	S	1	1125,00 A 2
M 22	x	180	S	1	1269,00 A 2
M 22	x	200	S	1	1417,00 A 2
M 24	x	75	S	1	414,00 A 2
M 24	x	80	S	1	334,00 A 2
M 24	x	85	S	1	443,00 A 2
M 24	x	90	S	1	354,00 A 2
M 24	x	95	S	1	476,00 A 2
M 24	x	100	S	1	380,00 A 2
M 24	x	110	S	1	423,00 A 2
M 24	x	120	S	1	459,00 A 2
M 24	x	130	S	1	579,00 A 2
M 24	x	140	S	1	626,00 A 2
M 24	x	150	S	1	662,00 A 2
M 24	x	160	S	1	984,00 A 2
M 24	x	170	S	1	1142,00 A 2
M 24	x	180	S	1	1142,00 A 2
M 24	x	190	S	1	1271,00 A 2
M 24	x	200	S	1	1271,00 A 2
M 24	x	210	S	1	1443,00 A 2
M 24	x	220	S	1	1443,00 A 2
M 24	x	230	S	1	1597,00 A 2
M 24	x	240	S	1	1597,00 A 2
M 24	x	250	S	1	1840,00 A 2
M 24	x	260*	S	1	1840,00 A 2
M 24	x	280*	S	1	2009,00 A 2
M 24	x	290*	S	1	2178,00 A 2
M 24	x	300*	S	1	2178,00 A 2
M 27	x	90*	S	1	944,00 A 2
M 27	x	100*	S	1	1017,00 A 2
M 27	x	110*	S	1	1096,00 A 2
M 27	x	120*	S	1	1175,00 A 2
M 27	x	130*	S	1	1214,00 A 2
M 27	x	140*	S	1	1287,00 A 2
M 27	x	150*	S	1	1366,00 A 2
M 27	x	160*	S	1	1439,00 A 2
M 27	x	170*	S	1	1591,00 A 2
M 27	x	180*	S	1	1591,00 A 2
M 27	x	200*	S	1	1737,00 A 2
M 27	x	210*	S	1	2147,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 27	x	220*	S	1	2147,00 A 2
M 27	x	230*	S	1	2403,00 A 2
M 27	x	240*	S	1	2403,00 A 2
M 27	x	250*	S	1	2658,00 A 2
M 30	x	90*	S	1	1231,00 A 2
M 30	x	100*	S	1	1338,00 A 2
M 30	x	110*	S	1	1428,00 A 2
M 30	x	120*	S	1	1524,00 A 2
M 30	x	130*	S	1	1597,00 A 2
M 30	x	140*	S	1	1810,00 A 2
M 30	x	150*	S	1	1912,00 A 2
M 30	x	160*	S	1	2114,00 A 2
M 30	x	170*	S	1	2328,00 A 2
M 30	x	180*	S	1	2328,00 A 2
M 30	x	190*	S	1	2547,00 A 2
M 30	x	200*	S	1	2547,00 A 2
M 30	x	210*	S	1	2760,00 A 2
M 30	x	220*	S	1	2760,00 A 2
M 30	x	240*	S	1	2965,00 A 2
M 30	x	250*	S	1	3170,00 A 2
M 33	x	100*	S	1	1760,00 A 2
M 33	x	110*	S	1	1884,00 A 2
M 33	x	120*	S	1	2007,00 A 2
M 33	x	130*	S	1	2120,00 A 2
M 33	x	140*	S	1	2255,00 A 2
M 33	x	150*	S	1	2373,00 A 2
M 33	x	160*	S	1	2491,00 A 2
M 33	x	170*	S	1	2727,00 A 2
M 33	x	180*	S	1	2727,00 A 2
M 33	x	190*	S	1	2969,00 A 2
M 33	x	200*	S	1	2969,00 A 2
M 33	x	210*	S	1	3221,00 A 2
M 33	x	220*	S	1	3221,00 A 2
M 33	x	230*	S	1	3476,00 A 2
M 33	x	240*	S	1	3476,00 A 2
M 33	x	250*	S	1	3732,00 A 2
M 36	x	100*	S	1	2154,00 A 2
M 36	x	110*	S	1	2305,00 A 2
M 36	x	120*	S	1	2457,00 A 2
M 36	x	130*	S	1	2575,00 A 2
M 36	x	140*	S	1	2727,00 A 2
M 36	x	150*	S	1	2879,00 A 2
M 36	x	160*	S	1	3025,00 A 2
M 36	x	170*	S	1	3498,00 A 2
M 36	x	180*	S	1	3498,00 A 2
M 36	x	190*	S	1	3801,00 A 2
M 36	x	200*	S	1	3801,00 A 2
M 36	x	210*	S	1	4090,00 A 2
M 36	x	220*	S	1	4090,00 A 2
M 36	x	230*	S	1	4397,00 A 2
M 36	x	240*	S	1	4397,00 A 2
M 36	x	250*	S	1	4703,00 A 2

E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions	PU	Pieces	€/100/Mat.
DIN	00931.940		RAZ 401

931 **A 4 – 70**

Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions ➔ TI-15 Tightening torque ➔ TI-235
Mech. properties ➔ TI-224 Standard conversion ➔ TI-6

Steel ➔ S. 137
Brass ➔ S. 577

DIN 931 ➔ replaced by ISO 4014

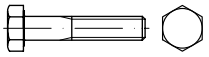
*Prop. class for dimensions different depending on production

M 5	x	30	S	100	11,60 A 4
M 5	x	35	S	100	12,50 A 4
M 5	x	40	S	100	13,70 A 4
M 5	x	45	S	100	15,80 A 4
M 5	x	50	S	100	19,80 A 4
M 5	x	55	S	100	32,70 A 4
M 5	x	60	S	100	34,20 A 4
M 5	x	70	S	100	72,00 A 4
M 5	x	80	S	100	222,00 A 4
M 5	x	90	S	100	285,00 A 4
M 5	x	100	S	100	363,00 A 4
M 6	x	30	S	200	11,50 A 4
M 6	x	35	S	100	12,30 A 4
M 6	x	40	S	100	13,20 A 4
M 6	x	45	S	100	15,20 A 4
M 6	x	50	S	100	17,30 A 4
M 6	x	55	S	100	24,00 A 4
M 6	x	60	S	100	27,60 A 4
M 6	x	65	S	100	33,20 A 4
M 6	x	70	S	100	35,20 A 4
M 6	x	80	S	100	43,40 A 4
M 6	x	90	S	100	57,20 A 4
M 6	x	100	S	100	63,40 A 4
M 6	x	110	S	50	83,80 A 4
M 6	x	120	S	50	102,00 A 4
M 6	x	130	S	50	173,00 A 4
M 6	x	140	S	1	192,00 A 4
M 6	x	150	S	1	212,00 A 4
M 6	x	160*	S	1	231,00 A 4
M 6	x	170*	S	1	295,00 A 4
M 8	x	35	S	100	25,00 A 4
M 8	x	40	S	100	25,00 A 4
M 8	x	45	S	100	26,50 A 4
M 8	x	50	S	100	28,60 A 4
M 8	x	55	S	100	33,70 A 4
M 8	x	60	S	100	34,70 A 4
M 8	x	65	S	100	45,50 A 4
M 8	x	70	S	100	48,00 A 4
M 8	x	75	S	100	100,00 A 4
M 8	x	80	S	100	72,00 A 4
M 8	x	85	S	100	105,00 A 4
M 8	x	90	S	100	84,80 A 4
M 8	x	100	S	100	99,70 A 4
M 8	x	110	S	50	122,00 A 4
M 8	x	120	S	50	139,00 A 4
M 8	x	130	S	50	174,00 A 4
M 8	x	140	S	1	203,00 A 4
M 8	x	150	S	1	232,00 A 4
M 8	x	160	S	1	289,00 A 4
M 8	x	170	S	1	354,00 A 4
M 8	x	180	S	1	354,00 A 4
M 8	x	190	S	1	470,00 A 4
M 8	x	200	S	1	470,00 A 4
M 8	x	220*	S	1	695,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	40	S	100	46,50 A 4
M 10	x	45	S	100	47,50 A 4
M 10	x	50	S	100	49,50 A 4
M 10	x	55	S	100	55,20 A 4
M 10	x	60	S	100	57,70 A 4
M 10	x	65	S	100	67,40 A 4
M 10	x	70	S	100	69,00 A 4
M 10	x	75	S	50	118,00 A 4
M 10	x	80	S	50	83,30 A 4
M 10	x	90	S	50	115,00 A 4
M 10	x	100	S	50	145,00 A 4
M 10	x	110	S	50	183,00 A 4
M 10	x	120	S	50	225,00 A 4
M 10	x	130	S	1	289,00 A 4
M 10	x	140	S	1	332,00 A 4
M 10	x	150	S	1	377,00 A 4
M 10	x	160	S	1	469,00 A 4
M 10	x	170	S	1	573,00 A 4
M 10	x	180	S	1	573,00 A 4
M 10	x	190	S	1	760,00 A 4
M 10	x	200	S	1	760,00 A 4
M 10	x	210	S	1	938,00 A 4
M 10	x	220	S	1	1058,00 A 4
M 12	x	45	S	50	69,50 A 4
M 12	x	50	S	50	70,00 A 4
M 12	x	55	S	50	77,20 A 4
M 12	x	60	S	50	78,70 A 4
M 12	x	65	S	50	93,50 A 4
M 12	x	70	S	50	95,10 A 4
M 12	x	75	S	50	158,00 A 4
M 12	x	80	S	50	111,00 A 4
M 12	x	85	S	50	168,00 A 4
M 12	x	90	S	50	135,00 A 4
M 12	x	95	S	50	200,00 A 4
M 12	x	100	S	50	161,00 A 4
M 12	x	110	S	50	197,00 A 4
M 12	x	120	S	25	242,00 A 4
M 12	x	130	S	1	305,00 A 4
M 12	x	140	S	1	358,00 A 4
M 12	x	150	S	1	413,00 A 4
M 12	x	160	S	1	537,00 A 4
M 12	x	170	S	1	674,00 A 4
M 12	x	180	S	1	674,00 A 4
M 12	x	190	S	1	833,00 A 4
M 12	x	200	S	1	833,00 A 4
M 12	x	210	S	1	1016,00 A 4
M 12	x	220	S	1	1077,00 A 4
M 12	x	240	S	1	1159,00 A 4
M 12	x	250	S	1	1199,00 A 4
M 12	x	260*	S	1	1304,00 A 4
M 12	x	280*	S	1	1381,00 A 4
M 12	x	300*	S	1	1432,00 A 4
M 12	x	320*	S	1	1509,00 A 4
M 12	x	340*	S	1	1585,00 A 4
M 12	x	360*	S	1	1662,00 A 4
M 12	x	380*	S	1	1739,00 A 4
M 12	x	400*	S	1	1867,00 A 4
M 14	x	50	S	50	172,00 A 4
M 14	x	55	S	50	169,00 A 4
M 14	x	60	S	50	169,00 A 4
M 14	x	65	S	50	185,00 A 4
M 14	x	70	S	50	187,00 A 4
M 14	x	80	S	50	204,00 A 4
M 14	x	90	S	50	228,00 A 4
M 14	x	100	S	50	247,00 A 4
M 14	x	110	S	1	310,00 A 4
M 14	x	120	S	1	351,00 A 4
M 14	x	130	S	1	418,00 A 4
M 14	x	140	S	1	464,00 A 4
M 14	x	150	S	1	509,00 A 4
M 14	x	160	S	1	668,00 A 4
M 14	x	170*	S	1	772,00 A 4
M 14	x	180*	S	1	772,00 A 4
M 14	x	190*	S	1	869,00 A 4
M 14	x	200*	S	1	869,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	55	S	50	169,00 A4
M 16	x	60	S	50	169,00 A4
M 16	x	65	S	50	185,00 A4
M 16	x	70	S	25	187,00 A4
M 16	x	75	S	25	204,00 A4
M 16	x	80	S	25	204,00 A4
M 16	x	85	S	25	285,00 A4
M 16	x	90	S	25	228,00 A4
M 16	x	100	S	25	247,00 A4
M 16	x	110	S	25	310,00 A4
M 16	x	120	S	25	351,00 A4
M 16	x	130	S	1	418,00 A4
M 16	x	140	S	1	464,00 A4
M 16	x	150	S	1	509,00 A4
M 16	x	160	S	1	668,00 A4
M 16	x	170	S	1	772,00 A4
M 16	x	180	S	1	772,00 A4
M 16	x	190	S	1	869,00 A4
M 16	x	200	S	1	869,00 A4
M 16	x	210	S	1	1231,00 A4
M 16	x	220	S	1	1231,00 A4
M 16	x	230	S	1	1399,00 A4
M 16	x	240	S	1	1399,00 A4
M 16	x	250	S	1	1568,00 A4
M 16	x	260*	S	1	1568,00 A4
M 16	x	270*	S	1	1737,00 A4
M 16	x	280*	S	1	1737,00 A4
M 16	x	290*	S	1	1906,00 A4
M 16	x	300*	S	1	1906,00 A4
M 16	x	320*	S	1	3052,00 A4
M 16	x	340*	S	1	3313,00 A4
M 16	x	360*	S	1	3400,00 A4
M 16	x	380*	S	1	3436,00 A4
M 16	x	400*	S	1	3503,00 A4
M 18	x	70	S	1	372,00 A4
M 18	x	80	S	1	412,00 A4
M 18	x	90	S	1	455,00 A4
M 18	x	100	S	1	493,00 A4
M 18	x	110	S	1	741,00 A4
M 18	x	120	S	1	802,00 A4
M 18	x	130	S	1	937,00 A4
M 18	x	140	S	1	949,00 A4
M 18	x	150	S	1	951,00 A4
M 18	x	160	S	1	965,00 A4
M 18	x	170	S	1	1407,00 A4
M 18	x	180	S	1	1407,00 A4
M 18	x	190	S	1	1611,00 A4
M 18	x	200	S	1	1611,00 A4
M 20	x	65	S	1	288,00 A4
M 20	x	70	S	1	298,00 A4
M 20	x	75	S	1	313,00 A4
M 20	x	80	S	1	313,00 A4
M 20	x	85	S	1	452,00 A4
M 20	x	90	S	1	361,00 A4
M 20	x	100	S	1	399,00 A4
M 20	x	110	S	1	494,00 A4
M 20	x	120	S	1	535,00 A4
M 20	x	130	S	1	625,00 A4
M 20	x	140	S	1	685,00 A4
M 20	x	150	S	1	745,00 A4
M 20	x	160	S	1	965,00 A4
M 20	x	170	S	1	1110,00 A4
M 20	x	180	S	1	1110,00 A4
M 20	x	190	S	1	1255,00 A4
M 20	x	200	S	1	1255,00 A4
M 20	x	210	S	1	1432,00 A4
M 20	x	220	S	1	1432,00 A4
M 20	x	230	S	1	1609,00 A4
M 20	x	240	S	1	1609,00 A4
M 20	x	250	S	1	2141,00 A4
M 20	x	260*	S	1	2141,00 A4
M 20	x	270*	S	1	2356,00 A4
M 20	x	280*	S	1	2356,00 A4
M 20	x	290*	S	1	2570,00 A4
M 20	x	300*	S	1	2570,00 A4
M 22	x	80	S	1	796,00 A4
M 22	x	90	S	1	852,00 A4
M 22	x	100	S	1	933,00 A4
M 22	x	110	S	1	1078,00 A4
M 22	x	120	S	1	1167,00 A4
M 22	x	130	S	1	1247,00 A4
M 22	x	140	S	1	1416,00 A4
M 22	x	150	S	1	1545,00 A4
M 22	x	160	S	1	1649,00 A4
M 22	x	200	S	1	2052,00 A4
M 24	x	75	S	1	720,00 A4
M 24	x	80	S	1	610,00 A4
M 24	x	85	S	1	823,00 A4
M 24	x	90	S	1	662,00 A4
M 24	x	100	S	1	734,00 A4
M 24	x	110	S	1	827,00 A4
M 24	x	120	S	1	874,00 A4
M 24	x	130	S	1	953,00 A4
M 24	x	140	S	1	1049,00 A4
M 24	x	150	S	1	1116,00 A4
M 24	x	160	S	1	1488,00 A4
M 24	x	170	S	1	1649,00 A4
M 24	x	180	S	1	1649,00 A4
M 24	x	190	S	1	1850,00 A4
M 24	x	200	S	1	1850,00 A4
M 24	x	210	S	1	2431,00 A4
M 24	x	220	S	1	2431,00 A4
M 24	x	230	S	1	2668,00 A4
M 24	x	240	S	1	2668,00 A4
M 24	x	250	S	1	2906,00 A4
M 24	x	260*	S	1	2906,00 A4
M 24	x	270*	S	1	3144,00 A4
M 24	x	280*	S	1	3144,00 A4
M 24	x	290*	S	1	3382,00 A4
M 24	x	300*	S	1	3382,00 A4
M 27	x	90*	S	1	1354,00 A4
M 27	x	100*	S	1	1467,00 A4
M 27	x	110*	S	1	1579,00 A4
M 27	x	120*	S	1	1687,00 A4
M 27	x	130*	S	1	1748,00 A4
M 27	x	140*	S	1	1855,00 A4
M 27	x	150*	S	1	1963,00 A4
M 27	x	160*	S	1	2075,00 A4
M 27	x	170*	S	1	2290,00 A4
M 27	x	180*	S	1	2290,00 A4
M 27	x	190*	S	1	2495,00 A4
M 27	x	200*	S	1	2495,00 A4
M 27	x	210*	S	1	3221,00 A4
M 27	x	220*	S	1	3221,00 A4
M 27	x	230*	S	1	3527,00 A4
M 27	x	240*	S	1	3527,00 A4
M 27	x	250*	S	1	3834,00 A4
M 27	x	260*	S	1	4121,00 A4
M 27	x	280*	S	1	4693,00 A4
M 30	x	90*	S	1	1692,00 A4
M 30	x	100*	S	1	1830,00 A4
M 30	x	110*	S	1	1968,00 A4
M 30	x	120*	S	1	2096,00 A4
M 30	x	130*	S	1	2188,00 A4
M 30	x	140*	S	1	2326,00 A4
M 30	x	150*	S	1	2454,00 A4
M 30	x	160*	S	1	2602,00 A4
M 30	x	170*	S	1	2863,00 A4
M 30	x	180*	S	1	2863,00 A4
M 30	x	190*	S	1	3118,00 A4
M 30	x	200*	S	1	3118,00 A4
M 30	x	210*	S	1	3783,00 A4
M 30	x	220*	S	1	3783,00 A4
M 30	x	240*	S	1	4090,00 A4
M 30	x	250*	S	1	4499,00 A4
M 30	x	260*	S	1	4755,00 A4
M 30	x	280*	S	1	5241,00 A4
M 30	x	300*	S	1	5700,00 A4
M 33	x	90*	S	1	2351,00 A4
M 33	x	100*	S	1	2530,00 A4
M 33	x	110*	S	1	2709,00 A4
M 33	x	120*	S	1	2893,00 A4
M 33	x	130*	S	1	3067,00 A4
M 33	x	140*	S	1	3236,00 A4
M 33	x	150*	S	1	3425,00 A4
M 33	x	160*	S	1	3589,00 A4
M 33	x	170*	S	1	3936,00 A4
M 33	x	180*	S	1	3936,00 A4
M 33	x	190*	S	1	4279,00 A4
M 33	x	200*	S	1	4279,00 A4
M 33	x	210*	S	1	4857,00 A4
M 33	x	220*	S	1	4857,00 A4
M 33	x	230*	S	1	5419,00 A4
M 33	x	240*	S	1	5419,00 A4
M 33	x	250*	S	1	5777,00 A4
M 36	x	100*	S	1	3103,00 A4
M 36	x	110*	S	1	3323,00 A4
M 36	x	120*	S	1	3533,00 A4
M 36	x	130*	S	1	3717,00 A4
M 36	x	140*	S	1	3936,00 A4
M 36	x	150*	S	1	4141,00 A4
M 36	x	160*	S	1	4361,00 A4
M 36	x	170*	S	1	5010,00 A4
M 36	x	180*	S	1	5010,00 A4
M 36	x	190*	S	1	5470,00 A4
M 36	x	200*	S	1	5470,00 A4
M 36	x	220*	S	1	6084,00 A4
M 36	x	230*	S	1	6749,00 A4
M 36	x	240*	S	1	6749,00 A4
M 36	x	250*	S	1	7413,00 A4

DIN	00931.948	RAZ 403
931	A 4 - 80	



Hexagon head bolts with shank

Short dimensions in part thread up to head, high strength (strongly cold worked)

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 137
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 6	x	30	S	100	29,00 A4-80
M 6	x	35	S	100	31,00 A4-80
M 6	x	40	S	100	33,50 A4-80
M 6	x	45	S	100	38,50 A4-80
M 6	x	50	S	100	43,50 A4-80
M 6	x	55	S	100	61,00 A4-80
M 6	x	60	S	100	70,00 A4-80
M 6	x	65	S	100	84,00 A4-80
M 6	x	70	S	100	87,00 A4-80
M 8	x	35	S	100	63,00 A4-80
M 8	x	40	S	100	63,00 A4-80
M 8	x	45	S	100	67,00 A4-80
M 8	x	50	S	100	72,00 A4-80
M 8	x	55	S	100	85,00 A4-80
M 8	x	60	S	100	87,00 A4-80
M 8	x	65	S	100	114,00 A4-80
M 8	x	70	S	50	121,00 A4-80
M 8	x	75	S	50	260,00 A4-80
M 8	x	80	S	50	179,00 A4-80
M 8	x	90	S	50	211,00 A4-80
M 8	x	100	S	50	248,00 A4-80
M 10	x	40	S	100	117,00 A4-80
M 10	x	45	S	100	119,00 A4-80

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	50	S	100	124,00 A4-80
M 10	x	55	S	50	139,00 A4-80
M 10	x	60	S	50	145,00 A4-80
M 10	x	65	S	50	169,00 A4-80
M 10	x	70	S	50	173,00 A4-80
M 10	x	75	S	50	310,00 A4-80
M 10	x	80	S	50	209,00 A4-80
M 10	x	90	S	50	290,00 A4-80
M 10	x	100	S	50	365,00 A4-80
M 10	x	110	S	25	465,00 A4-80
M 10	x	120	S	25	570,00 A4-80
M 12	x	45	S	50	174,00 A4-80
M 12	x	50	S	50	176,00 A4-80
M 12	x	55	S	50	194,00 A4-80
M 12	x	60	S	50	197,00 A4-80
M 12	x	65	S	50	234,00 A4-80
M 12	x	70	S	25	238,00 A4-80
M 12	x	75	S	25	430,00 A4-80
M 12	x	80	S	25	280,00 A4-80
M 12	x	90	S	25	340,00 A4-80
M 12	x	100	S	25	405,00 A4-80
M 12	x	110	S	25	495,00 A4-80
M 12	x	120	S	25	610,00 A4-80
M 14	x	50	S	50	430,00 A4-80
M 14	x	55	S	50	430,00 A4-80
M 14	x	60	S	50	430,00 A4-80
M 14	x	80	S	50	520,00 A4-80
M 14	x	90	S	50	580,00 A4-80
M 14	x	100	S	50	620,00 A4-80
M 14	x	110	S	1	780,00 A4-80
M 16	x	55	S	25	430,00 A4-80
M 16	x	60	S	25	430,00 A4-80
M 16	x	65	S	25	470,00 A4-80
M 16	x	70	S	25	475,00 A4-80
M 16	x	75	S	25	610,00 A4-80
M 16	x	80	S	25	520,00 A4-80
M 16	x	85	S	25	710,00 A4-80
M 16	x	90	S	25	580,00 A4-80
M 16	x	100	S	25	620,00 A4-80
M 16	x	110	S	25	780,00 A4-80
M 16	x	120	S	25	890,00 A4-80
M 16	x	130	S	1	1050,00 A4-80
M 16	x	140	S	1	1170,00 A4-80
M 16	x	150	S	1	1280,00 A4-80
M 16	x	160	S	1	1680,00 A4-80
M 16	x	180	S	1	1940,00 A4-80
M 16	x	200	S	1	2180,00 A4-80
M 20	x	65	S	1	730,00 A4-80
M 20	x	70	S	1	760,00 A4-80
M 20	x	75	S	1	900,00 A4-80
M 20	x	80	S	1	800,00 A4-80
M 20	x	90	S	1	910,00 A4-80
M 20	x	100	S	1	1010,00 A4-80
M 20	x	110	S	1	1240,00 A4-80
M 20	x	120	S	1	1350,00 A4-80
M 20	x	130	S	1	1560,00 A4-80
M 20	x	140	S	1	1720,00 A4-80
M 20	x	150	S	1	1860,00 A4-80
M 20	x	160	S	1	2420,00 A4-80
M 20	x	180	S	1	2800,00 A4-80
M 20	x	200	S	1	3150,00 A4-80

DIN 00931.950 RAZ 403

931 **1.4571 (A 5)**

Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

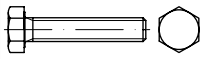
Steel → S. 137
Brass → S. 577

DIN 931 → replaced by ISO 4014

M 16	x	55	S	1	620,00 A5
M 16	x	60	S	1	640,00 A5
M 16	x	65	S	1	660,00 A5
M 16	x	70	S	1	680,00 A5
M 16	x	80	S	1	710,00 A5
M 16	x	90	S	1	750,00 A5
M 16	x	100	S	1	780,00 A5
M 20	x	65	S	1	920,00 A5
M 20	x	70	S	1	940,00 A5
M 20	x	80	S	1	1000,00 A5
M 20	x	85	S	1	1030,00 A5
M 20	x	90	S	1	1130,00 A5
M 20	x	100	S	1	1160,00 A5
M 20	x	110	S	1	1180,00 A5
M 20	x	120	S	1	1230,00 A5
M 20	x	140	S	1	1340,00 A5

DIN 00933.920 RAZ 401

933 **A 2 - 70**



Hexagon head screws with thread up to head

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 148
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

*Prop. class for dimensions different depending on production

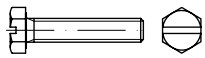
M 3	x	6	S	100	8,15 A2
M 3	x	8	S	100	5,85 A2
M 3	x	10	S	100	5,60 A2
M 3	x	12	S	100	5,20 A2
M 3	x	14	S	100	6,90 A2
M 3	x	16	S	100	5,20 A2
M 3	x	20	S	100	5,85 A2
M 3	x	25	S	100	6,30 A2
M 3	x	30	S	100	7,60 A2
M 3	x	35	S	100	10,90 A2
M 3	x	40	S	100	16,30 A2
M 4	x	6	S	200	8,15 A2
M 4	x	8	S	200	5,85 A2
M 4	x	10	S	200	5,60 A2
M 4	x	12	S	200	5,20 A2
M 4	x	14	S	100	6,90 A2
M 4	x	16	S	200	4,25 A2

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	18	S	100	5,60 A2
M 4	x	20	S	200	4,60 A2
M 4	x	22	S	100	6,40 A2
M 4	x	25	S	200	5,30 A2
M 4	x	30	S	200	5,95 A2
M 4	x	35	S	200	10,20 A2
M 4	x	40	S	200	12,20 A2
M 4	x	45	S	100	15,50 A2
M 4	x	50	S	100	18,40 A2
M 4	x	60	S	100	56,20 A2
M 5	x	6*	S	100	17,30 A2
M 5	x	8*	S	100	5,85 A2
M 5	x	10	S	500	5,60 A2
M 5	x	10	K	100	7,70 A2
M 5	x	12	S	500	5,20 A2
M 5	x	12	K	100	7,25 A2
M 5	x	14	S	500	6,90 A2
M 5	x	14	K	100	9,40 A2
M 5	x	16	S	500	4,25 A2
M 5	x	16	K	100	6,30 A2
M 5	x	18	S	500	5,60 A2
M 5	x	18	K	100	8,10 A2
M 5	x	20	S	500	4,60 A2
M 5	x	20	K	100	6,65 A2
M 5	x	22	S	200	6,40 A2
M 5	x	25	S	200	6,10 A2
M 5	x	25	K	100	8,20 A2
M 5	x	30	S	200	6,85 A2
M 5	x	30	K	100	8,90 A2
M 5	x	35	S	200	8,05 A2
M 5	x	40	S	200	11,60 A2
M 5	x	45	S	200	15,50 A2
M 5	x	50	S	200	18,40 A2
M 5	x	55	S	200	21,70 A2
M 5	x	60	S	200	23,50 A2
M 5	x	70*	S	100	61,80 A2
M 5	x	80*	S	100	208,00 A2
M 6	x	6*	S	100	67,00 A2
M 6	x	8*	S	100	8,15 A2
M 6	x	10	S	500	6,90 A2
M 6	x	10	K	100	8,95 A2
M 6	x	12	S	500	6,90 A2
M 6	x	12	K	100	8,95 A2
M 6	x	14	S	500	8,20 A2
M 6	x	14	K	100	10,70 A2
M 6	x	16	S	200	4,90 A2
M 6	x	16	K	100	7,00 A2
M 6	x	18	S	200	7,00 A2
M 6	x	20	S	200	5,60 A2
M 6	x	20	K	100	7,70 A2
M 6	x	22	S	200	7,80 A2
M 6	x	25	S	200	6,25 A2
M 6	x	25	K	100	8,30 A2
M 6	x	30	S	200	7,25 A2
M 6	x	30	K	100	9,30 A2
M 6	x	35	S	200	7,90 A2
M 6	x	35	K	100	10,00 A2
M 6	x	40	S	200	8,85 A2
M 6	x	40	K	100	10,90 A2
M 6	x	45	S	100	13,80 A2
M 6	x	50	S	100	15,00 A2
M 6	x	55	S	100	19,10 A2
M 6	x	60	S	100	21,70 A2
M 6	x	65	S	100	30,00 A2
M 6	x	70	S	100	30,00 A2
M 6	x	75	S	100	44,60 A2
M 6	x	80	S	100	35,80 A2
M 6	x	90	S	100	51,10 A2
M 6	x	100	S	100	58,70 A2
M 6	x	110	S	100	228,00 A2
M 6	x	120	S	100	267,00 A2
M 8	x	8*	S	100	77,30 A2
M 8	x	10*	S	200	16,10 A2
M 8	x	10*	K	100	18,15 A2
M 8	x	12	S	200	15,00 A2

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 12	K	100	17,10 A 2
M 8 x 14	S	200	17,80 A 2
M 8 x 16	S	200	10,20 A 2
M 8 x 16	K	100	12,30 A 2
M 8 x 18	S	200	12,70 A 2
M 8 x 20	S	200	10,20 A 2
M 8 x 20	K	100	12,80 A 2
M 8 x 22	S	200	15,20 A 2
M 8 x 25	S	200	12,10 A 2
M 8 x 25	K	100	14,20 A 2
M 8 x 30	S	200	12,80 A 2
M 8 x 30	K	100	14,90 A 2
M 8 x 35	S	200	15,90 A 2
M 8 x 35	K	100	21,00 A 2
M 8 x 40	S	200	15,10 A 2
M 8 x 40	K	100	17,20 A 2
M 8 x 45	S	200	16,80 A 2
M 8 x 45	K	100	19,00 A 2
M 8 x 50	S	200	17,80 A 2
M 8 x 50	K	100	20,10 A 2
M 8 x 55	S	100	27,00 A 2
M 8 x 60	S	200	28,60 A 2
M 8 x 60	K	100	31,00 A 2
M 8 x 65	S	50	35,70 A 2
M 8 x 70	S	50	42,40 A 2
M 8 x 75	S	50	66,90 A 2
M 8 x 80	S	50	53,60 A 2
M 8 x 85	S	50	86,00 A 2
M 8 x 90	S	50	68,50 A 2
M 8 x 100	S	50	77,20 A 2
M 8 x 110	S	50	116,00 A 2
M 8 x 120	S	50	136,00 A 2
M 8 x 130	S	50	171,00 A 2
M 8 x 140	S	50	206,00 A 2
M 8 x 150	S	50	240,00 A 2
M 8 x 160	S	50	275,00 A 2
M 8 x 170	S	50	343,00 A 2
M 8 x 180	S	50	343,00 A 2
M 8 x 190	S	50	650,00 A 2
M 8 x 200	S	50	860,00 A 2
M 10 x 10*	S	100	111,00 A 2
M 10 x 12*	S	100	59,30 A 2
M 10 x 14*	S	100	37,30 A 2
M 10 x 16	S	100	30,10 A 2
M 10 x 18	S	100	33,20 A 2
M 10 x 20	S	100	21,90 A 2
M 10 x 22	S	100	25,80 A 2
M 10 x 25	S	100	20,90 A 2
M 10 x 30	S	100	23,20 A 2
M 10 x 35	S	100	25,50 A 2
M 10 x 40	S	100	27,60 A 2
M 10 x 45	S	100	29,60 A 2
M 10 x 50	S	100	31,60 A 2
M 10 x 55	S	50	44,40 A 2
M 10 x 60	S	50	47,00 A 2
M 10 x 65	S	50	52,60 A 2
M 10 x 70	S	50	55,70 A 2
M 10 x 75	S	50	82,80 A 2
M 10 x 80	S	50	66,40 A 2
M 10 x 85	S	50	115,00 A 2
M 10 x 90	S	50	89,40 A 2
M 10 x 100	S	50	103,00 A 2
M 10 x 110	S	50	170,00 A 2
M 10 x 120	S	50	187,00 A 2
M 10 x 130	S	1	233,00 A 2
M 10 x 140	S	1	275,00 A 2
M 10 x 150	S	1	315,00 A 2
M 10 x 160	S	1	357,00 A 2
M 10 x 170	S	1	439,00 A 2
M 10 x 180	S	1	439,00 A 2
M 10 x 190	S	1	695,00 A 2
M 10 x 200	S	1	766,00 A 2
M 12 x 16*	S	100	47,00 A 2
M 12 x 20	S	100	41,90 A 2
M 12 x 22	S	100	50,10 A 2
M 12 x 25	S	100	31,10 A 2
M 12 x 30	S	100	33,20 A 2
M 12 x 35	S	100	36,30 A 2
M 12 x 40	S	50	39,30 A 2
M 12 x 45	S	50	41,90 A 2
M 12 x 50	S	50	44,90 A 2
M 12 x 55	S	50	48,00 A 2
M 12 x 60	S	50	50,60 A 2
M 12 x 65	S	50	72,60 A 2
M 12 x 70	S	50	77,20 A 2
M 12 x 75	S	50	116,00 A 2
M 12 x 80	S	50	93,50 A 2
M 12 x 85	S	50	164,00 A 2
M 12 x 90	S	50	129,00 A 2
M 12 x 95	S	50	179,00 A 2
M 12 x 100	S	50	154,00 A 2
M 12 x 110	S	25	185,00 A 2
M 12 x 120	S	25	227,00 A 2
M 12 x 130	S	1	275,00 A 2
M 12 x 140	S	1	323,00 A 2
M 12 x 150	S	1	371,00 A 2
M 12 x 160	S	1	419,00 A 2
M 12 x 170	S	1	515,00 A 2
M 12 x 180	S	1	515,00 A 2
M 12 x 190	S	1	843,00 A 2
M 12 x 200	S	1	945,00 A 2
M 14 x 20*	S	50	115,00 A 2
M 14 x 25	S	50	95,60 A 2
M 14 x 30	S	50	69,50 A 2
M 14 x 35	S	50	69,50 A 2
M 14 x 40	S	50	74,10 A 2
M 14 x 45	S	50	79,70 A 2
M 14 x 50	S	50	84,30 A 2
M 14 x 55	S	50	89,90 A 2
M 14 x 60	S	50	96,10 A 2
M 14 x 65	S	50	103,00 A 2
M 14 x 70	S	50	107,00 A 2
M 14 x 75	S	50	158,00 A 2
M 14 x 80	S	50	127,00 A 2
M 14 x 90	S	50	214,00 A 2
M 14 x 100	S	50	245,00 A 2
M 14 x 110	S	25	302,00 A 2
M 14 x 120	S	25	340,00 A 2
M 14 x 130	S	25	404,00 A 2
M 14 x 140	S	25	455,00 A 2
M 14 x 150	S	25	498,00 A 2
M 16 x 20*	S	50	115,00 A 2
M 16 x 25	S	50	95,60 A 2
M 16 x 30	S	50	69,50 A 2
M 16 x 35	S	50	69,50 A 2
M 16 x 40	S	50	74,10 A 2
M 16 x 45	S	50	79,70 A 2
M 16 x 50	S	50	84,30 A 2
M 16 x 55	S	25	89,90 A 2
M 16 x 60	S	25	96,10 A 2
M 16 x 65	S	25	103,00 A 2
M 16 x 70	S	25	107,00 A 2
M 16 x 75	S	25	127,00 A 2
M 16 x 80	S	25	127,00 A 2
M 16 x 85	S	25	261,00 A 2
M 16 x 90	S	25	214,00 A 2
M 16 x 100	S	25	245,00 A 2
M 16 x 110	S	25	302,00 A 2
M 16 x 120	S	25	340,00 A 2
M 16 x 130	S	25	404,00 A 2
M 16 x 140	S	25	455,00 A 2
M 16 x 150	S	25	498,00 A 2
M 16 x 160	S	25	888,00 A 2
M 16 x 170	S	25	916,00 A 2
M 16 x 180	S	25	916,00 A 2
M 16 x 190	S	10	1012,00 A 2
M 16 x 200	S	10	1012,00 A 2
M 18 x 30	S	25	262,00 A 2
M 18 x 35	S	25	213,00 A 2
M 18 x 40	S	25	196,00 A 2
M 18 x 45	S	25	209,00 A 2
M 18 x 50	S	25	223,00 A 2
M 18 x 55	S	25	243,00 A 2
M 18 x 60	S	25	246,00 A 2
M 18 x 65	S	25	274,00 A 2
M 18 x 70	S	25	282,00 A 2
M 18 x 75	S	25	323,00 A 2
M 18 x 80	S	25	323,00 A 2
M 18 x 90	S	25	529,00 A 2
M 18 x 100	S	25	600,00 A 2
M 18 x 110	S	1	685,00 A 2
M 18 x 120	S	1	759,00 A 2
M 18 x 130	S	1	915,00 A 2
M 18 x 140	S	1	997,00 A 2
M 18 x 150	S	1	1119,00 A 2
M 20 x 30*	S	25	174,00 A 2
M 20 x 35	S	25	142,00 A 2
M 20 x 40	S	25	131,00 A 2
M 20 x 45	S	25	139,00 A 2
M 20 x 50	S	25	149,00 A 2
M 20 x 55	S	25	162,00 A 2
M 20 x 60	S	25	164,00 A 2
M 20 x 65	S	25	183,00 A 2
M 20 x 70	S	25	188,00 A 2
M 20 x 75	S	25	215,00 A 2
M 20 x 80	S	25	215,00 A 2
M 20 x 85	S	25	440,00 A 2
M 20 x 90	S	25	352,00 A 2
M 20 x 95	S	10	352,00 A 2
M 20 x 100	S	10	401,00 A 2
M 20 x 110	S	10	457,00 A 2
M 20 x 120	S	10	506,00 A 2
M 20 x 130	S	10	610,00 A 2
M 20 x 140	S	10	662,00 A 2
M 20 x 150	S	10	721,00 A 2
M 20 x 160	S	10	1124,00 A 2
M 20 x 170	S	10	1164,00 A 2
M 20 x 180	S	10	1164,00 A 2
M 20 x 200	S	10	1271,00 A 2
M 20 x 220*	S	10	1540,00 A 2
M 22 x 30	S	25	715,00 A 2
M 22 x 35	S	25	715,00 A 2
M 22 x 40	S	25	715,00 A 2
M 22 x 50	S	25	443,00 A 2
M 22 x 55	S	1	465,00 A 2
M 22 x 60	S	1	485,00 A 2
M 22 x 65	S	1	521,00 A 2
M 22 x 70	S	1	521,00 A 2
M 22 x 75	S	1	564,00 A 2
M 22 x 80	S	1	564,00 A 2
M 22 x 90	S	1	695,00 A 2
M 22 x 100	S	1	761,00 A 2
M 22 x 110	S	1	1226,00 A 2
M 22 x 120	S	1	1254,00 A 2
M 22 x 130	S	1	1282,00 A 2
M 22 x 140	S	1	1304,00 A 2
M 24 x 40*	S	1	562,00 A 2
M 24 x 45*	S	20	562,00 A 2
M 24 x 50	S	20	296,00 A 2
M 24 x 55	S	10	309,00 A 2
M 24 x 60	S	10	322,00 A 2
M 24 x 65	S	10	333,00 A 2
M 24 x 70	S	10	351,00 A 2
M 24 x 80	S	10	377,00 A 2
M 24 x 90	S	1	533,00 A 2
M 24 x 100	S	1	641,00 A 2
M 24 x 110	S	1	755,00 A 2
M 24 x 120	S	1	833,00 A 2
M 24 x 130	S	1	901,00 A 2
M 24 x 140	S	1	996,00 A 2
M 24 x 150	S	1	1073,00 A 2
M 24 x 160	S	1	1552,00 A 2
M 24 x 170	S	1	1586,00 A 2
M 24 x 180	S	1	1586,00 A 2
M 24 x 190	S	1	1653,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	200	S	1	1653,00 A 2
M 27	x	50*	S	1	558,00 A 2
M 27	x	55*	S	1	608,00 A 2
M 27	x	60*	S	1	618,00 A 2
M 27	x	65*	S	1	669,00 A 2
M 27	x	70*	S	1	669,00 A 2
M 27	x	80*	S	1	721,00 A 2
M 27	x	90*	S	1	773,00 A 2
M 27	x	100*	S	1	824,00 A 2
M 27	x	110*	S	1	938,00 A 2
M 27	x	120*	S	1	997,00 A 2
M 27	x	130*	S	1	1073,00 A 2
M 27	x	140*	S	1	1134,00 A 2
M 27	x	150*	S	1	1202,00 A 2
M 30	x	60*	S	1	824,00 A 2
M 30	x	65*	S	1	893,00 A 2
M 30	x	70*	S	1	930,00 A 2
M 30	x	80*	S	1	987,00 A 2
M 30	x	90*	S	1	1073,00 A 2
M 30	x	100*	S	1	1168,00 A 2
M 30	x	110*	S	1	1288,00 A 2
M 30	x	120*	S	1	1365,00 A 2
M 30	x	130*	S	1	1486,00 A 2
M 30	x	140*	S	1	1589,00 A 2
M 30	x	150*	S	1	1674,00 A 2
M 33	x	70*	S	1	1204,00 A 2
M 33	x	80*	S	1	1303,00 A 2
M 33	x	90*	S	1	1395,00 A 2
M 33	x	100*	S	1	1487,00 A 2
M 33	x	110*	S	1	1656,00 A 2
M 33	x	120*	S	1	1756,00 A 2
M 33	x	130*	S	1	1840,00 A 2
M 33	x	140*	S	1	1940,00 A 2
M 33	x	150*	S	1	2047,00 A 2
M 36	x	80*	S	1	1671,00 A 2
M 36	x	90*	S	1	1794,00 A 2
M 36	x	100*	S	1	1927,00 A 2
M 36	x	110*	S	1	2126,00 A 2
M 36	x	120*	S	1	2234,00 A 2
M 36	x	130*	S	1	2262,00 A 2
M 36	x	140*	S	1	2385,00 A 2
M 36	x	150*	S	1	2495,00 A 2

DIN	00933.924	RAZ 404
933	A 2	Sz



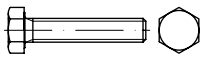
Hexagon head screws with thread up to head Sz = slotted head as per DIN 962

Dimensions → TI-15/141 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 156

M 4	x	6	S	100	24,30 A 2
M 4	x	8	S	100	21,50 A 2
M 4	x	10	S	100	21,30 A 2
M 4	x	12	S	100	20,70 A 2
M 5	x	8	S	100	23,80 A 2
M 5	x	10	S	100	22,80 A 2
M 5	x	12	S	100	22,60 A 2
M 5	x	16	S	100	21,50 A 2
M 5	x	20	S	100	22,50 A 2
M 5	x	25	S	100	24,20 A 2
M 5	x	30	S	100	26,00 A 2
M 6	x	10	S	100	25,50 A 2
M 6	x	12	S	100	24,20 A 2
M 6	x	16	S	100	23,30 A 2
M 6	x	20	S	100	25,00 A 2
M 6	x	25	S	100	27,00 A 2
M 6	x	30	S	100	29,50 A 2
M 6	x	35	S	100	31,50 A 2
M 6	x	40	S	100	34,00 A 2
M 8	x	16	S	100	52,00 A 2
M 8	x	20	S	100	52,00 A 2
M 8	x	25	S	100	55,00 A 2
M 8	x	30	S	100	57,00 A 2
M 8	x	35	S	100	59,00 A 2
M 8	x	40	S	100	62,00 A 2

DIN	00933.940	RAZ 401
933	A 4 – 70	



Hexagon head screws with thread up to head

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 148
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

*Prop. class for dimensions different depending on production

M 3	x	5	S	100	10,70 A 4
M 3	x	6	S	100	8,65 A 4
M 3	x	8	S	100	7,15 A 4
M 3	x	10	S	100	6,90 A 4
M 3	x	12	S	100	6,45 A 4
M 3	x	16	S	100	6,45 A 4
M 3	x	18	S	100	8,90 A 4
M 3	x	20	S	100	7,05 A 4
M 3	x	25	S	100	7,90 A 4
M 3	x	30	S	100	9,15 A 4
M 3	x	35	S	100	14,10 A 4
M 3	x	40	S	100	19,90 A 4
M 4	x	6	S	200	8,65 A 4
M 4	x	8	S	200	7,15 A 4
M 4	x	10	S	200	6,90 A 4
M 4	x	12	S	200	6,45 A 4
M 4	x	14	S	200	7,70 A 4
M 4	x	16	S	200	5,25 A 4
M 4	x	18	S	200	6,95 A 4
M 4	x	20	S	200	5,55 A 4
M 4	x	25	S	200	6,80 A 4
M 4	x	30	S	200	7,70 A 4
M 4	x	35	S	200	13,20 A 4
M 4	x	40	S	200	17,30 A 4
M 4	x	45	S	200	20,40 A 4
M 4	x	50	S	200	21,90 A 4
M 4	x	60	S	100	66,90 A 4
M 5	x	6*	S	100	21,90 A 4
M 5	x	8*	S	100	7,15 A 4
M 5	x	10	S	500	6,90 A 4
M 5	x	10	K	100	9,40 A 4
M 5	x	12	S	500	6,45 A 4
M 5	x	12	K	100	8,95 A 4
M 5	x	14	S	500	7,70 A 4
M 5	x	14	K	100	10,20 A 4
M 5	x	16	S	500	5,75 A 4
M 5	x	16	K	100	8,25 A 4
M 5	x	18	S	500	7,70 A 4
M 5	x	18	K	100	10,20 A 4
M 5	x	20	S	500	6,35 A 4
M 5	x	20	K	100	8,85 A 4
M 5	x	22	S	200	9,10 A 4
M 5	x	25	S	200	7,30 A 4
M 5	x	30	S	200	8,50 A 4
M 5	x	35	S	200	12,30 A 4
M 5	x	40	S	200	15,30 A 4
M 5	x	45	S	200	20,40 A 4
M 5	x	50	S	200	21,90 A 4
M 5	x	55	S	200	29,60 A 4
M 5	x	60	S	200	31,70 A 4
M 5	x	70*	S	100	72,60 A 4
M 5	x	80*	S	100	222,00 A 4
M 6	x	8*	S	100	11,10 A 4
M 6	x	10	S	500	10,10 A 4
M 6	x	10	K	100	12,60 A 4
M 6	x	12	S	500	9,30 A 4
M 6	x	12	K	100	11,80 A 4
M 6	x	14	S	500	10,80 A 4
M 6	x	14	K	100	13,30 A 4
M 6	x	16	S	200	7,30 A 4
M 6	x	20	S	200	7,90 A 4
M 6	x	22	S	200	10,90 A 4
M 6	x	25	S	200	8,70 A 4
M 6	x	30	S	200	9,95 A 4
M 6	x	35	S	200	11,70 A 4
M 6	x	40	S	200	13,20 A 4
M 6	x	45	S	100	17,80 A 4
M 6	x	50	S	100	20,70 A 4
M 6	x	55	S	100	27,60 A 4
M 6	x	60	S	100	29,60 A 4
M 6	x	65	S	50	47,00 A 4
M 6	x	70	S	50	47,00 A 4
M 6	x	75	S	50	71,00 A 4
M 6	x	80	S	50	57,20 A 4
M 6	x	90	S	50	79,70 A 4
M 6	x	100	S	50	91,50 A 4
M 6	x	110	S	50	273,00 A 4
M 6	x	120	S	50	330,00 A 4
M 8	x	8*	S	100	43,00 A 4
M 8	x	10*	S	200	21,90 A 4
M 8	x	12	S	200	21,40 A 4
M 8	x	14	S	200	25,50 A 4
M 8	x	16	S	200	16,90 A 4
M 8	x	18	S	200	21,50 A 4
M 8	x	20	S	200	16,90 A 4
M 8	x	22	S	200	21,50 A 4
M 8	x	25	S	200	17,10 A 4
M 8	x	30	S	200	18,10 A 4
M 8	x	35	S	200	20,10 A 4
M 8	x	40	S	100	21,20 A 4
M 8	x	45	S	100	25,00 A 4
M 8	x	50	S	100	26,70 A 4
M 8	x	55	S	100	35,20 A 4
M 8	x	60	S	100	37,80 A 4
M 8	x	65	S	50	51,10 A 4
M 8	x	70	S	50	54,10 A 4
M 8	x	75	S	50	82,80 A 4
M 8	x	80	S	50	66,40 A 4
M 8	x	90	S	50	95,10 A 4
M 8	x	100	S	50	108,00 A 4
M 8	x	110	S	1	141,00 A 4
M 8	x	120	S	1	164,00 A 4
M 8	x	130	S	1	212,00 A 4
M 8	x	140	S	1	257,00 A 4
M 8	x	150	S	1	302,00 A 4
M 8	x	160	S	1	347,00 A 4
M 8	x	170	S	1	437,00 A 4
M 8	x	180	S	1	437,00 A 4
M 8	x	200	S	1	655,00 A 4
M 10	x	10*	S	100	116,00 A 4
M 10	x	12*	S	100	68,50 A 4
M 10	x	14*	S	100	49,50 A 4
M 10	x	16	S	100	39,80 A 4
M 10	x	20	S	100	30,60 A 4
M 10	x	22	S	100	37,30 A 4
M 10	x	25	S	100	29,60 A 4
M 10	x	30	S	100	31,70 A 4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	35	S	100	33,20 A4
M 10	x	40	S	100	36,30 A4
M 10	x	45	S	100	39,80 A4
M 10	x	50	S	100	43,40 A4
M 10	x	55	S	50	56,20 A4
M 10	x	60	S	50	58,20 A4
M 10	x	65	S	50	71,00 A4
M 10	x	70	S	50	74,60 A4
M 10	x	75	S	50	115,00 A4
M 10	x	80	S	50	92,00 A4
M 10	x	85	S	50	146,00 A4
M 10	x	90	S	50	134,00 A4
M 10	x	95	S	50	225,00 A4
M 10	x	100	S	50	155,00 A4
M 10	x	110	S	50	219,00 A4
M 10	x	120	S	50	270,00 A4
M 10	x	130	S	1	351,00 A4
M 10	x	140	S	1	414,00 A4
M 10	x	150	S	1	482,00 A4
M 10	x	160	S	1	547,00 A4
M 10	x	170	S	1	629,00 A4
M 10	x	180	S	1	675,00 A4
M 10	x	200	S	1	869,00 A4
M 12	x	16*	S	100	69,00 A4
M 12	x	18*	S	100	69,00 A4
M 12	x	20	S	100	55,70 A4
M 12	x	22	S	100	65,40 A4
M 12	x	25	S	100	46,50 A4
M 12	x	30	S	100	46,50 A4
M 12	x	35	S	100	50,10 A4
M 12	x	40	S	50	51,60 A4
M 12	x	45	S	50	55,70 A4
M 12	x	50	S	50	59,80 A4
M 12	x	55	S	50	72,00 A4
M 12	x	60	S	50	73,10 A4
M 12	x	65	S	50	94,00 A4
M 12	x	70	S	50	97,60 A4
M 12	x	75	S	50	140,00 A4
M 12	x	80	S	50	112,00 A4
M 12	x	85	S	50	180,00 A4
M 12	x	90	S	50	139,00 A4
M 12	x	95	S	1	299,00 A4
M 12	x	100	S	1	163,00 A4
M 12	x	110	S	1	238,00 A4
M 12	x	120	S	1	296,00 A4
M 12	x	130	S	1	386,00 A4
M 12	x	140	S	1	463,00 A4
M 12	x	150	S	1	540,00 A4
M 12	x	160	S	1	618,00 A4
M 12	x	170	S	1	748,00 A4
M 12	x	180	S	1	772,00 A4
M 12	x	190	S	1	971,00 A4
M 12	x	200	S	1	1124,00 A4
M 14	x	20*	S	50	149,00 A4
M 14	x	25	S	50	138,00 A4
M 14	x	30	S	50	118,00 A4
M 14	x	35	S	50	118,00 A4
M 14	x	40	S	50	118,00 A4
M 14	x	45	S	50	120,00 A4
M 14	x	50	S	50	127,00 A4
M 14	x	55	S	50	141,00 A4
M 14	x	60	S	50	144,00 A4
M 14	x	65	S	50	167,00 A4
M 14	x	70	S	50	172,00 A4
M 14	x	75	S	50	236,00 A4
M 14	x	80	S	1	195,00 A4
M 14	x	100	S	1	327,00 A4
M 14	x	110	S	1	423,00 A4
M 14	x	120	S	1	481,00 A4
M 14	x	130	S	1	547,00 A4
M 14	x	140	S	1	603,00 A4
M 14	x	150	S	1	669,00 A4
M 14	x	160*	S	1	1248,00 A4
M 16	x	20*	S	50	149,00 A4
M 16	x	25	S	50	138,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	30	S	50	118,00 A4
M 16	x	35	S	50	118,00 A4
M 16	x	40	S	50	118,00 A4
M 16	x	45	S	50	120,00 A4
M 16	x	50	S	50	127,00 A4
M 16	x	55	S	25	141,00 A4
M 16	x	60	S	25	144,00 A4
M 16	x	65	S	25	167,00 A4
M 16	x	70	S	25	172,00 A4
M 16	x	75	S	25	195,00 A4
M 16	x	80	S	25	195,00 A4
M 16	x	90	S	25	278,00 A4
M 16	x	100	S	25	327,00 A4
M 16	x	110	S	1	423,00 A4
M 16	x	120	S	1	481,00 A4
M 16	x	130	S	1	547,00 A4
M 16	x	140	S	1	603,00 A4
M 16	x	150	S	1	669,00 A4
M 16	x	160	S	1	1220,00 A4
M 16	x	170	S	1	1287,00 A4
M 16	x	180	S	1	1287,00 A4
M 16	x	190	S	1	1338,00 A4
M 16	x	200	S	1	1338,00 A4
M 18	x	30	S	1	373,00 A4
M 18	x	35	S	1	334,00 A4
M 18	x	40	S	1	334,00 A4
M 18	x	45	S	1	334,00 A4
M 18	x	50	S	1	349,00 A4
M 18	x	55	S	1	376,00 A4
M 18	x	60	S	1	380,00 A4
M 18	x	65	S	1	423,00 A4
M 18	x	70	S	1	436,00 A4
M 18	x	75	S	1	482,00 A4
M 18	x	80	S	1	482,00 A4
M 18	x	90	S	1	697,00 A4
M 18	x	100	S	1	822,00 A4
M 18	x	110	S	1	1000,00 A4
M 18	x	120	S	1	1088,00 A4
M 18	x	130	S	1	1277,00 A4
M 18	x	150	S	1	1513,00 A4
M 20	x	20*	S	25	338,00 A4
M 20	x	30*	S	25	248,00 A4
M 20	x	35*	S	25	223,00 A4
M 20	x	40	S	25	223,00 A4
M 20	x	45	S	25	223,00 A4
M 20	x	50	S	25	233,00 A4
M 20	x	55	S	25	251,00 A4
M 20	x	60	S	25	254,00 A4
M 20	x	65	S	25	282,00 A4
M 20	x	70	S	25	290,00 A4
M 20	x	75	S	25	321,00 A4
M 20	x	80	S	25	321,00 A4
M 20	x	90	S	1	465,00 A4
M 20	x	100	S	1	548,00 A4
M 20	x	110	S	1	667,00 A4
M 20	x	120	S	1	725,00 A4
M 20	x	130	S	1	851,00 A4
M 20	x	140	S	1	914,00 A4
M 20	x	150	S	1	1008,00 A4
M 20	x	160	S	1	1816,00 A4
M 20	x	170	S	1	1855,00 A4
M 20	x	180	S	1	1855,00 A4
M 20	x	190	S	1	1968,00 A4
M 20	x	200	S	1	1968,00 A4
M 22	x	40	S	1	1073,00 A4
M 22	x	45	S	1	1073,00 A4
M 22	x	50	S	1	875,00 A4
M 22	x	55	S	1	892,00 A4
M 22	x	60	S	1	916,00 A4
M 22	x	65	S	1	948,00 A4
M 22	x	70	S	1	998,00 A4
M 22	x	75	S	1	1084,00 A4
M 22	x	80	S	1	1084,00 A4
M 22	x	90	S	1	1385,00 A4
M 22	x	100	S	1	1523,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 22	x	110	S	1	1868,00 A4
M 22	x	120	S	1	2040,00 A4
M 22	x	130	S	1	2236,00 A4
M 22	x	140	S	1	2400,00 A4
M 24	x	30*	S	1	962,00 A4
M 24	x	35*	S	1	962,00 A4
M 24	x	40*	S	1	805,00 A4
M 24	x	45*	S	1	805,00 A4
M 24	x	50*	S	1	547,00 A4
M 24	x	55*	S	1	557,00 A4
M 24	x	60	S	1	572,00 A4
M 24	x	65	S	1	593,00 A4
M 24	x	70	S	1	623,00 A4
M 24	x	75	S	1	677,00 A4
M 24	x	80	S	1	677,00 A4
M 24	x	90	S	1	925,00 A4
M 24	x	100	S	1	1006,00 A4
M 24	x	110	S	1	1167,00 A4
M 24	x	120	S	1	1274,00 A4
M 24	x	130	S	1	1397,00 A4
M 24	x	140	S	1	1501,00 A4
M 24	x	150	S	1	1631,00 A4
M 24	x	160	S	1	2443,00 A4
M 24	x	170	S	1	2489,00 A4
M 24	x	180	S	1	2489,00 A4
M 24	x	190	S	1	2551,00 A4
M 24	x	200	S	1	2551,00 A4
M 27	x	50*	S	1	997,00 A4
M 27	x	55*	S	1	1055,00 A4
M 27	x	60*	S	1	1106,00 A4
M 27	x	65*	S	1	1150,00 A4
M 27	x	70*	S	1	1209,00 A4
M 27	x	80*	S	1	1303,00 A4
M 27	x	90*	S	1	1413,00 A4
M 27	x	100*	S	1	1508,00 A4
M 27	x	110*	S	1	1702,00 A4
M 27	x	120*	S	1	1802,00 A4
M 27	x	130*	S	1	1866,00 A4
M 27	x	140*	S	1	1968,00 A4
M 27	x	150*	S	1	2034,00 A4
M 30	x	40*	S	1	2400,00 A4
M 30	x	50*	S	1	1748,00 A4
M 30	x	60*	S	1	1360,00 A4
M 30	x	65*	S	1	1416,00 A4
M 30	x	70*	S	1	1472,00 A4
M 30	x	80*	S	1	1587,00 A4
M 30	x	90*	S	1	1707,00 A4
M 30	x	100*	S	1	1902,00 A4
M 30	x	110*	S	1	2167,00 A4
M 30	x	120*	S	1	2305,00 A4
M 30	x	130*	S	1	2397,00 A4
M 30	x	140*	S	1	2479,00 A4
M 30	x	150*	S	1	2525,00 A4
M 33	x	70*	S	1	1983,00 A4
M 33	x	80*	S	1	2152,00 A4
M 33	x	90*	S	1	2305,00 A4
M 33	x	120*	S	1	2888,00 A4
M 33	x	130*	S	1	2985,00 A4
M 33	x	140*	S	1	3026,00 A4
M 33	x	150*	S	1	3062,00 A4
M 36	x	80*	S	1	2658,00 A4
M 36	x	90*	S	1	2842,00 A4
M 36	x	100*	S	1	3195,00 A4
M 36	x	110*	S	1	3359,00 A4
M 36	x	120*	S	1	3527,00 A4
M 36	x	130*	S	1	3604,00 A4
M 36	x	140*	S	1	3676,00 A4
M 36	x	150*	S	1	3752,00 A4

Dimensions	PU	Pieces	€/100/Mat.
DIN 00933.948			RAZ 403
933 A 4 - 80			

Hexagon head screws with thread up to head

High strength (strongly cold worked)

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 148
Brass, plastic → S. 577

DIN 933 → replaced by ISO 4017

M 6	x	10	S	100	25,50	A4-80
M 6	x	12	S	100	23,20	A4-80
M 6	x	16	S	100	18,30	A4-80
M 6	x	20	S	100	19,90	A4-80
M 6	x	25	S	100	21,90	A4-80
M 6	x	30	S	100	25,00	A4-80
M 6	x	35	S	100	29,50	A4-80
M 6	x	40	S	100	33,50	A4-80
M 6	x	45	S	100	45,00	A4-80
M 6	x	50	S	100	52,00	A4-80
M 6	x	55	S	100	68,00	A4-80
M 6	x	60	S	100	73,00	A4-80
M 8	x	10	S	100	55,00	A4-80
M 8	x	12	S	100	54,00	A4-80
M 8	x	16	S	100	43,00	A4-80
M 8	x	20	S	100	43,00	A4-80
M 8	x	25	S	100	43,00	A4-80
M 8	x	30	S	100	45,50	A4-80
M 8	x	35	S	100	51,00	A4-80
M 8	x	40	S	100	54,00	A4-80
M 8	x	45	S	100	63,00	A4-80
M 8	x	50	S	100	68,00	A4-80
M 8	x	55	S	100	89,00	A4-80
M 8	x	60	S	100	94,00	A4-80
M 10	x	16	S	100	99,00	A4-80
M 10	x	20	S	100	77,00	A4-80
M 10	x	25	S	100	75,00	A4-80
M 10	x	30	S	100	80,00	A4-80
M 10	x	35	S	100	84,00	A4-80
M 10	x	40	S	100	91,00	A4-80
M 10	x	45	S	100	100,00	A4-80
M 10	x	50	S	100	109,00	A4-80
M 10	x	55	S	100	140,00	A4-80
M 10	x	60	S	100	146,00	A4-80
M 10	x	65	S	100	177,00	A4-80
M 10	x	70	S	100	186,00	A4-80
M 10	x	75	S	50	295,00	A4-80
M 10	x	80	S	50	229,00	A4-80
M 12	x	20	S	100	139,00	A4-80
M 12	x	25	S	100	117,00	A4-80
M 12	x	30	S	100	117,00	A4-80
M 12	x	35	S	100	126,00	A4-80
M 12	x	40	S	100	130,00	A4-80
M 12	x	45	S	50	140,00	A4-80
M 12	x	50	S	50	150,00	A4-80
M 12	x	55	S	50	181,00	A4-80
M 12	x	60	S	50	183,00	A4-80
M 12	x	65	S	50	234,00	A4-80
M 12	x	70	S	50	243,00	A4-80
M 12	x	75	S	50	355,00	A4-80
M 12	x	80	S	50	285,00	A4-80
M 14	x	25	S	50	350,00	A4-80
M 14	x	30	S	50	300,00	A4-80
M 14	x	35	S	50	300,00	A4-80
M 14	x	40	S	50	300,00	A4-80
M 14	x	45	S	50	305,00	A4-80
M 14	x	50	S	50	320,00	A4-80
M 14	x	55	S	50	360,00	A4-80
M 14	x	60	S	50	365,00	A4-80
M 14	x	65	S	50	425,00	A4-80
M 14	x	80	S	1	495,00	A4-80
M 16	x	25	S	50	350,00	A4-80
M 16	x	30	S	50	300,00	A4-80
M 16	x	35	S	50	300,00	A4-80
M 16	x	40	S	50	300,00	A4-80
M 16	x	45	S	50	305,00	A4-80
M 16	x	50	S	25	320,00	A4-80
M 16	x	55	S	25	360,00	A4-80
M 16	x	60	S	25	365,00	A4-80
M 16	x	65	S	25	425,00	A4-80
M 16	x	70	S	25	435,00	A4-80
M 16	x	75	S	25	570,00	A4-80
M 16	x	80	S	25	495,00	A4-80
M 16	x	90	S	25	710,00	A4-80
M 16	x	100	S	25	820,00	A4-80
M 20	x	30	S	25	630,00	A4-80
M 20	x	35	S	25	680,00	A4-80
M 20	x	40	S	25	570,00	A4-80
M 20	x	45	S	25	570,00	A4-80
M 20	x	50	S	25	590,00	A4-80
M 20	x	55	S	25	640,00	A4-80
M 20	x	60	S	25	640,00	A4-80
M 20	x	65	S	25	720,00	A4-80
M 20	x	70	S	25	730,00	A4-80
M 20	x	75	S	25	780,00	A4-80
M 20	x	80	S	25	810,00	A4-80

DIN	00933.950	RAZ 403
933	1.4571 (A 5)	

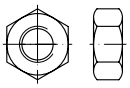
Hexagon head screws with thread up to head

Dimensions → TI-15 Tightening torque → TI-233
Mech. properties → TI-224 Standard conversion → TI-7

Steel → S. 148
Brass, plastic → S. 577

M 10	x	20	S	1	405,00	A5
M 10	x	25	S	1	410,00	A5
M 10	x	30	S	1	415,00	A5
M 10	x	35	S	1	425,00	A5
M 10	x	40	S	1	435,00	A5
M 10	x	45	S	1	445,00	A5
M 10	x	50	S	1	530,00	A5
M 12	x	25	S	1	415,00	A5
M 12	x	30	S	1	425,00	A5
M 12	x	35	S	1	435,00	A5
M 12	x	40	S	1	445,00	A5
M 12	x	45	S	1	455,00	A5
M 12	x	50	S	1	540,00	A5
M 16	x	30	S	1	600,00	A5
M 16	x	35	S	1	620,00	A5
M 16	x	40	S	1	640,00	A5
M 16	x	45	S	1	650,00	A5
M 16	x	50	S	1	670,00	A5
M 16	x	55	S	1	950,00	A5
M 16	x	60	S	1	1000,00	A5
M 16	x	65	S	1	1100,00	A5
M 20	x	40	S	1	1190,00	A5
M 20	x	45	S	1	1220,00	A5
M 20	x	50	S	1	1240,00	A5
M 20	x	60	S	1	1390,00	A5

DIN	00934.910	RAZ 410
934	A 1/A 2	



Hexagon nuts

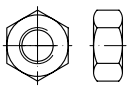
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 160
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 1,6	S	500	21,50	A1/A2
M 2	S	500	15,10	A1/A2
M 2	K	100	19,70	A1/A2
M 2,3	S	500	19,95	A1/A2
M 2,3	K	100	23,00	A1/A2
M 2,5	S	500	13,80	A1/A2
M 2,5	K	100	16,65	A1/A2
M 2,6	S	500	27,10	A1/A2
M 2,6	K	100	31,70	A1/A2

DIN	00934.920	RAZ 410
934	A 2 - 70	



Hexagon nuts

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 160
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

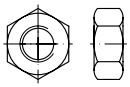
*Prop. class for dimensions different depending on production

M 3*	S	1000	5,55	A2
M 3*	K	100	8,85	A2
M 3,5*	K	100	23,55	A2
M 4*	S	1000	6,30	A2
M 4*	K	100	9,20	A2
M 5	S	1000	7,40	A2
M 5	K	100	10,40	A2
M 6	S	1000	11,20	A2
M 6	K	100	14,10	A2
M 7	S	100	18,40	A2
M 8	S	500	20,70	A2
M 8	K	100	24,05	A2
M 10	S	250	44,00	A2
M 10	K	100	47,55	A2
M 12	S	250	62,90	A2
M 12	K	100	66,50	A2
M 14	S	25	110,00	A2
M 16	S	50	110,00	A2
M 18	S	10	282,00	A2
M 20	S	25	282,00	A2
M 22	S	10	640,00	A2
M 24	S	25	640,00	A2
M 27*	S	1	1217,00	A2

Dimensions	PU	Pieces	€/100/Mat.
M 30*	S	1	1713,00 A 2
M 33*	S	1	2225,00 A 2
M 36*	S	1	2455,00 A 2
M 42*	S	1	3580,00 A 2
M 48*	S	1	5931,00 A 2

DIN 00934.925 RAZ 410

934 A 2 **fine**



Hexagon nuts with metric fine pitch thread

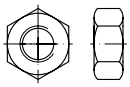
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

DIN 934 fine thread → replaced by ISO 8673

M 6	x	0,75	S	100	80,00 A 2
M 8	x	1	S	100	48,60 A 2
M 10	x	1	S	50	66,50 A 2
M 10	x	1,25	S	50	66,50 A 2
M 12	x	1,25	S	50	117,00 A 2
M 12	x	1,5	S	50	95,65 A 2
M 14	x	1,5	S	25	131,00 A 2
M 16	x	1,5	S	25	177,00 A 2
M 18	x	1,5	S	10	322,11 A 2
M 20	x	1,5	S	10	323,00 A 2
M 24	x	1,5	S	10	747,00 A 2
M 24	x	2	S	10	747,00 A 2
M 30	x	1,5	S	1	1841,00 A 2
M 30	x	2	S	1	1841,00 A 2
M 36	x	1,5	S	1	3017,00 A 2

DIN 00934.924 RAZ 410

934 A 2 **left**

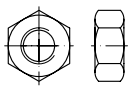


Hexagon nuts with metric left hand thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

M 5 -LH	S	100	20,50 A 2
M 6 -LH	S	100	31,00 A 2
M 8 -LH	S	100	49,50 A 2
M 10 -LH	S	50	95,00 A 2
M 12 -LH	S	25	129,00 A 2
M 14 -LH	S	25	242,00 A 2
M 16 -LH	S	25	242,00 A 2
M 18 -LH	S	25	300,00 A 2
M 20 -LH	S	1	370,00 A 2
M 22 -LH	S	10	520,00 A 2
M 24 -LH	S	1	1030,00 A 2
M 27 -LH	S	1	1080,00 A 2
M 30 -LH	S	1	1250,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
~DIN 00934.926 RAZ 415			
934 A 2 **Ww-BSW**			



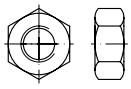
Hexagon nuts with Whitworth thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

WW 1/4	S	50	52,00 A 2
WW 5/16	S	50	89,00 A 2
WW 3/8	S	50	164,00 A 2
WW 1/2	S	50	200,00 A 2
WW 5/8	S	25	380,00 A 2
WW 3/4	S	10	620,00 A 2

DIN 00934.940 RAZ 410

934 A 4 - 70



Hexagon nuts

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

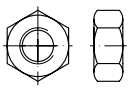
Steel → S. 160
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

*Prop. class for dimensions different depending on production

M 2*	S	1000	17,90 A 4
M 2*	K	100	20,70 A 4
M 2,5*	S	500	17,40 A 4
M 2,5*	K	100	19,95 A 4
M 3*	S	1000	7,20 A 4
M 3*	K	100	10,40 A 4
M 4*	S	1000	8,15 A 4
M 4*	K	100	12,00 A 4
M 5	S	1000	8,75 A 4
M 5	K	100	12,60 A 4
M 6	S	1000	13,55 A 4
M 6	K	100	17,40 A 4
M 7	S	100	24,55 A 4
M 8	S	500	26,10 A 4
M 8	K	100	29,15 A 4
M 10	S	250	55,75 A 4
M 10	K	50	61,35 A 4
M 12	S	250	76,70 A 4
M 12	K	50	82,35 A 4
M 14	S	25	159,00 A 4
M 16	S	50	159,00 A 4
M 18	S	10	389,00 A 4
M 20	S	25	389,00 A 4
M 22	S	10	783,00 A 4
M 24	S	10	783,00 A 4
M 27*	S	1	1483,00 A 4
M 30*	S	1	1995,00 A 4
M 33*	S	1	2531,00 A 4
M 36*	S	1	3068,00 A 4
M 39*	S	1	6238,00 A 4
M 42*	S	1	4346,00 A 4
M 48*	S	1	8300,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
DIN 00934.948 RAZ 409			
934 A 4 - 80			



Hexagon nuts

High strength (strongly cold worked)

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

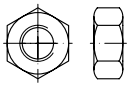
Steel → S. 160
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 6	S	200	10,25 A 4-80
M 8	S	200	12,80 A 4-80
M 10	S	100	25,60 A 4-80
M 12	S	100	33,25 A 4-80
M 14	S	100	56,25 A 4-80
M 16	S	50	71,60 A 4-80
M 18	S	50	103,00 A 4-80
M 20	S	50	116,00 A 4-80
M 24	S	25	350,00 A 4-80

DIN 00934.950 RAZ 409

934 1.4571 (A 5)



Hexagon nuts

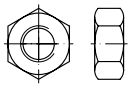
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 160
Brass, copper, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 6	S	100	102,00 A 5
M 8	S	100	111,00 A 5
M 10	S	100	118,00 A 5
M 12	S	50	151,00 A 5
M 16	S	25	254,00 A 5
M 20	S	25	507,00 A 5
M 24	S	10	895,00 A 5
M 27	S	10	1432,00 A 5
M 30	S	10	1969,00 A 5

Dimensions	PU	Pieces	€/100/Mat.
DIN 00934.944			RAZ 410
934 A 4			**left**



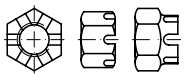
Hexagon nuts with metric left hand thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

DIN 934 → replaced by ISO 4032

M 5 -LH	S	100	26,00 A 4
M 6 -LH	S	100	36,00 A 4
M 8 -LH	S	100	55,00 A 4
M 10 -LH	S	50	103,00 A 4
M 12 -LH	S	25	139,00 A 4
M 14 -LH	S	25	260,00 A 4
M 16 -LH	S	25	270,00 A 4
M 18 -LH	S	25	370,00 A 4
M 20 -LH	S	10	450,00 A 4
M 22 -LH	S	10	720,00 A 4
M 24 -LH	S	10	1130,00 A 4
M 27 -LH	S	1	1400,00 A 4
M 30 -LH	S	1	1640,00 A 4

DIN	00935.920	RAZ 420
935-1 A 2		



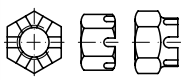
Hexagon slotted and castle nuts

Dimensions → TI-65 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 165

M 6	S	50	79,00 A 2
M 8	S	25	107,00 A 2
M 10 SW 17	S	25	158,00 A 2
M 12 SW 19	S	25	197,00 A 2
M 16	S	1	365,00 A 2
M 20	S	1	620,00 A 2
M 24	S	1	870,00 A 2

DIN	00935.940	RAZ 420
935-1 A 4		



Hexagon slotted and castle nuts

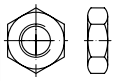
Dimensions → TI-65 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 165

M 8	S	25	190,00 A 4
M 10 SW 17	S	25	203,00 A 4
M 12 SW 19	S	25	285,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
M 16	S	1	475,00 A 4
M 20	S	1	840,00 A 4
M 24	S	1	1620,00 A 4
M 30	S	1	8500,00 A 4

DIN	00936.920	RAZ 420
936 A 2		



Hexagon thin nuts

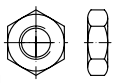
Dimensions → TI-62 Mech. properties → TI-224

Steel → S. 166
Brass → S. 579

Nuts acc. to ISO → ISO 4035 (DIN 439)

M 8	S	100	33,50 A 2
M 10	S	50	60,00 A 2
M 12	S	50	84,00 A 2
M 16	S	25	136,00 A 2
M 20	S	10	217,00 A 2
M 24	S	1	335,00 A 2
M 27	S	1	500,00 A 2
M 30	S	1	700,00 A 2
M 36	S	1	1410,00 A 2

DIN	00936.940	RAZ 420
936 A 4		



Hexagon thin nuts

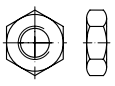
Dimensions → TI-62 Mech. properties → TI-224

Steel → S. 166
Brass → S. 579

Nuts acc. to ISO → ISO 4035 (DIN 439)

M 8	S	100	39,50 A 4
M 10	S	50	75,00 A 4
M 12	S	50	108,00 A 4
M 14	S	25	209,00 A 4
M 16	S	25	174,00 A 4
M 20	S	10	290,00 A 4
M 22	S	10	415,00 A 4
M 24	S	1	435,00 A 4
M 30	S	1	880,00 A 4
M 36	S	1	2080,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
DIN 00936.925			RAZ 420
936 A 2			**fine**



Hexagon thin nuts with metric fine pitch thread

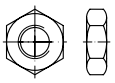
Dimensions → TI-62 Mech. properties → TI-224

Steel → S. 166
Brass → S. 580

Nuts acc. to ISO → ISO 8675 (DIN 439)

M 8	x	1	S	100	46,50 A 2
M 10	x	1	S	50	85,00 A 2
M 12	x	1,5	S	50	111,00 A 2
M 14	x	1,5	S	25	164,00 A 2
M 16	x	1,5	S	25	175,00 A 2
M 18	x	1,5	S	10	243,00 A 2
M 20	x	1,5	S	10	295,00 A 2
M 22	x	1,5	S	10	390,00 A 2
M 24	x	1,5	S	1	440,00 A 2
M 27	x	1,5	S	1	810,00 A 2
M 30	x	1,5	S	1	840,00 A 2
M 36	x	1,5	S	1	1900,00 A 2

DIN	00936.945	RAZ 420
936 A 4		**fine**



Hexagon thin nuts with metric fine pitch thread

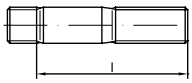
Dimensions → TI-62 Mech. properties → TI-224

Steel → S. 166
Brass → S. 580

Nuts acc. to ISO → ISO 8675 (DIN 439)

M 10	x	1	S	50	108,00 A 4
M 12	x	1,5	S	50	166,00 A 4
M 14	x	1,5	S	25	245,00 A 4
M 16	x	1,5	S	25	250,00 A 4
M 18	x	1,5	S	10	435,00 A 4
M 20	x	1,5	S	10	465,00 A 4
M 24	x	1,5	S	1	610,00 A 4
M 30	x	1,5	S	1	1120,00 A 4
M 36	x	1,5	S	1	2280,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
DIN	00938.920				RAZ 430
938	A 2				
M 6	x	16	S	25	69,00 A 2
M 6	x	20	S	25	70,00 A 2
M 6	x	25	S	25	73,00 A 2
M 6	x	30	S	25	75,00 A 2
M 6	x	35	S	25	77,00 A 2
M 6	x	40	S	25	79,00 A 2
M 8	x	16	S	25	84,00 A 2
M 8	x	20	S	25	87,00 A 2
M 8	x	25	S	25	90,00 A 2
M 8	x	30	S	25	93,00 A 2
M 8	x	35	S	25	96,00 A 2
M 8	x	40	S	25	97,00 A 2
M 8	x	45	S	25	101,00 A 2
M 8	x	50	S	25	104,00 A 2
M 8	x	55	S	25	106,00 A 2
M 8	x	60	S	25	131,00 A 2
M 10	x	20	S	25	109,00 A 2
M 10	x	25	S	25	113,00 A 2
M 10	x	30	S	25	118,00 A 2
M 10	x	35	S	25	123,00 A 2
M 10	x	40	S	25	126,00 A 2
M 10	x	45	S	25	131,00 A 2
M 10	x	50	S	25	135,00 A 2
M 10	x	55	S	25	140,00 A 2
M 10	x	60	S	25	145,00 A 2
M 10	x	65	S	25	150,00 A 2
M 10	x	70	S	25	158,00 A 2
M 12	x	25	S	25	140,00 A 2
M 12	x	30	S	25	142,00 A 2
M 12	x	35	S	25	149,00 A 2
M 12	x	40	S	25	154,00 A 2
M 12	x	45	S	25	161,00 A 2
M 12	x	50	S	25	169,00 A 2
M 12	x	55	S	10	179,00 A 2
M 12	x	60	S	10	186,00 A 2
M 12	x	65	S	10	207,00 A 2
M 12	x	70	S	10	220,00 A 2
M 12	x	75	S	10	229,00 A 2
M 12	x	80	S	10	235,00 A 2
M 12	x	90	S	10	280,00 A 2
M 12	x	100	S	10	315,00 A 2
M 16	x	30	S	10	250,00 A 2
M 16	x	35	S	10	265,00 A 2
M 16	x	40	S	10	275,00 A 2
M 16	x	45	S	10	290,00 A 2
M 16	x	50	S	10	300,00 A 2
M 16	x	55	S	10	320,00 A 2
M 16	x	60	S	10	370,00 A 2
M 16	x	65	S	10	380,00 A 2
M 16	x	70	S	10	390,00 A 2
M 16	x	75	S	10	410,00 A 2
M 16	x	80	S	10	425,00 A 2
M 16	x	90	S	10	440,00 A 2
M 16	x	100	S	1	450,00 A 2
M 20	x	35	S	1	400,00 A 2
M 20	x	40	S	1	430,00 A 2
M 20	x	45	S	1	445,00 A 2
M 20	x	50	S	1	520,00 A 2

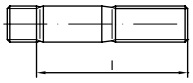


Studs, metal end ≈ 1 d

Dimensions → TI-18 Mech. properties → TI-224

Steel → S. 169

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	55	S	1	530,00 A 2
M 20	x	60	S	1	540,00 A 2
M 20	x	65	S	1	550,00 A 2
M 20	x	70	S	1	560,00 A 2
M 20	x	75	S	1	590,00 A 2
M 20	x	80	S	1	610,00 A 2
M 20	x	90	S	1	670,00 A 2
M 20	x	100	S	1	730,00 A 2
M 24	x	50	S	1	680,00 A 2
M 24	x	55	S	1	710,00 A 2
M 24	x	60	S	1	740,00 A 2
M 24	x	65	S	1	770,00 A 2
M 24	x	70	S	1	800,00 A 2
DIN	00938.940				RAZ 430
938	A 4				
M 6	x	20	S	25	92,00 A 4
M 6	x	25	S	25	95,00 A 4
M 6	x	30	S	25	99,00 A 4
M 6	x	35	S	25	102,00 A 4
M 6	x	40	S	25	104,00 A 4
M 6	x	45	S	25	107,00 A 4
M 8	x	16	S	25	98,00 A 4
M 8	x	20	S	25	100,00 A 4
M 8	x	25	S	25	102,00 A 4
M 8	x	30	S	25	105,00 A 4
M 8	x	35	S	25	119,00 A 4
M 8	x	40	S	25	122,00 A 4
M 8	x	45	S	25	129,00 A 4
M 8	x	50	S	25	131,00 A 4
M 8	x	55	S	25	136,00 A 4
M 8	x	60	S	25	138,00 A 4
M 8	x	65	S	25	144,00 A 4
M 8	x	70	S	25	152,00 A 4
M 8	x	75	S	25	156,00 A 4
M 8	x	80	S	25	161,00 A 4
M 8	x	90	S	25	169,00 A 4
M 10	x	20	S	25	136,00 A 4
M 10	x	25	S	25	138,00 A 4
M 10	x	30	S	25	144,00 A 4
M 10	x	35	S	25	160,00 A 4
M 10	x	40	S	25	166,00 A 4
M 10	x	45	S	25	172,00 A 4
M 10	x	50	S	25	178,00 A 4
M 10	x	55	S	25	187,00 A 4
M 10	x	60	S	25	197,00 A 4
M 10	x	65	S	25	213,00 A 4
M 10	x	70	S	25	221,00 A 4
M 10	x	80	S	25	230,00 A 4
M 12	x	20	S	25	180,00 A 4
M 12	x	25	S	25	180,00 A 4
M 12	x	30	S	25	189,00 A 4
M 12	x	35	S	25	199,00 A 4
M 12	x	40	S	25	211,00 A 4
M 12	x	45	S	25	221,00 A 4
M 12	x	50	S	25	230,00 A 4
M 12	x	55	S	10	240,00 A 4
M 12	x	60	S	10	248,00 A 4
M 12	x	65	S	10	265,00 A 4
M 12	x	70	S	10	285,00 A 4

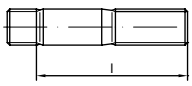


Studs, metal end ≈ 1 d

Dimensions → TI-18 Mech. properties → TI-224

Steel → S. 169

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	75	S	10	290,00 A 4
M 12	x	80	S	10	300,00 A 4
M 12	x	85	S	10	315,00 A 4
M 12	x	90	S	10	320,00 A 4
M 12	x	95	S	10	340,00 A 4
M 12	x	100	S	10	355,00 A 4
M 16	x	30	S	10	320,00 A 4
M 16	x	35	S	10	340,00 A 4
M 16	x	40	S	10	365,00 A 4
M 16	x	45	S	10	375,00 A 4
M 16	x	50	S	10	395,00 A 4
M 16	x	55	S	10	410,00 A 4
M 16	x	60	S	10	440,00 A 4
M 16	x	65	S	1	465,00 A 4
M 16	x	70	S	1	485,00 A 4
M 16	x	75	S	1	495,00 A 4
M 16	x	80	S	1	520,00 A 4
M 16	x	85	S	1	610,00 A 4
M 16	x	90	S	1	630,00 A 4
M 16	x	95	S	1	640,00 A 4
M 16	x	100	S	1	680,00 A 4
M 20	x	40	S	1	590,00 A 4
M 20	x	45	S	1	610,00 A 4
M 20	x	50	S	1	630,00 A 4
M 20	x	55	S	1	670,00 A 4
M 20	x	60	S	1	700,00 A 4
M 20	x	65	S	1	740,00 A 4
M 20	x	70	S	1	780,00 A 4
M 20	x	75	S	1	820,00 A 4
M 20	x	80	S	1	870,00 A 4
M 20	x	85	S	1	910,00 A 4
M 20	x	90	S	1	950,00 A 4
M 20	x	95	S	1	1000,00 A 4
M 20	x	100	S	1	1050,00 A 4
M 24	x	45	S	1	800,00 A 4
M 24	x	50	S	1	840,00 A 4
M 24	x	55	S	1	880,00 A 4
M 24	x	60	S	1	930,00 A 4
M 24	x	65	S	1	970,00 A 4
M 24	x	70	S	1	1010,00 A 4
M 24	x	75	S	1	1070,00 A 4
M 24	x	80	S	1	1120,00 A 4
M 24	x	85	S	1	1180,00 A 4
M 24	x	90	S	1	1240,00 A 4
M 24	x	95	S	1	1300,00 A 4
M 24	x	100	S	1	1340,00 A 4
DIN	00938.941				RAZ 2013
938	A 4 BUMAX88*				
M 6	x	25	S	100	197,00 A 4-88
M 6	x	30	S	100	203,00 A 4-88
M 6	x	35	S	100	210,00 A 4-88



Studs, metal end ≈ 1 d

Dimension from M 6 and length > 3xd, approved for use acc. to pressure equipment directive → cert. 3.1 on request

Dimensions → TI-18 Tightening torque → TI-236
Mech. properties → TI-225

Steel → S. 169

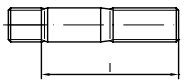
*Mechanical properties ~ Class 8.8

DGRL Zulassung

DIN 938

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	30	S	50	152,00 A4-88
M 8	x	35	S	50	163,00 A4-88
M 8	x	40	S	50	174,00 A4-88
M 8	x	50	S	50	197,00 A4-88
M 10	x	20	S	50	310,00 A4-88
M 10	x	25	S	50	325,00 A4-88
M 10	x	30	S	50	345,00 A4-88
M 10	x	40	S	50	375,00 A4-88
M 10	x	45	S	50	390,00 A4-88
M 10	x	50	S	50	410,00 A4-88
M 10	x	60	S	50	445,00 A4-88
M 10	x	65	S	50	460,00 A4-88
M 12	x	25	S	25	280,00 A4-88
M 12	x	30	S	25	300,00 A4-88
M 12	x	35	S	25	320,00 A4-88
M 12	x	40	S	25	340,00 A4-88
M 12	x	45	S	25	365,00 A4-88
M 12	x	50	S	25	395,00 A4-88
M 12	x	60	S	25	630,00 A4-88
M 16	x	35	S	25	750,00 A4-88
M 16	x	40	S	25	770,00 A4-88
M 16	x	45	S	25	800,00 A4-88
M 16	x	50	S	25	970,00 A4-88
M 16	x	55	S	25	1020,00 A4-88
M 16	x	60	S	25	1060,00 A4-88
M 16	x	65	S	25	1110,00 A4-88
M 20	x	40	S	10	1570,00 A4-88
M 20	x	50	S	10	1690,00 A4-88
M 20	x	60	S	10	1830,00 A4-88
M 20	x	80	S	10	2550,00 A4-88

DIN	00939.920	RAZ 430
939	A 2	



Studs, metal end ≈ 1,25 d

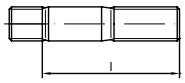
Dimensions → TI-18 Mech. properties → TI-224

Steel → S. 170

M 6	x	16	S	25	71,00 A2
M 6	x	20	S	25	72,00 A2
M 6	x	25	S	25	75,00 A2
M 6	x	30	S	25	77,00 A2
M 6	x	35	S	25	79,00 A2
M 6	x	40	S	25	81,00 A2
M 8	x	16	S	25	86,00 A2
M 8	x	20	S	25	89,00 A2
M 8	x	25	S	25	92,00 A2
M 8	x	30	S	25	95,00 A2
M 8	x	35	S	25	99,00 A2
M 8	x	40	S	25	100,00 A2
M 8	x	45	S	25	103,00 A2
M 8	x	50	S	25	106,00 A2
M 8	x	55	S	25	109,00 A2
M 8	x	60	S	25	135,00 A2
M 10	x	20	S	25	112,00 A2
M 10	x	25	S	25	116,00 A2
M 10	x	30	S	25	121,00 A2
M 10	x	35	S	25	126,00 A2
M 10	x	40	S	25	129,00 A2
M 10	x	45	S	25	135,00 A2
M 10	x	50	S	25	139,00 A2
M 10	x	55	S	25	144,00 A2
M 10	x	60	S	25	149,00 A2
M 10	x	70	S	25	162,00 A2
M 12	x	25	S	25	144,00 A2

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	30	S	25	146,00 A2
M 12	x	35	S	25	153,00 A2
M 12	x	40	S	25	158,00 A2
M 12	x	45	S	25	165,00 A2
M 12	x	50	S	25	173,00 A2
M 12	x	55	S	10	184,00 A2
M 12	x	60	S	10	191,00 A2
M 12	x	65	S	10	207,00 A2
M 12	x	70	S	10	220,00 A2
M 12	x	75	S	10	229,00 A2
M 12	x	80	S	10	235,00 A2
M 12	x	90	S	10	280,00 A2
M 12	x	100	S	10	315,00 A2
M 16	x	30	S	10	250,00 A2
M 16	x	35	S	10	265,00 A2
M 16	x	40	S	10	275,00 A2
M 16	x	45	S	10	290,00 A2
M 16	x	50	S	10	300,00 A2
M 16	x	55	S	10	320,00 A2
M 16	x	60	S	10	370,00 A2
M 16	x	65	S	10	380,00 A2
M 16	x	70	S	10	390,00 A2
M 16	x	75	S	10	410,00 A2
M 16	x	80	S	10	425,00 A2
M 16	x	90	S	10	440,00 A2
M 16	x	100	S	1	450,00 A2
M 20	x	45	S	1	445,00 A2
M 20	x	50	S	1	520,00 A2
M 20	x	55	S	1	530,00 A2
M 20	x	60	S	1	540,00 A2
M 20	x	65	S	1	550,00 A2
M 20	x	70	S	1	560,00 A2
M 20	x	75	S	1	590,00 A2
M 20	x	80	S	1	610,00 A2
M 20	x	90	S	1	670,00 A2
M 20	x	100	S	1	730,00 A2

DIN	00939.940	RAZ 430
939	A 4	



Studs, metal end ≈ 1,25 d

Dimensions → TI-18 Mech. properties → TI-224

Steel → S. 170

M 6	x	20	S	25	92,00 A4
M 6	x	25	S	25	95,00 A4
M 6	x	30	S	25	99,00 A4
M 6	x	35	S	25	102,00 A4
M 6	x	40	S	25	104,00 A4
M 6	x	45	S	25	107,00 A4
M 6	x	50	S	25	111,00 A4
M 8	x	20	S	25	100,00 A4
M 8	x	25	S	25	102,00 A4
M 8	x	30	S	25	105,00 A4
M 8	x	35	S	25	119,00 A4
M 8	x	40	S	25	122,00 A4
M 8	x	45	S	25	129,00 A4
M 8	x	50	S	25	131,00 A4
M 8	x	55	S	25	136,00 A4
M 8	x	60	S	25	138,00 A4
M 8	x	65	S	25	144,00 A4
M 8	x	70	S	25	152,00 A4
M 8	x	75	S	25	156,00 A4
M 8	x	80	S	25	161,00 A4
M 10	x	20	S	25	136,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	25	S	25	138,00 A4
M 10	x	30	S	25	144,00 A4
M 10	x	35	S	25	160,00 A4
M 10	x	40	S	25	166,00 A4
M 10	x	45	S	25	172,00 A4
M 10	x	50	S	25	178,00 A4
M 10	x	55	S	25	187,00 A4
M 10	x	60	S	25	197,00 A4
M 10	x	65	S	25	213,00 A4
M 10	x	70	S	25	221,00 A4
M 10	x	75	S	25	223,00 A4
M 10	x	80	S	25	230,00 A4
M 12	x	25	S	25	180,00 A4
M 12	x	30	S	25	189,00 A4
M 12	x	35	S	25	199,00 A4
M 12	x	40	S	25	211,00 A4
M 12	x	45	S	25	221,00 A4
M 12	x	50	S	25	230,00 A4
M 12	x	55	S	10	240,00 A4
M 12	x	60	S	10	248,00 A4
M 12	x	65	S	10	265,00 A4
M 12	x	70	S	10	285,00 A4
M 12	x	75	S	10	290,00 A4
M 12	x	80	S	10	300,00 A4
M 12	x	85	S	10	315,00 A4
M 12	x	90	S	10	320,00 A4
M 12	x	95	S	10	340,00 A4
M 12	x	100	S	10	355,00 A4
M 16	x	30	S	10	320,00 A4
M 16	x	35	S	10	340,00 A4
M 16	x	40	S	10	365,00 A4
M 16	x	45	S	10	375,00 A4
M 16	x	50	S	10	395,00 A4
M 16	x	55	S	10	410,00 A4
M 16	x	60	S	10	440,00 A4
M 16	x	65	S	1	465,00 A4
M 16	x	70	S	1	485,00 A4
M 16	x	75	S	1	495,00 A4
M 16	x	80	S	1	520,00 A4
M 16	x	85	S	1	610,00 A4
M 16	x	90	S	1	630,00 A4
M 16	x	95	S	1	640,00 A4
M 16	x	100	S	1	680,00 A4
M 16	x	120	S	1	700,00 A4
M 16	x	140	S	1	720,00 A4
M 20	x	40	S	1	590,00 A4
M 20	x	45	S	1	610,00 A4
M 20	x	50	S	1	630,00 A4
M 20	x	55	S	1	670,00 A4
M 20	x	60	S	1	700,00 A4
M 20	x	70	S	1	780,00 A4
M 20	x	75	S	1	820,00 A4
M 20	x	80	S	1	870,00 A4
M 20	x	85	S	1	910,00 A4
M 20	x	90	S	1	950,00 A4
M 20	x	95	S	1	1000,00 A4
M 20	x	100	S	1	1050,00 A4
M 24	x	50	S	1	840,00 A4
M 24	x	55	S	1	880,00 A4
M 24	x	60	S	1	930,00 A4
M 24	x	65	S	1	970,00 A4
M 24	x	70	S	1	1010,00 A4
M 24	x	75	S	1	1070,00 A4
M 24	x	80	S	1	1120,00 A4
M 24	x	85	S	1	1180,00 A4
M 24	x	90	S	1	1240,00 A4
M 24	x	95	S	1	1300,00 A4
M 24	x	100	S	1	1340,00 A4

€/100 = price in € plus VAT when ordering full package unit

DIN	00963.914	RAZ 450
963	A 1	turned

Slotted countersunk head screws

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 177
Brass ➔ S. 580

DIN 963 ➔ replaced by ISO 2009

Dimensions			PU	Pieces	€/100/Mat.
M 1,4	x	3	S	100	35,50 A 1
M 1,4	x	4	S	100	28,50 A 1
M 1,4	x	5	S	100	29,00 A 1
M 1,4	x	6	S	100	30,00 A 1
M 1,4	x	8	S	100	31,50 A 1
M 1,6	x	4	S	100	14,55 A 1
M 1,6	x	5	S	100	13,65 A 1
M 1,6	x	6	S	100	12,65 A 1
M 1,6	x	8	S	100	13,65 A 1
M 1,6	x	10	S	100	14,15 A 1

DIN	00963.920	RAZ 450
963	A 2	

Slotted countersunk head screws

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 177
Brass, plastic ➔ S. 580

DIN 963 ➔ replaced by ISO 2009

Dimensions			PU	Pieces	€/100/Mat.
M 1	x	2	S	1000	150,00 A 2
M 1	x	3	S	1000	150,00 A 2
M 1	x	4	S	1000	150,00 A 2
M 1	x	5	S	1000	150,00 A 2
M 1,2	x	2	S	1000	150,00 A 2
M 1,2	x	3	S	1000	150,00 A 2
M 1,2	x	4	S	1000	150,00 A 2
M 1,2	x	5	S	1000	160,00 A 2
M 1,2	x	6	S	1000	175,00 A 2
M 1,4	x	2	S	1000	150,00 A 2
M 1,4	x	3	S	1000	150,00 A 2
M 1,4	x	4	S	1000	150,00 A 2
M 1,4	x	5	S	1000	160,00 A 2
M 1,4	x	6	S	1000	175,00 A 2
M 1,4	x	8	S	1000	195,00 A 2
M 1,4	x	10	S	1000	225,00 A 2
M 1,6	x	3	S	1000	55,00 A 2
M 1,6	x	4	S	1000	55,00 A 2
M 1,6	x	5	S	1000	65,00 A 2
M 1,6	x	6	S	1000	70,00 A 2
M 1,6	x	8	S	1000	75,00 A 2
M 1,6	x	10	S	1000	80,00 A 2
M 2	x	3	S	1000	65,00 A 2
M 2	x	4	S	1000	4,60 A 2
M 2	x	5	S	1000	3,30 A 2
M 2	x	6	S	1000	3,45 A 2
M 2	x	8	S	1000	3,65 A 2
M 2	x	10	S	1000	4,00 A 2
M 2	x	12	S	1000	4,30 A 2
M 2	x	16	S	1000	4,60 A 2
M 2	x	18	S	1000	6,00 A 2
M 2,5	x	4	S	1000	4,60 A 2
M 2,5	x	5	S	1000	3,30 A 2
M 2,5	x	6	S	1000	3,45 A 2
M 2,5	x	8	S	1000	3,65 A 2
M 2,5	x	10	S	1000	4,00 A 2
M 2,5	x	12	S	1000	4,30 A 2
M 2,5	x	14	S	1000	4,60 A 2
M 2,5	x	16	S	1000	4,60 A 2
M 2,5	x	20	S	1000	12,75 A 2
M 2,5	x	25	S	1000	16,15 A 2
M 3	x	4	S	1000	25,20 A 2
M 3	x	5	S	1000	5,05 A 2
M 3	x	5	K	200	6,05 A 2
M 3	x	6	S	1000	2,90 A 2
M 3	x	6	K	200	3,90 A 2
M 3	x	8	S	1000	2,65 A 2
M 3	x	8	K	200	3,65 A 2
M 3	x	10	S	1000	2,45 A 2
M 3	x	10	K	200	3,45 A 2
M 3	x	12	S	1000	2,50 A 2
M 3	x	12	K	200	3,50 A 2
M 3	x	14	K	200	5,75 A 2
M 3	x	16	S	1000	2,85 A 2
M 3	x	16	K	200	3,85 A 2
M 3	x	20	S	1000	3,30 A 2
M 3	x	20	K	200	4,30 A 2
M 3	x	22	S	1000	11,05 A 2
M 3	x	25	S	1000	4,15 A 2
M 3	x	25	K	200	5,15 A 2
M 3	x	30	S	1000	24,35 A 2
M 3	x	30	K	200	8,20 A 2
M 3	x	35	S	1000	25,35 A 2
M 3	x	40	S	1000	32,00 A 2
M 3	x	45	S	1000	29,00 A 2
M 3	x	50	S	500	39,00 A 2
M 3	x	60	S	500	58,00 A 2
M 3,5	x	8	K	200	15,85 A 2
M 3,5	x	10	K	200	15,85 A 2
M 3,5	x	12	K	200	17,15 A 2
M 3,5	x	16	K	200	18,45 A 2
M 4	x	5	S	1000	24,00 A 2
M 4	x	5	K	200	10,65 A 2
M 4	x	6	S	1000	4,45 A 2
M 4	x	6	K	200	5,45 A 2
M 4	x	8	S	1000	4,30 A 2
M 4	x	8	K	200	5,30 A 2
M 4	x	10	S	1000	3,75 A 2
M 4	x	10	K	200	4,75 A 2
M 4	x	12	S	1000	3,45 A 2
M 4	x	12	K	200	4,45 A 2
M 4	x	14	S	1000	19,05 A 2
M 4	x	16	S	1000	3,60 A 2
M 4	x	16	K	200	4,60 A 2
M 4	x	18	S	1000	20,75 A 2
M 4	x	20	S	1000	4,10 A 2
M 4	x	20	K	200	5,10 A 2
M 4	x	22	K	200	8,05 A 2
M 4	x	25	S	500	4,60 A 2
M 4	x	25	K	200	5,60 A 2
M 4	x	30	S	500	6,20 A 2
M 4	x	30	K	200	7,20 A 2
M 4	x	35	S	500	8,45 A 2
M 4	x	35	K	200	9,45 A 2
M 4	x	40	K	100	12,65 A 2
M 4	x	50	K	100	19,45 A 2
M 5	x	6	S	500	6,80 A 2
M 5	x	6	K	200	7,80 A 2
M 5	x	8	S	500	5,95 A 2
M 5	x	8	K	200	6,95 A 2
M 5	x	10	S	500	5,95 A 2
M 5	x	10	K	200	6,95 A 2
M 5	x	12	S	500	4,40 A 2
M 5	x	12	K	200	5,40 A 2
M 5	x	14	K	200	8,65 A 2
M 5	x	16	S	500	5,10 A 2
M 5	x	16	K	200	6,10 A 2
M 5	x	18	S	500	6,50 A 2
M 5	x	20	S	500	5,90 A 2
M 5	x	20	K	200	6,90 A 2
M 5	x	25	S	500	6,95 A 2
M 5	x	25	K	200	7,95 A 2
M 5	x	30	S	500	7,85 A 2
M 5	x	30	K	200	8,85 A 2
M 5	x	35	S	200	9,55 A 2
M 5	x	35	K	100	11,60 A 2
M 5	x	40	S	200	12,30 A 2
M 5	x	40	K	100	14,35 A 2
M 5	x	45	K	100	17,55 A 2
M 5	x	50	K	100	22,25 A 2
M 5	x	60	K	100	33,45 A 2
M 5	x	65	K	100	46,00 A 2
M 5	x	70	K	100	46,00 A 2
M 5	x	80	S	500	52,00 A 2
M 5	x	90	K	100	66,00 A 2
M 5	x	100	K	100	75,00 A 2
M 6	x	8	S	200	10,70 A 2
M 6	x	8	K	100	12,75 A 2
M 6	x	10	S	200	7,15 A 2
M 6	x	10	K	100	9,20 A 2
M 6	x	12	S	200	6,90 A 2
M 6	x	12	K	100	8,95 A 2
M 6	x	16	S	200	6,45 A 2
M 6	x	16	K	100	8,50 A 2
M 6	x	18	K	100	14,00 A 2
M 6	x	20	S	200	7,15 A 2
M 6	x	20	K	100	9,20 A 2
M 6	x	25	S	200	8,20 A 2
M 6	x	25	K	100	10,25 A 2
M 6	x	30	S	200	9,95 A 2
M 6	x	30	K	100	12,00 A 2
M 6	x	35	S	100	11,90 A 2
M 6	x	35	K	50	16,00 A 2
M 6	x	40	S	100	15,40 A 2
M 6	x	40	K	50	19,50 A 2
M 6	x	45	K	100	22,50 A 2
M 6	x	50	K	50	27,60 A 2
M 6	x	55	K	50	41,00 A 2
M 6	x	60	K	50	41,00 A 2
M 6	x	65	K	50	45,45 A 2
M 6	x	70	K	50	45,45 A 2
M 6	x	80	K	50	50,10 A 2
M 6	x	90	K	50	66,00 A 2
M 6	x	100	K	50	100,00 A 2
M 6	x	110	K	50	180,00 A 2
M 6	x	120	K	25	200,00 A 2
M 6	x	130	K	25	256,00 A 2
M 6	x	140	K	25	298,00 A 2
M 6	x	160	K	25	350,00 A 2
M 8	x	12	S	100	16,00 A 2
M 8	x	16	S	100	16,40 A 2
M 8	x	16	K	50	20,50 A 2
M 8	x	18	S	200	42,00 A 2
M 8	x	20	S	100	17,00 A 2
M 8	x	20	K	50	21,10 A 2
M 8	x	25	S	100	20,40 A 2
M 8	x	25	K	50	24,50 A 2
M 8	x	30	S	100	21,70 A 2
M 8	x	30	K	50	25,80 A 2
M 8	x	35	S	100	24,20 A 2
M 8	x	35	K	50	28,30 A 2
M 8	x	40	S	100	26,80 A 2
M 8	x	40	K	50	30,90 A 2
M 8	x	45	K	50	36,70 A 2
M 8	x	50	S	100	35,10 A 2
M 8	x	50	K	50	39,20 A 2
M 8	x	55	K	50	55,20 A 2
M 8	x	60	K	50	55,20 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 70	K	50	59,30 A2
M 8 x 80	K	50	65,40 A2
M 8 x 90	K	50	72,00 A2
M 8 x 100	K	50	115,00 A2
M 8 x 110	K	50	200,00 A2
M 10 x 16	K	50	65,40 A2
M 10 x 20	S	100	33,20 A2
M 10 x 20	K	50	37,30 A2
M 10 x 25	S	100	37,60 A2
M 10 x 25	K	50	41,70 A2
M 10 x 30	S	100	42,20 A2
M 10 x 30	K	50	46,30 A2
M 10 x 35	S	100	46,60 A2
M 10 x 35	K	50	50,70 A2
M 10 x 40	S	100	51,10 A2
M 10 x 40	K	50	55,20 A2
M 10 x 50	S	100	59,80 A2
M 10 x 50	K	50	63,90 A2
M 10 x 60	S	100	77,70 A2
M 10 x 60	K	50	81,80 A2
M 10 x 70	S	50	100,00 A2
M 10 x 80	S	50	115,70 A2
M 10 x 90	K	50	125,00 A2
M 10 x 100	K	50	175,00 A2
M 10 x 120	K	25	399,00 A2
M 10 x 130	K	25	420,00 A2
M 10 x 140	K	25	420,00 A2

DIN	00963.940	RAZ 450
963	A 4	

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 177
Brass, plastic → S. 580

DIN 963 → replaced by ISO 2009

M 2	x	3	S	1000	85,00 A4
M 2	x	4	S	1000	4,60 A4
M 2	x	4	K	200	5,60 A4
M 2	x	5	S	1000	3,30 A4
M 2	x	5	K	200	4,30 A4
M 2	x	6	S	1000	3,45 A4
M 2	x	6	K	200	4,45 A4
M 2	x	8	S	1000	3,65 A4
M 2	x	8	K	200	4,65 A4
M 2	x	10	S	1000	4,00 A4
M 2	x	10	K	200	5,00 A4
M 2	x	12	S	1000	4,30 A4
M 2	x	12	K	200	5,30 A4
M 2	x	16	S	1000	4,60 A4
M 2	x	16	K	200	5,60 A4
M 2	x	20	S	1000	6,10 A4
M 2	x	20	K	200	7,10 A4
M 2,5	x	4	S	1000	4,60 A4
M 2,5	x	4	K	200	5,60 A4
M 2,5	x	5	S	1000	3,30 A4
M 2,5	x	5	K	200	4,30 A4
M 2,5	x	6	S	1000	3,45 A4
M 2,5	x	6	K	200	4,45 A4
M 2,5	x	8	S	1000	3,65 A4
M 2,5	x	8	K	200	4,65 A4
M 2,5	x	10	S	1000	4,00 A4
M 2,5	x	10	K	200	5,00 A4
M 2,5	x	12	S	1000	4,30 A4
M 2,5	x	12	K	200	5,30 A4
M 2,5	x	16	S	1000	4,60 A4
M 2,5	x	16	K	200	5,60 A4
M 2,5	x	20	K	200	7,10 A4
M 3	x	4	S	1000	7,65 A4
M 3	x	4	K	200	8,65 A4
M 3	x	5	S	1000	6,60 A4
M 3	x	5	K	200	7,60 A4
M 3	x	6	S	1000	3,95 A4
M 3	x	6	K	200	4,95 A4
M 3	x	8	S	1000	3,35 A4
M 3	x	8	K	200	4,35 A4
M 3	x	10	S	1000	2,85 A4
M 3	x	10	K	200	3,85 A4
M 3	x	12	S	1000	3,00 A4
M 3	x	12	K	200	4,00 A4
M 3	x	16	S	1000	3,45 A4
M 3	x	16	K	200	4,45 A4
M 3	x	20	S	1000	3,80 A4
M 3	x	20	K	200	4,80 A4
M 3	x	25	S	1000	5,50 A4
M 3	x	25	K	200	6,50 A4
M 3	x	30	S	1000	6,15 A4
M 3	x	30	K	200	7,15 A4
M 3	x	35	S	1000	30,00 A4
M 3	x	40	S	1000	38,00 A4
M 3	x	40	K	200	15,95 A4
M 3	x	45	S	1000	47,00 A4
M 3	x	50	S	1000	59,00 A4
M 4	x	5	K	200	12,75 A4
M 4	x	6	S	1000	5,80 A4
M 4	x	6	K	200	6,80 A4
M 4	x	8	S	1000	5,50 A4
M 4	x	8	K	200	6,50 A4
M 4	x	10	S	1000	4,65 A4
M 4	x	10	K	200	5,65 A4
M 4	x	12	S	1000	4,45 A4
M 4	x	12	K	200	5,45 A4
M 4	x	16	S	1000	4,70 A4
M 4	x	16	K	200	5,70 A4
M 4	x	18	S	200	8,00 A4
M 4	x	20	S	1000	5,15 A4
M 4	x	20	K	200	6,15 A4
M 4	x	25	S	500	6,40 A4
M 4	x	25	K	200	7,40 A4
M 4	x	30	S	500	8,45 A4
M 4	x	30	K	200	9,45 A4
M 4	x	35	S	500	10,20 A4
M 4	x	35	K	200	11,20 A4
M 4	x	40	K	100	13,10 A4
M 4	x	45	K	100	21,75 A4
M 4	x	50	K	100	21,75 A4
M 4	x	60	K	100	33,15 A4
M 5	x	6	S	500	25,00 A4
M 5	x	8	S	500	7,15 A4
M 5	x	8	K	200	8,15 A4
M 5	x	10	S	500	7,15 A4
M 5	x	10	K	200	8,15 A4
M 5	x	12	S	500	5,55 A4
M 5	x	12	K	200	6,55 A4
M 5	x	16	S	500	6,45 A4
M 5	x	16	K	200	7,45 A4
M 5	x	18	K	200	12,00 A4
M 5	x	20	S	500	7,55 A4
M 5	x	20	K	200	8,55 A4
M 5	x	25	S	500	8,70 A4
M 5	x	25	K	200	9,70 A4
M 5	x	30	S	500	9,95 A4
M 5	x	30	K	200	10,95 A4
M 5	x	35	S	200	13,70 A4
M 5	x	35	K	100	15,75 A4
M 5	x	40	S	200	15,30 A4
M 5	x	40	K	100	17,35 A4
M 5	x	45	K	100	21,05 A4
M 5	x	50	K	100	22,95 A4
M 5	x	60	K	100	31,25 A4
M 5	x	70	K	100	49,55 A4
M 5	x	80	K	100	54,70 A4
M 5	x	90	K	100	72,00 A4
M 5	x	100	K	100	73,10 A4
M 6	x	8	S	200	28,00 A4
M 6	x	8	K	100	15,85 A4
M 6	x	10	S	200	10,20 A4
M 6	x	10	K	100	12,25 A4
M 6	x	12	S	200	9,85 A4
M 6	x	12	K	100	11,90 A4
M 6	x	14	S	200	12,00 A4
M 6	x	16	S	200	9,45 A4
M 6	x	16	K	100	11,50 A4
M 6	x	18	K	100	16,25 A4
M 6	x	20	S	200	10,90 A4
M 6	x	20	K	100	12,95 A4
M 6	x	25	S	200	12,70 A4
M 6	x	25	K	100	14,75 A4
M 6	x	30	S	200	14,70 A4
M 6	x	30	K	100	16,75 A4
M 6	x	35	S	100	18,60 A4
M 6	x	35	K	50	22,70 A4
M 6	x	40	S	100	23,00 A4
M 6	x	40	K	50	27,10 A4
M 6	x	45	S	100	25,30 A4
M 6	x	45	K	50	29,40 A4
M 6	x	50	S	100	26,70 A4
M 6	x	50	K	50	30,80 A4
M 6	x	55	K	100	37,80 A4
M 6	x	60	S	100	33,70 A4
M 6	x	60	K	50	37,80 A4
M 6	x	65	K	50	60,00 A4
M 6	x	70	K	50	60,30 A4
M 6	x	80	K	50	71,50 A4
M 6	x	90	K	50	88,90 A4
M 6	x	100	K	50	214,00 A4
M 6	x	110	K	50	274,00 A4
M 6	x	120	K	50	285,00 A4
M 8	x	10	K	50	40,10 A4
M 8	x	12	S	100	40,00 A4
M 8	x	12	K	50	27,70 A4
M 8	x	16	S	100	23,00 A4
M 8	x	16	K	50	27,10 A4
M 8	x	20	S	100	23,60 A4
M 8	x	20	K	50	27,70 A4
M 8	x	25	S	100	26,80 A4
M 8	x	25	K	50	30,90 A4
M 8	x	30	S	100	29,30 A4
M 8	x	30	K	50	33,40 A4
M 8	x	35	S	100	33,20 A4
M 8	x	35	K	50	37,30 A4
M 8	x	40	S	100	37,00 A4
M 8	x	40	K	50	41,10 A4
M 8	x	45	S	100	44,20 A4
M 8	x	45	K	50	48,30 A4
M 8	x	50	S	100	49,20 A4
M 8	x	50	K	50	53,30 A4
M 8	x	55	K	50	63,40 A4
M 8	x	60	K	50	63,40 A4
M 8	x	70	K	50	99,20 A4
M 8	x	80	K	50	120,00 A4
M 8	x	90	K	50	150,00 A4
M 8	x	100	K	50	158,00 A4
M 10	x	16	K	50	82,80 A4
M 10	x	20	S	100	46,00 A4
M 10	x	20	K	50	50,10 A4
M 10	x	25	S	100	52,60 A4
M 10	x	25	K	50	56,70 A4
M 10	x	30	S	100	58,70 A4
M 10	x	30	K	50	62,80 A4
M 10	x	35	S	100	64,90 A4
M 10	x	35	K	50	69,00 A4
M 10	x	40	S	100	71,50 A4
M 10	x	40	K	50	75,60 A4
M 10	x	45	S	100	77,70 A4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	45	K	50	81,80 A4
M 10	x	50	S	100	83,80 A4
M 10	x	50	K	50	87,90 A4
M 10	x	60	S	100	108,00 A4
M 10	x	60	K	50	113,00 A4
M 10	x	70	S	50	165,00 A4
M 10	x	70	K	25	175,00 A4
M 10	x	80	S	50	200,00 A4
M 10	x	90	K	25	245,00 A4
M 10	x	100	K	25	295,00 A4
M 10	x	110	K	25	395,00 A4
M 10	x	120	K	25	435,00 A4
M 10	x	130	K	25	500,00 A4
M 10	x	140	K	25	575,00 A4
M 12	x	16	K	25	116,00 A4
M 12	x	20	K	25	213,00 A4
M 12	x	25	K	25	213,00 A4
M 12	x	30	K	25	227,00 A4
M 12	x	35	K	25	241,00 A4
M 12	x	40	K	25	248,00 A4
M 12	x	45	K	25	281,00 A4
M 12	x	50	K	25	281,00 A4
M 12	x	60	K	25	323,00 A4
M 12	x	70	K	25	438,00 A4
M 12	x	80	K	25	509,00 A4
M 12	x	90	K	25	690,00 A4
M 12	x	100	K	25	935,00 A4
M 16	x	25	K	1	758,00 A4
M 16	x	30	K	1	773,00 A4
M 16	x	35	K	1	794,00 A4
M 16	x	40	K	1	823,00 A4
M 16	x	45	K	1	866,00 A4
M 16	x	50	K	1	866,00 A4
M 16	x	60	K	1	909,00 A4
M 16	x	70	K	1	1100,00 A4

DIN	00964.920	RAZ 450
964	A 2	

Slotted raised countersunk head screws

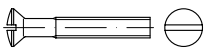
Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 179
Brass → S. 581

DIN 964 → replaced by ISO 2010

M 3	x	5	K	200	5,10 A2
M 3	x	6	S	1000	3,30 A2
M 3	x	6	K	200	4,30 A2
M 3	x	8	S	1000	3,00 A2
M 3	x	8	K	200	4,00 A2
M 3	x	10	S	1000	2,70 A2
M 3	x	10	K	200	3,70 A2
M 3	x	12	S	1000	2,75 A2
M 3	x	12	K	200	3,75 A2
M 3	x	16	K	200	4,10 A2
M 3	x	20	S	1000	3,70 A2
M 3	x	20	K	200	4,70 A2
M 3	x	25	K	200	5,70 A2
M 4	x	6	S	1000	7,10 A2
M 4	x	6	K	200	8,10 A2
M 4	x	8	S	1000	4,80 A2
M 4	x	8	K	200	5,80 A2
M 4	x	10	S	1000	4,10 A2
M 4	x	10	K	200	5,10 A2
M 4	x	12	S	1000	3,85 A2
M 4	x	12	K	200	4,85 A2
M 4	x	16	S	1000	4,20 A2
M 4	x	16	K	200	5,20 A2
M 4	x	20	S	1000	4,30 A2
M 4	x	20	K	200	5,30 A2
M 4	x	25	K	200	6,15 A2
M 4	x	30	K	200	7,65 A2
M 4	x	35	K	100	12,25 A2
M 5	x	8	K	100	10,60 A2
M 5	x	10	S	500	6,60 A2
M 5	x	10	K	200	7,60 A2
M 5	x	12	S	500	5,00 A2
M 5	x	12	K	200	6,00 A2
M 5	x	16	S	500	5,75 A2
M 5	x	16	K	200	6,75 A2
M 5	x	18	K	200	10,45 A2
M 5	x	20	S	500	6,40 A2
M 5	x	20	K	200	7,40 A2
M 5	x	25	S	500	7,55 A2
M 5	x	25	K	200	8,55 A2
M 5	x	30	S	500	8,90 A2
M 5	x	30	K	200	9,90 A2
M 5	x	35	S	200	10,90 A2
M 5	x	35	K	100	12,95 A2
M 5	x	40	K	100	16,15 A2
M 5	x	45	K	100	18,15 A2
M 5	x	50	K	100	22,85 A2
M 5	x	60	K	100	33,75 A2
M 5	x	70	K	100	48,35 A2
M 5	x	80	K	100	53,65 A2
M 6	x	10	S	200	8,20 A2
M 6	x	10	K	100	10,25 A2
M 6	x	12	S	200	7,90 A2
M 6	x	12	K	100	9,95 A2
M 6	x	16	S	200	7,15 A2
M 6	x	16	K	100	9,20 A2
M 6	x	20	S	200	8,20 A2
M 6	x	20	K	100	10,25 A2
M 6	x	25	S	200	9,55 A2
M 6	x	25	K	100	11,60 A2
M 6	x	30	S	200	10,60 A2
M 6	x	30	K	100	12,65 A2
M 6	x	35	S	100	13,70 A2
M 6	x	35	K	50	17,80 A2
M 6	x	40	S	100	17,70 A2
M 6	x	40	K	50	21,80 A2
M 6	x	45	K	50	23,20 A2
M 6	x	50	K	50	30,90 A2
M 6	x	55	S	100	40,30 A2
M 6	x	60	K	50	40,30 A2
M 6	x	70	K	50	59,80 A2
M 6	x	80	S	50	185,00 A2
M 6	x	90	S	50	245,00 A2
M 6	x	100	S	50	310,00 A2
M 6	x	105	S	50	350,00 A2
M 6	x	110	S	50	350,00 A2
M 8	x	12	K	50	37,90 A2
M 8	x	16	S	100	18,80 A2
M 8	x	16	K	50	22,90 A2
M 8	x	20	S	100	19,80 A2
M 8	x	20	K	50	23,90 A2
M 8	x	25	S	100	23,00 A2
M 8	x	25	K	50	27,10 A2
M 8	x	30	S	100	24,90 A2
M 8	x	30	K	50	29,00 A2
M 8	x	35	S	100	27,50 A2
M 8	x	40	S	100	30,60 A2
M 8	x	40	K	50	34,70 A2
M 8	x	45	S	100	36,50 A2
M 8	x	50	S	100	38,55 A2
M 8	x	55	S	100	55,00 A2
M 8	x	60	S	100	53,60 A2
M 8	x	70	S	100	82,30 A2
M 8	x	80	K	50	101,00 A2
M 10	x	20	S	100	44,30 A2
M 10	x	25	S	100	47,20 A2
M 10	x	25	K	50	51,30 A2
M 10	x	30	K	50	55,70 A2
M 10	x	35	S	100	55,20 A2
M 10	x	40	K	50	66,90 A2

DIN	00964.940	RAZ 450
964	A 4	



Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

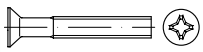
Steel → S. 179
Brass → S. 581

DIN 964 → replaced by ISO 2010

M 2	x	4	K	200	9,30 A4
M 2	x	5	K	200	5,10 A4
M 2	x	6	K	200	5,30 A4
M 2	x	8	K	200	5,60 A4
M 2	x	10	K	200	6,05 A4
M 2	x	12	K	200	6,40 A4
M 2	x	20	K	200	11,50 A4
M 2,5	x	6	K	200	5,30 A4
M 2,5	x	8	K	200	5,60 A4
M 2,5	x	10	K	200	6,05 A4
M 2,5	x	16	K	200	8,85 A4
M 2,5	x	20	K	200	11,50 A4
M 3	x	6	S	1000	4,30 A4
M 3	x	6	K	200	5,30 A4
M 3	x	8	K	200	4,70 A4
M 3	x	10	K	200	4,20 A4
M 3	x	12	K	200	4,40 A4
M 3	x	16	K	200	4,75 A4
M 3	x	20	K	200	5,25 A4
M 3	x	25	K	200	6,70 A4
M 3	x	30	K	200	10,10 A4
M 4	x	6	K	200	10,00 A4
M 4	x	8	S	1000	6,30 A4
M 4	x	8	K	200	7,30 A4
M 4	x	10	S	1000	5,15 A4
M 4	x	10	K	200	6,15 A4
M 4	x	12	K	200	6,00 A4
M 4	x	16	S	1000	5,30 A4
M 4	x	16	K	200	6,30 A4
M 4	x	18	K	200	9,50 A4
M 4	x	20	S	1000	5,75 A4
M 4	x	20	K	200	6,75 A4
M 4	x	25	K	200	8,15 A4
M 4	x	30	K	200	10,40 A4
M 4	x	35	K	100	15,45 A4
M 4	x	40	K	100	20,35 A4
M 4	x	45	K	100	26,35 A4
M 5	x	10	S	500	7,95 A4
M 5	x	10	K	200	8,95 A4
M 5	x	12	K	200	7,55 A4
M 5	x	16	S	500	7,30 A4
M 5	x	16	K	200	8,30 A4
M 5	x	20	S	500	7,70 A4
M 5	x	20	K	200	8,70 A4
M 5	x	25	K	200	10,20 A4
M 5	x	30	K	200	12,70 A4
M 5	x	35	K	100	17,25 A4
M 5	x	40	S	200	18,90 A4
M 5	x	40	K	100	20,95 A4
M 5	x	50	S	200	40,80 A4
M 5	x	50	K	100	42,85 A4
M 5	x	60	K	100	53,15 A4

Dimensions	PU	Pieces	€/100/Mat.
M 5 x 70	K	100	64,85 A4
M 5 x 80	K	100	72,05 A4
M 6 x 10	S	200	11,80 A4
M 6 x 10	K	100	13,85 A4
M 6 x 12	K	100	13,25 A4
M 6 x 16	S	200	10,80 A4
M 6 x 16	K	100	12,85 A4
M 6 x 20	S	200	12,60 A4
M 6 x 20	K	100	14,65 A4
M 6 x 25	S	200	14,70 A4
M 6 x 25	K	100	16,75 A4
M 6 x 30	S	200	16,80 A4
M 6 x 30	K	100	18,85 A4
M 6 x 35	S	100	21,10 A4
M 6 x 40	S	100	28,10 A4
M 6 x 40	K	50	32,20 A4
M 6 x 50	S	100	42,80 A4
M 6 x 50	K	50	46,90 A4
M 6 x 60	K	50	49,80 A4
M 6 x 70	K	50	72,60 A4
M 6 x 80	K	50	86,40 A4
M 8 x 16	K	50	30,90 A4
M 8 x 20	S	100	28,10 A4
M 8 x 20	K	50	32,20 A4
M 8 x 25	S	100	30,60 A4
M 8 x 25	K	50	34,70 A4
M 8 x 30	S	100	34,50 A4
M 8 x 40	K	50	46,90 A4
M 8 x 50	S	100	62,30 A4
M 8 x 50	K	50	66,40 A4
M 10 x 20	K	50	59,30 A4
M 10 x 25	K	50	61,80 A4
M 10 x 50	K	50	103,00 A4

DIN	00965.924	RAZ 460
965	**A 2**	**H**



Countersunk head screws with Phillips cross recess H

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

Steel ➔ S. 180

DIN 965 ➔ replaced by ISO 7046

Dimensions	PU	Pieces	€/100/Mat.
M 1,6 x 3 -H	S	2000	60,00 A2
M 1,6 x 3 -H	K	1000	65,00 A2
M 1,6 x 4 -H	S	2000	60,00 A2
M 1,6 x 4 -H	K	1000	65,00 A2
M 1,6 x 5 -H	S	2000	65,00 A2
M 1,6 x 5 -H	K	1000	70,00 A2
M 1,6 x 6 -H	S	2000	67,00 A2
M 1,6 x 6 -H	K	1000	72,00 A2
M 1,6 x 8 -H	S	2000	69,00 A2
M 1,6 x 8 -H	K	1000	74,00 A2
M 1,6 x 10 -H	S	2000	71,00 A2
M 1,6 x 10 -H	K	1000	76,00 A2
M 1,6 x 12 -H	S	2000	73,00 A2
M 1,6 x 12 -H	K	1000	78,00 A2
M 1,6 x 16 -H	S	2000	75,00 A2
M 1,6 x 16 -H	K	1000	80,00 A2
M 2 x 3 -H	S	1000	5,80 A2
M 2 x 4 -H	S	1000	5,80 A2
M 2 x 5 -H	S	1000	5,80 A2
M 2 x 6 -H	S	1000	5,80 A2
M 2 x 8 -H	S	1000	5,80 A2
M 2 x 10 -H	S	1000	5,80 A2
M 2 x 12 -H	S	1000	6,30 A2
M 2 x 14 -H	S	1000	12,00 A2
M 2 x 16 -H	S	1000	19,90 A2
M 2 x 20 -H	S	1000	22,00 A2
M 2,5 x 3 -H	S	1000	12,00 A2
M 2,5 x 4 -H	S	1000	12,00 A2
M 2,5 x 5 -H	S	1000	5,80 A2
M 2,5 x 6 -H	S	1000	5,80 A2
M 2,5 x 8 -H	S	1000	5,80 A2
M 2,5 x 10 -H	S	1000	5,80 A2
M 2,5 x 12 -H	S	1000	6,00 A2
M 2,5 x 16 -H	S	1000	6,50 A2
M 2,5 x 20 -H	S	1000	7,00 A2
M 2,5 x 25 -H	S	1000	15,00 A2
M 3 x 4 -H	S	1000	6,60 A2
M 3 x 5 -H	S	1000	5,60 A2
M 3 x 5 -H	K	200	6,60 A2
M 3 x 6 -H	S	1000	3,70 A2
M 3 x 6 -H	K	200	4,70 A2
M 3 x 8 -H	S	1000	3,95 A2
M 3 x 8 -H	K	200	4,95 A2
M 3 x 10 -H	S	1000	4,20 A2
M 3 x 10 -H	K	200	5,20 A2
M 3 x 12 -H	S	1000	4,45 A2
M 3 x 12 -H	K	200	5,45 A2
M 3 x 16 -H	S	1000	4,85 A2
M 3 x 16 -H	K	200	5,85 A2
M 3 x 20 -H	S	1000	5,55 A2
M 3 x 20 -H	K	200	6,55 A2
M 3 x 22 -H	S	1000	9,00 A2
M 3 x 25 -H	S	1000	6,05 A2
M 3 x 30 -H	S	1000	8,90 A2
M 3 x 35 -H	S	500	15,00 A2
M 3 x 40 -H	S	500	18,50 A2
M 3 x 45 -H	S	500	34,20 A2
M 3 x 50 -H	S	500	34,20 A2
M 4 x 5 -H	S	1000	7,55 A2
M 4 x 6 -H	S	1000	5,95 A2
M 4 x 6 -H	K	200	6,95 A2
M 4 x 8 -H	S	1000	5,95 A2
M 4 x 8 -H	K	200	6,95 A2
M 4 x 10 -H	S	1000	6,20 A2
M 4 x 10 -H	K	200	7,20 A2
M 4 x 12 -H	S	1000	6,55 A2
M 4 x 12 -H	K	200	7,55 A2
M 4 x 14 -H	S	1000	7,40 A2
M 4 x 16 -H	S	1000	7,40 A2
M 4 x 16 -H	K	200	8,40 A2
M 4 x 18 -H	S	1000	8,25 A2
M 4 x 20 -H	S	1000	8,15 A2
M 4 x 20 -H	K	200	9,15 A2
M 4 x 25 -H	S	1000	9,50 A2
M 4 x 25 -H	K	200	10,50 A2
M 4 x 30 -H	S	1000	11,10 A2
M 4 x 30 -H	K	200	12,10 A2
M 4 x 35 -H	S	500	14,00 A2
M 4 x 35 -H	K	200	15,00 A2
M 4 x 40 -H	S	500	15,00 A2
M 4 x 40 -H	K	200	16,00 A2
M 4 x 45 -H	S	500	34,20 A2
M 4 x 50 -H	S	500	34,20 A2
M 4 x 60 -H	S	500	45,00 A2
M 5 x 6 -H	S	500	14,80 A2
M 5 x 8 -H	S	500	10,60 A2
M 5 x 8 -H	K	200	11,60 A2
M 5 x 10 -H	S	500	10,50 A2
M 5 x 10 -H	K	200	11,50 A2
M 5 x 12 -H	S	500	10,60 A2
M 5 x 12 -H	K	200	11,60 A2
M 5 x 14 -H	S	500	11,86 A2
M 5 x 16 -H	S	500	11,80 A2
M 5 x 16 -H	K	200	12,80 A2
M 5 x 18 -H	S	500	17,30 A2
M 5 x 20 -H	S	500	13,20 A2
M 5 x 20 -H	K	200	14,20 A2
M 5 x 25 -H	S	500	15,10 A2
M 5 x 25 -H	K	200	16,10 A2
M 5 x 30 -H	S	500	17,60 A2
M 5 x 30 -H	K	200	18,60 A2
M 5 x 35 -H	S	500	19,90 A2
M 5 x 35 -H	K	200	20,90 A2
M 5 x 40 -H	S	200	23,20 A2
M 5 x 45 -H	S	200	28,50 A2
M 5 x 50 -H	S	200	29,90 A2
M 5 x 55 -H	S	200	37,40 A2
M 5 x 60 -H	S	200	37,40 A2
M 5 x 70 -H	S	200	50,60 A2
M 5 x 80 -H	S	200	59,30 A2
M 5 x 90 -H	S	200	70,00 A2
M 5 x 100 -H	S	200	85,00 A2
M 6 x 8 -H	S	200	17,60 A2
M 6 x 10 -H	S	200	13,20 A2
M 6 x 12 -H	S	200	13,90 A2
M 6 x 16 -H	S	200	15,80 A2
M 6 x 20 -H	S	200	17,10 A2
M 6 x 25 -H	S	200	19,10 A2
M 6 x 30 -H	S	200	22,40 A2
M 6 x 35 -H	S	200	24,70 A2
M 6 x 40 -H	S	200	28,10 A2
M 6 x 45 -H	S	200	31,30 A2
M 6 x 50 -H	S	200	35,60 A2
M 6 x 55 -H	S	200	40,30 A2
M 6 x 60 -H	S	200	40,30 A2
M 6 x 70 -H	S	100	60,30 A2
M 6 x 80 -H	S	100	69,50 A2
M 6 x 90 -H	S	100	79,00 A2
M 6 x 100 -H	S	100	88,50 A2
M 6 x 110 -H	S	100	185,00 A2
M 6 x 120 -H	S	100	225,00 A2
M 8 x 10 -H	S	100	75,50 A2
M 8 x 12 -H	S	100	28,60 A2
M 8 x 16 -H	S	100	30,80 A2
M 8 x 20 -H	S	100	34,70 A2
M 8 x 25 -H	S	100	40,30 A2
M 8 x 30 -H	S	100	41,90 A2
M 8 x 35 -H	S	100	43,90 A2
M 8 x 40 -H	S	100	47,70 A2
M 8 x 45 -H	S	100	51,00 A2
M 8 x 50 -H	S	100	57,70 A2
M 8 x 55 -H	S	100	64,40 A2
M 8 x 60 -H	S	100	64,40 A2
M 8 x 70 -H	S	100	75,60 A2
M 8 x 80 -H	S	100	87,90 A2
M 8 x 105 -H	S	100	73,20 A2
M 8 x 130 -H	S	100	108,00 A2
M 10 x 12 -H	S	100	125,00 A2
M 10 x 16 -H	S	100	145,00 A2
M 10 x 20 -H	S	100	160,00 A2
M 10 x 25 -H	S	100	190,00 A2
M 10 x 30 -H	S	100	220,00 A2
M 10 x 35 -H	S	100	240,00 A2
M 10 x 40 -H	S	100	261,00 A2
M 10 x 45 -H	S	100	290,00 A2
M 10 x 50 -H	S	100	315,00 A2
M 10 x 55 -H	S	100	345,00 A2
M 10 x 60 -H	S	100	365,00 A2

€/100 = price in € plus VAT when ordering full package unit

Dimensions		PU	Pieces	€/100/Mat.
DIN	00965.944			RAZ 460
965	A 4			H

Countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 180

DIN 965 → replaced by ISO 7046

M 1,6	x	3	-H	S	1000	60,00 A4
M 1,6	x	4	-H	S	1000	60,00 A4
M 1,6	x	5	-H	S	1000	65,00 A4
M 1,6	x	10	-H	S	1000	71,00 A4
M 1,6	x	16	-H	S	1000	75,00 A4
M 2	x	3	-H	S	1000	16,00 A4
M 2	x	4	-H	S	1000	16,00 A4
M 2	x	5	-H	S	1000	17,25 A4
M 2	x	6	-H	S	1000	18,65 A4
M 2	x	8	-H	S	1000	20,00 A4
M 2	x	10	-H	S	1000	21,00 A4
M 2	x	12	-H	S	1000	22,50 A4
M 2	x	16	-H	S	1000	24,00 A4
M 2	x	20	-H	S	1000	27,00 A4
M 2,5	x	3	-H	S	1000	16,00 A4
M 2,5	x	4	-H	S	1000	16,00 A4
M 2,5	x	5	-H	S	1000	18,00 A4
M 2,5	x	6	-H	S	1000	19,00 A4
M 2,5	x	8	-H	S	1000	22,00 A4
M 2,5	x	10	-H	S	1000	24,00 A4
M 2,5	x	12	-H	S	1000	26,00 A4
M 2,5	x	14	-H	S	1000	29,50 A4
M 2,5	x	16	-H	S	1000	29,50 A4
M 2,5	x	20	-H	S	1000	35,00 A4
M 2,5	x	25	-H	S	1000	42,00 A4
M 3	x	4	-H	S	1000	20,00 A4
M 3	x	5	-H	S	1000	20,00 A4
M 3	x	6	-H	S	1000	5,90 A4
M 3	x	8	-H	S	1000	5,75 A4
M 3	x	10	-H	S	1000	6,35 A4
M 3	x	12	-H	S	1000	6,85 A4
M 3	x	14	-H	S	1000	7,40 A4
M 3	x	16	-H	S	1000	7,40 A4
M 3	x	20	-H	S	1000	8,25 A4
M 3	x	25	-H	S	1000	9,70 A4
M 3	x	30	-H	S	1000	14,30 A4
M 3	x	35	-H	S	1000	26,10 A4
M 3	x	40	-H	S	500	33,00 A4
M 4	x	5	-H	S	1000	13,50 A4
M 4	x	6	-H	S	1000	9,55 A4
M 4	x	8	-H	S	1000	8,60 A4
M 4	x	10	-H	S	1000	9,20 A4
M 4	x	12	-H	S	1000	9,90 A4
M 4	x	16	-H	S	1000	10,60 A4
M 4	x	18	-H	S	1000	12,00 A4
M 4	x	20	-H	S	1000	11,90 A4
M 4	x	25	-H	S	1000	14,10 A4
M 4	x	30	-H	S	1000	17,80 A4
M 4	x	35	-H	S	500	22,40 A4
M 4	x	40	-H	S	500	24,10 A4
M 4	x	45	-H	S	500	54,70 A4
M 4	x	50	-H	S	200	54,70 A4
M 4	x	55	-H	S	200	66,00 A4
M 4	x	60	-H	S	200	85,00 A4
M 5	x	6	-H	S	500	20,00 A4
M 5	x	8	-H	S	500	18,00 A4
M 5	x	10	-H	S	500	13,40 A4
M 5	x	12	-H	S	500	14,40 A4
M 5	x	16	-H	S	500	15,40 A4
M 5	x	20	-H	S	500	16,80 A4
M 5	x	25	-H	S	500	20,10 A4
M 5	x	30	-H	S	500	23,60 A4
M 5	x	35	-H	S	200	29,50 A4
M 5	x	40	-H	S	200	38,00 A4
M 5	x	45	-H	S	200	63,50 A4
M 5	x	50	-H	S	200	70,00 A4
M 5	x	55	-H	S	200	82,00 A4
M 5	x	60	-H	S	200	95,00 A4
M 6	x	8	-H	S	200	24,50 A4
M 6	x	10	-H	S	200	20,10 A4
M 6	x	12	-H	S	200	21,00 A4
M 6	x	16	-H	S	200	22,80 A4
M 6	x	20	-H	S	200	24,50 A4
M 6	x	25	-H	S	200	28,60 A4
M 6	x	30	-H	S	200	30,20 A4
M 6	x	35	-H	S	200	39,60 A4
M 6	x	40	-H	S	200	40,00 A4
M 6	x	45	-H	S	200	54,10 A4
M 6	x	50	-H	S	200	54,10 A4
M 6	x	55	-H	S	200	65,00 A4
M 6	x	60	-H	S	200	64,90 A4
M 6	x	70	-H	S	200	95,00 A4
M 6	x	80	-H	S	200	120,00 A4
M 6	x	90	-H	S	200	145,00 A4
M 8	x	10	-H	S	200	65,00 A4
M 8	x	12	-H	S	100	65,00 A4
M 8	x	16	-H	S	100	53,10 A4
M 8	x	20	-H	S	100	57,20 A4
M 8	x	25	-H	S	100	61,30 A4
M 8	x	30	-H	S	100	71,00 A4
M 8	x	35	-H	S	100	82,80 A4
M 8	x	40	-H	S	100	91,50 A4
M 8	x	45	-H	S	100	175,00 A4
M 8	x	50	-H	S	100	205,00 A4
M 8	x	55	-H	S	100	260,00 A4
M 8	x	60	-H	S	100	290,00 A4
M 8	x	70	-H	S	100	330,00 A4
M 8	x	80	-H	S	100	375,00 A4
M 8	x	90	-H	S	100	425,00 A4
M 10	x	16	-H	S	100	250,00 A4
M 10	x	20	-H	S	100	140,00 A4
M 10	x	25	-H	S	100	151,00 A4
M 10	x	30	-H	S	100	162,00 A4
M 10	x	35	-H	S	100	181,00 A4
M 10	x	40	-H	S	100	196,00 A4
M 10	x	45	-H	S	100	201,00 A4
M 10	x	50	-H	S	100	201,00 A4
M 10	x	55	-H	S	100	225,00 A4
M 10	x	60	-H	S	100	225,00 A4
M 10	x	70	-H	S	100	420,00 A4
M 10	x	80	-H	S	100	500,00 A4

ROM®
REYHER ORDER MANAGEMENT

Absolute reliability for kanban supplies

- Cutting-edge in-house ROM | RFID solutions
- Customized kanban solutions with modules that can be freely combined
- Flexible exchangeable labels with product illustration

Dimensions		PU	Pieces	€/100/Mat.
DIN	00965.925			RAZ 460
965	A 2			Z

Countersunk head screws with Pozidriv cross recess Z

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 181

DIN 965 → replaced by ISO 7046

M 1,6	x	3	-Z	S	2000	60,00 A2
M 1,6	x	4	-Z	S	2000	60,00 A2
M 1,6	x	5	-Z	S	2000	65,00 A2
M 1,6	x	6	-Z	S	2000	67,00 A2
M 1,6	x	8	-Z	S	2000	69,00 A2
M 1,6	x	10	-Z	S	2000	71,00 A2
M 1,6	x	12	-Z	S	2000	73,00 A2
M 1,6	x	16	-Z	S	2000	75,00 A2
M 2	x	3	-Z	S	1000	12,00 A2
M 2	x	4	-Z	S	1000	13,00 A2
M 2	x	5	-Z	S	1000	14,25 A2
M 2	x	6	-Z	S	1000	15,65 A2
M 2	x	10	-Z	S	1000	15,85 A2
M 2	x	12	-Z	S	1000	16,36 A2
M 2	x	14	-Z	S	1000	19,90 A2
M 2	x	16	-Z	S	1000	19,90 A2
M 2	x	20	-Z	S	1000	22,00 A2
M 2,5	x	3	-Z	S	1000	12,00 A2
M 2,5	x	4	-Z	S	1000	12,00 A2
M 2,5	x	5	-Z	S	1000	5,80 A2
M 2,5	x	6	-Z	S	1000	5,80 A2
M 2,5	x	8	-Z	S	1000	5,80 A2
M 2,5	x	10	-Z	S	1000	5,80 A2
M 2,5	x	12	-Z	S	1000	6,00 A2
M 2,5	x	16	-Z	S	1000	6,50 A2
M 2,5	x	20	-Z	S	1000	7,00 A2
M 2,5	x	25	-Z	S	1000	15,00 A2
M 3	x	4	-Z	S	1000	6,60 A2
M 3	x	5	-Z	S	1000	5,60 A2
M 3	x	6	-Z	S	1000	3,70 A2
M 3	x	8	-Z	S	1000	3,95 A2
M 3	x	10	-Z	S	1000	4,20 A2
M 3	x	12	-Z	S	1000	4,45 A2
M 3	x	14	-Z	S	1000	4,40 A2
M 3	x	16	-Z	S	1000	4,85 A2
M 3	x	22	-Z	S	1000	6,05 A2
M 3	x	25	-Z	S	1000	6,05 A2
M 3	x	30	-Z	S	1000	8,90 A2
M 3	x	40	-Z	S	500	18,50 A2
M 3	x	50	-Z	S	500	34,20 A2
M 4	x	5	-Z	S	1000	7,55 A2
M 4	x	6	-Z	S	1000	5,95 A2
M 4	x	8	-Z	S	1000	5,95 A2
M 4	x	10	-Z	S	1000	6,20 A2
M 4	x	12	-Z	S	1000	6,55 A2
M 4	x	14	-Z	S	1000	7,40 A2
M 4	x	16	-Z	S	1000	7,40 A2
M 4	x	20	-Z	S	1000	8,15 A2
M 4	x	22	-Z	S	1000	9,50 A2
M 4	x	25	-Z	S	1000	9,50 A2
M 4	x	30	-Z	S	1000	11,10 A2
M 4	x	40	-Z	S	500	15,00 A2
M 4	x	45	-Z	S	500	34,20 A2
M 4	x	60	-Z	S	500	40,00 A2
M 5	x	8	-Z	S	500	10,60 A2
M 5	x	10	-Z	S	500	10,50 A2

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	12 -Z	S	500	10,60 A 2
M 5	x	16 -Z	S	500	11,80 A 2
M 5	x	18 -Z	S	500	14,27 A 2
M 5	x	20 -Z	S	500	13,20 A 2
M 5	x	25 -Z	S	500	15,10 A 2
M 5	x	30 -Z	S	500	17,60 A 2
M 5	x	35 -Z	S	500	19,90 A 2
M 5	x	40 -Z	S	200	23,20 A 2
M 5	x	45 -Z	S	200	29,90 A 2
M 5	x	50 -Z	S	200	29,90 A 2
M 5	x	55 -Z	S	200	37,40 A 2
M 5	x	60 -Z	S	200	37,40 A 2
M 5	x	70 -Z	S	200	50,60 A 2
M 5	x	80 -Z	S	200	59,30 A 2
M 5	x	90 -Z	S	200	70,00 A 2
M 5	x	100 -Z	S	200	85,00 A 2
M 6	x	8 -Z	S	200	17,60 A 2
M 6	x	10 -Z	S	200	13,20 A 2
M 6	x	12 -Z	S	200	13,90 A 2
M 6	x	16 -Z	S	200	15,80 A 2
M 6	x	20 -Z	S	200	17,10 A 2
M 6	x	25 -Z	S	200	19,10 A 2
M 6	x	30 -Z	S	200	22,40 A 2
M 6	x	40 -Z	S	200	28,10 A 2
M 6	x	50 -Z	S	200	35,60 A 2
M 6	x	60 -Z	S	200	40,30 A 2
M 6	x	70 -Z	S	100	90,00 A 2
M 6	x	80 -Z	S	100	105,00 A 2
M 6	x	90 -Z	S	100	125,00 A 2
M 6	x	100 -Z	S	100	150,00 A 2
M 6	x	110 -Z	S	100	185,00 A 2
M 6	x	120 -Z	S	100	225,00 A 2
M 8	x	10 -Z	S	100	75,50 A 2
M 8	x	12 -Z	S	100	85,00 A 2
M 8	x	16 -Z	S	100	100,00 A 2
M 8	x	20 -Z	S	100	110,00 A 2
M 8	x	25 -Z	S	100	130,00 A 2
M 8	x	30 -Z	S	100	150,00 A 2
M 8	x	40 -Z	S	100	180,00 A 2
M 8	x	45 -Z	S	100	200,00 A 2
M 8	x	50 -Z	S	100	215,00 A 2
M 8	x	55 -Z	S	100	235,00 A 2
M 8	x	60 -Z	S	100	250,00 A 2
M 8	x	70 -Z	S	100	295,00 A 2
M 8	x	80 -Z	S	100	350,00 A 2
M 10	x	16 -Z	S	100	145,00 A 2
M 10	x	25 -Z	S	100	190,00 A 2
M 10	x	35 -Z	S	100	240,00 A 2
M 10	x	40 -Z	S	100	261,00 A 2

~DIN	00965.926	RAZ 460
965	**A 2**	**ISR**

Countersunk head screws, ISR = hexalobular socket

~ ISO 14581

Dimensions → TI-39 Standard conversion → TI-11

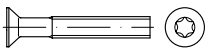
Steel → S. 181

M 1,6	x	3 -T5	K	1000	65,00 A 2
M 1,6	x	4 -T5	K	1000	65,00 A 2
M 1,6	x	5 -T5	K	1000	70,00 A 2
M 1,6	x	6 -T5	K	1000	72,00 A 2
M 1,6	x	8 -T5	K	1000	74,00 A 2
M 1,6	x	10 -T5	K	1000	76,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	3 -T6	S	2000	12,00 A 2
M 2	x	4 -T6	S	2000	13,00 A 2
M 2	x	5 -T6	S	2000	14,25 A 2
M 2	x	6 -T6	S	2000	15,65 A 2
M 2	x	8 -T6	S	2000	16,85 A 2
M 2	x	10 -T6	S	2000	17,75 A 2
M 2	x	12 -T6	S	2000	18,50 A 2
M 2	x	16 -T6	S	2000	19,90 A 2
M 2	x	20 -T6	S	2000	22,00 A 2
M 2,5	x	3 -T8	S	2000	12,00 A 2
M 2,5	x	4 -T8	S	2000	12,00 A 2
M 2,5	x	5 -T8	S	1000	8,20 A 2
M 2,5	x	6 -T8	S	1000	8,40 A 2
M 2,5	x	8 -T8	S	1000	8,60 A 2
M 2,5	x	10 -T8	S	1000	8,90 A 2
M 2,5	x	12 -T8	S	1000	9,40 A 2
M 2,5	x	16 -T8	S	1000	10,30 A 2
M 2,5	x	18 -T8	S	1000	12,25 A 2
M 2,5	x	20 -T8	S	1000	10,80 A 2
M 2,5	x	25 -T8	S	1000	15,00 A 2
M 3	x	4 -T10	S	1000	10,00 A 2
M 3	x	5 -T10	S	1000	8,40 A 2
M 3	x	6 -T10	S	1000	5,60 A 2
M 3	x	8 -T10	S	1000	5,90 A 2
M 3	x	10 -T10	S	1000	6,30 A 2
M 3	x	12 -T10	S	1000	6,60 A 2
M 3	x	16 -T10	S	1000	7,20 A 2
M 3	x	20 -T10	S	1000	8,30 A 2
M 3	x	22 -T10	S	1000	6,05 A 2
M 3	x	25 -T10	S	1000	9,00 A 2
M 3	x	30 -T10	S	1000	13,30 A 2
M 4	x	5 -T20	S	1000	11,30 A 2
M 4	x	6 -T20	S	1000	8,90 A 2
M 4	x	8 -T20	S	1000	9,00 A 2
M 4	x	10 -T20	S	1000	9,30 A 2
M 4	x	12 -T20	S	1000	9,80 A 2
M 4	x	16 -T20	S	1000	11,10 A 2
M 4	x	20 -T20	S	1000	12,20 A 2
M 4	x	25 -T20	S	1000	14,25 A 2
M 4	x	30 -T20	S	1000	16,70 A 2
M 4	x	35 -T20	S	500	21,00 A 2
M 4	x	40 -T20	S	500	22,50 A 2
M 5	x	6 -T25	S	1000	17,50 A 2
M 5	x	8 -T25	S	500	15,50 A 2
M 5	x	10 -T25	S	500	15,70 A 2
M 5	x	12 -T25	S	500	15,70 A 2
M 5	x	14 -T25	S	500	22,00 A 2
M 5	x	16 -T25	S	500	17,70 A 2
M 5	x	20 -T25	S	500	12,80 A 2
M 5	x	25 -T25	S	500	22,60 A 2
M 5	x	30 -T25	S	500	26,40 A 2
M 5	x	35 -T25	S	500	29,50 A 2
M 5	x	40 -T25	S	200	34,50 A 2
M 5	x	45 -T25	S	200	42,00 A 2
M 5	x	50 -T25	S	200	55,00 A 2
M 6	x	8 -T30	S	1000	15,00 A 2
M 6	x	10 -T30	S	200	10,80 A 2
M 6	x	12 -T30	S	200	20,50 A 2
M 6	x	16 -T30	S	200	23,50 A 2
M 6	x	20 -T30	S	200	25,50 A 2
M 6	x	25 -T30	S	200	28,50 A 2
M 6	x	30 -T30	S	200	33,50 A 2
M 6	x	35 -T30	S	200	44,00 A 2
M 6	x	40 -T30	S	200	45,70 A 2
M 6	x	45 -T30	S	200	45,70 A 2
M 6	x	50 -T30	S	200	82,00 A 2
M 6	x	60 -T30	S	200	83,30 A 2
M 8	x	10 -T40	S	100	75,50 A 2
M 8	x	12 -T40	S	100	85,00 A 2
M 8	x	16 -T40	S	100	100,00 A 2
M 8	x	20 -T40	S	100	110,00 A 2
M 8	x	25 -T40	S	100	130,00 A 2
M 8	x	30 -T40	S	100	150,00 A 2
M 8	x	35 -T40	S	100	165,00 A 2
M 8	x	40 -T40	S	100	180,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	45 -T40	S	100	200,00 A 2
M 8	x	50 -T40	S	100	215,00 A 2
M 8	x	55 -T40	S	100	235,00 A 2
M 8	x	60 -T40	S	50	250,00 A 2
M10	x	12 -T50	S	100	170,00 A 2
M10	x	16 -T50	S	100	200,00 A 2
M10	x	20 -T50	S	100	215,00 A 2
M10	x	25 -T50	S	100	255,00 A 2
M10	x	30 -T50	S	100	300,00 A 2
M10	x	35 -T50	S	100	325,00 A 2
M10	x	40 -T50	S	100	375,00 A 2
M10	x	45 -T50	S	100	400,00 A 2
M10	x	50 -T50	S	100	420,00 A 2
M10	x	55 -T50	S	100	460,00 A 2
M10	x	60 -T50	S	100	500,00 A 2

~DIN	00965.948	RAZ 460
965	**A 4**	**ISR**



Countersunk head screws, ISR = hexalobular socket

~ ISO 14581

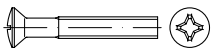
Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 181

M 2	x	3 -T6	S	2000	21,00 A 4
M 2	x	4 -T6	S	2000	23,00 A 4
M 2	x	5 -T6	S	2000	25,00 A 4
M 2	x	6 -T6	S	2000	27,40 A 4
M 2	x	8 -T6	S	2000	30,00 A 4
M 2	x	10 -T6	S	2000	21,50 A 4
M 2	x	12 -T6	S	2000	32,50 A 4
M 2	x	16 -T6	S	2000	35,00 A 4
M 2	x	20 -T6	S	2000	38,50 A 4
M 2,5	x	3 -T8	S	2000	21,00 A 4
M 2,5	x	4 -T8	S	2000	21,00 A 4
M 2,5	x	5 -T8	S	1000	15,00 A 4
M 2,5	x	6 -T8	S	1000	15,00 A 4
M 2,5	x	8 -T8	S	1000	15,50 A 4
M 2,5	x	10 -T8	S	1000	16,00 A 4
M 2,5	x	12 -T8	S	1000	17,00 A 4
M 2,5	x	16 -T8	S	1000	19,00 A 4
M 2,5	x	18 -T8	S	1000	22,00 A 4
M 2,5	x	20 -T8	S	1000	25,00 A 4
M 2,5	x	25 -T8	S	1000	27,00 A 4
M 3	x	4 -T10	S	1000	18,00 A 4
M 3	x	5 -T10	S	1000	15,00 A 4
M 3	x	6 -T10	S	1000	10,00 A 4
M 3	x	8 -T10	S	1000	11,00 A 4
M 3	x	10 -T10	S	1000	11,50 A 4
M 3	x	12 -T10	S	1000	12,00 A 4
M 3	x	16 -T10	S	1000	13,00 A 4
M 3	x	20 -T10	S	1000	15,00 A 4
M 3	x	25 -T10	S	1000	16,00 A 4
M 3	x	30 -T10	S	1000	24,00 A 4
M 4	x	5 -T20	S	1000	20,00 A 4
M 4	x	6 -T20	S	1000	16,00 A 4
M 4	x	8 -T20	S	1000	16,00 A 4
M 4	x	10 -T20	S	1000	17,00 A 4
M 4	x	12 -T20	S	1000	17,50 A 4
M 4	x	16 -T20	S	1000	20,00 A 4
M 4	x	20 -T20	S	1000	22,00 A 4
M 4	x	25 -T20	S	1000	25,00 A 4
M 4	x	30 -T20	S	1000	30,00 A 4
M 4	x	35 -T20	S	500	37,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 40 -T20	S	500	40,00 A4
M 5 x 6 -T25	S	1000	31,00 A4
M 5 x 8 -T25	S	500	32,00 A4
M 5 x 10 -T25	S	500	35,00 A4
M 5 x 12 -T25	S	500	38,00 A4
M 5 x 14 -T25	S	500	40,00 A4
M 5 x 16 -T25	S	500	42,00 A4
M 5 x 20 -T25	S	500	44,00 A4
M 5 x 25 -T25	S	500	45,00 A4
M 5 x 30 -T25	S	500	47,00 A4
M 5 x 35 -T25	S	500	52,00 A4
M 5 x 40 -T25	S	500	44,40 A4
M 5 x 45 -T25	S	200	75,00 A4
M 5 x 50 -T25	S	200	100,00 A4
M 6 x 8 -T30	S	1000	27,00 A4
M 6 x 10 -T30	S	200	32,00 A4
M 6 x 12 -T30	S	200	36,00 A4
M 6 x 16 -T30	S	200	42,00 A4
M 6 x 20 -T30	S	200	45,00 A4
M 6 x 25 -T30	S	200	50,00 A4
M 6 x 30 -T30	S	200	59,00 A4
M 6 x 35 -T30	S	200	77,00 A4
M 6 x 40 -T30	S	200	80,00 A4
M 6 x 45 -T30	S	200	100,00 A4
M 6 x 50 -T30	S	200	145,00 A4
M 6 x 60 -T30	S	200	165,00 A4
M 8 x 10 -T40	S	100	135,00 A4
M 8 x 12 -T40	S	100	150,00 A4
M 8 x 16 -T40	S	200	39,20 A4
M 8 x 20 -T40	S	200	44,89 A4
M 8 x 25 -T40	S	100	230,00 A4
M 8 x 30 -T40	S	100	265,00 A4
M 8 x 35 -T40	S	100	290,00 A4
M 8 x 40 -T40	S	100	315,00 A4
M 8 x 45 -T40	S	100	350,00 A4
M 8 x 50 -T40	S	100	380,00 A4
M 8 x 60 -T40	S	50	440,00 A4

DIN	00966.924	RAZ 460
966	A 2	H



Raised countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 182

DIN 966 → replaced by ISO 7047

M 2,5 x 4 -H	S	1000	15,00 A2
M 2,5 x 5 -H	S	1000	13,50 A2
M 2,5 x 6 -H	S	1000	11,50 A2
M 2,5 x 8 -H	S	1000	6,95 A2
M 2,5 x 10 -H	S	1000	6,95 A2
M 2,5 x 12 -H	S	1000	8,50 A2
M 2,5 x 16 -H	S	1000	11,00 A2
M 2,5 x 20 -H	S	1000	16,00 A2
M 2,5 x 25 -H	S	1000	24,00 A2
M 3 x 4 -H	S	1000	10,00 A2
M 3 x 5 -H	S	1000	5,60 A2
M 3 x 6 -H	S	1000	3,70 A2
M 3 x 8 -H	S	1000	3,95 A2
M 3 x 10 -H	S	1000	4,20 A2
M 3 x 12 -H	S	1000	4,85 A2
M 3 x 16 -H	S	1000	4,85 A2
M 3 x 18 -H	S	1000	5,50 A2
M 3 x 20 -H	S	1000	5,55 A2

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 25 -H	S	1000	9,75 A2
M 3 x 30 -H	S	500	13,00 A2
M 3 x 35 -H	S	500	14,00 A2
M 3 x 45 -H	S	500	32,00 A2
M 3 x 50 -H	S	500	50,00 A2
M 4 x 5 -H	S	1000	12,00 A2
M 4 x 6 -H	S	1000	5,80 A2
M 4 x 8 -H	S	1000	5,95 A2
M 4 x 10 -H	S	1000	6,20 A2
M 4 x 12 -H	S	1000	6,55 A2
M 4 x 14 -H	S	1000	7,40 A2
M 4 x 16 -H	S	1000	7,40 A2
M 4 x 20 -H	S	1000	8,15 A2
M 4 x 25 -H	S	1000	9,50 A2
M 4 x 30 -H	S	500	11,10 A2
M 4 x 35 -H	S	500	14,00 A2
M 4 x 40 -H	S	500	15,00 A2
M 4 x 45 -H	S	500	35,00 A2
M 4 x 50 -H	S	500	58,00 A2
M 5 x 6 -H	S	500	16,00 A2
M 5 x 8 -H	S	500	10,60 A2
M 5 x 10 -H	S	500	10,50 A2
M 5 x 12 -H	S	500	10,60 A2
M 5 x 16 -H	S	500	11,80 A2
M 5 x 20 -H	S	500	13,20 A2
M 5 x 25 -H	S	500	15,10 A2
M 5 x 30 -H	S	500	17,60 A2
M 5 x 35 -H	S	500	19,90 A2
M 5 x 40 -H	S	200	23,20 A2
M 5 x 45 -H	S	200	30,90 A2
M 5 x 50 -H	S	200	32,70 A2
M 5 x 55 -H	S	200	45,00 A2
M 5 x 60 -H	S	200	42,40 A2
M 5 x 70 -H	S	200	60,00 A2
M 5 x 80 -H	S	200	85,00 A2
M 6 x 8 -H	S	200	20,00 A2
M 6 x 10 -H	S	200	20,00 A2
M 6 x 12 -H	S	200	13,90 A2
M 6 x 16 -H	S	200	15,80 A2
M 6 x 20 -H	S	200	17,10 A2
M 6 x 22 -H	S	200	66,47 A2
M 6 x 25 -H	S	200	19,10 A2
M 6 x 30 -H	S	200	22,40 A2
M 6 x 35 -H	S	200	24,70 A2
M 6 x 40 -H	S	200	28,10 A2
M 6 x 45 -H	S	200	33,20 A2
M 6 x 50 -H	S	200	33,70 A2
M 6 x 55 -H	S	200	40,60 A2
M 6 x 60 -H	S	200	40,60 A2
M 6 x 65 -H	S	200	75,00 A2
M 6 x 70 -H	S	200	88,00 A2
M 6 x 80 -H	S	200	110,00 A2
M 8 x 10 -H	S	200	30,00 A2
M 8 x 12 -H	S	200	30,00 A2
M 8 x 16 -H	S	200	23,60 A2
M 8 x 20 -H	S	200	25,00 A2
M 8 x 25 -H	S	200	30,70 A2
M 8 x 30 -H	S	200	33,60 A2
M 8 x 35 -H	S	100	37,20 A2
M 8 x 40 -H	S	100	39,20 A2
M 8 x 45 -H	S	100	79,70 A2
M 8 x 50 -H	S	100	79,70 A2
M 8 x 55 -H	S	100	86,00 A2
M 8 x 60 -H	S	100	92,00 A2

Dimensions	PU	Pieces	€/100/Mat.

DIN	00966.944	RAZ 460
966	A 4	H

Raised countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 182

DIN 966 → replaced by ISO 7047

M 2,5 x 6 -H	S	1000	17,25 A4
M 2,5 x 8 -H	S	1000	10,50 A4
M 2,5 x 10 -H	S	1000	14,55 A4
M 2,5 x 12 -H	S	1000	12,75 A4
M 2,5 x 16 -H	S	1000	16,50 A4
M 2,5 x 20 -H	S	1000	24,00 A4
M 2,5 x 25 -H	S	1000	36,00 A4
M 3 x 4 -H	S	1000	15,00 A4
M 3 x 5 -H	S	1000	8,40 A4
M 3 x 6 -H	S	1000	5,75 A4
M 3 x 8 -H	S	1000	6,00 A4
M 3 x 10 -H	S	1000	6,35 A4
M 3 x 12 -H	S	1000	6,85 A4
M 3 x 16 -H	S	1000	7,40 A4
M 3 x 20 -H	S	1000	8,25 A4
M 3 x 25 -H	S	1000	9,70 A4
M 3 x 30 -H	S	1000	19,50 A4
M 4 x 6 -H	S	1000	8,70 A4
M 4 x 8 -H	S	1000	8,60 A4
M 4 x 10 -H	S	1000	9,20 A4
M 4 x 12 -H	S	1000	9,90 A4
M 4 x 16 -H	S	1000	10,60 A4
M 4 x 20 -H	S	1000	11,90 A4
M 4 x 25 -H	S	1000	14,10 A4
M 4 x 30 -H	S	1000	16,65 A4
M 4 x 35 -H	S	1000	21,00 A4
M 4 x 40 -H	S	1000	22,50 A4
M 5 x 6 -H	S	500	24,00 A4
M 5 x 8 -H	S	500	15,90 A4
M 5 x 10 -H	S	500	13,40 A4
M 5 x 12 -H	S	500	14,40 A4
M 5 x 16 -H	S	500	15,40 A4
M 5 x 20 -H	S	500	16,80 A4
M 5 x 25 -H	S	500	20,10 A4
M 5 x 30 -H	S	500	23,60 A4
M 5 x 35 -H	S	500	29,85 A4
M 5 x 40 -H	S	200	34,80 A4
M 5 x 45 -H	S	200	46,35 A4
M 5 x 50 -H	S	200	49,05 A4
M 6 x 8 -H	S	200	30,00 A4
M 6 x 10 -H	S	200	20,10 A4
M 6 x 12 -H	S	200	21,00 A4
M 6 x 16 -H	S	200	22,80 A4
M 6 x 20 -H	S	200	23,60 A4
M 6 x 25 -H	S	200	26,90 A4
M 6 x 30 -H	S	200	30,20 A4
M 6 x 35 -H	S	200	33,70 A4
M 6 x 40 -H	S	200	40,00 A4
M 6 x 45 -H	S	200	49,80 A4
M 6 x 50 -H	S	200	50,55 A4
M 6 x 55 -H	S	200	61,00 A4
M 6 x 60 -H	S	200	72,00 A4
M 8 x 10 -H	S	200	45,00 A4
M 8 x 16 -H	S	200	35,40 A4
M 8 x 20 -H	S	200	37,50 A4
M 8 x 25 -H	S	200	46,05 A4

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	30 -H	S	200	50,40 A4
M 8	x	35 -H	S	100	55,80 A4
M 8	x	40 -H	S	100	58,80 A4
M 8	x	45 -H	S	100	119,55 A4
M 8	x	50 -H	S	100	119,55 A4
M 8	x	55 -H	S	100	129,00 A4
M 8	x	60 -H	S	100	138,00 A4

~DIN	00975.920	RAZ 470
975	A 2	

Threaded rods, length 1000 mm

As per DIN 976-1, type A

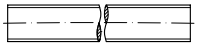
Mech. properties ➔ TI-224

Steel ➔ S. 182
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking)
➔ information box

M 3	S	1	355,00	A2
M 4	S	1	340,00	A2
M 5	S	1	370,00	A2
M 6	S	1	380,00	A2
M 8	S	1	600,00	A2
M 10	S	1	850,00	A2
M 12	S	1	1240,00	A2
M 14	S	1	1770,00	A2
M 16	S	1	2000,00	A2
M 20	S	1	3300,00	A2
M 24	S	1	4600,00	A2
M 27	S	1	5500,00	A2
M 30	S	1	7600,00	A2
M 36	S	1	10100,00	A2

~DIN	00975.926	RAZ 470
975	A 2	2000



Threaded rods, length 2.000 mm

As per DIN 976-1, type A

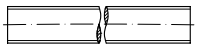
Mech. properties ➔ TI-224

Steel ➔ S. 183

Colour codes (as substitute for marking)
➔ information box

M 8	x	2000	S	1	1200,00	A2
M 10	x	2000	S	1	1690,00	A2
M 12	x	2000	S	1	2450,00	A2
M 16	x	2000	S	1	4000,00	A2
M 20	x	2000	S	1	6600,00	A2
M 24	x	2000	S	1	9200,00	A2

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.940		RAZ 470
975	A 4		



Threaded rods, length 1000 mm

As per DIN 976-1, type A

Mech. properties ➔ TI-224

Steel ➔ S. 182
Brass, plastic ➔ S. 582

Colour codes (as substitute for marking)
➔ information box

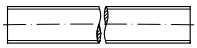
M 2	S	1	580,00	A4
M 3	S	1	415,00	A4
M 4	S	1	390,00	A4
M 5	S	1	560,00	A4
M 6	S	1	590,00	A4
M 8	S	1	770,00	A4
M 10	S	1	1180,00	A4
M 12	S	1	1610,00	A4
M 14	S	1	2180,00	A4
M 16	S	1	2850,00	A4
M 18	S	1	3500,00	A4
M 20	S	1	4100,00	A4
M 22	S	1	5600,00	A4
M 24	S	1	6600,00	A4
M 27	S	1	7600,00	A4
M 30	S	1	9300,00	A4
M 33	S	1	13900,00	A4
M 36	S	1	14200,00	A4

Colour marking for threaded rods

Property class/Mat.	Colour	~ Ral No.
A2	green	6024
A4	red	3000
others	as agreed	

Colour instead of stamping according to DIN 976-1

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00975.924		RAZ 470
975	A 2		left



Threaded rods, length 1000 mm with metric left hand thread

As per DIN 976-1, type A

Mech. properties ➔ TI-224

Steel ➔ S. 183

Colour codes (as substitute for marking)
➔ information box

M 6 -LH	S	1	1560,00	A2
M 8 -LH	S	1	1560,00	A2
M 10 -LH	S	1	2150,00	A2
M 12 -LH	S	1	3750,00	A2
M 16 -LH	S	1	6000,00	A2
M 20 -LH	S	1	9800,00	A2

~DIN	00975.944	RAZ 472
975	A 4	trapezoid

Threaded rods, length 1000 mm, with normal trapezoidal thread

Thread acc. to DIN 103,
Thread ends acc. to DIN 78-Ko/ISO 4753-RL

Round nuts with trap. thread ➔ article 88089

Mech. properties ➔ TI-224

Steel ➔ S. 186

TR 16	x	4	S	1	15800,00	A4
TR 20	x	4	S	1	21400,00	A4
TR 24	x	5	S	1	35400,00	A4
TR 30	x	6	S	1	41300,00	A4

Dimensions	PU Pieces	€/100/Mat.
DIN	00976.943	RAZ 2014
976	**A 4 BUMAX88***	**type B**

Stud bolts, B = with flat point

Dimension from M 6 and length L > 3xd, approved for use acc. to pressure equipment directive ➔ cert. 3.1 on request

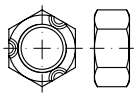
Mech. properties ➔ TI-225 Tightening torque ➔ TI-236

Studs as per ANSI standard on request

DGRL Zulassung

BM 5	x 1000	S	1	3880,00	A4-88
BM 6	x 1000	S	1	4250,00	A4-88
BM 8	x 1000	S	1	7000,00	A4-88
BM 10	x 1000	S	1	8200,00	A4-88
BM 12	x 1000	S	1	10400,00	A4-88
BM 14	x 1000	S	1	13400,00	A4-88
BM 16	x 1000	S	1	16000,00	A4-88
BM 20	x 1000	S	1	23500,00	A4-88
BM 24	x 1000	S	1	33600,00	A4-88
BM 27	x 1000	S	1	43200,00	A4-88
BM 30	x 1000	S	1	47100,00	A4-88
BM 36	x 1000	S	1	74900,00	A4-88

~DIN	00980.924	RAZ 480
980	**A 2**	**type V**



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Type and dimensions ~ DIN 934 with squeezing

Caution! Risk of cold shut. Please note the technical advice given in the information box.

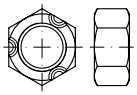
Dimensions ➔ TI-66 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

Steel ➔ S. 187

DIN 980 ➔ replaced by ISO 7042

VM 3	S 1000	12,30	A2
VM 4	S 1000	24,60	A2
VM 5	S 1000	28,00	A2
VM 6	S 1000	31,00	A2
VM 8	S 500	43,00	A2
VM 10	S 500	59,00	A2
VM 12	S 250	71,00	A2
VM 14	S 100	154,00	A2
VM 16	S 100	163,00	A2
VM 18	S 50	178,00	A2
VM 20	S 25	185,00	A2
VM 22	S 25	192,00	A2
VM 24	S 25	215,00	A2

Dimensions	PU Pieces	€/100/Mat.
~DIN	00980.944	RAZ 480
980	**A 4**	**type V**



Prevailing torque type hexagon nuts, V = all-metal nuts, single component

Type and dimensions ~ DIN 934 with squeezing

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions ➔ TI-66 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

Steel ➔ S. 187

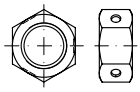
DIN 980 ➔ replaced by ISO 7042

VM 3	S 1000	80,00	A4
VM 4	S 100	99,00	A4
VM 5	S 1000	109,00	A4
VM 5	K 100	111,00	A4
VM 6	S 1000	112,00	A4
VM 6	K 100	114,00	A4
VM 8	S 500	118,00	A4
VM 8	K 100	120,00	A4
VM 10	S 500	176,00	A4
VM 10	K 100	178,00	A4
VM 12	S 250	270,00	A4
VM 12	K 50	275,00	A4
VM 14	S 100	325,00	A4
VM 16	S 100	440,00	A4
VM 16	K 25	445,00	A4
VM 18	S 50	465,00	A4
VM 20	S 25	590,00	A4
VM 24	S 25	1110,00	A4
VM 30	S 10	1610,00	A4

Important Note!

The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

Dimensions	PU Pieces	€/100/Mat.
Article	84032.927	RAZ 480
84032	**A 2 - 70**	**Biloc**



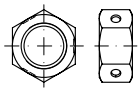
Prevailing torque type hexagon nuts, all-metal nuts

- three squeezing points on the center key area
- both sides screwable
- suitable for automatic feeders
- dimensions acc. ISO 4032

Dimensions ➔ TI-61

M 6	S 1000	39,00	
M 8	S 500	52,00	
M 10	S 250	78,00	
M 12	S 250	96,00	
M 16	S 50	180,00	
M 20	S 50	275,00	

Article	84032.948	RAZ 480
84032	**A 4 - 80**	**Biloc**



Prevailing torque type hexagon nuts, all-metal nuts

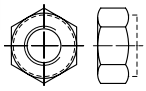
- three squeezing points on the center key area
- both sides screwable
- suitable for automatic feeders
- dimensions acc. ISO 4032

Dimensions ➔ TI-61

M 6	S 1000	45,00	
M 8	S 1000	48,00	
M 10	S 500	65,00	
M 12	S 500	98,00	
M 16	S 100	225,00	
M 20	S 50	345,00	

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00982.920		RAZ 480

982 A 2



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use at temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

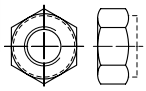
With heat-stabilised ring → ISO 7040 S. 531
Steel → S. 189

DIN 982 → replaced by ISO 7040

M 5	S	1000	40,00 A 2
M 5	K	100	42,00 A 2
M 6	S	1000	46,50 A 2
M 6	K	100	48,50 A 2
M 8	S	500	59,00 A 2
M 8	K	100	61,00 A 2
M 10	S	500	102,00 A 2
M 10	K	100	104,00 A 2
M 12	S	250	127,00 A 2
M 12	K	50	131,00 A 2
M 16	S	100	219,00 A 2
M 16	K	25	227,00 A 2
M 20	S	25	415,00 A 2

~DIN	00982.940	RAZ 480

982 A 4



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use at temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

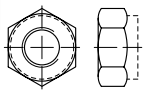
Steel → S. 189

DIN 982 → replaced by ISO 7040

M 5	S	100	55,00 A 4
M 6	S	100	63,00 A 4
M 8	S	100	83,00 A 4
M 10	S	100	165,00 A 4
M 12	S	50	210,00 A 4
M 16	S	25	365,00 A 4
M 20	S	25	1500,00 A 4
M 24	S	25	1700,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00985.920		RAZ 480

985 A 2



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 190
Brass → S. 582

DIN 985 → replaced by ISO 10511

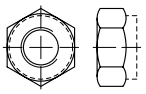
M 2,5	S	1000	15,50 A 2
M 3	S	1000	16,30 A 2
M 3	K	100	19,90 A 2
M 4	S	1000	12,70 A 2
M 4	K	100	15,80 A 2
M 5	S	1000	12,70 A 2
M 5	K	100	15,80 A 2
M 6	S	1000	16,40 A 2
M 6	K	100	19,90 A 2
M 8	S	500	31,50 A 2
M 8	K	100	36,50 A 2
M 10	S	500	62,00 A 2
M 10	K	50	69,00 A 2
M 12	S	250	85,00 A 2
M 12	K	25	101,00 A 2
M 14	S	250	192,00 A 2
M 14	K	25	222,00 A 2
M 16	S	250	203,00 A 2
M 16	K	25	234,00 A 2
M 18	S	25	520,00 A 2
M 20	S	1	620,00 A 2
M 22	S	1	660,00 A 2
M 24	S	1	660,00 A 2
M 27	S	1	2410,00 A 2
M 30	S	1	2410,00 A 2
M 36	S	1	4750,00 A 2

Important Note!

The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

Dimensions	PU	Pieces	€/100/Mat.
~DIN	00985.940		RAZ 480

985 A 4



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-224

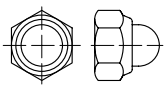
Steel → S. 190
Brass → S. 582

DIN 985 → replaced by ISO 10511

M 3	S	1000	45,50 A 4
M 3	K	100	52,00 A 4
M 4	S	1000	25,50 A 4
M 4	K	100	30,00 A 4
M 5	S	1000	25,50 A 4
M 5	K	100	30,00 A 4
M 6	S	1000	34,00 A 4
M 6	K	100	41,50 A 4
M 8	S	500	49,50 A 4
M 8	K	100	56,00 A 4
M 10	S	500	97,00 A 4
M 10	K	50	109,00 A 4
M 12	S	250	150,00 A 4
M 12	K	25	171,00 A 4
M 14	S	250	295,00 A 4
M 14	K	25	340,00 A 4
M 16	S	250	340,00 A 4
M 16	K	25	380,00 A 4
M 20	S	1	950,00 A 4
M 24	S	1	1000,00 A 4
M 27	S	1	2850,00 A 4
M 30	S	1	3650,00 A 4

~DIN	00986.920	RAZ 481

986 A 2



Prevailing torque type hexagon domed cap nuts with non-metallic insert

For use under temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 191

SW = wrench size

M 4	S	100	45,00 A 2
M 5	S	100	45,00 A 2
M 6	S	100	55,00 A 2
M 8	S	100	58,00 A 2

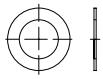
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 10 SW 17	S	100	124,00 A 2
M 12 SW 19	S	50	174,00 A 2
M 16	S	25	420,00 A 2

~DIN	00988.920	RAZ 481

988

A 2/1.4310



Shim rings

Caution! Tolerances as per product grade A–B ISO 4759-3/DIN 522.

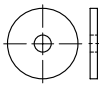
Steel ➔ S. 191
Spring steel ➔ S. 193

Hole ∅ x outside ∅ x thickness h								
6	x	12	x	0,25	S	100	265,00	A 2
6	x	12	x	0,5	S	100	260,00	A 2
6	x	12	x	1	S	100	340,00	A 2
8	x	14	x	0,1	S	100	305,00	A 2
8	x	14	x	0,25	S	100	260,00	A 2
8	x	14	x	0,5	S	100	260,00	A 2
8	x	14	x	1	S	100	335,00	A 2
10	x	16	x	0,1	S	100	225,00	A 2
10	x	16	x	0,25	S	100	255,00	A 2
10	x	16	x	0,5	S	100	255,00	A 2
10	x	16	x	1	S	100	330,00	A 2
12	x	18	x	0,1	S	100	225,00	A 2
12	x	18	x	0,25	S	100	255,00	A 2
12	x	18	x	0,5	S	100	255,00	A 2
12	x	18	x	1	S	100	330,00	A 2
14	x	20	x	1	S	100	35,00	A 2
16	x	22	x	0,1	S	100	285,00	A 2
16	x	22	x	0,25	S	100	275,00	A 2
16	x	22	x	0,5	S	100	260,00	A 2
16	x	22	x	1	S	100	335,00	A 2
18	x	25	x	1	S	100	335,00	A 2
20	x	28	x	0,1	S	100	300,00	A 2
20	x	28	x	0,2	S	100	315,00	A 2
20	x	28	x	0,25	S	100	275,00	A 2
20	x	28	x	0,5	S	100	265,00	A 2
20	x	28	x	1	S	100	340,00	A 2
20	x	28	x	2	S	100	490,00	A 2
25	x	35	x	0,1	S	100	256,00	A 2
25	x	35	x	0,2	S	100	270,00	A 2
25	x	35	x	0,25	S	100	305,00	A 2
25	x	35	x	0,5	S	100	285,00	A 2
25	x	35	x	1	S	100	370,00	A 2
30	x	42	x	1	S	100	335,00	A 2
40	x	50	x	0,2	S	50	110,00	A 2
40	x	50	x	0,5	S	50	140,00	A 2
40	x	50	x	1	S	50	280,00	A 2

Dimensions	PU	Pieces	€/100/Mat.
DIN	01052.924		RAZ 485

1052

A 2



Washers for timber connectors, heavy, round type

Dimensions ➔ TI-85

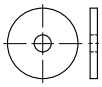
Steel ➔ S. 193

Hole ∅ x outside ∅ x thickness								
14	x	58	x	6	S	25	450,00	A 2
18	x	68	x	6	S	25	607,00	A 2
23	x	80	x	8	S	10	1464,00	A 2
25	x	92	x	8	S	10	1770,00	A 2
27	x	105	x	8	S	10	2000,00	A 2

DIN	01052.944	RAZ 485

1052

A 4



Washers for timber connectors, heavy, round type

Dimensions ➔ TI-85

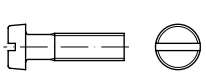
Steel ➔ S. 193

Hole ∅ x outside ∅ x thickness								
14	x	58	x	6	S	25	620,00	A 4
18	x	68	x	6	S	25	850,00	A 4
23	x	80	x	8	S	10	2050,00	A 4
25	x	92	x	8	S	10	2480,00	A 4
27	x	105	x	8	S	10	2800,00	A 4

ISO	01207.914	RAZ 30

1207

A 1 **turned**



Slotted cheese head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

Steel ➔ S. 194
Brass/plastic ➔ S. 582

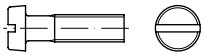
ISO 1207 ➔ replaces DIN 84 (compatible)

M 1,4	x	3	S	100	55,20	A 1
M 1,4	x	4	S	100	56,20	A 1
M 1,4	x	5	S	100	58,20	A 1
M 1,4	x	6	S	100	61,80	A 1
M 1,4	x	8	S	100	64,40	A 1
M 1,4	x	10	S	100	68,50	A 1
M 1,6	x	3	S	100	15,80	A 1
M 1,6	x	4	S	100	11,90	A 1
M 1,6	x	5	S	100	11,00	A 1
M 1,6	x	6	S	100	10,40	A 1
M 1,6	x	8	S	100	11,50	A 1
M 1,6	x	10	S	100	12,70	A 1
M 1,6	x	12	S	100	17,30	A 1

ISO	01207.920	RAZ 30

1207

A 2



Slotted cheese head screws

Partly from l = 60mm partial thread

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

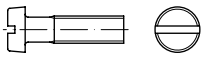
Steel ➔ S. 194
Brass/plastic ➔ S. 582

ISO 1207 ➔ replaces DIN 84 (compatible)

M 1	x	2	S	2000	150,00	A 2
M 1	x	3	S	2000	150,00	A 2
M 1	x	4	S	2000	150,00	A 2
M 1	x	5	S	2000	150,00	A 2
M 1	x	6	S	2000	150,00	A 2
M 1	x	8	S	2000	175,00	A 2
M 1	x	10	S	2000	195,00	A 2
M 1,2	x	2	S	2000	150,00	A 2
M 1,2	x	3	S	2000	150,00	A 2
M 1,2	x	4	S	2000	150,00	A 2
M 1,2	x	5	S	2000	150,00	A 2
M 1,2	x	6	S	2000	175,00	A 2
M 1,2	x	8	S	2000	195,00	A 2
M 1,2	x	10	S	2000	225,00	A 2
M 1,2	x	12	S	2000	255,00	A 2
M 1,4	x	2	S	2000	150,00	A 2
M 1,4	x	3	S	2000	150,00	A 2
M 1,4	x	4	S	2000	150,00	A 2
M 1,4	x	5	S	2000	150,00	A 2
M 1,4	x	6	S	2000	175,00	A 2
M 1,4	x	8	S	2000	195,00	A 2
M 1,4	x	10	S	2000	225,00	A 2
M 1,4	x	12	S	2000	255,00	A 2
M 1,6	x	2	S	2000	150,00	A 2
M 1,6	x	3	S	2000	150,00	A 2
M 1,6	x	4	S	2000	150,00	A 2
M 1,6	x	5	S	2000	150,00	A 2
M 1,6	x	6	S	2000	175,00	A 2
M 1,6	x	8	S	2000	195,00	A 2
M 1,6	x	10	S	2000	225,00	A 2
M 1,6	x	12	S	2000	255,00	A 2
M 1,6	x	16	S	2000	295,00	A 2
M 2	x	3	S	1000	3,90	A 2
M 2	x	4	S	1000	3,80	A 2
M 2	x	5	S	1000	3,85	A 2
M 2	x	6	S	1000	3,90	A 2
M 2	x	8	S	1000	4,10	A 2
M 2	x	10	S	1000	4,45	A 2
M 2	x	12	S	1000	5,00	A 2
M 2	x	16	S	1000	5,40	A 2
M 2	x	20	S	1000	9,00	A 2
M 2,5	x	3	S	1000	3,90	A 2
M 2,5	x	4	S	1000	3,80	A 2
M 2,5	x	5	S	1000	3,85	A 2
M 2,5	x	6	S	1000	3,90	A 2
M 2,5	x	8	S	1000	4,10	A 2
M 2,5	x	10	S	1000	4,45	A 2
M 2,5	x	12	S	1000	5,00	A 2
M 2,5	x	16	S	1000	5,40	A 2
M 2,5	x	18	S	1000	10,00	A 2
M 2,5	x	20	S	1000	7,75	A 2

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	22	S	1000	13,29 A 2
M 2,5	x	25	S	1000	9,30 A 2
M 2,5	x	30	S	1000	15,00 A 2
M 2,5	x	35	S	1000	27,00 A 2
M 2,5	x	40	S	1000	51,00 A 2
M 3	x	3	S	1000	10,00 A 2
M 3	x	4	S	1000	6,10 A 2
M 3	x	5	S	1000	4,10 A 2
M 3	x	5	K	200	5,10 A 2
M 3	x	6	S	1000	2,75 A 2
M 3	x	6	K	200	3,75 A 2
M 3	x	8	S	1000	2,40 A 2
M 3	x	8	K	200	3,40 A 2
M 3	x	10	S	1000	2,50 A 2
M 3	x	10	K	200	3,50 A 2
M 3	x	12	S	1000	2,70 A 2
M 3	x	12	K	200	3,70 A 2
M 3	x	14	S	1000	3,90 A 2
M 3	x	14	K	200	4,90 A 2
M 3	x	16	S	1000	3,00 A 2
M 3	x	16	K	200	4,00 A 2
M 3	x	18	S	1000	4,30 A 2
M 3	x	18	K	200	5,30 A 2
M 3	x	20	S	1000	3,30 A 2
M 3	x	20	K	200	4,30 A 2
M 3	x	22	S	1000	5,85 A 2
M 3	x	22	K	200	6,85 A 2
M 3	x	25	S	1000	3,80 A 2
M 3	x	25	K	200	4,80 A 2
M 3	x	30	S	1000	6,35 A 2
M 3	x	30	K	200	7,35 A 2
M 3	x	35	S	1000	9,25 A 2
M 3	x	40	K	200	12,55 A 2
M 3	x	45	S	500	18,00 A 2
M 3	x	50	K	200	36,00 A 2
M 3	x	55	K	200	70,00 A 2
M 3,5	x	6	K	200	20,00 A 2
M 3,5	x	8	K	200	16,15 A 2
M 3,5	x	10	K	200	15,95 A 2
M 3,5	x	12	K	200	16,85 A 2
M 3,5	x	16	K	200	17,85 A 2
M 3,5	x	20	K	200	21,65 A 2
M 3,5	x	25	K	200	32,50 A 2
M 4	x	4	K	200	11,50 A 2
M 4	x	5	S	1000	6,60 A 2
M 4	x	5	K	200	7,60 A 2
M 4	x	6	S	1000	4,30 A 2
M 4	x	6	K	200	5,30 A 2
M 4	x	8	S	1000	4,30 A 2
M 4	x	8	K	200	5,30 A 2
M 4	x	10	S	1000	3,50 A 2
M 4	x	10	K	200	4,50 A 2
M 4	x	12	S	1000	3,80 A 2
M 4	x	12	K	200	4,80 A 2
M 4	x	14	S	1000	5,60 A 2
M 4	x	16	S	1000	4,30 A 2
M 4	x	16	K	200	5,30 A 2
M 4	x	18	S	1000	6,15 A 2
M 4	x	18	K	200	7,15 A 2
M 4	x	20	S	1000	4,70 A 2
M 4	x	20	K	200	5,70 A 2
M 4	x	22	K	200	9,15 A 2
M 4	x	25	S	500	5,75 A 2
M 4	x	25	K	200	6,75 A 2
M 4	x	30	S	500	6,60 A 2
M 4	x	30	K	200	7,60 A 2
M 4	x	35	S	500	11,50 A 2
M 4	x	35	K	100	12,15 A 2
M 4	x	40	K	100	15,05 A 2
M 4	x	45	K	100	15,05 A 2
M 4	x	50	K	100	21,45 A 2
M 4	x	55	K	100	30,00 A 2
M 4	x	60	K	100	29,05 A 2
M 4	x	70	K	100	34,75 A 2
M 4	x	80	K	100	43,00 A 2
M 4	x	90	K	100	60,50 A 2
M 4	x	100	K	100	87,00 A 2
M 5	x	6	S	500	9,00 A 2
M 5	x	8	S	500	6,35 A 2
M 5	x	8	K	200	7,35 A 2
M 5	x	10	S	500	5,25 A 2
M 5	x	10	K	200	6,25 A 2
M 5	x	12	S	500	5,75 A 2
M 5	x	12	K	200	6,75 A 2
M 5	x	14	K	200	8,40 A 2
M 5	x	16	S	500	6,40 A 2
M 5	x	16	K	200	7,40 A 2
M 5	x	18	S	500	9,45 A 2
M 5	x	18	K	200	10,45 A 2
M 5	x	20	S	500	7,25 A 2
M 5	x	20	K	200	8,25 A 2
M 5	x	22	K	200	8,95 A 2
M 5	x	25	S	500	8,10 A 2
M 5	x	25	K	200	9,10 A 2
M 5	x	30	S	500	9,95 A 2
M 5	x	30	K	200	10,95 A 2
M 5	x	35	S	200	10,90 A 2
M 5	x	35	K	100	12,95 A 2
M 5	x	40	S	200	14,80 A 2
M 5	x	40	K	100	16,85 A 2
M 5	x	45	K	100	19,05 A 2
M 5	x	50	K	100	23,65 A 2
M 5	x	55	K	100	37,45 A 2
M 5	x	60	K	100	37,45 A 2
M 5	x	70	K	100	40,35 A 2
M 5	x	80	K	100	43,45 A 2
M 5	x	90	K	100	62,00 A 2
M 5	x	100	S	100	127,00 A 2
M 6	x	8	K	100	10,30 A 2
M 6	x	10	S	200	8,25 A 2
M 6	x	10	K	100	10,30 A 2
M 6	x	12	S	200	7,05 A 2
M 6	x	12	K	100	9,10 A 2
M 6	x	16	S	200	7,95 A 2
M 6	x	16	K	100	10,00 A 2
M 6	x	18	S	200	11,40 A 2
M 6	x	18	K	100	13,45 A 2
M 6	x	20	S	200	8,70 A 2
M 6	x	20	K	100	10,75 A 2
M 6	x	25	S	200	9,95 A 2
M 6	x	25	K	100	12,00 A 2
M 6	x	30	S	200	11,30 A 2
M 6	x	30	K	100	13,35 A 2
M 6	x	35	S	100	12,80 A 2
M 6	x	35	K	50	16,90 A 2
M 6	x	40	S	100	14,40 A 2
M 6	x	40	K	50	18,50 A 2
M 6	x	45	S	100	17,80 A 2
M 6	x	45	K	50	21,90 A 2
M 6	x	50	K	50	35,20 A 2
M 6	x	60	K	50	43,00 A 2
M 6	x	70	K	50	47,50 A 2
M 6	x	75	K	50	78,00 A 2
M 6	x	80	K	50	52,10 A 2
M 6	x	90	K	50	56,70 A 2
M 6	x	100	K	50	61,30 A 2
M 8	x	10	K	50	35,00 A 2
M 8	x	12	S	100	22,90 A 2
M 8	x	12	K	50	27,00 A 2
M 8	x	16	S	100	20,90 A 2
M 8	x	16	K	50	25,00 A 2
M 8	x	20	S	100	21,50 A 2
M 8	x	20	K	50	25,60 A 2
M 8	x	25	S	100	22,90 A 2
M 8	x	25	K	50	27,00 A 2
M 8	x	30	S	100	25,60 A 2
M 8	x	30	K	50	29,70 A 2
M 8	x	35	S	100	30,30 A 2
M 8	x	35	K	50	34,40 A 2
M 8	x	40	S	100	35,00 A 2
M 8	x	40	K	50	39,10 A 2
M 8	x	50	S	100	45,80 A 2
M 8	x	50	K	50	49,90 A 2
M 8	x	60	K	50	60,80 A 2
M 8	x	70	K	50	71,00 A 2
M 8	x	80	K	50	77,65 A 2
M 8	x	90	K	50	85,90 A 2
M 8	x	100	K	50	93,00 A 2
M 10	x	12	K	50	50,00 A 2
M 10	x	16	K	50	51,60 A 2
M 10	x	20	K	50	38,30 A 2
M 10	x	25	K	50	42,40 A 2
M 10	x	30	K	50	46,00 A 2
M 10	x	35	K	50	51,60 A 2
M 10	x	40	K	50	55,70 A 2
M 10	x	45	K	50	55,70 A 2
M 10	x	50	K	50	78,20 A 2
M 10	x	60	K	50	102,00 A 2
M 10	x	70	K	25	115,00 A 2
M 10	x	80	K	25	124,00 A 2
M 10	x	90	K	25	135,00 A 2
M 10	x	100	K	25	147,00 A 2

ISO	01207.940	RAZ 30
1207	**A 4**	



Slotted cheese head screws

Partly from l = 60mm partial thread

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

Steel ➔ S. 194
Brass/plastic ➔ S. 582

ISO 1207 ➔ replaces DIN 84 (compatible)

M 2	x	3	S	1000	3,90 A 4
M 2	x	3	K	200	4,90 A 4
M 2	x	4	S	1000	3,80 A 4
M 2	x	4	K	200	4,80 A 4
M 2	x	5	S	1000	3,85 A 4
M 2	x	5	K	200	4,85 A 4
M 2	x	6	S	1000	3,90 A 4
M 2	x	6	K	200	4,90 A 4
M 2	x	8	S	1000	4,10 A 4
M 2	x	8	K	200	5,10 A 4
M 2	x	10	S	1000	4,45 A 4
M 2	x	10	K	200	5,45 A 4
M 2	x	12	S	1000	5,00 A 4
M 2	x	12	K	200	6,00 A 4
M 2	x	16	S	1000	5,45 A 4
M 2	x	16	K	200	6,45 A 4
M 2	x	20	S	1000	7,80 A 4
M 2	x	20	K	200	8,80 A 4
M 2	x	25	K	200	15,00 A 4
M 2,5	x	3	S	1000	3,90 A 4
M 2,5	x	3	K	200	4,90 A 4
M 2,5	x	4	S	1000	3,80 A 4
M 2,5	x	4	K	200	4,80 A 4
M 2,5	x	5	S	1000	3,85 A 4
M 2,5	x	5	K	200	4,85 A 4
M 2,5	x	6	S	1000	3,90 A 4
M 2,5	x	6	K	200	4,90 A 4
M 2,5	x	8	S	1000	4,10 A 4
M 2,5	x	8	K	200	5,10 A 4
M 2,5	x	10	S	1000	4,45 A 4
M 2,5	x	10	K	200	5,45 A 4
M 2,5	x	12	S	1000	5,00 A 4

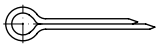
€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 2,5 x 12	K	200	6,00 A4
M 2,5 x 14	K	200	9,10 A4
M 2,5 x 16	S	1000	5,45 A4
M 2,5 x 16	K	200	6,45 A4
M 2,5 x 18	K	200	8,75 A4
M 2,5 x 20	S	1000	7,75 A4
M 2,5 x 20	K	200	8,75 A4
M 2,5 x 22	K	200	16,85 A4
M 2,5 x 25	K	200	17,75 A4
M 3 x 3	S	1000	10,70 A4
M 3 x 3	K	200	11,70 A4
M 3 x 4	S	1000	6,85 A4
M 3 x 4	K	200	7,85 A4
M 3 x 5	S	1000	5,45 A4
M 3 x 5	K	200	6,45 A4
M 3 x 6	S	1000	3,45 A4
M 3 x 6	K	200	4,45 A4
M 3 x 8	S	1000	3,15 A4
M 3 x 8	K	200	4,15 A4
M 3 x 10	S	1000	2,90 A4
M 3 x 10	K	200	3,90 A4
M 3 x 12	S	1000	3,20 A4
M 3 x 12	K	200	4,20 A4
M 3 x 14	K	200	4,50 A4
M 3 x 16	S	1000	3,50 A4
M 3 x 16	K	200	4,50 A4
M 3 x 18	K	200	5,95 A4
M 3 x 20	S	1000	3,95 A4
M 3 x 20	K	200	4,95 A4
M 3 x 22	K	200	8,95 A4
M 3 x 25	S	1000	5,30 A4
M 3 x 25	K	200	6,30 A4
M 3 x 30	S	1000	7,40 A4
M 3 x 30	K	200	8,40 A4
M 3 x 35	S	500	13,20 A4
M 3 x 35	K	100	15,25 A4
M 3 x 40	S	500	15,90 A4
M 3 x 40	K	100	17,95 A4
M 3 x 50	S	500	28,90 A4
M 3 x 50	K	100	30,95 A4
M 3 x 55	K	100	46,45 A4
M 3 x 60	K	100	46,45 A4
M 3,5 x 6	K	100	25,00 A4
M 3,5 x 8	K	200	19,55 A4
M 3,5 x 10	K	200	19,25 A4
M 3,5 x 20	S	500	28,00 A4
M 3,5 x 20	K	200	30,00 A4
M 4 x 4	K	200	12,75 A4
M 4 x 5	S	1000	7,55 A4
M 4 x 5	K	200	8,55 A4
M 4 x 6	S	1000	5,05 A4
M 4 x 6	K	200	6,05 A4
M 4 x 8	S	1000	4,90 A4
M 4 x 8	K	200	5,90 A4
M 4 x 10	S	1000	4,30 A4
M 4 x 10	K	200	5,30 A4
M 4 x 12	S	1000	4,60 A4
M 4 x 12	K	200	5,60 A4
M 4 x 16	S	1000	5,30 A4
M 4 x 16	K	200	6,30 A4
M 4 x 18	S	1000	7,50 A4
M 4 x 18	K	200	8,50 A4
M 4 x 20	S	1000	5,75 A4
M 4 x 20	K	200	6,75 A4
M 4 x 22	K	200	11,20 A4
M 4 x 25	S	500	7,05 A4
M 4 x 25	K	200	8,05 A4
M 4 x 30	S	500	8,00 A4
M 4 x 30	K	200	9,00 A4
M 4 x 35	S	500	11,40 A4
M 4 x 35	K	100	13,45 A4
M 4 x 40	S	500	14,10 A4
M 4 x 40	K	100	16,15 A4
M 4 x 45	K	100	18,85 A4
M 4 x 50	S	500	19,90 A4

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 50	K	100	21,95 A4
M 4 x 55	K	100	34,25 A4
M 4 x 60	K	100	34,25 A4
M 4 x 70	K	100	42,15 A4
M 4 x 80	K	100	44,95 A4
M 5 x 6	S	500	8,70 A4
M 5 x 6	K	200	9,70 A4
M 5 x 8	S	500	8,40 A4
M 5 x 8	K	200	9,40 A4
M 5 x 10	S	500	7,40 A4
M 5 x 10	K	200	8,40 A4
M 5 x 12	S	500	7,25 A4
M 5 x 12	K	200	8,25 A4
M 5 x 16	S	500	8,10 A4
M 5 x 16	K	200	9,10 A4
M 5 x 18	K	200	13,95 A4
M 5 x 20	S	500	9,15 A4
M 5 x 20	K	200	10,15 A4
M 5 x 25	S	500	10,20 A4
M 5 x 25	K	200	11,20 A4
M 5 x 30	S	500	12,50 A4
M 5 x 30	K	200	13,50 A4
M 5 x 35	S	200	13,80 A4
M 5 x 35	K	100	15,85 A4
M 5 x 40	S	200	20,60 A4
M 5 x 40	K	100	22,65 A4
M 5 x 45	K	100	23,95 A4
M 5 x 50	S	200	23,30 A4
M 5 x 50	K	100	25,35 A4
M 5 x 60	K	100	44,35 A4
M 5 x 70	K	100	51,05 A4
M 5 x 80	K	100	57,75 A4
M 5 x 100	K	100	71,05 A4
M 6 x 8	S	200	10,90 A4
M 6 x 8	K	100	12,95 A4
M 6 x 10	S	200	10,40 A4
M 6 x 10	K	100	12,45 A4
M 6 x 12	S	200	9,30 A4
M 6 x 12	K	100	11,35 A4
M 6 x 16	S	200	10,40 A4
M 6 x 16	K	100	12,45 A4
M 6 x 18	K	100	17,05 A4
M 6 x 20	S	200	11,50 A4
M 6 x 20	K	100	13,55 A4
M 6 x 22	K	100	19,15 A4
M 6 x 25	S	200	13,10 A4
M 6 x 25	K	100	15,15 A4
M 6 x 30	S	200	15,00 A4
M 6 x 30	K	100	17,05 A4
M 6 x 35	S	100	17,10 A4
M 6 x 35	K	50	21,20 A4
M 6 x 40	S	100	25,10 A4
M 6 x 40	K	50	29,20 A4
M 6 x 45	K	50	33,00 A4
M 6 x 50	S	100	31,70 A4
M 6 x 50	K	50	35,80 A4
M 6 x 60	K	50	47,40 A4
M 6 x 70	K	50	60,80 A4
M 6 x 75	K	50	71,00 A4
M 6 x 80	K	50	71,00 A4
M 8 x 10	S	100	35,80 A4
M 8 x 10	K	50	39,90 A4
M 8 x 12	S	100	27,90 A4
M 8 x 12	K	50	32,00 A4
M 8 x 16	S	100	24,50 A4
M 8 x 16	K	50	28,60 A4
M 8 x 20	S	100	25,70 A4
M 8 x 20	K	50	29,80 A4
M 8 x 25	S	100	28,20 A4
M 8 x 25	K	50	32,30 A4
M 8 x 30	S	100	31,20 A4
M 8 x 30	K	50	35,30 A4
M 8 x 35	S	100	37,40 A4
M 8 x 35	K	50	41,50 A4
M 8 x 40	S	100	41,70 A4

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 40	K	50	45,80 A4
M 8 x 45	K	50	54,85 A4
M 8 x 50	S	100	59,30 A4
M 8 x 50	K	50	63,40 A4
M 8 x 55	K	50	76,10 A4
M 8 x 60	K	50	76,10 A4
M 8 x 70	K	50	103,00 A4
M 10 x 16	K	50	70,30 A4
M 10 x 20	K	50	48,00 A4
M 10 x 25	K	50	52,10 A4
M 10 x 30	K	50	57,20 A4
M 10 x 35	K	50	63,40 A4
M 10 x 40	K	50	69,00 A4
M 10 x 50	K	50	98,10 A4
M 10 x 60	K	50	119,00 A4
M 10 x 65	K	50	165,00 A4
M 10 x 70	K	50	165,00 A4

ISO	01234.300	RAZ 40
1234	**1.4300/A 2**	



Split pins

Dimensions → TI-120 Standard conversion → TI-10

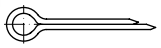
Steel → S. 196
Copper → S. 584

ISO 1234 → replaces DIN 94 (compatible)

Nominal ∅ (= drilling ∅) x length	PU	Pieces	€/100/Mat.
1 x 8	S	1000	3,60 A2
1 x 10	S	1000	3,60 A2
1 x 16	S	1000	3,60 A2
1 x 20	S	1000	3,75 A2
1 x 25	S	1000	4,40 A2
1 x 32	S	1000	6,00 A2
1,6 x 8	S	1000	4,25 A2
1,6 x 10	S	1000	4,25 A2
1,6 x 12	S	1000	4,25 A2
1,6 x 16	S	1000	4,25 A2
1,6 x 20	S	1000	4,45 A2
1,6 x 25	S	1000	5,20 A2
1,6 x 32	S	1000	6,00 A2
2 x 10	S	1000	5,80 A2
2 x 12	S	1000	5,80 A2
2 x 14	S	1000	5,80 A2
2 x 16	S	1000	5,80 A2
2 x 20	S	1000	6,20 A2
2 x 25	S	1000	7,20 A2
2 x 32	S	1000	8,60 A2
2 x 40	S	1000	10,00 A2
2,5 x 12	S	500	9,70 A2
2,5 x 16	S	500	9,70 A2
2,5 x 20	S	500	10,50 A2
2,5 x 25	S	500	12,30 A2
2,5 x 32	S	500	14,80 A2
2,5 x 36	S	500	16,30 A2
2,5 x 40	S	500	17,80 A2
2,5 x 45	S	500	19,60 A2
2,5 x 50	S	500	21,40 A2
3,2 x 16	S	500	13,60 A2
3,2 x 20	S	500	14,60 A2
3,2 x 25	S	500	16,90 A2
3,2 x 32	S	500	20,30 A2
3,2 x 36	S	500	22,20 A2
3,2 x 40	S	500	24,20 A2
3,2 x 45	S	500	27,00 A2
3,2 x 50	S	500	29,00 A2
4 x 20	S	500	23,00 A2

Dimensions			PU	Pieces	€/100/Mat.
4	x	25	S	500	27,00 A 2
4	x	28	S	500	28,00 A 2
4	x	32	S	500	32,50 A 2
4	x	36	S	500	35,50 A 2
4	x	40	S	500	38,50 A 2
4	x	45	S	500	42,00 A 2
4	x	50	S	500	46,00 A 2
4	x	63	S	500	60,00 A 2
5	x	25	S	250	39,50 A 2
5	x	28	S	250	40,00 A 2
5	x	32	S	250	47,50 A 2
5	x	36	S	250	52,00 A 2
5	x	40	S	250	56,00 A 2
5	x	45	S	250	62,00 A 2
5	x	50	S	250	67,00 A 2
5	x	56	S	250	74,00 A 2
5	x	63	S	250	82,00 A 2
5	x	71	S	250	91,00 A 2
5	x	80	S	250	95,00 A 2
6,3	x	32	S	250	68,00 A 2
6,3	x	36	S	250	74,00 A 2
6,3	x	40	S	250	80,00 A 2
6,3	x	45	S	250	95,00 A 2
6,3	x	50	S	250	95,00 A 2
6,3	x	56	S	250	105,00 A 2
6,3	x	63	S	250	116,00 A 2
6,3	x	71	S	250	128,00 A 2
6,3	x	80	S	250	142,00 A 2
8	x	36	S	100	148,00 A 2
8	x	45	S	100	162,00 A 2
8	x	50	S	100	175,00 A 2
8	x	56	S	100	191,00 A 2
8	x	63	S	100	210,00 A 2
8	x	71	S	100	231,00 A 2
8	x	80	S	100	255,00 A 2
10	x	63	S	50	310,00 A 2
10	x	71	S	50	370,00 A 2
10	x	80	S	50	405,00 A 2
10	x	100	S	25	490,00 A 2

ISO	01234.940	RAZ 40
1234	**A 4**	



Split pins

Dimensions → TI-120 Corrosion protection → TI-217

Steel → S. 196
Copper → S. 584

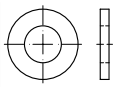
ISO 1234 → replaces DIN 94 (compatible)

Nominal ∅ (= drilling ∅) x length

1	x	16	K	100	6,40 A 4
1	x	20	K	100	7,40 A 4
1,6	x	10	K	100	6,60 A 4
1,6	x	12	K	100	7,10 A 4
1,6	x	16	K	100	9,00 A 4
1,6	x	20	K	100	11,30 A 4
1,6	x	25	K	100	12,90 A 4
1,6	x	32	K	100	14,70 A 4
2	x	10	K	100	9,20 A 4
2	x	16	K	100	11,00 A 4
2	x	20	K	100	13,00 A 4
2	x	25	K	100	15,10 A 4
2	x	32	K	100	18,00 A 4
2	x	40	K	100	22,10 A 4
2	x	40	K	100	20,20 A 4
2,5	x	25	K	100	25,50 A 4
2,5	x	32	K	100	28,50 A 4

Dimensions			PU	Pieces	€/100/Mat.
3,2	x	16	K	100	21,90 A 4
3,2	x	20	K	100	26,00 A 4
3,2	x	25	K	100	29,50 A 4
3,2	x	32	K	100	33,00 A 4
3,2	x	36	K	100	37,00 A 4
3,2	x	40	K	100	41,00 A 4
3,2	x	45	K	100	45,00 A 4
3,2	x	50	K	100	51,00 A 4
3,2	x	63	K	100	61,00 A 4
4	x	20	K	100	41,00 A 4
4	x	25	K	100	47,00 A 4
4	x	32	K	100	56,00 A 4
4	x	40	K	100	68,00 A 4
4	x	50	K	100	80,00 A 4
4	x	63	K	100	89,48 A 4
5	x	32	K	50	88,00 A 4
5	x	36	K	50	97,00 A 4
5	x	40	K	50	106,00 A 4
5	x	50	K	50	124,00 A 4
5	x	63	K	50	141,00 A 4
6,3	x	36	K	50	137,00 A 4
6,3	x	40	K	50	150,00 A 4
6,3	x	50	K	50	175,00 A 4
6,3	x	63	K	50	201,00 A 4
6,3	x	80	K	25	227,00 A 4
8	x	40	K	25	305,00 A 4
8	x	45	K	25	320,00 A 4
8	x	50	K	25	335,00 A 4
8	x	56	S	25	350,00 A 4
8	x	80	K	25	435,00 A 4
8	x	100	K	25	475,00 A 4
8	x	140	K	25	515,00 A 4
10	x	71	K	25	400,00 A 4
10	x	80	K	25	410,00 A 4
10	x	90	K	25	415,00 A 4
10	x	100	K	25	420,00 A 4
10	x	112	K	25	430,00 A 4
10	x	125	K	25	435,00 A 4
13	x	71	K	25	600,00 A 4
13	x	100	K	25	620,00 A 4
13	x	125	K	25	650,00 A 4
13	x	140	K	25	680,00 A 4
13	x	160	K	25	700,00 A 4
13	x	180	K	25	720,00 A 4
13	x	200	K	25	750,00 A 4

DIN	01440.920	RAZ 490
1440	**A 2**	



Washers for clevis pins

Dimensions → TI-85 Standard conversion → TI-10

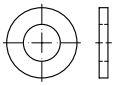
Steel → S. 197

DIN 1440 → replaced by ISO 8738

Inside ∅ min. = bolt ∅ x outside ∅ x thickness

5	x	10	x	0,8	S	50	32,00 A 2
6	x	12	x	1,6	S	50	39,00 A 2
8	x	16	x	2	S	50	65,00 A 2
10	x	20	x	2,5	S	50	89,00 A 2
12	x	25	x	3	S	25	124,00 A 2
14	x	28	x	3	S	25	176,00 A 2
16	x	28	x	3	S	25	181,00 A 2
20	x	32	x	4	S	10	260,00 A 2
25	x	40	x	4	S	1	345,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN	01440.940				RAZ 490
1440	**A 4**				



Washers for clevis pins

Dimensions → TI-85 Standard conversion → TI-10

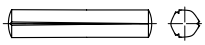
Steel → S. 197

DIN 1440 → replaced by ISO 8738

Inside ∅ min. = bolt ∅ x outside ∅ x thickness

5	x	10	x	0,8	S	50	38,00 A 4
6	x	12	x	1,6	S	50	44,50 A 4
8	x	16	x	2	S	50	77,00 A 4
10	x	20	x	2,5	S	50	112,00 A 4
12	x	25	x	3	S	25	165,00 A 4
14	x	28	x	3	S	25	228,00 A 4
16	x	28	x	3	S	25	233,00 A 4
18	x	30	x	4	S	10	315,00 A 4
20	x	32	x	4	S	10	345,00 A 4
23	x	36	x	4	S	10	445,00 A 4
25	x	40	x	4	S	1	470,00 A 4
30	x	45	x	5	S	1	1300,00 A 4
36	x	52	x	6	S	1	1530,00 A 4
40	x	58	x	6	S	1	2290,00 A 4
50	x	68	x	8	S	1	3400,00 A 4
60	x	80	x	9	S	1	4450,00 A 4

DIN	01471.910	RAZ 500
1471	**A 1**	



Grooved pins, full-length taper grooved

Dimensions → TI-117 Standard conversion → TI-10

Steel → S. 199

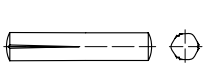
DIN 1471 → replaced by ISO 8744

2	x	8	S	100	9,70 A 1
2	x	10	S	100	10,00 A 1
2	x	12	S	100	10,30 A 1
2	x	16	S	100	10,80 A 1
2	x	18	S	100	11,20 A 1
2	x	20	S	100	11,60 A 1
3	x	8	S	100	12,70 A 1
3	x	10	S	100	13,40 A 1
3	x	12	S	100	13,60 A 1
3	x	16	S	100	13,70 A 1
3	x	18	S	100	13,90 A 1
3	x	20	S	100	14,60 A 1
3	x	25	S	100	16,40 A 1
4	x	8	S	100	14,60 A 1
4	x	10	S	100	15,00 A 1
4	x	12	S	100	15,30 A 1
4	x	16	S	100	17,70 A 1
4	x	18	S	100	18,30 A 1
4	x	20	S	100	18,80 A 1
4	x	25	S	100	21,90 A 1
4	x	30	S	100	23,80 A 1
4	x	35	S	100	26,50 A 1

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
4	x	40	S	100	28,50 A1
5	x	8	S	100	18,30 A1
5	x	10	S	100	19,70 A1
5	x	12	S	100	19,80 A1
5	x	16	S	100	23,80 A1
5	x	18	S	100	24,90 A1
5	x	20	S	100	26,50 A1
5	x	25	S	100	30,50 A1
5	x	30	S	100	33,00 A1
5	x	35	S	100	37,00 A1
5	x	40	S	100	40,00 A1
6	x	10	S	100	33,00 A1
6	x	12	S	100	34,00 A1
6	x	16	S	100	37,50 A1
6	x	18	S	100	39,00 A1
6	x	20	S	100	40,50 A1
6	x	25	S	100	46,00 A1
6	x	30	S	100	49,50 A1
6	x	40	S	100	59,00 A1
6	x	45	S	100	63,00 A1
6	x	50	S	100	67,00 A1
8	x	12	S	100	52,00 A1
8	x	16	S	100	55,00 A1
8	x	20	S	100	61,00 A1
8	x	25	S	100	69,00 A1
8	x	30	S	100	74,00 A1
8	x	35	S	100	82,00 A1
8	x	40	S	100	87,00 A1
8	x	45	S	100	94,00 A1
8	x	50	S	100	101,00 A1
8	x	60	S	100	114,00 A1

DIN	01472.910	RAZ 500
1472	**A 1**	



Grooved pins, half length taper grooved

Dimensions → TI-118 Standard conversion → TI-10

Steel → S. 200

DIN 1472 → replaced by ISO 8745

1,5	x	8	S	100	14,20 A1
1,5	x	10	S	100	14,40 A1
2	x	8	S	100	14,70 A1
2	x	10	S	100	15,10 A1
2	x	12	S	100	15,40 A1
2	x	14	S	100	15,60 A1
2	x	16	S	100	17,10 A1
2	x	18	S	100	17,40 A1
2	x	20	S	100	19,30 A1
3	x	6	S	100	15,30 A1
3	x	8	S	100	15,30 A1
3	x	10	S	100	15,60 A1
3	x	12	S	100	17,00 A1
3	x	14	S	100	17,20 A1
3	x	16	S	100	18,50 A1
3	x	18	S	100	19,00 A1
3	x	20	S	100	19,70 A1
3	x	25	S	100	20,10 A1
4	x	8	S	100	17,10 A1
4	x	10	S	100	17,50 A1
4	x	12	S	100	24,50 A1
4	x	14	S	100	25,30 A1
4	x	16	S	100	26,00 A1
4	x	18	S	100	27,50 A1
4	x	20	S	100	27,50 A1

Dimensions			PU	Pieces	€/100/Mat.
4	x	25	S	100	30,00 A1
4	x	30	S	100	31,50 A1
4	x	40	S	100	33,50 A1
5	x	8	S	100	18,30 A1
5	x	10	S	100	19,70 A1
5	x	12	S	100	19,80 A1
5	x	16	S	100	23,80 A1
5	x	18	S	100	31,50 A1
5	x	20	S	100	34,00 A1
5	x	25	S	100	35,50 A1
5	x	30	S	100	36,00 A1
5	x	35	S	100	37,00 A1
5	x	40	S	100	40,00 A1
6	x	10	S	100	33,00 A1
6	x	18	S	100	39,00 A1
6	x	20	S	100	40,50 A1
6	x	25	S	100	46,00 A1
6	x	30	S	100	49,50 A1
6	x	35	S	100	55,00 A1
6	x	40	S	100	59,00 A1
6	x	45	S	100	63,00 A1
6	x	50	S	100	67,00 A1
8	x	12	S	100	52,00 A1
8	x	16	S	100	55,00 A1
8	x	18	S	100	58,00 A1
8	x	20	S	100	61,00 A1
8	x	25	S	100	69,00 A1
8	x	30	S	100	74,00 A1
8	x	35	S	100	82,00 A1
8	x	40	S	100	87,00 A1
8	x	45	S	100	94,00 A1
8	x	50	S	100	101,00 A1
8	x	60	S	100	114,00 A1

DIN	01473.910	RAZ 500
1473	**A 1**	

Grooved pins, full length parallel grooved

Dimensions → TI-117 Standard conversion → TI-10

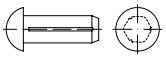
Steel → S. 200

DIN 1473 → replaced by ISO 8740

2	x	8	S	100	9,70 A1
2	x	10	S	100	10,00 A1
2	x	12	S	100	10,30 A1
2	x	16	S	100	10,80 A1
2	x	18	S	100	11,20 A1
2	x	20	S	100	11,60 A1
3	x	8	S	100	12,70 A1
3	x	10	S	100	13,40 A1
3	x	12	S	100	13,40 A1
3	x	16	S	100	13,40 A1
3	x	18	S	100	13,90 A1
3	x	20	S	100	14,60 A1
3	x	24	S	100	15,70 A1
3	x	30	S	100	17,30 A1
4	x	8	S	100	14,60 A1
4	x	10	S	100	15,00 A1
4	x	12	S	100	15,00 A1
4	x	16	S	100	17,70 A1
4	x	18	S	100	17,70 A1
4	x	20	S	100	18,80 A1
4	x	24	S	100	21,20 A1
4	x	30	S	100	23,80 A1
4	x	35	S	100	26,50 A1

Dimensions			PU	Pieces	€/100/Mat.
4	x	40	S	100	28,50 A1
5	x	8	S	100	18,30 A1
5	x	10	S	100	19,70 A1
5	x	12	S	100	19,80 A1
5	x	16	S	100	23,80 A1
5	x	18	S	100	24,90 A1
5	x	20	S	100	26,50 A1
5	x	24	S	100	30,50 A1
5	x	30	S	100	33,00 A1
5	x	35	S	100	37,00 A1
5	x	40	S	100	40,00 A1
6	x	10	S	100	33,00 A1
6	x	12	S	100	34,00 A1
6	x	16	S	100	37,50 A1
6	x	18	S	100	39,00 A1
6	x	20	S	100	40,50 A1
6	x	24	S	100	44,50 A1
6	x	30	S	100	49,50 A1
6	x	35	S	100	55,00 A1
6	x	40	S	100	59,00 A1
6	x	45	S	100	63,00 A1
6	x	50	S	100	67,00 A1
8	x	10	S	100	49,50 A1
8	x	12	S	100	52,00 A1
8	x	16	S	100	55,00 A1
8	x	20	S	100	61,00 A1
8	x	25	S	100	69,00 A1
8	x	30	S	100	74,00 A1
8	x	35	S	100	82,00 A1
8	x	40	S	100	87,00 A1
8	x	45	S	100	94,00 A1
8	x	50	S	100	101,00 A1
8	x	60	S	100	114,00 A1

DIN	01476.920	RAZ 500
1476	**1.4303 (A 2)**	



Grooved pins with round head

Dimensions → TI-118 Standard conversion → TI-10

Steel → S. 202
Brass, aluminium → S. 584

DIN 1476 → replaced by ISO 8746 (compatible)

1,4	x	3	S	100	7,90 A2
1,4	x	4	S	100	8,10 A2
1,4	x	5	S	100	8,20 A2
1,4	x	6	S	100	9,00 A2
1,6	x	3	S	100	8,10 A2
1,6	x	4	S	100	8,70 A2
1,6	x	5	S	100	8,90 A2
1,6	x	6	S	100	9,30 A2
2	x	3	S	100	10,80 A2
2	x	4	S	100	10,80 A2
2	x	5	S	100	10,80 A2
2	x	6	S	100	11,50 A2
2	x	8	S	100	12,20 A2
2	x	10	S	100	13,10 A2
2,5	x	4	S	100	11,20 A2
2,5	x	5	S	100	11,40 A2
2,5	x	6	S	100	11,50 A2
2,5	x	8	S	100	11,70 A2
2,5	x	10	S	100	13,50 A2
3	x	4	S	100	13,30 A2
3	x	5	S	100	14,20 A2
3	x	6	S	100	14,90 A2
3	x	8	S	100	18,30 A2

Dimensions			PU	Pieces	€/100/Mat.
3	x	10	S	100	19,00 A 2
3	x	12	S	100	21,90 A 2
4	x	6	S	100	24,10 A 2
4	x	8	S	100	27,00 A 2
4	x	10	S	100	29,00 A 2
4	x	12	S	100	33,00 A 2
5	x	8	S	100	33,00 A 2
5	x	10	S	100	36,00 A 2
5	x	12	S	100	41,00 A 2
5	x	16	S	100	43,50 A 2
6	x	10	S	100	40,00 A 2
6	x	12	S	100	44,00 A 2

ISO	91479.923	RAZ 660
1479	**A 2**	**type C**

Hexagon head tapping screws, C = with cone end

Caution! Hardness only ~ 250 HV.

Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

Steel → S. 203

Dimensions			PU	Pieces	€/100/Mat.
C 2,9	x	9,5	S	1000	5,40 A 2
C 2,9	x	13	S	1000	6,10 A 2
C 2,9	x	16	S	1000	6,40 A 2
C 2,9	x	22	S	1000	8,70 A 2
C 2,9	x	25	S	1000	9,80 A 2
C 2,9	x	32	S	1000	12,00 A 2
C 3,5	x	9,5	S	1000	6,60 A 2
C 3,5	x	13	S	1000	6,70 A 2
C 3,5	x	16	S	1000	7,10 A 2
C 3,5	x	19	S	1000	7,90 A 2
C 3,5	x	22	S	1000	9,30 A 2
C 3,5	x	25	S	1000	10,70 A 2
C 3,5	x	32	S	1000	12,80 A 2
C 3,5	x	38	S	1000	14,20 A 2
C 3,9	x	9,5	S	1000	7,70 A 2
C 3,9	x	13	S	1000	7,60 A 2
C 3,9	x	16	S	1000	8,00 A 2
C 3,9	x	19	S	1000	8,20 A 2
C 3,9	x	22	S	500	10,60 A 2
C 3,9	x	25	S	500	11,80 A 2
C 3,9	x	32	S	500	13,70 A 2
C 4,2	x	9,5	S	1000	8,40 A 2
C 4,2	x	13	S	1000	8,20 A 2
C 4,2	x	16	S	1000	8,50 A 2
C 4,2	x	19	S	1000	9,30 A 2
C 4,2	x	22	S	500	11,90 A 2
C 4,2	x	25	S	500	12,20 A 2
C 4,2	x	32	S	500	14,80 A 2
C 4,2	x	38	S	500	16,90 A 2
C 4,2	x	45	S	500	20,60 A 2
C 4,2	x	50	S	500	24,10 A 2
C 4,8	x	13	S	1000	10,50 A 2
C 4,8	x	16	S	1000	11,30 A 2
C 4,8	x	19	S	1000	11,90 A 2
C 4,8	x	22	S	1000	13,30 A 2
C 4,8	x	25	S	1000	14,60 A 2
C 4,8	x	32	S	500	18,20 A 2
C 4,8	x	38	S	500	19,50 A 2
C 4,8	x	45	S	500	25,00 A 2
C 4,8	x	50	S	250	29,50 A 2
C 5,5	x	13	S	500	16,40 A 2
C 5,5	x	16	S	500	17,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
C 5,5	x	19	S	500	18,20 A 2
C 5,5	x	22	S	500	20,70 A 2
C 5,5	x	25	S	250	22,70 A 2
C 5,5	x	32	S	250	26,00 A 2
C 5,5	x	38	S	250	29,50 A 2
C 5,5	x	45	S	250	33,00 A 2
C 5,5	x	50	S	250	36,00 A 2
C 6,3	x	13	S	250	23,80 A 2
C 6,3	x	16	S	500	23,80 A 2
C 6,3	x	19	S	500	25,50 A 2
C 6,3	x	22	S	500	29,00 A 2
C 6,3	x	25	S	500	31,00 A 2
C 6,3	x	32	S	250	34,00 A 2
C 6,3	x	38	S	250	38,00 A 2
C 6,3	x	45	S	250	42,50 A 2
C 6,3	x	50	S	250	45,50 A 2
C 6,3	x	60	S	100	56,00 A 2
C 6,3	x	70	S	100	78,00 A 2
C 8	x	16	S	100	45,00 A 2
C 8	x	19	S	100	50,00 A 2
C 8,0	x	22	S	250	51,00 A 2
C 8	x	25	S	100	78,00 A 2
C 8,0	x	32	S	100	82,85 A 2
C 8	x	38	S	100	111,00 A 2
C 8	x	45	S	100	150,00 A 2
C 8	x	50	S	100	205,00 A 2
C 8	x	60	S	100	277,00 A 2

DIN	01480.924	RAZ 510
1480	**A 2**	**SP-AE**

Turnbuckles, forged, open type, AE = with 2 welding studs

Dimensions → TI-81

SP-AE M 12	S	1	5000,00 A 2
SP-AE M 16	S	1	10700,00 A 2
SP-AE M 20	S	1	14500,00 A 2

DIN	01480.925	RAZ 510
1480	**A 2**	**SP-RR**

Turnbuckles, forged, open type, RR = with 2 eye bolts

Dimensions → TI-81

Steel → S. 204

SP-RR M 6	S	1	1480,00 A 2
SP-RR M 8	S	1	2150,00 A 2
SP-RR M 10	S	1	3200,00 A 2
SP-RR M 12	S	1	5000,00 A 2
SP-RR M 16	S	1	10400,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN	01481.960				RAZ 520
1481	**1.4310**				

Spring type straight pins, slotted, heavy duty (clamping sleeves)

Caution! Reduced spring load.

Dimensions → TI-119 Standard conversion → TI-10
Mech. properties → TI-224

Spring steel → S. 205

DIN 1481 → replaced by ISO 8752

Dimensions			PU	Pieces	€/100/Mat.
1	x	4	S	100	8,50
1	x	5	S	100	8,50
1	x	6	S	100	8,50
1	x	8	S	100	8,50
1	x	10	S	100	9,00
1	x	12	S	100	9,20
1	x	14	S	100	9,50
1	x	16	S	100	9,80
1	x	18	S	100	10,10
1	x	20	S	100	10,50
1,5	x	5	S	100	8,30
1,5	x	6	S	100	8,50
1,5	x	8	S	100	8,50
1,5	x	10	S	100	9,00
1,5	x	12	S	100	9,20
1,5	x	14	S	100	9,50
1,5	x	16	S	100	9,80
1,5	x	18	S	100	10,10
1,5	x	20	S	100	10,80
2	x	4	S	100	8,50
2	x	5	S	100	8,50
2	x	6	S	100	8,50
2	x	8	S	100	9,00
2	x	10	S	100	9,30
2	x	12	S	100	9,70
2	x	14	S	100	10,10
2	x	16	S	100	10,60
2	x	18	S	100	11,00
2	x	20	S	100	11,60
2	x	22	S	100	12,20
2	x	24	S	100	12,70
2	x	26	S	100	13,30
2	x	28	S	100	14,00
2	x	30	S	100	14,70
2,5	x	4	S	100	8,70
2,5	x	6	S	100	9,20
2,5	x	8	S	100	9,50
2,5	x	10	S	100	10,10
2,5	x	12	S	100	10,40
2,5	x	14	S	100	11,00
2,5	x	16	S	100	11,50
2,5	x	18	S	100	12,20
2,5	x	20	S	100	13,00
2,5	x	22	S	100	13,60
2,5	x	24	S	100	14,40
2,5	x	26	S	100	15,10
2,5	x	28	S	100	16,00
2,5	x	30	S	100	16,90
3	x	4	S	100	9,50
3	x	5	S	100	10,10
3	x	6	S	100	11,00
3	x	8	S	100	12,20
3	x	10	S	100	13,10
3	x	12	S	100	14,20

Dimensions	PU	Pieces	€/100/Mat.
3 x 14	S	100	16,00
3 x 16	S	100	16,60
3 x 18	S	100	17,20
3 x 20	S	100	17,90
3 x 22	S	100	19,70
3 x 24	S	50	21,50
3 x 26	S	50	22,40
3 x 28	S	50	23,50
3 x 30	S	50	24,60
3 x 32	S	50	25,50
3 x 36	S	50	27,00
3 x 40	S	50	28,50
3,5 x 4	S	100	13,50
3,5 x 5	S	100	14,00
3,5 x 6	S	100	14,70
3,5 x 8	S	100	16,10
3,5 x 10	S	100	16,50
3,5 x 12	S	100	18,70
3,5 x 14	S	100	21,00
3,5 x 16	S	100	22,80
3,5 x 18	S	100	24,20
3,5 x 20	S	100	27,00
3,5 x 22	S	100	28,00
3,5 x 24	S	100	30,50
3,5 x 26	S	100	31,00
3,5 x 28	S	100	33,00
3,5 x 30	S	100	34,50
3,5 x 32	S	100	36,50
3,5 x 36	S	100	39,50
3,5 x 40	S	100	44,50
4 x 6	S	100	14,70
4 x 8	S	100	16,10
4 x 10	S	100	16,50
4 x 12	S	100	18,70
4 x 14	S	50	22,10
4 x 16	S	50	23,80
4 x 18	S	50	25,50
4 x 20	S	50	28,00
4 x 22	S	50	29,00
4 x 24	S	50	31,50
4 x 26	S	50	33,00
4 x 28	S	50	34,00
4 x 30	S	50	35,50
4 x 32	S	50	35,50
4 x 36	S	50	40,50
4 x 40	S	50	45,50
4 x 45	S	50	48,00
4 x 50	S	50	55,00
4,5 x 6	S	100	19,70
4,5 x 8	S	100	19,70
4,5 x 10	S	100	19,70
4,5 x 12	S	100	21,70
4,5 x 14	S	100	24,00
4,5 x 16	S	100	25,50
4,5 x 18	S	100	28,00
4,5 x 20	S	100	30,50
4,5 x 22	S	100	32,00
4,5 x 24	S	100	34,00
4,5 x 26	S	100	36,00
4,5 x 28	S	100	38,00
4,5 x 30	S	100	41,00
4,5 x 32	S	100	43,00
4,5 x 36	S	100	51,00
4,5 x 40	S	100	54,00
4,5 x 45	S	100	59,00
4,5 x 50	S	100	64,00
5 x 6	S	50	19,10
5 x 8	S	50	20,90
5 x 10	S	50	23,10
5 x 12	S	50	26,00
5 x 14	S	50	28,50
5 x 16	S	50	31,50
5 x 18	S	50	34,00
5 x 20	S	50	36,50
5 x 22	S	50	39,00
5 x 24	S	50	41,50
5 x 26	S	50	44,00
5 x 28	S	50	47,50
5 x 30	S	50	51,00
5 x 32	S	50	53,00
5 x 36	S	50	59,00
5 x 40	S	50	64,00
5 x 45	S	50	69,00
5 x 50	S	50	78,00
5 x 60	S	50	125,00
5 x 70	S	50	162,00
6 x 10	S	25	33,00
6 x 12	S	25	35,00
6 x 14	S	25	36,50
6 x 16	S	25	39,00
6 x 18	S	25	45,00
6 x 20	S	25	52,00
6 x 22	S	25	55,00
6 x 24	S	25	59,00
6 x 26	S	25	63,00
6 x 28	S	25	67,00
6 x 30	S	25	71,00
6 x 32	S	25	76,00
6 x 36	S	25	84,00
6 x 40	S	25	102,00
6 x 45	S	25	117,00
6 x 50	S	25	133,00
6 x 60	S	25	174,00
6 x 70	S	25	192,00
6 x 80	S	25	206,00
10 x 10	S	50	81,00
10 x 12	S	50	84,00
10 x 16	S	50	92,00
10 x 18	S	50	119,00
10 x 20	S	50	119,00
10 x 22	S	50	136,00
10 x 24	S	50	141,00
10 x 28	S	50	153,00
10 x 30	S	10	165,00
10 x 32	S	50	159,00
10 x 36	S	50	191,00
10 x 40	S	50	229,00
10 x 45	S	10	249,00
10 x 50	S	50	270,00
10 x 55	S	10	285,00
10 x 60	S	10	305,00
10 x 65	S	50	320,00
10 x 70	S	50	330,00
10 x 75	S	50	340,00
10 x 80	S	10	355,00
10 x 85	S	50	365,00
10 x 90	S	50	375,00
10 x 95	S	50	390,00
10 x 100	S	50	410,00

ISO	01580.920	RAZ 30

1580 A 2

Slotted pan head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

Steel ➔ S. 209
Brass, plastic ➔ S. 585

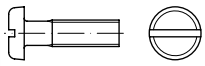
ISO 1580 ➔ replaces DIN 85 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 4	S	1000	9,00 A 2
M 3 x 5	S	1000	6,10 A 2
M 3 x 6	S	1000	3,35 A 2
M 3 x 6	K	200	4,35 A 2
M 3 x 8	S	1000	3,10 A 2
M 3 x 8	K	200	4,10 A 2
M 3 x 10	S	1000	2,95 A 2
M 3 x 10	K	200	3,95 A 2
M 3 x 12	S	1000	3,20 A 2
M 3 x 12	K	200	4,20 A 2
M 3 x 14	S	1000	3,50 A 2
M 3 x 16	S	1000	3,60 A 2
M 3 x 16	K	200	4,60 A 2
M 3 x 20	S	1000	4,00 A 2
M 3 x 20	K	200	5,00 A 2
M 3 x 25	K	200	4,85 A 2
M 3 x 30	S	500	9,00 A 2
M 3 x 35	K	200	6,90 A 2
M 4 x 5	S	1000	9,00 A 2
M 4 x 5	K	200	10,95 A 2
M 4 x 6	S	1000	6,00 A 2
M 4 x 8	S	1000	4,80 A 2
M 4 x 8	K	200	5,80 A 2
M 4 x 10	S	1000	4,35 A 2
M 4 x 10	K	200	5,35 A 2
M 4 x 12	S	1000	4,35 A 2
M 4 x 12	K	200	5,35 A 2
M 4 x 16	S	1000	4,80 A 2
M 4 x 16	K	200	5,80 A 2
M 4 x 20	S	1000	5,00 A 2
M 4 x 20	K	200	6,00 A 2
M 4 x 25	S	500	6,00 A 2
M 4 x 25	K	200	7,00 A 2
M 4 x 30	S	500	6,70 A 2
M 4 x 35	S	500	9,00 A 2
M 4 x 40	S	500	11,00 A 2
M 4 x 50	S	500	18,85 A 2
M 4 x 60	S	500	22,20 A 2
M 5 x 6	S	500	11,70 A 2
M 5 x 6	K	100	13,75 A 2
M 5 x 8	S	500	10,20 A 2
M 5 x 8	K	200	11,20 A 2
M 5 x 10	S	500	8,00 A 2
M 5 x 10	K	200	9,00 A 2
M 5 x 12	S	500	6,00 A 2
M 5 x 12	K	200	7,00 A 2
M 5 x 16	S	500	6,70 A 2
M 5 x 16	K	200	7,70 A 2
M 5 x 20	S	500	7,45 A 2
M 5 x 20	K	200	8,45 A 2
M 5 x 25	S	500	8,50 A 2
M 5 x 25	K	100	10,55 A 2
M 5 x 30	S	500	10,10 A 2
M 5 x 30	K	100	12,15 A 2
M 5 x 35	S	500	14,10 A 2
M 5 x 40	K	100	18,15 A 2
M 5 x 45	S	500	19,65 A 2
M 5 x 50	S	500	24,30 A 2
M 5 x 60	S	500	28,80 A 2
M 5 x 70	S	200	35,00 A 2
M 5 x 80	S	200	50,00 A 2
M 6 x 8	S	500	12,00 A 2
M 6 x 10	S	200	8,95 A 2
M 6 x 10	K	100	11,00 A 2
M 6 x 12	S	200	8,20 A 2
M 6 x 12	K	100	10,25 A 2
M 6 x 16	S	200	8,80 A 2
M 6 x 16	K	100	10,85 A 2
M 6 x 20	S	200	9,75 A 2
M 6 x 20	K	100	11,80 A 2
M 6 x 25	S	200	10,90 A 2
M 6 x 25	K	100	12,95 A 2
M 6 x 30	S	200	12,70 A 2
M 6 x 30	K	100	14,75 A 2
M 6 x 35	S	200	17,50 A 2
M 6 x 40	K	100	18,25 A 2
M 6 x 45	K	100	20,95 A 2
M 6 x 50	K	50	42,70 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	60	S	200	65,00 A 2
M 6	x	70	S	200	78,00 A 2
M 6	x	80	S	200	95,00 A 2

ISO | 01580.940 | RAZ 30

1580 A 4



Slotted pan head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

Steel ➔ S. 209
Brass, plastic ➔ S. 585

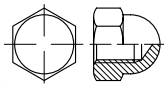
ISO 1580 ➔ replaces DIN 85 (compatible)

M 2	x	3	S	1000	35,00 A 4
M 2	x	4	S	1000	20,00 A 4
M 2	x	5	S	1000	21,00 A 4
M 2	x	6	S	1000	17,00 A 4
M 2	x	8	S	1000	18,00 A 4
M 2	x	10	S	1000	19,00 A 4
M 2	x	12	S	1000	20,00 A 4
M 2	x	16	S	1000	25,00 A 4
M 2	x	20	S	1000	28,00 A 4
M 2	x	25	S	1000	36,00 A 4
M 2	x	30	S	1000	45,00 A 4
M 2,5	x	3	S	1000	40,00 A 4
M 2,5	x	4	S	1000	32,00 A 4
M 2,5	x	5	S	1000	28,00 A 4
M 2,5	x	6	S	1000	29,00 A 4
M 2,5	x	8	S	1000	30,00 A 4
M 2,5	x	10	S	1000	31,00 A 4
M 2,5	x	12	S	1000	32,00 A 4
M 2,5	x	16	S	1000	35,00 A 4
M 2,5	x	20	S	1000	42,00 A 4
M 2,5	x	25	S	1000	50,00 A 4
M 2,5	x	30	S	1000	65,00 A 4
M 3	x	5	S	1000	6,90 A 4
M 3	x	5	K	200	7,90 A 4
M 3	x	6	S	1000	4,30 A 4
M 3	x	6	K	200	5,30 A 4
M 3	x	8	S	1000	4,00 A 4
M 3	x	8	K	200	5,00 A 4
M 3	x	10	S	1000	3,80 A 4
M 3	x	10	K	200	4,80 A 4
M 3	x	12	S	1000	4,00 A 4
M 3	x	12	K	200	5,00 A 4
M 3	x	16	S	1000	4,60 A 4
M 3	x	16	K	200	5,60 A 4
M 3	x	20	S	1000	4,90 A 4
M 3	x	20	K	200	5,90 A 4
M 3	x	25	K	100	6,30 A 4
M 3	x	30	K	100	8,35 A 4
M 4	x	5	S	1000	11,30 A 4
M 4	x	5	K	200	12,30 A 4
M 4	x	6	S	1000	6,40 A 4
M 4	x	6	K	200	7,40 A 4
M 4	x	8	S	1000	6,10 A 4
M 4	x	8	K	200	7,10 A 4
M 4	x	10	S	1000	5,60 A 4
M 4	x	10	K	200	6,60 A 4
M 4	x	12	S	1000	5,50 A 4
M 4	x	12	K	200	6,50 A 4
M 4	x	16	S	1000	6,25 A 4
M 4	x	16	K	200	7,25 A 4
M 4	x	20	S	1000	7,15 A 4
M 4	x	20	K	200	8,15 A 4
M 4	x	25	K	200	9,20 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	30	K	100	11,65 A 4
M 4	x	35	K	100	17,45 A 4
M 4	x	40	K	100	19,65 A 4
M 4	x	45	K	100	25,65 A 4
M 4	x	50	K	100	23,60 A 4
M 5	x	8	S	500	11,50 A 4
M 5	x	8	K	200	13,55 A 4
M 5	x	10	S	500	9,30 A 4
M 5	x	10	K	200	10,30 A 4
M 5	x	12	S	500	8,85 A 4
M 5	x	12	K	200	9,85 A 4
M 5	x	16	S	500	9,80 A 4
M 5	x	16	K	200	10,80 A 4
M 5	x	20	S	500	11,20 A 4
M 5	x	20	K	200	12,20 A 4
M 5	x	25	S	500	12,60 A 4
M 5	x	25	K	100	14,65 A 4
M 5	x	30	S	500	15,10 A 4
M 5	x	30	K	100	17,15 A 4
M 5	x	40	K	100	23,25 A 4
M 5	x	50	K	100	48,35 A 4
M 6	x	8	K	100	19,85 A 4
M 6	x	10	S	200	12,60 A 4
M 6	x	10	K	100	14,65 A 4
M 6	x	12	S	200	11,40 A 4
M 6	x	12	K	100	13,45 A 4
M 6	x	16	S	200	12,50 A 4
M 6	x	16	K	100	14,55 A 4
M 6	x	20	S	200	14,10 A 4
M 6	x	20	K	100	16,15 A 4
M 6	x	25	S	200	15,50 A 4
M 6	x	25	K	100	17,55 A 4
M 6	x	30	S	200	19,60 A 4
M 6	x	30	K	100	21,65 A 4
M 6	x	35	K	50	22,85 A 4
M 6	x	40	K	50	24,90 A 4
M 6	x	50	K	50	55,20 A 4
M 8	x	10	K	50	46,40 A 4
M 8	x	12	K	50	44,50 A 4
M 8	x	16	K	50	44,50 A 4
M 8	x	20	K	50	44,50 A 4
M 8	x	25	K	50	48,80 A 4

DIN | 01587.920 | RAZ 530

1587 A 2



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions ➔ TI-62 Standard conversion ➔ TI-10
Mech. properties ➔ TI-224

Steel ➔ S. 209
Brass, plastic ➔ S. 585

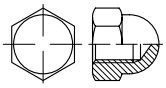
SW = wrench size

M 4			S	1000	22,00 A 2
M 4			K	100	26,50 A 2
M 5			S	1000	25,50 A 2
M 5			K	50	33,00 A 2
M 6			S	500	29,00 A 2
M 6			K	50	36,50 A 2
M 8			S	500	54,00 A 2
M 8			K	50	60,00 A 2
M 10	SW 17		S	250	103,00 A 2
M 10	SW 17		K	25	122,00 A 2
M 12	SW 19		S	200	181,00 A 2
M 12	SW 19		K	25	201,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 14	SW 22		S	10	290,00 A 2
M 16			S	10	305,00 A 2
M 20			S	1	590,00 A 2
M 24			S	1	1400,00 A 2
M 27			S	1	4500,00 A 2
M 30			S	1	5500,00 A 2

DIN | 01587.940 | RAZ 530

1587 A 4



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions ➔ TI-62 Standard conversion ➔ TI-10
Mech. properties ➔ TI-224

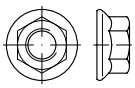
Steel ➔ S. 209
Brass, plastic ➔ S. 585

SW = wrench size

M 3			S	100	46,00 A 4
M 4			S	100	46,00 A 4
M 5			S	1000	50,00 A 4
M 5			K	50	52,00 A 4
M 6			S	500	61,00 A 4
M 6			K	50	69,00 A 4
M 8			S	500	84,00 A 4
M 8			K	50	92,00 A 4
M 10	SW 17		S	250	170,00 A 4
M 10	SW 17		K	25	185,00 A 4
M 12	SW 19		S	200	270,00 A 4
M 12	SW 19		K	25	285,00 A 4
M 14	SW 22		S	10	455,00 A 4
M 16			S	10	520,00 A 4
M 18			S	10	1000,00 A 4
M 20			S	1	850,00 A 4
M 24			S	1	1660,00 A 4
M 27			S	1	5800,00 A 4

EN | 01661.920 | RAZ 615

1661 A 2



Hexagon flange nuts

Dimensions ➔ TI-63 Mech. properties ➔ TI-224

Steel ➔ S. 210

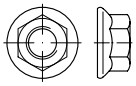
EN 1661 ➔ replaces DIN 6923

M 4	S	1000	8,50 A 2
M 5	S	1000	12,80 A 2
M 6	S	1000	20,50 A 2
M 8	S	1000	26,00 A 2
M 10	S	500	38,50 A 2
M 12	S	250	80,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
EN	01661.940		RAZ 615

1661

A 4



Hexagon flange nuts

Dimensions ➔ TI-63 Mech. properties ➔ TI-224

Steel ➔ S. 210

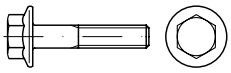
EN 1661 ➔ replaces DIN 6923

M 5	S	1000		26,00 A 4
M 6	S	1000		33,50 A 4
M 8	S	1000		38,50 A 4
M 10	S	500		90,00 A 4

EN	01665.920	RAZ 401

1665

A 2



Hexagon flange bolts, heavy series

Dimensions ➔ TI-17 Standard conversion ➔ TI-6
Mech. properties ➔ TI-224

Steel ➔ S. 210

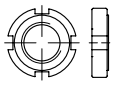
EN 1665 ➔ replaces DIN 6921

M 5	x	10	S	200	17,60 A 2
M 5	x	12	S	200	18,00 A 2
M 5	x	16	S	200	18,80 A 2
M 5	x	20	S	200	19,50 A 2
M 5	x	25	S	200	20,70 A 2
M 5	x	30	S	200	22,30 A 2
M 6	x	10	S	200	22,30 A 2
M 6	x	12	S	200	23,10 A 2
M 6	x	16	S	200	24,40 A 2
M 6	x	20	S	200	25,50 A 2
M 6	x	25	S	200	28,00 A 2
M 6	x	30	S	200	29,00 A 2
M 6	x	35	S	200	31,50 A 2
M 6	x	40	S	200	33,00 A 2
M 6	x	45	S	200	34,50 A 2
M 8	x	16	S	200	43,50 A 2
M 8	x	20	S	200	45,00 A 2
M 8	x	25	S	200	48,00 A 2
M 8	x	30	S	200	52,00 A 2
M 8	x	35	S	200	55,00 A 2
M 8	x	40	S	200	58,00 A 2
M 8	x	45	S	200	61,00 A 2
M 8	x	50	S	200	65,00 A 2
M 10	x	20	S	100	65,00 A 2
M 10	x	25	S	100	70,00 A 2
M 10	x	30	S	100	74,00 A 2
M 10	x	35	S	100	79,00 A 2
M 10	x	40	S	100	85,00 A 2
M 10	x	45	S	100	90,00 A 2
M 10	x	50	S	100	95,00 A 2
M 10	x	60	S	100	105,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
DIN	01804.920		RAZ 530

1804

A 2



Slotted round nuts

Dimensions ➔ TI-72

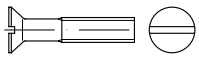
Steel ➔ S. 212

M 14	x	1,5	S	1	1750,00 A 2
M 16	x	1,5	S	1	1960,00 A 2
M 18	x	1,5	S	1	2030,00 A 2
M 20	x	1,5	S	1	2080,00 A 2
M 24	x	1,5	S	1	3650,00 A 2
M 30	x	1,5	S	1	4050,00 A 2
M 40	x	1,5	S	1	5400,00 A 2
M 42	x	1,5	S	1	5900,00 A 2
M 45	x	1,5	S	1	6100,00 A 2
M 50	x	1,5	S	1	6700,00 A 2

ISO	02009.914	RAZ 450

2009

A 1 turned



Slotted countersunk head screws

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 212
Brass, plastic ➔ S. 586

ISO 2009 ➔ replaces DIN 963

M 1,4	x	3	S	100	35,50 A 1
M 1,4	x	4	S	100	28,50 A 1
M 1,4	x	5	S	100	29,00 A 1
M 1,4	x	6	S	100	30,00 A 1
M 1,4	x	8	S	100	31,50 A 1
M 1,6	x	4	S	100	14,55 A 1
M 1,6	x	5	S	100	13,65 A 1
M 1,6	x	6	S	100	12,65 A 1
M 1,6	x	8	S	100	13,65 A 1
M 1,6	x	10	S	100	14,15 A 1

ISO	02009.920	RAZ 450

2009

A 2

Slotted countersunk head screws

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 212
Brass, plastic ➔ S. 586

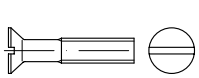
ISO 2009 ➔ replaces DIN 963

M 1	x	2	S	1000	150,00 A 2
M 1	x	3	S	1000	150,00 A 2
M 1	x	4	S	1000	150,00 A 2
M 1	x	5	S	1000	150,00 A 2
M 1,2	x	2	S	1000	150,00 A 2
M 1,2	x	3	S	1000	150,00 A 2
M 1,2	x	4	S	1000	150,00 A 2
M 1,2	x	5	S	1000	160,00 A 2
M 1,2	x	6	S	1000	175,00 A 2
M 1,4	x	2	S	1000	150,00 A 2
M 1,4	x	3	S	1000	150,00 A 2
M 1,4	x	4	S	1000	150,00 A 2
M 1,4	x	5	S	1000	160,00 A 2
M 1,4	x	6	S	1000	175,00 A 2
M 1,4	x	8	S	1000	195,00 A 2
M 1,4	x	10	S	1000	225,00 A 2
M 1,6	x	3	S	1000	55,00 A 2
M 1,6	x	4	S	1000	55,00 A 2
M 1,6	x	5	S	1000	65,00 A 2
M 1,6	x	6	S	1000	70,00 A 2
M 1,6	x	8	S	1000	75,00 A 2
M 1,6	x	10	S	1000	80,00 A 2
M 2	x	3	S	1000	65,00 A 2
M 2	x	4	S	1000	4,60 A 2
M 2	x	5	S	1000	3,30 A 2
M 2	x	6	S	1000	3,45 A 2
M 2	x	8	S	1000	3,65 A 2
M 2	x	10	S	1000	4,00 A 2
M 2	x	12	S	1000	4,30 A 2
M 2	x	16	S	1000	4,60 A 2
M 2	x	18	S	1000	6,00 A 2
M 2,5	x	4	S	1000	4,60 A 2
M 2,5	x	5	S	1000	3,30 A 2
M 2,5	x	6	S	1000	3,45 A 2
M 2,5	x	8	S	1000	3,65 A 2
M 2,5	x	10	S	1000	4,00 A 2
M 2,5	x	12	S	1000	4,30 A 2
M 2,5	x	14	S	1000	4,60 A 2
M 2,5	x	16	S	1000	4,60 A 2
M 2,5	x	20	S	1000	12,75 A 2
M 2,5	x	25	S	1000	16,15 A 2
M 3	x	4	S	1000	25,20 A 2
M 3	x	5	S	1000	5,05 A 2
M 3	x	5	K	200	6,05 A 2
M 3	x	6	S	1000	2,90 A 2
M 3	x	6	K	200	3,90 A 2
M 3	x	8	S	1000	2,65 A 2
M 3	x	8	K	200	3,65 A 2
M 3	x	10	S	1000	2,45 A 2
M 3	x	10	K	200	3,45 A 2
M 3	x	12	S	1000	2,50 A 2
M 3	x	12	K	200	3,50 A 2
M 3	x	14	K	200	5,75 A 2
M 3	x	16	S	1000	2,85 A 2
M 3	x	16	K	200	3,85 A 2
M 3	x	20	S	1000	3,30 A 2
M 3	x	20	K	200	4,30 A 2
M 3	x	22	S	1000	11,05 A 2
M 3	x	25	S	1000	4,15 A 2
M 3	x	25	K	200	5,15 A 2
M 3	x	30	S	1000	24,35 A 2
M 3	x	30	K	200	8,20 A 2
M 3	x	35	S	1000	25,35 A 2
M 3	x	40	S	1000	32,00 A 2
M 3	x	45	S	1000	29,00 A 2
M 3	x	50	S	500	39,00 A 2
M 3	x	60	S	500	58,00 A 2
M 3,5	x	8	K	200	15,85 A 2
M 3,5	x	10	K	200	15,85 A 2
M 3,5	x	12	K	200	17,15 A 2
M 3,5	x	16	K	200	18,45 A 2
M 4	x	5	S	1000	24,00 A 2
M 4	x	5	K	200	10,65 A 2
M 4	x	6	S	1000	4,45 A 2
M 4	x	6	K	200	5,45 A 2
M 4	x	8	S	1000	4,30 A 2
M 4	x	8	K	200	5,30 A 2
M 4	x	10	S	1000	3,75 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	10	K	200	4,75 A2
M 4	x	12	S	1000	3,45 A2
M 4	x	12	K	200	4,45 A2
M 4	x	14	S	1000	19,05 A2
M 4	x	16	S	1000	3,60 A2
M 4	x	16	K	200	4,60 A2
M 4	x	18	S	1000	20,75 A2
M 4	x	20	S	1000	4,10 A2
M 4	x	20	K	200	5,10 A2
M 4	x	22	K	200	8,05 A2
M 4	x	25	S	500	4,60 A2
M 4	x	25	K	200	5,60 A2
M 4	x	30	S	500	6,20 A2
M 4	x	30	K	200	7,20 A2
M 4	x	35	S	500	8,45 A2
M 4	x	35	K	200	9,45 A2
M 4	x	40	K	100	12,65 A2
M 4	x	50	K	100	19,45 A2
M 5	x	6	S	500	6,80 A2
M 5	x	6	K	200	7,80 A2
M 5	x	8	S	500	5,95 A2
M 5	x	8	K	200	6,95 A2
M 5	x	10	S	500	5,95 A2
M 5	x	10	K	200	6,95 A2
M 5	x	12	S	500	4,40 A2
M 5	x	12	K	200	5,40 A2
M 5	x	14	K	200	8,65 A2
M 5	x	16	S	500	5,10 A2
M 5	x	16	K	200	6,10 A2
M 5	x	18	S	500	6,50 A2
M 5	x	20	S	500	5,90 A2
M 5	x	20	K	200	6,90 A2
M 5	x	25	S	500	6,95 A2
M 5	x	25	K	200	7,95 A2
M 5	x	30	S	500	7,85 A2
M 5	x	30	K	200	8,85 A2
M 5	x	35	S	200	9,55 A2
M 5	x	35	K	100	11,60 A2
M 5	x	40	S	200	12,30 A2
M 5	x	40	K	100	14,35 A2
M 5	x	45	K	100	17,55 A2
M 5	x	50	K	100	22,25 A2
M 5	x	60	K	100	33,45 A2
M 5	x	65	K	100	46,00 A2
M 5	x	70	K	100	46,00 A2
M 5	x	80	S	500	52,00 A2
M 5	x	90	K	100	66,00 A2
M 5	x	100	K	100	75,00 A2
M 6	x	8	S	200	10,70 A2
M 6	x	8	K	100	12,75 A2
M 6	x	10	S	200	7,15 A2
M 6	x	10	K	100	9,20 A2
M 6	x	12	S	200	6,90 A2
M 6	x	12	K	100	8,95 A2
M 6	x	16	S	200	6,45 A2
M 6	x	16	K	100	8,50 A2
M 6	x	18	K	100	14,00 A2
M 6	x	20	S	200	7,15 A2
M 6	x	20	K	100	9,20 A2
M 6	x	25	S	200	8,20 A2
M 6	x	25	K	100	10,25 A2
M 6	x	30	S	200	9,95 A2
M 6	x	30	K	100	12,00 A2
M 6	x	35	S	100	11,90 A2
M 6	x	35	K	50	16,00 A2
M 6	x	40	S	100	15,40 A2
M 6	x	40	K	50	19,50 A2
M 6	x	45	K	100	22,50 A2
M 6	x	50	K	50	27,60 A2
M 6	x	55	K	50	41,00 A2
M 6	x	60	K	50	41,00 A2
M 6	x	65	K	50	45,45 A2
M 6	x	70	K	50	45,45 A2
M 6	x	80	K	50	50,10 A2
M 6	x	90	K	50	66,00 A2
M 6	x	100	K	50	100,00 A2
M 6	x	110	K	50	180,00 A2
M 6	x	120	K	25	200,00 A2
M 6	x	130	K	25	256,00 A2
M 6	x	140	K	25	298,00 A2
M 6	x	160	K	25	350,00 A2
M 8	x	12	S	100	16,00 A2
M 8	x	16	S	100	16,40 A2
M 8	x	16	K	50	20,50 A2
M 8	x	18	S	200	42,00 A2
M 8	x	20	S	100	17,00 A2
M 8	x	20	K	50	21,10 A2
M 8	x	25	S	100	20,40 A2
M 8	x	25	K	50	24,50 A2
M 8	x	30	S	100	21,70 A2
M 8	x	30	K	50	25,80 A2
M 8	x	35	S	100	24,20 A2
M 8	x	35	K	50	28,30 A2
M 8	x	40	S	100	26,80 A2
M 8	x	40	K	50	30,90 A2
M 8	x	45	K	50	36,70 A2
M 8	x	50	S	100	35,10 A2
M 8	x	50	K	50	39,20 A2
M 8	x	55	K	50	55,20 A2
M 8	x	60	K	50	55,20 A2
M 8	x	70	K	50	59,30 A2
M 8	x	80	K	50	65,40 A2
M 8	x	90	K	50	72,00 A2
M 8	x	100	K	50	115,00 A2
M 8	x	110	K	50	200,00 A2
M 10	x	16	K	50	65,40 A2
M 10	x	20	S	100	33,20 A2
M 10	x	20	K	50	37,30 A2
M 10	x	25	S	100	37,60 A2
M 10	x	25	K	50	41,70 A2
M 10	x	30	S	100	42,20 A2
M 10	x	30	K	50	46,30 A2
M 10	x	35	S	100	46,60 A2
M 10	x	35	K	50	50,70 A2
M 10	x	40	S	100	51,10 A2
M 10	x	40	K	50	55,20 A2
M 10	x	50	S	100	59,80 A2
M 10	x	50	K	50	63,90 A2
M 10	x	60	S	100	77,70 A2
M 10	x	60	K	50	81,80 A2
M 10	x	70	S	50	100,00 A2
M 10	x	80	S	50	115,70 A2
M 10	x	90	K	50	125,00 A2
M 10	x	100	K	50	175,00 A2
M 10	x	120	K	25	399,00 A2
M 10	x	130	K	25	420,00 A2
M 10	x	140	K	25	420,00 A2

ISO	02009.940	RAZ 450

2009 A 4



Slotted countersunk head screws

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 212
Brass, plastic ➔ S. 586

ISO 2009 ➔ replaces DIN 963

M 1	x	2	S	1000	190,00 A4
M 2	x	3	S	1000	85,00 A4
M 2	x	4	S	1000	4,60 A4
M 2	x	4	K	200	5,60 A4
M 2	x	5	S	1000	3,30 A4
M 2	x	5	K	200	4,30 A4
M 2	x	6	S	1000	3,45 A4
M 2	x	6	K	200	4,45 A4
M 2	x	8	S	1000	3,65 A4
M 2	x	8	K	200	4,65 A4
M 2	x	10	S	1000	4,00 A4
M 2	x	10	K	200	5,00 A4
M 2	x	12	S	1000	4,30 A4
M 2	x	12	K	200	5,30 A4
M 2	x	16	S	1000	4,60 A4
M 2	x	16	K	200	5,60 A4
M 2	x	20	S	1000	6,10 A4
M 2	x	20	K	200	7,10 A4
M 2,5	x	4	S	1000	4,60 A4
M 2,5	x	4	K	200	5,60 A4
M 2,5	x	5	S	1000	3,30 A4
M 2,5	x	5	K	200	4,30 A4
M 2,5	x	6	S	1000	3,45 A4
M 2,5	x	6	K	200	4,45 A4
M 2,5	x	8	S	1000	3,65 A4
M 2,5	x	8	K	200	4,65 A4
M 2,5	x	10	S	1000	4,00 A4
M 2,5	x	10	K	200	5,00 A4
M 2,5	x	12	S	1000	4,30 A4
M 2,5	x	12	K	200	5,30 A4
M 2,5	x	16	S	1000	4,60 A4
M 2,5	x	16	K	200	5,60 A4
M 2,5	x	20	K	200	7,10 A4
M 3	x	4	S	1000	7,65 A4
M 3	x	4	K	200	8,65 A4
M 3	x	5	S	1000	6,60 A4
M 3	x	5	K	200	7,60 A4
M 3	x	6	S	1000	3,95 A4
M 3	x	6	K	200	4,95 A4
M 3	x	8	S	1000	3,35 A4
M 3	x	8	K	200	4,35 A4
M 3	x	10	S	1000	2,85 A4
M 3	x	10	K	200	3,85 A4
M 3	x	12	S	1000	3,00 A4
M 3	x	12	K	200	4,00 A4
M 3	x	16	S	1000	3,45 A4
M 3	x	16	K	200	4,45 A4
M 3	x	20	S	1000	3,80 A4
M 3	x	20	K	200	4,80 A4
M 3	x	25	S	1000	5,50 A4
M 3	x	25	K	200	6,50 A4
M 3	x	30	S	1000	6,15 A4
M 3	x	30	K	200	7,15 A4
M 3	x	35	S	1000	30,00 A4
M 3	x	40	S	1000	38,00 A4
M 3	x	40	K	200	15,95 A4
M 3	x	45	S	1000	47,00 A4
M 3	x	50	S	1000	59,00 A4
M 4	x	5	K	200	12,75 A4
M 4	x	6	S	1000	5,80 A4
M 4	x	6	K	200	6,80 A4
M 4	x	8	S	1000	5,50 A4
M 4	x	8	K	200	6,50 A4
M 4	x	10	S	1000	4,65 A4
M 4	x	10	K	200	5,65 A4
M 4	x	12	S	1000	4,45 A4
M 4	x	12	K	200	5,45 A4
M 4	x	16	S	1000	4,70 A4
M 4	x	16	K	200	5,70 A4
M 4	x	18	S	200	8,00 A4
M 4	x	20	S	1000	5,15 A4
M 4	x	20	K	200	6,15 A4
M 4	x	25	S	500	6,40 A4
M 4	x	25	K	200	7,40 A4
M 4	x	30	S	500	8,45 A4
M 4	x	30	K	200	9,45 A4
M 4	x	35	S	500	10,20 A4
M 4	x	35	K	200	11,20 A4
M 4	x	40	K	100	13,10 A4

Dimensions	PU	Pieces	€/100/Mat.
M 4 x 45	K	100	21,75 A4
M 4 x 50	K	100	21,75 A4
M 4 x 60	K	100	33,15 A4
M 5 x 6	S	500	25,00 A4
M 5 x 8	S	500	7,15 A4
M 5 x 8	K	200	8,15 A4
M 5 x 10	S	500	7,15 A4
M 5 x 10	K	200	8,15 A4
M 5 x 12	S	500	5,55 A4
M 5 x 12	K	200	6,55 A4
M 5 x 16	S	500	6,45 A4
M 5 x 16	K	200	7,45 A4
M 5 x 18	K	200	12,00 A4
M 5 x 20	S	500	7,55 A4
M 5 x 20	K	200	8,55 A4
M 5 x 25	S	500	8,70 A4
M 5 x 25	K	200	9,70 A4
M 5 x 30	S	500	9,95 A4
M 5 x 30	K	200	10,95 A4
M 5 x 35	S	200	13,70 A4
M 5 x 35	K	100	15,75 A4
M 5 x 40	S	200	15,30 A4
M 5 x 40	K	100	17,35 A4
M 5 x 45	K	100	21,05 A4
M 5 x 50	K	100	22,95 A4
M 5 x 60	K	100	31,25 A4
M 5 x 70	K	100	49,55 A4
M 5 x 80	K	100	54,70 A4
M 5 x 90	K	100	72,00 A4
M 5 x 100	K	100	73,10 A4
M 6 x 8	S	200	28,00 A4
M 6 x 8	K	100	15,85 A4
M 6 x 10	S	200	10,20 A4
M 6 x 10	K	100	12,25 A4
M 6 x 12	S	200	9,85 A4
M 6 x 12	K	100	11,90 A4
M 6 x 14	S	200	12,00 A4
M 6 x 16	S	200	9,45 A4
M 6 x 16	K	100	11,50 A4
M 6 x 18	K	100	16,25 A4
M 6 x 20	S	200	10,90 A4
M 6 x 20	K	100	12,95 A4
M 6 x 25	S	200	12,70 A4
M 6 x 25	K	100	14,75 A4
M 6 x 30	S	200	14,70 A4
M 6 x 30	K	100	16,75 A4
M 6 x 35	S	100	18,60 A4
M 6 x 35	K	50	22,70 A4
M 6 x 40	S	100	23,00 A4
M 6 x 40	K	50	27,10 A4
M 6 x 45	S	100	25,30 A4
M 6 x 45	K	50	29,40 A4
M 6 x 50	S	100	26,70 A4
M 6 x 50	K	50	30,80 A4
M 6 x 55	K	100	37,80 A4
M 6 x 60	S	100	33,70 A4
M 6 x 60	K	50	37,80 A4
M 6 x 65	K	50	60,00 A4
M 6 x 70	K	50	60,30 A4
M 6 x 80	K	50	71,50 A4
M 6 x 90	K	50	88,90 A4
M 6 x 100	K	50	214,00 A4
M 6 x 110	K	50	274,00 A4
M 6 x 120	K	50	285,00 A4
M 8 x 10	K	50	40,10 A4
M 8 x 12	S	100	40,00 A4
M 8 x 12	K	50	27,70 A4
M 8 x 16	S	100	23,00 A4
M 8 x 16	K	50	27,10 A4
M 8 x 20	S	100	23,60 A4
M 8 x 20	K	50	27,70 A4
M 8 x 25	S	100	26,80 A4
M 8 x 25	K	50	30,90 A4
M 8 x 30	S	100	29,30 A4
M 8 x 30	K	50	33,40 A4

Dimensions	PU	Pieces	€/100/Mat.
M 8 x 35	S	100	33,20 A4
M 8 x 35	K	50	37,30 A4
M 8 x 40	S	100	37,00 A4
M 8 x 40	K	50	41,10 A4
M 8 x 45	S	100	44,20 A4
M 8 x 45	K	50	48,30 A4
M 8 x 50	S	100	49,20 A4
M 8 x 50	K	50	53,30 A4
M 8 x 55	K	50	63,40 A4
M 8 x 60	K	50	63,40 A4
M 8 x 70	K	50	99,20 A4
M 8 x 80	K	50	120,00 A4
M 8 x 90	K	50	150,00 A4
M 8 x 100	K	50	158,00 A4
M 10 x 16	K	50	82,80 A4
M 10 x 20	S	100	46,00 A4
M 10 x 20	K	50	50,10 A4
M 10 x 25	S	100	52,60 A4
M 10 x 25	K	50	56,70 A4
M 10 x 30	S	100	58,70 A4
M 10 x 30	K	50	62,80 A4
M 10 x 35	S	100	64,90 A4
M 10 x 35	K	50	69,00 A4
M 10 x 40	S	100	71,50 A4
M 10 x 40	K	50	75,60 A4
M 10 x 45	S	100	77,70 A4
M 10 x 45	K	50	81,80 A4
M 10 x 50	S	100	83,80 A4
M 10 x 50	K	50	87,90 A4
M 10 x 60	S	100	108,00 A4
M 10 x 60	K	50	113,00 A4
M 10 x 70	S	50	165,00 A4
M 10 x 70	K	25	175,00 A4
M 10 x 80	S	50	200,00 A4
M 10 x 90	K	25	245,00 A4
M 10 x 100	K	25	295,00 A4
M 10 x 110	K	25	395,00 A4
M 10 x 120	K	25	435,00 A4
M 10 x 130	K	25	500,00 A4
M 10 x 140	K	25	575,00 A4
M 12 x 16	K	25	116,00 A4
M 12 x 20	K	25	213,00 A4
M 12 x 25	K	25	213,00 A4
M 12 x 30	K	25	227,00 A4
M 12 x 35	K	25	241,00 A4
M 12 x 40	K	25	248,00 A4
M 12 x 45	K	25	281,00 A4
M 12 x 50	K	25	281,00 A4
M 12 x 60	K	25	323,00 A4
M 12 x 70	K	25	438,00 A4
M 12 x 80	K	25	509,00 A4
M 12 x 90	K	25	690,00 A4
M 12 x 100	K	25	935,00 A4
M 16 x 25	K	1	758,00 A4
M 16 x 30	K	1	773,00 A4
M 16 x 35	K	1	794,00 A4
M 16 x 40	K	1	823,00 A4
M 16 x 45	K	1	866,00 A4
M 16 x 50	K	1	866,00 A4
M 16 x 60	K	1	909,00 A4
M 16 x 70	K	1	1100,00 A4

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REYHER KITTING & PACKAGING

Individual trade packaging

- Packaging design
- Label design
- Packing quantities to match your needs

Dimensions	PU	Pieces	€/100/Mat.
ISO	02010.920		RAZ 450
2010	**A 2**		

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 214
Brass → S. 587

ISO 2010 → replaces DIN 964

M 3	x	5	K	200	5,10 A2
M 3	x	6	S	1000	3,30 A2
M 3	x	6	K	200	4,30 A2
M 3	x	8	S	1000	3,00 A2
M 3	x	8	K	200	4,00 A2
M 3	x	10	S	1000	2,70 A2
M 3	x	10	K	200	3,70 A2
M 3	x	12	S	1000	2,75 A2
M 3	x	12	K	200	3,75 A2
M 3	x	16	K	200	4,10 A2
M 3	x	20	S	1000	3,70 A2
M 3	x	20	K	200	4,70 A2
M 3	x	25	K	200	5,70 A2
M 4	x	6	S	1000	7,10 A2
M 4	x	6	K	200	8,10 A2
M 4	x	8	S	1000	4,80 A2
M 4	x	8	K	200	5,80 A2
M 4	x	10	S	1000	4,10 A2
M 4	x	10	K	200	5,10 A2
M 4	x	12	S	1000	3,85 A2
M 4	x	12	K	200	4,85 A2
M 4	x	16	S	1000	4,20 A2
M 4	x	16	K	200	5,20 A2
M 4	x	20	S	1000	4,30 A2
M 4	x	20	K	200	5,30 A2
M 4	x	25	K	200	6,15 A2
M 4	x	30	K	200	7,65 A2
M 4	x	35	K	100	12,25 A2
M 5	x	8	K	100	10,60 A2
M 5	x	10	S	500	6,60 A2
M 5	x	10	K	200	7,60 A2
M 5	x	12	S	500	5,00 A2
M 5	x	12	K	200	6,00 A2
M 5	x	16	S	500	5,75 A2
M 5	x	16	K	200	6,75 A2
M 5	x	18	K	200	10,45 A2
M 5	x	20	S	500	6,40 A2
M 5	x	20	K	200	7,40 A2
M 5	x	25	S	500	7,55 A2
M 5	x	25	K	200	8,55 A2
M 5	x	30	S	500	8,90 A2
M 5	x	30	K	200	9,90 A2
M 5	x	35	S	200	10,90 A2
M 5	x	35	K	100	12,95 A2
M 5	x	40	K	100	16,15 A2
M 5	x	45	K	100	18,15 A2
M 5	x	50	K	100	22,85 A2
M 5	x	60	K	100	33,75 A2
M 5	x	70	K	100	48,35 A2
M 5	x	80	K	100	53,65 A2
M 6	x	10	S	200	8,20 A2
M 6	x	10	K	100	10,25 A2
M 6	x	12	S	200	7,90 A2
M 6	x	12	K	100	9,95 A2
M 6	x	16	S	200	7,15 A2
M 6	x	16	K	100	9,20 A2
M 6	x	20	S	200	8,20 A2

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	20	K	100	10,25 A 2
M 6	x	25	S	200	9,55 A 2
M 6	x	25	K	100	11,60 A 2
M 6	x	30	S	200	10,60 A 2
M 6	x	30	K	100	12,65 A 2
M 6	x	35	S	100	13,70 A 2
M 6	x	35	K	50	17,80 A 2
M 6	x	40	S	100	17,70 A 2
M 6	x	40	K	50	21,80 A 2
M 6	x	45	K	50	23,20 A 2
M 6	x	50	K	50	30,90 A 2
M 6	x	55	S	100	40,30 A 2
M 6	x	60	K	50	40,30 A 2
M 6	x	70	K	50	59,80 A 2
M 6	x	80	S	50	185,00 A 2
M 6	x	90	S	50	245,00 A 2
M 6	x	100	S	50	310,00 A 2
M 6	x	105	S	50	350,00 A 2
M 6	x	110	S	50	350,00 A 2
M 8	x	12	K	50	37,90 A 2
M 8	x	16	S	100	18,80 A 2
M 8	x	16	K	50	22,90 A 2
M 8	x	20	S	100	19,80 A 2
M 8	x	20	K	50	23,90 A 2
M 8	x	25	S	100	23,00 A 2
M 8	x	25	K	50	27,10 A 2
M 8	x	30	S	100	24,90 A 2
M 8	x	30	K	50	29,00 A 2
M 8	x	35	S	100	27,50 A 2
M 8	x	40	S	100	30,60 A 2
M 8	x	40	K	50	34,70 A 2
M 8	x	45	S	100	36,50 A 2
M 8	x	50	S	100	38,55 A 2
M 8	x	55	S	100	55,00 A 2
M 8	x	60	S	100	53,60 A 2
M 8	x	70	S	100	82,30 A 2
M 8	x	80	K	50	101,00 A 2
M 10	x	20	S	100	44,30 A 2
M 10	x	25	S	100	47,20 A 2
M 10	x	25	K	50	51,30 A 2
M 10	x	30	K	50	55,70 A 2
M 10	x	35	S	100	55,20 A 2
M 10	x	40	K	50	66,90 A 2

ISO	02010.940	RAZ 450
2010	**A 4**	

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 214
Brass → S. 587

ISO 2010 → replaces DIN 964

M 2	x	4	K	200	9,30 A 4
M 2	x	5	K	200	5,10 A 4
M 2	x	6	K	200	5,30 A 4
M 2	x	8	K	200	5,60 A 4
M 2	x	10	K	200	6,05 A 4
M 2	x	12	K	200	6,40 A 4
M 2	x	20	K	200	11,50 A 4
M 2,5	x	6	K	200	5,30 A 4
M 2,5	x	8	K	200	5,60 A 4
M 2,5	x	10	K	200	6,05 A 4
M 2,5	x	16	K	200	8,85 A 4
M 2,5	x	20	K	200	11,50 A 4
M 3	x	6	S	1000	4,30 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6	K	200	5,30 A 4
M 3	x	8	K	200	4,70 A 4
M 3	x	10	K	200	4,20 A 4
M 3	x	12	K	200	4,40 A 4
M 3	x	16	K	200	4,75 A 4
M 3	x	20	K	200	5,25 A 4
M 3	x	25	K	200	6,70 A 4
M 3	x	30	K	200	10,10 A 4
M 4	x	6	K	200	10,00 A 4
M 4	x	8	S	1000	6,30 A 4
M 4	x	8	K	200	7,30 A 4
M 4	x	10	S	1000	5,15 A 4
M 4	x	10	K	200	6,15 A 4
M 4	x	12	K	200	6,00 A 4
M 4	x	16	S	1000	5,30 A 4
M 4	x	16	K	200	6,30 A 4
M 4	x	18	K	200	9,50 A 4
M 4	x	20	S	1000	5,75 A 4
M 4	x	20	K	200	6,75 A 4
M 4	x	25	K	200	8,15 A 4
M 4	x	30	K	200	10,40 A 4
M 4	x	35	K	100	15,45 A 4
M 4	x	40	K	100	20,35 A 4
M 4	x	45	K	100	26,35 A 4
M 5	x	10	S	500	7,95 A 4
M 5	x	10	K	200	8,95 A 4
M 5	x	12	K	200	7,55 A 4
M 5	x	16	S	500	7,30 A 4
M 5	x	16	K	200	8,30 A 4
M 5	x	20	S	500	7,70 A 4
M 5	x	20	K	200	8,70 A 4
M 5	x	25	K	200	10,20 A 4
M 5	x	30	K	200	12,70 A 4
M 5	x	35	K	100	17,25 A 4
M 5	x	40	S	200	18,90 A 4
M 5	x	40	K	100	20,95 A 4
M 5	x	50	S	200	40,80 A 4
M 5	x	50	K	100	42,85 A 4
M 5	x	60	K	100	53,15 A 4
M 5	x	70	K	100	64,85 A 4
M 5	x	80	K	100	72,05 A 4
M 6	x	10	S	200	11,80 A 4
M 6	x	10	K	100	13,85 A 4
M 6	x	12	K	100	13,25 A 4
M 6	x	16	S	200	10,80 A 4
M 6	x	16	K	100	12,85 A 4
M 6	x	20	S	200	12,60 A 4
M 6	x	20	K	100	14,65 A 4
M 6	x	25	S	200	14,70 A 4
M 6	x	25	K	100	16,75 A 4
M 6	x	30	S	200	16,80 A 4
M 6	x	30	K	100	18,85 A 4
M 6	x	35	S	100	21,10 A 4
M 6	x	40	S	100	28,10 A 4
M 6	x	40	K	50	32,20 A 4
M 6	x	50	S	100	42,80 A 4
M 6	x	50	K	50	46,90 A 4
M 6	x	60	K	50	49,80 A 4
M 6	x	70	K	50	72,60 A 4
M 6	x	80	K	50	86,40 A 4
M 8	x	16	K	50	30,90 A 4
M 8	x	20	S	100	28,10 A 4
M 8	x	20	K	50	32,20 A 4
M 8	x	25	S	100	30,60 A 4
M 8	x	25	K	50	34,70 A 4
M 8	x	30	S	100	34,50 A 4
M 8	x	40	K	50	46,90 A 4
M 8	x	50	S	100	62,30 A 4
M 8	x	50	K	50	66,40 A 4
M 10	x	20	K	50	59,30 A 4
M 10	x	25	K	50	61,80 A 4
M 10	x	50	K	50	103,00 A 4

Dimensions					PU	Pieces	€/100/Mat.
8	x	3,2	x	0,5	S	200	37,50
8	x	4,2	x	0,3	S	200	35,00
8	x	4,2	x	0,4	S	200	36,00
10	x	5,2	x	0,4	S	200	39,00
10	x	5,2	x	0,5	S	200	40,50
12,5	x	6,2	x	0,5	S	200	45,50
12,5	x	6,2	x	0,7	S	200	53,00
15	x	8,2	x	0,8	S	200	62,00
16	x	8,2	x	0,6	S	200	58,00
16	x	8,2	x	0,9	S	200	69,00
18	x	9,2	x	0,7	S	200	69,00
18	x	9,2	x	1,0	S	200	83,00
20	x	8,2	x	0,5	S	200	65,00
20	x	10,2	x	0,6	S	200	71,00
20	x	10,2	x	0,8	S	200	82,00
20	x	10,2	x	0,9	S	200	87,00
20	x	10,2	x	1	S	200	92,00
20	x	10,2	x	1,1	S	200	96,00
25	x	12,2	x	0,9	S	200	110,00
25	x	12,2	x	1,5	S	200	153,00
28	x	14,2	x	1,0	S	200	136,00
28	x	14,2	x	1,5	S	200	179,00
31,5	x	16,3	x	1,25	S	200	370,00
31,5	x	16,3	x	1,75	S	200	495,00
31,5	x	16,3	x	2	S	200	510,00
35,5	x	18,3	x	1,25	S	100	455,00
35,5	x	18,3	x	2,0	S	100	690,00
40	x	20,4	x	1,5	S	100	660,00
40	x	20,4	x	2	S	100	860,00
40	x	20,4	x	2,25	S	100	960,00

DIN	02093.960	RAZ 540
2093	**1.4310/1.4568***	

Disc springs

*t ≤ 2mm = 1.4310 or 1.4568; t > 2mm = 1.4568

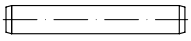
Caution! Reduced spring load.

Dimensions → TI-142

Steel → S. 215

Outside ∅ x inside ∅ x thickness t

ISO	02338.910	RAZ 3100
2338	**A 1**	**m6**



Parallel pins, tolerance m6

Conform to EN 22338

Dimensions → TI-114

Steel → S. 216

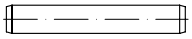
ISO 2338 → replaces DIN 7

∅ - tol. x length (with cone)

0,8 m6	x	4	S	100	9,70 A 1
0,8 m6	x	5	S	100	10,10 A 1
0,8 m6	x	6	S	100	10,40 A 1
0,8 m6	x	8	S	100	10,70 A 1
0,8 m6	x	10	S	100	11,10 A 1
1 m6	x	3	S	100	7,00 A 1
1 m6	x	4	S	100	7,20 A 1

Dimensions	PU	Pieces	€/100/Mat.
1 m6 x 5	S	100	7,60 A1
1 m6 x 6	S	100	7,80 A1
1 m6 x 8	S	100	8,00 A1
1 m6 x 10	S	100	8,30 A1
1 m6 x 12	S	100	8,70 A1
1,5 m6 x 3	S	100	7,80 A1
1,5 m6 x 4	S	100	8,00 A1
1,5 m6 x 5	S	100	8,20 A1
1,5 m6 x 6	S	100	8,40 A1
1,5 m6 x 8	S	100	8,90 A1
1,5 m6 x 10	S	100	9,30 A1
1,5 m6 x 12	S	100	9,70 A1
1,5 m6 x 14	S	100	10,10 A1
1,5 m6 x 16	S	100	10,70 A1
1,5 m6 x 18	S	100	17,50 A1
1,5 m6 x 20	S	100	17,50 A1
2 m6 x 4	S	100	8,60 A1
2 m6 x 5	S	100	8,80 A1
2 m6 x 6	S	100	9,00 A1
2 m6 x 8	S	100	9,90 A1
2 m6 x 10	S	100	10,30 A1
2 m6 x 12	S	100	10,70 A1
2 m6 x 14	S	100	11,10 A1
2 m6 x 16	S	100	11,60 A1
2 m6 x 18	S	100	12,10 A1
2 m6 x 20	S	100	13,10 A1
2,5 m6 x 4	S	100	9,70 A1
2,5 m6 x 5	S	100	10,00 A1
2,5 m6 x 6	S	100	10,30 A1
2,5 m6 x 8	S	100	10,70 A1
2,5 m6 x 10	S	100	11,10 A1
2,5 m6 x 12	S	100	11,70 A1
2,5 m6 x 14	S	100	13,50 A1
2,5 m6 x 16	S	100	14,60 A1
2,5 m6 x 18	S	100	16,00 A1
2,5 m6 x 20	S	100	16,60 A1
2,5 m6 x 24	S	100	19,70 A1
3 m6 x 4	S	100	12,10 A1
3 m6 x 5	S	100	12,50 A1
3 m6 x 6	S	100	12,90 A1
3 m6 x 8	S	100	13,70 A1
3 m6 x 10	S	100	14,20 A1
3 m6 x 12	S	100	14,80 A1
3 m6 x 14	S	100	15,60 A1
3 m6 x 16	S	100	16,00 A1
3 m6 x 18	S	50	18,70 A1
3 m6 x 20	S	50	19,80 A1
3 m6 x 24	S	50	22,50 A1
3 m6 x 28	S	50	26,00 A1
3 m6 x 30	S	50	29,00 A1
3 m6 x 32	S	50	31,00 A1
3 m6 x 40	S	50	55,00 A1
3 m6 x 45	S	50	66,00 A1
3 m6 x 50	S	50	78,00 A1
3 m6 x 60	S	50	200,00 A1
4 m6 x 5	S	50	17,30 A1
4 m6 x 6	S	50	17,70 A1
4 m6 x 8	S	50	18,80 A1
4 m6 x 10	S	50	21,50 A1
4 m6 x 12	S	50	23,50 A1
4 m6 x 14	S	50	26,50 A1
4 m6 x 16	S	50	27,50 A1
4 m6 x 18	S	50	29,00 A1
4 m6 x 20	S	50	32,00 A1
4 m6 x 24	S	50	33,50 A1
4 m6 x 26	S	50	36,00 A1
4 m6 x 28	S	25	40,00 A1
4 m6 x 32	S	25	45,50 A1
4 m6 x 36	S	25	53,00 A1
4 m6 x 40	S	25	56,00 A1
4 m6 x 50	S	25	90,00 A1
4 m6 x 60	S	25	132,00 A1
5 m6 x 5	S	50	19,10 A1
5 m6 x 6	S	50	19,20 A1
5 m6 x 8	S	50	25,50 A1
5 m6 x 10	S	50	26,00 A1
5 m6 x 12	S	50	28,00 A1
5 m6 x 14	S	100	29,50 A1
5 m6 x 16	S	50	30,50 A1
5 m6 x 18	S	25	36,00 A1
5 m6 x 20	S	25	37,50 A1
5 m6 x 24	S	25	40,50 A1
5 m6 x 28	S	25	43,50 A1
5 m6 x 30	S	25	46,00 A1
5 m6 x 32	S	25	51,00 A1
5 m6 x 36	S	25	56,00 A1
5 m6 x 40	S	25	64,00 A1
5 m6 x 45	S	25	74,00 A1
5 m6 x 50	S	25	83,00 A1
6 m6 x 6	S	50	32,50 A1
6 m6 x 8	S	50	34,00 A1
6 m6 x 10	S	50	36,00 A1
6 m6 x 12	S	25	40,50 A1
6 m6 x 14	S	25	42,00 A1
6 m6 x 16	S	25	43,50 A1
6 m6 x 18	S	25	44,50 A1
6 m6 x 20	S	25	46,00 A1
6 m6 x 24	S	25	59,00 A1
6 m6 x 28	S	25	62,00 A1
6 m6 x 30	S	25	71,00 A1
6 m6 x 32	S	25	65,00 A1
6 m6 x 36	S	25	69,00 A1
6 m6 x 40	S	10	86,00 A1
6 m6 x 45	S	10	92,00 A1
6 m6 x 50	S	10	97,00 A1
6 m6 x 55	S	10	105,00 A1
6 m6 x 60	S	10	111,00 A1
8 m6 x 10	S	10	61,00 A1
8 m6 x 12	S	10	63,00 A1
8 m6 x 14	S	10	66,00 A1
8 m6 x 16	S	10	72,00 A1
8 m6 x 18	S	10	76,00 A1
8 m6 x 20	S	10	79,00 A1
8 m6 x 24	S	10	83,00 A1
8 m6 x 28	S	10	86,00 A1
8 m6 x 30	S	10	94,00 A1
8 m6 x 32	S	10	95,00 A1
8 m6 x 36	S	10	120,00 A1
8 m6 x 40	S	10	128,00 A1
8 m6 x 45	S	10	136,00 A1
8 m6 x 50	S	10	151,00 A1
8 m6 x 55	S	10	167,00 A1
8 m6 x 60	S	10	178,00 A1
8 m6 x 70	S	1	209,00 A1
8 m6 x 80	S	1	255,00 A1
8 m6 x 90	S	100	257,00 A1
10 m6 x 10	S	10	91,00 A1
10 m6 x 12	S	10	94,00 A1
10 m6 x 14	S	10	97,00 A1
10 m6 x 16	S	10	100,00 A1
10 m6 x 18	S	10	105,00 A1
10 m6 x 20	S	10	130,00 A1
10 m6 x 24	S	10	140,00 A1
10 m6 x 28	S	10	157,00 A1
10 m6 x 32	S	10	171,00 A1
10 m6 x 36	S	10	182,00 A1
10 m6 x 40	S	10	193,00 A1
10 m6 x 45	S	10	208,00 A1
10 m6 x 50	S	10	236,00 A1
10 m6 x 55	S	10	260,00 A1
10 m6 x 60	S	10	275,00 A1
10 m6 x 70	S	10	310,00 A1
10 m6 x 80	S	10	350,00 A1
10 m6 x 90	S	10	390,00 A1
10 m6 x 100	S	10	480,00 A1
12 m6 x 16	S	10	198,00 A1
12 m6 x 18	S	10	220,00 A1
12 m6 x 20	S	10	236,00 A1
12 m6 x 24	S	10	243,00 A1
12 m6 x 30	S	10	305,00 A1
12 m6 x 32	S	10	345,00 A1
12 m6 x 40	S	10	415,00 A1
12 m6 x 45	S	10	470,00 A1
12 m6 x 50	S	10	510,00 A1
12 m6 x 55	S	10	560,00 A1
12 m6 x 60	S	10	600,00 A1
12 m6 x 70	S	10	710,00 A1
12 m6 x 80	S	10	780,00 A1
12 m6 x 90	S	10	870,00 A1
12 m6 x 100	S	10	950,00 A1
16 m6 x 20	S	10	590,00 A1
16 m6 x 24	S	10	610,00 A1
16 m6 x 28	S	10	680,00 A1
16 m6 x 32	S	10	840,00 A1
16 m6 x 36	S	10	1160,00 A1
16 m6 x 40	S	10	1250,00 A1
16 m6 x 45	S	10	1410,00 A1
16 m6 x 50	S	10	1540,00 A1
16 m6 x 55	S	10	1700,00 A1
16 m6 x 60	S	10	1820,00 A1
16 m6 x 70	S	10	2010,00 A1
16 m6 x 80	S	10	2150,00 A1
16 m6 x 90	S	10	2290,00 A1
16 m6 x 100	S	10	2410,00 A1

ISO	02338.940	RAZ 3100
2338	**A 4**	**m6**



Parallel pins, tolerance m6

conform to EN 22338

Dimensions → TI-114

Steel → S. 216

ISO 2338 → replaces DIN 7

∅ - tol. x length (with cone)

1 m6 x 3	S	100	11,40 A4
1 m6 x 4	S	100	11,40 A4
1 m6 x 5	S	100	11,40 A4
1 m6 x 6	S	100	11,90 A4
1 m6 x 8	S	100	12,60 A4
1 m6 x 10	S	100	12,70 A4
1 m6 x 12	S	100	12,70 A4
1,5 m6 x 4	S	100	12,80 A4
1,5 m6 x 5	S	100	12,80 A4
1,5 m6 x 6	S	100	13,20 A4
1,5 m6 x 8	S	100	13,20 A4
1,5 m6 x 10	S	100	14,10 A4
1,5 m6 x 12	S	100	14,60 A4
1,5 m6 x 14	S	100	15,30 A4
1,5 m6 x 16	S	100	15,80 A4
1,5 m6 x 18	S	100	22,30 A4
1,5 m6 x 20	S	100	24,10 A4
2 m6 x 5	S	100	14,00 A4
2 m6 x 6	S	100	14,10 A4
2 m6 x 8	S	100	14,70 A4
2 m6 x 10	S	100	15,60 A4
2 m6 x 12	S	100	16,70 A4
2 m6 x 14	S	100	17,70 A4
2 m6 x 16	S	100	19,00 A4
2 m6 x 18	S	100	22,30 A4
2 m6 x 20	S	100	24,10 A4
2 m6 x 24	S	100	27,50 A4
2,5 m6 x 4	S	100	14,10 A4
2,5 m6 x 5	S	100	14,70 A4
2,5 m6 x 6	S	100	15,60 A4
2,5 m6 x 8	S	100	16,70 A4
2,5 m6 x 10	S	100	17,70 A4

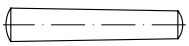
Dimensions	PU	Pieces	€/100/Mat.
2,5 m6 x 12	S	100	19,00 A4
2,5 m6 x 14	S	100	19,90 A4
2,5 m6 x 16	S	100	21,00 A4
2,5 m6 x 18	S	100	22,30 A4
2,5 m6 x 20	S	100	24,10 A4
2,5 m6 x 24	S	100	27,50 A4
3 m6 x 4	S	100	16,40 A4
3 m6 x 5	S	100	14,10 A4
3 m6 x 6	S	100	18,30 A4
3 m6 x 8	S	100	19,90 A4
3 m6 x 10	S	100	21,30 A4
3 m6 x 12	S	100	23,30 A4
3 m6 x 14	S	100	26,00 A4
3 m6 x 16	S	100	27,50 A4
3 m6 x 18	S	50	31,00 A4
3 m6 x 20	S	50	33,50 A4
3 m6 x 24	S	50	36,50 A4
3 m6 x 28	S	50	38,50 A4
3 m6 x 30	S	50	41,00 A4
3 m6 x 32	S	50	42,00 A4
4 m6 x 6	S	50	27,50 A4
4 m6 x 8	S	50	31,00 A4
4 m6 x 10	S	50	34,50 A4
4 m6 x 12	S	50	38,00 A4
4 m6 x 14	S	50	41,00 A4
4 m6 x 16	S	50	44,00 A4
4 m6 x 18	S	25	51,00 A4
4 m6 x 20	S	25	54,00 A4
4 m6 x 24	S	25	61,00 A4
4 m6 x 28	S	25	68,00 A4
4 m6 x 30	S	25	71,00 A4
4 m6 x 32	S	25	74,00 A4
4 m6 x 36	S	25	82,00 A4
4 m6 x 40	S	25	91,00 A4
5 m6 x 6	S	50	30,50 A4
5 m6 x 8	S	50	34,50 A4
5 m6 x 10	S	50	39,00 A4
5 m6 x 12	S	50	41,00 A4
5 m6 x 14	S	25	44,50 A4
5 m6 x 16	S	25	47,00 A4
5 m6 x 18	S	25	51,00 A4
5 m6 x 20	S	25	62,00 A4
5 m6 x 24	S	25	61,00 A4
5 m6 x 28	S	25	68,00 A4
5 m6 x 30	S	25	71,00 A4
5 m6 x 32	S	25	75,00 A4
5 m6 x 36	S	25	81,00 A4
5 m6 x 40	S	25	89,00 A4
5 m6 x 45	S	25	98,00 A4
5 m6 x 50	S	25	106,00 A4
6 m6 x 8	S	25	47,50 A4
6 m6 x 10	S	25	49,00 A4
6 m6 x 12	S	25	53,00 A4
6 m6 x 14	S	25	58,00 A4
6 m6 x 16	S	25	61,00 A4
6 m6 x 18	S	10	75,00 A4
6 m6 x 20	S	10	79,00 A4
6 m6 x 24	S	10	87,00 A4
6 m6 x 28	S	10	99,00 A4
6 m6 x 30	S	10	100,00 A4
6 m6 x 32	S	10	105,00 A4
6 m6 x 36	S	10	115,00 A4
6 m6 x 40	S	10	125,00 A4
6 m6 x 45	S	10	135,00 A4
6 m6 x 50	S	10	146,00 A4
6 m6 x 55	S	10	156,00 A4
6 m6 x 60	S	10	167,00 A4
8 m6 x 10	S	10	82,00 A4
8 m6 x 12	S	10	88,00 A4
8 m6 x 14	S	10	96,00 A4
8 m6 x 16	S	10	102,00 A4
8 m6 x 18	S	10	109,00 A4
8 m6 x 20	S	10	116,00 A4
8 m6 x 24	S	10	129,00 A4
8 m6 x 28	S	10	142,00 A4

Dimensions	PU	Pieces	€/100/Mat.
8 m6 x 30	S	10	147,00 A4
8 m6 x 32	S	10	155,00 A4
8 m6 x 36	S	10	169,00 A4
8 m6 x 40	S	10	185,00 A4
8 m6 x 45	S	10	202,00 A4
8 m6 x 50	S	10	218,00 A4
8 m6 x 55	S	10	236,00 A4
8 m6 x 60	S	1	265,00 A4
8 m6 x 70	S	1	315,00 A4
8 m6 x 80	S	1	350,00 A4
10 m6 x 12	S	10	156,00 A4
10 m6 x 14	S	10	156,00 A4
10 m6 x 16	S	10	157,00 A4
10 m6 x 18	S	10	160,00 A4
10 m6 x 20	S	10	168,00 A4
10 m6 x 24	S	10	188,00 A4
10 m6 x 28	S	10	210,00 A4
10 m6 x 30	S	10	220,00 A4
10 m6 x 32	S	10	231,00 A4
10 m6 x 36	S	10	270,00 A4
10 m6 x 40	S	10	290,00 A4
10 m6 x 45	S	10	315,00 A4
10 m6 x 50	S	10	345,00 A4
10 m6 x 55	S	10	370,00 A4
10 m6 x 60	S	10	395,00 A4
10 m6 x 70	S	10	475,00 A4
10 m6 x 80	S	1	520,00 A4
10 m6 x 90	S	1	580,00 A4
10 m6 x 100	S	1	620,00 A4
12 m6 x 14	S	10	350,00 A4
12 m6 x 16	S	10	280,00 A4
12 m6 x 18	S	10	300,00 A4
12 m6 x 20	S	10	325,00 A4
12 m6 x 24	S	10	350,00 A4
12 m6 x 28	S	10	395,00 A4
12 m6 x 32	S	10	440,00 A4
12 m6 x 36	S	10	485,00 A4
12 m6 x 40	S	10	550,00 A4
12 m6 x 45	S	10	600,00 A4
12 m6 x 50	S	10	650,00 A4
12 m6 x 55	S	10	720,00 A4
12 m6 x 60	S	10	760,00 A4
12 m6 x 70	S	10	880,00 A4
12 m6 x 80	S	10	1040,00 A4
12 m6 x 90	S	10	1130,00 A4
12 m6 x 100	S	10	1270,00 A4
16 m6 x 20	S	10	580,00 A4
16 m6 x 24	S	10	640,00 A4
16 m6 x 28	S	10	750,00 A4
16 m6 x 32	S	10	830,00 A4
16 m6 x 36	S	10	890,00 A4
16 m6 x 40	S	10	950,00 A4
16 m6 x 45	S	10	1040,00 A4
16 m6 x 50	S	10	1110,00 A4
16 m6 x 55	S	10	1190,00 A4
16 m6 x 60	S	10	1290,00 A4
16 m6 x 70	S	10	1410,00 A4
16 m6 x 80	S	10	1560,00 A4
16 m6 x 90	S	10	1720,00 A4
16 m6 x 100	S	10	1870,00 A4

Dimensions	PU	Pieces	€/100/Mat.
ISO 02339.912			RAZ 3100

2339

A 1 **type B**



Taper pins, taper 1 : 50, B = turned

Equals to EN 22339

Dimensions ➔ TI-115

Steel ➔ S. 217

ISO 2339 ➔ replaces DIN 1

∅ x length (with cone)

1 x 8	S	50	33,50 A1
1 x 10	S	50	33,50 A1
1 x 12	S	50	36,50 A1
1 x 14	S	50	36,50 A1
1 x 16	S	50	39,50 A1
1 x 18	S	50	39,50 A1
1,5 x 6	S	50	27,50 A1
1,5 x 8	S	50	27,50 A1
1,5 x 10	S	50	27,50 A1
1,5 x 12	S	50	29,50 A1
1,5 x 14	S	50	30,50 A1
1,5 x 16	S	50	30,50 A1
1,5 x 18	S	50	34,00 A1
1,5 x 20	S	50	35,50 A1
1,5 x 22	S	50	36,50 A1
1,5 x 24	S	50	39,00 A1
1,5 x 26	S	50	39,50 A1
2 x 8	S	50	28,50 A1
2 x 10	S	50	28,50 A1
2 x 12	S	50	29,00 A1
2 x 14	S	50	32,00 A1
2 x 16	S	50	33,00 A1
2 x 18	S	50	35,00 A1
2 x 20	S	50	36,50 A1
2 x 22	S	50	38,50 A1
2 x 24	S	50	40,00 A1
2 x 26	S	50	41,50 A1
2 x 28	S	50	42,50 A1
2 x 30	S	50	44,50 A1
2 x 32	S	50	46,00 A1
2 x 36	S	50	55,00 A1
2,5 x 12	S	50	33,50 A1
2,5 x 14	S	50	33,50 A1
2,5 x 16	S	50	35,50 A1
2,5 x 18	S	50	39,00 A1
2,5 x 20	S	50	42,50 A1
2,5 x 22	S	50	46,00 A1
2,5 x 24	S	50	49,50 A1
2,5 x 26	S	50	52,00 A1
2,5 x 28	S	50	55,00 A1
2,5 x 30	S	50	58,00 A1
2,5 x 32	S	50	61,00 A1
2,5 x 36	S	50	63,00 A1
3 x 12	S	50	35,50 A1
3 x 14	S	50	35,50 A1
3 x 16	S	50	39,00 A1
3 x 18	S	50	42,50 A1
3 x 20	S	50	48,50 A1
3 x 22	S	50	54,00 A1
3 x 24	S	50	59,00 A1
3 x 26	S	50	63,00 A1
3 x 28	S	50	67,00 A1
3 x 30	S	50	72,00 A1
3 x 32	S	50	76,00 A1
3 x 36	S	50	79,00 A1
3 x 40	S	50	83,00 A1

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
3	x	45	S	50	87,00 A1
3	x	50	S	50	92,00 A1
4	x	18	S	50	59,00 A1
4	x	20	S	50	65,00 A1
4	x	22	S	50	71,00 A1
4	x	24	S	50	78,00 A1
4	x	26	S	25	84,00 A1
4	x	28	S	25	89,00 A1
4	x	30	S	25	96,00 A1
4	x	32	S	25	103,00 A1
4	x	36	S	25	113,00 A1
4	x	40	S	25	123,00 A1
4	x	45	S	25	133,00 A1
4	x	50	S	25	144,00 A1
4	x	55	S	25	155,00 A1
4	x	60	S	25	174,00 A1
5	x	20	S	25	88,00 A1
5	x	22	S	25	94,00 A1
5	x	24	S	25	101,00 A1
5	x	26	S	25	108,00 A1
5	x	28	S	25	114,00 A1
5	x	30	S	25	121,00 A1
5	x	32	S	25	127,00 A1
5	x	36	S	25	138,00 A1
5	x	40	S	25	147,00 A1
5	x	45	S	10	164,00 A1
5	x	50	S	10	176,00 A1
5	x	55	S	10	187,00 A1
5	x	60	S	10	198,00 A1
5	x	70	S	10	225,00 A1
6	x	24	S	10	130,00 A1
6	x	26	S	10	136,00 A1
6	x	28	S	10	142,00 A1
6	x	30	S	10	149,00 A1
6	x	32	S	10	155,00 A1
6	x	36	S	10	170,00 A1
6	x	40	S	10	186,00 A1
6	x	45	S	10	204,00 A1
6	x	50	S	10	224,00 A1
6	x	55	S	10	249,00 A1
6	x	60	S	10	265,00 A1
6	x	70	S	10	300,00 A1
6	x	80	S	10	330,00 A1
8	x	28	S	10	224,00 A1
8	x	30	S	10	255,00 A1
8	x	32	S	10	280,00 A1
8	x	36	S	10	320,00 A1
8	x	40	S	10	350,00 A1
8	x	45	S	10	385,00 A1
8	x	50	S	10	420,00 A1
8	x	55	S	10	450,00 A1
8	x	60	S	10	475,00 A1
8	x	70	S	1	530,00 A1
8	x	80	S	1	580,00 A1
8	x	90	S	1	630,00 A1
8	x	100	S	1	680,00 A1
10	x	32	S	10	380,00 A1
10	x	36	S	10	410,00 A1
10	x	40	S	10	430,00 A1
10	x	45	S	10	455,00 A1
10	x	50	S	10	475,00 A1
10	x	55	S	1	530,00 A1
10	x	60	S	1	570,00 A1
10	x	70	S	1	620,00 A1
10	x	80	S	1	670,00 A1
10	x	90	S	1	740,00 A1
10	x	100	S	1	820,00 A1

Dimensions	PU	Pieces	€/100/Mat.
ISO	02342.910		RAZ 140
2342	**A 1**		

Slotted headless screws with chamfered end

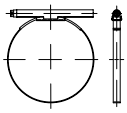
Dimensions ➔ TI-19

Steel ➔ S. 219

ISO 2342 ➔ replaces DIN 427 (compatible)

M 3	x	6	S	100	47,00 A1
M 3	x	8	S	100	52,00 A1
M 4	x	8	S	100	55,00 A1
M 4	x	10	S	100	58,00 A1
M 4	x	12	S	100	62,00 A1
M 4	x	16	S	100	67,00 A1
M 4	x	20	S	100	72,00 A1
M 5	x	10	S	100	62,00 A1
M 5	x	12	S	100	64,00 A1
M 5	x	16	S	100	85,00 A1
M 5	x	20	S	100	106,00 A1
M 6	x	12	S	100	136,00 A1
M 6	x	16	S	100	139,00 A1
M 6	x	20	S	100	142,00 A1
M 6	x	30	S	100	148,00 A1
M 8	x	16	S	100	188,00 A1
M 8	x	20	S	100	198,00 A1
M 10	x	20	S	100	260,00 A1
M 10	x	25	S	100	285,00 A1
M 10	x	30	S	100	300,00 A1
M 10	x	50	S	100	345,00 A1

DIN	03017.311	RAZ 555
3017	**1.4016 (W2)**	**type A**



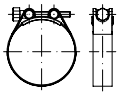
Hose clamps, A = with worm gear drive

Clamping screw with slotted, hexagon and cross recess (H2), band and casing: 1.4016, screw = steel, ZP

Stainless ➔ S. 496

Clamping range/band width x wrench size			
8- 12/ 7,5 C6	S	100	84,00
10- 16/ 7,5 C6	S	100	85,00
8- 16/ 9 C7	S	100	87,00
12- 20/ 9 C7	S	100	89,00
16- 27/ 9 C7	S	100	94,00
20- 32/ 9 C7	S	100	99,00
25- 40/ 9 C7	S	100	103,00
32- 50/ 9 C7	S	50	107,00
40- 60/ 9 C7	S	50	110,00
50- 70/ 9 C7	S	50	112,00
60- 80/ 9 C7	S	25	119,00
70- 90/ 9 C7	S	25	141,00
80-100/ 9 C7	S	25	144,00
90-110/ 9 C7	S	25	152,00

Dimensions	PU	Pieces	€/100/Mat.
DIN	03017.903		RAZ 555
3017	**1.4016 (W2)**		**type C1**



Hose clamps, C1 = with hinge bolts, one-piece

With hexagon clamping screw

Clamping range/band width			
17- 19/18	S	50	990,00
19- 21/18	S	50	990,00
21- 23/18	S	50	1000,00
23- 25/18	S	50	1010,00
25- 27/18	S	50	1020,00
27- 29/18	S	50	1020,00
29- 31/18	S	50	1030,00
31- 34/18	S	50	1030,00
34- 37/18	S	50	1030,00
37- 40/18	S	50	1040,00
40- 43/18	S	50	1040,00
43- 47/20	S	50	1060,00
47- 51/20	S	50	1090,00
51- 55/20	S	50	1090,00
55- 59/20	S	50	1110,00
59- 63/20	S	50	1120,00
63- 68/20	S	50	1150,00
68- 73/25	S	25	1390,00
73- 79/25	S	25	1410,00
79- 85/25	S	25	1450,00
85- 91/25	S	25	1470,00
91- 97/25	S	25	1500,00
97-104/25	S	25	1520,00
104-112/25	S	25	1560,00
112-121/25	S	25	1600,00
121-130/25	S	25	1650,00
130-140/30	S	10	2700,00
140-150/30	S	10	2750,00
150-162/30	S	10	2850,00
162-174/30	S	10	3050,00
174-187/30	S	10	3100,00
187-200/30	S	10	3150,00
200-213/30	S	10	3400,00
213-226/30	S	10	3450,00
226-239/30	S	10	3550,00
239-252/30	S	10	3600,00

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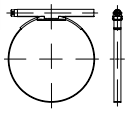
Dimensions			PU	Pieces	€/100/Mat.
DIN	03017.941				RAZ 555
3017	**A 4 (W5)**				**type A**
8- 16/ 9	C7		S	100	91,75 A4
12- 20/ 9	C7		S	100	103,00 A4
12- 22/ 9	C7		S	100	105,00 A4
16- 27/ 9	C7		S	100	109,00 A4
16- 27/12	C7		S	50	177,00 A4
20- 32/ 9	C7		S	100	110,00 A4
20- 32/12	C7		S	50	181,00 A4
25- 40/ 9	C7		S	100	123,00 A4
25- 40/12	C7		S	50	190,00 A4
32- 50/ 9	C7		S	50	130,00 A4
32- 50/12	C7		S	50	199,00 A4
40- 60/ 9	C7		S	50	139,00 A4
40- 60/12	C7		S	25	240,00 A4
50- 70/ 9	C7		S	50	147,00 A4
50- 70/12	C7		S	25	252,00 A4
60- 80/ 9	C7		S	25	161,00 A4
60- 80/12	C7		S	25	282,00 A4
70- 90/ 9	C7		S	25	170,00 A4
70- 90/12	C7		S	25	300,00 A4
80-100/ 9	C7		S	25	176,00 A4
80-100/12	C7		S	1	314,00 A4
90-110/ 9	C7		S	25	183,00 A4
90-110/12	C7		S	20	326,00 A4
100-120/12	C7		S	1	357,00 A4
110-130/12	C7		S	1	380,00 A4
120-140/12	C7		S	1	396,00 A4
130-150/12	C7		S	1	410,00 A4
140-160/12	C7		S	1	426,00 A4
150-170/12	C7		S	1	440,00 A4
160-180/12	C7		S	1	454,00 A4
170-190/12	C7		S	1	469,00 A4



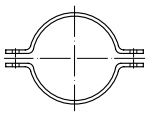
Hose clamps, A = with worm gear drive

Clamping screw with slot and hexagon, band, casing and screw: 1.4401

Steel ➔ S. 221

Clamping range/band width x wrench size

DIN	03567.951				RAZ 560
3567	**1.4571 (A5)**				**type A**
A 34 / NW 25			S	1	735,00 A5
A 43 / NW 32			S	1	767,00 A5
A 49 / NW 40			S	1	813,00 A5
A 61 / NW 50			S	1	1202,00 A5



Pipe clamps, A = equal sided

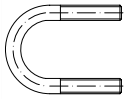
Dimensions ➔ TI-129

Steel ➔ S. 222

Prices are valid for pipe clamps halves

Inside ∅/for pipe nominal width

Dimensions			PU	Pieces	€/100/Mat.
A 77 / NW 65			S	1	1458,00 A5
A 89 / NW 80			S	1	1560,00 A5
A 115 / NW 100			S	1	3385,00 A5
A 140 / NW 125			S	1	3794,00 A5
A 169 / NW 150			S	1	4336,00 A5
A 220 / NW 200			S	1	5436,00 A5
DIN	03570.941				RAZ 560
3570	**A 4**				**type A**
A 23 / NW 15			S	1	270,00 A4
A 30 / NW 20			S	1	335,00 A4
A 38 / NW 25			S	1	345,00 A4
A 46 / NW 32			S	1	370,00 A4
A 52 / NW 40			S	1	390,00 A4
A 64 / NW 50			S	1	550,00 A4
A 82 / NW 65			S	1	630,00 A4
A 94 / NW 80			S	1	660,00 A4
A 120 / NW 100			S	1	2200,00 A4
A 148 / NW 125			S	1	2600,00 A4
A 176 / NW 150			S	1	2900,00 A4
A 228 / NW 200			S	1	6000,00 A4
A 282 / NW 250			S	1	6800,00 A4
A 332 / NW 300			S	1	7900,00 A4
A 530 / NW 500			S	1	8600,00 A4



Stirrup bolts without nuts, A = double-sided fixing thread

Hanger height for sheet thickness 10 mm

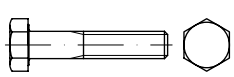
Nuts ➔ DIN 555/ISO 4034

Dimensions ➔ TI-128

Steel ➔ S. 224

Nominal width/~ pipe outside ∅

ISO	04014.920				**
4014	**A 2 - 70**				
M 5	x	30*	S	100	8,20 A2
M 5	x	35*	S	100	9,90 A2
M 5	x	40*	S	100	10,40 A2
M 5	x	45*	S	100	12,20 A2
M 5	x	50*	S	100	14,20 A2
M 5	x	55*	S	100	27,60 A2
M 5	x	60*	S	100	27,60 A2
M 5	x	65*	S	200	60,30 A2
M 5	x	70*	S	100	61,80 A2
M 5	x	80*	S	100	208,00 A2
M 5	x	90*	S	100	278,00 A2



Hexagon head bolts with shank

Short dimensions in part thread up to head,
**M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions ➔ TI-15
Mech. properties ➔ TI-224
Tightening torque ➔ TI-235
Standard conversion ➔ TI-6

Steel ➔ S. 224
Brass ➔ S. 588

ISO 4014 ➔ replaces DIN 931

*Prop. class for dimensions different depending on production

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	100*	S	100	350,00 A2
M 6	x	30*	S	200	7,90 A2
M 6	x	35*	S	100	8,85 A2
M 6	x	40*	S	100	10,20 A2
M 6	x	45*	S	100	11,90 A2
M 6	x	50*	S	100	14,20 A2
M 6	x	55*	S	100	20,90 A2
M 6	x	60*	S	100	23,70 A2
M 6	x	65*	S	100	29,60 A2
M 6	x	70*	S	100	32,20 A2
M 6	x	75*	S	100	46,40 A2
M 6	x	80*	S	100	38,80 A2
M 6	x	85*	S	100	63,90 A2
M 6	x	90*	S	100	51,10 A2
M 6	x	100*	S	100	59,80 A2
M 6	x	110*	S	50	75,10 A2
M 6	x	120*	S	50	88,40 A2
M 6	x	130*	S	50	143,00 A2
M 6	x	140*	S	50	151,00 A2
M 6	x	150*	S	50	180,00 A2
M 6	x	160*	S	50	194,00 A2
M 6	x	170*	S	50	236,00 A2
M 6	x	180*	S	50	239,00 A2
M 8	x	35*	S	100	14,80 A2
M 8	x	40*	S	100	17,30 A2
M 8	x	45*	S	100	18,40 A2
M 8	x	50*	S	100	19,60 A2
M 8	x	55*	S	100	21,90 A2
M 8	x	60*	S	100	22,40 A2
M 8	x	65*	S	100	31,10 A2
M 8	x	70*	S	100	32,70 A2
M 8	x	75*	S	100	63,40 A2
M 8	x	80*	S	100	50,10 A2
M 8	x	85*	S	100	76,60 A2
M 8	x	90*	S	100	61,30 A2
M 8	x	100*	S	100	74,10 A2
M 8	x	110*	S	50	88,90 A2
M 8	x	120*	S	50	101,00 A2
M 8	x	130*	S	50	114,00 A2
M 8	x	140*	S	50	126,00 A2
M 8	x	150*	S	50	138,00 A2
M 8	x	160*	S	25	192,00 A2
M 8	x	170*	S	25	233,00 A2
M 8	x	180*	S	25	233,00 A2
M 8	x	190*	S	25	309,00 A2
M 8	x	200*	S	25	309,00 A2
M 8	x	220*	S	25	466,00 A2
M 10	x	40	S	100	31,50 A2
M 10	x	45	S	100	32,00 A2
M 10	x	50	S	100	34,00 A2
M 10	x	55	S	50	37,00 A2
M 10	x	60	S	50	39,50 A2
M 10	x	65	S	50	45,00 A2
M 10	x	70	S	50	46,00 A2
M 10	x	75	S	50	84,00 A2
M 10	x	80	S	50	57,00 A2
M 10	x	85	S	50	126,00 A2
M 10	x	90	S	50	86,00 A2
M 10	x	100	S	50	110,00 A2
M 10	x	110*	S	100	184,00 A2
M 10	x	120*	S	50	165,00 A2
M 10	x	130*	S	50	202,00 A2
M 10	x	140*	S	50	509,00 A2
M 10	x	150*	S	50	264,00 A2
M 10	x	160*	S	50	309,00 A2
M 10	x	170*	S	1	378,00 A2
M 10	x	180*	S	1	382,00 A2
M 10	x	190*	S	1	502,00 A2
M 10	x	200*	S	1	502,00 A2
M 10	x	210*	S	1	649,00 A2
M 10	x	220*	S	1	726,00 A2
M 12	x	40*	S	50	42,10 A2
M 12	x	45	S	50	44,50 A2
M 12	x	50	S	50	49,00 A2
M 12	x	55	S	50	53,00 A2

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	60	S	50	56,00 A 2
M 12	x	65	S	50	63,00 A 2
M 12	x	70	S	50	67,00 A 2
M 12	x	75	S	50	119,00 A 2
M 12	x	80	S	50	81,00 A 2
M 12	x	85	S	50	153,00 A 2
M 12	x	90	S	50	109,00 A 2
M 12	x	100	S	50	122,00 A 2
M 12	x	105	S	50	250,00 A 2
M 12	x	110	S	25	149,00 A 2
M 12	x	120	S	25	177,00 A 2
M 12	x	130*	S	1	214,00 A 2
M 12	x	140*	S	1	296,55 A 2
M 12	x	150*	S	1	290,00 A 2
M 12	x	160*	S	1	347,00 A 2
M 12	x	170*	S	1	436,00 A 2
M 12	x	180*	S	1	436,00 A 2
M 12	x	190*	S	1	593,00 A 2
M 12	x	200*	S	1	593,00 A 2
M 12	x	210*	S	1	764,00 A 2
M 12	x	220*	S	1	834,00 A 2
M 12	x	230*	S	1	881,00 A 2
M 12	x	240*	S	1	929,00 A 2
M 12	x	250*	S	1	976,00 A 2
M 12	x	260*	S	1	1078,00 A 2
M 12	x	280*	S	1	1170,00 A 2
M 12	x	300*	S	1	1252,00 A 2
M 12	x	320*	S	1	1500,00 A 2
M 14	x	50	S	100	67,00 A 2
M 14	x	55	S	50	67,00 A 2
M 14	x	60	S	50	69,00 A 2
M 14	x	65	S	50	74,00 A 2
M 14	x	70	S	50	78,00 A 2
M 14	x	75	S	50	174,00 A 2
M 14	x	80	S	50	88,00 A 2
M 14	x	90	S	50	97,00 A 2
M 14	x	100	S	50	105,00 A 2
M 14	x	110	S	25	151,00 A 2
M 14	x	120	S	25	167,00 A 2
M 14	x	130	S	25	390,00 A 2
M 14	x	140	S	25	420,00 A 2
M 14	x	150*	S	1	367,00 A 2
M 14	x	160*	S	1	472,00 A 2
M 14	x	170*	S	1	524,00 A 2
M 14	x	180*	S	1	558,00 A 2
M 14	x	200*	S	1	644,00 A 2
M 16	x	55*	S	50	103,00 A 2
M 16	x	60*	S	50	105,00 A 2
M 16	x	65*	S	50	114,00 A 2
M 16	x	70*	S	25	120,00 A 2
M 16	x	75*	S	25	133,00 A 2
M 16	x	80*	S	25	133,00 A 2
M 16	x	85*	S	25	182,00 A 2
M 16	x	90*	S	25	146,00 A 2
M 16	x	95*	S	25	210,00 A 2
M 16	x	100*	S	25	159,00 A 2
M 16	x	110*	S	25	232,00 A 2
M 16	x	120*	S	25	251,00 A 2
M 16	x	130*	S	1	307,00 A 2
M 16	x	140*	S	1	334,00 A 2
M 16	x	150*	S	1	367,00 A 2
M 16	x	160*	S	1	472,00 A 2
M 16	x	170*	S	1	524,00 A 2
M 16	x	180*	S	1	558,00 A 2
M 16	x	190*	S	1	644,00 A 2
M 16	x	200*	S	1	644,00 A 2
M 16	x	210*	S	1	764,00 A 2
M 16	x	220*	S	1	764,00 A 2
M 16	x	230*	S	1	885,00 A 2
M 16	x	240*	S	1	885,00 A 2
M 16	x	250*	S	1	1055,00 A 2
M 16	x	260*	S	1	1055,00 A 2
M 16	x	270*	S	1	1185,00 A 2
M 16	x	280*	S	1	1185,00 A 2
M 16	x	290*	S	1	1316,00 A 2
M 16	x	300*	S	1	1316,00 A 2
M 18	x	65*	S	1	267,00 A 2
M 18	x	70*	S	25	282,00 A 2
M 18	x	75*	S	1	311,00 A 2
M 18	x	80*	S	25	311,00 A 2
M 18	x	90*	S	25	341,00 A 2
M 18	x	100*	S	25	370,00 A 2
M 18	x	110*	S	25	524,00 A 2
M 18	x	120*	S	25	574,00 A 2
M 18	x	130*	S	25	674,00 A 2
M 18	x	140*	S	25	739,00 A 2
M 18	x	150*	S	25	803,00 A 2
M 18	x	160*	S	25	841,00 A 2
M 20	x	65*	S	1	178,00 A 2
M 20	x	70*	S	1	188,00 A 2
M 20	x	75*	S	1	208,00 A 2
M 20	x	80*	S	1	208,00 A 2
M 20	x	85*	S	1	284,00 A 2
M 20	x	90*	S	1	227,00 A 2
M 20	x	100*	S	1	246,00 A 2
M 20	x	110*	S	1	349,00 A 2
M 20	x	120*	S	1	382,00 A 2
M 20	x	130*	S	1	449,00 A 2
M 20	x	140*	S	1	493,00 A 2
M 20	x	150*	S	1	535,00 A 2
M 20	x	160*	S	1	687,00 A 2
M 20	x	170*	S	1	747,00 A 2
M 20	x	180*	S	1	790,00 A 2
M 20	x	190*	S	1	893,00 A 2
M 20	x	200*	S	1	893,00 A 2
M 20	x	210*	S	1	1089,00 A 2
M 20	x	220*	S	1	1089,00 A 2
M 20	x	230*	S	1	1242,00 A 2
M 20	x	240*	S	1	1242,00 A 2
M 20	x	250*	S	1	1395,00 A 2
M 20	x	260*	S	1	1395,00 A 2
M 20	x	270*	S	1	1549,00 A 2
M 20	x	280*	S	1	1549,00 A 2
M 20	x	290*	S	1	1702,00 A 2
M 20	x	300*	S	1	1702,00 A 2
M 22	x	80	S	10	750,00 A 2
M 22	x	90	S	10	800,00 A 2
M 22	x	100	S	10	880,00 A 2
M 22	x	110	S	10	990,00 A 2
M 22	x	120	S	10	1080,00 A 2
M 22	x	130*	S	1	816,00 A 2
M 22	x	140*	S	1	885,00 A 2
M 22	x	150	S	10	1390,00 A 2
M 22	x	160*	S	1	1125,00 A 2
M 22	x	180*	S	1	1269,00 A 2
M 22	x	200*	S	1	1417,00 A 2
M 24	x	75*	S	1	414,00 A 2
M 24	x	80*	S	1	334,00 A 2
M 24	x	85*	S	1	443,00 A 2
M 24	x	90*	S	1	354,00 A 2
M 24	x	95*	S	1	476,00 A 2
M 24	x	100*	S	1	380,00 A 2
M 24	x	110*	S	1	423,00 A 2
M 24	x	120*	S	1	459,00 A 2
M 24	x	130*	S	1	579,00 A 2
M 24	x	140*	S	1	626,00 A 2
M 24	x	150*	S	1	662,00 A 2
M 24	x	160*	S	1	984,00 A 2
M 24	x	170*	S	1	1142,00 A 2
M 24	x	180*	S	1	1142,00 A 2
M 24	x	190*	S	1	1271,00 A 2
M 24	x	200*	S	1	1271,00 A 2
M 24	x	210*	S	1	1443,00 A 2
M 24	x	220*	S	1	1443,00 A 2
M 24	x	230*	S	1	1597,00 A 2
M 24	x	240*	S	1	1597,00 A 2
M 24	x	250*	S	1	1840,00 A 2
M 24	x	260*	S	1	1840,00 A 2
M 24	x	280*	S	1	2009,00 A 2
M 24	x	290*	S	1	2178,00 A 2
M 24	x	300*	S	1	2178,00 A 2
M 27	x	90*	S	1	944,00 A 2
M 27	x	100*	S	1	1017,00 A 2
M 27	x	110*	S	1	1096,00 A 2
M 27	x	120*	S	1	1175,00 A 2
M 27	x	130*	S	1	1214,00 A 2
M 27	x	140*	S	1	1287,00 A 2
M 27	x	150*	S	1	1366,00 A 2
M 27	x	160*	S	1	1439,00 A 2
M 27	x	170*	S	1	1591,00 A 2
M 27	x	180*	S	1	1591,00 A 2
M 27	x	200*	S	1	1737,00 A 2
M 27	x	210*	S	1	2147,00 A 2
M 27	x	220*	S	1	2147,00 A 2
M 27	x	230*	S	1	2403,00 A 2
M 27	x	240*	S	1	2403,00 A 2
M 27	x	250*	S	1	2658,00 A 2
M 30	x	90*	S	1	1231,00 A 2
M 30	x	100*	S	1	1338,00 A 2
M 30	x	110*	S	1	1428,00 A 2
M 30	x	120*	S	1	1524,00 A 2
M 30	x	130*	S	1	1597,00 A 2
M 30	x	140*	S	1	1810,00 A 2
M 30	x	150*	S	1	1912,00 A 2
M 30	x	160*	S	1	2114,00 A 2
M 30	x	170*	S	1	2328,00 A 2
M 30	x	180*	S	1	2328,00 A 2
M 30	x	190*	S	1	2547,00 A 2
M 30	x	200*	S	1	2547,00 A 2
M 30	x	210*	S	1	2760,00 A 2
M 30	x	220*	S	1	2760,00 A 2
M 30	x	240*	S	1	2965,00 A 2
M 30	x	250*	S	1	3170,00 A 2
M 33	x	100*	S	1	1760,00 A 2
M 33	x	110*	S	1	1884,00 A 2
M 33	x	120*	S	1	2007,00 A 2
M 33	x	130*	S	1	2120,00 A 2
M 33	x	140*	S	1	2255,00 A 2
M 33	x	150*	S	1	2373,00 A 2
M 33	x	160*	S	1	2491,00 A 2
M 33	x	170*	S	1	2727,00 A 2
M 33	x	180*	S	1	2727,00 A 2
M 33	x	190*	S	1	2969,00 A 2
M 33	x	200*	S	1	2969,00 A 2
M 33	x	210*	S	1	3221,00 A 2
M 33	x	220*	S	1	3221,00 A 2
M 33	x	230*	S	1	3476,00 A 2
M 33	x	240*	S	1	3476,00 A 2
M 33	x	250*	S	1	3732,00 A 2
M 36	x	100*	S	1	2154,00 A 2
M 36	x	110*	S	1	2305,00 A 2
M 36	x	120*	S	1	2457,00 A 2
M 36	x	130*	S	1	2575,00 A 2
M 36	x	140*	S	1	2727,00 A 2
M 36	x	150*	S	1	2879,00 A 2
M 36	x	160*	S	1	3025,00 A 2
M 36	x	170*	S	1	3498,00 A 2
M 36	x	180*	S	1	3498,00 A 2
M 36	x	190*	S	1	3801,00 A 2
M 36	x	200*	S	1	3801,00 A 2
M 36	x	210*	S	1	4090,00 A 2
M 36	x	220*	S	1	4090,00 A 2
M 36	x	230*	S	1	4397,00 A 2
M 36	x	240*	S	1	4397,00 A 2
M 36	x	250*	S	1	4703,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
ISO	04014.927				*
4014	**A 2 – 70**				**AD W2**

Hexagon head bolts with shank

Short dimensions in part thread up to head,
for pressure vessel const. as per AD regulations,
products with renunciation of inspection
certificate, *M 10/12= RAZ 3223 other ∅ = RAZ 403

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 224
Brass → S. 588

ISO 4014 → replaces DIN 931

M 10	x	50	S	100	35,00	A 2-70
M 10	x	55	S	100	38,00	A 2-70
M 10	x	60	S	100	41,00	A 2-70
M 10	x	65	S	100	47,50	A 2-70
M 10	x	70	S	100	48,00	A 2-70
M 10	x	75	S	50	84,00	A 2-70
M 10	x	80	S	50	58,00	A 2-70
M 10	x	90	S	50	88,00	A 2-70
M 10	x	100	S	50	112,00	A 2-70
M 10	x	110	S	50	136,00	A 2-70
M 10	x	120	S	50	168,00	A 2-70
M 10	x	130	S	50	205,00	A 2-70
M 10	x	140	S	50	237,00	A 2-70
M 10	x	150	S	50	268,00	A 2-70
M 12	x	50	S	50	48,60	A 2-70
M 12	x	55	S	50	52,15	A 2-70
M 12	x	60	S	50	55,75	A 2-70
M 12	x	65	S	50	62,40	A 2-70
M 12	x	70	S	50	67,00	A 2-70
M 12	x	75	S	50	119,00	A 2-70
M 12	x	80	S	25	80,80	A 2-70
M 12	x	85	S	25	154,00	A 2-70
M 12	x	90	S	25	109,00	A 2-70
M 12	x	100	S	25	122,00	A 2-70
M 12	x	110	S	25	149,00	A 2-70
M 12	x	120	S	25	177,00	A 2-70
M 12	x	130	S	25	217,00	A 2-70
M 12	x	140	S	25	258,00	A 2-70
M 12	x	150	S	25	293,00	A 2-70
M 16	x	50	S	25	102,00	A 2-70
M 16	x	55	S	25	105,00	A 2-70
M 16	x	60	S	25	107,00	A 2-70
M 16	x	65	S	25	115,00	A 2-70
M 16	x	70	S	25	121,00	A 2-70
M 16	x	75	S	25	174,00	A 2-70
M 16	x	80	S	25	136,00	A 2-70
M 16	x	85	S	25	197,00	A 2-70
M 16	x	90	S	25	149,00	A 2-70
M 16	x	95	S	25	213,00	A 2-70
M 16	x	100	S	25	162,00	A 2-70
M 16	x	110	S	25	233,00	A 2-70
M 16	x	120	S	25	254,00	A 2-70
M 16	x	130	S	25	312,00	A 2-70
M 16	x	140	S	25	338,00	A 2-70
M 16	x	150	S	1	369,00	A 2-70
M 16	x	160	S	1	476,00	A 2-70
M 16	x	170	S	1	502,00	A 2-70
M 16	x	180	S	1	563,00	A 2-70
M 20	x	65	S	25	179,00	A 2-70
M 20	x	70	S	25	190,00	A 2-70
M 20	x	75	S	25	210,00	A 2-70
M 20	x	80	S	25	210,00	A 2-70
M 20	x	85	S	25	415,00	A 2-70
M 20	x	90	S	25	228,00	A 2-70
M 20	x	100	S	25	248,00	A 2-70
M 20	x	110	S	25	353,00	A 2-70
M 20	x	120	S	25	384,00	A 2-70
M 20	x	130	S	25	450,00	A 2-70
M 20	x	140	S	1	496,00	A 2-70
M 20	x	150	S	1	537,00	A 2-70
M 20	x	160	S	1	721,00	A 2-70
M 20	x	170	S	1	931,00	A 2-70
M 20	x	180	S	1	972,00	A 2-70
M 20	x	190	S	1	1074,00	A 2-70
M 20	x	200	S	1	1125,00	A 2-70
M 20	x	220	S	1	1100,00	A 2-70
M 27	x	90	S	1	947,00	A 2-70

ISO	04014.940	**
4014	**A 4 – 70**	

Hexagon head bolts with shank

Short dimensions in part thread up to head,
**M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 224
Brass → S. 588

ISO 4014 → replaces DIN 931

*Prop. class for dimensions different depending on production

M 5	x	30*	S	100	11,60	A4
M 5	x	35*	S	100	12,50	A4
M 5	x	40*	S	100	13,70	A4
M 5	x	45*	S	100	15,80	A4
M 5	x	50*	S	100	19,80	A4
M 5	x	55*	S	100	32,70	A4
M 5	x	60*	S	100	34,20	A4
M 5	x	70*	S	100	72,00	A4
M 5	x	80*	S	100	222,00	A4
M 5	x	90*	S	100	285,00	A4
M 5	x	100*	S	100	363,00	A4
M 6	x	30*	S	200	11,50	A4
M 6	x	35*	S	100	12,30	A4
M 6	x	40*	S	100	13,20	A4
M 6	x	45*	S	100	15,20	A4
M 6	x	50*	S	100	17,30	A4
M 6	x	55*	S	100	24,00	A4
M 6	x	60*	S	100	27,60	A4
M 6	x	65*	S	100	33,20	A4
M 6	x	70*	S	100	35,20	A4
M 6	x	80*	S	100	43,40	A4
M 6	x	90*	S	100	57,20	A4
M 6	x	100*	S	100	63,40	A4
M 6	x	110*	S	50	83,80	A4
M 6	x	120*	S	50	102,00	A4
M 6	x	130*	S	50	173,00	A4
M 6	x	140*	S	1	192,00	A4
M 6	x	150*	S	1	212,00	A4
M 6	x	160*	S	1	231,00	A4
M 6	x	170*	S	1	295,00	A4
M 8	x	35*	S	100	25,00	A4
M 8	x	40*	S	100	25,00	A4
M 8	x	45*	S	100	26,50	A4
M 8	x	50*	S	100	28,60	A4
M 8	x	55*	S	100	33,70	A4
M 8	x	60*	S	100	34,70	A4
M 8	x	65*	S	100	45,50	A4
M 8	x	70*	S	100	48,00	A4
M 8	x	75*	S	100	100,00	A4
M 8	x	80*	S	100	72,00	A4
M 8	x	85*	S	100	105,00	A4
M 8	x	90*	S	100	84,80	A4
M 8	x	100*	S	100	99,70	A4
M 8	x	110*	S	50	122,00	A4
M 8	x	120*	S	50	139,00	A4
M 8	x	130*	S	50	174,00	A4
M 8	x	140*	S	1	203,00	A4
M 8	x	150*	S	1	232,00	A4
M 8	x	160*	S	1	289,00	A4
M 8	x	170*	S	1	354,00	A4
M 8	x	180*	S	1	354,00	A4
M 8	x	190*	S	1	470,00	A4
M 8	x	200*	S	1	470,00	A4
M 8	x	220*	S	1	695,00	A4
M 10	x	40	S	100	47,00	A4
M 10	x	45	S	100	48,00	A4
M 10	x	50	S	100	50,00	A4
M 10	x	55	S	50	56,00	A4
M 10	x	60	S	50	58,00	A4
M 10	x	65	S	50	68,00	A4
M 10	x	70	S	50	69,00	A4
M 10	x	75	S	50	123,00	A4
M 10	x	80	S	50	84,00	A4
M 10	x	90	S	50	115,00	A4
M 10	x	95	S	50	380,00	A4
M 10	x	100	S	50	146,00	A4
M 10	x	110	S	50	184,07	A4
M 10	x	120	S	50	224,97	A4
M 10	x	130*	S	50	289,00	A4
M 10	x	140	S	1	705,58	A4
M 10	x	150	S	50	378,36	A4
M 10	x	160*	S	1	469,00	A4
M 10	x	170*	S	1	573,00	A4
M 10	x	180*	S	1	573,00	A4
M 10	x	190*	S	1	760,00	A4
M 10	x	200*	S	1	760,00	A4
M 10	x	210*	S	1	938,00	A4
M 10	x	220*	S	1	1058,00	A4
M 12	x	45	S	50	70,00	A4
M 12	x	50	S	50	71,00	A4
M 12	x	55	S	50	78,00	A4
M 12	x	60	S	50	79,00	A4
M 12	x	65	S	50	94,00	A4
M 12	x	70	S	50	96,00	A4
M 12	x	75	S	50	171,00	A4
M 12	x	80	S	50	112,00	A4
M 12	x	85	S	50	199,00	A4
M 12	x	90	S	50	136,00	A4
M 12	x	95	S	50	209,00	A4
M 12	x	100	S	50	162,00	A4
M 12	x	110	S	25	197,00	A4
M 12	x	120	S	25	243,00	A4
M 12	x	130*	S	1	305,00	A4
M 12	x	140	S	1	455,05	A4
M 12	x	150*	S	50	414,15	A4
M 12	x	160*	S	1	537,00	A4
M 12	x	170*	S	1	778,37	A4
M 12	x	180*	S	1	674,00	A4
M 12	x	190*	S	1	833,00	A4
M 12	x	200*	S	1	833,00	A4
M 12	x	210*	S	1	1016,00	A4
M 12	x	220*	S	1	1077,00	A4
M 12	x	240*	S	1	1159,00	A4
M 12	x	250*	S	1	1199,00	A4
M 12	x	260*	S	1	1304,00	A4
M 12	x	280*	S	1	1381,00	A4
M 12	x	300*	S	1	1432,00	A4
M 12	x	320*	S	1	1509,00	A4
M 12	x	340*	S	1	1585,00	A4
M 12	x	360*	S	1	1662,00	A4
M 14	x	50	S	100	172,00	A4
M 14	x	55	S	50	172,00	A4
M 14	x	60	S	50	172,00	A4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 14	x	65	S	50	187,00 A4
M 14	x	70	S	50	190,00 A4
M 14	x	80	S	50	205,00 A4
M 14	x	90	S	50	231,00 A4
M 14	x	100	S	50	248,00 A4
M 14	x	110	S	25	315,00 A4
M 14	x	120	S	25	355,00 A4
M 14	x	130	S	25	420,00 A4
M 14	x	140	S	25	470,00 A4
M 14	x	150*	S	1	509,00 A4
M 14	x	160*	S	1	668,00 A4
M 14	x	170*	S	1	772,00 A4
M 14	x	180*	S	1	772,00 A4
M 14	x	190*	S	1	869,00 A4
M 14	x	200*	S	1	869,00 A4
M 16	x	55*	S	50	169,00 A4
M 16	x	60*	S	50	169,00 A4
M 16	x	65*	S	50	185,00 A4
M 16	x	70*	S	25	187,00 A4
M 16	x	75*	S	25	204,00 A4
M 16	x	80*	S	25	204,00 A4
M 16	x	85*	S	25	285,00 A4
M 16	x	90*	S	25	228,00 A4
M 16	x	100*	S	25	247,00 A4
M 16	x	110*	S	25	310,00 A4
M 16	x	120*	S	25	351,00 A4
M 16	x	130*	S	1	418,00 A4
M 16	x	140*	S	1	464,00 A4
M 16	x	150*	S	1	509,00 A4
M 16	x	160*	S	1	668,00 A4
M 16	x	170*	S	1	772,00 A4
M 16	x	180*	S	1	772,00 A4
M 16	x	190*	S	1	869,00 A4
M 16	x	200*	S	1	869,00 A4
M 16	x	210*	S	1	1231,00 A4
M 16	x	220*	S	1	1231,00 A4
M 16	x	230*	S	1	1399,00 A4
M 16	x	240*	S	1	1399,00 A4
M 16	x	250*	S	1	1568,00 A4
M 16	x	260*	S	1	1568,00 A4
M 16	x	270*	S	1	1737,00 A4
M 16	x	280*	S	1	1737,00 A4
M 16	x	290*	S	1	1906,00 A4
M 16	x	300*	S	1	1906,00 A4
M 16	x	320*	S	1	3052,00 A4
M 16	x	340*	S	1	3313,00 A4
M 16	x	360*	S	1	3400,00 A4
M 16	x	380*	S	1	3436,00 A4
M 16	x	400*	S	1	3503,00 A4
M 18	x	70*	S	1	372,00 A4
M 18	x	80*	S	1	412,00 A4
M 18	x	90*	S	1	455,00 A4
M 18	x	100*	S	1	493,00 A4
M 18	x	110*	S	1	741,00 A4
M 18	x	120*	S	1	802,00 A4
M 18	x	130*	S	1	937,00 A4
M 18	x	140*	S	1	949,00 A4
M 18	x	150*	S	1	951,00 A4
M 18	x	160*	S	1	965,00 A4
M 18	x	170*	S	1	1407,00 A4
M 18	x	180*	S	1	1407,00 A4
M 18	x	190*	S	1	1611,00 A4
M 18	x	200*	S	1	1611,00 A4
M 20	x	65*	S	1	288,00 A4
M 20	x	70*	S	1	298,00 A4
M 20	x	75*	S	1	313,00 A4
M 20	x	80*	S	1	313,00 A4
M 20	x	85*	S	1	452,00 A4
M 20	x	90*	S	1	361,00 A4
M 20	x	100*	S	1	399,00 A4
M 20	x	110*	S	1	494,00 A4
M 20	x	120*	S	1	535,00 A4
M 20	x	130*	S	1	625,00 A4
M 20	x	140*	S	1	685,00 A4
M 20	x	150*	S	1	745,00 A4
M 20	x	160*	S	1	965,00 A4
M 20	x	170*	S	1	1110,00 A4
M 20	x	180*	S	1	1110,00 A4
M 20	x	190*	S	1	1255,00 A4
M 20	x	200*	S	1	1255,00 A4
M 20	x	210*	S	1	1432,00 A4
M 20	x	220*	S	1	1432,00 A4
M 20	x	230*	S	1	1609,00 A4
M 20	x	240*	S	1	1609,00 A4
M 20	x	250*	S	1	2141,00 A4
M 20	x	260*	S	1	2141,00 A4
M 20	x	270*	S	1	2356,00 A4
M 20	x	280*	S	1	2356,00 A4
M 20	x	290*	S	1	2570,00 A4
M 20	x	300*	S	1	2570,00 A4
M 22	x	70	S	10	800,00 A4
M 22	x	80	S	10	800,00 A4
M 22	x	90	S	10	860,00 A4
M 22	x	100	S	10	940,00 A4
M 22	x	110	S	10	1080,00 A4
M 22	x	120	S	10	1170,00 A4
M 22	x	130	S	10	1250,00 A4
M 22	x	140	S	10	1440,00 A4
M 22	x	150	S	10	1560,00 A4
M 22	x	160	S	10	1670,00 A4
M 22	x	170	S	10	1900,00 A4
M 22	x	180	S	10	1850,00 A4
M 22	x	200	S	10	2080,00 A4
M 24	x	75*	S	1	720,00 A4
M 24	x	80*	S	1	610,00 A4
M 24	x	85*	S	1	823,00 A4
M 24	x	90*	S	1	662,00 A4
M 24	x	100*	S	1	734,00 A4
M 24	x	110*	S	1	827,00 A4
M 24	x	120*	S	1	874,00 A4
M 24	x	130*	S	1	953,00 A4
M 24	x	140*	S	1	1049,00 A4
M 24	x	150*	S	1	1116,00 A4
M 24	x	160*	S	1	1488,00 A4
M 24	x	170*	S	1	1649,00 A4
M 24	x	180*	S	1	1649,00 A4
M 24	x	190*	S	1	1850,00 A4
M 24	x	200*	S	1	1850,00 A4
M 24	x	210*	S	1	2431,00 A4
M 24	x	220*	S	1	2431,00 A4
M 24	x	230*	S	1	2668,00 A4
M 24	x	240*	S	1	2668,00 A4
M 24	x	250*	S	1	2906,00 A4
M 24	x	260*	S	1	2906,00 A4
M 24	x	270*	S	1	3144,00 A4
M 24	x	280*	S	1	3144,00 A4
M 24	x	290*	S	1	3382,00 A4
M 24	x	300*	S	1	3382,00 A4
M 27	x	90*	S	1	1354,00 A4
M 27	x	100*	S	1	1467,00 A4
M 27	x	110*	S	1	1579,00 A4
M 27	x	120*	S	1	1687,00 A4
M 27	x	130*	S	1	1748,00 A4
M 27	x	140*	S	1	1855,00 A4
M 27	x	150*	S	1	1963,00 A4
M 27	x	160*	S	1	2075,00 A4
M 27	x	170*	S	1	2290,00 A4
M 27	x	180*	S	1	2290,00 A4
M 27	x	190*	S	1	2495,00 A4
M 27	x	200*	S	1	2495,00 A4
M 27	x	210*	S	1	3221,00 A4
M 27	x	220*	S	1	3221,00 A4
M 27	x	230*	S	1	3527,00 A4
M 27	x	240*	S	1	3527,00 A4
M 27	x	250*	S	1	3834,00 A4
M 27	x	260*	S	1	4121,00 A4
M 27	x	280*	S	1	4693,00 A4
M 30	x	90*	S	1	1692,00 A4
M 30	x	100*	S	1	1830,00 A4
M 30	x	110*	S	1	1968,00 A4
M 30	x	120*	S	1	2096,00 A4
M 30	x	130*	S	1	2188,00 A4
M 30	x	140*	S	1	2326,00 A4
M 30	x	150*	S	1	2454,00 A4
M 30	x	160*	S	1	2602,00 A4
M 30	x	170*	S	1	2863,00 A4
M 30	x	180*	S	1	2863,00 A4
M 30	x	190*	S	1	3118,00 A4
M 30	x	200*	S	1	3118,00 A4
M 30	x	210*	S	1	3783,00 A4
M 30	x	220*	S	1	3783,00 A4
M 30	x	240*	S	1	4090,00 A4
M 30	x	250*	S	1	4499,00 A4
M 30	x	260*	S	1	4755,00 A4
M 30	x	280*	S	1	5241,00 A4
M 30	x	300*	S	1	5700,00 A4
M 33	x	90*	S	1	2351,00 A4
M 33	x	100*	S	1	2530,00 A4
M 33	x	110*	S	1	2709,00 A4
M 33	x	120*	S	1	2893,00 A4
M 33	x	130*	S	1	3067,00 A4
M 33	x	140*	S	1	3236,00 A4
M 33	x	150*	S	1	3425,00 A4
M 33	x	160*	S	1	3589,00 A4
M 33	x	170*	S	1	3936,00 A4
M 33	x	180*	S	1	3936,00 A4
M 33	x	190*	S	1	4279,00 A4
M 33	x	200*	S	1	4279,00 A4
M 33	x	210*	S	1	4857,00 A4
M 33	x	220*	S	1	4857,00 A4
M 33	x	230*	S	1	5419,00 A4
M 33	x	240*	S	1	5419,00 A4
M 33	x	250*	S	1	5777,00 A4
M 36	x	100*	S	1	3103,00 A4
M 36	x	110*	S	1	3323,00 A4
M 36	x	120*	S	1	3533,00 A4
M 36	x	130*	S	1	3717,00 A4
M 36	x	140*	S	1	3936,00 A4
M 36	x	150*	S	1	4141,00 A4
M 36	x	160*	S	1	4361,00 A4
M 36	x	170*	S	1	5010,00 A4
M 36	x	180*	S	1	5010,00 A4
M 36	x	190*	S	1	5470,00 A4
M 36	x	200*	S	1	5470,00 A4
M 36	x	220*	S	1	6084,00 A4
M 36	x	230*	S	1	6749,00 A4
M 36	x	240*	S	1	6749,00 A4
M 36	x	250*	S	1	7413,00 A4

ISO	04014.947	*
4014	**A 4 - 70**	**AD W2**

Hexagon head bolts with shank

Short dimensions in part thread up to head, for pressure vessel const. as per AD regulations, products with renunciation of inspection certificate, *M 10/12= RAZ 3223 other ∅ = RAZ 401

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 224
Brass → S. 588

ISO 4014 → replaces DIN 931

M 10	x	50	S	100	51,00 A4-70
M 10	x	55	S	100	56,50 A4-70
M 10	x	60	S	100	58,50 A4-70

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	65	S	100	68,50 A4-70
M 10	x	70	S	100	71,00 A4-70
M 10	x	75	S	50	120,00 A4-70
M 10	x	80	S	50	84,50 A4-70
M 10	x	90	S	50	117,00 A4-70
M 10	x	100	S	50	147,00 A4-70
M 10	x	110	S	50	185,00 A4-70
M 10	x	120	S	50	227,00 A4-70
M 10	x	130	S	1	292,00 A4-70
M 10	x	140	S	1	335,00 A4-70
M 10	x	150	S	1	380,00 A4-70
M 12	x	50	S	50	70,05 A4-70
M 12	x	55	S	50	77,20 A4-70
M 12	x	60	S	50	78,75 A4-70
M 12	x	65	S	50	93,60 A4-70
M 12	x	70	S	50	95,10 A4-70
M 12	x	75	S	25	172,00 A4-70
M 12	x	80	S	25	112,00 A4-70
M 12	x	85	S	50	171,00 A4-70
M 12	x	90	S	25	136,00 A4-70
M 12	x	100	S	25	162,00 A4-70
M 12	x	110	S	25	197,00 A4-70
M 12	x	120	S	25	243,00 A4-70
M 12	x	140	S	1	360,00 A4-70
M 12	x	150	S	1	415,00 A4-70
M 16	x	55	S	25	172,00 A4-70
M 16	x	60	S	25	172,00 A4-70
M 16	x	65	S	25	187,00 A4-70
M 16	x	70	S	25	190,00 A4-70
M 16	x	75	S	25	241,00 A4-70
M 16	x	80	S	25	205,00 A4-70
M 16	x	85	S	25	288,00 A4-70
M 16	x	90	S	25	231,00 A4-70
M 16	x	100	S	25	248,00 A4-70
M 16	x	110	S	25	312,00 A4-70
M 16	x	120	S	25	353,00 A4-70
M 16	x	130	S	1	420,00 A4-70
M 16	x	140	S	1	466,00 A4-70
M 16	x	150	S	1	512,00 A4-70
M 16	x	160	S	1	670,00 A4-70
M 16	x	170	S	1	773,00 A4-70
M 16	x	180	S	1	773,00 A4-70
M 16	x	200	S	1	871,00 A4-70
M 18	x	110	S	1	743,00 A4-70
M 20	x	65	S	25	292,00 A4-70
M 20	x	70	S	25	302,00 A4-70
M 20	x	75	S	25	358,00 A4-70
M 20	x	80	S	25	317,00 A4-70
M 20	x	90	S	25	364,00 A4-70
M 20	x	100	S	25	404,00 A4-70
M 20	x	110	S	25	496,00 A4-70
M 20	x	120	S	20	537,00 A4-70
M 20	x	130	S	20	624,00 A4-70
M 20	x	140	S	1	686,00 A4-70
M 20	x	150	S	1	742,00 A4-70
M 20	x	160	S	1	967,00 A4-70
M 20	x	170	S	1	1038,00 A4-70
M 20	x	180	S	1	1110,00 A4-70
M 20	x	190	S	1	1202,00 A4-70
M 20	x	200	S	1	1253,00 A4-70
M 24	x	90	S	1	665,00 A4-70
M 24	x	100	S	1	720,00 A4-70
M 24	x	110	S	1	770,00 A4-70
M 24	x	120	S	1	876,00 A4-70
M 24	x	150	S	1	1122,00 A4-70
M 27	x	100	S	1	1470,00 A4-70

Dimensions			PU	Pieces	€/100/Mat.
ISO		04014.948			RAZ 403
4014		**A 4 - 80**			

Hexagon head bolts with shank

High strength (strongly cold worked), short dimensions in part thread up to head

Dimensions ➔ TI-15 Tightening torque ➔ TI-235
Mech. properties ➔ TI-224 Standard conversion ➔ TI-6

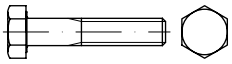
Steel ➔ S. 224
Brass ➔ S. 588

ISO 4014 ➔ replaces DIN 931

M 6	x	30	S	100	29,00 A4-80
M 6	x	35	S	100	31,00 A4-80
M 6	x	40	S	100	33,50 A4-80
M 6	x	45	S	100	38,50 A4-80
M 6	x	50	S	100	43,50 A4-80
M 6	x	55	S	100	61,00 A4-80
M 6	x	60	S	100	70,00 A4-80
M 6	x	65	S	100	84,00 A4-80
M 6	x	70	S	100	87,00 A4-80
M 8	x	35	S	100	63,00 A4-80
M 8	x	40	S	100	63,00 A4-80
M 8	x	45	S	100	67,00 A4-80
M 8	x	50	S	100	72,00 A4-80
M 8	x	55	S	100	85,00 A4-80
M 8	x	60	S	100	87,00 A4-80
M 8	x	65	S	100	114,00 A4-80
M 8	x	70	S	50	121,00 A4-80
M 8	x	75	S	50	260,00 A4-80
M 8	x	80	S	50	179,00 A4-80
M 8	x	90	S	50	211,00 A4-80
M 8	x	100	S	50	248,00 A4-80
M 10	x	40	S	100	117,00 A4-80
M 10	x	45	S	100	119,00 A4-80
M 10	x	50	S	100	124,00 A4-80
M 10	x	55	S	50	139,00 A4-80
M 10	x	60	S	50	145,00 A4-80
M 10	x	65	S	50	169,00 A4-80
M 10	x	70	S	50	173,00 A4-80
M 10	x	75	S	50	310,00 A4-80
M 10	x	80	S	50	209,00 A4-80
M 10	x	90	S	50	290,00 A4-80
M 10	x	100	S	50	365,00 A4-80
M 10	x	110	S	25	465,00 A4-80
M 10	x	120	S	25	570,00 A4-80
M 12	x	45	S	50	174,00 A4-80
M 12	x	50	S	50	176,00 A4-80
M 12	x	55	S	50	194,00 A4-80
M 12	x	60	S	50	197,00 A4-80
M 12	x	65	S	50	234,00 A4-80
M 12	x	70	S	25	238,00 A4-80
M 12	x	75	S	25	430,00 A4-80
M 12	x	80	S	25	280,00 A4-80
M 12	x	90	S	25	340,00 A4-80
M 12	x	100	S	25	405,00 A4-80
M 12	x	110	S	25	495,00 A4-80
M 12	x	120	S	25	610,00 A4-80
M 14	x	50	S	50	430,00 A4-80
M 14	x	60	S	50	430,00 A4-80
M 14	x	80	S	50	520,00 A4-80
M 14	x	90	S	50	580,00 A4-80
M 14	x	100	S	50	620,00 A4-80
M 14	x	110	S	1	780,00 A4-80
M 16	x	55	S	25	430,00 A4-80
M 16	x	60	S	25	430,00 A4-80

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	65	S	25	470,00 A4-80
M 16	x	70	S	25	475,00 A4-80
M 16	x	75	S	25	610,00 A4-80
M 16	x	80	S	25	520,00 A4-80
M 16	x	85	S	25	710,00 A4-80
M 16	x	90	S	25	580,00 A4-80
M 16	x	100	S	25	620,00 A4-80
M 16	x	110	S	25	780,00 A4-80
M 16	x	120	S	25	890,00 A4-80
M 16	x	130	S	1	1050,00 A4-80
M 16	x	140	S	1	1170,00 A4-80
M 16	x	150	S	1	1280,00 A4-80
M 16	x	160	S	1	1680,00 A4-80
M 16	x	180	S	1	1940,00 A4-80
M 16	x	200	S	1	2180,00 A4-80
M 20	x	65	S	1	730,00 A4-80
M 20	x	70	S	1	760,00 A4-80
M 20	x	75	S	1	900,00 A4-80
M 20	x	80	S	1	800,00 A4-80
M 20	x	90	S	1	910,00 A4-80
M 20	x	100	S	1	1010,00 A4-80
M 20	x	110	S	1	1240,00 A4-80
M 20	x	120	S	1	1350,00 A4-80
M 20	x	130	S	1	1560,00 A4-80
M 20	x	140	S	1	1720,00 A4-80
M 20	x	150	S	1	1860,00 A4-80
M 20	x	160	S	1	2420,00 A4-80
M 20	x	180	S	1	2800,00 A4-80
M 20	x	200	S	1	3150,00 A4-80

ISO	04014.941	RAZ 2010
4014	**A 4 BUMAX88***	



Hexagon head bolts with shank

Dimension from M 6 and length > 3xd, approved for use acc. to pressure equipment directive ➔ cert. 3.1 on request

Dimensions ➔ TI-15 Tightening torque ➔ TI-236
Mech. properties ➔ TI-225

Steel ➔ S. 224
Brass ➔ S. 588

*Mechanical properties ~ Class 8.8

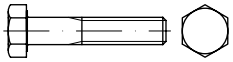
DGRL Zulassung

M 6	x	30	S	100	116,00 A4-88
M 6	x	35	S	100	125,00 A4-88
M 6	x	40	S	100	134,00 A4-88
M 6	x	45	S	100	145,00 A4-88
M 6	x	50	S	100	154,00 A4-88
M 6	x	55	S	100	164,00 A4-88
M 6	x	60	S	100	174,00 A4-88
M 6	x	65	S	100	183,00 A4-88
M 6	x	70	S	100	193,00 A4-88
M 6	x	80	S	100	217,00 A4-88
M 6	x	90	S	100	600,00 A4-88
M 6	x	100	S	100	550,00 A4-88
M 6	x	110	S	100	390,00 A4-88
M 6	x	120	S	100	770,00 A4-88
M 6	x	130	S	100	1160,00 A4-88
M 8	x	35	S	50	213,00 A4-88
M 8	x	40	S	50	230,00 A4-88
M 8	x	45	S	50	244,00 A4-88
M 8	x	50	S	50	270,00 A4-88
M 8	x	55	S	50	285,00 A4-88

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	60	S	50	300,00 A4-88
M 8	x	65	S	50	320,00 A4-88
M 8	x	70	S	50	340,00 A4-88
M 8	x	75	S	50	365,00 A4-88
M 8	x	80	S	50	380,00 A4-88
M 8	x	90	S	50	710,00 A4-88
M 8	x	100	S	50	770,00 A4-88
M 8	x	110	S	50	1470,00 A4-88
M 8	x	120	S	50	1310,00 A4-88
M 8	x	130	S	50	1320,00 A4-88
M 8	x	140	S	50	1350,00 A4-88
M 8	x	150	S	50	1380,00 A4-88
M 10	x	40	S	50	430,00 A4-88
M 10	x	45	S	50	460,00 A4-88
M 10	x	50	S	50	485,00 A4-88
M 10	x	55	S	50	500,00 A4-88
M 10	x	60	S	50	540,00 A4-88
M 10	x	65	S	50	570,00 A4-88
M 10	x	70	S	50	600,00 A4-88
M 10	x	75	S	50	640,00 A4-88
M 10	x	80	S	50	670,00 A4-88
M 10	x	85	S	50	690,00 A4-88
M 10	x	85	S	50	720,00 A4-88
M 10	x	100	S	50	780,00 A4-88
M 10	x	110	S	50	860,00 A4-88
M 10	x	120	S	50	950,00 A4-88
M 10	x	130	S	50	1140,00 A4-88
M 10	x	140	S	50	1170,00 A4-88
M 10	x	150	S	50	1290,00 A4-88
M 10	x	160	S	50	1640,00 A4-88
M 10	x	180	S	50	1850,00 A4-88
M 10	x	200	S	50	2650,00 A4-88
M 12	x	45	S	25	630,00 A4-88
M 12	x	50	S	25	670,00 A4-88
M 12	x	55	S	25	710,00 A4-88
M 12	x	60	S	25	750,00 A4-88
M 12	x	65	S	25	790,00 A4-88
M 12	x	70	S	25	830,00 A4-88
M 12	x	75	S	25	890,00 A4-88
M 12	x	80	S	25	940,00 A4-88
M 12	x	90	S	25	1010,00 A4-88
M 12	x	100	S	25	1090,00 A4-88
M 12	x	110	S	25	1190,00 A4-88
M 12	x	120	S	25	1250,00 A4-88
M 12	x	130	S	25	1330,00 A4-88
M 12	x	140	S	25	1450,00 A4-88
M 12	x	150	S	25	1570,00 A4-88
M 12	x	160	S	25	2220,00 A4-88
M 12	x	180	S	25	2550,00 A4-88
M 14	x	80	S	25	1670,00 A4-88
M 14	x	90	S	25	1750,00 A4-88
M 14	x	100	S	25	1870,00 A4-88
M 14	x	120	S	25	2100,00 A4-88
M 14	x	140	S	25	2320,00 A4-88
M 16	x	50	S	25	1240,00 A4-88
M 16	x	55	S	25	1310,00 A4-88
M 16	x	60	S	25	1420,00 A4-88
M 16	x	65	S	25	1490,00 A4-88
M 16	x	70	S	25	1570,00 A4-88
M 16	x	75	S	25	1640,00 A4-88
M 16	x	80	S	25	1720,00 A4-88
M 16	x	90	S	25	1870,00 A4-88
M 16	x	100	S	25	2020,00 A4-88
M 16	x	110	S	25	2170,00 A4-88
M 16	x	120	S	25	2320,00 A4-88
M 16	x	130	S	25	2460,00 A4-88
M 16	x	140	S	25	2650,00 A4-88
M 16	x	150	S	25	2800,00 A4-88
M 16	x	160	S	25	2950,00 A4-88
M 16	x	180	S	25	4000,00 A4-88
M 16	x	200	S	25	4300,00 A4-88
M 18	x	90	S	10	3100,00 A4-88
M 18	x	100	S	10	3300,00 A4-88
M 18	x	120	S	10	3700,00 A4-88
M 18	x	140	S	10	4050,00 A4-88

Dimensions			PU	Pieces	€/100/Mat.
M 20	x	70	S	10	2850,00 A4-88
M 20	x	75	S	10	2950,00 A4-88
M 20	x	80	S	10	3000,00 A4-88
M 20	x	90	S	10	3300,00 A4-88
M 20	x	100	S	10	3550,00 A4-88
M 20	x	110	S	10	3800,00 A4-88
M 20	x	120	S	10	4050,00 A4-88
M 20	x	130	S	10	4250,00 A4-88
M 20	x	140	S	10	4500,00 A4-88
M 20	x	150	S	10	4800,00 A4-88
M 20	x	160	S	10	5100,00 A4-88
M 20	x	180	S	10	5600,00 A4-88
M 20	x	200	S	10	6100,00 A4-88
M 24	x	75	S	10	4400,00 A4-88
M 24	x	80	S	10	4550,00 A4-88
M 24	x	90	S	10	4900,00 A4-88
M 24	x	100	S	10	5300,00 A4-88
M 24	x	110	S	10	5600,00 A4-88
M 24	x	120	S	10	6000,00 A4-88
M 24	x	130	S	10	6300,00 A4-88
M 24	x	140	S	10	6700,00 A4-88
M 24	x	150	S	10	7200,00 A4-88
M 24	x	160	S	10	7500,00 A4-88
M 24	x	180	S	10	8200,00 A4-88
M 24	x	200	S	10	10100,00 A4-88
M 27	x	100	S	10	19900,00 A4-88
M 27	x	110	S	10	20300,00 A4-88
M 27	x	120	S	10	20800,00 A4-88
M 27	x	130	S	10	21100,00 A4-88
M 27	x	140	S	10	21600,00 A4-88
M 27	x	150	S	10	22000,00 A4-88
M 27	x	160	S	10	22500,00 A4-88
M 27	x	180	S	10	23500,00 A4-88
M 27	x	200	S	10	24400,00 A4-88
M 30	x	80	S	10	17700,00 A4-88
M 30	x	90	S	10	18300,00 A4-88
M 30	x	100	S	10	18700,00 A4-88
M 30	x	110	S	10	19400,00 A4-88
M 30	x	120	S	10	19800,00 A4-88
M 30	x	130	S	10	20200,00 A4-88
M 30	x	140	S	10	20800,00 A4-88
M 30	x	150	S	10	21300,00 A4-88
M 30	x	160	S	10	21900,00 A4-88
M 30	x	180	S	10	23100,00 A4-88
M 30	x	200	S	10	24200,00 A4-88
M 36	x	100	S	10	38300,00 A4-88
M 36	x	120	S	10	40500,00 A4-88
M 36	x	140	S	10	43200,00 A4-88
M 36	x	160	S	10	45900,00 A4-88
M 36	x	200	S	10	51100,00 A4-88

ISO	04014.942	RAZ 2010
4014	**A 4 BUMAX109***	



Hexagon head bolts with shank

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-225

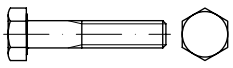
Steel → S. 224
Brass → S. 588

*Mechanical properties ~ Class 10.9

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	35	S	100	162,00 A4-109
M 6	x	40	S	100	174,00 A4-109
M 6	x	45	S	100	186,00 A4-109
M 6	x	50	S	100	197,00 A4-109
M 6	x	55	S	100	209,00 A4-109

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	60	S	100	220,00 A4-109
M 6	x	70	S	100	244,00 A4-109
M 6	x	80	S	100	270,00 A4-109
M 8	x	40	S	50	260,00 A4-109
M 8	x	45	S	50	275,00 A4-109
M 8	x	50	S	50	300,00 A4-109
M 8	x	55	S	50	315,00 A4-109
M 8	x	60	S	50	335,00 A4-109
M 8	x	70	S	50	375,00 A4-109
M 8	x	80	S	50	410,00 A4-109
M 10	x	45	S	50	540,00 A4-109
M 10	x	50	S	50	570,00 A4-109
M 10	x	55	S	50	590,00 A4-109
M 10	x	60	S	50	620,00 A4-109
M 10	x	65	S	50	650,00 A4-109
M 10	x	70	S	50	680,00 A4-109
M 10	x	80	S	50	740,00 A4-109
M 10	x	90	S	50	800,00 A4-109
M 10	x	100	S	50	860,00 A4-109
M 12	x	45	S	25	730,00 A4-109
M 12	x	50	S	25	770,00 A4-109
M 12	x	55	S	25	820,00 A4-109
M 12	x	60	S	25	860,00 A4-109
M 12	x	70	S	25	950,00 A4-109
M 12	x	80	S	25	1040,00 A4-109
M 12	x	90	S	25	1130,00 A4-109
M 12	x	100	S	25	1220,00 A4-109
M 12	x	120	S	25	1400,00 A4-109
M 16	x	70	S	25	1710,00 A4-109
M 16	x	80	S	25	1870,00 A4-109
M 16	x	90	S	25	2030,00 A4-109
M 16	x	100	S	25	2200,00 A4-109
M 16	x	120	S	25	2550,00 A4-109

ISO	04014.950	RAZ 403
4014	**1.4571 (A 5)**	



Hexagon head bolts with shank

Short dimensions in part thread up to head

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 224
Brass → S. 588

ISO 4014 → replaces DIN 931

M 16	x	55	S	1	620,00 A5
M 16	x	60	S	1	640,00 A5
M 16	x	65	S	1	660,00 A5
M 16	x	70	S	1	680,00 A5
M 16	x	80	S	1	710,00 A5
M 16	x	90	S	1	750,00 A5
M 16	x	100	S	1	780,00 A5
M 20	x	65	S	1	920,00 A5
M 20	x	70	S	1	940,00 A5
M 20	x	80	S	1	1000,00 A5
M 20	x	85	S	1	1030,00 A5
M 20	x	90	S	1	1130,00 A5
M 20	x	100	S	1	1160,00 A5
M 20	x	110	S	1	1180,00 A5
M 20	x	120	S	1	1230,00 A5
M 20	x	140	S	1	1340,00 A5

Dimensions		PU	Pieces	€/100/Mat.
ISO	04017.920			**
4017	**A 2 – 70**			

Hexagon head screws with thread up to head

**M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions ➔ TI-15 Tightening torque ➔ TI-235
Mech. properties ➔ TI-224 Standard conversion ➔ TI-6

Steel ➔ S. 240-241
Brass ➔ S. 588

ISO 4017 ➔ replaces DIN 933

*Prop. class for dimensions different depending on production

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	6*	S	100	8,15 A 2
M 3	x	8*	S	100	5,85 A 2
M 3	x	10*	S	100	5,60 A 2
M 3	x	12*	S	100	5,20 A 2
M 3	x	14*	S	100	6,90 A 2
M 3	x	16*	S	100	5,20 A 2
M 3	x	20*	S	100	5,85 A 2
M 3	x	25*	S	100	6,30 A 2
M 3	x	30*	S	100	7,60 A 2
M 3	x	35*	S	100	10,90 A 2
M 3	x	40*	S	100	16,30 A 2
M 4	x	6*	S	200	8,15 A 2
M 4	x	8*	S	200	5,85 A 2
M 4	x	10*	S	200	5,60 A 2
M 4	x	12*	S	200	5,20 A 2
M 4	x	14*	S	100	6,90 A 2
M 4	x	16*	S	200	4,25 A 2
M 4	x	18*	S	100	5,60 A 2
M 4	x	20*	S	200	4,60 A 2
M 4	x	22*	S	100	6,40 A 2
M 4	x	25*	S	200	5,30 A 2
M 4	x	30*	S	200	5,95 A 2
M 4	x	35*	S	200	10,20 A 2
M 4	x	40*	S	200	12,20 A 2
M 4	x	45*	S	100	15,50 A 2
M 4	x	50*	S	100	18,40 A 2
M 4	x	60*	S	100	56,20 A 2
M 5	x	6*	S	100	17,30 A 2
M 5	x	8*	S	100	5,85 A 2
M 5	x	10*	S	500	5,60 A 2
M 5	x	10*	K	100	7,70 A 2
M 5	x	12*	S	500	5,20 A 2
M 5	x	12*	K	100	7,25 A 2
M 5	x	14*	S	500	6,90 A 2
M 5	x	14*	K	100	9,40 A 2
M 5	x	16*	S	500	4,25 A 2
M 5	x	16*	K	100	6,30 A 2
M 5	x	18*	S	500	5,60 A 2
M 5	x	18*	K	100	8,10 A 2
M 5	x	20*	S	500	4,60 A 2
M 5	x	20*	K	100	6,65 A 2
M 5	x	22*	S	200	6,40 A 2
M 5	x	25*	S	200	6,10 A 2
M 5	x	25*	K	100	8,20 A 2
M 5	x	30*	S	200	6,85 A 2
M 5	x	30*	K	100	8,90 A 2
M 5	x	35*	S	200	8,05 A 2
M 5	x	40*	S	200	11,60 A 2
M 5	x	45*	S	200	15,50 A 2
M 5	x	50*	S	200	18,40 A 2
M 5	x	55*	S	200	21,70 A 2
M 5	x	60*	S	200	23,50 A 2
M 5	x	70*	S	100	61,80 A 2
M 5	x	80*	S	100	208,00 A 2
M 6	x	6*	S	100	67,00 A 2
M 6	x	8*	S	100	8,15 A 2
M 6	x	10*	S	500	6,90 A 2
M 6	x	10*	K	100	8,95 A 2
M 6	x	12*	S	500	6,90 A 2
M 6	x	12*	K	100	8,95 A 2
M 6	x	14*	S	500	8,20 A 2
M 6	x	14*	K	100	10,70 A 2
M 6	x	16*	S	200	4,90 A 2
M 6	x	16*	K	100	7,00 A 2
M 6	x	18*	S	200	7,00 A 2
M 6	x	20*	S	200	5,60 A 2
M 6	x	20*	K	100	7,70 A 2
M 6	x	22*	S	200	7,80 A 2
M 6	x	25*	S	200	6,25 A 2
M 6	x	25*	K	100	8,30 A 2
M 6	x	30*	S	200	7,25 A 2
M 6	x	30*	K	100	9,30 A 2
M 6	x	35*	S	200	7,90 A 2
M 6	x	35*	K	100	10,00 A 2
M 6	x	40*	S	200	8,85 A 2
M 6	x	40*	K	100	10,90 A 2
M 6	x	45*	S	100	13,80 A 2
M 6	x	50*	S	100	15,00 A 2
M 6	x	55*	S	100	19,10 A 2
M 6	x	60*	S	100	21,70 A 2
M 6	x	65*	S	100	30,00 A 2
M 6	x	70*	S	100	30,00 A 2
M 6	x	75*	S	100	44,60 A 2
M 6	x	80*	S	100	35,80 A 2
M 6	x	90*	S	100	51,10 A 2
M 6	x	100*	S	100	58,70 A 2
M 6	x	110*	S	100	228,00 A 2
M 6	x	120*	S	100	267,00 A 2
M 8	x	8*	S	100	77,30 A 2
M 8	x	10*	S	200	16,10 A 2
M 8	x	10*	K	100	18,15 A 2
M 8	x	12*	S	200	15,00 A 2
M 8	x	12*	K	100	17,10 A 2
M 8	x	14*	S	200	17,80 A 2
M 8	x	16*	S	200	10,20 A 2
M 8	x	16*	K	100	12,30 A 2
M 8	x	18*	S	200	12,70 A 2
M 8	x	20*	S	200	10,20 A 2
M 8	x	20*	K	100	12,80 A 2
M 8	x	22*	S	200	15,20 A 2
M 8	x	25*	S	200	12,10 A 2
M 8	x	25*	K	100	14,20 A 2
M 8	x	30*	S	200	12,80 A 2
M 8	x	30*	K	100	14,90 A 2
M 8	x	35*	S	200	15,90 A 2
M 8	x	35*	K	100	21,00 A 2
M 8	x	40*	S	200	15,10 A 2
M 8	x	40*	K	100	17,20 A 2
M 8	x	45*	S	200	16,80 A 2
M 8	x	45*	K	100	19,00 A 2
M 8	x	50*	S	200	17,80 A 2
M 8	x	50*	K	100	20,10 A 2
M 8	x	55*	S	100	27,00 A 2
M 8	x	60*	S	200	28,60 A 2
M 8	x	60*	K	100	31,00 A 2
M 8	x	65*	S	50	35,70 A 2
M 8	x	70*	S	50	42,40 A 2
M 8	x	75*	S	50	66,90 A 2
M 8	x	80*	S	50	53,60 A 2
M 8	x	85*	S	50	86,00 A 2
M 8	x	90*	S	50	68,50 A 2
M 8	x	100*	S	50	77,20 A 2
M 8	x	110*	S	50	116,00 A 2
M 8	x	120*	S	50	136,00 A 2
M 8	x	130*	S	50	171,00 A 2
M 8	x	140*	S	50	206,00 A 2
M 8	x	150*	S	50	240,00 A 2
M 8	x	160*	S	50	275,00 A 2
M 8	x	170*	S	50	343,00 A 2
M 8	x	180*	S	50	343,00 A 2
M 8	x	190*	S	50	650,00 A 2
M 8	x	200*	S	50	860,00 A 2
M 10	x	10*	S	100	129,00 A 2
M 10	x	12*	S	100	41,50 A 2
M 10	x	14*	S	100	49,00 A 2
M 10	x	16	S	100	30,00 A 2
M 10	x	18	S	100	33,20 A 2
M 10	x	20	S	100	21,80 A 2
M 10	x	22	S	100	25,80 A 2
M 10	x	25	S	100	20,70 A 2
M 10	x	30	S	100	23,00 A 2
M 10	x	35	S	100	25,50 A 2
M 10	x	40	S	100	27,50 A 2
M 10	x	45	S	100	29,50 A 2
M 10	x	50	S	100	31,50 A 2
M 10	x	55	S	100	44,00 A 2
M 10	x	60	S	100	47,00 A 2
M 10	x	65	S	100	53,00 A 2
M 10	x	70	S	100	56,00 A 2
M 10	x	75	S	50	89,00 A 2
M 10	x	80	S	50	67,00 A 2
M 10	x	85	S	50	115,00 A 2
M 10	x	90	S	50	90,00 A 2
M 10	x	100	S	50	115,00 A 2
M 10	x	110	S	50	170,00 A 2
M 10	x	120	S	50	187,00 A 2
M 10	x	130	S	1	233,00 A 2
M 10	x	140	S	1	275,00 A 2
M 10	x	150	S	1	315,00 A 2
M 10	x	160*	S	1	357,00 A 2
M 10	x	170*	S	1	439,00 A 2
M 10	x	180*	S	1	439,00 A 2
M 10	x	190*	S	1	695,00 A 2
M 10	x	200*	S	1	766,00 A 2
M 12	x	16	S	100	62,00 A 2
M 12	x	20	S	100	42,00 A 2
M 12	x	22	S	100	50,10 A 2
M 12	x	25	S	100	31,50 A 2
M 12	x	30	S	100	33,00 A 2
M 12	x	35	S	100	36,00 A 2
M 12	x	40	S	100	39,00 A 2
M 12	x	45	S	100	41,50 A 2
M 12	x	50	S	50	44,50 A 2
M 12	x	55	S	50	48,00 A 2
M 12	x	60	S	50	51,00 A 2
M 12	x	65	S	50	73,00 A 2
M 12	x	70	S	50	78,00 A 2
M 12	x	75	S	50	114,00 A 2
M 12	x	80	S	50	94,00 A 2
M 12	x	85	S	50	164,00 A 2
M 12	x	90	S	50	122,00 A 2
M 12	x	95	S	50	179,00 A 2
M 12	x	100	S	50	146,00 A 2
M 12	x	110*	S	25	173,00 A 2
M 12	x	120	S	25	232,00 A 2
M 12	x	130	S	1	275,00 A 2

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€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	140	S	1	323,00 A 2
M 12	x	150*	S	1	549,60 A 2
M 12	x	160*	S	1	419,00 A 2
M 12	x	170*	S	1	515,00 A 2
M 12	x	180*	S	1	515,00 A 2
M 12	x	190*	S	1	843,00 A 2
M 12	x	200*	S	1	945,00 A 2
M 14	x	20	S	50	116,00 A 2
M 14	x	25	S	50	82,00 A 2
M 14	x	30	S	50	59,00 A 2
M 14	x	35	S	50	61,00 A 2
M 14	x	40	S	50	63,00 A 2
M 14	x	45	S	50	67,00 A 2
M 14	x	50	S	50	71,00 A 2
M 14	x	55	S	50	80,00 A 2
M 14	x	60	S	50	83,00 A 2
M 14	x	65	S	50	91,00 A 2
M 14	x	70	S	50	116,00 A 2
M 14	x	75	S	50	158,00 A 2
M 14	x	80	S	50	131,00 A 2
M 14	x	90	S	50	214,00 A 2
M 14	x	100	S	50	245,00 A 2
M 14	x	110*	S	25	302,00 A 2
M 14	x	120*	S	25	340,00 A 2
M 14	x	130*	S	25	404,00 A 2
M 14	x	140*	S	25	455,00 A 2
M 14	x	150*	S	25	498,00 A 2
M 16	x	20*	S	50	115,00 A 2
M 16	x	25*	S	50	95,60 A 2
M 16	x	30*	S	50	69,50 A 2
M 16	x	35*	S	50	69,50 A 2
M 16	x	40*	S	50	74,10 A 2
M 16	x	45*	S	50	79,70 A 2
M 16	x	50*	S	50	84,30 A 2
M 16	x	55*	S	25	89,90 A 2
M 16	x	60*	S	25	96,10 A 2
M 16	x	65*	S	25	103,00 A 2
M 16	x	70*	S	25	107,00 A 2
M 16	x	75*	S	25	127,00 A 2
M 16	x	80*	S	25	127,00 A 2
M 16	x	85*	S	25	261,00 A 2
M 16	x	90*	S	25	214,00 A 2
M 16	x	100*	S	25	245,00 A 2
M 16	x	110*	S	25	302,00 A 2
M 16	x	120*	S	25	340,00 A 2
M 16	x	130*	S	25	404,00 A 2
M 16	x	140*	S	25	455,00 A 2
M 16	x	150*	S	25	498,00 A 2
M 16	x	160*	S	25	888,00 A 2
M 16	x	170*	S	25	916,00 A 2
M 16	x	180*	S	25	916,00 A 2
M 16	x	190*	S	10	1012,00 A 2
M 16	x	200*	S	10	1012,00 A 2
M 18	x	30*	S	25	262,00 A 2
M 18	x	35*	S	25	213,00 A 2
M 18	x	40*	S	25	196,00 A 2
M 18	x	45*	S	25	209,00 A 2
M 18	x	50*	S	25	223,00 A 2
M 18	x	55*	S	25	243,00 A 2
M 18	x	60*	S	25	246,00 A 2
M 18	x	65*	S	25	274,00 A 2
M 18	x	70*	S	25	282,00 A 2
M 18	x	75*	S	25	323,00 A 2
M 18	x	80*	S	25	323,00 A 2
M 18	x	90*	S	25	529,00 A 2
M 18	x	100*	S	25	600,00 A 2
M 18	x	110*	S	1	685,00 A 2
M 18	x	120*	S	1	759,00 A 2
M 18	x	130*	S	1	915,00 A 2
M 18	x	140*	S	1	997,00 A 2
M 18	x	150*	S	1	1119,00 A 2
M 20	x	30*	S	25	174,00 A 2
M 20	x	35*	S	25	142,00 A 2
M 20	x	40*	S	25	131,00 A 2
M 20	x	45*	S	25	139,00 A 2
M 20	x	50*	S	25	149,00 A 2
M 20	x	55*	S	25	162,00 A 2
M 20	x	60*	S	25	164,00 A 2
M 20	x	65*	S	25	183,00 A 2
M 20	x	70*	S	25	188,00 A 2
M 20	x	75*	S	25	215,00 A 2
M 20	x	80*	S	25	215,00 A 2
M 20	x	85*	S	25	440,00 A 2
M 20	x	90*	S	25	352,00 A 2
M 20	x	95*	S	10	352,00 A 2
M 20	x	100*	S	10	401,00 A 2
M 20	x	110*	S	10	457,00 A 2
M 20	x	120*	S	10	506,00 A 2
M 20	x	130*	S	10	610,00 A 2
M 20	x	140*	S	10	662,00 A 2
M 20	x	150*	S	10	721,00 A 2
M 20	x	160*	S	10	1124,00 A 2
M 20	x	170*	S	10	1164,00 A 2
M 20	x	180*	S	10	1164,00 A 2
M 20	x	200*	S	10	1271,00 A 2
M 20	x	220*	S	10	1540,00 A 2
M 22	x	30*	S	25	715,00 A 2
M 22	x	35*	S	25	715,00 A 2
M 22	x	40*	S	25	715,00 A 2
M 22	x	50*	S	25	443,00 A 2
M 22	x	55*	S	1	465,00 A 2
M 22	x	60	S	10	760,00 A 2
M 22	x	65	S	10	830,00 A 2
M 22	x	70	S	10	850,00 A 2
M 22	x	80*	S	1	564,00 A 2
M 22	x	90*	S	1	695,00 A 2
M 22	x	100	S	10	1390,00 A 2
M 22	x	110*	S	1	1226,00 A 2
M 22	x	120	S	10	1690,00 A 2
M 22	x	130*	S	1	1282,00 A 2
M 22	x	140*	S	1	1304,00 A 2
M 24	x	40*	S	1	562,00 A 2
M 24	x	45*	S	20	562,00 A 2
M 24	x	50*	S	20	296,00 A 2
M 24	x	55*	S	10	309,00 A 2
M 24	x	60*	S	10	322,00 A 2
M 24	x	65*	S	10	333,00 A 2
M 24	x	70*	S	10	351,00 A 2
M 24	x	80*	S	10	377,00 A 2
M 24	x	90*	S	1	533,00 A 2
M 24	x	100*	S	1	641,00 A 2
M 24	x	110*	S	1	755,00 A 2
M 24	x	120*	S	1	833,00 A 2
M 24	x	130*	S	1	901,00 A 2
M 24	x	140*	S	1	996,00 A 2
M 24	x	150*	S	1	1073,00 A 2
M 24	x	160*	S	1	1552,00 A 2
M 24	x	170*	S	1	1586,00 A 2
M 24	x	180*	S	1	1586,00 A 2
M 24	x	190*	S	1	1653,00 A 2
M 24	x	200*	S	1	1653,00 A 2
M 27	x	50*	S	1	558,00 A 2
M 27	x	55*	S	1	608,00 A 2
M 27	x	60*	S	1	618,00 A 2
M 27	x	65*	S	1	669,00 A 2
M 27	x	70*	S	1	669,00 A 2
M 27	x	80*	S	1	721,00 A 2
M 27	x	90*	S	1	773,00 A 2
M 27	x	100*	S	1	824,00 A 2
M 27	x	110*	S	1	938,00 A 2
M 27	x	120*	S	1	997,00 A 2
M 27	x	130*	S	1	1073,00 A 2
M 27	x	140*	S	1	1134,00 A 2
M 27	x	150*	S	1	1202,00 A 2
M 30	x	60*	S	1	824,00 A 2
M 30	x	65*	S	1	893,00 A 2
M 30	x	70*	S	1	930,00 A 2
M 30	x	80*	S	1	987,00 A 2
M 30	x	90*	S	1	1073,00 A 2
M 30	x	100*	S	1	1168,00 A 2
M 30	x	110*	S	1	1288,00 A 2
M 30	x	120*	S	1	1365,00 A 2
M 30	x	130*	S	1	1486,00 A 2
M 30	x	140*	S	1	1589,00 A 2
M 30	x	150*	S	1	1674,00 A 2
M 33	x	70*	S	1	1204,00 A 2
M 33	x	80*	S	1	1303,00 A 2
M 33	x	90*	S	1	1395,00 A 2
M 33	x	100*	S	1	1487,00 A 2
M 33	x	110*	S	1	1656,00 A 2
M 33	x	120*	S	1	1756,00 A 2
M 33	x	130*	S	1	1840,00 A 2
M 33	x	140*	S	1	1940,00 A 2
M 33	x	150*	S	1	2047,00 A 2
M 36	x	80*	S	1	1671,00 A 2
M 36	x	90*	S	1	1794,00 A 2
M 36	x	100*	S	1	1927,00 A 2
M 36	x	110*	S	1	2126,00 A 2
M 36	x	120*	S	1	2234,00 A 2
M 36	x	130*	S	1	2262,00 A 2
M 36	x	140*	S	1	2385,00 A 2
M 36	x	150*	S	1	2495,00 A 2

ISO	04017.927	*
4017	**A 2 – 70**	**AD W2**

Hexagon head screws with thread up to head

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate, *M 10/12= RAZ 3223 other ∅ = RAZ 403

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 240–241
Brass → S. 588

ISO 4017 → replaces DIN 933

M 10	x	16	S	100	31,00 A 2-70
M 10	x	20	S	100	22,50 A 2-70
M 10	x	25	S	100	21,50 A 2-70
M 10	x	30	S	100	23,80 A 2-70
M 10	x	35	S	100	26,00 A 2-70
M 10	x	40	S	100	28,00 A 2-70
M 10	x	45	S	100	30,00 A 2-70
M 10	x	50	S	100	32,00 A 2-70
M 12	x	20	S	50	41,95 A 2-70
M 12	x	25	S	50	31,20 A 2-70
M 12	x	30	S	50	32,75 A 2-70
M 12	x	35	S	50	35,80 A 2-70
M 12	x	40	S	50	38,85 A 2-70
M 12	x	45	S	50	41,45 A 2-70
M 12	x	50	S	50	44,50 A 2-70
M 12	x	55	S	50	47,55 A 2-70
M 12	x	60	S	50	50,10 A 2-70
M 12	x	65	S	50	72,60 A 2-70
M 12	x	70	S	50	77,20 A 2-70
M 12	x	75	S	25	114,00 A 2-70
M 12	x	80	S	25	93,60 A 2-70
M 16	x	30	S	25	69,05 A 2-70
M 16	x	35	S	25	69,05 A 2-70
M 16	x	40	S	25	73,65 A 2-70
M 16	x	45	S	25	79,25 A 2-70
M 16	x	50	S	25	83,85 A 2-70
M 16	x	55	S	25	89,50 A 2-70
M 16	x	60	S	25	95,65 A 2-70
M 16	x	65	S	25	103,00 A 2-70

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	70	S	25	108,00 A2-70
M 16	x	75	S	25	149,00 A2-70
M 16	x	80	S	25	127,00 A2-70
M 16	x	85	S	25	263,00 A2-70
M 16	x	110	S	25	305,00 A2-70
M 16	x	120	S	25	343,00 A2-70
M 20	x	30	S	25	177,00 A2-70
M 20	x	35	S	25	144,00 A2-70
M 20	x	40	S	25	133,00 A2-70
M 20	x	45	S	25	141,00 A2-70
M 20	x	50	S	25	156,00 A2-70
M 20	x	55	S	25	164,00 A2-70
M 20	x	60	S	25	164,00 A2-70
M 20	x	65	S	25	185,00 A2-70
M 20	x	70	S	25	190,00 A2-70
M 20	x	75	S	25	218,00 A2-70
M 20	x	80	S	25	218,00 A2-70
M 20	x	90	S	25	355,00 A2-70
M 20	x	120	S	10	508,00 A2-70

ISO	04017.940	**
4017	**A 4 - 70**	

Hexagon head screws with thread up to head

**M 10/12/14/22= RAZ 3220 other ∅ = RAZ 401

Dimensions ➔ TI-15 Tightening torque ➔ TI-235
Mech. properties ➔ TI-224 Standard conversion ➔ TI-6

Steel ➔ S. 240-241
Brass ➔ S. 588

ISO 4017 ➔ replaces DIN 933

*Prop. class for dimensions different depending on production

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5*	S	100	10,70 A4
M 3	x	6*	S	100	8,65 A4
M 3	x	8*	S	100	7,15 A4
M 3	x	10*	S	100	6,90 A4
M 3	x	12*	S	100	6,45 A4
M 3	x	16*	S	100	6,45 A4
M 3	x	18*	S	100	8,90 A4
M 3	x	20*	S	100	7,05 A4
M 3	x	25*	S	100	7,90 A4
M 3	x	30*	S	100	9,15 A4
M 3	x	35*	S	100	14,10 A4
M 3	x	40*	S	100	19,90 A4
M 4	x	6*	S	200	8,65 A4
M 4	x	8*	S	200	7,15 A4
M 4	x	10*	S	200	6,90 A4
M 4	x	12*	S	200	6,45 A4
M 4	x	14*	S	200	7,70 A4
M 4	x	16*	S	200	5,25 A4
M 4	x	18*	S	200	6,95 A4
M 4	x	20*	S	200	5,55 A4
M 4	x	25*	S	200	6,80 A4
M 4	x	30*	S	200	7,70 A4
M 4	x	35*	S	200	13,20 A4
M 4	x	40*	S	200	17,30 A4
M 4	x	45*	S	200	20,40 A4
M 4	x	50*	S	200	21,90 A4
M 4	x	60*	S	100	66,90 A4
M 5	x	6*	S	100	21,90 A4
M 5	x	8*	S	100	7,15 A4
M 5	x	10*	S	500	6,90 A4
M 5	x	10*	K	100	9,40 A4
M 5	x	12*	S	500	6,45 A4
M 5	x	12*	K	100	8,95 A4

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	14*	S	500	7,70 A4
M 5	x	14*	K	100	10,20 A4
M 5	x	16*	S	500	5,75 A4
M 5	x	16*	K	100	8,25 A4
M 5	x	18*	S	500	7,70 A4
M 5	x	18*	K	100	10,20 A4
M 5	x	20*	S	500	6,35 A4
M 5	x	20*	K	100	8,85 A4
M 5	x	22*	S	200	9,10 A4
M 5	x	25*	S	200	7,30 A4
M 5	x	30*	S	200	8,50 A4
M 5	x	35*	S	200	12,30 A4
M 5	x	40*	S	200	15,30 A4
M 5	x	45*	S	200	20,40 A4
M 5	x	50*	S	200	21,90 A4
M 5	x	55*	S	200	29,60 A4
M 5	x	60*	S	200	31,70 A4
M 5	x	70*	S	100	72,60 A4
M 5	x	80*	S	100	222,00 A4
M 6	x	8*	S	100	11,10 A4
M 6	x	10*	S	500	10,10 A4
M 6	x	10*	K	100	12,60 A4
M 6	x	12*	S	500	9,30 A4
M 6	x	12*	K	100	11,80 A4
M 6	x	14*	S	500	10,80 A4
M 6	x	14*	K	100	13,30 A4
M 6	x	16*	S	200	7,30 A4
M 6	x	20*	S	200	7,90 A4
M 6	x	22*	S	200	10,90 A4
M 6	x	25*	S	200	8,70 A4
M 6	x	30*	S	200	9,95 A4
M 6	x	35*	S	200	11,70 A4
M 6	x	40*	S	200	13,20 A4
M 6	x	45*	S	100	17,80 A4
M 6	x	50*	S	100	20,70 A4
M 6	x	55*	S	100	27,60 A4
M 6	x	60*	S	100	29,60 A4
M 6	x	65*	S	50	47,00 A4
M 6	x	70*	S	50	47,00 A4
M 6	x	75*	S	50	71,00 A4
M 6	x	80*	S	50	57,20 A4
M 6	x	90*	S	50	79,70 A4
M 6	x	100*	S	50	91,50 A4
M 6	x	110*	S	50	273,00 A4
M 6	x	120*	S	50	330,00 A4
M 8	x	8*	S	100	43,00 A4
M 8	x	10*	S	200	21,90 A4
M 8	x	12*	S	200	21,40 A4
M 8	x	14*	S	200	25,50 A4
M 8	x	16*	S	200	16,90 A4
M 8	x	18*	S	200	21,50 A4
M 8	x	20*	S	200	16,90 A4
M 8	x	22*	S	200	21,50 A4
M 8	x	25*	S	200	17,10 A4
M 8	x	30*	S	200	18,10 A4
M 8	x	35*	S	200	20,10 A4
M 8	x	40*	S	100	21,20 A4
M 8	x	45*	S	100	25,00 A4
M 8	x	50*	S	100	26,70 A4
M 8	x	55*	S	100	35,20 A4
M 8	x	60*	S	100	37,80 A4
M 8	x	65*	S	50	51,10 A4
M 8	x	70*	S	50	54,10 A4
M 8	x	75*	S	50	82,80 A4
M 8	x	80*	S	50	66,40 A4
M 8	x	90*	S	50	95,10 A4
M 8	x	100*	S	50	108,00 A4
M 8	x	110*	S	1	141,00 A4
M 8	x	120*	S	1	164,00 A4
M 8	x	130*	S	1	212,00 A4
M 8	x	140*	S	1	257,00 A4
M 8	x	150*	S	1	302,00 A4
M 8	x	160*	S	1	347,00 A4
M 8	x	170*	S	1	437,00 A4
M 8	x	180*	S	1	437,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	200*	S	1	655,00 A4
M 10	x	10*	S	100	116,00 A4
M 10	x	12*	S	100	67,00 A4
M 10	x	14*	S	100	66,00 A4
M 10	x	16	S	100	39,50 A4
M 10	x	20	S	100	31,00 A4
M 10	x	22	S	100	37,30 A4
M 10	x	25	S	100	30,00 A4
M 10	x	30	S	100	32,00 A4
M 10	x	35	S	100	33,50 A4
M 10	x	40	S	100	36,50 A4
M 10	x	45	S	100	40,00 A4
M 10	x	50	S	100	43,50 A4
M 10	x	55	S	100	56,00 A4
M 10	x	60	S	100	59,00 A4
M 10	x	65	S	100	71,00 A4
M 10	x	70	S	100	75,00 A4
M 10	x	75	S	100	117,00 A4
M 10	x	80	S	50	92,00 A4
M 10	x	85	S	50	145,00 A4
M 10	x	90	S	50	119,00 A4
M 10	x	95	S	50	223,00 A4
M 10	x	100	S	50	189,00 A4
M 10	x	110*	S	50	219,00 A4
M 10	x	120*	S	50	270,00 A4
M 10	x	130*	S	1	351,00 A4
M 10	x	140*	S	1	414,00 A4
M 10	x	150*	S	1	482,00 A4
M 10	x	160*	S	1	547,00 A4
M 10	x	170*	S	1	629,00 A4
M 10	x	180*	S	1	675,00 A4
M 10	x	200*	S	1	869,00 A4
M 12	x	16	S	100	74,00 A4
M 12	x	18*	S	100	69,00 A4
M 12	x	20	S	100	56,00 A4
M 12	x	22	S	100	65,40 A4
M 12	x	25	S	100	47,00 A4
M 12	x	30	S	100	47,00 A4
M 12	x	35	S	100	51,00 A4
M 12	x	40	S	100	52,00 A4
M 12	x	45	S	100	56,00 A4
M 12	x	50	S	50	60,00 A4
M 12	x	55	S	50	73,00 A4
M 12	x	60	S	50	74,00 A4
M 12	x	65	S	50	94,00 A4
M 12	x	70	S	50	98,00 A4
M 12	x	75	S	50	140,00 A4
M 12	x	80	S	50	113,00 A4
M 12	x	85	S	50	180,00 A4
M 12	x	90	S	50	154,00 A4
M 12	x	95	S	1	299,00 A4
M 12	x	100	S	50	164,00 A4
M 12	x	110	S	1	285,00 A4
M 12	x	120	S	50	295,00 A4
M 12	x	130*	S	1	286,00 A4
M 12	x	140	S	1	463,00 A4
M 12	x	150*	S	1	540,00 A4
M 12	x	160*	S	1	618,00 A4
M 12	x	170*	S	1	748,00 A4
M 12	x	180*	S	1	772,00 A4
M 12	x	190*	S	1	971,00 A4
M 12	x	200*	S	1	1124,00 A4
M 14	x	20*	S	50	149,00 A4
M 14	x	25	S	50	139,00 A4
M 14	x	30	S	50	119,00 A4
M 14	x	35	S	50	119,00 A4
M 14	x	40	S	50	119,00 A4
M 14	x	45	S	50	121,00 A4
M 14	x	50	S	50	128,00 A4
M 14	x	55	S	50	142,00 A4
M 14	x	60	S	50	145,00 A4
M 14	x	65	S	50	168,00 A4
M 14	x	70	S	50	173,00 A4
M 14	x	75	S	50	236,00 A4
M 14	x	80	S	50	196,00 A4

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 14	x	90	S	50	285,00 A4
M 14	x	100	S	50	330,00 A4
M 14	x	110	S	25	425,00 A4
M 14	x	120	S	25	485,00 A4
M 14	x	130	S	25	550,00 A4
M 14	x	140	S	25	610,00 A4
M 14	x	150*	S	1	669,00 A4
M 14	x	160*	S	1	1248,00 A4
M 16	x	20*	S	50	149,00 A4
M 16	x	25*	S	50	138,00 A4
M 16	x	30*	S	50	118,00 A4
M 16	x	35*	S	50	118,00 A4
M 16	x	40*	S	50	118,00 A4
M 16	x	45*	S	50	120,00 A4
M 16	x	50*	S	50	127,00 A4
M 16	x	55*	S	25	141,00 A4
M 16	x	60*	S	25	144,00 A4
M 16	x	65*	S	25	167,00 A4
M 16	x	70*	S	25	172,00 A4
M 16	x	75*	S	25	195,00 A4
M 16	x	80*	S	25	195,00 A4
M 16	x	90*	S	25	278,00 A4
M 16	x	100*	S	25	327,00 A4
M 16	x	110*	S	1	423,00 A4
M 16	x	120*	S	1	481,00 A4
M 16	x	130*	S	1	547,00 A4
M 16	x	140*	S	1	603,00 A4
M 16	x	150*	S	1	669,00 A4
M 16	x	160*	S	1	1220,00 A4
M 16	x	170*	S	1	1287,00 A4
M 16	x	180*	S	1	1287,00 A4
M 16	x	190*	S	1	1338,00 A4
M 16	x	200*	S	1	1338,00 A4
M 18	x	30*	S	1	373,00 A4
M 18	x	35*	S	1	334,00 A4
M 18	x	40*	S	1	334,00 A4
M 18	x	45*	S	1	334,00 A4
M 18	x	50*	S	1	349,00 A4
M 18	x	55*	S	1	376,00 A4
M 18	x	60*	S	1	380,00 A4
M 18	x	65*	S	1	423,00 A4
M 18	x	70*	S	1	436,00 A4
M 18	x	75*	S	1	482,00 A4
M 18	x	80*	S	1	482,00 A4
M 18	x	90*	S	1	697,00 A4
M 18	x	100*	S	1	822,00 A4
M 18	x	110*	S	1	1000,00 A4
M 18	x	120*	S	1	1088,00 A4
M 18	x	130*	S	1	1277,00 A4
M 18	x	150*	S	1	1513,00 A4
M 20	x	20*	S	25	338,00 A4
M 20	x	30*	S	25	248,00 A4
M 20	x	35*	S	25	223,00 A4
M 20	x	40*	S	25	223,00 A4
M 20	x	45*	S	25	223,00 A4
M 20	x	50*	S	25	233,00 A4
M 20	x	55*	S	25	251,00 A4
M 20	x	60*	S	25	254,00 A4
M 20	x	65*	S	25	282,00 A4
M 20	x	70*	S	25	290,00 A4
M 20	x	75*	S	25	321,00 A4
M 20	x	80*	S	25	321,00 A4
M 20	x	90*	S	1	465,00 A4
M 20	x	100*	S	1	548,00 A4
M 20	x	110*	S	1	667,00 A4
M 20	x	120*	S	1	725,00 A4
M 20	x	130*	S	1	851,00 A4
M 20	x	140*	S	1	914,00 A4
M 20	x	150*	S	1	1008,00 A4
M 20	x	160*	S	1	1816,00 A4
M 20	x	170*	S	1	1855,00 A4
M 20	x	180*	S	1	1855,00 A4
M 20	x	190*	S	1	1968,00 A4
M 20	x	200*	S	1	1968,00 A4
M 22	x	30*	S	1	1073,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 22	x	40*	S	1	1073,00 A4
M 22	x	45*	S	1	1073,00 A4
M 22	x	50*	S	1	875,00 A4
M 22	x	55*	S	1	892,00 A4
M 22	x	60	S	10	920,00 A4
M 22	x	65*	S	1	948,00 A4
M 22	x	70	S	10	1000,00 A4
M 22	x	75*	S	1	1084,00 A4
M 22	x	80	S	10	1090,00 A4
M 22	x	90	S	10	1390,00 A4
M 22	x	100	S	10	1690,00 A4
M 22	x	110	S	10	1870,00 A4
M 22	x	120	S	10	2050,00 A4
M 22	x	130	S	10	2240,00 A4
M 22	x	140	S	10	2400,00 A4
M 22	x	150	S	10	2650,00 A4
M 24	x	30*	S	1	962,00 A4
M 24	x	35*	S	1	962,00 A4
M 24	x	40*	S	1	805,00 A4
M 24	x	45*	S	1	805,00 A4
M 24	x	50*	S	1	547,00 A4
M 24	x	55*	S	1	557,00 A4
M 24	x	60*	S	1	572,00 A4
M 24	x	65*	S	1	593,00 A4
M 24	x	70*	S	1	623,00 A4
M 24	x	75*	S	1	677,00 A4
M 24	x	80*	S	1	677,00 A4
M 24	x	90*	S	1	925,00 A4
M 24	x	100*	S	1	1006,00 A4
M 24	x	110*	S	1	1167,00 A4
M 24	x	120*	S	1	1274,00 A4
M 24	x	130*	S	1	1397,00 A4
M 24	x	140*	S	1	1501,00 A4
M 24	x	150*	S	1	1631,00 A4
M 24	x	160*	S	1	2443,00 A4
M 24	x	170*	S	1	2489,00 A4
M 24	x	180*	S	1	2489,00 A4
M 24	x	190*	S	1	2551,00 A4
M 24	x	200*	S	1	2551,00 A4
M 27	x	50*	S	1	997,00 A4
M 27	x	55*	S	1	1055,00 A4
M 27	x	60*	S	1	1106,00 A4
M 27	x	65*	S	1	1150,00 A4
M 27	x	70*	S	1	1209,00 A4
M 27	x	80*	S	1	1303,00 A4
M 27	x	90*	S	1	1413,00 A4
M 27	x	100*	S	1	1508,00 A4
M 27	x	110*	S	1	1702,00 A4
M 27	x	120*	S	1	1802,00 A4
M 27	x	130*	S	1	1866,00 A4
M 27	x	140*	S	1	1968,00 A4
M 27	x	150*	S	1	2034,00 A4
M 30	x	40*	S	1	2400,00 A4
M 30	x	50*	S	1	1748,00 A4
M 30	x	60*	S	1	1360,00 A4
M 30	x	65*	S	1	1416,00 A4
M 30	x	70*	S	1	1472,00 A4
M 30	x	80*	S	1	1587,00 A4
M 30	x	90*	S	1	1707,00 A4
M 30	x	100*	S	1	1902,00 A4
M 30	x	110*	S	1	2167,00 A4
M 30	x	120*	S	1	2305,00 A4
M 30	x	130*	S	1	2397,00 A4
M 30	x	140*	S	1	2479,00 A4
M 30	x	150*	S	1	2525,00 A4
M 33	x	70*	S	1	1983,00 A4
M 33	x	80*	S	1	2152,00 A4
M 33	x	90*	S	1	2305,00 A4
M 33	x	120*	S	1	2888,00 A4
M 33	x	130*	S	1	2985,00 A4
M 33	x	140*	S	1	3026,00 A4
M 33	x	150*	S	1	3062,00 A4
M 36	x	80*	S	1	2658,00 A4
M 36	x	90*	S	1	2842,00 A4
M 36	x	100*	S	1	3195,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 36	x	110*	S	1	3359,00 A4
M 36	x	120*	S	1	3527,00 A4
M 36	x	130*	S	1	3604,00 A4
M 36	x	140*	S	1	3676,00 A4
M 36	x	150*	S	1	3752,00 A4

ISO	04017.947	*
4017	**A 4 - 70**	**AD W2**

Hexagon head screws with thread up to head

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate, *M 10/12= RAZ 3223 other ∅ = RAZ 403

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 240–241
Brass → S. 588

ISO 4017 → replaces DIN 933

M 5	x	10	S	100	6,90 A4-70
M 5	x	12	S	100	6,45 A4-70
M 5	x	16	S	100	5,75 A4-70
M 5	x	20	S	100	6,50 A4-70
M 6	x	8	S	200	11,80 A4-70
M 6	x	10	S	200	10,30 A4-70
M 6	x	12	S	200	9,50 A4-70
M 6	x	16	S	200	7,30 A4-70
M 6	x	20	S	200	7,90 A4-70
M 6	x	25	S	200	8,70 A4-70
M 6	x	30	S	100	9,95 A4-70
M 8	x	12	S	200	21,40 A4-70
M 8	x	16	S	200	16,90 A4-70
M 8	x	20	S	200	16,90 A4-70
M 8	x	25	S	200	17,10 A4-70
M 8	x	30	S	200	18,10 A4-70
M 8	x	35	S	200	20,10 A4-70
M 8	x	40	S	100	21,20 A4-70
M 8	x	45	S	100	26,00 A4-70
M 10	x	16	S	100	40,60 A4-70
M 10	x	20	S	100	30,60 A4-70
M 10	x	25	S	100	29,60 A4-70
M 10	x	30	S	100	31,60 A4-70
M 10	x	35	S	100	33,20 A4-70
M 10	x	40	S	100	36,30 A4-70
M 10	x	45	S	100	40,60 A4-70
M 10	x	50	S	100	44,30 A4-70
M 10	x	55	S	50	57,00 A4-70
M 10	x	60	S	100	58,20 A4-70
M 10	x	70	S	50	75,00 A4-70
M 10	x	80	S	50	93,00 A4-70
M 12	x	16	S	50	72,00 A4-70
M 12	x	20	S	50	55,25 A4-70
M 12	x	25	S	50	46,55 A4-70
M 12	x	30	S	50	46,55 A4-70
M 12	x	35	S	50	50,10 A4-70
M 12	x	40	S	50	51,65 A4-70
M 12	x	45	S	50	55,75 A4-70
M 12	x	50	S	50	59,85 A4-70
M 12	x	55	S	50	72,10 A4-70
M 12	x	60	S	50	73,15 A4-70
M 12	x	65	S	50	93,60 A4-70
M 12	x	70	S	50	97,15 A4-70
M 12	x	75	S	50	141,00 A4-70
M 12	x	80	S	25	113,00 A4-70
M 12	x	90	S	50	141,00 A4-70

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	20	S	50	151,00 A4-70
M 16	x	25	S	25	139,00 A4-70
M 16	x	30	S	25	119,00 A4-70
M 16	x	35	S	25	119,00 A4-70
M 16	x	40	S	25	119,00 A4-70
M 16	x	45	S	25	121,00 A4-70
M 16	x	50	S	25	128,00 A4-70
M 16	x	55	S	25	144,00 A4-70
M 16	x	60	S	25	146,00 A4-70
M 16	x	65	S	25	169,00 A4-70
M 16	x	70	S	25	174,00 A4-70
M 16	x	75	S	25	225,00 A4-70
M 16	x	80	S	25	197,00 A4-70
M 16	x	90	S	50	282,00 A4-70
M 16	x	100	S	25	335,00 A4-70
M 20	x	30	S	25	251,00 A4-70
M 20	x	35	S	25	225,00 A4-70
M 20	x	40	S	25	225,00 A4-70
M 20	x	45	S	25	225,00 A4-70
M 20	x	50	S	25	236,00 A4-70
M 20	x	55	S	25	254,00 A4-70
M 20	x	60	S	25	256,00 A4-70
M 20	x	65	S	25	287,00 A4-70
M 20	x	70	S	25	292,00 A4-70
M 20	x	75	S	25	312,00 A4-70
M 20	x	80	S	25	323,00 A4-70
M 20	x	90	S	10	471,00 A4-70
M 20	x	100	S	10	565,00 A4-70
M 20	x	120	S	1	728,00 A4-70
M 20	x	160	S	1	1850,00 A4-70
M 24	x	110	S	1	1170,00 A4-70
M 24	x	130	S	1	1400,00 A4-70

ISO	04017.948	RAZ 403
4017	**A 4 - 80**	

Hexagon head screws with thread up to head

High strength (strongly cold worked)

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 240-241
Brass → S. 588

ISO 4017 → replaces DIN 933

M 6	x	10	S	100	25,50 A4-80
M 6	x	12	S	100	23,20 A4-80
M 6	x	16	S	100	18,30 A4-80
M 6	x	20	S	100	19,90 A4-80
M 6	x	25	S	100	21,90 A4-80
M 6	x	30	S	100	25,00 A4-80
M 6	x	35	S	100	29,50 A4-80
M 6	x	40	S	100	33,50 A4-80
M 6	x	45	S	100	45,00 A4-80
M 6	x	50	S	100	52,00 A4-80
M 6	x	55	S	100	68,00 A4-80
M 6	x	60	S	100	73,00 A4-80
M 8	x	10	S	100	55,00 A4-80
M 8	x	12	S	100	54,00 A4-80
M 8	x	16	S	100	43,00 A4-80
M 8	x	20	S	100	43,00 A4-80
M 8	x	25	S	100	43,00 A4-80
M 8	x	30	S	100	45,50 A4-80
M 8	x	35	S	100	51,00 A4-80
M 8	x	40	S	100	54,00 A4-80

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	45	S	100	63,00 A4-80
M 8	x	50	S	100	68,00 A4-80
M 8	x	55	S	100	89,00 A4-80
M 8	x	60	S	100	94,00 A4-80
M 10	x	16	S	100	99,00 A4-80
M 10	x	20	S	100	77,00 A4-80
M 10	x	25	S	100	75,00 A4-80
M 10	x	30	S	100	80,00 A4-80
M 10	x	35	S	100	84,00 A4-80
M 10	x	40	S	100	91,00 A4-80
M 10	x	45	S	100	100,00 A4-80
M 10	x	50	S	100	109,00 A4-80
M 10	x	55	S	100	140,00 A4-80
M 10	x	60	S	100	146,00 A4-80
M 10	x	65	S	100	177,00 A4-80
M 10	x	70	S	100	186,00 A4-80
M 10	x	75	S	50	295,00 A4-80
M 10	x	80	S	50	229,00 A4-80
M 12	x	20	S	100	139,00 A4-80
M 12	x	25	S	100	117,00 A4-80
M 12	x	30	S	100	117,00 A4-80
M 12	x	35	S	100	126,00 A4-80
M 12	x	40	S	100	130,00 A4-80
M 12	x	45	S	50	140,00 A4-80
M 12	x	50	S	50	150,00 A4-80
M 12	x	55	S	50	181,00 A4-80
M 12	x	60	S	50	183,00 A4-80
M 12	x	65	S	50	234,00 A4-80
M 12	x	70	S	50	243,00 A4-80
M 12	x	75	S	50	355,00 A4-80
M 12	x	80	S	50	285,00 A4-80
M 14	x	25	S	50	350,00 A4-80
M 14	x	30	S	50	300,00 A4-80
M 14	x	35	S	50	300,00 A4-80
M 14	x	40	S	50	300,00 A4-80
M 14	x	45	S	50	305,00 A4-80
M 14	x	50	S	50	320,00 A4-80
M 14	x	55	S	50	360,00 A4-80
M 14	x	60	S	50	365,00 A4-80
M 14	x	65	S	50	425,00 A4-80
M 14	x	80	S	1	495,00 A4-80
M 16	x	25	S	50	350,00 A4-80
M 16	x	30	S	50	300,00 A4-80
M 16	x	35	S	50	300,00 A4-80
M 16	x	40	S	50	300,00 A4-80
M 16	x	45	S	50	305,00 A4-80
M 16	x	50	S	25	320,00 A4-80
M 16	x	55	S	25	360,00 A4-80
M 16	x	60	S	25	365,00 A4-80
M 16	x	65	S	25	425,00 A4-80
M 16	x	70	S	25	435,00 A4-80
M 16	x	75	S	25	570,00 A4-80
M 16	x	80	S	25	495,00 A4-80
M 16	x	90	S	25	710,00 A4-80
M 16	x	100	S	25	820,00 A4-80
M 20	x	30	S	25	630,00 A4-80
M 20	x	35	S	25	680,00 A4-80
M 20	x	40	S	25	570,00 A4-80
M 20	x	45	S	25	570,00 A4-80
M 20	x	50	S	25	590,00 A4-80
M 20	x	55	S	25	640,00 A4-80
M 20	x	60	S	25	640,00 A4-80
M 20	x	65	S	25	720,00 A4-80
M 20	x	70	S	25	730,00 A4-80
M 20	x	75	S	25	780,00 A4-80
M 20	x	80	S	25	810,00 A4-80

Dimensions	PU	Pieces	€/100/Mat.
ISO	04017.941		RAZ 2010
4017	**A 4 BUMAX88***		

Hexagon head screws with thread up to head

Dimension from M 6 and length L > 3xd, approved for use acc. to pressure equipment directive → cert. 3.1 on request

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-225

Steel → S. 240-241
Brass → S. 588

*Mechanical properties ~ Class 8.8

DGRL Zulassung

M 4	x	10	S	200	73,00 A4-88
M 4	x	12	S	200	74,00 A4-88
M 4	x	16	S	200	79,00 A4-88
M 4	x	20	S	200	82,00 A4-88
M 4	x	25	S	200	86,00 A4-88
M 4	x	30	S	200	90,00 A4-88
M 5	x	10	S	100	83,00 A4-88
M 5	x	12	S	100	85,00 A4-88
M 5	x	16	S	100	90,00 A4-88
M 5	x	20	S	100	93,00 A4-88
M 5	x	25	S	100	99,00 A4-88
M 5	x	30	S	100	104,00 A4-88
M 5	x	35	S	100	109,00 A4-88
M 5	x	40	S	100	114,00 A4-88
M 5	x	45	S	100	120,00 A4-88
M 5	x	50	S	100	125,00 A4-88
M 6	x	10	S	100	79,00 A4-88
M 6	x	12	S	100	81,00 A4-88
M 6	x	16	S	100	87,00 A4-88
M 6	x	20	S	100	93,00 A4-88
M 6	x	25	S	100	101,00 A4-88
M 6	x	30	S	100	109,00 A4-88
M 6	x	35	S	100	117,00 A4-88
M 6	x	40	S	100	125,00 A4-88
M 6	x	45	S	100	133,00 A4-88
M 6	x	50	S	100	142,00 A4-88
M 6	x	60	S	100	157,00 A4-88
M 6	x	70	S	100	730,00 A4-88
M 6	x	80	S	100	750,00 A4-88
M 8	x	10	S	50	129,00 A4-88
M 8	x	12	S	50	134,00 A4-88
M 8	x	14	S	50	140,00 A4-88
M 8	x	16	S	50	146,00 A4-88
M 8	x	20	S	50	157,00 A4-88
M 8	x	25	S	50	172,00 A4-88
M 8	x	30	S	50	186,00 A4-88
M 8	x	35	S	50	201,00 A4-88
M 8	x	40	S	50	216,00 A4-88
M 8	x	45	S	50	230,00 A4-88
M 8	x	50	S	50	244,00 A4-88
M 8	x	60	S	50	275,00 A4-88
M 8	x	70	S	50	870,00 A4-88
M 8	x	80	S	50	910,00 A4-88
M 10	x	16	S	50	260,00 A4-88
M 10	x	20	S	50	295,00 A4-88
M 10	x	25	S	50	340,00 A4-88
M 10	x	30	S	50	360,00 A4-88
M 10	x	35	S	50	385,00 A4-88
M 10	x	40	S	50	420,00 A4-88

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	45	S	50	455,00 A4-88
M 10	x	50	S	50	465,00 A4-88
M 10	x	60	S	50	510,00 A4-88
M 10	x	70	S	50	560,00 A4-88
M 10	x	80	S	50	620,00 A4-88
M 10	x	90	S	50	660,00 A4-88
M 10	x	100	S	50	710,00 A4-88
M 10	x	110	S	50	860,00 A4-88
M 10	x	120	S	50	900,00 A4-88
M 10	x	130	S	50	980,00 A4-88
M 12	x	20	S	25	430,00 A4-88
M 12	x	25	S	25	460,00 A4-88
M 12	x	30	S	25	485,00 A4-88
M 12	x	35	S	25	520,00 A4-88
M 12	x	40	S	25	560,00 A4-88
M 12	x	45	S	25	600,00 A4-88
M 12	x	50	S	25	630,00 A4-88
M 12	x	60	S	25	700,00 A4-88
M 12	x	70	S	25	760,00 A4-88
M 12	x	80	S	25	850,00 A4-88
M 12	x	90	S	25	910,00 A4-88
M 12	x	100	S	25	1100,00 A4-88
M 14	x	30	S	25	1100,00 A4-88
M 14	x	40	S	25	1180,00 A4-88
M 14	x	50	S	25	1260,00 A4-88
M 14	x	60	S	25	1350,00 A4-88
M 14	x	70	S	25	1350,00 A4-88
M 16	x	25	S	25	890,00 A4-88
M 16	x	30	S	25	950,00 A4-88
M 16	x	35	S	25	1010,00 A4-88
M 16	x	40	S	25	1080,00 A4-88
M 16	x	45	S	25	1140,00 A4-88
M 16	x	50	S	25	1200,00 A4-88
M 16	x	60	S	25	1330,00 A4-88
M 16	x	70	S	25	1460,00 A4-88
M 16	x	80	S	25	1620,00 A4-88
M 16	x	120	S	25	2700,00 A4-88
M 18	x	40	S	10	1810,00 A4-88
M 18	x	50	S	10	1980,00 A4-88
M 18	x	60	S	10	2140,00 A4-88
M 18	x	70	S	10	2300,00 A4-88
M 18	x	80	S	10	2460,00 A4-88
M 20	x	35	S	10	2190,00 A4-88
M 20	x	40	S	10	2290,00 A4-88
M 20	x	45	S	10	2390,00 A4-88
M 20	x	50	S	10	2490,00 A4-88
M 20	x	55	S	10	2550,00 A4-88
M 20	x	60	S	10	2650,00 A4-88
M 20	x	65	S	10	2800,00 A4-88
M 20	x	70	S	10	2900,00 A4-88
M 20	x	75	S	10	3000,00 A4-88
M 20	x	80	S	10	3100,00 A4-88
M 20	x	100	S	10	3500,00 A4-88
M 24	x	40	S	10	3350,00 A4-88
M 24	x	45	S	10	3450,00 A4-88
M 24	x	50	S	10	3600,00 A4-88
M 24	x	60	S	10	3900,00 A4-88
M 24	x	65	S	10	4050,00 A4-88
M 24	x	70	S	10	4200,00 A4-88
M 24	x	80	S	10	4500,00 A4-88
M 24	x	90	S	10	5100,00 A4-88
M 24	x	100	S	10	5300,00 A4-88
M 24	x	120	S	10	6100,00 A4-88
M 27	x	50	S	10	18000,00 A4-88
M 27	x	60	S	10	18400,00 A4-88
M 27	x	70	S	10	18700,00 A4-88
M 27	x	80	S	10	19100,00 A4-88
M 27	x	90	S	10	19500,00 A4-88
M 27	x	100	S	10	19900,00 A4-88
M 27	x	120	S	10	20700,00 A4-88
M 27	x	130	S	10	21100,00 A4-88
M 27	x	140	S	10	21400,00 A4-88
M 30	x	60	S	10	16800,00 A4-88
M 30	x	70	S	10	17300,00 A4-88
M 30	x	80	S	10	17700,00 A4-88
M 30	x	90	S	10	18200,00 A4-88
M 30	x	100	S	10	18700,00 A4-88
M 36	x	80	S	10	36000,00 A4-88
M 36	x	90	S	10	37100,00 A4-88
M 36	x	100	S	10	38300,00 A4-88
M 36	x	120	S	10	40500,00 A4-88
M 36	x	130	S	10	41700,00 A4-88
M 36	x	140	S	10	42900,00 A4-88
M 36	x	150	S	10	43800,00 A4-88

ISO 04017.942 RAZ 2010

4017 A 4 BUMAX109*

Hexagon head screws with thread up to head

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-225

Steel → S. 240-241
Brass → S. 588

*Mechanical properties ~ Class 10.9

M 4	x	16	S	200	120,00 A4-109
M 4	x	20	S	200	103,00 A4-109
M 6	x	16	S	100	119,00 A4-109
M 6	x	20	S	100	124,00 A4-109
M 6	x	25	S	100	145,00 A4-109
M 6	x	30	S	100	144,00 A4-109
M 8	x	20	S	50	179,00 A4-109
M 8	x	25	S	50	189,00 A4-109
M 8	x	30	S	50	211,00 A4-109
M 8	x	35	S	50	228,00 A4-109
M 8	x	40	S	50	315,00 A4-109
M 8	x	45	S	50	325,00 A4-109
M 8	x	50	S	50	350,00 A4-109
M 8	x	55	S	50	405,00 A4-109
M 8	x	60	S	50	440,00 A4-109
M 8	x	65	S	50	460,00 A4-109
M 8	x	70	S	50	660,00 A4-109
M 10	x	20	S	50	400,00 A4-109
M 10	x	25	S	50	520,00 A4-109
M 10	x	30	S	50	450,00 A4-109
M 10	x	40	S	50	495,00 A4-109
M 10	x	100	S	50	1180,00 A4-109
M 10	x	110	S	50	1230,00 A4-109
M 10	x	120	S	50	1400,00 A4-109
M 12	x	20	S	25	530,00 A4-109
M 12	x	25	S	25	540,00 A4-109
M 12	x	30	S	25	580,00 A4-109
M 12	x	40	S	25	660,00 A4-109
M 12	x	90	S	25	1080,00 A4-109
M 12	x	110	S	25	1390,00 A4-109
M 12	x	120	S	25	1540,00 A4-109
M 12	x	130	S	25	1900,00 A4-109
M 12	x	140	S	25	2110,00 A4-109
M 12	x	150	S	25	2340,00 A4-109
M 12	x	160	S	25	2600,00 A4-109
M 12	x	170	S	25	2900,00 A4-109
M 16	x	30	S	25	1070,00 A4-109
M 16	x	40	S	25	1210,00 A4-109
M 16	x	50	S	25	1350,00 A4-109
M 16	x	60	S	25	1490,00 A4-109
M 20	x	40	S	10	2220,00 A4-109
M 20	x	50	S	10	2950,00 A4-109
M 20	x	60	S	10	3200,00 A4-109
M 20	x	70	S	10	3500,00 A4-109
M 20	x	80	S	10	4000,00 A4-109

ISO 04017.950 *

4017 1.4571 (A 5)

Hexagon head screws with thread up to head

*M 10/12 = RAZ 3220 other ∅ = RAZ 403

Dimensions → TI-15 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 240-241
Brass, plastic → S. 588

ISO 4017 → replaces DIN 933

M 10	x	20	S	1	405,00 A5
M 10	x	25	S	1	410,00 A5
M 10	x	30	S	1	415,00 A5
M 10	x	35	S	1	425,00 A5
M 10	x	40	S	1	435,00 A5
M 10	x	45	S	1	445,00 A5
M 10	x	50	S	1	530,00 A5
M 12	x	25	S	1	415,00 A5
M 12	x	30	S	1	425,00 A5
M 12	x	35	S	1	435,00 A5
M 12	x	40	S	1	445,00 A5
M 12	x	45	S	1	455,00 A5
M 12	x	50	S	1	540,00 A5
M 16	x	30	S	1	600,00 A5
M 16	x	35	S	1	620,00 A5
M 16	x	40	S	1	640,00 A5
M 16	x	45	S	1	650,00 A5
M 16	x	50	S	1	670,00 A5
M 16	x	55	S	1	950,00 A5
M 16	x	60	S	1	1000,00 A5
M 16	x	65	S	1	1100,00 A5
M 20	x	40	S	1	1190,00 A5
M 20	x	45	S	1	1220,00 A5
M 20	x	50	S	1	1240,00 A5
M 20	x	60	S	1	1390,00 A5

ISO 04026.910 RAZ 370

4026 A 1/A 2

Hexagon socket set screws with flat point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 257

ISO 4026 → replaces DIN 913

M 2	x	2	S	50	85,00 A1/A2
M 2	x	3	S	50	59,00 A1/A2
M 2	x	4	S	50	60,00 A1/A2
M 2	x	5	S	50	60,00 A1/A2
M 2	x	6	S	50	60,00 A1/A2
M 2	x	8	S	50	61,00 A1/A2
M 2,5	x	3	S	50	46,50 A1/A2
M 2,5	x	4	S	50	45,00 A1/A2

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	5	S	50	45,00 A 1/A 2
M 2,5	x	6	S	50	45,00 A 1/A 2
M 3	x	2	S	50	45,60 A 1/A 2
M 3	x	3	S	50	22,80 A 1/A 2
M 3	x	4	S	50	24,80 A 1/A 2
M 3	x	5	S	50	24,50 A 1/A 2
M 3	x	6	S	50	26,50 A 1/A 2
M 3	x	8	S	50	27,50 A 1/A 2
M 3	x	10	S	50	28,50 A 1/A 2
M 3	x	12	S	50	31,50 A 1/A 2
M 3	x	16	S	50	23,40 A 1/A 2
M 3	x	20	S	50	30,50 A 1/A 2
M 3	x	25	S	50	52,00 A 1/A 2
M 4	x	4	S	50	17,40 A 1/A 2
M 4	x	5	S	50	17,40 A 1/A 2
M 4	x	6	S	50	17,70 A 1/A 2
M 4	x	8	S	50	18,20 A 1/A 2
M 4	x	10	S	50	19,30 A 1/A 2
M 4	x	12	S	50	20,50 A 1/A 2
M 4	x	16	S	50	22,30 A 1/A 2
M 4	x	20	S	25	24,00 A 1/A 2
M 4	x	25	S	25	41,00 A 1/A 2
M 4	x	30	S	25	45,00 A 1/A 2
M 5	x	4	S	50	19,00 A 1/A 2
M 5	x	5	S	50	19,30 A 1/A 2
M 5	x	6	S	50	19,70 A 1/A 2
M 5	x	8	S	50	20,20 A 1/A 2
M 5	x	10	S	50	20,70 A 1/A 2
M 5	x	12	S	50	21,70 A 1/A 2
M 5	x	16	S	50	24,00 A 1/A 2
M 5	x	20	S	25	28,50 A 1/A 2
M 5	x	25	S	25	31,50 A 1/A 2
M 5	x	30	S	25	55,00 A 1/A 2
M 5	x	35	S	25	78,50 A 1/A 2
M 5	x	40	S	25	80,00 A 1/A 2
M 5	x	45	S	25	85,00 A 1/A 2
M 6	x	5	S	25	22,40 A 1/A 2
M 6	x	6	S	25	22,40 A 1/A 2
M 6	x	8	S	25	23,40 A 1/A 2
M 6	x	10	S	25	23,90 A 1/A 2
M 6	x	12	S	25	25,00 A 1/A 2
M 6	x	16	S	25	28,50 A 1/A 2
M 6	x	20	S	25	32,50 A 1/A 2
M 6	x	25	S	25	37,00 A 1/A 2
M 6	x	30	S	25	43,00 A 1/A 2
M 6	x	35	S	25	53,00 A 1/A 2
M 6	x	40	S	25	58,00 A 1/A 2
M 6	x	45	S	25	134,00 A 1/A 2
M 6	x	50	S	25	156,00 A 1/A 2
M 6	x	60	S	25	178,00 A 1/A 2
M 8	x	6	S	25	48,00 A 1/A 2
M 8	x	8	S	25	32,50 A 1/A 2
M 8	x	10	S	25	32,50 A 1/A 2
M 8	x	12	S	25	35,50 A 1/A 2
M 8	x	16	S	25	39,00 A 1/A 2
M 8	x	20	S	25	46,00 A 1/A 2
M 8	x	25	S	25	53,00 A 1/A 2
M 8	x	30	S	25	61,00 A 1/A 2
M 8	x	35	S	25	74,00 A 1/A 2
M 8	x	40	S	25	86,00 A 1/A 2
M 8	x	45	S	25	94,00 A 1/A 2
M 8	x	50	S	10	118,00 A 1/A 2
M 8	x	60	S	10	212,00 A 1/A 2
M 8	x	70	S	10	270,00 A 1/A 2
M 8	x	80	S	10	328,00 A 1/A 2
M 8	x	100	S	10	388,00 A 1/A 2
M 10	x	10	S	25	48,00 A 1/A 2
M 10	x	12	S	25	49,00 A 1/A 2
M 10	x	16	S	25	52,00 A 1/A 2
M 10	x	18	S	25	60,00 A 1/A 2
M 10	x	20	S	25	63,00 A 1/A 2
M 10	x	25	S	25	75,00 A 1/A 2
M 10	x	30	S	10	87,00 A 1/A 2
M 10	x	35	S	10	106,00 A 1/A 2
M 10	x	40	S	10	112,00 A 1/A 2
M 10	x	45	S	10	119,00 A 1/A 2
M 10	x	50	S	10	130,00 A 1/A 2
M 10	x	60	S	10	181,00 A 1/A 2
M 10	x	70	S	10	232,00 A 1/A 2
M 10	x	80	S	10	283,00 A 1/A 2
M 10	x	100	S	10	345,00 A 1/A 2
M 12	x	10	S	10	100,00 A 1/A 2
M 12	x	12	S	10	101,00 A 1/A 2
M 12	x	16	S	10	101,00 A 1/A 2
M 12	x	20	S	10	115,00 A 1/A 2
M 12	x	25	S	10	126,00 A 1/A 2
M 12	x	30	S	10	137,00 A 1/A 2
M 12	x	35	S	10	148,00 A 1/A 2
M 12	x	40	S	10	164,00 A 1/A 2
M 12	x	45	S	10	186,00 A 1/A 2
M 12	x	50	S	10	202,00 A 1/A 2
M 12	x	60	S	10	295,00 A 1/A 2
M 12	x	70	S	10	547,00 A 1/A 2
M 12	x	80	S	10	566,00 A 1/A 2
M 12	x	90	S	10	635,00 A 1/A 2
M 16	x	16	S	10	221,00 A 1/A 2
M 16	x	20	S	10	321,00 A 1/A 2
M 16	x	25	S	10	596,00 A 1/A 2
M 16	x	30	S	10	348,00 A 1/A 2
M 16	x	40	S	10	564,00 A 1/A 2
M 16	x	50	S	10	964,00 A 1/A 2
M 16	x	60	S	10	1020,00 A 1/A 2
M 16	x	70	S	10	1200,00 A 1/A 2
M 16	x	80	S	10	1430,00 A 1/A 2
M 16	x	90	S	10	1545,00 A 1/A 2
M 16	x	100	S	10	1730,00 A 1/A 2
M 20	x	20	S	10	981,00 A 1/A 2
M 20	x	25	S	10	1020,00 A 1/A 2
M 20	x	30	S	10	1200,00 A 1/A 2
M 20	x	35	S	10	1510,00 A 1/A 2
M 20	x	40	S	10	1580,00 A 1/A 2
M 20	x	50	S	10	1660,00 A 1/A 2
M 20	x	60	S	10	2050,00 A 1/A 2
M 20	x	70	S	10	2150,00 A 1/A 2
M 20	x	80	S	10	2360,00 A 1/A 2
M 20	x	90	S	10	2600,00 A 1/A 2
M 20	x	100	S	10	2825,00 A 1/A 2

ISO	04026.940	RAZ 370

4026 A 4

Hexagon socket set screws with flat point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 257

ISO 4026 → replaces DIN 913

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	4	S	50	40,00 A 4
M 3	x	5	S	50	42,00 A 4
M 3	x	6	S	50	46,50 A 4
M 3	x	8	S	50	53,00 A 4
M 4	x	5	S	50	52,00 A 4
M 4	x	6	S	50	54,00 A 4
M 4	x	8	S	50	57,00 A 4
M 4	x	10	S	50	60,00 A 4
M 4	x	12	S	50	64,00 A 4
M 4	x	16	S	25	74,00 A 4
M 4	x	20	S	25	78,00 A 4
M 5	x	5	S	50	61,00 A 4
M 5	x	6	S	50	61,00 A 4
M 5	x	8	S	50	62,00 A 4
M 5	x	10	S	50	67,00 A 4
M 5	x	12	S	25	73,00 A 4
M 5	x	16	S	25	78,00 A 4
M 5	x	20	S	25	88,00 A 4
M 5	x	25	S	25	92,00 A 4
M 5	x	30	S	25	100,00 A 4
M 6	x	6	S	25	68,00 A 4
M 6	x	8	S	25	69,00 A 4
M 6	x	10	S	25	73,00 A 4
M 6	x	12	S	25	77,00 A 4
M 6	x	16	S	25	88,00 A 4
M 6	x	20	S	25	99,00 A 4
M 6	x	25	S	25	118,00 A 4
M 6	x	30	S	25	129,00 A 4
M 6	x	35	S	25	137,00 A 4
M 6	x	40	S	25	149,00 A 4
M 6	x	45	S	25	160,00 A 4
M 6	x	50	S	25	182,00 A 4
M 8	x	8	S	25	94,00 A 4
M 8	x	10	S	25	94,00 A 4
M 8	x	12	S	25	105,00 A 4
M 8	x	16	S	25	116,00 A 4
M 8	x	20	S	25	139,00 A 4
M 8	x	25	S	25	170,00 A 4
M 8	x	30	S	25	185,00 A 4
M 8	x	35	S	10	207,00 A 4
M 8	x	40	S	10	222,00 A 4
M 8	x	50	S	10	275,00 A 4
M 8	x	60	S	10	320,00 A 4
M 10	x	10	S	25	149,00 A 4
M 10	x	12	S	25	149,00 A 4
M 10	x	16	S	25	160,00 A 4
M 10	x	20	S	10	205,00 A 4
M 10	x	25	S	10	235,00 A 4
M 10	x	30	S	10	220,00 A 4
M 10	x	35	S	10	235,00 A 4
M 10	x	40	S	10	249,00 A 4
M 10	x	45	S	10	270,00 A 4
M 10	x	50	S	10	305,00 A 4
M 10	x	60	S	10	395,00 A 4
M 10	x	70	S	10	485,00 A 4
M 12	x	12	S	10	170,00 A 4
M 12	x	16	S	10	170,00 A 4
M 12	x	20	S	10	210,00 A 4
M 12	x	25	S	10	235,00 A 4
M 12	x	30	S	10	255,00 A 4
M 12	x	35	S	10	285,00 A 4
M 12	x	40	S	10	305,00 A 4
M 12	x	45	S	10	330,00 A 4
M 12	x	50	S	10	355,00 A 4
M 12	x	60	S	10	475,00 A 4
M 16	x	16	S	10	710,00 A 4
M 16	x	20	S	10	1150,00 A 4
M 16	x	25	S	10	355,00 A 4
M 16	x	30	S	10	415,00 A 4
M 16	x	35	S	10	460,00 A 4
M 16	x	40	S	10	480,00 A 4
M 16	x	50	S	10	1910,00 A 4
M 20	x	20	S	10	1850,00 A 4
M 20	x	25	S	10	2000,00 A 4
M 20	x	30	S	10	2150,00 A 4
M 20	x	35	S	10	2400,00 A 4
M 20	x	40	S	10	2750,00 A 4
M 20	x	50	S	10	3250,00 A 4
M 24	x	25	S	10	3075,00 A 4
M 24	x	30	S	10	3250,00 A 4
M 24	x	35	S	10	3600,00 A 4
M 24	x	40	S	10	3750,00 A 4
M 24	x	45	S	10	3900,00 A 4
M 24	x	50	S	10	4150,00 A 4

ISO	04027.910	RAZ 370
4027	A 1/A 2	

Hexagon socket set screws with cone point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 259

ISO 4027 → replaces DIN 914

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	2	S	50	75,00 A 1/A 2
M 2	x	3	S	50	57,00 A 1/A 2
M 2	x	4	S	50	57,00 A 1/A 2
M 2	x	5	S	50	58,00 A 1/A 2
M 2	x	6	S	50	58,00 A 1/A 2
M 2	x	8	S	50	58,00 A 1/A 2
M 2,5	x		S	50	43,50 A 1/A 2
M 2,5	x		S	50	44,00 A 1/A 2
M 2,5	x	6	S	50	44,00 A 1/A 2
M 3	x	3	S	50	29,00 A 1/A 2
M 3	x	4	S	50	24,00 A 1/A 2
M 3	x	5	S	50	23,70 A 1/A 2
M 3	x	6	S	50	25,50 A 1/A 2
M 3	x	8	S	50	26,50 A 1/A 2
M 3	x	10	S	50	28,00 A 1/A 2
M 3	x	12	S	50	31,00 A 1/A 2
M 3	x	16	S	50	34,00 A 1/A 2
M 4	x	4	S	50	24,20 A 1/A 2
M 4	x	5	S	50	22,40 A 1/A 2
M 4	x	6	S	50	22,80 A 1/A 2
M 4	x	8	S	50	23,10 A 1/A 2
M 4	x	10	S	50	24,80 A 1/A 2
M 4	x	12	S	50	26,50 A 1/A 2
M 4	x	16	S	50	29,00 A 1/A 2
M 4	x	20	S	25	34,50 A 1/A 2
M 4	x	25	S	25	53,00 A 1/A 2
M 4	x	30	S	25	58,00 A 1/A 2
M 5	x	5	S	50	30,00 A 1/A 2
M 5	x	6	S	50	28,00 A 1/A 2
M 5	x	8	S	50	28,50 A 1/A 2
M 5	x	10	S	50	29,50 A 1/A 2
M 5	x	12	S	50	31,00 A 1/A 2
M 5	x	16	S	50	34,00 A 1/A 2
M 5	x	20	S	25	40,50 A 1/A 2
M 5	x	25	S	25	44,50 A 1/A 2
M 5	x	30	S	25	78,00 A 1/A 2
M 6	x	6	S	25	31,00 A 1/A 2
M 6	x	8	S	25	30,50 A 1/A 2
M 6	x	10	S	25	31,00 A 1/A 2
M 6	x	12	S	25	32,50 A 1/A 2
M 6	x	16	S	25	37,00 A 1/A 2
M 6	x	20	S	25	42,00 A 1/A 2
M 6	x	25	S	25	47,00 A 1/A 2
M 6	x	30	S	25	55,00 A 1/A 2
M 6	x	35	S	25	67,00 A 1/A 2
M 6	x	40	S	25	75,00 A 1/A 2
M 6	x	45	S	25	172,00 A 1/A 2
M 6	x	50	S	25	201,00 A 1/A 2
M 8	x	8	S	25	45,00 A 1/A 2
M 8	x	10	S	25	41,50 A 1/A 2
M 8	x	12	S	25	45,50 A 1/A 2
M 8	x	16	S	25	50,00 A 1/A 2
M 8	x	20	S	25	59,00 A 1/A 2
M 8	x	25	S	25	68,00 A 1/A 2
M 8	x	30	S	25	78,00 A 1/A 2
M 8	x	35	S	25	95,00 A 1/A 2
M 8	x	40	S	25	110,00 A 1/A 2
M 8	x	45	S	25	120,00 A 1/A 2
M 8	x	50	S	10	151,00 A 1/A 2
M 8	x	60	S	10	275,00 A 1/A 2
M 10	x	10	S	25	67,00 A 1/A 2
M 10	x	12	S	25	63,00 A 1/A 2
M 10	x	16	S	25	67,00 A 1/A 2
M 10	x	20	S	25	81,00 A 1/A 2
M 10	x	25	S	10	107,00 A 1/A 2
M 10	x	30	S	10	112,00 A 1/A 2
M 10	x	35	S	10	136,00 A 1/A 2
M 10	x	40	S	10	143,00 A 1/A 2
M 10	x	50	S	10	167,00 A 1/A 2
M 10	x	60	S	10	232,00 A 1/A 2
M 12	x	16	S	10	109,00 A 1/A 2
M 12	x	20	S	10	124,00 A 1/A 2
M 12	x	25	S	10	136,00 A 1/A 2
M 12	x	30	S	10	147,00 A 1/A 2
M 12	x	35	S	10	159,00 A 1/A 2
M 12	x	40	S	10	177,00 A 1/A 2
M 12	x	50	S	10	218,00 A 1/A 2
M 12	x	60	S	10	285,00 A 1/A 2

ISO	04027.940	RAZ 370
4027	A 4	

Hexagon socket set screws with cone point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 259

ISO 4027 → replaces DIN 914

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	8	S	50	114,00 A 4
M 3	x	4	S	50	35,00 A 4
M 3	x	5	S	50	44,00 A 4
M 3	x	6	S	50	44,00 A 4
M 3	x	8	S	50	50,00 A 4
M 3	x	10	S	50	56,00 A 4
M 4	x	4	S	50	49,50 A 4
M 4	x	5	S	50	49,50 A 4
M 4	x	6	S	50	51,00 A 4
M 4	x	8	S	50	54,00 A 4
M 4	x	10	S	50	57,00 A 4
M 4	x	12	S	50	61,00 A 4
M 4	x	16	S	25	70,00 A 4
M 4	x	20	S	25	74,00 A 4
M 5	x	5	S	50	58,00 A 4
M 5	x	6	S	50	58,00 A 4
M 5	x	8	S	50	59,00 A 4
M 5	x	10	S	50	63,00 A 4
M 5	x	12	S	25	69,00 A 4
M 5	x	16	S	25	74,00 A 4
M 5	x	20	S	25	84,00 A 4
M 5	x	25	S	25	87,00 A 4
M 5	x	30	S	25	95,00 A 4
M 6	x	6	S	25	64,00 A 4
M 6	x	8	S	25	65,00 A 4
M 6	x	10	S	25	69,00 A 4
M 6	x	12	S	25	73,00 A 4
M 6	x	16	S	25	83,00 A 4
M 6	x	20	S	25	94,00 A 4
M 6	x	25	S	25	112,00 A 4
M 6	x	30	S	25	123,00 A 4
M 6	x	35	S	25	130,00 A 4
M 6	x	45	S	25	152,00 A 4
M 6	x	50	S	25	173,00 A 4
M 8	x	8	S	25	90,00 A 4
M 8	x	10	S	25	90,00 A 4
M 8	x	12	S	25	100,00 A 4
M 8	x	16	S	25	110,00 A 4
M 8	x	20	S	25	132,00 A 4
M 8	x	25	S	25	161,00 A 4
M 8	x	30	S	25	175,00 A 4
M 8	x	35	S	10	197,00 A 4
M 8	x	40	S	10	211,00 A 4
M 8	x	45	S	10	233,00 A 4
M 8	x	50	S	10	265,00 A 4
M 8	x	60	S	10	305,00 A 4
M 10	x	10	S	25	141,00 A 4
M 10	x	12	S	25	141,00 A 4
M 10	x	16	S	25	152,00 A 4
M 10	x	20	S	10	195,00 A 4
M 10	x	25	S	10	223,00 A 4
M 10	x	30	S	10	250,00 A 4
M 10	x	35	S	10	270,00 A 4
M 10	x	40	S	10	285,00 A 4
M 10	x	45	S	10	310,00 A 4
M 10	x	50	S	10	350,00 A 4
M 10	x	60	S	10	450,00 A 4
M 12	x	12	S	10	194,00 A 4
M 12	x	16	S	10	194,00 A 4
M 12	x	20	S	10	239,00 A 4
M 12	x	25	S	10	270,00 A 4
M 12	x	30	S	10	290,00 A 4
M 12	x	35	S	10	325,00 A 4
M 12	x	40	S	10	350,00 A 4
M 12	x	45	S	10	375,00 A 4
M 12	x	50	S	10	405,00 A 4
M 12	x	60	S	10	540,00 A 4
M 16	x	25	S	10	405,00 A 4
M 16	x	30	S	10	475,00 A 4
M 16	x	40	S	10	550,00 A 4
M 16	x	50	S	10	560,00 A 4
M 16	x	60	S	10	580,00 A 4

ISO	04028.910	RAZ 370
4028	A 1/A 2	

Hexagon socket set screws with full dog point

Dimensions → TI-20 Standard conversion → TI-6

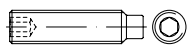
Steel → S. 260

ISO 4028 → replaces DIN 915

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	6	S	50	45,00 A 1/A 2
M 2	x	10	S	50	58,00 A 1/A 2
M 3	x	4	S	50	31,00 A 1/A 2
M 3	x	5	S	50	31,00 A 1/A 2
M 3	x	6	S	50	32,00 A 1/A 2
M 3	x	8	S	50	37,00 A 1/A 2
M 3	x	10	S	50	38,00 A 1/A 2
M 3	x	12	S	50	41,00 A 1/A 2
M 4	x	5	S	50	23,80 A 1/A 2
M 4	x	6	S	50	24,20 A 1/A 2
M 4	x	8	S	50	24,50 A 1/A 2
M 4	x	10	S	50	26,50 A 1/A 2
M 4	x	12	S	50	28,00 A 1/A 2
M 4	x	16	S	50	30,50 A 1/A 2
M 4	x	20	S	25	36,50 A 1/A 2
M 4	x	25	S	25	56,00 A 1/A 2

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	5	S	50	31,50 A 1/A 2
M 5	x	6	S	50	30,00 A 1/A 2
M 5	x	8	S	50	30,50 A 1/A 2
M 5	x	10	S	50	31,50 A 1/A 2
M 5	x	12	S	50	33,00 A 1/A 2
M 5	x	16	S	50	36,00 A 1/A 2
M 5	x	20	S	25	43,00 A 1/A 2
M 5	x	25	S	25	47,00 A 1/A 2
M 5	x	30	S	25	82,00 A 1/A 2
M 5	x	35	S	25	85,00 A 1/A 2
M 6	x	6	S	25	33,00 A 1/A 2
M 6	x	8	S	25	32,00 A 1/A 2
M 6	x	10	S	25	33,00 A 1/A 2
M 6	x	12	S	25	34,50 A 1/A 2
M 6	x	16	S	25	39,00 A 1/A 2
M 6	x	20	S	25	44,50 A 1/A 2
M 6	x	25	S	25	50,00 A 1/A 2
M 6	x	30	S	25	59,00 A 1/A 2
M 6	x	35	S	25	72,00 A 1/A 2
M 6	x	40	S	25	80,00 A 1/A 2
M 6	x	50	S	25	213,00 A 1/A 2
M 6	x	8	S	25	47,50 A 1/A 2
M 8	x	10	S	25	44,50 A 1/A 2
M 8	x	12	S	25	48,50 A 1/A 2
M 8	x	16	S	25	53,00 A 1/A 2
M 8	x	20	S	25	63,00 A 1/A 2
M 8	x	25	S	25	72,00 A 1/A 2
M 8	x	30	S	25	83,00 A 1/A 2
M 8	x	35	S	25	101,00 A 1/A 2
M 8	x	40	S	25	117,00 A 1/A 2
M 8	x	45	S	25	128,00 A 1/A 2
M 8	x	60	S	10	290,00 A 1/A 2
M 10	x	10	S	25	72,00 A 1/A 2
M 10	x	12	S	25	67,00 A 1/A 2
M 10	x	16	S	25	71,00 A 1/A 2
M 10	x	20	S	25	86,00 A 1/A 2
M 10	x	25	S	25	103,00 A 1/A 2
M 10	x	30	S	10	119,00 A 1/A 2
M 10	x	35	S	10	144,00 A 1/A 2
M 10	x	40	S	10	152,00 A 1/A 2
M 10	x	45	S	10	162,00 A 1/A 2
M 10	x	50	S	10	178,00 A 1/A 2
M 10	x	60	S	10	247,00 A 1/A 2
M 12	x	16	S	10	115,00 A 1/A 2
M 12	x	20	S	10	132,00 A 1/A 2
M 12	x	25	S	10	144,00 A 1/A 2
M 12	x	30	S	10	157,00 A 1/A 2
M 12	x	40	S	10	188,00 A 1/A 2
M 12	x	50	S	10	231,00 A 1/A 2
M 12	x	60	S	10	305,00 A 1/A 2

ISO	04028.940	RAZ 370
4028	**A 4**	



Hexagon socket set screws with full dog point

Dimensions → TI-20 Standard conversion → TI-6

Steel → S. 260

ISO 4028 → replaces DIN 915

M 4	x	6	S	50	48,50 A 4
M 4	x	8	S	50	51,00 A 4
M 4	x	10	S	50	55,00 A 4
M 4	x	16	S	25	67,00 A 4
M 4	x	20	S	25	71,00 A 4
M 5	x	6	S	50	55,00 A 4
M 5	x	8	S	50	56,00 A 4
M 5	x	10	S	50	61,00 A 4
M 5	x	12	S	25	66,00 A 4
M 5	x	16	S	25	71,00 A 4
M 5	x	20	S	25	80,00 A 4
M 5	x	25	S	25	84,00 A 4
M 6	x	6	S	25	62,00 A 4
M 6	x	8	S	25	63,00 A 4
M 6	x	10	S	25	66,00 A 4
M 6	x	12	S	25	70,00 A 4
M 6	x	16	S	25	80,00 A 4
M 6	x	20	S	25	90,00 A 4
M 6	x	30	S	25	117,00 A 4
M 6	x	35	S	25	125,00 A 4
M 6	x	40	S	25	135,00 A 4
M 6	x	45	S	25	145,00 A 4
M 6	x	50	S	25	165,00 A 4
M 8	x	8	S	25	86,00 A 4
M 8	x	10	S	25	86,00 A 4
M 8	x	12	S	25	95,00 A 4
M 8	x	16	S	25	105,00 A 4
M 8	x	20	S	25	126,00 A 4
M 8	x	25	S	25	154,00 A 4
M 8	x	30	S	25	168,00 A 4
M 8	x	40	S	10	201,00 A 4
M 8	x	50	S	10	250,00 A 4
M 10	x	10	S	25	162,00 A 4
M 10	x	12	S	25	162,00 A 4
M 10	x	16	S	25	145,00 A 4
M 10	x	20	S	10	186,00 A 4
M 10	x	25	S	10	213,00 A 4
M 10	x	30	S	10	239,00 A 4
M 10	x	40	S	10	275,00 A 4
M 12	x	12	S	10	226,00 A 4
M 12	x	16	S	10	185,00 A 4
M 12	x	20	S	10	229,00 A 4
M 12	x	25	S	10	260,00 A 4
M 12	x	30	S	10	280,00 A 4
M 12	x	35	S	10	310,00 A 4
M 12	x	40	S	10	335,00 A 4
M 12	x	50	S	10	390,00 A 4
M 12	x	60	S	10	600,00 A 4
M 16	x	25	S	10	390,00 A 4
M 16	x	30	S	10	455,00 A 4
M 16	x	35	S	10	500,00 A 4
M 16	x	40	S	10	530,00 A 4

ISO	04029.910	RAZ 370
4029	**A 1/A 2**	

Hexagon socket set screws with cup point

Dimensions → TI-21 Standard conversion → TI-6

Steel → S. 262

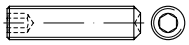
ISO 4029 → replaces DIN 916

M 2	x	2	S	50	74,00 A 1/A 2
M 2	x	3	S	50	60,00 A 1/A 2
M 2	x	4	S	50	61,00 A 1/A 2
M 2	x	5	S	50	61,00 A 1/A 2
M 2	x	6	S	50	61,00 A 1/A 2
M 3	x	4	S	50	25,50 A 1/A 2
M 3	x	5	S	50	24,90 A 1/A 2
M 3	x	6	S	50	27,00 A 1/A 2
M 3	x	8	S	50	28,00 A 1/A 2
M 3	x	10	S	50	29,00 A 1/A 2
M 3	x	12	S	50	32,00 A 1/A 2
M 3	x	16	S	50	63,00 A 1/A 2
M 3	x	20	S	50	69,00 A 1/A 2
M 4	x	3	S	50	17,70 A 1/A 2
M 4	x	4	S	50	17,70 A 1/A 2
M 4	x	5	S	50	17,70 A 1/A 2
M 4	x	6	S	50	18,00 A 1/A 2
M 4	x	8	S	50	18,50 A 1/A 2
M 4	x	10	S	50	19,60 A 1/A 2
M 4	x	12	S	50	20,80 A 1/A 2
M 4	x	16	S	50	22,60 A 1/A 2
M 4	x	20	S	25	27,00 A 1/A 2
M 4	x	25	S	25	42,00 A 1/A 2
M 4	x	30	S	25	46,00 A 1/A 2
M 5	x	5	S	50	19,60 A 1/A 2
M 5	x	6	S	50	20,00 A 1/A 2
M 5	x	8	S	50	20,50 A 1/A 2
M 5	x	10	S	50	21,10 A 1/A 2
M 5	x	12	S	50	22,10 A 1/A 2
M 5	x	16	S	50	24,30 A 1/A 2
M 5	x	20	S	25	29,00 A 1/A 2
M 5	x	25	S	25	32,00 A 1/A 2
M 5	x	30	S	25	56,00 A 1/A 2
M 6	x	6	S	25	22,80 A 1/A 2
M 6	x	8	S	25	23,80 A 1/A 2
M 6	x	10	S	25	24,20 A 1/A 2
M 6	x	12	S	25	25,50 A 1/A 2
M 6	x	16	S	25	29,00 A 1/A 2
M 6	x	20	S	25	33,00 A 1/A 2
M 6	x	25	S	25	37,50 A 1/A 2
M 6	x	30	S	25	43,50 A 1/A 2
M 6	x	35	S	25	53,00 A 1/A 2
M 6	x	40	S	25	59,00 A 1/A 2
M 6	x	45	S	25	136,00 A 1/A 2
M 6	x	50	S	25	159,00 A 1/A 2
M 6	x	60	S	25	182,00 A 1/A 2
M 8	x	8	S	25	33,00 A 1/A 2
M 8	x	10	S	25	33,00 A 1/A 2
M 8	x	12	S	25	36,00 A 1/A 2
M 8	x	16	S	25	39,50 A 1/A 2
M 8	x	20	S	25	46,50 A 1/A 2
M 8	x	25	S	25	54,00 A 1/A 2
M 8	x	30	S	25	62,00 A 1/A 2
M 8	x	35	S	25	75,00 A 1/A 2
M 8	x	40	S	25	87,00 A 1/A 2
M 8	x	45	S	25	95,00 A 1/A 2
M 8	x	50	S	10	119,00 A 1/A 2
M 8	x	60	S	10	215,00 A 1/A 2
M 8	x	70	S	10	220,00 A 1/A 2
M 10	x	10	S	25	49,00 A 1/A 2
M 10	x	12	S	25	49,50 A 1/A 2
M 10	x	16	S	25	53,00 A 1/A 2
M 10	x	20	S	25	64,00 A 1/A 2
M 10	x	25	S	25	76,00 A 1/A 2
M 10	x	30	S	10	89,00 A 1/A 2
M 10	x	35	S	10	107,00 A 1/A 2
M 10	x	40	S	10	113,00 A 1/A 2
M 10	x	45	S	10	121,00 A 1/A 2
M 10	x	50	S	10	132,00 A 1/A 2
M 10	x	60	S	10	184,00 A 1/A 2
M 12	x	12	S	10	168,00 A 1/A 2
M 12	x	16	S	10	102,00 A 1/A 2
M 12	x	20	S	10	117,00 A 1/A 2
M 12	x	25	S	10	128,00 A 1/A 2
M 12	x	30	S	10	139,00 A 1/A 2
M 12	x	35	S	10	150,00 A 1/A 2
M 12	x	40	S	10	167,00 A 1/A 2
M 12	x	50	S	10	205,00 A 1/A 2
M 12	x	60	S	10	270,00 A 1/A 2
M 16	x	16	S	10	437,50 A 1/A 2
M 16	x	20	S	10	340,00 A 1/A 2
M 16	x	25	S	10	410,00 A 1/A 2
M 16	x	30	S	10	495,00 A 1/A 2
M 16	x	40	S	10	630,00 A 1/A 2
M 16	x	50	S	10	785,00 A 1/A 2

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 16	x	60	S	10	950,00 A 1/A 2
M 20	x	25	S	10	1500,00 A 1/A 2
M 20	x	30	S	10	1600,00 A 1/A 2
M 20	x	35	S	10	1700,00 A 1/A 2
M 20	x	50	S	10	1800,00 A 1/A 2

ISO	04029.940	RAZ 370
4029	**A 4**	



Hexagon socket set screws with cup point

Dimensions → TI-21 Standard conversion → TI-6

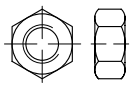
Steel → S. 262

ISO 4029 → replaces DIN 916

M 2	x	2	S	50	136,00 A 4
M 2	x	4	S	50	146,00 A 4
M 2	x	5	S	50	155,00 A 4
M 2	x	6	S	50	159,00 A 4
M 3	x	5	S	50	59,00 A 4
M 3	x	6	S	50	68,00 A 4
M 3	x	8	S	50	80,00 A 4
M 3	x	10	S	50	96,00 A 4
M 3	x	12	S	50	105,00 A 4
M 3	x	16	S	50	113,00 A 4
M 3	x	20	S	50	127,00 A 4
M 4	x	5	S	50	49,00 A 4
M 4	x	6	S	50	51,00 A 4
M 4	x	8	S	50	53,00 A 4
M 4	x	10	S	50	57,00 A 4
M 4	x	12	S	50	61,00 A 4
M 4	x	16	S	25	69,00 A 4
M 4	x	20	S	25	74,00 A 4
M 5	x	5	S	50	57,00 A 4
M 5	x	6	S	50	57,00 A 4
M 5	x	8	S	50	59,00 A 4
M 5	x	10	S	50	63,00 A 4
M 5	x	12	S	25	69,00 A 4
M 5	x	16	S	25	74,00 A 4
M 5	x	20	S	25	83,00 A 4
M 5	x	25	S	25	87,00 A 4
M 5	x	30	S	25	94,00 A 4
M 6	x	6	S	25	64,00 A 4
M 6	x	8	S	25	65,00 A 4
M 6	x	10	S	25	69,00 A 4
M 6	x	12	S	25	73,00 A 4
M 6	x	16	S	25	83,00 A 4
M 6	x	20	S	25	93,00 A 4
M 6	x	25	S	25	111,00 A 4
M 6	x	30	S	25	122,00 A 4
M 6	x	35	S	25	129,00 A 4
M 6	x	40	S	25	140,00 A 4
M 6	x	50	S	25	171,00 A 4
M 8	x	8	S	25	89,00 A 4
M 8	x	10	S	25	89,00 A 4
M 8	x	12	S	25	99,00 A 4
M 8	x	16	S	25	109,00 A 4
M 8	x	20	S	25	130,00 A 4
M 8	x	25	S	25	160,00 A 4
M 8	x	30	S	25	174,00 A 4
M 8	x	35	S	10	195,00 A 4
M 8	x	40	S	10	209,00 A 4
M 8	x	50	S	10	260,00 A 4
M 8	x	60	S	10	305,00 A 4
M 10	x	8	S	25	208,00 A 4
M 10	x	10	S	25	140,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	12	S	25	140,00 A 4
M 10	x	16	S	25	151,00 A 4
M 10	x	20	S	10	193,00 A 4
M 10	x	25	S	10	221,00 A 4
M 10	x	30	S	10	248,00 A 4
M 10	x	35	S	10	265,00 A 4
M 10	x	40	S	10	285,00 A 4
M 10	x	50	S	10	345,00 A 4
M 10	x	60	S	10	445,00 A 4
M 12	x	16	S	10	192,00 A 4
M 12	x	20	S	10	237,00 A 4
M 12	x	25	S	10	265,00 A 4
M 12	x	30	S	10	290,00 A 4
M 12	x	35	S	10	325,00 A 4
M 12	x	40	S	10	345,00 A 4
M 12	x	50	S	10	400,00 A 4
M 12	x	60	S	10	540,00 A 4
M 16	x	16	S	10	480,00 A 4
M 16	x	20	S	10	525,00 A 4
M 16	x	25	S	10	450,00 A 4
M 16	x	30	S	10	470,00 A 4
M 16	x	35	S	10	520,00 A 4
M 16	x	40	S	10	540,00 A 4

ISO	04032.910	RAZ 410
4032	**A 1**	**turned**



Hexagon nuts, ISO type 1

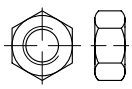
Dimensions → TI-61 Mech. properties → TI-224

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 1,6	S	500	21,50 A 1
M 2	S	500	15,10 A 1
M 2	K	100	19,70 A 1
M 2,3	S	500	19,95 A 1
M 2,3	K	100	23,00 A 1
M 2,5	S	500	13,80 A 1
M 2,5	K	100	16,65 A 1
M 2,6	S	500	27,10 A 1
M 2,6	K	100	31,70 A 1

ISO	04032.920	**
4032	**A 2 – 70**	



Hexagon nuts, ISO type 1

**M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

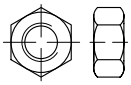
ISO 4032 → replaces DIN 934

*Prop. class for dimensions different depending on production

M 3*	S	1000	5,55 A 2
M 3*	K	100	8,85 A 2
M 3,5*	K	100	23,55 A 2
M 4*	S	1000	6,30 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 4*	K	100	9,20 A 2
M 5	S	1000	7,40 A 2
M 6	S	1000	11,20 A 2
M 7*	S	100	18,40 A 2
M 8	S	500	20,60 A 2
M 10	S	250	44,00 A 2
M 12	S	250	63,00 A 2
M 14	S	25	111,00 A 2
M 16	S	50	111,00 A 2
M 18	S	10	285,00 A 2
M 20	S	25	285,00 A 2
M 22	S	10	640,00 A 2
M 24	S	25	640,00 A 2
M 30*	S	1	2500,00 A 2
M 33*	S	1	2900,00 A 2
M 36*	S	5	2460,00 A 2
M 42*	S	1	3580,00 A 2
M 48*	S	1	5931,00 A 2

ISO	04032.926	RAZ 409
4032	**A 2 – 70**	**AD W2**



Hexagon nuts

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate

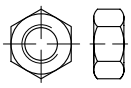
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 10	S	100	385,00 A 2-70
M 12	S	100	440,00 A 2-70
M 14	S	25	540,00 A 2-70
M 16	S	50	610,00 A 2-70
M 20	S	25	820,00 A 2-70
M 24	S	25	1150,00 A 2-70
M 27	S	1	1800,00 A 2-70
M 30	S	1	2100,00 A 2-70
M 33	S	1	2500,00 A 2-70

ISO	04032.940	**
4032	**A 4 – 70**	



Hexagon nuts, ISO type 1

**M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-224

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

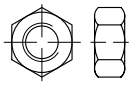
*Prop. class for dimensions different depending on production

M 2*	S	1000	17,90 A 4
M 2*	K	100	20,70 A 4
M 2,5*	S	500	17,40 A 4
M 2,5*	K	100	19,95 A 4
M 3*	S	1000	7,20 A 4
M 3*	K	100	10,40 A 4

Dimensions	PU	Pieces	€/100/Mat.
M 4*	S	1000	8,15 A4
M 4*	K	100	12,00 A4
M 5	S	1000	8,80 A4
M 6	S	1000	13,50 A4
M 7*	S	100	24,55 A4
M 8	S	500	26,00 A4
M 10	S	250	56,00 A4
M 12	S	250	77,00 A4
M 14	S	25	158,00 A4
M 16	S	50	158,00 A4
M 18	S	10	390,00 A4
M 20	S	25	390,00 A4
M 22	S	10	790,00 A4
M 24	S	10	790,00 A4
M 27*	S	10	1490,00 A4
M 30*	S	10	1990,00 A4
M 33*	S	10	2550,00 A4
M 36*	S	5	3100,00 A4
M 39*	S	5	6300,00 A4
M 42*	S	1	4346,00 A4
M 48*	S	1	8300,00 A4

ISO 04032.947 RAZ 409

4032 A 4 - 70 AD W2



Hexagon nuts, ISO type 1

For pressure vessel const. as per AD regulations, products with renunciation of inspection certificate

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

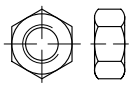
Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 8	S	500	430,00 A4-70
M 10	S	100	450,00 A4-70
M 12	S	100	490,00 A4-70
M 14	S	25	560,00 A4-70
M 16	S	50	670,00 A4-70
M 20	S	25	920,00 A4-70
M 24	S	25	1280,00 A4-70
M 27	S	1	2000,00 A4-70
M 30	S	1	2300,00 A4-70

ISO 04032.948 RAZ 3310

4032 A 4 - 80



Hexagon nuts, ISO type 1

High strength (strongly cold worked)

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

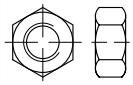
ISO 4032 → replaces DIN 934

M 6	S	200	10,25 A4-80
M 8	S	200	12,80 A4-80
M 10	S	100	25,60 A4-80

Dimensions	PU	Pieces	€/100/Mat.
M 12	S	100	33,25 A4-80
M 14	S	100	56,25 A4-80
M 16	S	50	71,60 A4-80
M 18	S	50	103,00 A4-80
M 20	S	50	116,00 A4-80
M 24	S	25	350,00 A4-80

ISO 04032.941 RAZ 2011

4032 A 4 BUMAX88*



Hexagon nuts, ISO type 1

Dimension from M 6 approved for use acc. to pressure equipment directive,
→ certificate 3.1 on request

Dimensions → TI-61 Mech. properties → TI-225

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

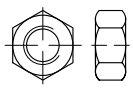
*Mechanical properties ~ Class 8

DGRL Zulassung

M 6	S	100	47,25 A4-88
M 8	S	100	80,00 A4-88
M 10	S	50	190,00 A4-88
M 12	S	50	320,00 A4-88
M 14	S	50	750,00 A4-88
M 16	S	25	830,00 A4-88
M 18	S	25	4800,00 A4-88
M 20	S	25	1360,00 A4-88
M 24	S	10	6500,00 A4-88
M 27	S	10	12200,00 A4-88
M 30	S	10	13100,00 A4-88
M 36	S	10	32900,00 A4-88

ISO 04032.942 RAZ 2011

4032 A 4 BUMAX109



Hexagon nuts, ISO type 1

Dimensions → TI-61 Mech. properties → TI-225

Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

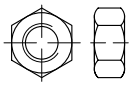
*Mechanical properties ~ Class 10

M 6	S	100	116,00 A4-109
M 8	S	100	214,00 A4-109
M 10	S	50	270,00 A4-109
M 12	S	50	370,00 A4-109
M 16	S	25	1320,00 A4-109
M 20	S	25	1800,00 A4-109

Dimensions	PU	Pieces	€/100/Mat.

ISO 04032.950 RAZ 3300

4032 1.4571 (A 5)



Hexagon nuts, ISO type 1

Dimensions → TI-61 Mech. properties → TI-224

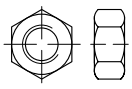
Steel → S. 263
Brass, aluminium, titanium, copper → S. 589

ISO 4032 → replaces DIN 934

M 6	S	100	102,00 A5
M 8	S	100	111,00 A5
M 10	S	100	118,00 A5
M 12	S	50	149,00 A5
M 16	S	25	255,00 A5
M 20	S	25	510,00 A5
M 24	S	10	900,00 A5
M 27	S	10	1420,00 A5
M 30	S	10	1950,00 A5

ISO 04032.924 RAZ 3310

4032 A 2 left



Hexagon nuts, ISO type 1, with metric left hand thread

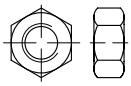
Dimensions → TI-61 Mech. properties → TI-224

Steel → S. 265

ISO 4032 → replaces DIN 934

M 5	S	100	20,50 A2
M 6	S	100	31,00 A2
M 8	S	100	49,50 A2
M 10	S	50	95,00 A2
M 12	S	25	129,00 A2
M 14	S	25	242,00 A2
M 16	S	25	242,00 A2
M 18	S	25	300,00 A2
M 20	S	10	370,00 A2
M 22	S	10	520,00 A2
M 24	S	10	1030,00 A2
M 27	S	1	1080,00 A2
M 30	S	1	1250,00 A2

Dimensions	PU	Pieces	€/100/Mat.
ISO 04032.944			RAZ 3310
4032 A 4			left
M 5	S	100	26,00 A4
M 6	S	100	36,00 A4
M 8	S	100	55,00 A4
M 10	S	50	103,00 A4
M 12	S	25	139,00 A4
M 14	S	25	260,00 A4
M 16	S	25	270,00 A4
M 18	S	25	370,00 A4
M 20	S	10	450,00 A4
M 22	S	10	720,00 A4
M 24	S	10	1130,00 A4
M 27	S	1	1400,00 A4
M 30	S	1	1640,00 A4



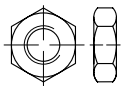
Hexagon nuts, ISO type 1, with metric left hand thread

Dimensions ➔ TI-61 Mech. properties ➔ TI-224

Steel ➔ S. 265

ISO 4032 ➔ replaces DIN 934

Dimensions	PU	Pieces	€/100/Mat.
ISO 04032.920			*
4035 A 2			
M 2	S	100	20,00 A2
M 2,5	S	100	17,40 A2
M 3	S	1000	12,80 A2
M 3	K	100	14,90 A2
M 4	S	1000	12,30 A2
M 4	K	100	14,40 A2
M 5	S	1000	12,30 A2
M 5	K	100	14,40 A2
M 6	S	1000	17,70 A2
M 6	K	100	19,70 A2
M 8	S	1000	32,50 A2
M 8	K	100	35,00 A2
M 10	S	100	69,00 A2
M 12	S	50	77,00 A2
M 14	S	25	208,00 A2
M 16	S	100	255,00 A2
M 16	K	25	260,00 A2
M 18	S	10	365,00 A2
M 20	S	10	465,00 A2
M 22	S	10	590,00 A2
M 24	S	10	790,00 A2



Hexagon nuts, shallow pattern with chamfers

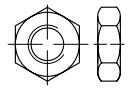
*M 5–M 39 = RAZ 3370 other ∅ = RAZ 170

Dimensions ➔ TI-62 Mech. properties ➔ TI-224

Steel ➔ S. 268
Brass ➔ S. 590

ISO 4035 ➔ replaces DIN 439 type B

Dimensions	PU	Pieces	€/100/Mat.
M 27	S	10	1070,00 A2
M 30	S	10	1490,00 A2
M 36	S	1	2650,00 A2
ISO 04035.940			*
4035 A 4			
M 2	S	100	30,00 A4
M 2,5	S	100	30,00 A4
M 3	S	100	17,40 A4
M 4	S	100	16,90 A4
M 5	S	100	19,50 A4
M 6	S	100	22,50 A4
M 8	S	100	42,00 A4
M 10	S	100	79,00 A4
M 12	S	50	169,00 A4
M 14	S	25	249,00 A4
M 16	S	25	320,00 A4
M 18	S	10	440,00 A4
M 20	S	10	580,00 A4
M 24	S	10	970,00 A4
M 27	S	10	1340,00 A4
M 30	S	10	1860,00 A4
M 36	S	1	3350,00 A4
M 42	S	1	5300,00 A4



Hexagon nuts, shallow pattern with chamfers

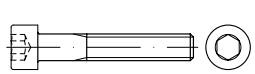
*M 5–M 39 = RAZ 3370 other ∅ = RAZ 170

Dimensions ➔ TI-62 Mech. properties ➔ TI-224

Steel ➔ S. 268
Brass ➔ S. 590

ISO 4035 ➔ replaces DIN 439 type B

Dimensions	PU	Pieces	€/100/Mat.
ISO 04762.920			RAZ 360
4762 A 2 – 70			
M 1,6 x 4*	S	100	85,80 A2
M 1,6 x 5*	S	100	92,00 A2
M 1,6 x 6*	S	100	98,10 A2
M 1,6 x 8*	S	100	106,00 A2
M 2 x 3*	S	100	42,40 A2
M 2 x 4*	S	100	26,50 A2
M 2 x 5*	S	100	26,50 A2
M 2 x 6*	S	100	26,50 A2
M 2 x 8*	S	100	26,50 A2
M 2 x 10*	S	100	27,60 A2
M 2 x 12*	S	100	29,10 A2
M 2 x 16*	S	100	33,20 A2
M 2 x 20*	S	100	39,80 A2



Hexagon socket head cap screws

Dimensions ➔ TI-12 Tightening torque ➔ TI-235
Mech. properties ➔ TI-224 Standard conversion ➔ TI-6

Steel ➔ S. 270

ISO 4762 ➔ replaces DIN 912 (compatible)

*Prop. class for dimensions different depending on production

Dimensions	PU	Pieces	€/100/Mat.
M 2,5 x 4*	S	100	26,50 A2
M 2,5 x 5*	S	100	26,50 A2
M 2,5 x 6*	S	100	26,50 A2
M 2,5 x 8*	S	100	26,50 A2
M 2,5 x 10*	S	100	27,60 A2
M 2,5 x 12*	S	100	29,10 A2
M 2,5 x 14*	S	100	41,40 A2
M 2,5 x 16*	S	100	33,20 A2
M 2,5 x 20*	S	100	39,80 A2
M 2,5 x 25*	S	100	53,10 A2
M 3 x 4*	S	100	19,90 A2
M 3 x 5*	S	100	16,30 A2
M 3 x 6*	S	100	12,20 A2
M 3 x 8*	S	100	10,70 A2
M 3 x 10*	S	100	9,20 A2
M 3 x 12*	S	100	9,20 A2
M 3 x 14*	S	100	7,75 A2
M 3 x 16*	S	100	6,15 A2
M 3 x 18*	S	100	8,40 A2
M 3 x 20*	S	100	6,70 A2
M 3 x 22*	S	100	8,75 A2
M 3 x 25*	S	100	7,05 A2
M 3 x 30*	S	100	9,10 A2
M 3 x 35*	S	100	10,70 A2
M 3 x 40*	S	100	11,70 A2
M 3 x 45*	S	100	20,90 A2
M 3 x 50*	S	100	20,90 A2
M 4 x 5*	S	100	19,40 A2
M 4 x 6*	S	200	13,20 A2
M 4 x 8*	S	500	10,70 A2
M 4 x 8*	K	200	11,95 A2
M 4 x 10*	S	500	9,95 A2
M 4 x 10*	K	200	12,00 A2
M 4 x 12*	S	500	9,95 A2
M 4 x 12*	K	200	12,00 A2
M 4 x 14*	S	500	7,75 A2
M 4 x 14*	K	200	9,00 A2
M 4 x 16*	S	500	6,15 A2
M 4 x 16*	K	200	8,20 A2
M 4 x 18*	S	500	8,40 A2
M 4 x 18*	K	200	9,65 A2
M 4 x 20*	S	500	6,70 A2
M 4 x 20*	K	200	8,80 A2
M 4 x 22*	S	500	8,75 A2
M 4 x 22*	K	200	10,00 A2
M 4 x 25*	S	500	7,05 A2
M 4 x 25*	K	200	8,30 A2
M 4 x 30*	S	500	9,10 A2
M 4 x 30*	K	200	10,35 A2
M 4 x 35*	S	500	9,40 A2
M 4 x 35*	K	200	10,65 A2
M 4 x 40*	S	500	10,50 A2
M 4 x 40*	K	200	11,75 A2
M 4 x 45*	S	200	20,90 A2
M 4 x 50*	S	200	20,90 A2
M 4 x 55*	S	200	124,00 A2
M 4 x 60*	S	200	136,00 A2
M 4 x 70*	S	200	177,00 A2
M 4 x 80*	S	200	450,00 A2
M 5 x 6*	S	100	23,50 A2
M 5 x 8*	S	100	10,70 A2
M 5 x 10*	S	500	9,95 A2
M 5 x 10*	K	100	12,00 A2
M 5 x 12*	S	500	9,95 A2
M 5 x 12*	K	100	12,00 A2
M 5 x 14*	S	500	8,85 A2
M 5 x 14*	K	100	11,35 A2
M 5 x 16*	S	500	6,95 A2
M 5 x 16*	K	100	9,00 A2
M 5 x 18*	S	500	8,70 A2
M 5 x 18*	K	100	11,20 A2
M 5 x 20*	S	500	7,15 A2
M 5 x 20*	K	100	9,20 A2
M 5 x 22*	S	500	9,80 A2
M 5 x 22*	K	100	12,30 A2

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	25*	S	500	7,75 A 2
M 5	x	25*	K	100	9,80 A 2
M 5	x	30*	S	500	9,10 A 2
M 5	x	30*	K	100	11,20 A 2
M 5	x	35*	S	500	10,10 A 2
M 5	x	35*	K	100	12,60 A 2
M 5	x	40*	S	500	11,00 A 2
M 5	x	40*	K	100	13,50 A 2
M 5	x	45*	S	100	14,70 A 2
M 5	x	50*	S	100	16,30 A 2
M 5	x	55*	S	100	23,50 A 2
M 5	x	60*	S	100	30,60 A 2
M 5	x	65*	S	100	43,90 A 2
M 5	x	70*	S	100	35,20 A 2
M 5	x	75*	S	100	94,10 A 2
M 5	x	80*	S	100	72,00 A 2
M 5	x	90*	S	100	246,00 A 2
M 5	x	100*	S	100	363,00 A 2
M 6	x	6*	S	100	24,50 A 2
M 6	x	8*	S	100	13,80 A 2
M 6	x	10*	S	500	12,20 A 2
M 6	x	10*	K	100	14,30 A 2
M 6	x	12*	S	500	12,20 A 2
M 6	x	12*	K	100	14,30 A 2
M 6	x	14*	S	500	12,30 A 2
M 6	x	14*	K	100	14,80 A 2
M 6	x	16*	S	500	8,60 A 2
M 6	x	16*	K	100	10,70 A 2
M 6	x	18*	S	500	11,70 A 2
M 6	x	18*	K	100	14,20 A 2
M 6	x	20*	S	500	9,55 A 2
M 6	x	20*	K	100	11,60 A 2
M 6	x	22*	S	100	12,20 A 2
M 6	x	25*	S	500	10,30 A 2
M 6	x	25*	K	100	12,40 A 2
M 6	x	30*	S	500	11,10 A 2
M 6	x	30*	K	100	13,20 A 2
M 6	x	35*	S	500	12,60 A 2
M 6	x	35*	K	100	14,70 A 2
M 6	x	40*	S	500	13,70 A 2
M 6	x	40*	K	100	15,80 A 2
M 6	x	45*	S	500	18,40 A 2
M 6	x	45*	K	100	20,90 A 2
M 6	x	50*	S	500	21,90 A 2
M 6	x	50*	K	100	24,40 A 2
M 6	x	55*	S	500	26,30 A 2
M 6	x	55*	K	100	28,80 A 2
M 6	x	60*	S	500	28,60 A 2
M 6	x	60*	K	100	31,10 A 2
M 6	x	65*	S	500	46,50 A 2
M 6	x	65*	K	100	49,00 A 2
M 6	x	70*	S	500	37,30 A 2
M 6	x	70*	K	100	39,80 A 2
M 6	x	75*	S	100	64,40 A 2
M 6	x	80*	S	100	51,10 A 2
M 6	x	85*	S	100	333,00 A 2
M 6	x	90*	S	100	86,90 A 2
M 6	x	95*	S	100	369,00 A 2
M 6	x	100*	S	100	97,10 A 2
M 6	x	110*	S	100	107,00 A 2
M 6	x	120*	S	100	127,00 A 2
M 6	x	130*	S	50	138,00 A 2
M 6	x	140*	S	50	158,00 A 2
M 6	x	150*	S	50	178,00 A 2
M 8	x	8*	S	100	102,00 A 2
M 8	x	10*	S	100	24,00 A 2
M 8	x	12*	S	200	22,40 A 2
M 8	x	14*	S	200	27,00 A 2
M 8	x	16*	S	200	19,40 A 2
M 8	x	16*	K	100	21,50 A 2
M 8	x	18*	S	200	22,40 A 2
M 8	x	20*	S	200	16,60 A 2
M 8	x	20*	K	100	18,70 A 2
M 8	x	22*	S	200	19,90 A 2
M 8	x	25*	S	200	15,50 A 2

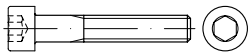
Dimensions			PU	Pieces	€/100/Mat.
M 8	x	25*	K	100	17,60 A 2
M 8	x	30*	S	200	17,30 A 2
M 8	x	30*	K	100	19,40 A 2
M 8	x	35*	S	200	18,90 A 2
M 8	x	35*	K	100	21,00 A 2
M 8	x	40*	S	200	20,70 A 2
M 8	x	40*	K	100	22,80 A 2
M 8	x	45*	S	200	23,50 A 2
M 8	x	50*	S	200	25,50 A 2
M 8	x	55*	S	200	34,50 A 2
M 8	x	60*	S	200	35,50 A 2
M 8	x	65*	S	200	72,00 A 2
M 8	x	70*	S	200	54,70 A 2
M 8	x	75*	S	200	107,00 A 2
M 8	x	80*	S	200	71,00 A 2
M 8	x	85*	S	100	135,00 A 2
M 8	x	90*	S	200	78,20 A 2
M 8	x	100*	S	200	87,40 A 2
M 8	x	110*	S	50	117,00 A 2
M 8	x	120*	S	50	138,00 A 2
M 8	x	130*	S	50	153,00 A 2
M 8	x	140*	S	50	168,00 A 2
M 8	x	150*	S	50	184,00 A 2
M 8	x	160*	S	50	485,00 A 2
M 8	x	170*	S	50	639,00 A 2
M 8	x	180*	S	50	894,00 A 2
M 10	x	12*	S	100	65,40 A 2
M 10	x	16*	S	100	36,80 A 2
M 10	x	18*	S	100	43,90 A 2
M 10	x	20*	S	100	28,80 A 2
M 10	x	25*	S	100	26,30 A 2
M 10	x	30*	S	100	27,80 A 2
M 10	x	35*	S	100	28,60 A 2
M 10	x	40*	S	100	31,10 A 2
M 10	x	45*	S	100	37,30 A 2
M 10	x	50*	S	100	39,30 A 2
M 10	x	55*	S	100	51,60 A 2
M 10	x	60*	S	100	55,20 A 2
M 10	x	65*	S	100	81,80 A 2
M 10	x	70*	S	100	65,40 A 2
M 10	x	75*	S	100	120,00 A 2
M 10	x	80*	S	100	80,20 A 2
M 10	x	90*	S	100	91,00 A 2
M 10	x	100*	S	100	111,00 A 2
M 10	x	110*	S	50	153,00 A 2
M 10	x	120*	S	50	168,00 A 2
M 10	x	130*	S	50	204,00 A 2
M 10	x	140*	S	50	245,00 A 2
M 10	x	150*	S	50	276,00 A 2
M 10	x	160*	S	50	818,00 A 2
M 10	x	170*	S	50	920,00 A 2
M 10	x	180*	S	50	1175,00 A 2
M 12	x	16*	S	100	93,50 A 2
M 12	x	20*	S	100	46,00 A 2
M 12	x	25*	S	100	43,40 A 2
M 12	x	30*	S	100	40,30 A 2
M 12	x	35*	S	100	42,90 A 2
M 12	x	40*	S	100	46,50 A 2
M 12	x	45*	S	100	51,60 A 2
M 12	x	50*	S	100	55,70 A 2
M 12	x	55*	S	100	73,10 A 2
M 12	x	60*	S	100	75,60 A 2
M 12	x	65*	S	100	120,00 A 2
M 12	x	70*	S	100	96,10 A 2
M 12	x	75*	S	100	184,00 A 2
M 12	x	80*	S	100	100,00 A 2
M 12	x	85*	S	100	317,00 A 2
M 12	x	90*	S	100	125,00 A 2
M 12	x	100*	S	100	144,00 A 2
M 12	x	110*	S	10	214,00 A 2
M 12	x	120*	S	10	235,00 A 2
M 12	x	130*	S	10	276,00 A 2
M 12	x	140*	S	1	332,00 A 2
M 12	x	150*	S	1	373,00 A 2
M 12	x	160*	S	1	1073,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	170*	S	1	1175,00 A 2
M 12	x	180*	S	1	1431,00 A 2
M 14	x	20*	S	50	460,00 A 2
M 14	x	25*	S	50	327,00 A 2
M 14	x	30*	S	50	243,00 A 2
M 14	x	35*	S	50	243,00 A 2
M 14	x	40*	S	50	243,00 A 2
M 14	x	45*	S	50	255,00 A 2
M 14	x	50*	S	50	279,00 A 2
M 14	x	55*	S	50	325,00 A 2
M 14	x	60*	S	50	337,00 A 2
M 14	x	65*	S	50	472,00 A 2
M 14	x	70*	S	50	472,00 A 2
M 14	x	80*	S	50	485,00 A 2
M 14	x	90*	S	1	547,00 A 2
M 14	x	100*	S	1	644,00 A 2
M 14	x	110*	S	1	1018,00 A 2
M 14	x	120*	S	1	1150,00 A 2
M 14	x	130*	S	1	1334,00 A 2
M 14	x	140*	S	1	1518,00 A 2
M 14	x	150*	S	1	1702,00 A 2
M 16	x	20*	S	50	291,00 A 2
M 16	x	25*	S	25	181,00 A 2
M 16	x	30*	S	25	135,00 A 2
M 16	x	35*	S	25	135,00 A 2
M 16	x	40*	S	25	135,00 A 2
M 16	x	45*	S	25	142,00 A 2
M 16	x	50*	S	25	155,00 A 2
M 16	x	55*	S	25	180,00 A 2
M 16	x	60*	S	25	187,00 A 2
M 16	x	65*	S	25	262,00 A 2
M 16	x	70*	S	25	262,00 A 2
M 16	x	75*	S	25	388,00 A 2
M 16	x	80*	S	25	269,00 A 2
M 16	x	90*	S	25	304,00 A 2
M 16	x	100*	S	25	359,00 A 2
M 16	x	110*	S	25	566,00 A 2
M 16	x	120*	S	25	639,00 A 2
M 16	x	130*	S	25	741,00 A 2
M 16	x	140*	S	1	843,00 A 2
M 16	x	150*	S	1	945,00 A 2
M 16	x	160*	S	1	1942,00 A 2
M 16	x	170*	S	1	2096,00 A 2
M 16	x	180*	S	1	2249,00 A 2
M 16	x	190*	S	1	2403,00 A 2
M 16	x	200*	S	1	2709,00 A 2
M 20	x	30*	S	10	480,00 A 2
M 20	x	35*	S	25	480,00 A 2
M 20	x	40*	S	25	311,00 A 2
M 20	x	45*	S	25	311,00 A 2
M 20	x	50*	S	25	311,00 A 2
M 20	x	55*	S	25	343,00 A 2
M 20	x	60*	S	25	352,00 A 2
M 20	x	65*	S	25	488,00 A 2
M 20	x	70*	S	25	399,00 A 2
M 20	x	75*	S	25	560,00 A 2
M 20	x	80*	S	1	455,00 A 2
M 20	x	90*	S	1	614,00 A 2
M 20	x	100*	S	1	711,00 A 2
M 20	x	110*	S	1	1095,00 A 2
M 20	x	120*	S	1	1248,00 A 2
M 20	x	130*	S	1	1559,00 A 2
M 20	x	140*	S	1	1758,00 A 2
M 20	x	150*	S	1	1994,00 A 2
M 20	x	160*	S	1	2965,00 A 2
M 20	x	170*	S	1	3170,00 A 2
M 20	x	180*	S	1	3425,00 A 2
M 20	x	190*	S	1	3681,00 A 2
M 20	x	200*	S	1	3936,00 A 2
M 24	x	40*	S	1	1406,00 A 2
M 24	x	45*	S	1	1406,00 A 2
M 24	x	50*	S	1	1098,00 A 2
M 24	x	55*	S	1	1585,00 A 2
M 24	x	60*	S	1	1149,00 A 2
M 24	x	65*	S	1	1641,00 A 2

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	70*	S	1	1171,00 A2
M 24	x	75*	S	1	1712,00 A2
M 24	x	80*	S	1	1262,00 A2
M 24	x	90*	S	1	1416,00 A2
M 24	x	100*	S	1	1518,00 A2
M 24	x	110*	S	1	1825,00 A2
M 24	x	120*	S	1	1994,00 A2
M 24	x	130*	S	1	2147,00 A2
M 24	x	140*	S	1	2300,00 A2
M 24	x	150*	S	1	2454,00 A2
M 24	x	160*	S	1	3834,00 A2
M 24	x	170*	S	1	4141,00 A2
M 24	x	180*	S	1	4397,00 A2
M 24	x	200*	S	1	4908,00 A2
M 30	x	50*	S	1	2965,00 A2
M 30	x	60*	S	1	3016,00 A2
M 30	x	70*	S	1	3221,00 A2
M 30	x	80*	S	1	3374,00 A2
M 30	x	90*	S	1	3579,00 A2
M 30	x	100*	S	1	3732,00 A2
M 30	x	110*	S	1	3936,00 A2
M 30	x	120*	S	1	4090,00 A2
M 30	x	130*	S	1	4294,00 A2
M 30	x	140*	S	1	4448,00 A2
M 30	x	150*	S	1	4652,00 A2

ISO	04762.940	RAZ 360
4762	**A 4 - 70**	



Hexagon socket head cap screws

Dimensions → TI-12 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 270

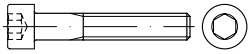
ISO 4762 → replaces DIN 912 (compatible)

*Prop. class for dimensions different depending on production

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	3*	S	100	55,20 A4
M 2	x	4*	S	100	30,60 A4
M 2	x	5*	S	100	30,60 A4
M 2	x	6*	S	100	30,60 A4
M 2	x	8*	S	100	30,60 A4
M 2	x	10*	S	100	32,20 A4
M 2	x	12*	S	100	33,70 A4
M 2	x	16*	S	100	38,30 A4
M 2,5	x	4*	S	100	30,60 A4
M 2,5	x	5*	S	100	30,60 A4
M 2,5	x	6*	S	100	30,60 A4
M 2,5	x	8*	S	100	30,60 A4
M 2,5	x	10*	S	100	32,20 A4
M 2,5	x	12*	S	100	33,70 A4
M 2,5	x	14*	S	100	47,00 A4
M 2,5	x	16*	S	100	38,30 A4
M 2,5	x	20*	S	100	47,50 A4
M 3	x	4*	S	100	24,50 A4
M 3	x	5*	S	100	23,50 A4
M 3	x	6*	S	100	17,80 A4
M 3	x	8*	S	100	14,80 A4
M 3	x	10*	S	100	12,70 A4
M 3	x	12*	S	100	12,70 A4
M 3	x	14*	S	100	12,70 A4
M 3	x	16*	S	100	8,70 A4
M 3	x	18*	S	100	11,20 A4
M 3	x	20*	S	100	9,20 A4
M 3	x	22*	S	100	11,80 A4
M 3	x	25*	S	100	9,80 A4
M 3	x	30*	S	100	11,40 A4
M 3	x	35*	S	100	15,30 A4
M 3	x	40*	S	100	16,80 A4
M 3	x	45*	S	100	29,60 A4
M 3	x	50*	S	100	29,60 A4
M 4	x	5*	S	100	31,10 A4
M 4	x	6*	S	200	18,40 A4
M 4	x	8*	S	500	14,80 A4
M 4	x	8*	K	200	16,05 A4
M 4	x	10*	S	500	13,60 A4
M 4	x	10*	K	200	14,85 A4
M 4	x	12*	S	500	13,60 A4
M 4	x	12*	K	200	14,85 A4
M 4	x	14*	S	500	13,60 A4
M 4	x	14*	K	200	14,85 A4
M 4	x	16*	S	500	8,70 A4
M 4	x	16*	K	200	9,95 A4
M 4	x	18*	S	500	11,20 A4
M 4	x	18*	K	200	12,45 A4
M 4	x	20*	S	500	9,20 A4
M 4	x	20*	K	200	10,45 A4
M 4	x	22*	S	500	11,80 A4
M 4	x	25*	S	500	9,80 A4
M 4	x	25*	K	200	11,05 A4
M 4	x	30*	S	500	11,40 A4
M 4	x	30*	K	200	12,65 A4
M 4	x	35*	S	500	15,20 A4
M 4	x	35*	K	200	16,45 A4
M 4	x	40*	S	500	18,20 A4
M 4	x	40*	K	200	19,45 A4
M 4	x	45*	S	200	29,60 A4
M 4	x	50*	S	200	29,60 A4
M 4	x	55*	S	200	111,00 A4
M 4	x	60*	S	200	146,00 A4
M 4	x	70*	S	200	187,00 A4
M 5	x	6*	S	100	30,60 A4
M 5	x	8*	S	100	17,60 A4
M 5	x	10*	S	500	13,60 A4
M 5	x	10*	K	100	16,10 A4
M 5	x	12*	S	500	13,60 A4
M 5	x	12*	K	100	16,10 A4
M 5	x	14*	S	500	13,60 A4
M 5	x	14*	K	100	16,10 A4
M 5	x	16*	S	500	9,55 A4
M 5	x	16*	K	100	12,05 A4
M 5	x	18*	S	500	13,20 A4
M 5	x	18*	K	100	15,70 A4
M 5	x	20*	S	500	10,40 A4
M 5	x	20*	K	100	12,90 A4
M 5	x	22*	S	500	13,60 A4
M 5	x	22*	K	100	16,10 A4
M 5	x	25*	S	500	10,60 A4
M 5	x	25*	K	100	13,10 A4
M 5	x	30*	S	500	12,70 A4
M 5	x	30*	K	100	15,20 A4
M 5	x	35*	S	500	15,80 A4
M 5	x	35*	K	100	18,30 A4
M 5	x	40*	S	500	17,30 A4
M 5	x	40*	K	100	19,80 A4
M 5	x	45*	S	100	18,90 A4
M 5	x	50*	S	100	21,40 A4
M 5	x	55*	S	100	29,60 A4
M 5	x	60*	S	100	37,80 A4
M 5	x	70*	S	100	44,90 A4
M 5	x	80*	S	100	101,00 A4
M 5	x	90*	S	100	276,00 A4
M 5	x	100*	S	100	483,00 A4
M 6	x	8*	S	100	17,60 A4
M 6	x	10*	S	500	15,80 A4
M 6	x	10*	K	100	18,30 A4
M 6	x	12*	S	500	16,10 A4
M 6	x	12*	K	100	18,60 A4
M 6	x	14*	S	500	17,60 A4
M 6	x	14*	K	100	20,10 A4
M 6	x	16*	S	500	11,90 A4
M 6	x	16*	K	100	14,40 A4
M 6	x	18*	S	500	16,00 A4
M 6	x	18*	K	100	18,50 A4
M 6	x	20*	S	500	12,80 A4
M 6	x	20*	K	100	15,30 A4
M 6	x	22*	S	500	17,20 A4
M 6	x	22*	K	100	19,70 A4
M 6	x	25*	S	500	14,10 A4
M 6	x	25*	K	100	16,60 A4
M 6	x	30*	S	500	15,10 A4
M 6	x	30*	K	100	17,60 A4
M 6	x	35*	S	500	15,90 A4
M 6	x	35*	K	100	18,40 A4
M 6	x	40*	S	500	18,30 A4
M 6	x	40*	K	100	20,80 A4
M 6	x	45*	S	500	24,10 A4
M 6	x	45*	K	100	26,60 A4
M 6	x	50*	S	500	27,60 A4
M 6	x	50*	K	100	30,10 A4
M 6	x	55*	S	500	34,20 A4
M 6	x	60*	S	500	35,70 A4
M 6	x	60*	K	100	38,20 A4
M 6	x	65*	S	500	61,30 A4
M 6	x	65*	K	100	63,80 A4
M 6	x	70*	S	500	41,40 A4
M 6	x	70*	K	100	43,90 A4
M 6	x	75*	S	100	74,60 A4
M 6	x	80*	S	100	64,90 A4
M 6	x	90*	S	100	132,00 A4
M 6	x	100*	S	100	148,00 A4
M 6	x	110*	S	100	161,00 A4
M 6	x	120*	S	100	191,00 A4
M 6	x	130*	S	100	219,00 A4
M 6	x	140*	S	100	250,00 A4
M 6	x	150*	S	100	281,00 A4
M 8	x	10*	S	100	29,10 A4
M 8	x	12*	S	200	27,30 A4
M 8	x	14*	S	200	31,90 A4
M 8	x	16*	S	200	23,70 A4
M 8	x	18*	S	200	26,80 A4
M 8	x	20*	S	200	18,40 A4
M 8	x	22*	S	200	25,00 A4
M 8	x	25*	S	200	19,90 A4
M 8	x	30*	S	200	20,90 A4
M 8	x	35*	S	200	23,00 A4
M 8	x	40*	S	200	29,10 A4
M 8	x	45*	S	200	34,20 A4
M 8	x	50*	S	200	38,80 A4
M 8	x	55*	S	200	43,90 A4
M 8	x	60*	S	200	46,00 A4
M 8	x	65*	S	200	89,90 A4
M 8	x	70*	S	200	72,00 A4
M 8	x	75*	S	200	138,00 A4
M 8	x	80*	S	200	89,90 A4
M 8	x	90*	S	200	102,00 A4
M 8	x	100*	S	200	115,00 A4
M 8	x	110*	S	50	184,00 A4
M 8	x	120*	S	50	214,00 A4
M 8	x	130*	S	50	235,00 A4
M 8	x	140*	S	50	265,00 A4
M 8	x	150*	S	50	296,00 A4
M 8	x	160*	S	50	728,00 A4
M 8	x	170*	S	50	920,00 A4
M 8	x	180*	S	50	1227,00 A4
M 10	x	10*	S	100	225,00 A4
M 10	x	12*	S	100	72,00 A4
M 10	x	16*	S	100	43,40 A4
M 10	x	18*	S	100	57,20 A4
M 10	x	20*	S	100	34,70 A4
M 10	x	25*	S	100	33,20 A4
M 10	x	30*	S	100	34,70 A4
M 10	x	35*	S	100	37,30 A4
M 10	x	40*	S	100	39,80 A4
M 10	x	45*	S	100	47,50 A4
M 10	x	50*	S	100	53,60 A4
M 10	x	55*	S	100	63,40 A4
M 10	x	60*	S	100	68,50 A4

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	65*	S	100	98,60 A4
M 10	x	70*	S	100	79,20 A4
M 10	x	75*	S	100	139,00 A4
M 10	x	80*	S	100	93,50 A4
M 10	x	90*	S	100	115,00 A4
M 10	x	100*	S	100	141,00 A4
M 10	x	110*	S	50	245,00 A4
M 10	x	120*	S	50	265,00 A4
M 10	x	130*	S	1	317,00 A4
M 10	x	140*	S	1	383,00 A4
M 10	x	150*	S	1	424,00 A4
M 10	x	160*	S	1	1145,00 A4
M 10	x	170*	S	1	1288,00 A4
M 10	x	180*	S	1	1636,00 A4
M 12	x	16*	S	100	104,00 A4
M 12	x	20*	S	100	73,60 A4
M 12	x	25*	S	100	70,50 A4
M 12	x	30*	S	100	53,10 A4
M 12	x	35*	S	100	57,20 A4
M 12	x	40*	S	100	61,30 A4
M 12	x	45*	S	100	69,50 A4
M 12	x	50*	S	100	74,60 A4
M 12	x	55*	S	100	93,50 A4
M 12	x	60*	S	100	100,00 A4
M 12	x	65*	S	100	133,00 A4
M 12	x	70*	S	100	111,00 A4
M 12	x	75*	S	100	199,00 A4
M 12	x	80*	S	100	134,00 A4
M 12	x	90*	S	100	156,00 A4
M 12	x	100*	S	100	184,00 A4
M 12	x	110*	S	10	332,00 A4
M 12	x	120*	S	10	363,00 A4
M 12	x	130*	S	10	434,00 A4
M 12	x	140*	S	1	511,00 A4
M 12	x	150*	S	1	587,00 A4
M 12	x	160*	S	1	1431,00 A4
M 12	x	170*	S	1	1533,00 A4
M 12	x	180*	S	1	1661,00 A4
M 14	x	20*	S	50	541,00 A4
M 14	x	25*	S	50	403,00 A4
M 14	x	30*	S	50	353,00 A4
M 14	x	35*	S	50	353,00 A4
M 14	x	40*	S	50	353,00 A4
M 14	x	45*	S	50	386,00 A4
M 14	x	50*	S	50	407,00 A4
M 14	x	55*	S	50	467,00 A4
M 14	x	60*	S	50	522,00 A4
M 14	x	65*	S	50	681,00 A4
M 14	x	70*	S	1	570,00 A4
M 14	x	80*	S	1	784,00 A4
M 14	x	90*	S	1	889,00 A4
M 14	x	100*	S	1	1007,00 A4
M 14	x	110*	S	1	1564,00 A4
M 14	x	120*	S	1	1840,00 A4
M 14	x	130*	S	1	2116,00 A4
M 14	x	140*	S	1	2392,00 A4
M 14	x	150*	S	1	2760,00 A4
M 16	x	20*	S	50	331,00 A4
M 16	x	25*	S	25	224,00 A4
M 16	x	30*	S	25	196,00 A4
M 16	x	35*	S	25	196,00 A4
M 16	x	40*	S	25	196,00 A4
M 16	x	45*	S	25	214,00 A4
M 16	x	50*	S	25	226,00 A4
M 16	x	55*	S	25	259,00 A4
M 16	x	60*	S	25	290,00 A4
M 16	x	65*	S	25	378,00 A4
M 16	x	70*	S	25	317,00 A4
M 16	x	75*	S	1	613,00 A4
M 16	x	80*	S	25	436,00 A4
M 16	x	90*	S	25	494,00 A4
M 16	x	100*	S	25	560,00 A4
M 16	x	110*	S	1	869,00 A4
M 16	x	120*	S	1	1022,00 A4
M 16	x	130*	S	1	1175,00 A4
M 16	x	140*	S	1	1329,00 A4
M 16	x	150*	S	1	1533,00 A4
M 16	x	160*	S	1	2198,00 A4
M 16	x	170*	S	1	2351,00 A4
M 16	x	180*	S	1	2505,00 A4
M 16	x	190*	S	1	2658,00 A4
M 16	x	200*	S	1	2863,00 A4
M 16	x	220*	S	1	4450,00 A4
M 16	x	240*	S	1	5250,00 A4
M 16	x	250*	S	1	5750,00 A4
M 16	x	260*	S	1	6400,00 A4
M 16	x	280*	S	1	7700,00 A4
M 16	x	300*	S	1	9250,00 A4
M 18	x	40*	S	1	935,00 A4
M 18	x	45*	S	1	935,00 A4
M 18	x	50*	S	1	1058,00 A4
M 18	x	55*	S	1	1140,00 A4
M 18	x	60*	S	1	1232,00 A4
M 18	x	65*	S	1	1595,00 A4
M 18	x	70*	S	1	1339,00 A4
M 18	x	75*	S	1	2060,00 A4
M 18	x	80*	S	1	1717,00 A4
M 18	x	90*	S	1	1968,00 A4
M 18	x	100*	S	1	2208,00 A4
M 18	x	110*	S	1	3420,00 A4
M 18	x	120*	S	1	3844,00 A4
M 20	x	30*	S	1	766,00 A4
M 20	x	35*	S	1	766,00 A4
M 20	x	40*	S	10	495,00 A4
M 20	x	45*	S	10	536,00 A4
M 20	x	50*	S	10	572,00 A4
M 20	x	55*	S	1	608,00 A4
M 20	x	60*	S	1	659,00 A4
M 20	x	65*	S	1	1073,00 A4
M 20	x	70*	S	1	710,00 A4
M 20	x	75*	S	1	1329,00 A4
M 20	x	80*	S	1	920,00 A4
M 20	x	90*	S	1	1073,00 A4
M 20	x	100*	S	1	1227,00 A4
M 20	x	110*	S	1	1789,00 A4
M 20	x	120*	S	1	1942,00 A4
M 20	x	130*	S	1	2403,00 A4
M 20	x	140*	S	1	2709,00 A4
M 20	x	150*	S	1	3067,00 A4
M 20	x	160*	S	1	3323,00 A4
M 20	x	170*	S	1	3476,00 A4
M 20	x	180*	S	1	3630,00 A4
M 20	x	190*	S	1	3834,00 A4
M 20	x	200*	S	1	4090,00 A4
M 24	x	40*	S	1	2045,00 A4
M 24	x	45*	S	1	2045,00 A4
M 24	x	50*	S	1	1789,00 A4
M 24	x	55*	S	1	2351,00 A4
M 24	x	60*	S	1	1789,00 A4
M 24	x	65*	S	1	2454,00 A4
M 24	x	70*	S	1	1994,00 A4
M 24	x	75*	S	1	2607,00 A4
M 24	x	80*	S	1	2147,00 A4
M 24	x	90*	S	1	2300,00 A4
M 24	x	100*	S	1	2556,00 A4
M 24	x	110*	S	1	2812,00 A4
M 24	x	120*	S	1	3067,00 A4
M 24	x	130*	S	1	3323,00 A4
M 24	x	140*	S	1	3579,00 A4
M 24	x	150*	S	1	3834,00 A4
M 24	x	160*	S	1	4141,00 A4
M 24	x	180*	S	1	4550,00 A4
M 24	x	190*	S	1	4806,00 A4
M 24	x	200*	S	1	5010,00 A4
M 24	x	210*	S	1	7900,00 A4
M 24	x	220*	S	1	8700,00 A4
M 24	x	230*	S	1	9800,00 A4
M 24	x	240*	S	1	11300,00 A4
M 30	x	50*	S	1	3374,00 A4
M 30	x	60*	S	1	3425,00 A4
M 30	x	70*	S	1	3681,00 A4
M 30	x	80*	S	1	3885,00 A4
M 30	x	90*	S	1	4090,00 A4
M 30	x	100*	S	1	4294,00 A4
M 30	x	110*	S	1	4499,00 A4
M 30	x	120*	S	1	4703,00 A4
M 30	x	130*	S	1	4908,00 A4
M 30	x	140*	S	1	5112,00 A4
M 30	x	150*	S	1	5317,00 A4
M 30	x	160*	S	1	6800,00 A4
M 30	x	170*	S	1	8300,00 A4
M 30	x	180*	S	1	10200,00 A4
M 30	x	200*	S	1	13100,00 A4

ISO	04762.948	RAZ 361
4762	**A 4 - 80**	



Hexagon socket head cap screws

High strength (strongly cold worked)

Dimensions → TI-12 Tightening torque → TI-235
Mech. properties → TI-224 Standard conversion → TI-6

Steel → S. 270

ISO 4762 → replaces DIN 912 (compatible)

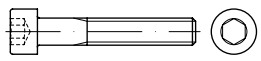
M 6	x	8	S	100	59,00 A4-80
M 6	x	10	S	100	59,00 A4-80
M 6	x	12	S	100	48,50 A4-80
M 6	x	14	S	100	60,00 A4-80
M 6	x	16	S	100	36,00 A4-80
M 6	x	20	S	100	39,50 A4-80
M 6	x	25	S	100	43,00 A4-80
M 6	x	30	S	100	46,50 A4-80
M 6	x	35	S	100	48,50 A4-80
M 6	x	40	S	100	56,00 A4-80
M 6	x	45	S	100	89,00 A4-80
M 6	x	50	S	100	83,00 A4-80
M 6	x	55	S	100	103,00 A4-80
M 6	x	60	S	100	108,00 A4-80
M 6	x	70	S	100	125,00 A4-80
M 8	x	10	S	100	99,00 A4-80
M 8	x	12	S	100	116,00 A4-80
M 8	x	16	S	100	72,00 A4-80
M 8	x	20	S	100	56,00 A4-80
M 8	x	25	S	100	60,00 A4-80
M 8	x	30	S	100	63,00 A4-80
M 8	x	35	S	100	70,00 A4-80
M 8	x	40	S	100	88,00 A4-80
M 8	x	45	S	100	103,00 A4-80
M 8	x	50	S	100	117,00 A4-80
M 8	x	55	S	100	132,00 A4-80
M 8	x	60	S	100	139,00 A4-80
M 8	x	70	S	100	217,00 A4-80
M 8	x	80	S	50	270,00 A4-80
M 8	x	90	S	50	310,00 A4-80
M 8	x	100	S	50	350,00 A4-80
M 10	x	16	S	100	131,00 A4-80
M 10	x	20	S	100	132,00 A4-80
M 10	x	25	S	100	100,00 A4-80
M 10	x	30	S	100	105,00 A4-80
M 10	x	35	S	100	114,00 A4-80
M 10	x	40	S	100	120,00 A4-80
M 10	x	45	S	100	143,00 A4-80
M 10	x	50	S	100	162,00 A4-80
M 10	x	55	S	50	191,00 A4-80
M 10	x	60	S	50	206,00 A4-80

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	70	S	50	238,00 A4-80
M 10	x	80	S	50	285,00 A4-80
M 10	x	90	S	50	350,00 A4-80
M 10	x	100	S	50	430,00 A4-80
M 12	x	20	S	100	221,00 A4-80
M 12	x	25	S	100	212,00 A4-80
M 12	x	30	S	100	160,00 A4-80
M 12	x	35	S	50	172,00 A4-80
M 12	x	40	S	50	185,00 A4-80
M 12	x	45	S	50	209,00 A4-80
M 12	x	50	S	50	224,00 A4-80
M 12	x	55	S	50	285,00 A4-80
M 12	x	60	S	50	305,00 A4-80
M 12	x	70	S	50	335,00 A4-80
M 12	x	80	S	50	410,00 A4-80
M 12	x	90	S	50	480,00 A4-80
M 12	x	100	S	50	560,00 A4-80
M 16	x	20	S	50	1450,00 A4-80
M 16	x	25	S	50	680,00 A4-80
M 16	x	30	S	50	600,00 A4-80
M 16	x	35	S	50	600,00 A4-80
M 16	x	40	S	50	600,00 A4-80
M 16	x	45	S	50	650,00 A4-80
M 16	x	50	S	50	690,00 A4-80
M 16	x	55	S	25	790,00 A4-80
M 16	x	60	S	25	880,00 A4-80
M 16	x	70	S	25	960,00 A4-80
M 16	x	80	S	1	1320,00 A4-80
M 16	x	90	S	1	1490,00 A4-80
M 16	x	100	S	1	1690,00 A4-80
M 20	x	30	S	1	2310,00 A4-80
M 20	x	35	S	1	2030,00 A4-80
M 20	x	40	S	1	1490,00 A4-80
M 20	x	45	S	1	1620,00 A4-80
M 20	x	50	S	1	1720,00 A4-80
M 20	x	60	S	1	1980,00 A4-80
M 20	x	70	S	1	2140,00 A4-80
M 20	x	80	S	1	2800,00 A4-80
M 20	x	90	S	1	3250,00 A4-80
M 20	x	100	S	1	3700,00 A4-80

ISO 04762.941 RAZ 2010

4762 A 4 BUMAX88*



Hexagon socket head cap screws

Dimension from M 8 and lenght L > 3xd
approved for use acc. to pressure equipment directive ➔ certificate 3.1 on request

Dimensions ➔ TI-12 Tightening torque ➔ TI-236
Mech. properties ➔ TI-225

Steel ➔ S. 270

*Mechanical properties ~ Class 8.8

DGRL Zulassung

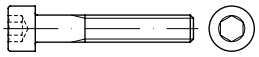
M 3	x	6	S	500	49,20 A4-88
M 3	x	8	S	500	52,00 A4-88
M 3	x	10	S	500	60,00 A4-88
M 3	x	12	S	500	60,00 A4-88
M 3	x	16	S	500	62,00 A4-88
M 3	x	20	S	500	63,00 A4-88
M 3	x	25	S	500	66,00 A4-88
M 3	x	30	S	500	115,00 A4-88
M 4	x	6	S	200	55,00 A4-88
M 4	x	8	S	200	58,00 A4-88

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	10	S	200	60,00 A4-88
M 4	x	12	S	200	62,00 A4-88
M 4	x	16	S	200	66,00 A4-88
M 4	x	20	S	200	69,00 A4-88
M 4	x	25	S	200	74,00 A4-88
M 4	x	30	S	200	91,00 A4-88
M 4	x	35	S	200	118,00 A4-88
M 4	x	40	S	200	123,00 A4-88
M 4	x	50	S	200	133,00 A4-88
M 5	x	10	S	100	89,00 A4-88
M 5	x	12	S	100	92,00 A4-88
M 5	x	16	S	100	96,00 A4-88
M 5	x	20	S	100	100,00 A4-88
M 5	x	25	S	100	107,00 A4-88
M 5	x	30	S	100	148,00 A4-88
M 5	x	35	S	100	154,00 A4-88
M 5	x	40	S	100	161,00 A4-88
M 5	x	45	S	100	168,00 A4-88
M 5	x	50	S	100	174,00 A4-88
M 5	x	60	S	100	345,00 A4-88
M 5	x	70	S	100	435,00 A4-88
M 6	x	12	S	100	102,00 A4-88
M 6	x	14	S	100	105,00 A4-88
M 6	x	16	S	100	107,00 A4-88
M 6	x	20	S	100	113,00 A4-88
M 6	x	25	S	100	120,00 A4-88
M 6	x	30	S	100	129,00 A4-88
M 6	x	35	S	100	174,00 A4-88
M 6	x	40	S	100	183,00 A4-88
M 6	x	45	S	100	191,00 A4-88
M 6	x	50	S	100	201,00 A4-88
M 6	x	60	S	100	219,00 A4-88
M 6	x	70	S	100	236,00 A4-88
M 6	x	80	S	100	405,00 A4-88
M 6	x	90	S	100	415,00 A4-88
M 8	x	16	S	50	160,00 A4-88
M 8	x	20	S	50	172,00 A4-88
M 8	x	25	S	50	186,00 A4-88
M 8	x	30	S	50	204,00 A4-88
M 8	x	35	S	50	222,00 A4-88
M 8	x	40	S	50	240,00 A4-88
M 8	x	45	S	50	260,00 A4-88
M 8	x	50	S	50	280,00 A4-88
M 8	x	60	S	50	315,00 A4-88
M 8	x	70	S	50	360,00 A4-88
M 8	x	80	S	50	690,00 A4-88
M 10	x	16	S	50	380,00 A4-88
M 10	x	20	S	50	340,00 A4-88
M 10	x	25	S	50	360,00 A4-88
M 10	x	30	S	50	385,00 A4-88
M 10	x	35	S	50	415,00 A4-88
M 10	x	40	S	50	435,00 A4-88
M 10	x	45	S	50	600,00 A4-88
M 10	x	50	S	50	630,00 A4-88
M 10	x	55	S	50	680,00 A4-88
M 10	x	60	S	50	690,00 A4-88
M 10	x	65	S	50	710,00 A4-88
M 10	x	70	S	50	740,00 A4-88
M 10	x	75	S	50	820,00 A4-88
M 10	x	80	S	50	840,00 A4-88
M 10	x	90	S	50	900,00 A4-88
M 10	x	100	S	50	960,00 A4-88
M 10	x	120	S	50	1410,00 A4-88
M 12	x	20	S	25	455,00 A4-88
M 12	x	25	S	25	485,00 A4-88
M 12	x	30	S	25	520,00 A4-88
M 12	x	35	S	25	550,00 A4-88
M 12	x	40	S	25	580,00 A4-88
M 12	x	45	S	25	620,00 A4-88
M 12	x	50	S	25	660,00 A4-88
M 12	x	60	S	25	780,00 A4-88
M 12	x	70	S	25	850,00 A4-88
M 12	x	80	S	25	980,00 A4-88
M 12	x	90	S	25	1090,00 A4-88
M 12	x	100	S	25	1180,00 A4-88

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	120	S	25	1350,00 A4-88
M 16	x	30	S	25	900,00 A4-88
M 16	x	35	S	25	960,00 A4-88
M 16	x	40	S	25	1010,00 A4-88
M 16	x	45	S	25	1090,00 A4-88
M 16	x	50	S	25	1150,00 A4-88
M 16	x	55	S	25	1240,00 A4-88
M 16	x	60	S	25	1320,00 A4-88
M 16	x	80	S	25	1750,00 A4-88
M 16	x	90	S	25	1950,00 A4-88
M 16	x	100	S	25	2060,00 A4-88
M 16	x	110	S	25	2220,00 A4-88
M 16	x	120	S	25	2370,00 A4-88
M 20	x	30	S	10	2390,00 A4-88
M 20	x	40	S	10	2410,00 A4-88
M 20	x	45	S	10	2550,00 A4-88
M 20	x	50	S	10	2650,00 A4-88
M 20	x	60	S	10	2850,00 A4-88
M 20	x	70	S	10	3050,00 A4-88
M 20	x	80	S	10	3350,00 A4-88
M 20	x	90	S	10	3600,00 A4-88
M 20	x	100	S	10	3800,00 A4-88
M 24	x	50	S	10	3900,00 A4-88
M 24	x	60	S	10	4200,00 A4-88
M 24	x	70	S	10	4500,00 A4-88
M 24	x	80	S	10	4600,00 A4-88
M 24	x	90	S	10	5200,00 A4-88
M 24	x	100	S	10	5400,00 A4-88
M 24	x	120	S	10	6300,00 A4-88
M 24	x	140	S	10	6900,00 A4-88
M 24	x	150	S	10	7500,00 A4-88

ISO 04762.942 RAZ 2010

4762 A 4 BUMAX109*



Hexagon socket head cap screws

Dimensions ➔ TI-12 Tightening torque ➔ TI-236
Mech. properties ➔ TI-225

Steel ➔ S. 270

*Mechanical properties ~ Class 10.9

M 4	x	12	S	200	740,00 A4-109
M 4	x	20	S	200	106,00 A4-109
M 6	x	20	S	100	185,00 A4-109
M 6	x	30	S	100	206,00 A4-109
M 6	x	40	S	100	270,00 A4-109
M 6	x	50	S	100	290,00 A4-109
M 6	x	60	S	100	315,00 A4-109
M 6	x	70	S	100	335,00 A4-109
M 6	x	80	S	100	1230,00 A4-109
M 8	x	20	S	50	240,00 A4-109
M 8	x	30	S	50	275,00 A4-109
M 8	x	40	S	50	310,00 A4-109
M 8	x	50	S	50	350,00 A4-109
M 8	x	60	S	50	350,00 A4-109
M 8	x	70	S	50	425,00 A4-109
M 8	x	80	S	50	630,00 A4-109
M 8	x	90	S	50	970,00 A4-109
M 10	x	20	S	50	430,00 A4-109
M 10	x	30	S	50	495,00 A4-109
M 10	x	40	S	50	530,00 A4-109
M 10	x	50	S	50	790,00 A4-109
M 10	x	60	S	50	870,00 A4-109
M 10	x	70	S	50	850,00 A4-109
M 10	x	80	S	50	1010,00 A4-109
M 10	x	90	S	50	1070,00 A4-109

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	100	S	50	1120,00 A4-109
M 12	x	30	S	25	710,00 A4-109
M 12	x	40	S	25	780,00 A4-109
M 12	x	50	S	25	860,00 A4-109
M 12	x	60	S	25	990,00 A4-109
M 12	x	70	S	25	1060,00 A4-109
M 12	x	80	S	25	1180,00 A4-109
M 12	x	90	S	25	1290,00 A4-109
M 12	x	100	S	25	1390,00 A4-109
M 12	x	120	S	25	1580,00 A4-109
M 16	x	25	S	25	2800,00 A4-109
M 16	x	30	S	25	3000,00 A4-109
M 16	x	40	S	25	1300,00 A4-109
M 16	x	50	S	25	1390,00 A4-109
M 16	x	60	S	25	1510,00 A4-109
M 16	x	80	S	25	1980,00 A4-109
M 16	x	90	S	25	2200,00 A4-109
M 16	x	100	S	25	2310,00 A4-109
M 16	x	130	S	25	2850,00 A4-109
M 16	x	140	S	25	2950,00 A4-109

ISO	04766.910	RAZ 230
4766	**A 1**	

Slotted grub screws with flat point

Dimensions → TI-19

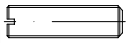
Steel → S. 287
Brass, plastic → S. 590

ISO 4766 → replaces DIN 551 (compatible)

M 3	x	3	S	50	15,00 A1
M 3	x	4	S	50	15,20 A1
M 3	x	5	S	50	16,00 A1
M 3	x	6	S	50	17,10 A1
M 3	x	8	S	50	18,00 A1
M 3	x	10	S	50	18,80 A1
M 4	x	4	S	50	16,60 A1
M 4	x	5	S	50	16,60 A1
M 4	x	6	S	50	17,40 A1
M 4	x	8	S	50	18,50 A1
M 4	x	10	S	50	19,50 A1
M 4	x	12	S	50	20,50 A1
M 4	x	16	S	50	21,70 A1
M 5	x	5	S	50	18,00 A1
M 5	x	6	S	50	19,00 A1
M 5	x	8	S	50	20,30 A1
M 5	x	10	S	50	21,40 A1
M 5	x	12	S	50	22,70 A1
M 5	x	16	S	50	24,90 A1
M 5	x	20	S	25	32,50 A1
M 5	x	25	S	25	38,00 A1
M 6	x	6	S	25	22,80 A1
M 6	x	8	S	25	23,80 A1
M 6	x	10	S	25	25,50 A1
M 6	x	12	S	25	27,50 A1
M 6	x	16	S	25	29,00 A1
M 6	x	20	S	25	33,00 A1
M 6	x	25	S	25	38,00 A1
M 6	x	30	S	25	44,50 A1
M 6	x	40	S	25	51,00 A1
M 8	x	8	S	50	30,00 A1
M 8	x	10	S	25	36,50 A1
M 8	x	12	S	25	40,00 A1
M 8	x	16	S	25	44,50 A1

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	20	S	25	53,00 A1
M 8	x	25	S	25	63,00 A1
M 8	x	30	S	25	69,00 A1
M 8	x	35	S	25	73,00 A1
M 8	x	40	S	25	79,00 A1
M 10	x	10	S	10	64,00 A1
M 10	x	12	S	10	64,00 A1
M 10	x	16	S	10	68,00 A1
M 10	x	20	S	10	84,00 A1
M 10	x	25	S	10	95,00 A1
M 10	x	30	S	10	101,00 A1
M 10	x	35	S	10	108,00 A1
M 10	x	40	S	10	114,00 A1

ISO	04766.940	RAZ 230
4766	**A 4**	



Slotted grub screws with flat point

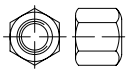
Dimensions → TI-19

Steel → S. 287
Brass, plastic → S. 590

ISO 4766 → replaces DIN 551 (compatible)

M 3	x	4	S	50	59,00 A4
M 3	x	6	S	50	67,00 A4
M 3	x	8	S	50	70,00 A4
M 3	x	10	S	50	74,00 A4
M 4	x	5	S	50	41,50 A4
M 4	x	6	S	50	43,50 A4
M 4	x	10	S	50	49,00 A4
M 4	x	16	S	50	55,00 A4
M 4	x	20	S	50	64,00 A4
M 4	x	25	S	50	77,00 A4
M 4	x	30	S	50	88,00 A4
M 5	x	5	S	50	166,00 A4
M 5	x	6	S	50	47,50 A4
M 5	x	8	S	50	51,00 A4
M 5	x	10	S	50	54,00 A4
M 5	x	12	S	25	62,00 A4
M 5	x	16	S	25	67,00 A4
M 5	x	20	S	25	80,00 A4
M 6	x	5	S	25	52,00 A4
M 6	x	6	S	25	56,00 A4
M 6	x	8	S	25	58,00 A4
M 6	x	10	S	25	62,00 A4
M 6	x	12	S	25	67,00 A4
M 6	x	16	S	25	71,00 A4
M 6	x	20	S	25	82,00 A4
M 6	x	25	S	25	95,00 A4
M 6	x	30	S	25	111,00 A4
M 8	x	6	S	25	80,00 A4
M 8	x	8	S	25	80,00 A4
M 8	x	10	S	25	91,00 A4
M 8	x	12	S	25	100,00 A4
M 8	x	16	S	25	111,00 A4
M 8	x	20	S	25	132,00 A4
M 8	x	30	S	25	174,00 A4
M 8	x	40	S	25	200,00 A4

Dimensions	PU	Pieces	€/100/Mat.
DIN	06330.942		RAZ 570
6330	**A 4**		**type B**



Hexagon nuts with a height of 1,5 d, B = with one spherical bearing face

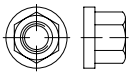
Dimensions → TI-62 Mech. properties → TI-224

Steel → S. 291

Thread - wrench size

BM 6 SW 10	S	25	150,00 A4
BM 8 SW 13	S	25	184,00 A4
BM 10 SW 17	S	25	265,00 A4
BM 12 SW 19	S	25	340,00 A4
BM 16 SW 24	S	10	610,00 A4
BM 20 SW 30	S	10	1020,00 A4
BM 24 SW 36	S	10	1750,00 A4

DIN	06331.940	RAZ 570
6331	**A 4**	



Hexagon nuts with collar with a height of 1,5 d

Dimensions → TI-63 Mech. properties → TI-224

Steel → S. 291

Thread - wrench size

M 8 SW 13	S	10	330,00 A4
M 10 SW 16	S	10	465,00 A4
M 12 SW 18	S	10	610,00 A4
M 16 SW 24	S	10	1070,00 A4
M 20 SW 30	S	10	1880,00 A4
M 24 SW 36	S	10	3400,00 A4

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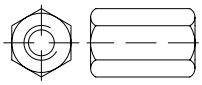
Dimensions	PU	Pieces	€/100/Mat.
DIN	06334.940		RAZ 570
6334	**A 4**		



Hexagon nuts with a height of 3 d

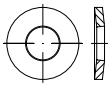
Dimensions ➔ TI-63 Mech. properties ➔ TI-224

Steel ➔ S. 292

Round and hexagon couplings ➔ article 88088/88087

internal thread - wrench size			
M 6 SW10	S	10	720,00 A4
M 8 SW13	S	10	720,00 A4
M 10 SW17	S	10	1260,00 A4
M 12 SW19	S	10	1750,00 A4
M 16 SW24	S	10	2900,00 A4
M 20 SW30	S	10	4200,00 A4
M 24 SW36	S	10	6100,00 A4

~DIN	06796.(*)	RAZ 580
6796	**1.4310/A 2***	



Conical spring washers for screwed fastenings

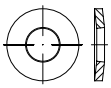
*≤ ∅ 8 = 1.4310 = (960), > ∅ 8 = A 2 = (920)

Caution! Reduced spring load.

Spring steel ➔ S. 293

Nominal ∅ x outside ∅ x thickness						
4	x	9	x 1	S	1000	15,40
5	x	11	x 1,2	S	1000	17,90
6	x	14	x 1,5	S	1000	33,50
8	x	1	x 2	S	500	40,50
10	x	23	x 2,5	S	500	46,50
12	x	29	x 3	S	250	52,50

~DIN	06796.940	RAZ 580
6796	**A 4**	



Conical spring washers for screwed fastenings

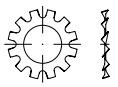
Caution! Reduced spring load.

Spring steel ➔ S. 293

Nominal ∅ x outside ∅ x thickness						
5	x	11	x 1,2	S	100	33,00 A4
6	x	14	x 1,5	S	100	128,00 A4
8	x	1	x 2	S	100	140,00 A4
10	x	23	x 2,5	S	100	221,00 A4

Dimensions	PU	Pieces	€/100/Mat.
12 x 29 x 3	S	100	365,00 A4
16 x 39 x 4	S	50	1070,00 A4
20 x 45 x 5	S	25	1940,00 A4

~DIN	06797.961	RAZ 580
6797	**1.4310**	**type A**



Toothed lock washers, A = external teeth

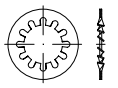
Caution! Reduced spring load.

Dimensions ➔ TI-99

Spring steel ➔ S. 293

A 3,2	S	2000	2,00
A 3,2	K	100	4,35
A 4,3	S	1000	2,40
A 4,3	K	100	4,75
A 5,3	S	1000	3,15
A 5,3	K	100	5,60
A 6,4	S	1000	3,75
A 6,4	K	100	6,10
A 8,4	S	1000	6,80
A 8,4	K	100	9,10
A 10,5	S	1000	10,30
A 10,5	K	100	12,70
A 13	S	100	11,90
A 17	S	50	26,00

~DIN	06797.964	RAZ 580
6797	**1.4310**	**type I**



Toothed lock washers, I = internal teeth

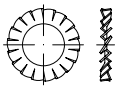
Caution! Reduced spring load.

Dimensions ➔ TI-99

Spring steel ➔ S. 294

I 3,2	S	2000	2,05
I 4,3	S	1000	2,45
I 5,3	S	1000	3,30
I 6,4	S	1000	3,90
I 8,4	S	1000	7,00
I 10,5	S	1000	14,40
I 12,5	S	500	21,40

Dimensions	PU	Pieces	€/100/Mat.
~DIN	06798.961		RAZ 580
6798	**1.4310**		**type A**



Serrated lock washers, A = external teeth

Caution! Reduced spring load.

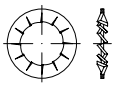
Dimensions ➔ TI-99

Spring steel ➔ S. 294

Bronze ➔ S. 591

A 2,2	K	1000	2,80
A 3,2	S	2000	2,20
A 3,2	K	100	4,15
A 4,3	S	1000	2,60
A 4,3	K	100	4,60
A 5,3	S	1000	3,90
A 5,3	K	100	5,80
A 6,4	S	1000	4,40
A 6,4	K	100	6,40
A 8,4	S	1000	7,50
A 8,4	K	100	9,40
A 10,5	S	1000	10,80
A 10,5	K	100	12,70
A 13	S	100	13,30
A 17	S	50	33,50
A 21	S	50	45,50
A 25	S	50	59,00

~DIN	06798.964	RAZ 580
6798	**1.4310**	**type I**



Serrated lock washers, I = internal teeth

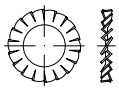
Caution! Reduced spring load.

Dimensions ➔ TI-99

Spring steel ➔ S. 295

I 3,2	S	2000	2,70
I 4,3	S	1000	3,25
I 5,3	S	1000	4,75
I 6,4	S	1000	5,50
I 8,4	S	1000	9,20

Dimensions	PU	Pieces	€/100/Mat.
~DIN	06798.944		RAZ 580
6798	**A 4 unmagnetic***		**type A**



Serrated lock washers, A = external teeth

*Permeability μ ≤ 1,1 H/m

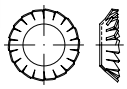
Caution! Reduced spring load.

Dimensions ➔ TI-99

Spring steel ➔ S. 294
Bronze ➔ S. 591

A 3,2	S	2000	8,80 A4
A 4,3	S	1000	9,70 A4
A 5,3	S	1000	12,90 A4
A 6,4	S	1000	14,60 A4
A 8,4	S	1000	24,50 A4
A 10,5	S	1000	38,50 A4
A 13	S	100	42,10 A4
A 17	S	50	46,50 A4

~DIN	06798.965	RAZ 580
6798	**1.4310**	**type V**



Serrated lock washers, V = countersunk

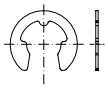
Caution! Reduced spring load.

Dimensions ➔ TI-99

Spring steel ➔ S. 295

V 3,2	S	1000	5,20
V 4,3	S	1000	5,90
V 5,3	S	1000	8,60
V 6,4	S	1000	12,40
V 8,4	S	1000	20,00
V 10,5	S	1000	26,00
V 13	S	100	38,00

~DIN	06799.300	RAZ 580
6799	**1.4122**	



Retaining rings for shafts

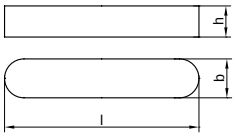
Caution! Reduced spring load.

Dimensions ➔ TI-100

Nominal size = slot ∅

1,5	S	250	8,30
1,9	S	250	8,10
2,3	S	250	9,50
3,2	S	250	10,80
4	S	250	13,00
5	S	250	16,90
6	S	100	19,20
7	S	100	29,50
8	S	100	37,00
9	S	100	51,00
10	S	100	66,00
12	S	100	94,00
15	S	100	219,00
19	S	50	245,00

DIN	06885.941	RAZ 590
6885	**A 4**	**type A**



Parallel keys, deep pattern, A = round-ended (without holes)

Dimensions ➔ TI-135

Steel ➔ S. 296

Width b x height h x length l

A 3	x	3	x	10	S	100	36,00	A4
A 3	x	3	x	12	S	100	36,50	A4
A 3	x	3	x	16	S	100	36,50	A4
A 3	x	3	x	20	S	100	38,50	A4
A 4	x	4	x	10	S	100	41,00	A4
A 4	x	4	x	12	S	100	42,50	A4
A 4	x	4	x	14	S	100	43,00	A4
A 4	x	4	x	16	S	100	43,00	A4
A 4	x	4	x	18	S	100	46,50	A4
A 4	x	4	x	20	S	100	46,50	A4
A 4	x	4	x	22	S	100	50,00	A4
A 5	x	5	x	10	S	100	36,00	A4
A 5	x	5	x	12	S	100	36,00	A4
A 5	x	5	x	14	S	50	36,50	A4
A 5	x	5	x	16	S	50	37,50	A4
A 5	x	5	x	18	S	50	39,00	A4
A 5	x	5	x	20	S	50	40,00	A4
A 5	x	5	x	22	S	50	41,50	A4
A 5	x	5	x	25	S	50	43,50	A4
A 5	x	5	x	28	S	50	48,50	A4
A 5	x	5	x	30	S	50	48,50	A4
A 5	x	5	x	32	S	50	66,00	A4
A 5	x	5	x	36	S	50	70,20	A4
A 5	x	5	x	40	S	50	74,00	A4
A 5	x	5	x	45	S	50	79,00	A4
A 5	x	5	x	50	S	50	83,25	A4
A 6	x	6	x	12	S	25	46,00	A4
A 6	x	6	x	14	S	50	46,00	A4
A 6	x	6	x	16	S	25	46,00	A4
A 6	x	6	x	18	S	25	48,00	A4
A 6	x	6	x	20	S	25	49,50	A4
A 6	x	6	x	22	S	25	52,00	A4
A 6	x	6	x	25	S	25	55,00	A4
A 6	x	6	x	28	S	25	58,00	A4
A 6	x	6	x	30	S	25	62,00	A4
A 6	x	6	x	32	S	25	62,00	A4
A 6	x	6	x	36	S	25	66,00	A4
A 6	x	6	x	40	S	25	70,00	A4
A 6	x	6	x	50	S	25	82,00	A4
A 6	x	6	x	56	S	25	85,00	A4
A 6	x	6	x	60	S	25	95,00	A4
A 6	x	6	x	63	S	25	108,00	A4
A 6	x	6	x	70	S	25	110,00	A4
A 6	x	6	x	80	S	25	125,00	A4
A 8	x	7	x	16	S	10	72,00	A4
A 8	x	7	x	18	S	10	72,00	A4
A 8	x	7	x	20	S	10	72,00	A4
A 8	x	7	x	22	S	10	79,00	A4
A 8	x	7	x	25	S	10	79,00	A4
A 8	x	7	x	28	S	10	84,00	A4
A 8	x	7	x	30	S	10	90,00	A4
A 8	x	7	x	32	S	10	90,00	A4
A 8	x	7	x	36	S	10	96,00	A4
A 8	x	7	x	40	S	10	103,00	A4
A 8	x	5	x	40	S	10	103,00	A4
A 8	x	7	x	45	S	10	151,00	A4
A 8	x	5	x	45	S	10	151,00	A4
A 8	x	7	x	50	S	10	160,00	A4
A 8	x	7	x	56	S	10	180,00	A4
A 8	x	7	x	60	S	10	190,00	A4
A 8	x	7	x	63	S	10	198,00	A4
A 8	x	7	x	70	S	10	205,00	A4
A 8	x	7	x	80	S	10	226,00	A4
A 8	x	7	x	90	S	10	240,00	A4
A 8	x	7	x	100	S	10	285,00	A4
A 10	x	8	x	20	S	10	102,00	A4
A 10	x	8	x	22	S	10	104,00	A4
A 10	x	8	x	25	S	10	104,00	A4
A 10	x	8	x	28	S	10	111,00	A4
A 10	x	8	x	30	S	10	121,00	A4
A 10	x	8	x	32	S	10	121,00	A4
A 10	x	8	x	36	S	10	130,00	A4
A 10	x	8	x	40	S	10	139,00	A4
A 10	x	8	x	45	S	10	151,00	A4
A 10	x	8	x	50	S	10	162,00	A4
A 10	x	8	x	56	S	10	176,00	A4
A 10	x	8	x	60	S	10	193,00	A4
A 10	x	8	x	63	S	10	265,00	A4
A 10	x	8	x	70	S	10	290,00	A4
A 10	x	8	x	80	S	10	325,00	A4
A 10	x	8	x	90	S	10	370,00	A4
A 10	x	8	x	100	S	10	395,00	A4
A 10	x	8	x	110	S	10	430,00	A4
A 10	x	8	x	120	S	10	460,00	A4
A 12	x	8	x	28	S	10	140,00	A4
A 12	x	8	x	30	S	10	140,00	A4
A 12	x	8	x	32	S	10	140,00	A4
A 12	x	8	x	36	S	10	150,00	A4
A 12	x	8	x	40	S	10	161,00	A4
A 12	x	8	x	45	S	10	176,00	A4
A 12	x	8	x	50	S	10	189,00	A4
A 12	x	8	x	56	S	10	207,00	A4
A 12	x	8	x	60	S	10	227,00	A4
A 12	x	8	x	63	S	10	227,00	A4
A 12	x	8	x	70	S	10	250,00	A4
A 12	x	8	x	80	S	10	285,00	A4
A 12	x	8	x	90	S	10	310,00	A4
A 12	x	8	x	100	S	10	350,00	A4
A 14	x	9	x	32	S	10	235,00	A4
A 14	x	9	x	40	S	10	246,00	A4
A 14	x	9	x	45	S	10	260,00	A4
A 14	x	9	x	50	S	10	260,00	A4
A 14	x	9	x	56	S	5	270,00	A4
A 14	x	9	x	60	S	5	295,00	A4
A 14	x	9	x	63	S	5	310,00	A4
A 14	x	9	x	70	S	5	325,00	A4
A 14	x	9	x	80	S	5	370,00	A4
A 14	x	9	x	100	S	5	455,00	A4
A 14	x	9	x	125	S	5	560,00	A4
A 16	x	10	x	30	S	5	635,00	A4
A 16	x	10	x	40	S	5	635,00	A4
A 16	x	10	x	50	S	5	635,00	A4
A 16	x	10	x	63	S	5	765,00	A4
A 16	x	10	x	70	S	5	805,00	A4
A 16	x	10	x	80	S	5	905,00	A4
A 16	x	10	x	90	S	5	980,00	A4
A 16	x	10	x	100	S	5	980,00	A4

DIN	06912.920	RAZ 600
6912	A 2	

Hexagon socket head cap screws, low head, with centre

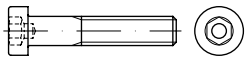
Length ≤100 mm sometimes thread up to head

Dimensions → TI-12 Tightening torque → TI-235
Mech. properties → TI-224

Steel → S. 298

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	6	S	200	48,60 A 2
M 4	x	8	S	200	40,90 A 2
M 4	x	10	S	200	34,25 A 2
M 4	x	12	S	200	40,40 A 2
M 4	x	16	S	200	28,65 A 2
M 4	x	20	S	200	30,20 A 2
M 4	x	25	S	200	31,45 A 2
M 4	x	30	S	200	36,85 A 2
M 4	x	35	S	200	38,85 A 2
M 4	x	40	S	200	41,70 A 2
M 5	x	6	S	100	56,75 A 2
M 5	x	8	S	100	49,10 A 2
M 5	x	10	S	100	46,55 A 2
M 5	x	12	S	100	40,40 A 2
M 5	x	14	S	100	40,40 A 2
M 5	x	16	S	100	31,70 A 2
M 5	x	20	S	100	33,75 A 2
M 5	x	25	S	100	35,80 A 2
M 5	x	30	S	100	41,95 A 2
M 5	x	35	S	100	48,10 A 2
M 5	x	40	S	100	50,65 A 2
M 5	x	45	S	100	55,75 A 2
M 5	x	50	S	100	61,35 A 2
M 6	x	8	S	100	52,15 A 2
M 6	x	10	S	100	45,00 A 2
M 6	x	12	S	100	50,10 A 2
M 6	x	14	S	100	50,11 A 2
M 6	x	16	S	100	39,90 A 2
M 6	x	20	S	100	42,95 A 2
M 6	x	25	S	100	45,00 A 2
M 6	x	30	S	100	49,10 A 2
M 6	x	35	S	100	55,75 A 2
M 6	x	40	S	100	52,15 A 2
M 6	x	45	S	100	55,75 A 2
M 6	x	50	S	100	55,75 A 2
M 6	x	55	S	100	69,05 A 2
M 6	x	60	S	100	76,20 A 2
M 6	x	70	S	100	102,00 A 2
M 6	x	80	S	100	135,00 A 2
M 8	x	10	S	100	82,85 A 2
M 8	x	12	S	100	89,50 A 2
M 8	x	16	S	100	80,30 A 2
M 8	x	20	S	100	69,05 A 2
M 8	x	25	S	100	65,45 A 2
M 8	x	30	S	100	69,05 A 2
M 8	x	35	S	100	77,75 A 2
M 8	x	40	S	100	84,90 A 2
M 8	x	45	S	100	102,00 A 2
M 8	x	50	S	100	112,00 A 2
M 8	x	55	S	100	124,00 A 2
M 8	x	60	S	100	133,00 A 2
M 8	x	65	S	100	171,00 A 2
M 8	x	70	S	50	171,00 A 2
M 8	x	80	S	50	206,00 A 2
M 8	x	90	S	50	226,00 A 2
M 8	x	100	S	50	257,00 A 2
M 10	x	16	S	100	155,00 A 2
M 10	x	20	S	100	141,00 A 2
M 10	x	25	S	100	133,00 A 2
M 10	x	30	S	100	144,00 A 2
M 10	x	35	S	100	151,00 A 2
M 10	x	40	S	100	162,00 A 2
M 10	x	45	S	100	179,00 A 2
M 10	x	50	S	100	202,00 A 2
M 10	x	55	S	50	223,00 A 2
M 10	x	60	S	50	231,00 A 2
M 10	x	70	S	50	269,00 A 2
M 10	x	80	S	50	300,00 A 2
M 10	x	90	S	50	372,00 A 2
M 10	x	100	S	50	438,00 A 2
M 12	x	20	S	50	218,00 A 2
M 12	x	25	S	50	202,00 A 2
M 12	x	30	S	50	205,00 A 2
M 12	x	35	S	50	218,00 A 2
M 12	x	40	S	50	238,00 A 2
M 12	x	45	S	50	259,00 A 2
M 12	x	50	S	50	287,00 A 2
M 12	x	55	S	50	310,00 A 2
M 12	x	60	S	50	320,00 A 2
M 12	x	70	S	50	369,00 A 2
M 12	x	80	S	25	415,00 A 2
M 12	x	90	S	25	517,00 A 2
M 12	x	100	S	25	594,00 A 2
M 16	x	25	S	1	834,00 A 2
M 16	x	30	S	1	645,00 A 2
M 16	x	35	S	1	660,00 A 2
M 16	x	40	S	1	681,00 A 2
M 16	x	45	S	1	711,00 A 2
M 16	x	50	S	1	737,00 A 2
M 16	x	55	S	1	798,00 A 2
M 16	x	60	S	1	824,00 A 2
M 16	x	70	S	1	893,00 A 2
M 16	x	80	S	1	967,00 A 2
M 16	x	90	S	1	1074,00 A 2
M 16	x	100	S	1	1228,00 A 2
M 20	x	35	S	1	1279,00 A 2
M 20	x	40	S	1	1355,00 A 2
M 20	x	45	S	1	1381,00 A 2
M 20	x	50	S	1	1417,00 A 2
M 20	x	60	S	1	1560,00 A 2
M 20	x	70	S	1	1688,00 A 2
M 20	x	80	S	1	2097,00 A 2
M 20	x	90	S	1	2404,00 A 2
M 20	x	100	S	1	2813,00 A 2

DIN	06912.940	RAZ 600
6912	A 4	



Hexagon socket head cap screws, low head, with centre

Length ≤100 mm sometimes thread up to head

Dimensions → TI-12 Tightening torque → TI-235
Mech. properties → TI-224

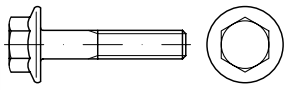
Steel → S. 298

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	6	S	100	58,30 A 4
M 4	x	8	S	100	49,10 A 4
M 4	x	10	S	200	42,95 A 4
M 4	x	12	S	200	40,90 A 4
M 4	x	16	S	200	29,15 A 4
M 4	x	20	S	200	31,20 A 4
M 4	x	25	S	200	33,25 A 4
M 4	x	30	S	200	37,35 A 4
M 4	x	35	S	200	44,00 A 4
M 4	x	40	S	200	47,55 A 4
M 5	x	6	S	100	61,90 A 4
M 5	x	8	S	100	52,70 A 4
M 5	x	10	S	100	63,40 A 4
M 5	x	12	S	100	55,25 A 4
M 5	x	16	S	100	39,90 A 4
M 5	x	20	S	100	42,95 A 4
M 5	x	25	S	100	45,00 A 4
M 5	x	30	S	100	52,70 A 4
M 5	x	35	S	100	58,80 A 4
M 5	x	40	S	100	64,45 A 4
M 5	x	50	S	100	96,15 A 4
M 6	x	8	S	100	72,60 A 4
M 6	x	10	S	100	65,45 A 4
M 6	x	12	S	100	63,95 A 4
M 6	x	16	S	100	50,65 A 4
M 6	x	20	S	100	53,20 A 4
M 6	x	25	S	100	60,35 A 4
M 6	x	30	S	100	63,40 A 4
M 6	x	35	S	100	67,50 A 4
M 6	x	40	S	100	76,70 A 4
M 6	x	45	S	100	92,05 A 4
M 6	x	50	S	100	106,00 A 4
M 6	x	55	S	100	133,00 A 4
M 6	x	60	S	100	144,00 A 4
M 6	x	70	S	100	169,00 A 4
M 6	x	80	S	100	200,00 A 4
M 8	x	10	S	100	92,05 A 4
M 8	x	12	S	100	92,05 A 4
M 8	x	16	S	100	95,10 A 4
M 8	x	20	S	100	78,25 A 4
M 8	x	25	S	100	81,80 A 4
M 8	x	30	S	100	85,90 A 4
M 8	x	35	S	100	95,10 A 4
M 8	x	40	S	100	120,00 A 4
M 8	x	45	S	100	133,00 A 4
M 8	x	50	S	100	151,00 A 4
M 8	x	55	S	100	164,00 A 4
M 8	x	60	S	100	174,00 A 4
M 8	x	70	S	50	292,00 A 4
M 8	x	80	S	50	364,00 A 4
M 8	x	90	S	50	502,00 A 4
M 10	x	16	S	100	187,00 A 4
M 10	x	20	S	100	182,00 A 4
M 10	x	25	S	100	172,00 A 4
M 10	x	30	S	100	174,00 A 4
M 10	x	35	S	100	185,00 A 4
M 10	x	40	S	100	202,00 A 4
M 10	x	45	S	100	225,00 A 4
M 10	x	50	S	100	246,00 A 4
M 10	x	55	S	50	282,00 A 4
M 10	x	60	S	50	297,00 A 4
M 10	x	70	S	50	338,00 A 4
M 10	x	80	S	50	404,00 A 4
M 10	x	90	S	50	507,00 A 4
M 10	x	100	S	50	609,00 A 4
M 12	x	16	S	50	307,00 A 4
M 12	x	20	S	50	317,00 A 4
M 12	x	25	S	50	302,00 A 4
M 12	x	30	S	50	277,00 A 4
M 12	x	35	S	50	292,00 A 4
M 12	x	40	S	50	312,00 A 4
M 12	x	45	S	50	348,00 A 4
M 12	x	50	S	50	369,00 A 4
M 12	x	55	S	50	420,00 A 4
M 12	x	60	S	50	435,00 A 4
M 12	x	70	S	25	476,00 A 4
M 12	x	80	S	25	583,00 A 4
M 12	x	90	S	1	660,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	100	S	1	660,00 A4
M 16	x	25	S	1	967,00 A4
M 16	x	30	S	1	757,00 A4
M 16	x	35	S	1	778,00 A4
M 16	x	40	S	1	798,00 A4
M 16	x	45	S	1	839,00 A4
M 16	x	50	S	1	870,00 A4
M 16	x	55	S	1	962,00 A4
M 16	x	60	S	1	982,00 A4
M 16	x	65	S	1	1023,00 A4
M 16	x	70	S	1	1049,00 A4
M 16	x	80	S	1	1381,00 A4
M 16	x	90	S	1	1637,00 A4
M 16	x	100	S	1	1637,00 A4
M 16	x	110	S	1	2813,00 A4
M 16	x	120	S	1	2889,00 A4
M 16	x	130	S	1	2940,00 A4
M 16	x	140	S	1	3017,00 A4
M 20	x	30	S	1	1713,00 A4
M 20	x	35	S	1	1739,00 A4
M 20	x	40	S	1	1688,00 A4
M 20	x	45	S	1	1739,00 A4
M 20	x	50	S	1	1841,00 A4
M 20	x	60	S	1	2046,00 A4
M 20	x	70	S	1	2250,00 A4
M 20	x	80	S	1	2813,00 A4
M 20	x	90	S	1	3886,00 A4
M 20	x	100	S	1	3989,00 A4
M 20	x	110	S	1	5165,00 A4
M 20	x	120	S	1	5216,00 A4
M 20	x	130	S	1	5267,00 A4
M 20	x	150	S	1	5420,00 A4
M 24	x	50	S	1	2864,00 A4
M 24	x	55	S	1	2864,00 A4
M 24	x	60	S	1	2864,00 A4
M 24	x	65	S	1	3017,00 A4
M 24	x	70	S	1	3017,00 A4
M 24	x	80	S	1	3580,00 A4
M 24	x	90	S	1	4653,00 A4
M 24	x	110	S	1	5931,00 A4
M 24	x	120	S	1	5983,00 A4
M 24	x	130	S	1	6034,00 A4
M 24	x	150	S	1	6187,00 A4

DIN 6921.920 RAZ 401

6921 A 2



Hexagon flange bolts

Dimensions → TI-17 Standard conversion → TI-6
Mech. properties → TI-224

Steel → S. 302

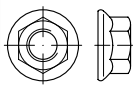
DIN 6921 → replaced by EN 1665

M 5	x	10	S	200	17,60
M 5	x	12	S	200	18,00
M 5	x	16	S	200	18,80
M 5	x	20	S	200	19,50
M 5	x	25	S	200	20,70
M 5	x	30	S	200	22,30
M 6	x	10	S	200	22,30
M 6	x	12	S	200	23,10
M 6	x	16	S	200	24,40
M 6	x	20	S	200	25,50
M 6	x	25	S	200	28,00
M 6	x	30	S	200	29,00
M 6	x	35	S	200	31,50

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	40	S	200	33,00
M 6	x	45	S	200	34,50
M 8	x	16	S	200	43,50
M 8	x	20	S	200	45,00
M 8	x	25	S	200	48,00
M 8	x	30	S	200	52,00
M 8	x	35	S	200	55,00
M 8	x	40	S	200	58,00
M 8	x	45	S	200	61,00
M 8	x	50	S	200	65,00
M 10	x	20	S	100	65,00
M 10	x	25	S	100	70,00
M 10	x	30	S	100	74,00
M 10	x	35	S	100	79,00
M 10	x	40	S	100	85,00
M 10	x	45	S	100	90,00
M 10	x	50	S	100	95,00
M 10	x	60	S	100	105,00

DIN 06923.920 RAZ 615

6923 A 2



Hexagon flange nuts

Dimensions → TI-63 Mech. properties → TI-224

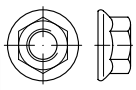
Steel → S. 303

DIN 6923 → replaced by EN 1661

M 4	S	1000	8,50 A2
M 5	S	1000	12,80 A2
M 6	S	1000	20,50 A2
M 8	S	1000	26,00 A2
M 10	S	500	38,50 A2
M 12	S	250	80,00 A2

DIN 06923.940 RAZ 615

6923 A 4



Hexagon flange nuts

Dimensions → TI-63 Mech. properties → TI-224

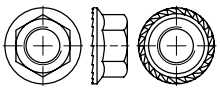
Steel → S. 303

DIN 6923 → replaced by EN 1661

M 5	S	1000	26,00 A4
M 6	S	1000	33,50 A4
M 8	S	1000	38,50 A4
M 10	S	500	90,00 A4

DIN 06923.924 RAZ 615

6923 A 2 locking



Hexagon locking nuts with flange

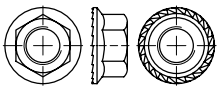
Dimensions → TI-63 Mech. properties → TI-224

Steel → S. 303

M 4	S	500	9,00 A2
M 5	S	500	13,50 A2
M 6	S	1000	21,50 A2
M 8	S	1000	27,00 A2
M 10	S	500	40,00 A2
M 12	S	200	84,00 A2

DIN 06923.944 RAZ 615

6923 A 4 locking



Hexagon locking nuts with flange

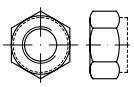
Dimensions → TI-63 Mech. properties → TI-224

Steel → S. 303

M 4	S	500	15,00 A4
M 5	S	500	27,00 A4
M 6	S	500	35,00 A4
M 8	S	500	40,00 A4
M 10	S	200	95,00 A4
M 12	S	100	120,00 A4

~DIN 06924.920 RAZ 480

6924 A 2



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use under temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 303

DIN 6924 coarse pitch thread
→ replaced by ISO 7040 (compatible)

M 5	S	1000	40,00 A2
M 6	S	1000	46,50 A2
M 8	S	500	59,00 A2
M 16	S	100	219,00 A2
M 20	S	25	415,00 A2

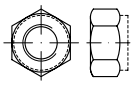
€/100 = price in € plus VAT when ordering full package unit

Dimensions | PU Pieces | €/100/Mat.

~DIN | 06924.940 | RAZ 480

6924

A 4



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use under temperatures from −50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 303

DIN 6924 coarse pitch thread
→ replaced by ISO 7040 (compatible)

M 5	S	100	55,00 A4
M 6	S	100	63,00 A4
M 8	S	100	83,00 A4
M 16	S	25	365,00 A4
M 20	S	25	1500,00 A4
M 24	S	25	1700,00 A4

Important Note!

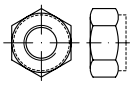
The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

Dimensions | PU Pieces | €/100/Mat.

~ISO | 07040.920 | *

7040

A 2



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use under temperatures from −50 to +120 °C,
*M 10/12 RAZ = 3395, other ∅ RAZ = 480

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 305

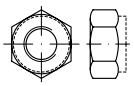
ISO 7040 → replaces DIN 982 and 6924

M 5	S	1000	40,00 A2
M 8	S	500	59,00 A2
M 10	S	500	102,00 A2
M 12	S	250	127,00 A2
M 16	S	100	219,00 A2
M 20	S	25	415,00 A2

ISO | 07040.924 | RAZ 3395

7040

A 2 – 70 HS



Prevailing torque type hexagon nuts with non-metallic insert, high type, with heat-stabilised polyamide locking ring

For use under temperatures up to ~ +150/180 °C (DB 205107-03)

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Mech. properties → TI-224

Steel → S. 305

ISO 7040 → replaces DIN 982 and 6924

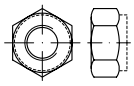
M 3	S	1000	465,00 A2
M 4	S	100	85,00 A2
M 5	S	500	87,00 A2
M 5	K	100	89,00 A2
M 6	S	500	131,00 A2
M 6	K	100	133,00 A2
M 8	S	500	182,00 A2
M 8	K	100	184,00 A2
M 10	S	500	320,00 A2
M 10	K	100	325,00 A2
M 12	S	100	405,00 A2
M 16	S	25	810,00 A2

Dimensions | PU Pieces | €/100/Mat.

ISO | 07040.940 | *

7040

A 4



Prevailing torque type hexagon nuts with non-metallic insert, high type

For use under temperatures from −50 to +120 °C,
*M 10/12 RAZ = 3395, other ∅ RAZ = 480

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 305

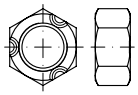
ISO 7040 → replaces DIN 982 and 6924

M 5	S	100	55,00 A4
M 6	S	100	63,00 A4
M 8	S	100	83,00 A4
M 10	S	100	165,00 A4
M 12	S	50	210,00 A4
M 16	S	25	365,00 A4
M 20	S	25	1500,00 A4
M 24	S	25	1700,00 A4

ISO | 07042.920 | *

7042

A 2



Prevailing torque type hexagon nuts (all metal nuts)

*M 10/12/14 RAZ = 3395, other ∅ RAZ = 480

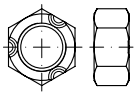
Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-66 Standard conversion → TI-7
Mech. properties → TI-224

ISO 7042 → replaces DIN 980 and 6925

M 3	S	1000	12,30 A2
M 4	S	1000	24,60 A2
M 5	S	1000	28,00 A2
M 8	S	500	43,00 A2
M 10	S	500	59,00 A2
M 12	S	250	71,00 A2
M 14	S	100	154,00 A2
M 16	S	100	163,00 A2
M 18	S	50	178,00 A2
M 20	S	25	185,00 A2
M 24	S	25	215,00 A2

Dimensions	PU	Pieces	€/100/Mat.
ISO	07042.940		*
7042	**A 4**		



Prevailing torque type hexagon nuts (all metal nuts)

*M 10/12/14 RAZ = 3395, other ∅ RAZ = 480

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions ➔ TI-66 Standard conversion ➔ TI-7
Mech. properties ➔ TI-224

ISO 7042 ➔ replaces DIN 980 and 6925

M 3	S	1000	80,00 A4
M 4	S	100	99,00 A4
M 5	S	1000	109,00 A4
M 6	S	1000	112,00 A4
M 8	S	500	118,00 A4
M 10	S	500	176,00 A4
M 12	S	250	270,00 A4
M 14	S	100	325,00 A4
M 16	S	100	440,00 A4
M 18	S	50	465,00 A4
M 20	S	25	590,00 A4
M 24	S	25	1110,00 A4
M 30	S	10	1610,00 A4

Important Note!

The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

Dimensions	PU	Pieces	€/100/Mat.
ISO	07045.925		RAZ 710
7045	**A 2**		**H**

Cheese head screws with Phillips cross recess H

Dimensions ➔ TI-40 Standard conversion ➔ TI-11

Steel ➔ S. 306

ISO 7045 ➔ replaces DIN 7985 (compatible)

M 1,6	x	2	-H	S 1000	20,00 A2
M 1,6	x	3	-H	S 1000	17,80 A2
M 1,6	x	4	-H	S 1000	16,60 A2
M 1,6	x	5	-H	S 1000	16,60 A2
M 1,6	x	6	-H	S 1000	16,60 A2
M 1,6	x	8	-H	S 1000	17,10 A2
M 1,6	x	10	-H	S 1000	18,40 A2
M 1,6	x	12	-H	S 1000	20,90 A2
M 1,6	x	16	-H	S 1000	25,00 A2
M 2	x	2	-H	S 1000	18,00 A2
M 2	x	3	-H	S 1000	10,40 A2
M 2	x	4	-H	S 1000	7,05 A2
M 2	x	4	-H	K 200	8,05 A2
M 2	x	5	-H	S 1000	5,80 A2
M 2	x	5	-H	K 200	6,80 A2
M 2	x	6	-H	S 1000	5,80 A2
M 2	x	6	-H	K 200	6,80 A2
M 2	x	8	-H	S 1000	5,80 A2
M 2	x	8	-H	K 200	6,80 A2
M 2	x	10	-H	S 1000	5,80 A2
M 2	x	10	-H	K 200	6,80 A2
M 2	x	12	-H	S 1000	6,30 A2
M 2	x	12	-H	K 200	7,30 A2
M 2	x	14	-H	S 1000	8,85 A2
M 2	x	16	-H	S 1000	6,70 A2
M 2	x	16	-H	K 200	7,70 A2
M 2	x	18	-H	S 1000	9,45 A2
M 2	x	20	-H	S 1000	7,75 A2
M 2	x	20	-H	K 200	8,75 A2
M 2,5	x	3	-H	S 1000	11,00 A2
M 2,5	x	4	-H	S 1000	7,05 A2
M 2,5	x	4	-H	K 200	8,05 A2
M 2,5	x	5	-H	S 1000	7,20 A2
M 2,5	x	5	-H	K 200	8,20 A2
M 2,5	x	6	-H	S 1000	5,80 A2
M 2,5	x	6	-H	K 200	6,80 A2
M 2,5	x	8	-H	S 1000	5,80 A2
M 2,5	x	8	-H	K 200	6,80 A2
M 2,5	x	10	-H	S 1000	5,80 A2
M 2,5	x	10	-H	K 200	6,80 A2
M 2,5	x	12	-H	S 1000	6,30 A2
M 2,5	x	12	-H	K 200	7,30 A2
M 2,5	x	14	-H	S 1000	8,85 A2
M 2,5	x	16	-H	S 1000	6,70 A2
M 2,5	x	18	-H	S 1000	9,45 A2
M 2,5	x	20	-H	S 1000	7,75 A2
M 2,5	x	25	-H	S 1000	12,30 A2
M 2,5	x	30	-H	S 1000	18,00 A2
M 3	x	4	-H	S 1000	6,60 A2
M 3	x	5	-H	S 1000	5,60 A2
M 3	x	6	-H	S 1000	3,70 A2
M 3	x	6	-H	K 200	4,70 A2
M 3	x	8	-H	S 1000	3,95 A2
M 3	x	8	-H	K 200	4,95 A2
M 3	x	10	-H	S 1000	4,20 A2
M 3	x	10	-H	K 200	5,20 A2
M 3	x	12	-H	S 1000	4,45 A2
M 3	x	12	-H	K 200	5,45 A2
M 3	x	14	-H	S 1000	6,35 A2
M 3	x	16	-H	S 1000	5,85 A2
M 3	x	16	-H	K 200	7,95 A2
M 3	x	18	-H	S 1000	7,40 A2
M 3	x	20	-H	S 1000	5,55 A2
M 3	x	20	-H	K 200	6,55 A2
M 3	x	22	-H	S 1000	7,90 A2
M 3	x	25	-H	S 1000	6,05 A2
M 3	x	30	-H	S 1000	8,90 A2
M 3	x	35	-H	S 1000	16,30 A2
M 3	x	40	-H	S 1000	18,40 A2
M 3	x	45	-H	S 500	27,00 A2
M 3	x	50	-H	S 500	27,00 A2
M 4	x	4	-H	S 1000	9,90 A2
M 4	x	5	-H	S 1000	7,55 A2
M 4	x	6	-H	S 1000	5,95 A2
M 4	x	6	-H	K 200	6,95 A2
M 4	x	8	-H	S 1000	5,95 A2
M 4	x	8	-H	K 200	6,95 A2
M 4	x	10	-H	S 1000	6,20 A2
M 4	x	10	-H	K 200	7,20 A2
M 4	x	12	-H	S 1000	6,55 A2
M 4	x	12	-H	K 200	7,55 A2
M 4	x	14	-H	S 1000	9,70 A2
M 4	x	16	-H	S 1000	8,40 A2
M 4	x	16	-H	K 200	9,45 A2
M 4	x	18	-H	S 1000	10,70 A2
M 4	x	20	-H	S 1000	8,15 A2
M 4	x	20	-H	K 200	9,15 A2
M 4	x	22	-H	S 1000	12,50 A2
M 4	x	25	-H	S 1000	9,50 A2
M 4	x	25	-H	K 200	10,50 A2
M 4	x	30	-H	S 1000	11,10 A2
M 4	x	30	-H	K 200	12,10 A2
M 4	x	35	-H	S 500	14,00 A2
M 4	x	40	-H	S 500	15,00 A2
M 4	x	45	-H	S 500	17,60 A2
M 4	x	50	-H	S 200	34,20 A2
M 4	x	60	-H	S 200	40,60 A2
M 5	x	6	-H	S 500	14,80 A2
M 5	x	8	-H	S 500	10,60 A2
M 5	x	8	-H	K 200	11,60 A2
M 5	x	10	-H	S 500	10,50 A2
M 5	x	10	-H	K 200	11,50 A2
M 5	x	12	-H	S 500	10,60 A2
M 5	x	12	-H	K 200	11,60 A2
M 5	x	14	-H	S 500	15,50 A2
M 5	x	16	-H	S 500	11,80 A2
M 5	x	16	-H	K 200	12,80 A2
M 5	x	18	-H	S 500	17,30 A2
M 5	x	20	-H	S 500	13,20 A2
M 5	x	20	-H	K 200	14,20 A2
M 5	x	22	-H	S 500	19,60 A2
M 5	x	25	-H	S 500	15,10 A2
M 5	x	25	-H	K 200	16,10 A2
M 5	x	30	-H	S 500	17,60 A2
M 5	x	30	-H	K 200	18,60 A2
M 5	x	35	-H	S 500	19,90 A2
M 5	x	35	-H	K 200	20,90 A2
M 5	x	40	-H	S 500	23,20 A2
M 5	x	40	-H	K 200	24,20 A2
M 5	x	45	-H	S 200	26,10 A2
M 5	x	50	-H	S 200	27,70 A2
M 5	x	55	-H	S 200	32,00 A2
M 5	x	60	-H	S 200	32,70 A2
M 5	x	70	-H	S 100	50,60 A2
M 5	x	80	-H	S 100	59,30 A2
M 5	x	90	-H	S 100	72,00 A2
M 6	x	8	-H	S 200	13,10 A2
M 6	x	10	-H	S 200	13,20 A2
M 6	x	12	-H	S 200	13,90 A2
M 6	x	14	-H	S 200	20,70 A2
M 6	x	16	-H	S 200	15,80 A2

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 18 -H	S	200	21,00 A 2
M 6 x 20 -H	S	200	17,10 A 2
M 6 x 25 -H	S	200	19,10 A 2
M 6 x 30 -H	S	200	22,40 A 2
M 6 x 35 -H	S	200	24,70 A 2
M 6 x 40 -H	S	200	28,10 A 2
M 6 x 45 -H	S	200	31,40 A 2
M 6 x 50 -H	S	200	32,30 A 2
M 6 x 55 -H	S	200	36,40 A 2
M 6 x 60 -H	S	100	36,40 A 2
M 6 x 70 -H	S	100	60,30 A 2
M 6 x 80 -H	S	100	69,50 A 2
M 6 x 90 -H	S	100	85,30 A 2
M 8 x 10 -H	S	100	29,30 A 2
M 8 x 12 -H	S	100	24,50 A 2
M 8 x 16 -H	S	100	28,50 A 2
M 8 x 20 -H	S	100	30,60 A 2
M 8 x 25 -H	S	100	31,90 A 2
M 8 x 30 -H	S	100	34,30 A 2
M 8 x 35 -H	S	100	34,90 A 2
M 8 x 40 -H	S	100	36,80 A 2
M 8 x 45 -H	S	100	37,70 A 2
M 8 x 50 -H	S	100	38,60 A 2
M 8 x 55 -H	S	100	46,90 A 2
M 8 x 60 -H	S	100	46,90 A 2
M 10 x 12 -H	S	100	175,00 A 2
M 10 x 16 -H	S	100	160,00 A 2
M 10 x 20 -H	S	100	170,00 A 2
M 10 x 25 -H	S	100	190,00 A 2
M 10 x 30 -H	S	100	205,00 A 2
M 10 x 35 -H	S	100	225,00 A 2
M 10 x 40 -H	S	100	245,00 A 2
M 10 x 45 -H	S	100	275,00 A 2
M 10 x 50 -H	S	100	275,00 A 2
M 10 x 55 -H	S	100	295,00 A 2
M 10 x 60 -H	S	100	310,00 A 2

ISO	07045.926	RAZ 710
7045	A 2	Z

Cheese head screws with Pozidriv cross recess Z

Dimensions → TI-40 Standard conversion → TI-11

Steel → S. 308

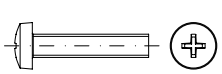
ISO 7045 → replaces DIN 7985 (compatible)

M 1,6 x 3 -Z	S	1000	25,00 A 2
M 1,6 x 4 -Z	S	1000	24,00 A 2
M 1,6 x 5 -Z	S	1000	24,50 A 2
M 1,6 x 6 -Z	S	1000	25,00 A 2
M 1,6 x 8 -Z	S	1000	27,00 A 2
M 1,6 x 12 -Z	S	1000	35,00 A 2
M 1,6 x 16 -Z	S	1000	42,00 A 2
M 2 x 3 -Z	S	1000	10,40 A 2
M 2 x 5 -Z	S	1000	5,80 A 2
M 2 x 6 -Z	S	1000	5,80 A 2
M 2 x 8 -Z	S	1000	5,80 A 2
M 2 x 10 -Z	S	1000	5,80 A 2
M 2 x 12 -Z	S	1000	6,30 A 2
M 2 x 16 -Z	S	1000	6,70 A 2
M 2,5 x 4 -Z	S	1000	7,05 A 2
M 2,5 x 6 -Z	S	1000	5,80 A 2
M 2,5 x 8 -Z	S	1000	5,80 A 2
M 2,5 x 10 -Z	S	1000	5,80 A 2
M 2,5 x 12 -Z	S	1000	6,30 A 2

Dimensions	PU	Pieces	€/100/Mat.
M 2,5 x 16 -Z	S	1000	6,70 A 2
M 2,5 x 18 -Z	S	1000	7,75 A 2
M 2,5 x 20 -Z	S	1000	7,75 A 2
M 2,5 x 25 -Z	S	1000	12,30 A 2
M 2,5 x 30 -Z	S	1000	16,00 A 2
M 3 x 4 -Z	S	1000	6,60 A 2
M 3 x 5 -Z	S	1000	5,60 A 2
M 3 x 6 -Z	S	1000	3,70 A 2
M 3 x 8 -Z	S	1000	3,95 A 2
M 3 x 10 -Z	S	1000	4,20 A 2
M 3 x 12 -Z	S	1000	4,45 A 2
M 3 x 14 -Z	S	1000	7,20 A 2
M 3 x 16 -Z	S	1000	5,85 A 2
M 3 x 18 -Z	S	1000	5,42 A 2
M 3 x 20 -Z	S	1000	5,55 A 2
M 3 x 25 -Z	S	1000	6,05 A 2
M 3 x 30 -Z	S	1000	8,90 A 2
M 3 x 35 -Z	S	1000	16,30 A 2
M 4 x 5 -Z	S	1000	7,55 A 2
M 4 x 6 -Z	S	1000	5,95 A 2
M 4 x 8 -Z	S	1000	5,95 A 2
M 4 x 10 -Z	S	1000	6,20 A 2
M 4 x 12 -Z	S	1000	6,55 A 2
M 4 x 14 -Z	S	1000	8,40 A 2
M 4 x 16 -Z	S	1000	8,40 A 2
M 4 x 18 -Z	S	1000	9,40 A 2
M 4 x 20 -Z	S	1000	8,15 A 2
M 4 x 30 -Z	S	1000	11,10 A 2
M 4 x 35 -Z	S	500	14,00 A 2
M 4 x 40 -Z	S	500	15,00 A 2
M 4 x 45 -Z	S	500	17,60 A 2
M 4 x 50 -Z	S	200	34,20 A 2
M 4 x 60 -Z	S	200	40,60 A 2
M 4 x 70 -Z	S	200	58,00 A 2
M 5 x 6 -Z	S	500	14,80 A 2
M 5 x 8 -Z	S	500	10,60 A 2
M 5 x 10 -Z	S	500	10,50 A 2
M 5 x 12 -Z	S	500	10,60 A 2
M 5 x 14 -Z	S	500	11,80 A 2
M 5 x 16 -Z	S	500	11,80 A 2
M 5 x 18 -Z	S	500	13,20 A 2
M 5 x 20 -Z	S	500	13,20 A 2
M 5 x 25 -Z	S	500	15,10 A 2
M 5 x 30 -Z	S	500	17,60 A 2
M 5 x 35 -Z	S	500	19,90 A 2
M 5 x 40 -Z	S	500	23,20 A 2
M 5 x 45 -Z	S	200	26,10 A 2
M 5 x 50 -Z	S	200	27,70 A 2
M 6 x 8 -Z	S	200	13,10 A 2
M 6 x 10 -Z	S	200	13,20 A 2
M 6 x 12 -Z	S	200	13,90 A 2
M 6 x 16 -Z	S	1000	15,80 A 2
M 6 x 20 -Z	S	200	17,10 A 2
M 6 x 25 -Z	S	200	19,10 A 2
M 6 x 30 -Z	S	200	22,40 A 2
M 6 x 40 -Z	S	200	28,10 A 2
M 6 x 45 -Z	S	200	31,40 A 2
M 6 x 50 -Z	S	200	32,30 A 2
M 6 x 55 -Z	S	200	36,40 A 2
M 6 x 60 -Z	S	100	36,40 A 2
M 8 x 10 -Z	S	200	110,00 A 2
M 8 x 12 -Z	S	200	95,00 A 2
M 8 x 16 -Z	S	200	105,00 A 2
M 8 x 20 -Z	S	200	113,00 A 2
M 8 x 25 -Z	S	200	125,00 A 2
M 8 x 30 -Z	S	200	136,00 A 2
M 8 x 50 -Z	S	200	182,00 A 2
M10 x 30 -Z	S	100	205,00 A 2

Dimensions	PU	Pieces	€/100/Mat.

ISO	07045.944	RAZ 710
7045	A 4	H



Cheese head screws with Phillips cross recess H

Dimensions → TI-40 Standard conversion → TI-11

Steel → S. 306

ISO 7045 → replaces DIN 7985 (compatible)

M 1,6 x 3 -H	S	1000	25,00 A 2
M 1,6 x 4 -H	S	1000	23,20 A 2
M 1,6 x 5 -H	S	1000	23,20 A 2
M 1,6 x 6 -H	S	1000	23,20 A 2
M 1,6 x 8 -H	S	1000	23,70 A 2
M 1,6 x 10 -H	S	1000	25,50 A 2
M 2 x 4 -H	S	1000	11,20 A 2
M 2 x 6 -H	S	1000	9,30 A 2
M 2 x 8 -H	S	1000	9,30 A 2
M 2 x 10 -H	S	1000	9,30 A 2
M 2 x 12 -H	S	1000	10,10 A 2
M 2 x 16 -H	S	1000	10,70 A 2
M 2 x 20 -H	S	1000	12,40 A 2
M 2,5 x 4 -H	S	1000	11,20 A 2
M 2,5 x 5 -H	S	1000	9,30 A 2
M 2,5 x 6 -H	S	1000	9,30 A 2
M 2,5 x 8 -H	S	1000	9,30 A 2
M 2,5 x 10 -H	S	1000	9,30 A 2
M 2,5 x 12 -H	S	1000	10,10 A 2
M 2,5 x 14 -H	S	1000	13,40 A 2
M 2,5 x 16 -H	S	1000	10,70 A 2
M 2,5 x 20 -H	S	1000	12,40 A 2
M 3 x 4 -H	S	1000	10,60 A 2
M 3 x 5 -H	S	1000	8,95 A 2
M 3 x 6 -H	S	1000	5,90 A 2
M 3 x 8 -H	S	1000	5,80 A 2
M 3 x 10 -H	S	1000	6,35 A 2
M 3 x 12 -H	S	1000	6,85 A 2
M 3 x 14 -H	S	1000	10,20 A 2
M 3 x 16 -H	S	1000	7,40 A 2
M 3 x 20 -H	S	1000	8,25 A 2
M 3 x 25 -H	S	1000	9,70 A 2
M 3 x 30 -H	S	1000	14,30 A 2
M 3 x 35 -H	S	1000	26,10 A 2
M 3 x 40 -H	S	1000	29,40 A 2
M 3 x 50 -H	S	500	43,30 A 2
M 4 x 5 -H	S	1000	12,10 A 2
M 4 x 6 -H	S	1000	9,55 A 2
M 4 x 10 -H	S	1000	9,20 A 2
M 4 x 12 -H	S	1000	9,90 A 2
M 4 x 14 -H	S	1000	15,50 A 2
M 4 x 16 -H	S	1000	10,60 A 2
M 4 x 18 -H	S	1000	17,10 A 2
M 4 x 20 -H	S	1000	11,90 A 2
M 4 x 22 -H	S	1000	20,00 A 2
M 4 x 25 -H	S	1000	14,10 A 2
M 4 x 30 -H	S	500	17,80 A 2
M 4 x 35 -H	S	500	22,40 A 2
M 4 x 40 -H	S	500	24,10 A 2
M 4 x 45 -H	S	200	54,70 A 2
M 4 x 50 -H	S	200	54,70 A 2
M 5 x 6 -H	S	500	23,70 A 2
M 5 x 8 -H	S	500	17,00 A 2
M 5 x 10 -H	S	500	13,40 A 2
M 5 x 12 -H	S	500	14,40 A 2
M 5 x 14 -H	S	500	24,90 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	16 -H	S	500	15,40 A 2
M 5	x	18 -H	S	500	27,80 A 2
M 5	x	20 -H	S	500	16,80 A 2
M 5	x	22 -H	S	500	31,40 A 2
M 5	x	25 -H	S	500	20,10 A 2
M 5	x	30 -H	S	500	23,60 A 2
M 5	x	35 -H	S	500	26,90 A 2
M 5	x	40 -H	S	500	37,20 A 2
M 5	x	45 -H	S	500	49,40 A 2
M 5	x	50 -H	S	200	52,10 A 2
M 5	x	60 -H	S	200	68,00 A 2
M 6	x	8 -H	S	200	28,30 A 2
M 6	x	10 -H	S	200	20,10 A 2
M 6	x	12 -H	S	200	21,00 A 2
M 6	x	16 -H	S	200	22,80 A 2
M 6	x	20 -H	S	200	24,50 A 2
M 6	x	25 -H	S	200	26,90 A 2
M 6	x	30 -H	S	200	30,20 A 2
M 6	x	35 -H	S	200	33,70 A 2
M 6	x	40 -H	S	200	40,00 A 2
M 6	x	45 -H	S	200	53,10 A 2
M 6	x	50 -H	S	200	54,10 A 2
M 6	x	60 -H	S	100	64,90 A 2

ISO	07046.924	RAZ 460

7046-2 A 2 H

Countersunk head screws with Phillips cross recess H

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

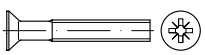
Steel ➔ S. 308

ISO 7046 ➔ replaces DIN 965 (compatible)

M 1,6	x	3 -H	S	2000	60,00 A 2
M 1,6	x	3 -H	K	1000	65,00 A 2
M 1,6	x	4 -H	S	2000	60,00 A 2
M 1,6	x	4 -H	K	1000	65,00 A 2
M 1,6	x	5 -H	S	2000	65,00 A 2
M 1,6	x	5 -H	K	1000	70,00 A 2
M 1,6	x	6 -H	S	2000	67,00 A 2
M 1,6	x	6 -H	K	1000	72,00 A 2
M 1,6	x	8 -H	S	2000	69,00 A 2
M 1,6	x	8 -H	K	1000	74,00 A 2
M 1,6	x	10 -H	S	2000	71,00 A 2
M 1,6	x	10 -H	K	1000	76,00 A 2
M 1,6	x	12 -H	S	2000	73,00 A 2
M 1,6	x	12 -H	K	1000	78,00 A 2
M 1,6	x	16 -H	S	2000	75,00 A 2
M 1,6	x	16 -H	K	1000	80,00 A 2
M 2	x	3 -H	S	1000	5,80 A 2
M 2	x	4 -H	S	1000	5,80 A 2
M 2	x	5 -H	S	1000	5,80 A 2
M 2	x	6 -H	S	1000	5,80 A 2
M 2	x	8 -H	S	1000	5,80 A 2
M 2	x	10 -H	S	1000	5,80 A 2
M 2	x	12 -H	S	1000	6,30 A 2
M 2	x	14 -H	S	1000	12,00 A 2
M 2	x	16 -H	S	1000	19,90 A 2
M 2	x	20 -H	S	1000	22,00 A 2
M 2,5	x	3 -H	S	1000	12,00 A 2
M 2,5	x	4 -H	S	1000	12,00 A 2
M 2,5	x	5 -H	S	1000	5,80 A 2
M 2,5	x	6 -H	S	1000	5,80 A 2
M 2,5	x	8 -H	S	1000	5,80 A 2
M 2,5	x	10 -H	S	1000	5,80 A 2
M 2,5	x	12 -H	S	1000	6,00 A 2
M 2,5	x	16 -H	S	1000	6,50 A 2
M 2,5	x	20 -H	S	1000	7,00 A 2
M 2,5	x	25 -H	S	1000	15,00 A 2
M 3	x	4 -H	S	1000	6,60 A 2
M 3	x	5 -H	S	1000	5,60 A 2
M 3	x	5 -H	K	200	6,60 A 2
M 3	x	6 -H	S	1000	3,70 A 2
M 3	x	6 -H	K	200	4,70 A 2
M 3	x	8 -H	S	1000	3,95 A 2
M 3	x	8 -H	K	200	4,95 A 2
M 3	x	10 -H	K	200	5,20 A 2
M 3	x	12 -H	S	1000	4,45 A 2
M 3	x	12 -H	K	200	5,45 A 2
M 3	x	16 -H	S	1000	4,85 A 2
M 3	x	16 -H	K	200	5,85 A 2
M 3	x	20 -H	S	1000	5,55 A 2
M 3	x	20 -H	K	200	6,55 A 2
M 3	x	22 -H	S	1000	9,00 A 2
M 3	x	25 -H	S	1000	6,05 A 2
M 3	x	30 -H	S	1000	8,90 A 2
M 3	x	35 -H	S	500	15,00 A 2
M 3	x	40 -H	S	500	18,50 A 2
M 3	x	45 -H	S	500	34,20 A 2
M 3	x	50 -H	S	500	34,20 A 2
M 4	x	5 -H	S	1000	7,55 A 2
M 4	x	6 -H	S	1000	5,95 A 2
M 4	x	6 -H	K	200	6,95 A 2
M 4	x	8 -H	K	200	6,95 A 2
M 4	x	10 -H	S	1000	6,20 A 2
M 4	x	10 -H	K	200	7,20 A 2
M 4	x	12 -H	S	1000	6,55 A 2
M 4	x	12 -H	K	200	7,55 A 2
M 4	x	14 -H	S	1000	7,40 A 2
M 4	x	16 -H	S	1000	7,40 A 2
M 4	x	16 -H	K	200	8,40 A 2
M 4	x	18 -H	S	1000	8,25 A 2
M 4	x	20 -H	S	1000	8,15 A 2
M 4	x	20 -H	K	200	9,15 A 2
M 4	x	25 -H	S	1000	9,50 A 2
M 4	x	25 -H	K	200	10,50 A 2
M 4	x	30 -H	S	1000	11,10 A 2
M 4	x	30 -H	K	200	12,10 A 2
M 4	x	35 -H	S	500	14,00 A 2
M 4	x	35 -H	K	200	15,00 A 2
M 4	x	40 -H	S	500	15,00 A 2
M 4	x	40 -H	K	200	16,00 A 2
M 4	x	45 -H	S	500	34,20 A 2
M 4	x	50 -H	S	500	34,20 A 2
M 4	x	60 -H	S	500	45,00 A 2
M 5	x	6 -H	S	500	14,80 A 2
M 5	x	8 -H	S	500	10,60 A 2
M 5	x	8 -H	K	200	11,60 A 2
M 5	x	10 -H	S	500	10,50 A 2
M 5	x	10 -H	K	200	11,50 A 2
M 5	x	12 -H	S	500	10,60 A 2
M 5	x	12 -H	K	200	11,60 A 2
M 5	x	14 -H	S	500	11,86 A 2
M 5	x	16 -H	S	500	11,80 A 2
M 5	x	16 -H	K	200	12,80 A 2
M 5	x	18 -H	S	500	17,30 A 2
M 5	x	20 -H	S	500	13,20 A 2
M 5	x	20 -H	K	200	14,20 A 2
M 5	x	25 -H	S	500	15,10 A 2
M 5	x	25 -H	K	200	16,10 A 2
M 5	x	30 -H	S	500	17,60 A 2
M 5	x	30 -H	K	200	18,60 A 2
M 5	x	35 -H	S	500	19,90 A 2
M 5	x	35 -H	K	200	20,90 A 2
M 5	x	40 -H	S	200	23,20 A 2
M 5	x	45 -H	S	200	28,50 A 2
M 5	x	50 -H	S	200	29,90 A 2
M 5	x	55 -H	S	200	37,40 A 2
M 5	x	60 -H	S	200	37,40 A 2
M 5	x	70 -H	S	200	50,60 A 2
M 5	x	80 -H	S	200	59,30 A 2
M 5	x	90 -H	S	200	70,00 A 2
M 5	x	100 -H	S	200	85,00 A 2
M 6	x	8 -H	S	200	17,60 A 2
M 6	x	10 -H	S	200	13,20 A 2
M 6	x	12 -H	S	200	13,90 A 2
M 6	x	16 -H	S	200	15,80 A 2
M 6	x	20 -H	S	200	17,10 A 2
M 6	x	25 -H	S	200	19,10 A 2
M 6	x	30 -H	S	200	22,40 A 2
M 6	x	35 -H	S	200	24,70 A 2
M 6	x	40 -H	S	200	28,10 A 2
M 6	x	45 -H	S	200	31,30 A 2
M 6	x	50 -H	S	200	35,60 A 2
M 6	x	55 -H	S	200	40,30 A 2
M 6	x	60 -H	S	200	40,30 A 2
M 6	x	70 -H	S	100	60,30 A 2
M 6	x	80 -H	S	100	69,50 A 2
M 6	x	90 -H	S	100	79,00 A 2
M 6	x	100 -H	S	100	88,50 A 2
M 6	x	110 -H	S	100	185,00 A 2
M 6	x	120 -H	S	100	225,00 A 2
M 8	x	10 -H	S	100	75,50 A 2
M 8	x	12 -H	S	100	28,60 A 2
M 8	x	16 -H	S	100	30,80 A 2
M 8	x	20 -H	S	100	34,70 A 2
M 8	x	25 -H	S	100	40,30 A 2
M 8	x	30 -H	S	100	41,90 A 2
M 8	x	35 -H	S	100	43,90 A 2
M 8	x	40 -H	S	100	47,70 A 2
M 8	x	45 -H	S	100	51,00 A 2
M 8	x	50 -H	S	100	57,70 A 2
M 8	x	55 -H	S	100	64,40 A 2
M 8	x	60 -H	S	100	64,40 A 2
M 8	x	70 -H	S	100	75,60 A 2
M 8	x	80 -H	S	100	87,90 A 2
M 8	x	105 -H	S	100	73,20 A 2
M 8	x	130 -H	S	100	108,00 A 2
M 10	x	12 -H	S	100	125,00 A 2
M 10	x	16 -H	S	100	145,00 A 2
M 10	x	20 -H	S	100	160,00 A 2
M 10	x	25 -H	S	100	190,00 A 2
M 10	x	30 -H	S	100	220,00 A 2
M 10	x	35 -H	S	100	240,00 A 2
M 10	x	40 -H	S	100	261,00 A 2
M 10	x	45 -H	S	100	290,00 A 2
M 10	x	50 -H	S	100	315,00 A 2
M 10	x	55 -H	S	100	345,00 A 2
M 10	x	60 -H	S	100	365,00 A 2

ISO	07046.927	RAZ 460

7046-2 A 2 Z



Countersunk head screws with Pozidriv cross recess Z

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

Steel ➔ S. 309

ISO 7046 ➔ replaces DIN 965 (compatible)

M 2	x	3 -Z	S	1000	12,00 A 2
M 2	x	4 -Z	S	1000	13,00 A 2
M 2	x	5 -Z	S	1000	14,25 A 2
M 2	x	6 -Z	S	1000	15,65 A 2
M 2	x	10 -Z	S	1000	15,85 A 2
M 2	x	12 -Z	S	1000	16,36 A 2

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
M 2 x 14 -Z	S	1000	19,90 A2
M 2 x 16 -Z	S	1000	19,90 A2
M 2 x 20 -Z	S	1000	22,00 A2
M 2,5 x 3 -Z	S	1000	12,00 A2
M 2,5 x 4 -Z	S	1000	12,00 A2
M 2,5 x 5 -Z	S	1000	5,80 A2
M 2,5 x 6 -Z	S	1000	5,80 A2
M 2,5 x 8 -Z	S	1000	5,80 A2
M 2,5 x 10 -Z	S	1000	5,80 A2
M 2,5 x 12 -Z	S	1000	6,00 A2
M 2,5 x 16 -Z	S	1000	6,50 A2
M 2,5 x 20 -Z	S	1000	7,00 A2
M 2,5 x 25 -Z	S	1000	15,00 A2
M 3 x 4 -Z	S	1000	6,60 A2
M 3 x 5 -Z	S	1000	5,60 A2
M 3 x 6 -Z	S	1000	3,70 A2
M 3 x 8 -Z	S	1000	3,95 A2
M 3 x 10 -Z	S	1000	4,20 A2
M 3 x 12 -Z	S	1000	4,45 A2
M 3 x 14 -Z	S	1000	4,40 A2
M 3 x 16 -Z	S	1000	4,85 A2
M 3 x 22 -Z	S	1000	6,05 A2
M 3 x 25 -Z	S	1000	6,05 A2
M 3 x 30 -Z	S	1000	8,90 A2
M 3 x 40 -Z	S	500	18,50 A2
M 3 x 50 -Z	S	500	34,20 A2
M 4 x 5 -Z	S	1000	7,55 A2
M 4 x 6 -Z	S	1000	5,95 A2
M 4 x 8 -Z	S	1000	5,95 A2
M 4 x 10 -Z	S	1000	6,20 A2
M 4 x 12 -Z	S	1000	6,55 A2
M 4 x 14 -Z	S	1000	7,40 A2
M 4 x 16 -Z	S	1000	7,40 A2
M 4 x 20 -Z	S	1000	8,15 A2
M 4 x 22 -Z	S	1000	9,50 A2
M 4 x 25 -Z	S	1000	9,50 A2
M 4 x 30 -Z	S	1000	11,10 A2
M 4 x 40 -Z	S	500	15,00 A2
M 4 x 45 -Z	S	500	34,20 A2
M 4 x 60 -Z	S	500	40,00 A2
M 5 x 8 -Z	S	500	10,60 A2
M 5 x 10 -Z	S	500	10,50 A2
M 5 x 12 -Z	S	500	10,60 A2
M 5 x 16 -Z	S	500	11,80 A2
M 5 x 18 -Z	S	500	14,27 A2
M 5 x 20 -Z	S	500	13,20 A2
M 5 x 25 -Z	S	500	15,10 A2
M 5 x 30 -Z	S	500	17,60 A2
M 5 x 35 -Z	S	500	19,90 A2
M 5 x 40 -Z	S	200	23,20 A2
M 5 x 45 -Z	S	200	29,90 A2
M 5 x 50 -Z	S	200	29,90 A2
M 5 x 55 -Z	S	200	37,40 A2
M 5 x 60 -Z	S	200	37,40 A2
M 5 x 70 -Z	S	200	50,60 A2
M 5 x 80 -Z	S	200	59,30 A2
M 5 x 90 -Z	S	200	70,00 A2
M 5 x 100 -Z	S	200	85,00 A2
M 6 x 8 -Z	S	200	17,60 A2
M 6 x 10 -Z	S	200	13,20 A2
M 6 x 12 -Z	S	200	13,90 A2
M 6 x 16 -Z	S	200	15,80 A2
M 6 x 20 -Z	S	200	17,10 A2
M 6 x 25 -Z	S	200	19,10 A2
M 6 x 30 -Z	S	200	22,40 A2
M 6 x 40 -Z	S	200	28,10 A2
M 6 x 50 -Z	S	200	35,60 A2
M 6 x 60 -Z	S	200	40,30 A2
M 6 x 70 -Z	S	100	90,00 A2
M 6 x 80 -Z	S	100	105,00 A2
M 6 x 90 -Z	S	100	125,00 A2
M 6 x 100 -Z	S	100	150,00 A2
M 6 x 110 -Z	S	100	185,00 A2
M 6 x 120 -Z	S	100	225,00 A2
M 8 x 10 -Z	S	100	75,50 A2
M 8 x 12 -Z	S	100	85,00 A2
M 8 x 16 -Z	S	100	100,00 A2
M 8 x 20 -Z	S	100	110,00 A2
M 8 x 25 -Z	S	100	130,00 A2
M 8 x 30 -Z	S	100	150,00 A2
M 8 x 40 -Z	S	100	180,00 A2
M 8 x 45 -Z	S	100	200,00 A2
M 8 x 50 -Z	S	100	215,00 A2
M 8 x 55 -Z	S	100	235,00 A2
M 8 x 60 -Z	S	100	250,00 A2
M 8 x 70 -Z	S	100	295,00 A2
M 8 x 80 -Z	S	100	350,00 A2
M 10 x 16 -Z	S	100	145,00 A2
M 10 x 25 -Z	S	100	190,00 A2
M 10 x 35 -Z	S	100	240,00 A2
M 10 x 40 -Z	S	100	261,00 A2

ISO | 07046.945 | RAZ 460

7046-2 A 4 H

Countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 308

ISO 7046 → replaces DIN 965 (compatible)

Dimensions	PU	Pieces	€/100/Mat.
M 1,6 x 3 -H	S	1000	60,00 A4
M 1,6 x 4 -H	S	1000	60,00 A4
M 1,6 x 5 -H	S	1000	65,00 A4
M 1,6 x 10 -H	S	1000	71,00 A4
M 1,6 x 16 -H	S	1000	75,00 A4
M 2 x 3 -H	S	1000	16,00 A4
M 2 x 4 -H	S	1000	16,00 A4
M 2 x 5 -H	S	1000	17,25 A4
M 2 x 6 -H	S	1000	18,65 A4
M 2 x 8 -H	S	1000	20,00 A4
M 2 x 10 -H	S	1000	21,00 A4
M 2 x 12 -H	S	1000	22,50 A4
M 2 x 16 -H	S	1000	24,00 A4
M 2 x 20 -H	S	1000	27,00 A4
M 2,5 x 3 -H	S	1000	16,00 A4
M 2,5 x 4 -H	S	1000	16,00 A4
M 2,5 x 5 -H	S	1000	18,00 A4
M 2,5 x 6 -H	S	1000	19,00 A4
M 2,5 x 8 -H	S	1000	22,00 A4
M 2,5 x 10 -H	S	1000	24,00 A4
M 2,5 x 12 -H	S	1000	26,00 A4
M 2,5 x 14 -H	S	1000	29,50 A4
M 2,5 x 16 -H	S	1000	29,50 A4
M 2,5 x 20 -H	S	1000	35,00 A4
M 2,5 x 25 -H	S	1000	42,00 A4
M 3 x 4 -H	S	1000	20,00 A4
M 3 x 5 -H	S	1000	20,00 A4
M 3 x 6 -H	S	1000	5,90 A4
M 3 x 8 -H	S	1000	5,75 A4
M 3 x 10 -H	S	1000	6,35 A4
M 3 x 12 -H	S	1000	6,85 A4
M 3 x 14 -H	S	1000	7,40 A4
M 3 x 16 -H	S	1000	7,40 A4
M 3 x 20 -H	S	1000	8,25 A4
M 3 x 25 -H	S	1000	9,70 A4
M 3 x 30 -H	S	1000	14,30 A4
M 3 x 35 -H	S	1000	26,10 A4
M 3 x 40 -H	S	500	33,00 A4
M 4 x 5 -H	S	1000	13,50 A4
M 4 x 6 -H	S	1000	9,55 A4
M 4 x 8 -H	S	1000	8,60 A4
M 4 x 10 -H	S	1000	9,20 A4
M 4 x 12 -H	S	1000	9,90 A4
M 4 x 16 -H	S	1000	10,60 A4
M 4 x 18 -H	S	1000	12,00 A4
M 4 x 20 -H	S	1000	11,90 A4
M 4 x 25 -H	S	1000	14,10 A4
M 4 x 30 -H	S	1000	17,80 A4
M 4 x 35 -H	S	500	22,40 A4
M 4 x 40 -H	S	500	24,10 A4
M 4 x 45 -H	S	500	54,70 A4
M 4 x 50 -H	S	200	54,70 A4
M 4 x 55 -H	S	200	66,00 A4
M 4 x 60 -H	S	200	85,00 A4
M 5 x 6 -H	S	500	20,00 A4
M 5 x 8 -H	S	500	18,00 A4
M 5 x 10 -H	S	500	13,40 A4
M 5 x 12 -H	S	500	14,40 A4
M 5 x 16 -H	S	500	15,40 A4
M 5 x 20 -H	S	500	16,80 A4
M 5 x 25 -H	S	500	20,10 A4
M 5 x 30 -H	S	500	23,60 A4
M 5 x 35 -H	S	200	29,50 A4
M 5 x 40 -H	S	200	38,00 A4
M 5 x 45 -H	S	200	63,50 A4
M 5 x 50 -H	S	200	70,00 A4
M 5 x 55 -H	S	200	82,00 A4
M 5 x 60 -H	S	200	95,00 A4
M 6 x 8 -H	S	200	24,50 A4
M 6 x 10 -H	S	200	20,10 A4
M 6 x 12 -H	S	200	21,00 A4
M 6 x 16 -H	S	200	22,80 A4
M 6 x 20 -H	S	200	24,50 A4
M 6 x 25 -H	S	200	28,60 A4
M 6 x 30 -H	S	200	30,20 A4
M 6 x 35 -H	S	200	39,60 A4
M 6 x 40 -H	S	200	40,00 A4
M 6 x 45 -H	S	200	54,10 A4
M 6 x 50 -H	S	200	54,10 A4
M 6 x 55 -H	S	200	65,00 A4
M 6 x 60 -H	S	200	64,90 A4
M 6 x 70 -H	S	200	95,00 A4
M 6 x 80 -H	S	200	120,00 A4
M 6 x 90 -H	S	200	145,00 A4
M 8 x 10 -H	S	200	65,00 A4
M 8 x 12 -H	S	100	65,00 A4
M 8 x 16 -H	S	100	53,10 A4
M 8 x 20 -H	S	100	57,20 A4
M 8 x 25 -H	S	100	61,30 A4
M 8 x 30 -H	S	100	71,00 A4
M 8 x 35 -H	S	100	82,80 A4
M 8 x 40 -H	S	100	91,50 A4
M 8 x 45 -H	S	100	175,00 A4
M 8 x 50 -H	S	100	205,00 A4
M 8 x 55 -H	S	100	260,00 A4
M 8 x 60 -H	S	100	290,00 A4
M 8 x 70 -H	S	100	330,00 A4
M 8 x 80 -H	S	100	375,00 A4
M 8 x 90 -H	S	100	425,00 A4
M 10 x 16 -H	S	100	250,00 A4
M 10 x 20 -H	S	100	140,00 A4
M 10 x 25 -H	S	100	151,00 A4
M 10 x 30 -H	S	100	162,00 A4
M 10 x 35 -H	S	100	181,00 A4
M 10 x 40 -H	S	100	196,00 A4
M 10 x 45 -H	S	100	201,00 A4
M 10 x 50 -H	S	100	201,00 A4
M 10 x 55 -H	S	100	225,00 A4
M 10 x 60 -H	S	100	225,00 A4
M 10 x 70 -H	S	100	420,00 A4
M 10 x 80 -H	S	100	500,00 A4

Dimensions	PU	Pieces	€/100/Mat.
ISO 07047.924			RAZ 460
7047	**A 2**		**H**

Raised countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 310

ISO 7047 → replaces DIN 966 (compatible)

M 2,5	x	4 -H	S	1000	15,00 A2
M 2,5	x	5 -H	S	1000	13,50 A2
M 2,5	x	6 -H	S	1000	11,50 A2
M 2,5	x	8 -H	S	1000	6,95 A2
M 2,5	x	10 -H	S	1000	6,95 A2
M 2,5	x	12 -H	S	1000	8,50 A2
M 2,5	x	16 -H	S	1000	11,00 A2
M 2,5	x	20 -H	S	1000	16,00 A2
M 2,5	x	25 -H	S	1000	24,00 A2
M 3	x	4 -H	S	1000	10,00 A2
M 3	x	5 -H	S	1000	5,60 A2
M 3	x	6 -H	S	1000	3,70 A2
M 3	x	8 -H	S	1000	3,95 A2
M 3	x	10 -H	S	1000	4,20 A2
M 3	x	12 -H	S	1000	4,85 A2
M 3	x	16 -H	S	1000	4,85 A2
M 3	x	18 -H	S	1000	5,50 A2
M 3	x	20 -H	S	1000	5,55 A2
M 3	x	25 -H	S	1000	9,75 A2
M 3	x	30 -H	S	500	13,00 A2
M 3	x	35 -H	S	500	14,00 A2
M 3	x	45 -H	S	500	32,00 A2
M 3	x	50 -H	S	500	50,00 A2
M 4	x	5 -H	S	1000	12,00 A2
M 4	x	6 -H	S	1000	5,80 A2
M 4	x	8 -H	S	1000	5,95 A2
M 4	x	10 -H	S	1000	6,20 A2
M 4	x	12 -H	S	1000	6,55 A2
M 4	x	14 -H	S	1000	7,40 A2
M 4	x	16 -H	S	1000	7,40 A2
M 4	x	20 -H	S	1000	8,15 A2
M 4	x	25 -H	S	1000	9,50 A2
M 4	x	30 -H	S	500	11,10 A2
M 4	x	35 -H	S	500	14,00 A2
M 4	x	40 -H	S	500	15,00 A2
M 4	x	45 -H	S	500	35,00 A2
M 4	x	50 -H	S	500	58,00 A2
M 5	x	6 -H	S	500	16,00 A2
M 5	x	8 -H	S	500	10,60 A2
M 5	x	10 -H	S	500	10,50 A2
M 5	x	12 -H	S	500	10,60 A2
M 5	x	16 -H	S	500	11,80 A2
M 5	x	20 -H	S	500	13,20 A2
M 5	x	25 -H	S	500	15,10 A2
M 5	x	30 -H	S	500	17,60 A2
M 5	x	35 -H	S	500	19,90 A2
M 5	x	40 -H	S	200	23,20 A2
M 5	x	45 -H	S	200	30,90 A2
M 5	x	50 -H	S	200	32,70 A2
M 5	x	55 -H	S	200	45,00 A2
M 5	x	60 -H	S	200	42,40 A2
M 5	x	70 -H	S	200	60,00 A2
M 5	x	80 -H	S	200	85,00 A2
M 6	x	8 -H	S	200	20,00 A2
M 6	x	10 -H	S	200	20,00 A2
M 6	x	12 -H	S	200	13,90 A2
M 6	x	16 -H	S	200	15,80 A2
M 6	x	20 -H	S	200	17,10 A2
M 6	x	22 -H	S	200	66,47 A2
M 6	x	25 -H	S	200	19,10 A2
M 6	x	30 -H	S	200	22,40 A2
M 6	x	35 -H	S	200	24,70 A2
M 6	x	40 -H	S	200	28,10 A2
M 6	x	45 -H	S	200	33,20 A2
M 6	x	50 -H	S	200	33,70 A2
M 6	x	55 -H	S	200	40,60 A2
M 6	x	60 -H	S	200	40,60 A2
M 6	x	65 -H	S	200	75,00 A2
M 6	x	70 -H	S	200	88,00 A2
M 6	x	80 -H	S	200	110,00 A2
M 8	x	10 -H	S	200	30,00 A2
M 8	x	12 -H	S	200	30,00 A2
M 8	x	16 -H	S	200	23,60 A2
M 8	x	20 -H	S	200	25,00 A2
M 8	x	25 -H	S	200	30,70 A2
M 8	x	30 -H	S	200	33,60 A2
M 8	x	35 -H	S	100	37,20 A2
M 8	x	40 -H	S	100	39,20 A2
M 8	x	45 -H	S	100	79,70 A2
M 8	x	50 -H	S	100	79,70 A2
M 8	x	55 -H	S	100	86,00 A2
M 8	x	60 -H	S	100	92,00 A2

Dimensions	PU	Pieces	€/100/Mat.
ISO 07047.944			RAZ 460
7047	**A 4**		**H**

Raised countersunk head screws with Phillips cross recess H

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 310

ISO 7047 → replaces DIN 966 (compatible)

M 2,5	x	6 -H	S	1000	17,25 A4
M 2,5	x	8 -H	S	1000	10,50 A4
M 2,5	x	10 -H	S	1000	14,55 A4
M 2,5	x	12 -H	S	1000	12,75 A4
M 2,5	x	16 -H	S	1000	16,50 A4
M 2,5	x	20 -H	S	1000	24,00 A4
M 2,5	x	25 -H	S	1000	36,00 A4
M 3	x	4 -H	S	1000	15,00 A4
M 3	x	5 -H	S	1000	8,40 A4
M 3	x	6 -H	S	1000	5,75 A4
M 3	x	8 -H	S	1000	6,00 A4
M 3	x	10 -H	S	1000	6,35 A4
M 3	x	12 -H	S	1000	6,85 A4
M 3	x	16 -H	S	1000	7,40 A4
M 3	x	20 -H	S	1000	8,25 A4
M 3	x	25 -H	S	1000	9,70 A4
M 3	x	30 -H	S	1000	19,50 A4
M 4	x	6 -H	S	1000	8,70 A4
M 4	x	8 -H	S	1000	8,60 A4
M 4	x	10 -H	S	1000	9,20 A4
M 4	x	12 -H	S	1000	9,90 A4
M 4	x	16 -H	S	1000	10,60 A4
M 4	x	20 -H	S	1000	11,90 A4
M 4	x	25 -H	S	1000	14,10 A4
M 4	x	30 -H	S	1000	16,65 A4
M 4	x	35 -H	S	1000	21,00 A4
M 4	x	40 -H	S	1000	22,50 A4
M 5	x	6 -H	S	500	24,00 A4
M 5	x	8 -H	S	500	15,90 A4
M 5	x	10 -H	S	500	13,40 A4
M 5	x	12 -H	S	500	14,40 A4
M 5	x	16 -H	S	500	15,40 A4
M 5	x	20 -H	S	500	16,80 A4
M 5	x	25 -H	S	500	20,10 A4
M 5	x	30 -H	S	500	23,60 A4
M 5	x	35 -H	S	500	29,85 A4
M 5	x	40 -H	S	200	34,80 A4
M 5	x	45 -H	S	200	46,35 A4
M 5	x	50 -H	S	200	49,05 A4
M 6	x	8 -H	S	200	30,00 A4
M 6	x	10 -H	S	200	20,10 A4
M 6	x	12 -H	S	200	21,00 A4
M 6	x	16 -H	S	200	22,80 A4
M 6	x	20 -H	S	200	23,60 A4
M 6	x	25 -H	S	200	26,90 A4
M 6	x	30 -H	S	200	30,20 A4
M 6	x	35 -H	S	200	33,70 A4
M 6	x	40 -H	S	200	40,00 A4
M 6	x	45 -H	S	200	49,80 A4
M 6	x	50 -H	S	200	50,55 A4
M 6	x	55 -H	S	200	61,00 A4
M 6	x	60 -H	S	200	72,00 A4
M 8	x	10 -H	S	200	45,00 A4
M 8	x	16 -H	S	200	35,40 A4
M 8	x	20 -H	S	200	37,50 A4
M 8	x	25 -H	S	200	46,05 A4
M 8	x	30 -H	S	200	50,40 A4
M 8	x	35 -H	S	100	55,80 A4
M 8	x	40 -H	S	100	58,80 A4
M 8	x	45 -H	S	100	119,55 A4
M 8	x	50 -H	S	100	119,55 A4
M 8	x	55 -H	S	100	129,00 A4
M 8	x	60 -H	S	100	138,00 A4

Dimensions	PU	Pieces	€/100/Mat.
ISO 07049.926			RAZ 690
7049	**A 2**		**type C-H**

Pan head tapping screws with Phillips cross recess H, C = with cone end

Nominal lengths from 60 mm with partial thread

Caution! Hardness only ~ 250 HV.

Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

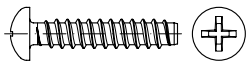
Steel → S. 310

ISO 7049 → replaces DIN 7981 (compatible)

C 2,2	x	4,5-H	S	1000	6,00 A2
C 2,2	x	6,5-H	S	1000	5,80 A2
C 2,2	x	6,5-H	K	100	7,85 A2
C 2,2	x	9,5-H	S	1000	4,55 A2
C 2,2	x	13 -H	S	1000	6,50 A2
C 2,2	x	16 -H	S	1000	7,50 A2
C 2,2	x	19 -H	S	1000	10,00 A2
C 2,9	x	6,5-H	S	1000	3,75 A2
C 2,9	x	6,5-H	K	100	5,80 A2
C 2,9	x	9,5-H	S	1000	2,60 A2
C 2,9	x	9,5-H	K	100	4,65 A2
C 2,9	x	13 -H	S	1000	2,70 A2
C 2,9	x	13 -H	K	100	4,75 A2
C 2,9	x	16 -H	S	1000	3,00 A2
C 2,9	x	16 -H	K	100	5,05 A2
C 2,9	x	19 -H	S	1000	3,20 A2
C 2,9	x	19 -H	K	100	5,25 A2

Dimensions			PU	Pieces	€/100/Mat.
C 2,9	x	22 -H	S	1000	5,35 A 2
C 2,9	x	22 -H	K	100	7,40 A 2
C 2,9	x	25 -H	S	1000	5,60 A 2
C 2,9	x	25 -H	K	100	7,65 A 2
C 3,5	x	6,5-H	S	1000	4,20 A 2
C 3,5	x	9,5-H	S	1000	3,40 A 2
C 3,5	x	9,5-H	K	100	5,45 A 2
C 3,5	x	13 -H	S	1000	3,60 A 2
C 3,5	x	13 -H	K	100	5,65 A 2
C 3,5	x	16 -H	S	1000	3,80 A 2
C 3,5	x	16 -H	K	100	5,85 A 2
C 3,5	x	19 -H	S	1000	4,20 A 2
C 3,5	x	19 -H	K	100	6,25 A 2
C 3,5	x	22 -H	S	1000	5,25 A 2
C 3,5	x	22 -H	K	100	7,30 A 2
C 3,5	x	25 -H	S	1000	5,45 A 2
C 3,5	x	25 -H	K	100	7,50 A 2
C 3,5	x	32 -H	S	1000	6,20 A 2
C 3,5	x	32 -H	K	100	8,25 A 2
C 3,5	x	38 -H	S	1000	6,95 A 2
C 3,5	x	38 -H	K	100	9,00 A 2
C 3,5	x	45 -H	S	1000	9,00 A 2
C 3,5	x	50 -H	S	1000	12,00 A 2
C 3,5	x	60 -H	S	500	16,50 A 2
C 3,9	x	9,5-H	S	1000	4,10 A 2
C 3,9	x	9,5-H	K	100	6,15 A 2
C 3,9	x	13 -H	S	1000	4,10 A 2
C 3,9	x	13 -H	K	100	6,15 A 2
C 3,9	x	16 -H	S	1000	4,40 A 2
C 3,9	x	16 -H	K	100	6,45 A 2
C 3,9	x	19 -H	S	1000	4,80 A 2
C 3,9	x	19 -H	K	100	6,85 A 2
C 3,9	x	22 -H	S	500	5,90 A 2
C 3,9	x	22 -H	K	100	7,95 A 2
C 3,9	x	25 -H	S	500	6,10 A 2
C 3,9	x	25 -H	K	100	8,15 A 2
C 3,9	x	32 -H	S	500	7,25 A 2
C 3,9	x	32 -H	K	100	9,30 A 2
C 3,9	x	38 -H	S	500	8,30 A 2
C 3,9	x	38 -H	K	100	10,35 A 2
C 3,9	x	45 -H	S	500	10,30 A 2
C 3,9	x	50 -H	S	500	12,35 A 2
C 4,2	x	9,5-H	S	1000	4,60 A 2
C 4,2	x	9,5-H	K	100	6,65 A 2
C 4,2	x	13 -H	S	1000	4,70 A 2
C 4,2	x	13 -H	K	100	6,75 A 2
C 4,2	x	16 -H	S	1000	5,25 A 2
C 4,2	x	16 -H	K	100	7,30 A 2
C 4,2	x	19 -H	S	500	5,75 A 2
C 4,2	x	19 -H	K	100	7,80 A 2
C 4,2	x	22 -H	S	500	6,50 A 2
C 4,2	x	22 -H	K	100	8,55 A 2
C 4,2	x	25 -H	S	500	6,70 A 2
C 4,2	x	25 -H	K	100	8,75 A 2
C 4,2	x	32 -H	S	500	8,30 A 2
C 4,2	x	32 -H	K	100	10,35 A 2
C 4,2	x	38 -H	S	500	9,45 A 2
C 4,2	x	38 -H	K	100	11,50 A 2
C 4,2	x	45 -H	S	500	13,70 A 2
C 4,2	x	45 -H	K	100	15,75 A 2
C 4,2	x	50 -H	S	500	15,50 A 2
C 4,2	x	50 -H	K	100	17,55 A 2
C 4,8	x	9,5-H	S	500	5,80 A 2
C 4,8	x	9,5-H	K	100	7,85 A 2
C 4,8	x	13 -H	S	500	6,00 A 2
C 4,8	x	13 -H	K	100	8,05 A 2
C 4,8	x	16 -H	S	500	6,50 A 2
C 4,8	x	16 -H	K	100	8,55 A 2
C 4,8	x	19 -H	S	500	7,25 A 2
C 4,8	x	19 -H	K	100	9,30 A 2
C 4,8	x	22 -H	S	500	8,30 A 2
C 4,8	x	22 -H	K	100	10,35 A 2
C 4,8	x	25 -H	S	500	8,50 A 2
C 4,8	x	25 -H	K	100	10,55 A 2
C 4,8	x	32 -H	S	250	10,80 A 2
C 4,8	x	32 -H	K	100	12,90 A 2
C 4,8	x	38 -H	S	250	12,10 A 2
C 4,8	x	38 -H	K	100	14,15 A 2
C 4,8	x	45 -H	S	250	15,80 A 2
C 4,8	x	45 -H	K	100	17,85 A 2
C 4,8	x	50 -H	S	250	16,30 A 2
C 4,8	x	50 -H	K	100	18,35 A 2
C 4,8	x	60 -H	S	250	22,10 A 2
C 4,8	x	70 -H	S	250	29,00 A 2
C 4,8	x	80 -H	S	100	34,40 A 2
C 4,8	x	90 -H	S	100	44,40 A 2
C 4,8	x	100 -H	S	100	56,20 A 2
C 4,8	x	120 -H	S	100	75,00 A 2
C 5,5	x	13 -H	S	500	9,75 A 2
C 5,5	x	13 -H	K	100	11,80 A 2
C 5,5	x	16 -H	S	500	10,40 A 2
C 5,5	x	16 -H	K	100	12,45 A 2
C 5,5	x	19 -H	S	500	11,10 A 2
C 5,5	x	19 -H	K	100	13,15 A 2
C 5,5	x	22 -H	S	500	12,20 A 2
C 5,5	x	22 -H	K	100	14,25 A 2
C 5,5	x	25 -H	S	500	13,10 A 2
C 5,5	x	25 -H	K	100	15,15 A 2
C 5,5	x	32 -H	S	250	15,30 A 2
C 5,5	x	32 -H	K	100	17,35 A 2
C 5,5	x	38 -H	S	250	17,30 A 2
C 5,5	x	38 -H	K	100	19,35 A 2
C 5,5	x	45 -H	S	250	20,70 A 2
C 5,5	x	45 -H	K	100	22,75 A 2
C 5,5	x	50 -H	S	250	23,20 A 2
C 5,5	x	50 -H	K	100	25,25 A 2
C 5,5	x	60 -H	S	100	27,60 A 2
C 5,5	x	70 -H	S	100	32,00 A 2
C 5,5	x	80 -H	S	100	40,00 A 2
C 5,5	x	90 -H	S	100	55,00 A 2
C 5,5	x	100 -H	S	100	68,00 A 2
C 6,3	x	13 -H	S	250	13,30 A 2
C 6,3	x	13 -H	K	100	15,35 A 2
C 6,3	x	16 -H	S	500	11,20 A 2
C 6,3	x	16 -H	K	100	13,25 A 2
C 6,3	x	19 -H	S	250	12,00 A 2
C 6,3	x	19 -H	K	100	14,05 A 2
C 6,3	x	22 -H	S	250	13,20 A 2
C 6,3	x	22 -H	K	100	15,25 A 2
C 6,3	x	25 -H	S	250	14,00 A 2
C 6,3	x	25 -H	K	100	16,05 A 2
C 6,3	x	32 -H	S	250	16,80 A 2
C 6,3	x	32 -H	K	100	18,85 A 2
C 6,3	x	38 -H	S	250	18,60 A 2
C 6,3	x	38 -H	K	100	20,65 A 2
C 6,3	x	45 -H	S	250	22,20 A 2
C 6,3	x	45 -H	K	100	24,25 A 2
C 6,3	x	50 -H	S	250	27,60 A 2
C 6,3	x	50 -H	K	100	29,65 A 2
C 6,3	x	60 -H	K	100	31,50 A 2
C 6,3	x	70 -H	K	100	41,00 A 2
C 6,3	x	80 -H	K	100	54,00 A 2
C 6,3	x	90 -H	K	100	66,00 A 2
C 6,3	x	100 -H	K	100	80,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
ISO		07049.925			RAZ 690
7049		**A 2**			**type F-H**



Pan head tapping screws with Phillips cross recess H, F = with flat end

Caution! Hardness only ~ 250 HV.

Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

Steel → S. 311

ISO 7049 → replaces DIN 7981 (compatible)

2,9	x	6,5 -F-H	S	1000	7,50 A 2
2,9	x	9,5 -F-H	S	1000	7,60 A 2
2,9	x	13 -F-H	S	1000	8,10 A 2
2,9	x	16 -F-H	S	1000	9,00 A 2
3,5	x	9,5 -F-H	S	1000	10,20 A 2
3,5	x	13 -F-H	S	1000	10,80 A 2
3,5	x	16 -F-H	S	1000	11,40 A 2
3,9	x	9,5 -F-H	S	1000	12,30 A 2
3,9	x	13 -F-H	S	1000	12,30 A 2
4,2	x	9,5 -F-H	S	1000	13,80 A 2

Dimensions			PU	Pieces	€/100/Mat.
ISO		07049.944			RAZ 690
7049		**A 4**			**type C-H**

Pan head tapping screws with Phillips cross recess H, C = with cone end

Caution! Hardness only ~ 250 HV.

Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

Steel → S. 310

ISO 7049 → replaces DIN 7981 (compatible)

C 2,2	x	4,5-H	S	1000	12,00 A 4
C 2,2	x	6,5-H	S	1000	11,60 A 4
C 2,2	x	9,5-H	S	1000	9,10 A 4
C 2,2	x	13 -H	S	1000	13,00 A 4
C 2,2	x	16 -H	S	1000	15,00 A 4
C 2,2	x	19 -H	S	1000	18,00 A 4
C 2,9	x	6,5-H	S	1000	2,33 A 4
C 2,9	x	9,5-H	S	1000	5,20 A 4
C 2,9	x	13 -H	S	1000	5,40 A 4
C 2,9	x	16 -H	S	1000	6,00 A 4
C 2,9	x	19 -H	S	1000	6,40 A 4
C 2,9	x	22 -H	S	1000	10,70 A 4
C 2,9	x	25 -H	S	1000	11,20 A 4
C 3,5	x	6,5-H	S	1000	7,00 A 4
C 3,5	x	6,5-H	K	100	10,50 A 4
C 3,5	x	9,5-H	S	1000	6,80 A 4
C 3,5	x	13 -H	S	1000	6,35 A 4
C 3,5	x	16 -H	S	1000	6,55 A 4
C 3,5	x	19 -H	S	1000	8,40 A 4
C 3,5	x	22 -H	S	1000	11,00 A 4

Dimensions				PU	Pieces	€/100/Mat.
C 3,5	x	25	-H	S	1000	12,00 A4
C 3,5	x	32	-H	S	1000	13,00 A4
C 3,5	x	38	-H	S	1000	15,00 A4
C 3,9	x	9,5	-H	S	1000	8,20 A4
C 3,9	x	13	-H	S	1000	6,75 A4
C 3,9	x	16	-H	S	1000	8,80 A4
C 3,9	x	19	-H	S	1000	9,60 A4
C 3,9	x	25	-H	S	500	12,20 A4
C 3,9	x	32	-H	S	500	14,50 A4
C 3,9	x	38	-H	S	500	16,60 A4
C 3,9	x	45	-H	S	500	20,60 A4
C 3,9	x	50	-H	S	500	24,70 A4
C 4,2	x	9,5	-H	S	1000	9,20 A4
C 4,2	x	13	-H	S	1000	8,70 A4
C 4,2	x	16	-H	S	1000	9,55 A4
C 4,2	x	19	-H	S	500	10,35 A4
C 4,2	x	22	-H	S	500	13,00 A4
C 4,2	x	25	-H	S	500	13,40 A4
C 4,2	x	32	-H	S	500	16,60 A4
C 4,2	x	38	-H	S	500	18,90 A4
C 4,2	x	45	-H	S	500	27,40 A4
C 4,8	x	9,5	-H	S	500	11,60 A4
C 4,8	x	13	-H	S	100	12,00 A4
C 4,8	x	16	-H	S	500	12,80 A4
C 4,8	x	19	-H	S	500	13,05 A4
C 4,8	x	22	-H	S	500	16,60 A4
C 4,8	x	25	-H	S	500	15,75 A4
C 4,8	x	32	-H	S	250	20,70 A4
C 4,8	x	38	-H	S	250	24,20 A4
C 4,8	x	45	-H	S	250	31,60 A4
C 4,8	x	50	-H	S	250	32,60 A4
C 4,8	x	60	-H	S	250	44,20 A4
C 4,8	x	70	-H	S	250	58,00 A4
C 4,8	x	90	-H	S	100	88,80 A4
C 4,8	x	100	-H	S	100	112,40 A4
C 5,5	x	13	-H	S	500	19,50 A4
C 5,5	x	16	-H	S	500	20,80 A4
C 5,5	x	19	-H	S	500	22,20 A4
C 5,5	x	22	-H	S	500	24,40 A4
C 5,5	x	25	-H	S	500	26,20 A4
C 5,5	x	32	-H	S	250	30,60 A4
C 5,5	x	38	-H	S	250	34,60 A4
C 5,5	x	45	-H	S	250	41,40 A4
C 5,5	x	50	-H	S	250	46,40 A4
C 5,5	x	60	-H	S	100	55,20 A4
C 6,3	x	13	-H	S	250	26,60 A4
C 6,3	x	16	-H	S	500	22,40 A4
C 6,3	x	19	-H	S	250	24,00 A4
C 6,3	x	22	-H	S	250	26,40 A4
C 6,3	x	25	-H	S	250	28,00 A4
C 6,3	x	32	-H	S	250	33,60 A4
C 6,3	x	38	-H	S	250	37,20 A4
C 6,3	x	45	-H	S	250	44,40 A4
C 6,3	x	50	-H	S	250	55,20 A4

E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions	PU	Pieces	€/100/Mat.
ISO 07050.924			RAZ 690

7050 A 2 type C-H

Countersunk head tapping screws with Phillips cross recess H, C = with cone end

Nominal lengths from 60 mm with partial thread, countersunk ⊀ = 80°

Caution! Hardness only ~ 250 HV.

Dimensions ➔ TI-47 Standard conversion ➔ TI-11
Mounting instructions ➔ TI-237

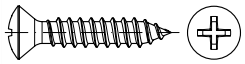
Steel ➔ S. 312

ISO 7050 ➔ replaces DIN 7982

2,2	x	6,5	-C-H	S	1000	7,50 A2
2,2	x	9,5	-C-H	S	1000	5,15 A2
2,2	x	13	-C-H	S	1000	9,85 A2
2,2	x	16	-C-H	S	1000	13,75 A2
2,2	x	19	-C-H	S	1000	19,65 A2
2,9	x	6,5	-C-H	S	1000	3,50 A2
2,9	x	9,5	-C-H	S	1000	2,60 A2
2,9	x	13	-C-H	S	1000	2,70 A2
2,9	x	16	-C-H	S	1000	3,00 A2
2,9	x	19	-C-H	S	1000	3,20 A2
2,9	x	22	-C-H	S	1000	5,35 A2
2,9	x	25	-C-H	S	1000	5,60 A2
3,5	x	9,5	-C-H	S	1000	3,40 A2
3,5	x	13	-C-H	S	1000	3,60 A2
3,5	x	16	-C-H	S	1000	3,80 A2
3,5	x	19	-C-H	S	1000	4,20 A2
3,5	x	22	-C-H	S	1000	5,25 A2
3,5	x	25	-C-H	S	1000	5,45 A2
3,5	x	32	-C-H	S	1000	6,20 A2
3,5	x	38	-C-H	S	1000	6,95 A2
3,5	x	45	-C-H	S	1000	9,00 A2
3,5	x	50	-C-H	S	1000	12,00 A2
3,5	x	60	-C-H	S	500	16,50 A2
4,2	x	9,5	-C-H	S	1000	4,60 A2
4,2	x	13	-C-H	S	1000	4,70 A2
4,2	x	16	-C-H	S	1000	5,25 A2
4,2	x	19	-C-H	S	500	5,75 A2
4,2	x	19	-C-H	S	500	6,50 A2
4,2	x	25	-C-H	S	500	6,70 A2
4,2	x	32	-C-H	S	500	8,30 A2
4,2	x	38	-C-H	S	500	9,45 A2
4,2	x	45	-C-H	S	500	13,70 A2
4,2	x	50	-C-H	S	500	15,50 A2
4,2	x	60	-C-H	S	250	27,50 A2
4,8	x	13	-C-H	S	500	6,00 A2
4,8	x	16	-C-H	S	500	6,50 A2
4,8	x	19	-C-H	S	500	7,25 A2
4,8	x	22	-C-H	S	500	8,30 A2
4,8	x	25	-C-H	S	500	8,50 A2
4,8	x	32	-C-H	S	250	10,80 A2
4,8	x	38	-C-H	S	250	12,10 A2
4,8	x	45	-C-H	S	250	15,80 A2
4,8	x	50	-C-H	S	250	16,30 A2
4,8	x	55	-C-H	S	250	34,50 A2
4,8	x	60	-C-H	S	250	22,10 A2
4,8	x	70	-C-H	S	250	29,00 A2
4,8	x	80	-C-H	S	250	34,40 A2
4,8	x	90	-C-H	S	100	44,40 A2
4,8	x	100	-C-H	S	100	56,20 A2
5,5	x	13	-C-H	S	500	9,75 A2
5,5	x	16	-C-H	S	500	10,40 A2
5,5	x	19	-C-H	S	500	11,10 A2
5,5	x	22	-C-H	S	500	12,20 A2
5,5	x	25	-C-H	S	500	13,10 A2
5,5	x	32	-C-H	S	250	15,30 A2
5,5	x	38	-C-H	S	250	17,30 A2
5,5	x	45	-C-H	S	250	20,70 A2
5,5	x	50	-C-H	S	250	23,20 A2
5,5	x	60	-C-H	S	250	27,60 A2
6,3	x	16	-C-H	S	500	11,20 A2
6,3	x	19	-C-H	S	500	12,00 A2
6,3	x	22	-C-H	S	500	13,20 A2
6,3	x	25	-C-H	S	500	14,00 A2
6,3	x	32	-C-H	S	250	16,80 A2
6,3	x	38	-C-H	S	250	18,60 A2
6,3	x	45	-C-H	S	250	22,20 A2
6,3	x	50	-C-H	S	250	27,60 A2

ISO	07051.924	RAZ 690

7051 A 2 type C-H



Raised countersunk head tapping screws with Phillips cross recess H, C = with cone end

countersunk ⊀ = 90°

Caution! Hardness only ~ 250 HV.

Dimensions ➔ TI-47 Standard conversion ➔ TI-11
Mounting instructions ➔ TI-237

Steel ➔ S. 313

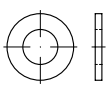
ISO 7051 ➔ replaces DIN 7983

2,9	x	9,5	-C-H	S	1000	2,60 A2
2,9	x	13	-C-H	S	1000	2,70 A2
2,9	x	16	-C-H	S	1000	3,00 A2
2,9	x	19	-C-H	S	1000	3,20 A2
2,9	x	22	-C-H	S	1000	5,35 A2
2,9	x	25	-C-H	S	1000	5,60 A2
3,5	x	9,5	-C-H	S	1000	3,40 A2
3,5	x	13	-C-H	S	1000	3,60 A2
3,5	x	16	-C-H	S	1000	3,80 A2
3,5	x	19	-C-H	S	1000	4,20 A2
3,5	x	22	-C-H	S	1000	5,25 A2
3,5	x	25	-C-H	S	1000	5,45 A2
3,5	x	32	-C-H	S	1000	6,20 A2
3,5	x	38	-C-H	S	1000	6,95 A2
4,2	x	9,5	-C-H	S	1000	4,60 A2
4,2	x	13	-C-H	S	1000	4,70 A2
4,2	x	16	-C-H	S	1000	5,25 A2
4,2	x	19	-C-H	S	500	5,75 A2
4,2	x	22	-C-H	S	500	6,50 A2
4,2	x	25	-C-H	S	500	6,70 A2
4,2	x	32	-C-H	S	500	8,30 A2
4,2	x	38	-C-H	S	500	9,45 A2
4,2	x	45	-C-H	S	500	13,70 A2
4,2	x	50	-C-H	S	500	15,50 A2
4,2	x	60	-C-H	S	200	21,00 A2
4,8	x	13	-C-H	S	500	6,00 A2
4,8	x	16	-C-H	S	500	6,50 A2
4,8	x	19	-C-H	S	500	7,25 A2
4,8	x	22	-C-H	S	500	8,30 A2
4,8	x	25	-C-H	S	500	8,50 A2
4,8	x	32	-C-H	S	250	10,80 A2
4,8	x	38	-C-H	S	250	12,10 A2
4,8	x	45	-C-H	S	250	15,80 A2
4,8	x	50	-C-H	S	250	16,30 A2
4,8	x	60	-C-H	S	250	26,60 A2

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
5,5	x	13 -C-H	S	500	9,75 A 2
5,5	x	16 -C-H	S	500	10,40 A 2
5,5	x	19 -C-H	S	500	11,10 A 2
5,5	x	22 -C-H	S	500	12,20 A 2
5,5	x	25 -C-H	S	500	13,10 A 2
5,5	x	32 -C-H	S	250	15,30 A 2
5,5	x	38 -C-H	S	250	17,30 A 2
5,5	x	45 -C-H	S	250	20,70 A 2
5,5	x	50 -C-H	S	250	23,20 A 2
6,3	x	16 -C-H	S	500	11,20 A 2
6,3	x	19 -C-H	S	500	12,00 A 2
6,3	x	22 -C-H	S	500	13,20 A 2
6,3	x	25 -C-H	S	500	14,00 A 2
6,3	x	32 -C-H	S	250	16,80 A 2
6,3	x	38 -C-H	S	250	18,60 A 2
6,3	x	45 -C-H	S	250	22,20 A 2
6,3	x	50 -C-H	S	250	27,60 A 2

ISO	07089.924	RAZ 3380
7089	**A 2 200 HV**	



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

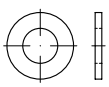
Steel → S. 313
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M

1,6	S	1000	14,40 A 2
2	S	1000	2,70 A 2
2,5	S	1000	2,70 A 2
3	S	1000	11,00 A 2
3	K	200	12,25 A 2
4	S	1000	11,60 A 2
4	K	200	12,80 A 2
5	S	1000	12,00 A 2
5	K	200	14,20 A 2
6	S	1000	17,80 A 2
6	K	200	20,30 A 2
8	S	1000	21,80 A 2
8	K	200	25,10 A 2
10	S	500	44,00 A 2
10	K	100	48,10 A 2
12	S	500	64,80 A 2
12	K	100	69,40 A 2
14	S	100	116,00 A 2
16	S	100	124,00 A 2
16	K	25	129,00 A 2
18	S	200	43,20 A 2
20	S	100	184,00 A 2
20	K	25	189,00 A 2
22	S	200	96,00 A 2
24	S	100	352,00 A 2
24	K	25	357,00 A 2
27	S	100	194,40 A 2
30	S	100	552,00 A 2
30	K	25	560,00 A 2
33	S	100	277,20 A 2
36	S	50	1420,00 A 2
39	S	10	408,00 A 2
42	S	10	1056,00 A 2
45	S	10	1680,00 A 2
48	S	1	3340,00 A 2
52	S	1	6240,00 A 2
56	S	1	10640,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
ISO	07089.944				RAZ 3380
7089	**A 4 200 HV**				



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M

2	S	1000	7,06 A 4
2,5	S	1000	5,76 A 4
3	S	1000	1,15 A 4
4	S	1000	47,00 A 4
4	K	200	48,20 A 4
5	S	1000	50,00 A 4
5	K	200	52,20 A 4
6	S	1000	58,00 A 4
6	K	200	61,00 A 4
8	S	1000	66,50 A 4
8	K	200	69,40 A 4
10	S	500	148,50 A 4
10	K	100	152,70 A 4
12	S	500	161,00 A 4
12	K	100	165,60 A 4
14	S	500	35,50 A 4
16	S	100	365,00 A 4
16	K	25	375,00 A 4
18	S	200	61,20 A 4
20	S	100	398,00 A 4
20	K	25	408,00 A 4
22	S	200	122,00 A 4
24	S	100	756,00 A 4
24	K	25	766,00 A 4
27	S	100	261,60 A 4
30	S	100	788,00 A 4
30	K	25	798,00 A 4
33	S	10	462,00 A 4
36	S	10	420,00 A 4
39	S	10	984,00 A 4
42	S	10	1008,00 A 4

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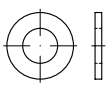
Dimensions			PU	Pieces	€/100/Mat.
ISO	07089.941				RAZ 2012
7089	**A 4 BUMAX88 200 HV**				



Plain washers, normal series, product grade A, without chamfer

Dimension from ∅ 6 approved for use acc. to pressure equipment directive
→ certificate 3.1 on request

Dimensions → TI-84

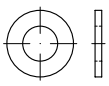
Steel → S. 313
Brass, copper, plastic, aluminium → S. 591

For the use of bolts with property class BUMAX88

For screws M

5	S	200	56,00 A 4-88
6	S	200	59,00 A 4-88
8	S	100	76,00 A 4-88
10	S	100	159,00 A 4-88
12	S	100	240,00 A 4-88
14	S	100	580,00 A 4-88
16	S	100	460,00 A 4-88
18	S	100	700,00 A 4-88
20	S	100	620,00 A 4-88
22	S	100	760,00 A 4-88
24	S	50	1210,00 A 4-88
27	S	50	1730,00 A 4-88
30	S	50	2120,00 A 4-88
36	S	50	2470,00 A 4-88

ISO	07089.942	RAZ 2012
7089	**A 4 BUMAX109 300 HV**	



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Brass, copper, plastic, aluminium → S. 591

For the use of bolts with property class BUMAX109

For screws M

6	S	200	57,00 A 4-109
8	S	100	75,00 A 4-109
10	S	100	160,00 A 4-109
12	S	100	222,00 A 4-109
14	S	100	580,00 A 4-109
16	S	100	460,00 A 4-109
20	S	100	660,00 A 4-109

Dimensions	PU	Pieces	€/100/Mat.
ISO	07089.954		RAZ 3380

7089 A 5 (1.4571) 200 HV

Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Brass, copper, plastic, aluminium → S. 591

ISO 7089 → replaces DIN 125 type A

For screws M

6	S	100	54,00 A 5
8	S	100	59,40 A 5
10	S	100	114,00 A 5
12	S	50	128,40 A 5
16	S	50	186,00 A 5
20	S	25	276,00 A 5
24	S	25	1056,00 A 5
30	S	10	1260,00 A 5

ISO	07090.924	RAZ 3380

7090 A 2 200 HV

Plain washers, normal series, with chamfer, product grade A

Dimensions → TI-84

Steel → S. 315
Brass → S. 592

ISO 7090 → replaces DIN 125 type B

For screws M

4	S	1000	27,00 A 2
5	S	1000	19,20 A 2
5	K	200	160,00 A 2
6	S	1000	25,60 A 2
6	K	200	187,00 A 2
8	S	500	36,00 A 2
8	K	100	200,00 A 2
10	S	250	54,00 A 2
10	K	50	323,00 A 2
12	S	250	74,00 A 2
12	K	50	403,00 A 2
16	S	100	120,00 A 2
16	K	25	900,00 A 2
20	S	50	192,00 A 2
20	K	10	924,00 A 2
24	S	50	480,00 A 2
24	K	10	954,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
ISO	07090.944		RAZ 3380

7090 A 4 200 HV

Plain washers, normal series, with chamfer, product grade A

Dimensions → TI-84

Steel → S. 315
Brass → S. 592

ISO 7090 → replaces DIN 125 type B

For screws M

4	S	1000	28,00 A 4
5	S	1000	158,00 A 4
5	K	200	160,00 A 4
6	S	1000	185,00 A 4
6	K	200	187,00 A 4
8	S	500	198,00 A 4
8	K	100	200,00 A 4
10	S	250	320,00 A 4
10	K	100	322,00 A 4
12	S	250	400,00 A 4
12	K	100	402,00 A 4
16	S	100	896,00 A 4
16	K	25	900,00 A 4
18	S	50	96,00 A 4
20	S	50	920,00 A 4
20	K	10	922,00 A 4
24	S	50	950,00 A 4
27	S	25	276,00 A 4
30	S	25	342,00 A 4
33	S	25	984,00 A 4
36	S	10	2640,00 A 4
42	S	10	3540,00 A 4
45	S	10	5184,00 A 4
48	S	10	5880,00 A 4
52	S	1	6120,00 A 4
56	S	1	7080,00 A 4

ISO	07090.954	RAZ 3380

7090 A 5 200 HV

Plain washers, normal series, with chamfer, product grade A

Dimensions → TI-84

Steel → S. 315
Brass → S. 592

ISO 7090 → replaces DIN 125 type B

For screws M

4	S	1000	28,00 A 5
5	S	1000	158,00 A 5
6	S	1000	185,00 A 5
8	S	500	198,00 A 5
10	S	250	320,00 A 5
12	S	250	400,00 A 5
16	S	100	896,00 A 5
20	S	50	920,00 A 5

Dimensions	PU	Pieces	€/100/Mat.
24	S	50	950,00 A 5
30	S	25	342,00 A 5

ISO	07092.924	RAZ 3380

7092 A 2 200 HV

Plain washers, small series, product grade A

Primarily for cap screws

Dimensions → TI-84

Steel → S. 317
Brass → S. 592

ISO 7092 → replaces DIN 433

For screws M

2	S	2000	3,40 A 2
2,5	S	2000	2,25 A 2
3	S	2000	1,10 A 2
4	S	2000	1,24 A 2
5	S	2000	1,75 A 2
6	S	1000	2,60 A 2
8	S	1000	5,20 A 2
10	S	1000	6,40 A 2
12	S	100	10,60 A 2
14	S	100	16,60 A 2
16	S	50	21,20 A 2

ISO	07092.944	RAZ 3380

7092 A 4 200 HV

Plain washers, small series, product grade A

Primarily for cap screws

Dimensions → TI-84

Steel → S. 317
Brass → S. 592

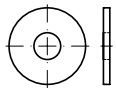
ISO 7092 → replaces DIN 433

For screws M

3	S	2000	1,55 A 4
4	S	2000	2,05 A 4
5	S	2000	2,50 A 4
6	S	1000	3,85 A 4
8	S	1000	7,00 A 4
10	S	1000	9,50 A 4
12	S	100	17,20 A 4
16	S	50	30,50 A 4
20	S	25	44,50 A 4
24	S	25	178,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
ISO	07093.924		RAZ 3380

7093-1 A 2 200 HV



Plain washers, large series, product grade A

Dimensions → TI-85

Steel → S. 318
Brass → S. 593

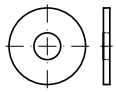
ISO 7093 → replaces DIN 9021

For screws M

3	S	1000	14,50 A 2
3	K	200	17,00 A 2
4	S	1000	17,00 A 2
4	K	200	19,00 A 2
5	S	1000	21,00 A 2
5	K	200	24,00 A 2
6	S	1000	24,00 A 2
6	K	200	28,00 A 2
8	S	500	27,00 A 2
8	K	100	31,00 A 2
10	S	250	30,00 A 2
10	K	50	37,00 A 2
12	S	250	98,00 A 2
12	K	50	118,00 A 2
14	S	100	81,00 A 2
16	S	100	119,00 A 2
16	K	25	139,00 A 2
18	S	100	155,00 A 2
20	S	50	350,00 A 2
20	K	10	400,00 A 2
24	S	25	450,00 A 2

ISO	07093.944	RAZ 750

7093-1 A 4 200 HV



Plain washers, large series, product grade A

Dimensions → TI-85

Steel → S. 318
Brass → S. 593

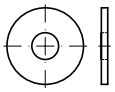
ISO 7093 → replaces DIN 9021

For screws M

3	S	1000	2,20 A 4
4	S	1000	2,90 A 4
5	S	100	29,00 A 4
6	S	100	60,00 A 4
8	S	100	75,00 A 4
10	S	100	95,00 A 4
12	S	100	225,00 A 4
14	S	100	340,00 A 4
16	S	100	432,00 A 4
18	S	50	1140,00 A 4
20	S	50	1200,00 A 4
22	S	10	1760,00 A 4
24	S	10	2280,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
ISO	07093.954		RAZ 750

7093-1 A 5 200 HV



Plain washers, large series, product grade A

Dimensions → TI-85

Steel → S. 318
Brass → S. 593

ISO 7093 → replaces DIN 9021

For screws M

5	S	100	29,00 A 5
6	S	100	60,00 A 5
8	S	100	75,00 A 5
10	S	100	95,00 A 5
12	S	100	225,00 A 5
16	S	100	432,00 A 5
20	S	50	1200,00 A 5
24	S	10	2280,00 A 5

ISO	07094.920	RAZ 170

7094 A 2 100 HV

Plain washers, extra large series, product grade C

Especially for wood constructions

Dimensions → TI-84

Steel → S. 318

ISO 7094 → replaces DIN 440 type R (compatible)

For screws M

5	S	100	8,00 A 2
6	S	100	11,00 A 2
8	S	100	26,00 A 2
10	S	50	38,00 A 2
12	S	50	84,00 A 2
16	S	50	160,00 A 2
20	S	50	335,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
ISO	07094.940		RAZ 170

7094 A 4 100 HV

Plain washers, extra large series, product grade C

especially for wood constructions

Dimensions → TI-84

Steel → S. 318

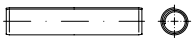
ISO 7094 → replaces DIN 440 type R (compatible)

For screws M

5	S	100	30,50 A 4
6	S	100	42,00 A 4
8	S	100	93,00 A 4
10	S	50	144,00 A 4
12	S	50	226,00 A 4
16	S	50	720,00 A 4
20	S	50	1060,00 A 4

DIN	07343.960	RAZ 623

7343 1.4310



Spring-type straight pins, coiled, standard duty

Caution! Reduced spring load.

Dimensions → TI-119

Spring steel → S. 319

DIN 7343 → replaced by ISO 8750 (compatible)

1	x	6	S 1000	7,90
1	x	8	S 1000	8,00
1	x	10	S 1000	8,50
1	x	12	S 1000	9,00
1,5	x	5	S 1000	7,70
1,5	x	6	S 1000	7,80
1,5	x	8	S 1000	8,00
1,5	x	10	S 1000	8,50
1,5	x	12	S 1000	9,00
2	x	4	S 1000	7,70
2	x	5	S 1000	8,00
2	x	6	S 1000	8,20
2	x	8	S 1000	8,50
2	x	10	S 1000	9,00
2	x	12	S 1000	9,20
2	x	14	S 1000	9,50
2	x	16	S 1000	10,10
2	x	18	S 1000	10,40
2	x	20	S 1000	11,10
2,5	x	5	S 1000	8,70
2,5	x	6	S 1000	9,00
2,5	x	8	S 1000	9,20
2,5	x	10	S 1000	9,50
2,5	x	12	S 1000	10,10
2,5	x	14	S 1000	10,40
2,5	x	16	S 1000	11,10
2,5	x	18	S 1000	12,20

Dimensions			PU	Pieces	€/100/Mat.
2,5	x	20	S	1000	12,90
2,5	x	22	S	1000	13,40
2,5	x	24	S	1000	14,10
3	x	8	S	1000	12,20
3	x	10	S	1000	12,90
3	x	12	S	1000	13,80
3	x	14	S	1000	15,90
3	x	16	S	1000	16,60
3	x	18	S	1000	17,20
3	x	20	S	1000	17,80
3	x	22	S	1000	20,00
3	x	24	S	1000	20,80
3	x	26	S	1000	22,10
3	x	28	S	1000	23,00
3	x	30	S	1000	24,20
3	x	32	S	1000	24,90
4	x	8	S	500	16,50
4	x	10	S	500	16,70
4	x	12	S	500	19,00
4	x	14	S	500	21,30
4	x	16	S	500	23,40
4	x	18	S	500	24,80
4	x	20	S	500	28,00
4	x	22	S	500	29,50
4	x	24	S	500	31,50
4	x	26	S	500	33,00
4	x	28	S	500	34,50
4	x	30	S	500	36,00
4	x	32	S	500	38,50
4	x	35	S	500	41,00
4	x	40	S	500	46,50
4	x	45	S	500	53,00
4	x	50	S	500	58,00
5	x	12	S	500	26,00
5	x	14	S	500	28,50
5	x	16	S	500	31,50
5	x	18	S	500	34,50
5	x	20	S	500	37,00
5	x	22	S	500	40,00
5	x	24	S	500	43,00
5	x	26	S	500	46,00
5	x	28	S	500	48,50
5	x	30	S	500	53,00
5	x	32	S	500	55,00
5	x	35	S	500	61,00
5	x	40	S	500	66,00
5	x	45	S	500	73,00
5	x	50	S	250	80,00
6	x	12	S	500	33,50
6	x	14	S	500	36,50
6	x	16	S	500	40,50
6	x	18	S	500	44,00
6	x	20	S	500	47,00
6	x	22	S	500	52,00
6	x	24	S	500	55,00
6	x	26	S	500	59,00
6	x	28	S	500	62,00
6	x	30	S	500	68,00
6	x	32	S	500	70,00
6	x	35	S	500	78,00
6	x	40	S	250	85,00
6	x	45	S	250	94,00
6	x	50	S	250	103,00
8	x	16	S	500	49,00
8	x	18	S	500	54,00
8	x	20	S	500	59,00
8	x	22	S	500	64,00
8	x	24	S	500	68,00
8	x	26	S	500	73,00
8	x	28	S	500	78,00
8	x	30	S	500	83,00
8	x	32	S	500	88,00
8	x	35	S	500	98,00
8	x	40	S	250	108,00
8	x	45	S	250	121,00
8	x	50	S	250	132,00

DIN 7349.920 — RAZ 620

7349 A 2 100 HV

Washers for screws with heavy spring-type straight pins

Dimensions → TI-85

Steel → S. 321

Inside ∅ x outside ∅ x thickness							
3,2	x	9	x	1	S	100	7,20 A 2
4,3	x	12	x	1,6	S	100	7,60 A 2
5,3	x	15	x	2	S	100	12,30 A 2
6,4	x	17	x	3	S	100	22,90 A 2
8,4	x	21	x	4	S	100	41,50 A 2
10,5	x	25	x	4	S	100	59,00 A 2
13	x	30	x	6	S	50	140,00 A 2
17	x	40	x	6	S	50	208,00 A 2
21	x	44	x	8	S	25	385,00 A 2
25	x	50	x	10	S	25	592,00 A 2

DIN 7349.940 — RAZ 620

7349 A 4 100 HV

Washers for screws with heavy spring-type straight pins

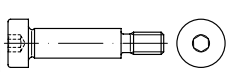
Dimensions → TI-85

Steel → S. 321

Inside ∅ x outside ∅ x thickness				
8,4	S	100	48,50	A 4
10,5	S	50	69,00	A 4
13	S	50	170,00	A 4
17	S	50	240,00	A 4
21	S	25	420,00	A 4
25	S	10	890,00	A 4

~ISO 7379.920 — RAZ 3400

7379 A 2 f9



Hex. socket head shoulder screws, outer nominal size = ISO 7379, tolerance of fit shank f9

Dimensions → TI-13 Mech. properties → TI-224

Steel → S. 322

Shank ∅/thread M x shank length							
6 f9	M	5	x	10	S	50	335,00 A 2
6 f9	M	5	x	12	S	50	360,00 A 2
6 f9	M	5	x	16	S	50	400,00 A 2
6 f9	M	5	x	20	S	50	425,00 A 2
6 f9	M	5	x	25	S	50	450,00 A 2
8 f9	M	6	x	12	S	50	450,00 A 2
8 f9	M	6	x	16	S	50	480,00 A 2
8 f9	M	6	x	20	S	50	510,00 A 2
8 f9	M	6	x	25	S	50	540,00 A 2
10f9	M	8	x	16	S	50	710,00 A 2
10f9	M	8	x	20	S	50	760,00 A 2
10f9	M	8	x	25	S	50	830,00 A 2
10f9	M	8	x	30	S	50	900,00 A 2
12f9	M	10	x	20	S	50	1070,00 A 2
12f9	M	10	x	25	S	50	1160,00 A 2
12f9	M	10	x	30	S	50	1210,00 A 2
12f9	M	10	x	40	S	50	1370,00 A 2
16f9	M	12	x	30	S	25	2550,00 A 2
16f9	M	12	x	40	S	25	2850,00 A 2
16f9	M	12	x	50	S	25	3250,00 A 2

ISO 07380.920 — RAZ 3500

7380-1 A 2

Hexagon socket button head screws

Length ≤100 mm sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions → TI-14 Tightening torque → TI-235
Mech. properties → TI-235

Steel → S. 322

M 3	x	4	S	500	33,25	A 2
M 3	x	5	S	500	33,25	A 2
M 3	x	6	S	500	27,10	A 2
M 3	x	8	S	500	27,10	A 2
M 3	x	10	S	500	27,10	A 2
M 3	x	12	S	500	27,10	A 2
M 3	x	16	S	500	29,15	A 2
M 3	x	20	S	500	29,15	A 2
M 3	x	25	S	500	31,20	A 2
M 4	x	4	S	500	49,60	A 2
M 4	x	5	S	500	45,50	A 2
M 4	x	6	S	500	31,20	A 2
M 4	x	8	S	500	31,20	A 2
M 4	x	10	S	500	31,20	A 2
M 4	x	12	S	500	31,20	A 2
M 4	x	16	S	500	33,25	A 2
M 4	x	20	S	500	33,25	A 2
M 4	x	25	S	500	33,25	A 2
M 4	x	30	S	500	35,30	A 2
M 5	x	6	S	500	31,20	A 2
M 5	x	8	S	500	29,15	A 2
M 5	x	10	S	500	29,15	A 2
M 5	x	12	S	500	29,15	A 2
M 5	x	16	S	500	29,15	A 2
M 5	x	20	S	500	31,20	A 2
M 5	x	25	S	500	31,20	A 2
M 5	x	30	S	500	31,20	A 2
M 5	x	40	S	500	33,00	A 2
M 5	x	45	S	200	35,00	A 2
M 6	x	8	S	500	29,15	A 2
M 6	x	10	S	500	29,15	A 2
M 6	x	12	S	500	29,15	A 2
M 6	x	16	S	500	31,20	A 2
M 6	x	20	S	500	31,20	A 2
M 6	x	25	S	500	33,25	A 2
M 6	x	30	S	500	35,30	A 2

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	35	S	200	59,85 A 2
M 6	x	40	S	200	67,00 A 2
M 6	x	45	S	200	79,50 A 2
M 6	x	50	S	200	88,50 A 2
M 6	x	60	S	200	110,00 A 2
M 8	x	10	S	200	49,60 A 2
M 8	x	12	S	200	49,60 A 2
M 8	x	16	S	200	49,60 A 2
M 8	x	20	S	200	53,70 A 2
M 8	x	25	S	200	55,75 A 2
M 8	x	30	S	200	72,10 A 2
M 8	x	35	S	200	82,35 A 2
M 8	x	40	S	200	88,45 A 2
M 8	x	45	S	200	89,25 A 2
M 8	x	50	S	200	92,00 A 2
M 8	x	60	S	200	94,00 A 2
M 10	x	16	S	200	81,00 A 2
M 10	x	20	S	200	81,80 A 2
M 10	x	25	S	200	92,05 A 2
M 10	x	30	S	200	103,00 A 2
M 10	x	40	S	100	105,00 A 2
M 10	x	50	S	100	118,00 A 2

ISO | 07380.922 | RAZ 3500

7380-2 A 2

Hexagon socket button head screws with collar

Sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions → TI-14 Tightening torque → TI-235
Mech. properties → TI-235

Steel → S. 323

M 3	x	6	S	500	64,00 A 2
M 3	x	8	S	500	73,00 A 2
M 3	x	10	S	500	78,00 A 2
M 4	x	6	S	500	82,00 A 2
M 4	x	8	S	500	82,00 A 2
M 4	x	10	S	500	73,50 A 2
M 4	x	12	S	500	75,00 A 2
M 4	x	16	S	500	78,00 A 2
M 4	x	20	S	500	86,00 A 2
M 4	x	25	S	500	94,00 A 2
M 5	x	6	S	500	85,00 A 2
M 5	x	8	S	500	85,00 A 2
M 5	x	10	S	500	78,25 A 2
M 5	x	12	S	500	80,30 A 2
M 5	x	16	S	500	87,95 A 2
M 5	x	20	S	500	97,15 A 2
M 5	x	25	S	500	102,00 A 2
M 6	x	8	S	500	78,00 A 2
M 6	x	10	S	500	81,00 A 2
M 6	x	12	S	500	90,00 A 2
M 6	x	16	S	500	102,00 A 2
M 6	x	20	S	500	115,00 A 2
M 6	x	25	S	500	130,00 A 2
M 6	x	30	S	500	147,00 A 2
M 6	x	35	S	200	161,00 A 2
M 6	x	40	S	200	172,00 A 2
M 6	x	45	S	200	183,00 A 2
M 8	x	10	S	200	158,00 A 2
M 8	x	12	S	200	151,00 A 2
M 8	x	16	S	200	164,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	20	S	200	202,00 A 2
M 8	x	25	S	200	240,00 A 2

ISO | 07434.910 | RAZ 230

7434 A 1

Slotted grub screws with cone point

Dimensions → TI-19

Steel → S. 324
Brass → S. 593

ISO 7434 → replaces DIN 553 (compatible)

M 2	x	3	S	50	15,10 A 1
M 2	x	4	S	50	15,90 A 1
M 2,5	x	5	S	50	16,50 A 1
M 2,5	x	6	S	50	17,00 A 1
M 2,5	x	8	S	50	17,40 A 1
M 3	x	4	S	50	15,70 A 1
M 3	x	5	S	50	16,50 A 1
M 3	x	6	S	50	17,70 A 1
M 3	x	8	S	50	18,60 A 1
M 4	x	5	S	50	17,20 A 1
M 4	x	6	S	50	18,00 A 1
M 4	x	8	S	50	19,10 A 1
M 4	x	10	S	50	20,20 A 1
M 4	x	12	S	50	21,20 A 1
M 4	x	16	S	50	22,40 A 1
M 5	x	5	S	50	18,60 A 1
M 5	x	6	S	50	19,60 A 1
M 5	x	8	S	50	21,00 A 1
M 5	x	10	S	50	22,10 A 1
M 5	x	12	S	50	23,50 A 1
M 5	x	16	S	50	26,00 A 1
M 6	x	6	S	25	23,60 A 1
M 6	x	8	S	25	24,50 A 1
M 6	x	10	S	25	26,50 A 1
M 6	x	12	S	25	28,00 A 1
M 6	x	16	S	25	30,00 A 1
M 6	x	20	S	25	34,00 A 1
M 6	x	25	S	25	39,50 A 1

ISO | 07434.940 | RAZ 230

7434 A 4

Slotted grub screws with cone point

Dimensions → TI-19

Steel → S. 324
Brass → S. 593

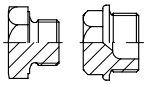
ISO 7434 → replaces DIN 553 (compatible)

M 4	x	6	S	50	46,50 A 4
M 4	x	8	S	50	49,50 A 4
M 4	x	10	S	50	53,00 A 4
M 5	x	5	S	50	48,00 A 4
M 5	x	6	S	50	51,00 A 4
M 5	x	8	S	50	55,00 A 4
M 5	x	10	S	50	58,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
M 5	x	16	S	25	72,00 A 4
M 6	x	6	S	25	60,00 A 4
M 6	x	8	S	25	62,00 A 4
M 6	x	10	S	25	67,00 A 4
M 6	x	12	S	25	72,00 A 4
M 6	x	16	S	25	76,00 A 4
M 8	x	12	S	25	108,00 A 4
M 8	x	16	S	25	119,00 A 4
M 8	x	20	S	25	142,00 A 4
M 8	x	25	S	25	169,00 A 4

DIN | 07604.941 | RAZ 640

7604 A 4 type A



≤ M 16 ≥ M 18

Hexagon head screw plugs with collar, light type, A = short stud end, cylindrical fine pitch thread

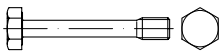
Dimensions → TI-24

Steel → S. 330

AM 10	x	1	S	10	750,00 A 4
AM 12	x	1,5	S	10	1170,00 A 4
AM 14	x	1,5	S	10	1300,00 A 4
AM 16	x	1,5	S	1	1360,00 A 4
AM 18	x	1,5	S	1	3050,00 A 4
AM 22	x	1,5	S	1	3400,00 A 4

~DIN | 07964.924 | RAZ 401

7964 A 2 K-D1

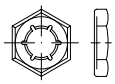


Hexagon head screws with waisted shank, short thread, wrench sizes acc. to ISO

Dimensions → TI-17 Mech. properties → TI-224

Thread ∅ x length/thread length					
M 8	x	20/10	S	100	169,00 A 2
M 8	x	30/10	S	100	172,00 A 2
M 10	x	25/12,5	S	50	221,00 A 2
M 10	x	35/12,5	S	50	228,00 A 2

~DIN	07967.960	RAZ 640
7967	**1.4310**	



Self locking counter nuts

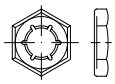
Caution! Reduced spring load.

Dimensions → TI-67 Mech. properties → TI-224

Spring steel → S. 331

Dimensions	PU	Pieces	€/100/Mat.
M 6	S	100	30,00
M 8	S	100	33,50
M 10	S	100	40,50
M 12	S	100	49,50
M 16	S	100	62,00
M 20	S	100	107,00
M 24	S	100	136,00
M 30	S	50	1660,00

~DIN	07967.940	RAZ 640
7967	**A 4**	



Self locking counter nuts

Caution! Reduced spring load.

Dimensions → TI-67

Spring steel → S. 331

Dimensions	PU	Pieces	€/100/Mat.
M 6	S	100	61,50 A4
M 8	S	100	65,00 A4
M 10	S	100	75,00 A4
M 12	S	100	85,00 A4
M 16	S	100	115,00 A4
M 20	S	50	200,00 A4
M 24	S	50	250,00 A4
M 27	S	10	2500,00 A4
M 30	S	10	3000,00 A4

Article	88312.920	RAZ 660
88312	**A 2**	**type C**

Cylindrical head tapping screws with hexagon socket C = with cone end

Caution! Hardness only ~ 250 HV.

Dimensions → TI-50 Mounting instructions → TI-237

Head sizes acc. to DIN 912/ISO 4762

Dimensions			PU	Pieces	€/100/Mat.
C 4,8	x	13	S	200	38,00 A2
C 4,8	x	16	S	1000	38,50 A2
C 4,8	x	19	S	1000	39,50 A2
C 4,8	x	22	S	200	43,50 A2
C 4,8	x	25	S	1000	44,00 A2
C 4,8	x	32	S	500	47,50 A2
C 4,8	x	38	S	500	54,00 A2
C 4,8	x	45	S	200	66,00 A2
C 4,8	x	50	S	200	82,00 A2
C 4,8	x	60	S	200	98,00 A2
C 4,8	x	70	S	200	115,00 A2
C 5,5	x	16	S	200	43,00 A2
C 5,5	x	19	S	500	43,50 A2
C 5,5	x	22	S	200	48,00 A2
C 5,5	x	25	S	200	50,00 A2
C 5,5	x	32	S	200	56,00 A2
C 5,5	x	38	S	250	62,00 A2
C 5,5	x	45	S	250	67,00 A2
C 5,5	x	50	S	200	85,00 A2
C 5,5	x	60	S	200	102,00 A2
C 5,5	x	70	S	200	121,00 A2
C 6,3	x	16	S	200	46,50 A2
C 6,3	x	19	S	200	49,00 A2
C 6,3	x	22	S	200	52,00 A2
C 6,3	x	25	S	500	57,00 A2
C 6,3	x	32	S	200	62,00 A2
C 6,3	x	38	S	200	66,80 A2
C 6,3	x	45	S	200	68,50 A2
C 6,3	x	50	S	250	87,00 A2
C 6,3	x	60	S	200	105,00 A2
C 6,3	x	70	S	200	128,00 A2

DIN	07976.923	RAZ 660
7976	**A 2**	**type C**

Hexagon head tapping screws, C = with cone end

Caution! Hardness only ~ 250 HV.

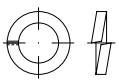
Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

Steel → S. 333

DIN 7976 → replaced by ISO 1479

Dimensions			PU	Pieces	€/100/Mat.
C 2,9	x	9,5	S	1000	5,40 A2
C 2,9	x	13	S	1000	6,10 A2
C 2,9	x	16	S	1000	6,40 A2
C 2,9	x	22	S	1000	8,70 A2
C 2,9	x	25	S	1000	9,80 A2
C 2,9	x	32	S	1000	12,00 A2
C 3,5	x	9,5	S	1000	6,60 A2
C 3,5	x	13	S	1000	6,70 A2
C 3,5	x	16	S	1000	7,10 A2
C 3,5	x	19	S	1000	7,90 A2
C 3,5	x	22	S	1000	9,30 A2
C 3,5	x	25	S	1000	10,70 A2
C 3,5	x	32	S	1000	12,80 A2
C 3,5	x	38	S	1000	14,20 A2
C 3,9	x	9,5	S	1000	7,70 A2
C 3,9	x	13	S	1000	7,60 A2
C 3,9	x	16	S	1000	8,00 A2
C 3,9	x	19	S	1000	8,20 A2
C 3,9	x	22	S	500	10,60 A2
C 3,9	x	25	S	500	11,80 A2
C 3,9	x	32	S	500	13,70 A2
C 4,2	x	9,5	S	1000	8,40 A2
C 4,2	x	13	S	1000	8,20 A2
C 4,2	x	16	S	1000	8,50 A2
C 4,2	x	19	S	1000	9,30 A2
C 4,2	x	22	S	500	11,90 A2
C 4,2	x	25	S	500	12,20 A2
C 4,2	x	32	S	500	14,80 A2
C 4,2	x	38	S	500	16,90 A2
C 4,2	x	45	S	500	20,60 A2
C 4,2	x	50	S	500	24,10 A2
C 4,8	x	13	S	1000	10,50 A2
C 4,8	x	16	S	1000	11,30 A2
C 4,8	x	19	S	1000	11,90 A2
C 4,8	x	22	S	1000	13,30 A2
C 4,8	x	25	S	1000	14,60 A2
C 4,8	x	32	S	500	18,20 A2
C 4,8	x	38	S	500	19,50 A2
C 4,8	x	45	S	500	25,00 A2
C 4,8	x	50	S	250	29,50 A2
C 5,5	x	13	S	500	16,40 A2
C 5,5	x	16	S	500	17,00 A2
C 5,5	x	19	S	500	18,20 A2
C 5,5	x	22	S	500	20,70 A2
C 5,5	x	25	S	250	22,70 A2
C 5,5	x	32	S	250	26,00 A2
C 5,5	x	38	S	250	29,50 A2
C 5,5	x	45	S	250	33,00 A2
C 5,5	x	50	S	250	36,00 A2
C 6,3	x	13	S	250	23,80 A2
C 6,3	x	16	S	500	23,80 A2
C 6,3	x	19	S	500	25,50 A2
C 6,3	x	22	S	500	29,00 A2
C 6,3	x	25	S	500	31,00 A2
C 6,3	x	32	S	250	34,00 A2
C 6,3	x	38	S	250	38,00 A2
C 6,3	x	45	S	250	42,50 A2
C 6,3	x	50	S	250	45,50 A2
C 6,3	x	60	S	100	56,00 A2
C 6,3	x	70	S	100	78,00 A2
C 8	x	16	S	100	45,00 A2
C 8	x	19	S	100	50,00 A2
C 8,0	x	22	S	250	51,00 A2
C 8	x	25	S	100	78,00 A2
C 8,0	x	32	S	100	82,85 A2
C 8	x	38	S	100	111,00 A2
C 8	x	45	S	100	150,00 A2
C 8	x	50	S	100	205,00 A2
C 8	x	60	S	100	277,00 A2

~DIN	07980.960	RAZ 680
7980	**1.4310**	



Spring lock washers for cheese head screws

Caution! Reduced spring load.

Dimensions → TI-100

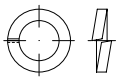
Spring steel → S. 335

3	S	1000	2,80
3	K	100	4,45
4	S	1000	3,05
4	K	100	4,70
5	S	1000	4,55
5	K	100	6,20
6	S	1000	5,30
6	K	100	6,90
8	S	1000	10,20
8	K	100	11,80
10	S	1000	17,70
10	K	100	19,30

Dimensions	PU	Pieces	€/100/Mat.
12	S	500	21,50
12	K	100	23,10
16	S	250	51,00
16	K	50	54,00

~DIN	07980.940	RAZ 680

7980 A 4



Spring lock washers for cheese head screws

Caution! Reduced spring load.

Dimensions ➔ TI-100

Spring steel ➔ S. 335

4	S	1000	3,90 A 4
4	K	100	5,60 A 4
5	S	1000	5,50 A 4
5	K	100	7,10 A 4
6	S	1000	6,40 A 4
6	K	100	8,00 A 4
8	S	1000	14,20 A 4
8	K	100	15,70 A 4
10	S	1000	21,80 A 4
10	K	100	23,50 A 4
12	S	500	27,00 A 4
12	K	100	28,50 A 4
16	S	100	61,00 A 4
16	K	50	62,50 A 4
20	S	50	139,00 A 4

DIN	07981.924	RAZ 690

7981 A 2 type C-H

Pan head tapping screws with Phillips cross recess H, C = with cone end

Nominal lengths from 60 mm with partial thread

Caution! Hardness only ~ 250 HV.

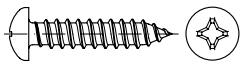
Dimensions ➔ TI-46 Standard conversion ➔ TI-11
Mounting instructions ➔ TI-237

Steel ➔ S. 335

DIN 7981 ➔ replaced by ISO 7049

Dimensions	PU	Pieces	€/100/Mat.
C 2,2 x 4,5-H	S	1000	6,00 A 2
C 2,2 x 6,5-H	S	1000	5,80 A 2
C 2,2 x 6,5-H	K	100	7,85 A 2
C 2,2 x 9,5-H	S	1000	4,55 A 2
C 2,2 x 13 -H	S	1000	6,50 A 2
C 2,2 x 16 -H	S	1000	7,50 A 2
C 2,2 x 19 -H	S	1000	10,00 A 2
C 2,9 x 6,5-H	S	1000	3,75 A 2
C 2,9 x 6,5-H	K	100	5,80 A 2
C 2,9 x 9,5-H	S	1000	2,60 A 2
C 2,9 x 9,5-H	K	100	4,65 A 2
C 2,9 x 13 -H	S	1000	2,70 A 2
C 2,9 x 13 -H	K	100	4,75 A 2
C 2,9 x 16 -H	S	1000	3,00 A 2
C 2,9 x 16 -H	K	100	5,05 A 2
C 2,9 x 19 -H	S	1000	3,20 A 2
C 2,9 x 19 -H	K	100	5,25 A 2
C 2,9 x 22 -H	S	1000	5,35 A 2
C 2,9 x 22 -H	K	100	7,40 A 2
C 2,9 x 25 -H	S	1000	5,60 A 2
C 2,9 x 25 -H	K	100	7,65 A 2
C 3,5 x 6,5-H	S	1000	4,20 A 2
C 3,5 x 9,5-H	S	1000	3,40 A 2
C 3,5 x 9,5-H	K	100	5,45 A 2
C 3,5 x 13 -H	S	1000	3,60 A 2
C 3,5 x 13 -H	K	100	5,65 A 2
C 3,5 x 16 -H	S	1000	3,80 A 2
C 3,5 x 16 -H	K	100	5,85 A 2
C 3,5 x 19 -H	S	1000	4,20 A 2
C 3,5 x 19 -H	K	100	6,25 A 2
C 3,5 x 22 -H	S	1000	5,25 A 2
C 3,5 x 22 -H	K	100	7,30 A 2
C 3,5 x 25 -H	S	1000	5,45 A 2
C 3,5 x 25 -H	K	100	7,50 A 2
C 3,5 x 32 -H	S	1000	6,20 A 2
C 3,5 x 32 -H	K	100	8,25 A 2
C 3,5 x 38 -H	S	1000	6,95 A 2
C 3,5 x 38 -H	K	100	9,00 A 2
C 3,5 x 45 -H	S	1000	9,00 A 2
C 3,5 x 50 -H	S	1000	12,00 A 2
C 3,5 x 60 -H	S	500	16,50 A 2
C 3,9 x 9,5-H	S	1000	4,10 A 2
C 3,9 x 9,5-H	K	100	6,15 A 2
C 3,9 x 13 -H	S	1000	4,10 A 2
C 3,9 x 13 -H	K	100	6,15 A 2
C 3,9 x 16 -H	S	1000	4,40 A 2
C 3,9 x 16 -H	K	100	6,45 A 2
C 3,9 x 19 -H	S	1000	4,80 A 2
C 3,9 x 19 -H	K	100	6,85 A 2
C 3,9 x 22 -H	S	500	5,90 A 2
C 3,9 x 22 -H	K	100	7,95 A 2
C 3,9 x 25 -H	S	500	6,10 A 2
C 3,9 x 25 -H	K	100	8,15 A 2
C 3,9 x 32 -H	S	500	7,25 A 2
C 3,9 x 32 -H	K	100	9,30 A 2
C 3,9 x 38 -H	S	500	8,30 A 2
C 3,9 x 38 -H	K	100	10,35 A 2
C 3,9 x 45 -H	S	500	10,30 A 2
C 3,9 x 50 -H	S	500	12,35 A 2
C 4,2 x 9,5-H	S	1000	4,60 A 2
C 4,2 x 9,5-H	K	100	6,65 A 2
C 4,2 x 13 -H	S	1000	4,70 A 2
C 4,2 x 13 -H	K	100	6,75 A 2
C 4,2 x 16 -H	S	1000	5,25 A 2
C 4,2 x 16 -H	K	100	7,30 A 2
C 4,2 x 19 -H	S	500	5,75 A 2
C 4,2 x 19 -H	K	100	7,80 A 2
C 4,2 x 22 -H	S	500	6,50 A 2
C 4,2 x 22 -H	K	100	8,55 A 2
C 4,2 x 25 -H	S	500	6,70 A 2
C 4,2 x 25 -H	K	100	8,75 A 2
C 4,2 x 32 -H	S	500	8,30 A 2
C 4,2 x 32 -H	K	100	10,35 A 2
C 4,2 x 38 -H	S	500	9,45 A 2
C 4,2 x 38 -H	K	100	11,50 A 2
C 4,2 x 45 -H	S	500	13,70 A 2
C 4,2 x 45 -H	K	100	15,75 A 2
C 4,2 x 50 -H	S	500	15,50 A 2
C 4,2 x 50 -H	K	100	17,55 A 2
C 4,8 x 9,5-H	S	500	5,80 A 2
C 4,8 x 9,5-H	K	100	7,85 A 2
C 4,8 x 13 -H	S	500	6,00 A 2
C 4,8 x 13 -H	K	100	8,05 A 2
C 4,8 x 16 -H	S	500	6,50 A 2
C 4,8 x 16 -H	K	100	8,55 A 2
C 4,8 x 19 -H	S	500	7,25 A 2
C 4,8 x 19 -H	K	100	9,30 A 2
C 4,8 x 22 -H	S	500	8,30 A 2
C 4,8 x 22 -H	K	100	10,35 A 2
C 4,8 x 25 -H	S	500	8,50 A 2
C 4,8 x 25 -H	K	100	10,55 A 2
C 4,8 x 32 -H	S	250	10,80 A 2
C 4,8 x 32 -H	K	100	12,90 A 2
C 4,8 x 38 -H	S	250	12,10 A 2
C 4,8 x 38 -H	K	100	14,15 A 2
C 4,8 x 45 -H	S	250	15,80 A 2
C 4,8 x 45 -H	K	100	17,85 A 2
C 4,8 x 50 -H	S	250	16,30 A 2
C 4,8 x 50 -H	K	100	18,35 A 2
C 4,8 x 60 -H	S	250	22,10 A 2
C 4,8 x 70 -H	S	250	29,00 A 2
C 4,8 x 80 -H	S	100	34,40 A 2
C 4,8 x 90 -H	S	100	44,40 A 2
C 4,8 x 100 -H	S	100	56,20 A 2
C 4,8 x 120 -H	S	100	75,00 A 2
C 5,5 x 13 -H	S	500	9,75 A 2
C 5,5 x 13 -H	K	100	11,80 A 2
C 5,5 x 16 -H	S	500	10,40 A 2
C 5,5 x 16 -H	K	100	12,45 A 2
C 5,5 x 19 -H	S	500	11,10 A 2
C 5,5 x 19 -H	K	100	13,15 A 2
C 5,5 x 22 -H	S	500	12,20 A 2
C 5,5 x 22 -H	K	100	14,25 A 2
C 5,5 x 25 -H	S	500	13,10 A 2
C 5,5 x 25 -H	K	100	15,15 A 2
C 5,5 x 32 -H	S	250	15,30 A 2
C 5,5 x 32 -H	K	100	17,35 A 2
C 5,5 x 38 -H	S	250	17,30 A 2
C 5,5 x 38 -H	K	100	19,35 A 2
C 5,5 x 45 -H	S	250	20,70 A 2
C 5,5 x 45 -H	K	100	22,75 A 2
C 5,5 x 50 -H	S	250	23,20 A 2
C 5,5 x 50 -H	K	100	25,25 A 2
C 5,5 x 60 -H	S	100	27,60 A 2
C 5,5 x 70 -H	S	100	32,00 A 2
C 5,5 x 80 -H	S	100	40,00 A 2
C 5,5 x 90 -H	S	100	55,00 A 2
C 5,5 x 100 -H	S	100	68,00 A 2
C 6,3 x 13 -H	S	250	13,30 A 2
C 6,3 x 13 -H	K	100	15,35 A 2
C 6,3 x 16 -H	S	500	11,20 A 2
C 6,3 x 16 -H	K	100	13,25 A 2
C 6,3 x 19 -H	S	250	12,00 A 2
C 6,3 x 19 -H	K	100	14,05 A 2
C 6,3 x 22 -H	S	250	13,20 A 2
C 6,3 x 22 -H	K	100	15,25 A 2
C 6,3 x 25 -H	S	250	14,00 A 2
C 6,3 x 25 -H	K	100	16,05 A 2
C 6,3 x 32 -H	S	250	16,80 A 2
C 6,3 x 32 -H	K	100	18,85 A 2
C 6,3 x 38 -H	S	250	18,60 A 2
C 6,3 x 38 -H	K	100	20,65 A 2
C 6,3 x 45 -H	S	250	22,20 A 2
C 6,3 x 45 -H	K	100	24,25 A 2
C 6,3 x 50 -H	S	250	27,60 A 2
C 6,3 x 50 -H	K	100	29,65 A 2
C 6,3 x 60 -H	K	100	31,50 A 2
C 6,3 x 70 -H	K	100	41,00 A 2
C 6,3 x 80 -H	K	100	54,00 A 2
C 6,3 x 90 -H	K	100	66,00 A 2
C 6,3 x 100 -H	K	100	80,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN	07981.944				RAZ 690
7981	**A 4**				**type C-H**



Pan head tapping screws with Phillips cross recess H, C = with cone end

Caution! Hardness only ~ 250 HV.

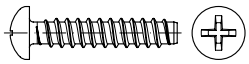
Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

Steel → S. 335

DIN 7981 → replaced by ISO 7049

C 2,2	x	4,5	-H	S 1000	12,00 A4
C 2,2	x	6,5	-H	S 1000	11,60 A4
C 2,2	x	9,5	-H	S 1000	9,10 A4
C 2,2	x	13	-H	S 1000	13,00 A4
C 2,2	x	16	-H	S 1000	15,00 A4
C 2,2	x	19	-H	S 1000	18,00 A4
C 2,9	x	6,5	-H	S 1000	2,33 A4
C 2,9	x	9,5	-H	S 1000	5,20 A4
C 2,9	x	13	-H	S 1000	5,40 A4
C 2,9	x	16	-H	S 1000	6,00 A4
C 2,9	x	19	-H	S 1000	6,40 A4
C 2,9	x	22	-H	S 1000	10,70 A4
C 2,9	x	25	-H	S 1000	11,20 A4
C 3,5	x	6,5	-H	S 1000	7,00 A4
C 3,5	x	6,5	-H	K 100	10,50 A4
C 3,5	x	9,5	-H	S 1000	6,80 A4
C 3,5	x	13	-H	S 1000	6,35 A4
C 3,5	x	16	-H	S 1000	6,55 A4
C 3,5	x	19	-H	S 1000	8,40 A4
C 3,5	x	22	-H	S 1000	11,00 A4
C 3,5	x	25	-H	S 1000	12,00 A4
C 3,5	x	32	-H	S 1000	13,00 A4
C 3,5	x	38	-H	S 1000	15,00 A4
C 3,9	x	9,5	-H	S 1000	8,20 A4
C 3,9	x	13	-H	S 1000	6,75 A4
C 3,9	x	16	-H	S 1000	8,80 A4
C 3,9	x	19	-H	S 1000	9,60 A4
C 3,9	x	25	-H	S 500	12,20 A4
C 3,9	x	32	-H	S 500	14,50 A4
C 3,9	x	38	-H	S 500	16,60 A4
C 3,9	x	45	-H	S 500	20,60 A4
C 3,9	x	50	-H	S 500	24,70 A4
C 4,2	x	9,5	-H	S 1000	9,20 A4
C 4,2	x	13	-H	S 1000	8,70 A4
C 4,2	x	16	-H	S 1000	9,55 A4
C 4,2	x	19	-H	S 500	10,35 A4
C 4,2	x	22	-H	S 500	13,00 A4
C 4,2	x	25	-H	S 500	13,40 A4
C 4,2	x	32	-H	S 500	16,60 A4
C 4,2	x	38	-H	S 500	18,90 A4
C 4,2	x	45	-H	S 500	27,40 A4
C 4,8	x	9,5	-H	S 500	11,60 A4
C 4,8	x	13	-H	S 100	12,00 A4
C 4,8	x	16	-H	S 500	12,80 A4
C 4,8	x	19	-H	S 500	13,05 A4
C 4,8	x	22	-H	S 500	16,60 A4
C 4,8	x	25	-H	S 500	15,75 A4
C 4,8	x	32	-H	S 250	20,70 A4
C 4,8	x	38	-H	S 250	24,20 A4
C 4,8	x	45	-H	S 250	31,60 A4
C 4,8	x	50	-H	S 250	32,60 A4
C 4,8	x	60	-H	S 250	44,20 A4
C 4,8	x	70	-H	S 250	58,00 A4
C 4,8	x	90	-H	S 100	88,80 A4
C 4,8	x	100	-H	S 100	112,40 A4
C 5,5	x	13	-H	S 500	19,50 A4
C 5,5	x	16	-H	S 500	20,80 A4
C 5,5	x	19	-H	S 500	22,20 A4
C 5,5	x	22	-H	S 500	24,40 A4
C 5,5	x	25	-H	S 500	26,20 A4
C 5,5	x	32	-H	S 250	30,60 A4
C 5,5	x	38	-H	S 250	34,60 A4
C 5,5	x	45	-H	S 250	41,40 A4
C 5,5	x	50	-H	S 250	46,40 A4
C 5,5	x	60	-H	S 100	55,20 A4
C 6,3	x	13	-H	S 250	26,60 A4
C 6,3	x	16	-H	S 500	22,40 A4
C 6,3	x	19	-H	S 250	24,00 A4
C 6,3	x	22	-H	S 250	26,40 A4
C 6,3	x	25	-H	S 250	28,00 A4
C 6,3	x	32	-H	S 250	33,60 A4
C 6,3	x	38	-H	S 250	37,20 A4
C 6,3	x	45	-H	S 250	44,40 A4
C 6,3	x	50	-H	S 250	55,20 A4

DIN	07981.927	RAZ 690
7981	**A 2**	**type F-H**



Pan head tapping screws with Phillips cross recess H, F = with flat end

Caution! Hardness only ~ 250 HV.

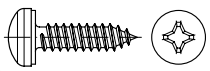
Dimensions → TI-46 Standard conversion → TI-11
Mounting instructions → TI-237

Steel → S. 337

DIN 7981 → replaced by ISO 7049

2,9	x	6,5	-F-H	S	1000	7,50 A2
2,9	x	9,5	-F-H	S	1000	7,60 A2
2,9	x	13	-F-H	S	1000	8,10 A2
2,9	x	16	-F-H	S	1000	9,00 A2
3,5	x	9,5	-F-H	S	1000	10,20 A2
3,5	x	13	-F-H	S	1000	10,80 A2
3,5	x	16	-F-H	S	1000	11,40 A2
3,9	x	9,5	-F-H	S	1000	12,30 A2
3,9	x	13	-F-H	S	1000	12,30 A2
4,2	x	9,5	-F-H	S	1000	13,80 A2

Article	88981.920	RAZ 998
7981	**A 2**	**article 88981**



Cap-head tapping screws with Phillips cross recess H type C = with cone point

Caution! Hardness only ~ 250 HV.

Matching decorative caps → Article 88003

Mounting instructions → TI-237 Standard conversion → TI-11

3,9	x	9,5	-H	S 1000	16,50 A2
3,9	x	13	-H	S 1000	16,10 A2
3,9	x	16	-H	S 1000	10,80 A2
3,9	x	19	-H	S 1000	17,50 A2
3,9	x	22	-H	S 500	14,30 A2
3,9	x	25	-H	S 500	21,00 A2
3,9	x	32	-H	S 500	19,30 A2
3,9	x	38	-H	S 500	29,50 A2

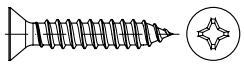
Article	88003.*	RAZ 800
88003	**Plastic**	

Decorative caps for cap screws article 88981 Ø 3.9

White RAL 9010 (*630), grey RAL 7035 (*640), black RAL 9005 (*650)

F. 3,9	S	1000	5,40

DIN	07982.924	RAZ 690
7982	**A 2**	**type C-H**



Countersunk head tapping screws with Phillips cross recess H, C = with cone end

Nominal lengths from 60 mm with partial thread, countersunk ⦟ = 80°

Caution! Hardness only ~ 250 HV.

Dimensions → TI-47 Standard conversion → TI-11

Steel → S. 338

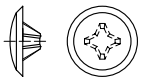
DIN 7982 → replaced by ISO 7050

C 2,2	x	6,5	-H	S 1000	7,50 A2
C 2,2	x	9,5	-H	S 1000	5,15 A2
C 2,2	x	13	-H	S 1000	9,85 A2
C 2,2	x	16	-H	S 1000	13,75 A2
C 2,2	x	19	-H	S 1000	19,65 A2
C 2,9	x	6,5	-H	S 1000	3,50 A2
C 2,9	x	9,5	-H	S 1000	2,60 A2
C 2,9	x	9,5	-H	K 100	4,65 A2
C 2,9	x	13	-H	S 1000	2,70 A2
C 2,9	x	13	-H	K 100	4,75 A2
C 2,9	x	16	-H	S 1000	3,00 A2
C 2,9	x	16	-H	K 100	5,05 A2
C 2,9	x	19	-H	S 1000	3,20 A2
C 2,9	x	19	-H	K 100	5,25 A2
C 2,9	x	22	-H	S 1000	5,35 A2
C 2,9	x	22	-H	K 100	7,40 A2
C 2,9	x	25	-H	S 1000	5,60 A2
C 2,9	x	25	-H	K 100	7,65 A2
C 3,5	x	9,5	-H	S 1000	3,40 A2
C 3,5	x	9,5	-H	K 100	5,45 A2
C 3,5	x	13	-H	S 1000	3,60 A2
C 3,5	x	13	-H	K 100	5,65 A2
C 3,5	x	16	-H	S 1000	3,80 A2
C 3,5	x	16	-H	K 100	5,85 A2
C 3,5	x	19	-H	S 1000	4,20 A2
C 3,5	x	19	-H	K 100	6,25 A2
C 3,5	x	22	-H	S 1000	5,25 A2

Dimensions	PU	Pieces	€/100/Mat.
C 3,5 x 22 -H	K	100	7,30 A 2
C 3,5 x 25 -H	S	1000	5,45 A 2
C 3,5 x 25 -H	K	100	7,50 A 2
C 3,5 x 32 -H	S	1000	6,20 A 2
C 3,5 x 32 -H	K	100	8,25 A 2
C 3,5 x 38 -H	S	1000	6,95 A 2
C 3,5 x 38 -H	K	100	9,00 A 2
C 3,5 x 45 -H	S	1000	9,00 A 2
C 3,5 x 50 -H	S	1000	12,00 A 2
C 3,5 x 60 -H	S	500	16,50 A 2
C 3,9 x 9,5-H	S	1000	4,10 A 2
C 3,9 x 9,5-H	K	100	6,15 A 2
C 3,9 x 13 -H	S	1000	4,10 A 2
C 3,9 x 13 -H	K	100	6,15 A 2
C 3,9 x 16 -H	S	1000	4,40 A 2
C 3,9 x 16 -H	K	100	6,45 A 2
C 3,9 x 19 -H	S	1000	4,80 A 2
C 3,9 x 19 -H	K	100	6,85 A 2
C 3,9 x 22 -H	S	500	5,90 A 2
C 3,9 x 22 -H	K	100	7,95 A 2
C 3,9 x 25 -H	S	500	6,10 A 2
C 3,9 x 25 -H	K	100	8,15 A 2
C 3,9 x 32 -H	S	500	7,25 A 2
C 3,9 x 32 -H	K	100	9,30 A 2
C 3,9 x 38 -H	S	500	8,30 A 2
C 3,9 x 38 -H	K	100	10,35 A 2
C 3,9 x 45 -H	S	500	10,30 A 2
C 3,9 x 50 -H	S	500	11,10 A 2
C 3,9 x 60 -H	S	500	15,00 A 2
C 4,2 x 9,5-H	S	1000	4,60 A 2
C 4,2 x 9,5-H	K	100	6,65 A 2
C 4,2 x 13 -H	S	1000	4,70 A 2
C 4,2 x 13 -H	K	100	6,75 A 2
C 4,2 x 16 -H	S	1000	5,25 A 2
C 4,2 x 16 -H	K	100	7,30 A 2
C 4,2 x 19 -H	S	500	5,75 A 2
C 4,2 x 19 -H	K	100	7,80 A 2
C 4,2 x 22 -H	S	500	6,50 A 2
C 4,2 x 22 -H	K	100	8,55 A 2
C 4,2 x 25 -H	S	500	6,70 A 2
C 4,2 x 25 -H	K	100	8,75 A 2
C 4,2 x 32 -H	S	500	8,30 A 2
C 4,2 x 32 -H	K	100	10,35 A 2
C 4,2 x 38 -H	S	500	9,45 A 2
C 4,2 x 38 -H	K	100	11,50 A 2
C 4,2 x 45 -H	S	500	13,70 A 2
C 4,2 x 45 -H	K	100	15,75 A 2
C 4,2 x 50 -H	S	500	15,50 A 2
C 4,2 x 50 -H	K	100	17,55 A 2
C 4,2 x 60 -H	S	250	27,50 A 2
C 4,8 x 13 -H	S	500	6,00 A 2
C 4,8 x 13 -H	K	100	8,05 A 2
C 4,8 x 16 -H	S	500	6,50 A 2
C 4,8 x 16 -H	K	100	8,55 A 2
C 4,8 x 19 -H	S	500	7,25 A 2
C 4,8 x 19 -H	K	100	9,30 A 2
C 4,8 x 22 -H	S	500	8,30 A 2
C 4,8 x 22 -H	K	100	10,35 A 2
C 4,8 x 25 -H	S	500	8,50 A 2
C 4,8 x 25 -H	K	100	10,55 A 2
C 4,8 x 32 -H	S	250	10,80 A 2
C 4,8 x 32 -H	K	100	12,85 A 2
C 4,8 x 38 -H	S	250	12,10 A 2
C 4,8 x 38 -H	K	100	14,15 A 2
C 4,8 x 45 -H	S	250	15,80 A 2
C 4,8 x 45 -H	K	100	17,85 A 2
C 4,8 x 50 -H	S	250	16,30 A 2
C 4,8 x 50 -H	K	100	18,35 A 2
C 4,8 x 55 -H	S	250	34,50 A 2
C 4,8 x 60 -H	S	250	22,10 A 2
C 4,8 x 70 -H	S	250	29,00 A 2
C 4,8 x 80 -H	S	250	34,40 A 2
C 4,8 x 90 -H	S	100	44,40 A 2
C 4,8 x 100 -H	S	100	56,20 A 2
C 5,5 x 13 -H	S	500	9,75 A 2

Dimensions	PU	Pieces	€/100/Mat.
C 5,5 x 13 -H	K	100	11,80 A 2
C 5,5 x 16 -H	K	100	12,45 A 2
C 5,5 x 19 -H	S	500	11,10 A 2
C 5,5 x 19 -H	K	100	13,15 A 2
C 5,5 x 22 -H	S	500	12,20 A 2
C 5,5 x 22 -H	K	100	14,25 A 2
C 5,5 x 25 -H	S	500	13,10 A 2
C 5,5 x 25 -H	K	100	15,15 A 2
C 5,5 x 32 -H	S	250	15,30 A 2
C 5,5 x 32 -H	K	100	17,35 A 2
C 5,5 x 38 -H	S	250	17,30 A 2
C 5,5 x 38 -H	K	100	19,35 A 2
C 5,5 x 45 -H	S	250	20,70 A 2
C 5,5 x 45 -H	K	100	22,75 A 2
C 5,5 x 50 -H	S	250	23,20 A 2
C 5,5 x 50 -H	K	100	25,25 A 2
C 5,5 x 60 -H	S	250	27,60 A 2
C 6,3 x 16 -H	S	500	11,20 A 2
C 6,3 x 16 -H	K	100	13,25 A 2
C 6,3 x 19 -H	S	500	12,00 A 2
C 6,3 x 19 -H	K	100	14,05 A 2
C 6,3 x 22 -H	S	500	13,20 A 2
C 6,3 x 22 -H	K	100	15,25 A 2
C 6,3 x 25 -H	S	500	14,00 A 2
C 6,3 x 25 -H	K	100	16,05 A 2
C 6,3 x 32 -H	S	250	16,80 A 2
C 6,3 x 32 -H	K	100	18,85 A 2
C 6,3 x 38 -H	S	250	18,60 A 2
C 6,3 x 38 -H	K	100	20,65 A 2
C 6,3 x 45 -H	S	250	22,20 A 2
C 6,3 x 45 -H	K	100	24,25 A 2
C 6,3 x 50 -H	S	250	27,60 A 2
C 6,3 x 50 -H	K	100	29,65 A 2

Article	88004.(*)	RAZ 800
88004	**Plastic**	**H**



Caps for countersunk head screws with Phillips cross recess H

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Cross recess no. x caps ∅	for screws ∅	PU	Pieces	
2	x 12 / 3,5-5	S	1000	1,95 plastic

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Dimensions	PU	Pieces	€/100/Mat.
DIN 07983.924			RAZ 690
7983	**A 2**		**type C-H**

Raised countersunk head tapping screws with Phillips cross recess H, C = with cone end

countersunk ⊀ = 80°

Caution! Hardness only ~ 250 HV.

Dimensions ➔ TI-47 Standard conversion ➔ TI-11
Mounting instructions ➔ TI-237

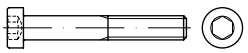
Steel ➔ S. 339

DIN 7983 ➔ replaced by ISO 7051

Dimensions	PU	Pieces	€/100/Mat.
C 2,9 x 9,5-H	S	1000	2,60 A 2
C 2,9 x 9,5-H	K	100	4,65 A 2
C 2,9 x 13 -H	S	1000	2,70 A 2
C 2,9 x 13 -H	K	100	4,75 A 2
C 2,9 x 16 -H	S	1000	3,00 A 2
C 2,9 x 16 -H	K	100	5,05 A 2
C 2,9 x 19 -H	S	1000	3,20 A 2
C 2,9 x 19 -H	K	100	5,25 A 2
C 2,9 x 22 -H	S	1000	5,35 A 2
C 2,9 x 22 -H	K	100	7,40 A 2
C 2,9 x 25 -H	S	1000	5,60 A 2
C 2,9 x 25 -H	K	100	7,65 A 2
C 3,5 x 9,5-H	S	1000	3,40 A 2
C 3,5 x 9,5-H	K	100	5,45 A 2
C 3,5 x 13 -H	S	1000	3,60 A 2
C 3,5 x 13 -H	K	100	5,65 A 2
C 3,5 x 16 -H	S	1000	3,80 A 2
C 3,5 x 16 -H	K	100	5,85 A 2
C 3,5 x 19 -H	S	1000	4,20 A 2
C 3,5 x 19 -H	K	100	6,25 A 2
C 3,5 x 22 -H	S	1000	5,25 A 2
C 3,5 x 22 -H	K	100	7,30 A 2
C 3,5 x 25 -H	S	1000	5,45 A 2
C 3,5 x 25 -H	K	100	7,50 A 2
C 3,5 x 32 -H	S	1000	6,20 A 2
C 3,5 x 32 -H	K	100	8,25 A 2
C 3,5 x 38 -H	S	1000	6,95 A 2
C 3,5 x 38 -H	K	100	9,00 A 2
C 3,9 x 9,5-H	S	1000	4,10 A 2
C 3,9 x 9,5-H	K	100	6,15 A 2
C 3,9 x 13 -H	S	1000	4,10 A 2
C 3,9 x 13 -H	K	100	6,15 A 2
C 3,9 x 16 -H	S	1000	4,40 A 2
C 3,9 x 16 -H	K	100	6,45 A 2
C 3,9 x 19 -H	S	1000	4,80 A 2
C 3,9 x 19 -H	K	100	6,85 A 2
C 3,9 x 22 -H	S	500	5,90 A 2
C 3,9 x 22 -H	K	100	7,95 A 2
C 3,9 x 25 -H	S	500	6,10 A 2
C 3,9 x 25 -H	K	100	8,15 A 2
C 3,9 x 32 -H	S	500	7,25 A 2
C 3,9 x 32 -H	K	100	9,30 A 2
C 3,9 x 38 -H	S	500	8,30 A 2
C 3,9 x 38 -H	K	100	10,35 A 2
C 4,2 x 9,5-H	S	1000	4,60 A 2
C 4,2 x 9,5-H	K	100	6,65 A 2
C 4,2 x 13 -H	S	1000	4,70 A 2
C 4,2 x 13 -H	K	100	6,75 A 2
C 4,2 x 16 -H	S	1000	5,25 A 2
C 4,2 x 16 -H	K	100	7,30 A 2
C 4,2 x 19 -H	S	500	5,75 A 2
C 4,2 x 19 -H	K	100	7,80 A 2

Dimensions			PU	Pieces	€/100/Mat.
C 4,2	x	22 -H	S	500	6,50 A 2
C 4,2	x	22 -H	K	100	8,55 A 2
C 4,2	x	25 -H	S	500	6,70 A 2
C 4,2	x	25 -H	K	100	8,75 A 2
C 4,2	x	32 -H	S	500	8,30 A 2
C 4,2	x	32 -H	K	100	10,35 A 2
C 4,2	x	38 -H	S	500	9,45 A 2
C 4,2	x	38 -H	K	100	11,50 A 2
C 4,2	x	45 -H	S	500	13,70 A 2
C 4,2	x	45 -H	K	100	15,75 A 2
C 4,2	x	50 -H	S	500	15,50 A 2
C 4,2	x	50 -H	K	100	17,55 A 2
C 4,2	x	60 -H	S	200	21,00 A 2
C 4,8	x	13 -H	S	500	6,00 A 2
C 4,8	x	13 -H	K	100	8,05 A 2
C 4,8	x	16 -H	S	500	6,50 A 2
C 4,8	x	16 -H	K	100	8,55 A 2
C 4,8	x	19 -H	S	500	7,25 A 2
C 4,8	x	19 -H	K	100	9,30 A 2
C 4,8	x	22 -H	S	500	8,30 A 2
C 4,8	x	22 -H	K	100	10,35 A 2
C 4,8	x	25 -H	S	500	8,50 A 2
C 4,8	x	25 -H	K	100	10,55 A 2
C 4,8	x	32 -H	S	250	10,80 A 2
C 4,8	x	32 -H	K	100	12,85 A 2
C 4,8	x	38 -H	S	250	12,10 A 2
C 4,8	x	38 -H	K	100	14,15 A 2
C 4,8	x	45 -H	S	250	15,80 A 2
C 4,8	x	45 -H	K	100	17,85 A 2
C 4,8	x	50 -H	S	250	16,30 A 2
C 4,8	x	50 -H	K	100	18,35 A 2
C 4,8	x	60 -H	S	250	26,60 A 2
C 5,5	x	13 -H	S	500	9,75 A 2
C 5,5	x	13 -H	K	100	11,80 A 2
C 5,5	x	16 -H	S	500	10,40 A 2
C 5,5	x	16 -H	K	100	12,45 A 2
C 5,5	x	19 -H	S	500	11,10 A 2
C 5,5	x	19 -H	K	100	13,15 A 2
C 5,5	x	22 -H	K	100	14,25 A 2
C 5,5	x	25 -H	K	100	15,15 A 2
C 5,5	x	32 -H	S	250	15,30 A 2
C 5,5	x	32 -H	K	100	17,35 A 2
C 5,5	x	38 -H	S	250	17,30 A 2
C 5,5	x	38 -H	K	100	19,35 A 2
C 5,5	x	45 -H	S	250	20,70 A 2
C 5,5	x	45 -H	K	100	22,75 A 2
C 5,5	x	50 -H	S	250	23,20 A 2
C 5,5	x	50 -H	K	100	25,25 A 2
C 6,3	x	16 -H	K	100	13,25 A 2
C 6,3	x	19 -H	K	100	14,05 A 2
C 6,3	x	22 -H	S	500	13,20 A 2
C 6,3	x	22 -H	K	100	15,25 A 2
C 6,3	x	25 -H	S	500	14,00 A 2
C 6,3	x	25 -H	K	100	16,05 A 2
C 6,3	x	32 -H	K	100	18,85 A 2
C 6,3	x	38 -H	K	100	20,65 A 2
C 6,3	x	45 -H	K	100	24,25 A 2
C 6,3	x	50 -H	S	250	27,60 A 2
C 6,3	x	50 -H	K	100	29,65 A 2

Dimensions			PU	Pieces	€/100/Mat.
DIN		07984.920			RAZ 700
7984		**A 2**			



Hexagon socket head cap screws with low head

Length ≤ 100 mm sometimes thread up to head

Caution! Screws have a reduced loadability.

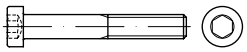
Dimensions → TI-13 Tightening torque → TI-235
Mech. properties → TI-224

Steel → S. 340

M 3	x	5	S	200	50,10 A 2
M 3	x	6	S	200	50,10 A 2
M 3	x	8	S	200	50,10 A 2
M 3	x	10	S	200	50,10 A 2
M 3	x	12	S	100	50,10 A 2
M 3	x	16	S	100	30,70 A 2
M 3	x	20	S	100	34,25 A 2
M 3	x	25	S	100	35,30 A 2
M 3	x	30	S	100	45,50 A 2
M 4	x	6	S	200	50,10 A 2
M 4	x	8	S	200	50,10 A 2
M 4	x	10	S	200	50,10 A 2
M 4	x	12	S	200	50,10 A 2
M 4	x	16	S	200	35,30 A 2
M 4	x	20	S	100	37,35 A 2
M 4	x	25	S	100	39,90 A 2
M 4	x	30	S	100	50,10 A 2
M 4	x	35	S	100	55,25 A 2
M 4	x	40	S	100	60,85 A 2
M 5	x	8	S	100	55,25 A 2
M 5	x	10	S	100	50,10 A 2
M 5	x	12	S	100	50,10 A 2
M 5	x	14	S	100	45,00 A 2
M 5	x	16	S	100	39,40 A 2
M 5	x	20	S	100	41,95 A 2
M 5	x	25	S	100	44,50 A 2
M 5	x	30	S	100	52,15 A 2
M 5	x	35	S	100	57,80 A 2
M 5	x	40	S	100	62,90 A 2
M 5	x	45	S	100	60,85 A 2
M 5	x	50	S	100	65,45 A 2
M 5	x	60	S	100	72,60 A 2
M 6	x	8	S	100	68,55 A 2
M 6	x	10	S	100	62,40 A 2
M 6	x	12	S	100	62,40 A 2
M 6	x	16	S	100	49,60 A 2
M 6	x	20	S	100	53,70 A 2
M 6	x	25	S	100	56,25 A 2
M 6	x	30	S	100	61,35 A 2
M 6	x	35	S	100	69,55 A 2
M 6	x	40	S	100	76,20 A 2
M 6	x	45	S	100	92,05 A 2
M 6	x	50	S	100	102,00 A 2
M 6	x	55	S	100	128,00 A 2
M 6	x	60	S	100	139,00 A 2
M 8	x	10	S	100	112,00 A 2
M 8	x	12	S	100	112,00 A 2
M 8	x	16	S	100	101,00 A 2
M 8	x	20	S	100	85,90 A 2
M 8	x	25	S	100	81,80 A 2
M 8	x	30	S	100	85,90 A 2
M 8	x	35	S	100	96,65 A 2
M 8	x	40	S	100	106,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	45	S	100	124,00 A 2
M 8	x	50	S	100	141,00 A 2
M 8	x	60	S	100	182,00 A 2
M 10	x	16	S	100	205,00 A 2
M 10	x	20	S	100	174,00 A 2
M 10	x	25	S	100	164,00 A 2
M 10	x	30	S	100	179,00 A 2
M 10	x	35	S	100	190,00 A 2
M 10	x	40	S	100	202,00 A 2
M 10	x	45	S	100	236,00 A 2
M 10	x	50	S	100	251,00 A 2
M 10	x	55	S	100	292,00 A 2
M 10	x	60	S	100	307,00 A 2
M 12	x	25	S	100	254,00 A 2
M 12	x	30	S	100	256,00 A 2
M 12	x	35	S	100	271,00 A 2
M 12	x	40	S	100	297,00 A 2
M 12	x	45	S	100	328,00 A 2
M 16	x	30	S	25	962,00 A 2
M 16	x	35	S	25	962,00 A 2
M 16	x	40	S	25	1003,00 A 2
M 16	x	45	S	25	1054,00 A 2
M 16	x	50	S	25	1095,00 A 2
M 16	x	55	S	25	1207,00 A 2
M 16	x	60	S	25	1238,00 A 2

DIN		07984.940			RAZ 700
7984		**A 4**			



Hexagon socket head cap screws with low head

Length ≤ 100 mm sometimes thread up to head

Caution! Screws have a reduced loadability.

Dimensions → TI-13 Tightening torque → TI-235
Mech. properties → TI-224

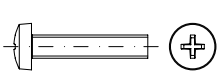
Steel → S. 340

M 4	x	6	S	200	105,00 A 4
M 4	x	8	S	200	88,45 A 4
M 4	x	10	S	200	72,10 A 4
M 4	x	12	S	200	72,10 A 4
M 4	x	16	S	200	57,80 A 4
M 5	x	10	S	100	78,25 A 4
M 5	x	12	S	100	68,00 A 4
M 5	x	16	S	100	49,60 A 4
M 5	x	20	S	100	53,70 A 4
M 6	x	10	S	100	93,60 A 4
M 6	x	12	S	100	79,25 A 4
M 6	x	16	S	100	62,40 A 4
M 6	x	20	S	100	65,95 A 4
M 6	x	25	S	100	75,70 A 4
M 6	x	30	S	100	78,75 A 4
M 6	x	35	S	100	84,40 A 4
M 6	x	40	S	100	95,65 A 4
M 8	x	12	S	100	156,00 A 4
M 8	x	16	S	100	119,00 A 4
M 8	x	20	S	100	97,15 A 4
M 8	x	25	S	100	102,00 A 4
M 8	x	30	S	100	108,00 A 4
M 8	x	35	S	100	119,00 A 4
M 8	x	40	S	100	151,00 A 4
M 8	x	50	S	100	190,00 A 4
M 10	x	20	S	100	225,00 A 4
M 10	x	25	S	100	213,00 A 4

Dimensions	PU	Pieces	€/100/Mat.
M 10 x 30	S	100	215,00 A4
M 10 x 35	S	100	228,00 A4
M 12 x 20	S	100	394,00 A4
M 12 x 25	S	50	374,00 A4
M 12 x 30	S	50	343,00 A4
M 12 x 35	S	50	364,00 A4
M 12 x 40	S	50	389,00 A4
M 16 x 30	S	25	1161,00 A4
M 16 x 35	S	25	1207,00 A4
M 16 x 40	S	25	1222,00 A4

DIN 07985.924 RAZ 710

7985 A 2 H



Cheese head screws with Phillips cross recess H

Dimensions ➔ TI-40 Standard conversion ➔ TI-11

Steel ➔ S. 342

DIN 7985 ➔ replaced by ISO 7045

Dimensions	PU	Pieces	€/100/Mat.
M 1,6 x 2 -H	S	1000	20,00 A2
M 1,6 x 3 -H	S	1000	17,80 A2
M 1,6 x 4 -H	S	1000	16,60 A2
M 1,6 x 5 -H	S	1000	16,60 A2
M 1,6 x 6 -H	S	1000	16,60 A2
M 1,6 x 8 -H	S	1000	17,10 A2
M 1,6 x 10 -H	S	1000	18,40 A2
M 1,6 x 12 -H	S	1000	20,90 A2
M 1,6 x 16 -H	S	1000	25,00 A2
M 2 x 2 -H	S	1000	18,00 A2
M 2 x 3 -H	S	1000	10,40 A2
M 2 x 4 -H	S	1000	7,05 A2
M 2 x 4 -H	K	200	8,05 A2
M 2 x 5 -H	S	1000	5,80 A2
M 2 x 5 -H	K	200	6,80 A2
M 2 x 6 -H	S	1000	5,80 A2
M 2 x 6 -H	K	200	6,80 A2
M 2 x 8 -H	S	1000	5,80 A2
M 2 x 8 -H	K	200	6,80 A2
M 2 x 10 -H	S	1000	5,80 A2
M 2 x 10 -H	K	200	6,80 A2
M 2 x 12 -H	S	1000	6,30 A2
M 2 x 12 -H	K	200	7,30 A2
M 2 x 14 -H	S	1000	8,85 A2
M 2 x 16 -H	S	1000	6,70 A2
M 2 x 16 -H	K	200	7,70 A2
M 2 x 18 -H	S	1000	9,45 A2
M 2 x 20 -H	S	1000	7,75 A2
M 2 x 20 -H	K	200	8,75 A2
M 2,5 x 3 -H	S	1000	11,00 A2
M 2,5 x 4 -H	S	1000	7,05 A2
M 2,5 x 4 -H	K	200	8,05 A2
M 2,5 x 5 -H	S	1000	7,20 A2
M 2,5 x 5 -H	K	200	8,20 A2
M 2,5 x 6 -H	S	1000	5,80 A2
M 2,5 x 6 -H	K	200	6,80 A2
M 2,5 x 8 -H	S	1000	5,80 A2
M 2,5 x 8 -H	K	200	6,80 A2
M 2,5 x 10 -H	S	1000	5,80 A2
M 2,5 x 10 -H	K	200	6,80 A2
M 2,5 x 12 -H	S	1000	6,30 A2
M 2,5 x 12 -H	K	200	7,30 A2
M 2,5 x 14 -H	S	1000	8,85 A2
M 2,5 x 16 -H	S	1000	6,70 A2
M 2,5 x 18 -H	S	1000	9,45 A2
M 2,5 x 20 -H	S	1000	7,75 A2
M 2,5 x 25 -H	S	1000	12,30 A2
M 2,5 x 30 -H	S	1000	18,00 A2
M 3 x 4 -H	S	1000	6,60 A2
M 3 x 5 -H	S	1000	5,60 A2
M 3 x 6 -H	S	1000	3,70 A2
M 3 x 6 -H	K	200	4,70 A2
M 3 x 8 -H	S	1000	3,95 A2
M 3 x 8 -H	K	200	4,95 A2
M 3 x 10 -H	S	1000	4,20 A2
M 3 x 10 -H	K	200	5,20 A2
M 3 x 12 -H	S	1000	4,45 A2
M 3 x 12 -H	K	200	5,45 A2
M 3 x 14 -H	S	1000	6,35 A2
M 3 x 16 -H	S	1000	5,85 A2
M 3 x 16 -H	K	200	7,95 A2
M 3 x 18 -H	S	1000	7,40 A2
M 3 x 20 -H	S	1000	5,55 A2
M 3 x 20 -H	K	200	6,55 A2
M 3 x 22 -H	S	1000	7,90 A2
M 3 x 25 -H	S	1000	6,05 A2
M 3 x 30 -H	S	1000	8,90 A2
M 3 x 35 -H	S	1000	16,30 A2
M 3 x 40 -H	S	1000	18,40 A2
M 3 x 45 -H	S	500	27,00 A2
M 3 x 50 -H	S	500	27,00 A2
M 4 x 4 -H	S	1000	9,90 A2
M 4 x 5 -H	S	1000	7,55 A2
M 4 x 6 -H	S	1000	5,95 A2
M 4 x 6 -H	K	200	6,95 A2
M 4 x 8 -H	S	1000	5,95 A2
M 4 x 8 -H	K	200	6,95 A2
M 4 x 10 -H	S	1000	6,20 A2
M 4 x 10 -H	K	200	7,20 A2
M 4 x 12 -H	S	1000	6,55 A2
M 4 x 12 -H	K	200	7,55 A2
M 4 x 14 -H	S	1000	9,70 A2
M 4 x 16 -H	S	1000	8,40 A2
M 4 x 16 -H	K	200	9,45 A2
M 4 x 18 -H	S	1000	10,70 A2
M 4 x 20 -H	S	1000	8,15 A2
M 4 x 20 -H	K	200	9,15 A2
M 4 x 22 -H	S	1000	12,50 A2
M 4 x 25 -H	S	1000	9,50 A2
M 4 x 25 -H	K	200	10,50 A2
M 4 x 30 -H	S	1000	11,10 A2
M 4 x 30 -H	K	200	12,10 A2
M 4 x 35 -H	S	500	14,00 A2
M 4 x 40 -H	S	500	15,00 A2
M 4 x 45 -H	S	500	17,60 A2
M 4 x 50 -H	S	200	34,20 A2
M 4 x 55 -H	S	200	40,00 A2
M 4 x 60 -H	S	200	40,60 A2
M 4 x 70 -H	S	200	52,00 A2
M 5 x 6 -H	S	500	14,80 A2
M 5 x 8 -H	S	500	10,60 A2
M 5 x 8 -H	K	200	11,60 A2
M 5 x 10 -H	S	500	10,50 A2
M 5 x 10 -H	K	200	11,50 A2
M 5 x 12 -H	S	500	10,60 A2
M 5 x 12 -H	K	200	11,60 A2
M 5 x 14 -H	S	500	15,50 A2
M 5 x 16 -H	S	500	11,80 A2
M 5 x 16 -H	K	200	12,80 A2
M 5 x 18 -H	S	500	17,30 A2
M 5 x 20 -H	S	500	13,20 A2
M 5 x 20 -H	K	200	14,20 A2
M 5 x 22 -H	S	500	19,60 A2
M 5 x 25 -H	S	500	15,10 A2
M 5 x 25 -H	K	200	16,10 A2
M 5 x 30 -H	S	500	17,60 A2
M 5 x 30 -H	K	200	18,60 A2
M 5 x 35 -H	S	500	19,90 A2
M 5 x 35 -H	K	200	20,90 A2
M 5 x 40 -H	S	500	23,20 A2
M 5 x 40 -H	K	200	24,20 A2
M 5 x 45 -H	S	200	26,10 A2
M 5 x 50 -H	S	200	27,70 A2
M 5 x 55 -H	S	200	32,00 A2
M 5 x 60 -H	S	200	32,70 A2
M 5 x 70 -H	S	100	50,60 A2
M 5 x 80 -H	S	100	59,30 A2
M 5 x 90 -H	S	100	72,00 A2
M 6 x 8 -H	S	200	13,10 A2
M 6 x 10 -H	S	200	13,20 A2
M 6 x 12 -H	S	200	13,90 A2
M 6 x 14 -H	S	200	20,70 A2
M 6 x 16 -H	S	200	15,80 A2
M 6 x 18 -H	S	200	21,00 A2
M 6 x 20 -H	S	200	17,10 A2
M 6 x 25 -H	S	200	19,10 A2
M 6 x 30 -H	S	200	22,40 A2
M 6 x 35 -H	S	200	24,70 A2
M 6 x 40 -H	S	200	28,10 A2
M 6 x 45 -H	S	200	31,40 A2
M 6 x 50 -H	S	200	32,30 A2
M 6 x 55 -H	S	200	36,40 A2
M 6 x 60 -H	S	100	36,40 A2
M 6 x 70 -H	S	100	60,30 A2
M 6 x 80 -H	S	100	69,50 A2
M 6 x 90 -H	S	100	85,30 A2
M 8 x 10 -H	S	100	29,30 A2
M 8 x 12 -H	S	100	24,50 A2
M 8 x 16 -H	S	100	28,50 A2
M 8 x 20 -H	S	100	30,60 A2
M 8 x 25 -H	S	100	31,90 A2
M 8 x 30 -H	S	100	34,30 A2
M 8 x 35 -H	S	100	34,90 A2
M 8 x 40 -H	S	100	36,80 A2
M 8 x 45 -H	S	100	37,70 A2
M 8 x 50 -H	S	100	38,60 A2
M 8 x 55 -H	S	100	46,90 A2
M 8 x 60 -H	S	100	46,90 A2
M 10 x 12 -H	S	100	175,00 A2
M 10 x 16 -H	S	100	160,00 A2
M 10 x 20 -H	S	100	170,00 A2
M 10 x 25 -H	S	100	190,00 A2
M 10 x 30 -H	S	100	205,00 A2
M 10 x 35 -H	S	100	225,00 A2
M 10 x 40 -H	S	100	245,00 A2
M 10 x 45 -H	S	100	275,00 A2
M 10 x 50 -H	S	100	275,00 A2
M 10 x 55 -H	S	100	295,00 A2
M 10 x 60 -H	S	100	310,00 A2

DIN 07985.944 RAZ 710

7985 A 4 H

Cheese head screws with Phillips cross recess H

Dimensions ➔ TI-40 Standard conversion ➔ TI-11

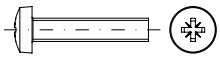
Steel ➔ S. 342

DIN 7985 ➔ replaced by ISO 7045

Dimensions	PU	Pieces	€/100/Mat.
M 1,6 x 3 -H	S	1000	25,00 A4
M 1,6 x 4 -H	S	1000	23,20 A4
M 1,6 x 5 -H	S	1000	23,20 A4
M 1,6 x 6 -H	S	1000	23,20 A4
M 1,6 x 8 -H	S	1000	23,70 A4
M 1,6 x 10 -H	S	1000	25,50 A4

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	4 -H	S	1000	11,20 A4
M 2	x	6 -H	S	1000	9,30 A4
M 2	x	8 -H	S	1000	9,30 A4
M 2	x	10 -H	S	1000	9,30 A4
M 2	x	12 -H	S	1000	10,10 A4
M 2	x	16 -H	S	1000	10,70 A4
M 2	x	20 -H	S	1000	12,40 A4
M 2,5	x	4 -H	S	1000	11,20 A4
M 2,5	x	5 -H	S	1000	9,30 A4
M 2,5	x	6 -H	S	1000	9,30 A4
M 2,5	x	8 -H	S	1000	9,30 A4
M 2,5	x	10 -H	S	1000	9,30 A4
M 2,5	x	12 -H	S	1000	10,10 A4
M 2,5	x	14 -H	S	1000	13,40 A4
M 2,5	x	16 -H	S	1000	10,70 A4
M 2,5	x	20 -H	S	1000	12,40 A4
M 2,5	x	30 -H	S	500	25,00 A4
M 3	x	4 -H	S	1000	10,60 A4
M 3	x	5 -H	S	1000	8,95 A4
M 3	x	6 -H	S	1000	5,90 A4
M 3	x	8 -H	S	1000	5,80 A4
M 3	x	10 -H	S	1000	6,35 A4
M 3	x	12 -H	S	1000	6,85 A4
M 3	x	14 -H	S	1000	10,20 A4
M 3	x	16 -H	S	1000	7,40 A4
M 3	x	20 -H	S	1000	8,25 A4
M 3	x	25 -H	S	1000	9,70 A4
M 3	x	30 -H	S	1000	14,30 A4
M 3	x	35 -H	S	1000	26,10 A4
M 3	x	40 -H	S	1000	29,40 A4
M 3	x	50 -H	S	500	43,30 A4
M 4	x	5 -H	S	1000	12,10 A4
M 4	x	6 -H	S	1000	9,55 A4
M 4	x	8 -H	S	1000	8,60 A4
M 4	x	10 -H	S	1000	9,20 A4
M 4	x	12 -H	S	1000	9,90 A4
M 4	x	14 -H	S	1000	15,50 A4
M 4	x	16 -H	S	1000	10,60 A4
M 4	x	18 -H	S	1000	17,10 A4
M 4	x	20 -H	S	1000	11,90 A4
M 4	x	22 -H	S	1000	20,00 A4
M 4	x	25 -H	S	1000	14,10 A4
M 4	x	30 -H	S	500	17,80 A4
M 4	x	35 -H	S	500	22,40 A4
M 4	x	40 -H	S	500	24,10 A4
M 4	x	45 -H	S	200	54,70 A4
M 4	x	50 -H	S	200	54,70 A4
M 5	x	6 -H	S	500	23,70 A4
M 5	x	8 -H	S	500	17,00 A4
M 5	x	10 -H	S	500	13,40 A4
M 5	x	12 -H	S	500	14,40 A4
M 5	x	14 -H	S	500	24,90 A4
M 5	x	16 -H	S	500	15,40 A4
M 5	x	18 -H	S	500	27,80 A4
M 5	x	20 -H	S	500	16,80 A4
M 5	x	22 -H	S	500	31,40 A4
M 5	x	25 -H	S	500	20,10 A4
M 5	x	30 -H	S	500	23,60 A4
M 5	x	35 -H	S	500	26,90 A4
M 5	x	40 -H	S	500	37,20 A4
M 5	x	45 -H	S	500	49,40 A4
M 5	x	50 -H	S	200	52,10 A4
M 5	x	60 -H	S	200	68,00 A4
M 6	x	8 -H	S	200	28,30 A4
M 6	x	10 -H	S	200	20,10 A4
M 6	x	12 -H	S	200	21,00 A4
M 6	x	16 -H	S	200	22,80 A4
M 6	x	20 -H	S	200	24,50 A4
M 6	x	25 -H	S	200	26,90 A4
M 6	x	30 -H	S	200	30,20 A4
M 6	x	35 -H	S	200	33,70 A4
M 6	x	40 -H	S	200	40,00 A4
M 6	x	45 -H	S	200	53,10 A4
M 6	x	50 -H	S	200	54,10 A4
M 6	x	60 -H	S	100	64,90 A4

Dimensions			PU	Pieces	€/100/Mat.
DIN		07985.925			RAZ 710
7985		**A 2**			**Z**



Cheese head screws with Pozidriv cross recess Z

Dimensions ➔ TI-40 Standard conversion ➔ TI-11

Steel ➔ S. 343

DIN 7985 ➔ replaced by ISO 7045

M 1,6	x	3 -Z	S	1000	25,00 A2
M 1,6	x	4 -Z	S	1000	24,00 A2
M 1,6	x	5 -Z	S	1000	24,50 A2
M 1,6	x	6 -Z	S	1000	25,00 A2
M 1,6	x	8 -Z	S	1000	27,00 A2
M 1,6	x	12 -Z	S	1000	35,00 A2
M 1,6	x	16 -Z	S	1000	42,00 A2
M 2	x	3 -Z	S	1000	10,40 A2
M 2	x	5 -Z	S	1000	5,80 A2
M 2	x	6 -Z	S	1000	5,80 A2
M 2	x	8 -Z	S	1000	5,80 A2
M 2	x	10 -Z	S	1000	5,80 A2
M 2	x	12 -Z	S	1000	6,30 A2
M 2	x	16 -Z	S	1000	6,70 A2
M 2,5	x	4 -Z	S	1000	7,05 A2
M 2,5	x	6 -Z	S	1000	5,80 A2
M 2,5	x	8 -Z	S	1000	5,80 A2
M 2,5	x	10 -Z	S	1000	5,80 A2
M 2,5	x	12 -Z	S	1000	6,30 A2
M 2,5	x	16 -Z	S	1000	6,70 A2
M 2,5	x	18 -Z	S	1000	7,75 A2
M 2,5	x	20 -Z	S	1000	7,75 A2
M 2,5	x	25 -Z	S	1000	12,30 A2
M 2,5	x	30 -Z	S	1000	16,00 A2
M 3	x	4 -Z	S	1000	6,60 A2
M 3	x	5 -Z	S	1000	5,60 A2
M 3	x	6 -Z	S	1000	3,70 A2
M 3	x	8 -Z	S	1000	3,95 A2
M 3	x	10 -Z	S	1000	4,20 A2
M 3	x	12 -Z	S	1000	4,45 A2
M 3	x	14 -Z	S	1000	7,20 A2
M 3	x	16 -Z	S	1000	5,85 A2
M 3	x	18 -Z	S	1000	5,42 A2
M 3	x	20 -Z	S	1000	5,55 A2
M 3	x	25 -Z	S	1000	6,05 A2
M 3	x	30 -Z	S	1000	8,90 A2
M 3	x	35 -Z	S	1000	16,30 A2
M 4	x	5 -Z	S	1000	7,55 A2
M 4	x	6 -Z	S	1000	5,95 A2
M 4	x	8 -Z	S	1000	5,95 A2
M 4	x	10 -Z	S	1000	6,20 A2
M 4	x	12 -Z	S	1000	6,55 A2
M 4	x	14 -Z	S	1000	8,40 A2
M 4	x	16 -Z	S	1000	8,40 A2
M 4	x	18 -Z	S	1000	9,40 A2
M 4	x	20 -Z	S	1000	8,15 A2
M 4	x	30 -Z	S	1000	11,10 A2
M 4	x	35 -Z	S	500	14,00 A2
M 4	x	40 -Z	S	500	15,00 A2
M 4	x	45 -Z	S	500	17,60 A2
M 4	x	50 -Z	S	200	34,20 A2
M 4	x	60 -Z	S	200	40,60 A2
M 4	x	70 -Z	S	200	58,00 A2
M 5	x	6 -Z	S	500	14,80 A2
M 5	x	8 -Z	S	500	10,60 A2
M 5	x	10 -Z	S	500	10,50 A2
M 5	x	12 -Z	S	500	10,60 A2
M 5	x	14 -Z	S	500	11,80 A2
M 5	x	16 -Z	S	500	11,80 A2
M 5	x	18 -Z	S	500	13,20 A2
M 5	x	20 -Z	S	500	13,20 A2
M 5	x	25 -Z	S	500	15,10 A2
M 5	x	30 -Z	S	500	17,60 A2
M 5	x	35 -Z	S	500	19,90 A2
M 5	x	40 -Z	S	500	23,20 A2
M 5	x	45 -Z	S	200	26,10 A2
M 5	x	50 -Z	S	200	27,70 A2
M 6	x	8 -Z	S	200	13,10 A2
M 6	x	10 -Z	S	200	13,20 A2
M 6	x	12 -Z	S	200	13,90 A2
M 6	x	16 -Z	S	1000	15,80 A2
M 6	x	20 -Z	S	200	17,10 A2
M 6	x	25 -Z	S	200	19,10 A2
M 6	x	30 -Z	S	200	22,40 A2
M 6	x	40 -Z	S	200	28,10 A2
M 6	x	45 -Z	S	200	31,40 A2
M 6	x	50 -Z	S	200	32,30 A2
M 6	x	55 -Z	S	200	36,40 A2
M 6	x	60 -Z	S	100	36,40 A2
M 8	x	10 -Z	S	200	110,00 A2
M 8	x	12 -Z	S	200	95,00 A2
M 8	x	16 -Z	S	200	105,00 A2
M 8	x	20 -Z	S	200	113,00 A2
M 8	x	25 -Z	S	200	125,00 A2
M 8	x	30 -Z	S	200	136,00 A2
M 8	x	50 -Z	S	200	182,00 A2
M10	x	30 -Z	S	100	205,00 A2

~DIN		07985.926			RAZ 710
7985		**A 2**			**ISR**

Cheese head screws, ISR = hexalobular socket

As per ISO 14583

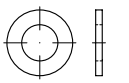
Dimensions ➔ TI-40 Standard conversion ➔ TI-11

Steel ➔ S. 344

M 1,6	x	2 -T5	S	1000	30,00 A2
M 1,6	x	3 -T5	S	1000	25,00 A2
M 1,6	x	4 -T5	S	1000	24,00 A2
M 1,6	x	5 -T5	S	1000	24,50 A2
M 1,6	x	6 -T5	S	1000	25,00 A2
M 1,6	x	8 -T5	S	1000	27,00 A2
M 1,6	x	10 -T5	S	1000	30,00 A2
M 1,6	x	12 -T5	S	1000	35,00 A2
M 1,6	x	16 -T5	S	1000	42,00 A2
M 2	x	2 -T6	S	1000	30,00 A2
M 2	x	3 -T6	S	1000	25,00 A2
M 2	x	4 -T6	S	1000	24,00 A2
M 2	x	5 -T6	S	1000	24,50 A2
M 2	x	6 -T6	S	1000	25,00 A2
M 2	x	8 -T6	S	1000	27,00 A2
M 2	x	10 -T6	S	1000	30,00 A2
M 2	x	12 -T6	S	1000	35,00 A2
M 2	x	16 -T6	S	1000	42,00 A2
M 2	x	20 -T6	S	1000	50,00 A2
M 2,5	x	3 -T8	S	1000	15,00 A2
M 2,5	x	4 -T8	S	1000	10,60 A2
M 2,5	x	5 -T8	S	1000	10,80 A2
M 2,5	x	6 -T8	S	1000	8,60 A2
M 2,5	x	8 -T8	S	1000	8,70 A2

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	10 -T8	S	1000	8,90 A 2
M 2,5	x	12 -T8	S	1000	9,50 A 2
M 2,5	x	16 -T8	S	1000	10,10 A 2
M 2,5	x	20 -T8	S	1000	11,70 A 2
M 2,5	x	25 -T8	S	1000	18,00 A 2
M 3	x	4 -T10	S	1000	6,50 A 2
M 3	x	5 -T10	S	1000	6,00 A 2
M 3	x	6 -T10	S	1000	5,55 A 2
M 3	x	8 -T10	S	1000	5,90 A 2
M 3	x	10 -T10	S	1000	6,30 A 2
M 3	x	12 -T10	S	1000	6,60 A 2
M 3	x	16 -T10	S	1000	7,80 A 2
M 3	x	20 -T10	S	1000	8,30 A 2
M 3	x	25 -T10	S	1000	9,10 A 2
M 3	x	30 -T10	S	1000	14,50 A 2
M 4	x	5 -T20	S	1000	12,00 A 2
M 4	x	6 -T20	S	1000	8,90 A 2
M 4	x	8 -T20	S	1000	9,00 A 2
M 4	x	10 -T20	S	1000	9,30 A 2
M 4	x	12 -T20	S	1000	9,80 A 2
M 4	x	16 -T20	S	1000	12,60 A 2
M 4	x	20 -T20	S	1000	12,80 A 2
M 4	x	25 -T20	S	1000	14,30 A 2
M 4	x	30 -T20	S	1000	18,00 A 2
M 4	x	35 -T20	S	500	24,75 A 2
M 4	x	40 -T20	S	500	32,00 A 2
M 5	x	6 -T25	S	500	22,20 A 2
M 5	x	8 -T25	S	500	15,50 A 2
M 5	x	10 -T25	S	500	15,80 A 2
M 5	x	12 -T25	S	500	15,90 A 2
M 5	x	16 -T25	S	500	17,70 A 2
M 5	x	20 -T25	S	500	19,80 A 2
M 5	x	25 -T25	S	500	22,70 A 2
M 5	x	30 -T25	S	500	26,00 A 2
M 5	x	35 -T25	S	500	29,50 A 2
M 5	x	40 -T25	S	500	34,50 A 2
M 5	x	45 -T25	S	500	42,25 A 2
M 5	x	50 -T25	S	500	55,00 A 2
M 6	x	8 -T30	S	200	19,60 A 2
M 6	x	10 -T30	S	200	19,80 A 2
M 6	x	12 -T30	S	500	20,80 A 2
M 6	x	16 -T30	S	200	22,50 A 2
M 6	x	20 -T30	S	200	25,50 A 2
M 6	x	25 -T30	S	200	28,50 A 2
M 6	x	30 -T30	S	200	33,50 A 2
M 6	x	35 -T30	S	200	37,00 A 2
M 6	x	40 -T30	S	200	42,00 A 2
M 6	x	45 -T30	S	200	51,35 A 2
M 6	x	50 -T30	S	200	65,00 A 2
M 6	x	60 -T30	S	200	88,00 A 2
M 8	x	10 -T45	S	500	110,00 A 2
M 8	x	12 -T45	S	500	95,00 A 2
M 8	x	16 -T45	S	500	105,00 A 2
M 8	x	20 -T45	S	500	113,00 A 2
M 8	x	25 -T45	S	500	125,00 A 2
M 8	x	30 -T45	S	500	136,00 A 2
M 8	x	35 -T45	S	500	147,00 A 2
M 8	x	40 -T45	S	500	159,00 A 2
M 8	x	45 -T45	S	200	170,00 A 2
M 8	x	50 -T45	S	200	182,00 A 2
M 8	x	55 -T45	S	200	195,00 A 2
M 8	x	60 -T45	S	200	206,00 A 2
M10	x	12 -T50	S	200	175,00 A 2
M10	x	16 -T50	S	200	158,00 A 2
M10	x	20 -T50	S	200	170,00 A 2
M10	x	25 -T50	S	200	190,00 A 2
M10	x	30 -T50	S	200	205,00 A 2
M10	x	35 -T50	S	200	225,00 A 2
M10	x	40 -T50	S	200	245,00 A 2
M10	x	45 -T50	S	100	270,00 A 2
M10	x	50 -T50	S	100	275,00 A 2
M10	x	55 -T50	S	100	295,00 A 2
M10	x	60 -T50	S	100	310,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
DIN 7989-1	07989.941	RAZ 720	A 4 / PK C



Washers for steel structures, product grade C (g)

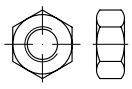
Old: type A

Dimensions ➔ TI-85

Steel ➔ S. 344

Nominal size/inside ∅ x outside ∅ x thickn.							
10/11	x	20	x	8	S	100	365,00 A 4
12/13,5	x	24	x	8	S	50	385,00 A 4
16/17,5	x	30	x	8	S	50	440,00 A 4
20/22	x	37	x	8	S	50	510,00 A 4
22/24	x	39	x	8	S	100	570,00 A 4
24/26	x	44	x	8	S	25	720,00 A 4
27/30	x	50	x	8	S	50	740,00 A 4
30/33	x	56	x	8	S	50	790,00 A 4

ISO	08673.920	RAZ 3310
8673	A 2	



Hexagon nuts, ISO type 1, with metric fine pitch thread

*M 5-M 39 = RAZ 3310 other ∅/M = RAZ 410

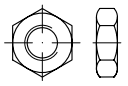
Dimensions ➔ TI-61 Mech. properties ➔ TI-224

Steel ➔ S. 346
Brass ➔ S. 594

ISO 8673 ➔ replaces DIN 934 fine thread

M 6	x	0,75	S	100	80,00 A 2
M 8	x	1	S	100	49,00 A 2
M 10	x	1	S	50	67,00 A 2
M 10	x	1,25	S	50	66,50 A 2
M 12	x	1,25	S	50	117,00 A 2
M 12	x	1,5	S	50	96,00 A 2
M 14	x	1,5	S	25	131,00 A 2
M 16	x	1,5	S	25	174,00 A 2
M 18	x	1,5	S	10	322,11 A 2
M 20	x	1,5	S	10	325,00 A 2
M 24	x	1,5	S	10	750,00 A 2
M 24	x	2	S	10	747,00 A 2
M 30	x	1,5	S	10	1830,00 A 2
M 30	x	2	S	1	1841,00 A 2
M 36	x	1,5	S	5	3000,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
ISO 8675	08675.920	*	A 2



Hexagon thin nuts with chamfers, with metric fine pitch thread

*M 10/12/14/22 = RAZ 3370 other ∅ = RAZ 170

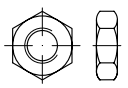
Dimensions ➔ TI-62 Mech. properties ➔ TI-224

Steel ➔ S. 349
Brass ➔ S. 594

ISO 8675 ➔ replaces DIN 439 fine thread

M 8	x	1	S	100	68,00 A 2
M 10	x	1	S	50	122,00 A 2
M 10	x	1,25	S	50	122,00 A 2
M 12	x	1,25	S	50	161,00 A 2
M 12	x	1,5	S	50	161,00 A 2
M 14	x	1,5	S	25	237,00 A 2
M 16	x	1,5	S	25	295,00 A 2
M 18	x	1	S	10	300,00 A 2
M 18	x	1,5	S	10	415,00 A 2
M 20	x	1,5	S	10	530,00 A 2
M 22	x	1,5	S	10	390,00 A 2
M 24	x	1,5	S	10	900,00 A 2
M 30	x	1,5	S	10	1690,00 A 2
M 30	x	2	S	10	1690,00 A 2
M 36	x	1,5	S	1	3050,00 A 2

ISO	08675.940	*
8675	A 4	



Hexagon thin nuts with chamfers, with metric fine pitch thread

*M 10/12/14/22 = RAZ 3370 other ∅ = RAZ 170

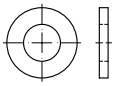
Dimensions ➔ TI-62 Mech. properties ➔ TI-224

Steel ➔ S. 349
Brass ➔ S. 594

ISO 8675 ➔ replaces DIN 439 fine thread

M 10	x	1	S	50	146,00 A 4
M 10	x	1,25	S	50	146,00 A 4
M 12	x	1,25	S	50	192,00 A 4
M 12	x	1,5	S	50	192,00 A 4
M 16	x	1,5	S	25	365,00 A 4
M 18	x	1,5	S	10	495,00 A 4
M 20	x	1,5	S	10	650,00 A 4
M 22	x	1,5	S	10	940,00 A 4
M 24	x	1,5	S	10	1100,00 A 4
M 24	x	2	S	10	1100,00 A 4
M 30	x	1,5	S	10	2120,00 A 4
M 30	x	2	S	10	2120,00 A 4
M 33	x	2	S	1	2750,00 A 4
M 36	x	3	S	1	3380,00 A 4

Dimensions	PU Pieces	€/100/Mat.
ISO	08738.920	RAZ 490
8738	**A 2 160 HV**	



Washers for clevis pins, product grade

ISO 8738 = EN 28738,
for pins acc. to ISO 2340 and ISO 2341

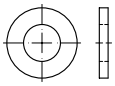
Dimensions → TI-85 Standard conversion → TI-10

Steel → S. 353

ISO 8738 → replaces DIN 1440

Nominal diameter			
5	S	50	38,40
6	S	50	46,80
8	S	50	78,00
10	S	50	106,80
12	S	25	148,80
14	S	25	211,20
16	S	25	217,20
20	S	10	312,00

ISO	08738.940	RAZ 490
8738	**A 4 160 HV**	



Washers for clevis pins, product grade

ISO 8738 = EN 28738,
for pins acc. to ISO 2340 and ISO 2341

Dimensions → TI-85 Standard conversion → TI-10

Steel → S. 353

ISO 8738 → replaces DIN 1440

Nominal diameter			
5	S	50	45,60
6	S	50	53,40
8	S	50	92,40
10	S	50	134,40
12	S	25	198,00
14	S	25	273,60
16	S	25	279,60
18	S	10	378,00
20	S	10	414,00
30	S	1	1560,00
36	S	1	1836,00
40	S	1	2748,00
50	S	1	4080,00
60	S	1	5340,00

Dimensions	PU Pieces	€/100/Mat.
ISO	08740.910	RAZ 3650
8740	**A 1**	

Grooved pins, full length parallel grooved, with chamfers

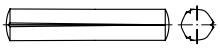
Dimensions → TI-117

Steel → S. 354

ISO 8740 → replaces DIN 1473

2	x	8	S	100	9,70 A1
2	x	10	S	100	10,00 A1
2	x	12	S	100	10,30 A1
2	x	16	S	100	10,80 A1
2	x	18	S	100	11,20 A1
2	x	20	S	100	11,60 A1
3	x	8	S	100	12,70 A1
3	x	10	S	100	13,40 A1
3	x	12	S	100	13,40 A1
3	x	16	S	100	13,40 A1
3	x	18	S	100	13,90 A1
3	x	20	S	100	14,60 A1
3	x	24	S	100	15,70 A1
3	x	30	S	100	17,30 A1
4	x	8	S	100	14,60 A1
4	x	10	S	100	15,00 A1
4	x	12	S	100	15,00 A1
4	x	16	S	100	17,70 A1
4	x	18	S	100	17,70 A1
4	x	20	S	100	18,80 A1
4	x	24	S	100	21,20 A1
4	x	30	S	100	23,80 A1
4	x	35	S	100	26,50 A1
4	x	40	S	100	28,50 A1
5	x	8	S	100	18,30 A1
5	x	10	S	100	19,70 A1
5	x	12	S	100	19,80 A1
5	x	16	S	100	23,80 A1
5	x	18	S	100	24,90 A1
5	x	20	S	100	26,50 A1
5	x	24	S	100	30,50 A1
5	x	30	S	100	33,00 A1
5	x	35	S	100	37,00 A1
5	x	40	S	100	40,00 A1
6	x	10	S	100	33,00 A1
6	x	12	S	100	34,00 A1
6	x	16	S	100	37,50 A1
6	x	18	S	100	39,00 A1
6	x	20	S	100	40,50 A1
6	x	24	S	100	44,50 A1
6	x	30	S	100	49,50 A1
6	x	35	S	100	55,00 A1
6	x	40	S	100	59,00 A1
6	x	45	S	100	63,00 A1
6	x	50	S	100	67,00 A1
8	x	10	S	100	49,50 A1
8	x	12	S	100	52,00 A1
8	x	16	S	100	55,00 A1
8	x	20	S	100	61,00 A1
8	x	25	S	100	69,00 A1
8	x	30	S	100	74,00 A1
8	x	35	S	100	82,00 A1
8	x	40	S	100	87,00 A1
8	x	45	S	100	94,00 A1
8	x	50	S	100	101,00 A1
8	x	60	S	100	114,00 A1

Dimensions	PU Pieces	€/100/Mat.
ISO	08744.910	RAZ 3650
8744	**A 1**	



Grooved pins, full-length taper grooved

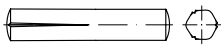
Dimensions → TI-117

Steel → S. 356

ISO 8744 → replaces DIN 1471

2	x	8	S	100	9,70 A1
2	x	10	S	100	10,00 A1
2	x	12	S	100	10,30 A1
2	x	16	S	100	10,80 A1
2	x	18	S	100	11,20 A1
2	x	20	S	100	11,60 A1
3	x	8	S	100	12,70 A1
3	x	10	S	100	13,40 A1
3	x	12	S	100	13,60 A1
3	x	16	S	100	13,70 A1
3	x	18	S	100	13,90 A1
3	x	20	S	100	14,60 A1
3	x	25	S	100	16,40 A1
4	x	8	S	100	14,60 A1
4	x	10	S	100	15,00 A1
4	x	12	S	100	15,30 A1
4	x	16	S	100	17,70 A1
4	x	18	S	100	18,30 A1
4	x	20	S	100	18,80 A1
4	x	25	S	100	21,90 A1
4	x	30	S	100	23,80 A1
4	x	35	S	100	26,50 A1
4	x	40	S	100	28,50 A1
5	x	8	S	100	18,30 A1
5	x	10	S	100	19,70 A1
5	x	12	S	100	19,80 A1
5	x	16	S	100	23,80 A1
5	x	18	S	100	24,90 A1
5	x	20	S	100	26,50 A1
5	x	25	S	100	30,50 A1
5	x	30	S	100	33,00 A1
5	x	35	S	100	37,00 A1
5	x	40	S	100	40,00 A1
6	x	10	S	100	33,00 A1
6	x	12	S	100	34,00 A1
6	x	16	S	100	37,50 A1
6	x	18	S	100	39,00 A1
6	x	20	S	100	40,50 A1
6	x	25	S	100	46,00 A1
6	x	30	S	100	49,50 A1
6	x	40	S	100	59,00 A1
6	x	45	S	100	63,00 A1
6	x	50	S	100	67,00 A1
8	x	12	S	100	52,00 A1
8	x	16	S	100	55,00 A1
8	x	20	S	100	61,00 A1
8	x	25	S	100	69,00 A1
8	x	30	S	100	74,00 A1
8	x	35	S	100	82,00 A1
8	x	40	S	100	87,00 A1
8	x	45	S	100	94,00 A1
8	x	50	S	100	101,00 A1
8	x	60	S	100	114,00 A1

Dimensions	PU Pieces	€/100/Mat.
ISO	08745.910	RAZ 3650
8745	**A 1**	



Grooved pins, half-length taper grooved

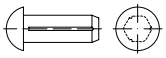
Dimensions → TI-118

Steel → S. 356

ISO 8745 → replaces DIN 1472

1,5	x	8	S	100	14,20 A 1
1,5	x	10	S	100	14,40 A 1
2	x	8	S	100	14,70 A 1
2	x	10	S	100	15,10 A 1
2	x	12	S	100	15,40 A 1
2	x	14	S	100	15,60 A 1
2	x	16	S	100	17,10 A 1
2	x	18	S	100	17,40 A 1
2	x	20	S	100	19,30 A 1
3	x	6	S	100	15,30 A 1
3	x	8	S	100	15,30 A 1
3	x	10	S	100	15,60 A 1
3	x	12	S	100	17,00 A 1
3	x	14	S	100	17,20 A 1
3	x	16	S	100	18,50 A 1
3	x	18	S	100	19,00 A 1
3	x	20	S	100	19,70 A 1
3	x	25	S	100	20,10 A 1
4	x	8	S	100	17,10 A 1
4	x	10	S	100	17,50 A 1
4	x	12	S	100	24,50 A 1
4	x	14	S	100	25,30 A 1
4	x	16	S	100	26,00 A 1
4	x	18	S	100	27,50 A 1
4	x	20	S	100	27,50 A 1
4	x	25	S	100	30,00 A 1
4	x	30	S	100	31,50 A 1
4	x	40	S	100	33,50 A 1
5	x	8	S	100	18,30 A 1
5	x	10	S	100	19,70 A 1
5	x	12	S	100	19,80 A 1
5	x	16	S	100	23,80 A 1
5	x	18	S	100	31,50 A 1
5	x	20	S	100	34,00 A 1
5	x	25	S	100	35,50 A 1
5	x	30	S	100	36,00 A 1
5	x	35	S	100	37,00 A 1
5	x	40	S	100	40,00 A 1
6	x	10	S	100	33,00 A 1
6	x	18	S	100	39,00 A 1
6	x	20	S	100	40,50 A 1
6	x	25	S	100	46,00 A 1
6	x	30	S	100	49,50 A 1
6	x	35	S	100	55,00 A 1
6	x	40	S	100	59,00 A 1
6	x	45	S	100	63,00 A 1
6	x	50	S	100	67,00 A 1
8	x	12	S	100	52,00 A 1
8	x	16	S	100	55,00 A 1
8	x	18	S	100	58,00 A 1
8	x	20	S	100	61,00 A 1
8	x	25	S	100	69,00 A 1
8	x	30	S	100	74,00 A 1
8	x	35	S	100	82,00 A 1
8	x	40	S	100	87,00 A 1
8	x	45	S	100	94,00 A 1
8	x	50	S	100	101,00 A 1
8	x	60	S	100	114,00 A 1

Dimensions	PU Pieces	€/100/Mat.
ISO	08746.920	RAZ 500
8746	**1.4303 (A 2)**	**type A**



Grooved pins with round head, A = with chamfer

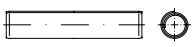
Dimensions → TI-118 Standard conversion → TI-10

Steel → S. 357
Brass, aluminium → S. 594

ISO 8746 → replaces DIN 1476 (compatible)

1,4	x	3	S	100	7,90 A 2
1,4	x	4	S	100	8,10 A 2
1,4	x	5	S	100	8,20 A 2
1,4	x	6	S	100	9,00 A 2
1,6	x	3	S	100	8,10 A 2
1,6	x	4	S	100	8,70 A 2
1,6	x	5	S	100	8,90 A 2
1,6	x	6	S	100	9,30 A 2
2	x	3	S	100	10,80 A 2
2	x	4	S	100	10,80 A 2
2	x	5	S	100	10,80 A 2
2	x	6	S	100	11,50 A 2
2	x	8	S	100	12,20 A 2
2	x	10	S	100	13,10 A 2
2,5	x	4	S	100	11,20 A 2
2,5	x	5	S	100	11,40 A 2
2,5	x	6	S	100	11,50 A 2
2,5	x	8	S	100	11,70 A 2
2,5	x	10	S	100	13,50 A 2
3	x	4	S	100	13,30 A 2
3	x	5	S	100	14,20 A 2
3	x	6	S	100	14,90 A 2
3	x	8	S	100	18,30 A 2
3	x	10	S	100	19,00 A 2
3	x	12	S	100	21,90 A 2
4	x	6	S	100	24,10 A 2
4	x	8	S	100	27,00 A 2
4	x	10	S	100	29,00 A 2
4	x	12	S	100	33,00 A 2
5	x	8	S	100	33,00 A 2
5	x	10	S	100	36,00 A 2
5	x	12	S	100	41,00 A 2
5	x	16	S	100	43,50 A 2
6	x	10	S	100	40,00 A 2
6	x	12	S	100	44,00 A 2

Dimensions	PU Pieces	€/100/Mat.
ISO	08750.960	RAZ 623
8750	**1.4310**	



Spring-type straight pins, coiled, standard duty

Caution! Reduced spring load.

Dimensions → TI-119

Spring steel → S. 358

ISO 8750 → replaces DIN 7343 (compatible)

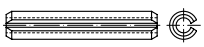
1	x	6	S	1000	7,90
1	x	8	S	1000	8,00
1	x	10	S	1000	8,50
1	x	12	S	1000	9,00
1,5	x	5	S	1000	7,70
1,5	x	6	S	1000	7,80
1,5	x	8	S	1000	8,00
1,5	x	10	S	1000	8,50
1,5	x	12	S	1000	9,00
2	x	4	S	1000	7,70
2	x	5	S	1000	8,00
2	x	6	S	1000	8,20
2	x	8	S	1000	8,50
2	x	10	S	1000	9,00
2	x	12	S	1000	9,20
2	x	14	S	1000	9,50
2	x	16	S	1000	10,10
2	x	18	S	1000	10,40
2	x	20	S	1000	11,10
2,5	x	5	S	1000	8,70
2,5	x	6	S	1000	9,00
2,5	x	8	S	1000	9,20
2,5	x	10	S	1000	9,50
2,5	x	12	S	1000	10,10
2,5	x	14	S	1000	10,40
2,5	x	16	S	1000	11,10
2,5	x	18	S	1000	12,20
2,5	x	20	S	1000	12,90
2,5	x	22	S	1000	13,40
2,5	x	24	S	1000	14,10
3	x	8	S	1000	12,20
3	x	10	S	1000	12,90
3	x	12	S	1000	13,80
3	x	14	S	1000	15,90
3	x	16	S	1000	16,60
3	x	18	S	1000	17,20
3	x	20	S	1000	17,80
3	x	22	S	1000	20,00
3	x	24	S	1000	20,80
3	x	26	S	1000	22,10
3	x	28	S	1000	23,00
3	x	30	S	1000	24,20
3	x	32	S	1000	24,90
4	x	8	S	500	16,50
4	x	10	S	500	16,70
4	x	12	S	500	19,00
4	x	14	S	500	21,30
4	x	16	S	500	23,40
4	x	18	S	500	24,80
4	x	20	S	500	28,00
4	x	22	S	500	29,50
4	x	24	S	500	31,50
4	x	26	S	500	33,00
4	x	28	S	500	34,50
4	x	30	S	500	36,00

Dimensions			PU	Pieces	€/100/Mat.
4	x	32	S	500	38,50
4	x	35	S	500	41,00
4	x	40	S	500	46,50
4	x	45	S	500	53,00
4	x	50	S	500	58,00
5	x	12	S	500	26,00
5	x	14	S	500	28,50
5	x	16	S	500	31,50
5	x	18	S	500	34,50
5	x	20	S	500	37,00
5	x	22	S	500	40,00
5	x	24	S	500	43,00
5	x	26	S	500	46,00
5	x	28	S	500	48,50
5	x	30	S	500	53,00
5	x	32	S	500	55,00
5	x	35	S	500	61,00
5	x	40	S	500	66,00
5	x	45	S	500	73,00
5	x	50	S	250	80,00
6	x	12	S	500	33,50
6	x	14	S	500	36,50
6	x	16	S	500	40,50
6	x	18	S	500	44,00
6	x	20	S	500	47,00
6	x	22	S	500	52,00
6	x	24	S	500	55,00
6	x	26	S	500	59,00
6	x	28	S	500	62,00
6	x	30	S	500	68,00
6	x	32	S	500	70,00
6	x	35	S	500	78,00
6	x	40	S	250	85,00
6	x	45	S	250	94,00
6	x	50	S	250	103,00
8	x	16	S	500	49,00
8	x	18	S	500	54,00
8	x	20	S	500	59,00
8	x	22	S	500	64,00
8	x	24	S	500	68,00
8	x	26	S	500	73,00
8	x	28	S	500	78,00
8	x	30	S	500	83,00
8	x	32	S	500	88,00
8	x	35	S	500	98,00
8	x	40	S	250	108,00
8	x	45	S	250	121,00
8	x	50	S	250	132,00

ISO	08752.960	*

8752

1.4310



Spring-type straight pins, slotted, heavy duty

Caution! Reduced spring load.

Dimensions ➔ TI-119

Spring steel ➔ S. 358

ISO 8752 ➔ replaces DIN 1481

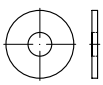
1	x	4	S	100	8,50
1	x	5	S	100	8,50
1	x	6	S	100	8,50
1	x	8	S	100	8,50
1	x	10	S	100	9,00
1	x	12	S	100	9,20
1	x	14	S	100	9,50
1	x	16	S	100	9,80
1	x	18	S	100	10,10
1	x	20	S	100	10,50
1,5	x	5	S	100	8,30
1,5	x	6	S	100	8,50
1,5	x	8	S	100	8,50
1,5	x	10	S	100	9,00
1,5	x	12	S	100	9,20
1,5	x	14	S	100	9,50
1,5	x	16	S	100	9,80
1,5	x	18	S	100	10,10
1,5	x	20	S	100	10,80
2	x	4	S	100	8,50
2	x	5	S	100	8,50
2	x	6	S	100	8,50
2	x	8	S	100	9,00
2	x	10	S	100	9,30
2	x	12	S	100	9,70
2	x	14	S	100	10,10
2	x	16	S	100	10,60
2	x	18	S	100	11,00
2	x	20	S	100	11,60
2	x	22	S	100	12,20
2	x	24	S	100	12,70
2	x	26	S	100	13,30
2	x	28	S	100	14,00
2	x	30	S	100	14,70
2,5	x	4	S	100	8,70
2,5	x	5	S	100	9,20
2,5	x	6	S	100	9,20
2,5	x	8	S	100	9,50
2,5	x	10	S	100	10,10
2,5	x	12	S	100	10,40
2,5	x	14	S	100	11,00
2,5	x	16	S	100	11,50
2,5	x	18	S	100	12,20
2,5	x	20	S	100	13,00
2,5	x	22	S	100	13,60
2,5	x	24	S	100	14,40
2,5	x	26	S	100	15,10
2,5	x	28	S	100	16,00
2,5	x	30	S	100	16,90
3	x	4	S	100	9,50
3	x	5	S	100	10,10
3	x	6	S	100	11,00
3	x	8	S	100	12,20
3	x	10	S	100	13,10
3	x	12	S	100	14,20
3	x	14	S	100	16,00
3	x	16	S	100	16,60
3	x	18	S	100	17,20
3	x	20	S	100	17,90
3	x	22	S	100	19,70
3	x	24	S	50	21,50
3	x	26	S	50	22,40
3	x	28	S	50	23,50
3	x	30	S	50	24,60
3	x	32	S	50	25,50
3	x	36	S	50	27,00
3	x	40	S	50	28,50
3,5	x	6	S	100	14,70
3,5	x	10	S	100	16,50
3,5	x	12	S	100	18,70
3,5	x	14	S	100	21,00
3,5	x	16	S	100	22,80
3,5	x	18	S	100	24,20
3,5	x	20	S	100	27,00
3,5	x	22	S	100	28,00
3,5	x	24	S	100	30,50
3,5	x	26	S	100	31,00
3,5	x	28	S	100	33,00
3,5	x	30	S	100	34,50
3,5	x	32	S	100	36,50
3,5	x	36	S	100	39,50
3,5	x	40	S	100	44,50
4	x	6	S	100	14,70
4	x	8	S	100	16,10
4	x	10	S	100	16,50
4	x	12	S	100	18,70
4	x	14	S	50	22,10
4	x	16	S	50	23,80
4	x	18	S	50	25,50
4	x	20	S	50	28,00
4	x	22	S	50	29,00
4	x	24	S	50	31,50
4	x	26	S	50	33,00
4	x	28	S	50	34,00
4	x	30	S	50	35,50
4	x	32	S	50	35,50
4	x	36	S	50	40,50
4	x	40	S	50	45,50
4	x	45	S	50	48,00
4	x	50	S	50	55,00
4,5	x	8	S	100	19,70
4,5	x	10	S	100	19,70
4,5	x	12	S	100	21,70
4,5	x	14	S	100	24,00
4,5	x	16	S	100	25,50
4,5	x	18	S	100	28,00
4,5	x	20	S	100	30,50
4,5	x	22	S	100	32,00
4,5	x	24	S	100	34,00
4,5	x	26	S	100	36,00
4,5	x	28	S	100	38,00
4,5	x	30	S	100	41,00
4,5	x	32	S	100	43,00
4,5	x	36	S	100	51,00
4,5	x	40	S	100	54,00
4,5	x	45	S	100	59,00
4,5	x	50	S	100	64,00
5	x	6	S	50	19,10
5	x	8	S	50	20,90
5	x	10	S	50	23,10
5	x	12	S	50	26,00
5	x	14	S	50	28,50
5	x	16	S	50	31,50
5	x	18	S	50	34,00
5	x	20	S	50	36,50
5	x	22	S	50	39,00
5	x	24	S	50	41,50
5	x	26	S	50	44,00
5	x	28	S	50	47,50
5	x	30	S	50	51,00
5	x	32	S	50	53,00
5	x	36	S	50	59,00
5	x	40	S	50	64,00
5	x	45	S	50	69,00
5	x	50	S	50	78,00
5	x	60	S	50	125,00
5	x	70	S	50	162,00
6	x	10	S	25	33,00
6	x	12	S	25	35,00
6	x	14	S	25	36,50
6	x	16	S	25	39,00
6	x	18	S	25	45,00
6	x	20	S	25	52,00
6	x	22	S	25	55,00
6	x	24	S	25	59,00
6	x	26	S	25	63,00
6	x	28	S	25	67,00
6	x	30	S	25	71,00
6	x	32	S	25	76,00
6	x	36	S	25	84,00
6	x	40	S	25	102,00
6	x	45	S	25	117,00
6	x	50	S	25	133,00
6	x	60	S	25	174,00
6	x	70	S	25	192,00
6	x	80	S	25	206,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions				PU	Pieces	€/100/Mat.
8	x	10		S	25	46,00
8	x	12		S	25	48,50
8	x	14		S	25	51,00
8	x	16		S	25	55,00
8	x	18		S	25	64,00
8	x	20		S	25	73,00
8	x	22		S	25	84,00
8	x	24		S	25	87,00
8	x	26		S	25	90,00
8	x	28		S	25	96,00
8	x	30		S	25	103,00
8	x	32		S	25	112,00
8	x	36		S	25	121,00
8	x	40		S	25	146,00
8	x	45		S	25	160,00
8	x	50		S	25	169,00
8	x	55		S	25	180,00
8	x	60		S	25	191,00
8	x	70		S	25	215,00
8	x	80		S	25	230,00
8	x	90		S	25	255,00
10	x	10		S	50	81,00
10	x	12		S	50	84,00
10	x	16		S	50	92,00
10	x	18		S	50	119,00
10	x	20		S	50	119,00
10	x	22		S	50	136,00
10	x	24		S	50	141,00
10	x	28		S	50	153,00
10	x	30		S	10	165,00
10	x	32		S	50	159,00
10	x	36		S	50	191,00
10	x	40		S	50	229,00
10	x	45		S	10	249,00
10	x	50		S	50	270,00
10	x	55		S	10	285,00
10	x	60		S	10	305,00
10	x	65		S	50	320,00
10	x	70		S	50	330,00
10	x	80		S	10	355,00
10	x	90		S	50	375,00
10	x	100		S	50	410,00

DIN 09021.920 RAZ 750

9021 A 2



Washers, outside Ø ≈ 3 x nom. thread Ø, product grade C

Dimensions → TI-85

Steel → S. 364
Brass, plastic → S. 595

DIN 9021 → replaced by ISO 7093

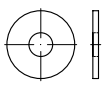
Inside Ø x outside Ø x thickness

3,2	x	9	x	0,8	S	1000	1,70 A 2
3,2	x	9	x	0,8	K	100	3,25 A 2
4,3	x	12	x	1	S	1000	2,25 A 2
4,3	x	12	x	1	K	100	3,45 A 2
5,3	x	15	x	1,2	S	1000	5,10 A 2
5,3	x	15	x	1,2	K	100	6,60 A 2
6,4	x	18	x	1,6	S	1000	6,70 A 2
6,4	x	18	x	1,6	K	100	8,30 A 2
8,4	x	24	x	2	S	1000	16,90 A 2
8,4	x	24	x	2	K	100	18,40 A 2
10,5	x	30	x	2,5	S	500	25,50 A 2

Dimensions					PU	Pieces	€/100/Mat.
10,5	x	30	x	2,5	K	50	28,00 A 2
13	x	37	x	3	S	250	62,00 A 2
13	x	37	x	3	K	50	64,00 A 2
15	x	44	x	3	S	100	81,00 A 2
17	x	50	x	3	S	100	98,00 A 2
17	x	50	x	3	K	25	103,00 A 2
20	x	56	x	4	S	100	155,00 A 2
22	x	60	x	4	S	100	169,00 A 2
22	x	60	x	4	K	10	181,00 A 2
26	x	72	x	5	S	25	450,00 A 2

DIN 09021.940 RAZ 750

9021 A 4



Washers, outside Ø ≈ 3 x nom. thread Ø, product grade C

Dimensions → TI-85

Steel → S. 364
Brass, plastic → S. 595

DIN 9021 → replaced by ISO 7093

Inside Ø x outside Ø x thickness

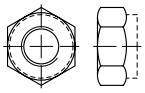
3,2	x	9	x	0,8	S	1000	2,20 A 4
3,2	x	9	x	0,8	K	100	4,15 A 4
4,3	x	12	x	1	S	1000	2,90 A 4
4,3	x	12	x	1	K	100	4,60 A 4
5,3	x	15	x	1,2	S	1000	6,40 A 4
5,3	x	15	x	1,2	K	100	8,70 A 4
6,4	x	18	x	1,6	S	1000	8,90 A 4
6,4	x	18	x	1,6	K	100	11,10 A 4
8,4	x	24	x	2	S	1000	19,90 A 4
8,4	x	24	x	2	K	100	22,60 A 4
10,5	x	30	x	2,5	S	500	40,00 A 4
10,5	x	30	x	2,5	K	50	45,50 A 4
13	x	37	x	3	S	250	80,00 A 4
13	x	37	x	3	K	50	85,00 A 4
15	x	44	x	3	S	100	111,00 A 4
17	x	50	x	3	S	100	143,00 A 4
17	x	50	x	3	K	25	153,00 A 4
20	x	56	x	4	S	100	214,00 A 4
22	x	60	x	4	S	10	265,00 A 4
26	x	72	x	5	S	10	316,00 A 4

Important Note!

The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

Dimensions	PU	Pieces	€/100/Mat.
~ISO	10511.920		RAZ 3395

10511 A 2



Prevailing torque type hexagon nuts with non-metallic insert, low type

for use under temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 364
Brass → S. 595

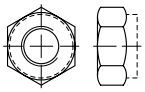
ISO 10511 → replaces DIN 985

Price and delivery reservation

M 3	S	1000	16,30
M 4	S	1000	12,70
M 5	S	1000	2,71
M 6	S	1000	16,40
M 8	S	500	31,50
M 10	S	500	62,00
M 12	S	250	85,00
M 14	S	250	192,00
M 16	S	250	203,00
M 18	S	25	520,00
M 20	S	1	620,00
M 22	S	1	660,00
M 24	S	1	660,00
M 30	S	1	2410,00
M 36	S	1	4750,00

ISO 10511.940 RAZ 3395

10511 A 4



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use under temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-224

Steel → S. 364
Brass → S. 595

ISO 10511 → replaces DIN 985

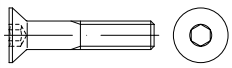
Price and delivery reservation

M 3	S	1000	45,50
M 4	S	1000	25,50
M 5	S	1000	25,50
M 6	S	1000	34,00
M 8	S	500	49,50
M 10	S	500	97,00

Dimensions	PU	Pieces	€/100/Mat.
M 12	S	250	150,00
M 14	S	250	295,00
M 16	S	250	340,00
M 20	S	1	950,00
M 24	S	1	1000,00
M 30	S	1	3650,00

ISO	10642.920	RAZ 3800

10642 A 2



Hexagon socket countersunk head screws

Sometimes thread up to head

Caution! Screws have only a reduced loadability.

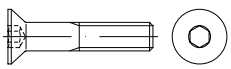
Dimensions → TI-14 Tightening torque → TI-235
Mech. properties → TI-224

Steel → S. 366

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 6	S	100	18,15 A 2
M 3 x 8	S	100	16,65 A 2
M 3 x 10	S	100	14,60 A 2
M 3 x 12	S	100	13,30 A 2
M 3 x 14	S	100	20,45 A 2
M 3 x 16	S	100	14,35 A 2
M 3 x 18	S	100	23,55 A 2
M 3 x 20	S	100	16,10 A 2
M 3 x 25	S	100	17,15 A 2
M 3 x 30	S	100	18,95 A 2
M 3 x 35	S	200	84,00 A 2
M 4 x 6	S	100	32,75 A 2
M 4 x 8	S	500	28,15 A 2
M 4 x 8	K	100	30,65 A 2
M 4 x 10	S	500	26,10 A 2
M 4 x 10	K	100	28,60 A 2
M 4 x 12	S	500	26,10 A 2
M 4 x 12	K	100	28,60 A 2
M 4 x 14	S	500	26,60 A 2
M 4 x 14	K	100	29,10 A 2
M 4 x 16	S	500	20,45 A 2
M 4 x 16	K	100	22,95 A 2
M 4 x 18	S	500	29,65 A 2
M 4 x 18	K	100	32,15 A 2
M 4 x 20	S	500	22,50 A 2
M 4 x 20	K	100	25,00 A 2
M 4 x 25	S	500	25,05 A 2
M 4 x 25	K	100	27,55 A 2
M 4 x 30	S	200	26,60 A 2
M 4 x 35	S	200	29,65 A 2
M 4 x 40	S	200	39,40 A 2
M 4 x 45	S	100	41,45 A 2
M 4 x 50	S	100	41,45 A 2
M 5 x 6	S	100	33,75 A 2
M 5 x 8	S	100	26,60 A 2
M 5 x 10	S	500	26,10 A 2
M 5 x 10	K	100	28,60 A 2
M 5 x 12	S	500	26,10 A 2
M 5 x 12	K	100	28,60 A 2
M 5 x 14	S	500	35,30 A 2
M 5 x 14	K	100	37,80 A 2
M 5 x 16	S	500	20,45 A 2
M 5 x 16	K	100	22,95 A 2
M 5 x 18	S	500	38,85 A 2
M 5 x 18	K	100	41,35 A 2
M 5 x 20	S	500	22,50 A 2
M 5 x 20	K	100	25,00 A 2
M 5 x 25	S	500	25,05 A 2
M 5 x 25	K	100	27,55 A 2
M 5 x 30	S	200	26,60 A 2
M 5 x 35	S	200	29,65 A 2
M 5 x 40	S	200	39,40 A 2
M 5 x 45	S	100	32,25 A 2
M 5 x 50	S	100	35,30 A 2
M 5 x 60	S	100	71,10 A 2
M 6 x 8	S	100	50,10 A 2
M 6 x 10	S	100	34,25 A 2
M 6 x 12	S	500	32,75 A 2
M 6 x 12	K	100	35,25 A 2
M 6 x 14	S	500	41,45 A 2
M 6 x 14	K	100	43,95 A 2
M 6 x 16	S	500	26,10 A 2
M 6 x 16	K	100	28,60 A 2
M 6 x 18	S	200	45,00 A 2
M 6 x 20	S	200	28,15 A 2
M 6 x 25	S	200	30,20 A 2
M 6 x 30	S	200	34,25 A 2
M 6 x 35	S	200	39,90 A 2
M 6 x 40	S	200	44,00 A 2
M 6 x 45	S	100	54,20 A 2
M 6 x 50	S	100	58,30 A 2
M 6 x 55	S	100	108,00 A 2
M 6 x 60	S	100	133,00 A 2
M 6 x 70	S	100	154,00 A 2
M 6 x 75	S	100	287,00 A 2
M 6 x 80	S	100	190,00 A 2
M 8 x 10	S	200	104,00 A 2
M 8 x 12	S	200	92,05 A 2
M 8 x 14	S	200	79,25 A 2
M 8 x 16	S	200	49,10 A 2
M 8 x 18	S	200	63,95 A 2
M 8 x 20	S	200	46,55 A 2
M 8 x 25	S	100	44,50 A 2
M 8 x 30	S	100	46,05 A 2
M 8 x 35	S	100	51,15 A 2
M 8 x 40	S	100	63,95 A 2
M 8 x 45	S	100	76,20 A 2
M 8 x 50	S	100	84,40 A 2
M 8 x 55	S	100	113,00 A 2
M 8 x 60	S	100	136,00 A 2
M 8 x 70	S	50	169,00 A 2
M 8 x 80	S	50	182,00 A 2
M 8 x 90	S	50	190,00 A 2
M 8 x 100	S	50	215,00 A 2
M 8 x 110	S	50	343,00 A 2
M 8 x 120	S	50	374,00 A 2
M 10 x 16	S	100	82,35 A 2
M 10 x 20	S	100	82,35 A 2
M 10 x 25	S	100	74,15 A 2
M 10 x 30	S	100	77,20 A 2
M 10 x 35	S	100	82,85 A 2
M 10 x 40	S	100	94,60 A 2
M 10 x 45	S	100	101,00 A 2
M 10 x 50	S	100	107,00 A 2
M 10 x 55	S	100	128,00 A 2
M 10 x 60	S	50	144,00 A 2
M 10 x 70	S	50	185,00 A 2
M 10 x 80	S	50	195,00 A 2
M 10 x 90	S	50	236,00 A 2
M 10 x 100	S	50	292,00 A 2
M 10 x 110	S	50	445,00 A 2
M 10 x 120	S	50	481,00 A 2
M 10 x 130	S	50	507,00 A 2
M 12 x 20	S	50	120,00 A 2
M 12 x 25	S	50	114,00 A 2
M 12 x 30	S	50	116,00 A 2
M 12 x 35	S	50	123,00 A 2
M 12 x 40	S	50	133,00 A 2
M 12 x 45	S	50	149,00 A 2
M 12 x 50	S	50	159,00 A 2
M 12 x 55	S	50	169,00 A 2
M 12 x 60	S	50	177,00 A 2
M 12 x 70	S	50	251,00 A 2
M 12 x 80	S	50	261,00 A 2
M 12 x 90	S	50	317,00 A 2
M 12 x 100	S	50	369,00 A 2
M 12 x 110	S	25	399,00 A 2
M 12 x 120	S	25	440,00 A 2
M 12 x 130	S	25	471,00 A 2
M 12 x 140	S	25	512,00 A 2
M 16 x 25	S	25	496,00 A 2
M 16 x 30	S	25	415,00 A 2
M 16 x 35	S	25	445,00 A 2
M 16 x 40	S	25	496,00 A 2
M 16 x 45	S	25	517,00 A 2
M 16 x 50	S	25	532,00 A 2
M 16 x 55	S	25	573,00 A 2
M 16 x 60	S	25	588,00 A 2
M 16 x 65	S	25	645,00 A 2
M 16 x 70	S	25	645,00 A 2
M 16 x 80	S	25	788,00 A 2
M 16 x 90	S	25	829,00 A 2
M 16 x 100	S	25	982,00 A 2
M 16 x 110	S	25	1176,00 A 2
M 16 x 120	S	25	1289,00 A 2
M 16 x 130	S	25	1447,00 A 2
M 16 x 140	S	25	1596,00 A 2
M 16 x 150	S	25	1688,00 A 2
M 20 x 40	S	25	951,00 A 2
M 20 x 45	S	25	951,00 A 2
M 20 x 50	S	25	951,00 A 2
M 20 x 55	S	25	1033,00 A 2
M 20 x 60	S	25	1084,00 A 2
M 20 x 70	S	25	1197,00 A 2
M 20 x 80	S	25	1432,00 A 2
M 20 x 90	S	25	1228,00 A 2
M 20 x 100	S	25	1483,00 A 2
M 20 x 110	S	25	2199,00 A 2
M 20 x 120	S	25	2250,00 A 2
M 20 x 130	S	1	2455,00 A 2
M 20 x 140	S	1	2506,00 A 2
M 20 x 150	S	1	2557,00 A 2

ISO	10642.940	RAZ 3800

10642 A 4



Hexagon socket countersunk head screws

∅ > M 20: head geometry acc. to DIN 7991, sometimes thread up to head

Caution! Screws have only a reduced loadability.

Dimensions → TI-14 Tightening torque → TI-235
Mech. properties → TI-224

Steel → S. 366

Dimensions	PU	Pieces	€/100/Mat.
M 3 x 6	S	100	28,15 A 4
M 3 x 8	S	100	28,15 A 4
M 3 x 10	S	100	26,60 A 4
M 3 x 12	S	100	20,70 A 4
M 3 x 14	S	100	27,10 A 4
M 3 x 16	S	100	26,10 A 4
M 3 x 18	S	100	34,25 A 4
M 3 x 20	S	100	26,60 A 4
M 3 x 25	S	100	27,10 A 4
M 3 x 30	S	100	29,15 A 4
M 4 x 6	S	100	40,40 A 4
M 4 x 8	S	500	36,30 A 4

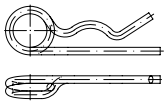
Dimensions			PU	Pieces	€/100/Mat.
M 4	x	8	K	100	38,80 A4
M 4	x	10	S	500	33,25 A4
M 4	x	10	K	100	35,75 A4
M 4	x	12	S	500	35,80 A4
M 4	x	12	K	100	38,30 A4
M 4	x	14	S	500	35,80 A4
M 4	x	14	K	100	38,30 A4
M 4	x	16	S	500	29,15 A4
M 4	x	16	K	100	31,65 A4
M 4	x	18	S	500	37,85 A4
M 4	x	18	K	100	40,35 A4
M 4	x	20	S	500	31,70 A4
M 4	x	20	K	100	34,20 A4
M 4	x	25	S	500	33,25 A4
M 4	x	25	K	100	35,75 A4
M 4	x	30	S	200	35,80 A4
M 4	x	35	S	200	39,90 A4
M 4	x	40	S	200	49,60 A4
M 4	x	45	S	100	50,65 A4
M 4	x	50	S	100	50,65 A4
M 5	x	6	S	100	42,95 A4
M 5	x	8	S	100	38,35 A4
M 5	x	10	S	500	37,35 A4
M 5	x	10	K	100	39,85 A4
M 5	x	12	S	500	35,80 A4
M 5	x	12	K	100	38,30 A4
M 5	x	14	S	500	40,90 A4
M 5	x	14	K	100	43,40 A4
M 5	x	16	S	500	29,15 A4
M 5	x	16	K	100	31,65 A4
M 5	x	18	S	500	41,95 A4
M 5	x	18	K	100	44,45 A4
M 5	x	20	S	500	31,70 A4
M 5	x	20	K	100	34,20 A4
M 5	x	25	S	500	33,25 A4
M 5	x	25	K	100	35,75 A4
M 5	x	30	S	200	35,80 A4
M 5	x	35	S	200	39,90 A4
M 5	x	40	S	200	49,60 A4
M 5	x	45	S	100	47,05 A4
M 5	x	50	S	100	53,20 A4
M 5	x	55	S	100	61,90 A4
M 5	x	60	S	100	65,45 A4
M 6	x	8	S	100	85,90 A4
M 6	x	10	S	100	44,00 A4
M 6	x	12	S	500	41,95 A4
M 6	x	12	K	100	44,45 A4
M 6	x	14	S	500	50,65 A4
M 6	x	14	K	100	53,15 A4
M 6	x	16	S	500	32,75 A4
M 6	x	16	K	100	35,25 A4
M 6	x	18	S	200	53,70 A4
M 6	x	20	S	200	33,25 A4
M 6	x	25	S	200	40,90 A4
M 6	x	30	S	200	45,50 A4
M 6	x	35	S	200	50,65 A4
M 6	x	40	S	200	60,85 A4
M 6	x	45	S	100	85,90 A4
M 6	x	50	S	100	88,45 A4
M 6	x	55	S	100	136,00 A4
M 6	x	60	S	100	159,00 A4
M 6	x	70	S	100	192,00 A4
M 6	x	80	S	100	231,00 A4
M 6	x	90	S	100	297,00 A4
M 6	x	100	S	100	369,00 A4
M 8	x	10	S	100	139,00 A4
M 8	x	12	S	200	127,00 A4
M 8	x	14	S	200	116,00 A4
M 8	x	16	S	200	61,35 A4
M 8	x	18	S	200	121,00 A4
M 8	x	20	S	200	55,25 A4
M 8	x	25	S	100	55,75 A4
M 8	x	30	S	100	57,30 A4
M 8	x	35	S	100	62,40 A4
M 8	x	40	S	100	82,35 A4

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	45	S	100	96,15 A4
M 8	x	50	S	100	105,00 A4
M 8	x	55	S	100	144,00 A4
M 8	x	60	S	100	167,00 A4
M 8	x	70	S	50	205,00 A4
M 8	x	80	S	50	241,00 A4
M 8	x	90	S	50	287,00 A4
M 8	x	100	S	50	317,00 A4
M 8	x	120	S	50	502,00 A4
M 10	x	16	S	25	139,00 A4
M 10	x	20	S	100	102,00 A4
M 10	x	25	S	100	97,65 A4
M 10	x	30	S	100	101,00 A4
M 10	x	35	S	100	108,00 A4
M 10	x	40	S	100	124,00 A4
M 10	x	45	S	100	133,00 A4
M 10	x	50	S	100	144,00 A4
M 10	x	55	S	100	182,00 A4
M 10	x	60	S	50	190,00 A4
M 10	x	70	S	50	231,00 A4
M 10	x	80	S	50	287,00 A4
M 10	x	90	S	50	343,00 A4
M 10	x	100	S	50	399,00 A4
M 10	x	120	S	50	502,00 A4
M 12	x	20	S	50	195,00 A4
M 12	x	25	S	50	185,00 A4
M 12	x	30	S	50	177,00 A4
M 12	x	35	S	50	185,00 A4
M 12	x	40	S	50	200,00 A4
M 12	x	45	S	50	223,00 A4
M 12	x	50	S	50	231,00 A4
M 12	x	55	S	50	246,00 A4
M 12	x	60	S	50	297,00 A4
M 12	x	70	S	50	307,00 A4
M 12	x	80	S	50	353,00 A4
M 12	x	90	S	50	430,00 A4
M 12	x	100	S	50	507,00 A4
M 12	x	110	S	25	737,00 A4
M 12	x	120	S	25	793,00 A4
M 16	x	25	S	25	542,00 A4
M 16	x	30	S	1	573,00 A4
M 16	x	35	S	1	604,00 A4
M 16	x	40	S	1	665,00 A4
M 16	x	45	S	1	691,00 A4
M 16	x	50	S	1	696,00 A4
M 16	x	55	S	1	742,00 A4
M 16	x	60	S	1	788,00 A4
M 16	x	70	S	1	885,00 A4
M 16	x	80	S	1	1125,00 A4
M 16	x	90	S	1	1355,00 A4
M 16	x	100	S	1	1534,00 A4
M 16	x	110	S	1	2301,00 A4
M 16	x	120	S	1	2352,00 A4
M 16	x	130	S	1	2404,00 A4
M 16	x	140	S	1	2455,00 A4
M 16	x	150	S	1	2506,00 A4
M 20	x	40	S	1	1381,00 A4
M 20	x	45	S	1	1534,00 A4
M 20	x	50	S	1	1611,00 A4
M 20	x	55	S	1	1739,00 A4
M 20	x	60	S	1	1867,00 A4
M 20	x	70	S	1	1995,00 A4
M 20	x	80	S	1	2608,00 A4
M 20	x	90	S	1	3324,00 A4
M 20	x	100	S	1	3733,00 A4
M 20	x	110	S	1	4858,00 A4
M 20	x	120	S	1	4909,00 A4
M 20	x	130	S	1	4960,00 A4
M 20	x	140	S	1	5011,00 A4
M 20	x	150	S	1	5062,00 A4
M 24	x	50	S	1	2352,00 A4
M 24	x	55	S	1	2352,00 A4
M 24	x	60	S	1	2352,00 A4
M 24	x	70	S	1	2455,00 A4
M 24	x	80	S	1	3068,00 A4

Dimensions			PU	Pieces	€/100/Mat.
M 24	x	90	S	1	3784,00 A4
M 24	x	100	S	1	4193,00 A4
M 24	x	110	S	1	5318,00 A4
M 24	x	120	S	1	5369,00 A4
M 24	x	140	S	1	5471,00 A4
M 24	x	150	S	1	5522,00 A4

DIN 11024.940 RAZ 770

11024 A 4



Spring cotters for a bolt

Dimensions → TI-121

Steel → S. 370

For hole ∅ (tol. H13)/shaft ∅ from-to			
2,5 / 9 -11,2	S	25	1040,00 A4
3,2 / 11,3-14	S	25	1120,00 A4
4 / 14,1-20	S	25	1850,00 A4
5 / 20,1-26	S	10	2270,00 A4
6,3 / 26,1-34	S	10	3250,00 A4
7 / 34,1-45	S	10	4050,00 A4
8 / 45,1-56	S	10	9800,00 A4

ISO 14583.920 RAZ 710

14583 A 2 ISR

Pan head screws, ISR = hexalobular socket

Dimensions → TI-40 Standard conversion → TI-11

Corrosion protection → TI-217 Tightening torque → TI-235

Steel → S. 380

M 1,6	x	2	S	1000	30,00 A2
M 1,6	x	3	S	1000	25,00 A2
M 1,6	x	4	S	1000	24,00 A2
M 1,6	x	5	S	1000	24,50 A2
M 1,6	x	6	S	1000	25,00 A2
M 1,6	x	8	S	1000	27,00 A2
M 1,6	x	10	S	1000	30,00 A2
M 1,6	x	12	S	1000	35,00 A2
M 1,6	x	16	S	1000	42,00 A2
M 2	x	2	S	1000	30,00 A2
M 2	x	3	S	1000	25,00 A2
M 2	x	4	S	1000	24,00 A2
M 2	x	5	S	1000	24,50 A2
M 2	x	6	S	1000	25,00 A2
M 2	x	8	S	1000	27,00 A2
M 2	x	10	S	1000	30,00 A2
M 2	x	12	S	1000	35,00 A2
M 2	x	16	S	1000	42,00 A2
M 2	x	20	S	1000	50,00 A2
M 2,5	x	3	S	1000	15,00 A2
M 2,5	x	4	S	1000	10,60 A2
M 2,5	x	5	S	1000	10,80 A2
M 2,5	x	6	S	1000	8,60 A2
M 2,5	x	8	S	1000	8,70 A2
M 2,5	x	10	S	1000	8,90 A2

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	12	S	1000	9,50 A 2
M 2,5	x	16	S	1000	10,10 A 2
M 2,5	x	20	S	1000	11,70 A 2
M 2,5	x	25	S	1000	18,00 A 2
M 3	x	4	S	1000	6,50 A 2
M 3	x	5	S	1000	6,00 A 2
M 3	x	6	S	1000	5,55 A 2
M 3	x	8	S	1000	5,90 A 2
M 3	x	10	S	1000	6,30 A 2
M 3	x	12	S	1000	6,60 A 2
M 3	x	16	S	1000	7,80 A 2
M 3	x	20	S	1000	8,30 A 2
M 3	x	25	S	1000	9,10 A 2
M 3	x	30	S	1000	14,50 A 2
M 4	x	5	S	1000	12,00 A 2
M 4	x	6	S	1000	8,90 A 2
M 4	x	8	S	1000	9,00 A 2
M 4	x	10	S	1000	9,30 A 2
M 4	x	12	S	1000	9,80 A 2
M 4	x	16	S	1000	12,60 A 2
M 4	x	20	S	1000	12,80 A 2
M 4	x	25	S	1000	14,30 A 2
M 4	x	30	S	1000	18,00 A 2
M 4	x	35	S	500	24,75 A 2
M 4	x	40	S	500	32,00 A 2
M 5	x	6	S	500	22,20 A 2
M 5	x	8	S	500	15,50 A 2
M 5	x	10	S	500	15,80 A 2
M 5	x	12	S	500	15,90 A 2
M 5	x	20	S	500	19,80 A 2
M 5	x	25	S	500	22,70 A 2
M 5	x	30	S	500	26,00 A 2
M 5	x	35	S	500	29,50 A 2
M 5	x	40	S	500	34,50 A 2
M 5	x	45	S	500	42,25 A 2
M 5	x	50	S	500	55,00 A 2
M 6	x	8	S	200	19,60 A 2
M 6	x	10	S	200	19,80 A 2
M 6	x	12	S	500	20,80 A 2
M 6	x	16	S	200	22,50 A 2
M 6	x	20	S	200	25,50 A 2
M 6	x	25	S	200	28,50 A 2
M 6	x	30	S	200	33,50 A 2
M 6	x	35	S	200	37,00 A 2
M 6	x	40	S	200	42,00 A 2
M 6	x	45	S	200	51,35 A 2
M 6	x	50	S	200	65,00 A 2
M 6	x	60	S	200	88,00 A 2
M 8	x	10	S	500	110,00 A 2
M 8	x	12	S	500	95,00 A 2
M 8	x	16	S	500	105,00 A 2
M 8	x	20	S	500	113,00 A 2
M 8	x	25	S	500	125,00 A 2
M 8	x	30	S	500	136,00 A 2
M 8	x	35	S	500	147,00 A 2
M 8	x	40	S	500	159,00 A 2
M 8	x	45	S	200	170,00 A 2
M 8	x	50	S	200	182,00 A 2
M 8	x	55	S	200	195,00 A 2
M 8	x	60	S	200	206,00 A 2
M10	x	12	S	200	175,00 A 2
M10	x	16	S	200	158,00 A 2
M10	x	20	S	200	170,00 A 2
M10	x	25	S	200	190,00 A 2
M10	x	30	S	200	205,00 A 2
M10	x	35	S	200	225,00 A 2
M10	x	40	S	200	245,00 A 2
M10	x	45	S	100	270,00 A 2
M10	x	50	S	100	275,00 A 2
M10	x	55	S	100	295,00 A 2
M10	x	60	S	100	310,00 A 2

ISO 14585.923 RAZ 690

14585 A 2 type C-ISR

Pan head tapping screws, ISR = hexalobular socket, C = with cone end

Dimensions ➔ TI-46

Steel ➔ S. 380

Dimensions			PU	Pieces	€/100/Mat.
2,9	x	6,5 -C	S	1000	7,30 A 2
2,9	x	9,5 -C	S	1000	3,90 A 2
2,9	x	13 -C	S	1000	4,10 A 2
2,9	x	16 -C	S	1000	4,50 A 2
2,9	x	19 -C	S	1000	4,80 A 2
2,9	x	22 -C	S	1000	8,10 A 2
2,9	x	25 -C	S	1000	8,40 A 2
3,5	x	9,5 -C	S	1000	5,10 A 2
3,5	x	13 -C	S	1000	5,40 A 2
3,5	x	16 -C	S	1000	5,70 A 2
3,5	x	19 -C	S	1000	6,30 A 2
3,5	x	22 -C	S	1000	7,90 A 2
3,5	x	25 -C	S	1000	8,20 A 2
3,5	x	32 -C	S	1000	9,30 A 2
3,5	x	38 -C	S	1000	10,45 A 2
3,9	x	9,5 -C	S	1000	6,15 A 2
3,9	x	13 -C	S	1000	6,15 A 2
3,9	x	16 -C	S	1000	6,60 A 2
3,9	x	19 -C	S	1000	7,20 A 2
3,9	x	22 -C	S	500	8,85 A 2
3,9	x	25 -C	S	500	9,15 A 2
3,9	x	32 -C	S	500	11,00 A 2
3,9	x	38 -C	S	500	12,45 A 2
3,9	x	45 -C	S	500	15,45 A 2
3,9	x	50 -C	S	500	16,65 A 2
4,2	x	9,5 -C	S	1000	4,60 A 2
4,2	x	13 -C	S	1000	7,05 A 2
4,2	x	16 -C	S	1000	8,00 A 2
4,2	x	19 -C	S	500	8,65 A 2
4,2	x	22 -C	S	500	9,75 A 2
4,2	x	25 -C	S	500	10,05 A 2
4,2	x	32 -C	S	500	12,45 A 2
4,2	x	38 -C	S	500	14,20 A 2
4,2	x	45 -C	S	500	20,55 A 2
4,2	x	50 -C	S	500	23,25 A 2
4,2	x	60 -C	S	500	41,25 A 2
4,8	x	9,5 -C	S	500	13,10 A 2
4,8	x	13 -C	S	500	9,00 A 2
4,8	x	16 -C	S	500	9,75 A 2
4,8	x	19 -C	S	500	11,00 A 2
4,8	x	22 -C	S	500	12,45 A 2
4,8	x	25 -C	S	500	12,75 A 2
4,8	x	32 -C	S	250	16,20 A 2
4,8	x	38 -C	S	250	18,15 A 2
4,8	x	45 -C	S	250	23,70 A 2
4,8	x	50 -C	S	250	24,45 A 2
4,8	x	55 -C	S	250	51,75 A 2
4,8	x	60 -C	S	250	33,15 A 2
4,8	x	70 -C	S	250	43,50 A 2
4,8	x	80 -C	S	250	51,60 A 2
4,8	x	90 -C	S	100	66,60 A 2
4,8	x	100 -C	S	100	84,30 A 2
5,5	x	13 -C	S	500	14,75 A 2
5,5	x	16 -C	S	500	15,60 A 2
5,5	x	19 -C	S	500	16,65 A 2
5,5	x	22 -C	S	500	18,30 A 2
5,5	x	25 -C	S	500	19,65 A 2
5,5	x	32 -C	S	250	22,95 A 2
5,5	x	38 -C	S	250	25,95 A 2
5,5	x	45 -C	S	250	31,05 A 2
5,5	x	50 -C	S	250	34,80 A 2
5,5	x	60 -C	S	250	41,40 A 2
5,5	x	70 -C	S	250	49,50 A 2
5,5	x	80 -C	S	250	60,00 A 2
6,3	x	13 -C	S	500	16,50 A 2
6,3	x	16 -C	S	500	16,80 A 2
6,3	x	19 -C	S	500	18,00 A 2
6,3	x	22 -C	S	500	19,80 A 2
6,3	x	25 -C	S	500	21,00 A 2
6,3	x	32 -C	S	250	25,20 A 2
6,3	x	38 -C	S	250	27,90 A 2
6,3	x	45 -C	S	250	33,30 A 2
6,3	x	50 -C	S	250	41,40 A 2
6,3	x	60 -C	S	250	49,80 A 2
6,3	x	70 -C	S	250	60,00 A 2

ISO 14586.923 RAZ 690

14586 A 2 type C-ISR

Countersunk head tapping screws, ISR = hexalobular socket, C = with cone end

countersunk ⌵ = 90°

Dimensions ➔ TI-47

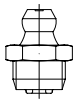
Steel ➔ S. 381

Dimensions			PU	Pieces	€/100/Mat.
2,9	x	6,5 -C	S	1000	7,30
2,9	x	9,5 -C	S	1000	3,90
2,9	x	13 -C	S	1000	4,10
2,9	x	16 -C	S	1000	4,50
2,9	x	19 -C	S	1000	4,80
2,9	x	22 -C	S	1000	8,10
2,9	x	25 -C	S	1000	8,40
3,5	x	9,5 -C	S	1000	5,10
3,5	x	13 -C	S	1000	5,40
3,5	x	16 -C	S	1000	5,70
3,5	x	19 -C	S	1000	6,30
3,5	x	22 -C	S	1000	7,90
3,5	x	25 -C	S	1000	8,20
3,5	x	32 -C	S	1000	9,30
3,5	x	38 -C	S	1000	10,45
3,9	x	9,5 -C	S	1000	6,15
3,9	x	13 -C	S	1000	6,15
3,9	x	16 -C	S	1000	6,60
3,9	x	19 -C	S	1000	7,20
3,9	x	22 -C	S	500	8,85
3,9	x	25 -C	S	500	9,15
3,9	x	32 -C	S	500	11,00
3,9	x	38 -C	S	500	12,45
3,9	x	45 -C	S	500	15,45
3,9	x	50 -C	S	500	16,65
4,2	x	9,5 -C	S	1000	6,90
4,2	x	13 -C	S	1000	7,05
4,2	x	16 -C	S	1000	8,00
4,2	x	19 -C	S	500	8,65
4,2	x	22 -C	S	500	9,75
4,2	x	25 -C	S	500	10,05
4,2	x	32 -C	S	500	12,45
4,2	x	38 -C	S	500	14,20
4,2	x	45 -C	S	500	20,55
4,2	x	50 -C	S	500	23,25
4,2	x	60 -C	S	500	41,25

Dimensions				PU	Pieces	€/100/Mat.
4,8	x	9,5	-C	S	500	13,10
4,8	x	13	-C	S	500	9,00
4,8	x	16	-C	S	500	9,75
4,8	x	19	-C	S	500	11,00
4,8	x	22	-C	S	500	12,45
4,8	x	25	-C	S	500	12,75
4,8	x	32	-C	S	250	16,20
4,8	x	38	-C	S	250	18,15
4,8	x	45	-C	S	250	23,70
4,8	x	50	-C	S	250	24,45
4,8	x	55	-C	S	250	51,75
4,8	x	60	-C	S	250	33,15
4,8	x	70	-C	S	250	43,50
4,8	x	80	-C	S	250	51,60
4,8	x	90	-C	S	100	66,60
4,8	x	100	-C	S	100	84,30
5,5	x	13	-C	S	500	14,75
5,5	x	16	-C	S	500	15,60
5,5	x	19	-C	S	500	16,65
5,5	x	22	-C	S	500	18,30
5,5	x	25	-C	S	500	19,65
5,5	x	32	-C	S	250	22,95
5,5	x	38	-C	S	250	25,95
5,5	x	45	-C	S	250	31,05
5,5	x	50	-C	S	250	34,80
5,5	x	60	-C	S	250	41,40
5,5	x	70	-C	S	250	49,50
5,5	x	80	-C	S	250	60,00
6,3	x	19	-C	S	500	18,00
6,3	x	22	-C	S	500	19,80
6,3	x	25	-C	S	500	21,00
6,3	x	32	-C	S	250	25,20
6,3	x	38	-C	S	250	27,90
6,3	x	45	-C	S	250	33,30
6,3	x	50	-C	S	250	41,40
6,3	x	60	-C	S	250	49,80
6,3	x	70	-C	S	250	60,00

DIN 71412.941 RAZ 782

71412 A 4 type A-M



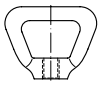
Lubricating nipples, cone type, with hexagon, A = cone head straight/axial, M = with taper fine pitch thread

Dimensions → TI-25

Steel → S. 384

Thread M x pitch/wrench size SW					
AM 6	x	1 SW 7	S	50	1304,00 A 4
AM 8	x	1 SW 9	S	50	1381,00 A 4
AM 10	x	1 SW11	S	25	1432,00 A 4

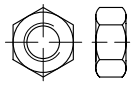
Dimensions			PU	Pieces	€/100/Mat.
DIN	80704.940				RAZ 790
80704	**A 4**				
M 8			S	1	4450,00 A 4
M 10			S	1	4700,00 A 4
M 12			S	1	5700,00 A 4
M 16			S	1	6700,00 A 4
M 20			S	1	8000,00 A 4



Bow nuts

Dimensions → TI-127

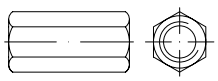
ASME B	83934.944				RAZ 2200
18.2.2	**A 4**				**UNC**
1/4			S	100	65,00 A 4
3/8			S	100	130,00 A 4
1/2			S	50	219,00 A 4
5/8			S	25	385,00 A 4



Hex nuts with UNC thread

Dimensions → TI-60 GS → TI-213

Article	88087.910				RAZ 810
88087	**A 1**				



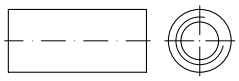
Hexagon couplings with continuous internal thread

Product grade C (g), thread tol.: 6H, tolerance for wrench size = h13, l ± 1,0, Thread screw-in depth: group N = max. 1,5d

Dimensions → TI-64

Internal thread x length/wrench sizes (SW)						
M 6	x	25 SW10	S	50	295,00 A 1/A 2
M 8	x	30 SW13	S	50	600,00 A 1/A 2
M 10	x	30 SW17	S	25	1030,00 A 1/A 2
M 12	x	40 SW19	S	25	1500,00 A 1/A 2
M 16	x	50 SW24	S	10	2600,00 A 1/A 2
M 20	x	50 SW30	S	10	3950,00 A 1/A 2
M 24	x	50 SW36	S	5	5600,00 A 1/A 2
M 30	x	60 SW46	S	5	8700,00 A 1/A 2

Dimensions			PU	Pieces	€/100/Mat.
Article	88088.920				RAZ 810
88088	**A 2**				
M 6	x	25 x 10	S	50	280,00 A 2
M 6	x	30 x 10	S	50	340,00 A 2
M 8	x	25 x 11	S	50	350,00 A 2
M 8	x	30 x 11	S	50	435,00 A 2
M 10	x	30 x 13	S	25	530,00 A 2
M 12	x	30 x 15	S	25	690,00 A 2
M 16	x	40 x 22	S	10	1650,00 A 2



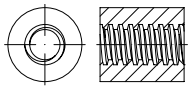
Round couplings with continuous internal thread

Product grade C (g), Thread screw-in depth: group N = max. 1,5d

Dimensions → TI-75

Internal thread x length x outside ∅

Article	88089.944				RAZ 811
88089	**A 4**				
TR 16	x 4 -36		S	1	7500,00 A 4
TR 20	x 4 -36		S	1	9400,00 A 4
TR 24	x 5 -50		S	1	12400,00 A 4
TR 30	x 6 -60		S	1	19200,00 A 4



Round nuts with trapezoidal thread, height = 1,5 d

Threaded rods TR → DIN 975 trapezoidal

Dimensions → TI-75

Thread x pitch x outside ∅

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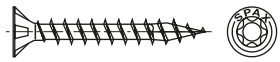
Dimensions	PU Pieces	€/100/Mat.
Article	88091.920	RAZ 816

88091 A 2 SPAX CSK-T



SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus

Slide-coated

Caution! Lower tightness compared to hardened steel.

- Bits ➔ article 88663, 88654
- Caps ➔ article 88006

Approvals: Z-9.1-235, ETA-12/0114

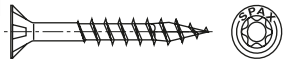
ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

3	x 12/10-T10	K	200	4,90	A 2
3	x 16/13-T10	K	200	5,15	A 2
3	x 20/16-T10	K	200	5,80	A 2
3	x 25/21-T10	K	200	6,00	A 2
3	x 30/26-T10	K	200	6,50	A 2
3	x 35/31-T10	K	200	9,70	A 2
3	x 40/36-T10	K	200	10,25	A 2
3,5	x 16/12-T15	K	200	5,85	A 2
3,5	x 20/15-T15	K	200	6,50	A 2
3,5	x 25/20-T15	K	200	6,65	A 2
3,5	x 30/25-T15	K	200	6,95	A 2
3,5	x 35/30-T15	K	200	7,75	A 2
3,5	x 40/35-T15	K	200	8,45	A 2
4	x 20/15-T20	K	200	7,75	A 2
4	x 25/20-T20	K	200	8,20	A 2
4	x 30/25-T20	K	200	9,00	A 2
4	x 35/30-T20	K	200	9,70	A 2
4	x 40/35-T20	K	200	10,30	A 2
4	x 45/40-T20	K	200	10,65	A 2
4	x 50/45-T20	K	200	11,05	A 2
4	x 60/50-T20	K	100	16,90	A 2
4,5	x 25/19-T20	K	200	9,70	A 2
4,5	x 30/24-T20	K	200	10,25	A 2
4,5	x 35/29-T20	K	200	11,30	A 2
4,5	x 40/34-T20	K	200	12,40	A 2
4,5	x 45/39-T20	K	200	13,60	A 2
4,5	x 50/44-T20	K	200	14,70	A 2
4,5	x 60/54-T20	K	100	19,45	A 2
4,5	x 70/59-T20	K	100	22,40	A 2
5	x 20/15-T20	K	200	12,30	A 2
5	x 25/20-T20	K	200	12,30	A 2
5	x 30/24-T20	K	200	11,65	A 2
5	x 35/29-T20	K	200	12,95	A 2
5	x 40/34-T20	K	200	14,70	A 2
5	x 45/39-T20	K	200	16,50	A 2
5	x 50/44-T20	K	200	18,25	A 2
5	x 60/54-T20	K	100	22,40	A 2
5	x 70/60-T20	K	100	32,50	A 2
5	x 80/60-T20	K	100	38,50	A 2
6	x 40/34-T30	K	200	29,00	A 2
6	x 45/38-T30	K	200	32,50	A 2
6	x 50/43-T30	K	100	32,50	A 2
6	x 60/53-T30	K	100	38,00	A 2
6	x 70/61-T30	K	100	39,50	A 2
6	x 80/61-T30	K	100	40,50	A 2

Dimensions	PU Pieces	€/100/Mat.
Article	88091.929	RAZ 816

88091 A 2 SPAX CSK-T-P



SPAX universal screws, with SPAX 4CUT point, CSK = SPAX MULTI counters. head, T = T-STAR plus, P = partially threaded

Slide-coated,
6x160 with CUT point

Caution! Lower tightness compared to hardened steel.

- Bits ➔ article 88663, 88654
- Caps ➔ article 88006

Approvals: Z-9.1-235, ETA-12/0114

ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

3,5	x 30/18-T15	K	200	6,95	A 2
3,5	x 35/23-T15	K	200	7,75	A 2
3,5	x 40/23-T15	K	200	8,45	A 2
4	x 30/18-T20	K	200	9,00	A 2
4	x 35/23-T20	K	200	9,70	A 2
4	x 40/23-T20	K	200	10,30	A 2
4	x 45/30-T20	K	200	10,65	A 2
4	x 50/32-T20	K	200	11,05	A 2
4,5	x 40/25-T20	K	200	12,40	A 2
4,5	x 45/30-T20	K	200	13,60	A 2
4,5	x 50/32-T20	K	200	14,70	A 2
4,5	x 60/37-T20	K	100	19,45	A 2
4,5	x 70/42-T20	K	100	22,40	A 2
5	x 40/27-T20	K	200	14,70	A 2
5	x 45/30-T20	K	200	16,50	A 2
5	x 50/32-T20	K	200	18,25	A 2
5	x 60/37-T20	K	100	22,40	A 2
5	x 70/41-T20	K	100	32,50	A 2
5	x 80/46-T20	K	100	38,50	A 2
5	x 90/61-T20	K	100	45,00	A 2
5	x 100/61-T20	K	100	53,00	A 2
5	x 120/68-T20	K	100	58,00	A 2
6	x 60/37-T30	K	100	38,00	A 2
6	x 70/41-T30	K	100	39,50	A 2
6	x 80/46-T30	K	100	40,50	A 2
6	x 90/61-T30	K	100	44,50	A 2
6	x 100/61-T30	K	100	48,50	A 2
6	x 120/68-T30	K	100	59,00	A 2
6	x 140/68-T30	K	100	80,00	A 2
6	x 160/68-T30	K	100	103,00	A 2

Dimensions	PU Pieces	€/100/Mat.
Article	88092.925	RAZ 816

88092 A 2 SPAX RCSK-T

SPAX universal screws, with SPAX 4CUT point, RCSK = SPAX MULTI raised countersunk head, T = T-STAR plus

Slide-coated

Caution! Lower tightness compared to hardened steel.

- Bits ➔ article 88663, 88654
- Caps ➔ article 88006

Approvals: Z-9.1-235, ETA-12/0114

ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

3	x 16/13-T10	K	200	6,00	A 2
3	x 20/16-T10	K	200	6,65	A 2
3	x 25/21-T10	K	200	6,85	A 2
3	x 30/26-T10	K	200	7,50	A 2
3,5	x 16/13-T15	K	200	6,70	A 2
3,5	x 20/16-T15	K	200	7,50	A 2
3,5	x 25/21-T15	K	200	7,60	A 2
3,5	x 30/25-T15	K	200	8,00	A 2
4	x 30/25-T20	K	200	10,25	A 2
4	x 35/30-T20	K	200	11,15	A 2
4	x 40/35-T20	K	200	11,80	A 2
4	x 45/40-T20	K	200	12,40	A 2
4,5	x 30/25-T20	K	200	11,80	A 2
4,5	x 40/34-T20	K	200	14,15	A 2
4,5	x 50/44-T20	K	200	16,90	A 2

Article	88093.924	RAZ 816

88093 A 2 SPAX PAN-T

SPAX universal screws, with SPAX 4CUT point, PAN = pan head, T = T-STAR plus

Slide-coated

Caution! Lower tightness compared to hardened steel.

- Bits ➔ article 88663, 88654
- Caps ➔ article 88006

Approvals: Z-9.1-235, ETA-12/0114

ETA CE

Nominal ∅ x nominal length/thread length approx. - bit size

3	x 20/16-T10	K	200	6,95	A 2
3	x 30/26-T10	K	200	7,80	A 2
3,5	x 20/16-T15	K	200	7,80	A 2
3,5	x 30/25-T15	K	200	8,35	A 2
4	x 20/16-T20	K	200	9,30	A 2

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
4	x	25/21-T20	K	200	9,85 A 2
4	x	30/25-T20	K	200	10,80 A 2
4	x	35/30-T20	K	200	11,65 A 2
4	x	40/35-T20	K	200	12,35 A 2
4	x	45/40-T20	K	200	12,80 A 2
4	x	50/45-T20	K	200	13,25 A 2
5	x	25/20-T20	K	200	13,35 A 2
5	x	30/25-T20	K	200	14,00 A 2
5	x	40/35-T20	K	200	17,65 A 2
5	x	50/44-T20	K	100	21,90 A 2

Article 88094.920 RAZ 816

88094 A 2 SPAX CSK-Z

**SPAX universal screws,
with SPAX 4CUT point,
CSK = SPAX MULTI counters. head,
Z = Pozidriv cross recess**

Slide-coated,
bit sizes: ∅ 3 ➔ Z1, ∅ 3,5 - 5,0 ➔ Z2, ∅ 6 ➔ 3

Caution! Lower tightness compared to hardened steel.

Approvals: Z-9.1-235, ETA-12/0114

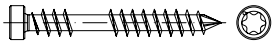
Nominal ∅ x nominal length/thread length approx.

3	x	12/10-Z	S	200	4,90 A 2
3	x	16/13-Z	S	200	5,15 A 2
3	x	20/16-Z	S	200	5,80 A 2
3	x	25/21-Z	S	200	6,00 A 2
3	x	30/26-Z	S	200	6,50 A 2
3	x	35/31-Z	S	200	9,70 A 2
3	x	40/36-Z	S	200	10,25 A 2
3,5	x	16/12-Z	S	200	5,85 A 2
3,5	x	20/15-Z	S	200	6,50 A 2
3,5	x	25/20-Z	S	200	6,65 A 2
3,5	x	30/25-Z	S	200	6,95 A 2
3,5	x	35/30-Z	S	200	7,75 A 2
3,5	x	40/35-Z	S	200	8,45 A 2
4	x	20/15-Z	S	200	7,75 A 2
4	x	25/20-Z	S	200	8,20 A 2
4	x	30/25-Z	S	200	9,00 A 2
4	x	35/30-Z	S	200	9,70 A 2
4	x	40/35-Z	S	200	10,30 A 2
4	x	45/40-Z	S	200	10,65 A 2
4	x	50/45-Z	S	200	11,05 A 2
4	x	60/50-Z	S	100	16,90 A 2
4,5	x	25/19-Z	S	200	9,70 A 2
4,5	x	30/24-Z	S	200	10,25 A 2
4,5	x	35/29-Z	S	200	11,30 A 2
4,5	x	40/34-Z	S	200	12,40 A 2
4,5	x	45/39-Z	S	200	13,60 A 2
4,5	x	50/44-Z	S	200	14,70 A 2
4,5	x	60/54-Z	S	100	19,45 A 2
4,5	x	70/59-Z	S	100	22,40 A 2
5	x	30/24-Z	S	200	11,65 A 2
5	x	35/29-Z	S	200	12,95 A 2
5	x	40/34-Z	S	200	14,70 A 2
5	x	45/39-Z	S	200	16,50 A 2
5	x	50/44-Z	S	200	18,25 A 2
5	x	60/54-Z	S	100	22,40 A 2
5	x	70/60-Z	S	100	32,50 A 2
5	x	80/60-Z	S	100	38,50 A 2
5	x	100/60-Z	K	200	53,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
6	x	40/33-Z	S	200	29,00 A 2
6	x	50/43-Z	S	100	32,50 A 2
6	x	60/53-Z	S	100	38,00 A 2
6	x	70/60-Z	S	100	39,50 A 2
6	x	80/60-Z	S	100	40,50 A 2
6	x	90/60-Z	S	100	44,50 A 2
6	x	100/60-Z	S	100	48,50 A 2

Article 88192.924 RAZ 816

88192 A 2 SPAX D-C-T



**SPAX screws D
for terraces planks,
with fixing thread
and SPAX CUT point,
C = cylindric head,
T = T-STAR plus**

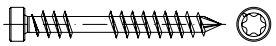
Slide-coated

Bits ➔ article 88663, 88654

5	x	40/22 -T25	S	200	25,00 A 2
5	x	50/23 -T25	S	200	30,50 A 2
5	x	60/28 -T25	S	100	34,00 A 2
5	x	70/33 -T25	S	100	51,00 A 2
5	x	80/33 -T25	S	100	55,00 A 2

Article 88192.944 RAZ 816

88192 A 4 SPAX D-C-T



**SPAX screws
D for terraces planks,
with fixing thread and SPAX CUT point,
C = cylindric head,
T = T-STAR plus**

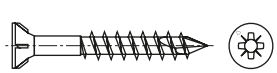
Slide-coated

Bits ➔ article 88663, 88654

5,5	x	40/22 -T25	S	200	48,00 A 4
5,5	x	50/22 -T25	S	200	51,00 A 4
5,5	x	60/27 -T25	S	100	58,00 A 4
5,5	x	70/32 -T25	S	100	87,00 A 4
5,5	x	80/37 -T25	S	100	94,00 A 4

Dimensions			PU	Pieces	€/100/Mat.
Article		88190.924			RAZ 816

88190 A 2 SPAX CSK-Z



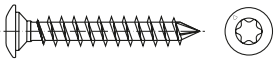
**SPAX glass strip screws,
with SPAX CUT point and
milling ribs, CSK = countersunk head,
Z = Pozidriv cross recess**

Slide-coated

3,5	x	40/23-Z2	S	200	25,30 A 2

Article 88191.924 RAZ 816

88191 A 2 SPAX CSK F-T



SPAX post screws, with SPAX CUT point, self-tapping, CSK F = countersunk fillister head, T = T-STAR plus

Slide-coated

Bits ➔ article 88663, 88654

Nominal ∅ x nominal length/thread length approx. - bit size

8	x	50/45 -T40	S	50	124,35 A 2

Article 88193.924 RAZ 816

88193 A 2 SPAX-T-T

**SPAX screws,
with SPAX 4CUT point,
T = with flange head, T = T-STAR plus**

Slide-coated

Bits ➔ article 88663, 88654

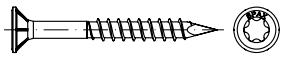
Approvals: Z-9.1-449, ETA-12/0114

Nominal ∅ x nominal length/thread length approx. - bit size

6	x	60/56-T30	S	100	48,80 A 2
6	x	80/61-T30	S	100	58,00 A 2
6	x	100/61-T30	S	100	67,00 A 2
6	x	120/68-T30	S	100	92,90 A 2
6	x	140/68-T30	S	100	99,00 A 2
8	x	50/46-T40	S	50	93,00 A 2
8	x	80/70-T40	S	50	115,00 A 2
8	x	100/80-T40	S	50	133,00 A 2
8	x	120/80-T40	S	50	184,00 A 2
8	x	140/80-T40	S	50	199,00 A 2
8	x	160/80-T40	S	50	217,00 A 2
8	x	180/80-T40	S	50	260,00 A 2
8	x	200/80-T40	S	50	312,00 A 2

Dimensions	PU	Pieces	€/100/Mat.
Article	89018.920		RAZ 816

89018 A 2 SPAX Facade



SPAX facade screws with raised countersunk head, CUT point, T-STAR plus

Slide-coated

Approvals: Z-9.1-235, ETA-12/0114 Bit sizes:
• ∅ 4,5 – T20 • ∅ 5,0 – T25

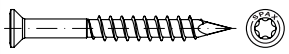
ETA CE

Nominal ∅ x nominal length/thread length approx.

4,5	x	35/25 -T	S	200	18,80
4,5	x	40/25 -T	S	200	19,50
4,5	x	45/30 -T	S	200	22,60
4,5	x	50/32 -T	S	200	25,30
4,5	x	60/37 -T	S	100	29,20
4,5	x	70/42 -T	S	100	32,40
4,5	x	80/46 -T	S	100	38,30
5	x	60/37 -T	S	100	37,40
5	x	70/42 -T	S	100	41,80
5	x	80/46 -T	S	100	50,50
5	x	90/61 -T	S	100	55,00
5	x	100/61 -T	S	100	59,50

Article	89018.922	RAZ 816

89018 A 2 small head SPAX Facade



SPAX facade screws with very small raised countersunk head, CUT point, T-STAR plus

Slide-coated

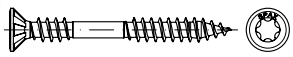
Bit sizes: • ∅ 4/4,5 – T15 • ∅ 5,0 – T20

Nominal ∅ x nominal length/thread length approx.

4	x	40/23 -T	S	100	17,50
4	x	45/30 -T	S	100	19,00
4,5	x	70/42 -T	S	100	33,00
5	x	100/61 -T	S	100	62,00

Dimensions	PU	Pieces	€/100/Mat.
Article	89019.920		RAZ 816

89019 A 2 fixing thread SPAX Facade



SPAX facade screws with raised countersunk head, 4CUT point, fixing thread, T-STAR plus

Small head (∅ 8 mm), slide-coated

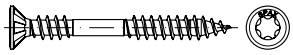
Bit sizes ∅ 4,5 – T20

Nominal ∅ x nominal length/thread length approx.

4,5	x	50/26,5 -T	S	200	22,50
4,5	x	60/26,5 -T	S	100	28,50
4,5	x	70/31,5 -T	S	100	38,00

Article	89019.927	RAZ 816

89019 A 2 fixing thread antique SPAX Facade



SPAX facade screws with raised countersunk head, antique look, 4CUT point, fixing thread, T-STAR plus

Small head (∅ 8 mm), slide-coated

Bit sizes ∅ 4,5 – T20

Nominal ∅ x nominal length/thread length approx.

4,5	x	70/26,5 -T	S	200	25,50 antique
4,5	x	60/26,5 -T	S	100	32,00 antique

Article	88096.920	RAZ 815

88096 A 2 PAN-Z

Chipboard screws, PAN = pan head, Z = Pozidriv cross recess

Caution! Lower tightness compared to hardened steel.

Dimensions → TI-52

3	x	16 -Z	S	1000	5,80 A 2
3	x	20 -Z	S	1000	5,90 A 2
3	x	25 -Z	S	1000	6,05 A 2
3	x	30 -Z	S	1000	6,40 A 2
3,5	x	16 -Z	S	1000	6,40 A 2
3,5	x	20 -Z	S	1000	6,65 A 2
3,5	x	25 -Z	S	1000	6,90 A 2
3,5	x	30 -Z	S	1000	7,15 A 2
3,5	x	35 -Z	S	1000	8,20 A 2
3,5	x	40 -Z	S	1000	8,45 A 2
4	x	16 -Z	S	1000	7,45 A 2
4	x	20 -Z	S	1000	8,20 A 2
4	x	25 -Z	S	1000	8,70 A 2
4	x	30 -Z	S	1000	9,20 A 2
4	x	35 -Z	S	1000	10,75 A 2
4	x	40 -Z	S	1000	11,25 A 2
4	x	45 -Z	S	1000	11,75 A 2
4	x	50 -Z	S	1000	12,30 A 2
4,5	x	12 -Z	S	1000	11,00 A 2
4,5	x	16 -Z	S	1000	9,50 A 2
4,5	x	20 -Z	S	1000	8,70 A 2
4,5	x	25 -Z	S	1000	9,20 A 2
4,5	x	30 -Z	S	1000	10,25 A 2
4,5	x	35 -Z	S	500	10,75 A 2
4,5	x	40 -Z	S	500	11,75 A 2
4,5	x	45 -Z	S	500	12,80 A 2
4,5	x	50 -Z	S	500	16,40 A 2
4,5	x	60 -Z	S	500	21,50 A 2
5	x	20 -Z	S	1000	11,75 A 2
5	x	25 -Z	S	1000	12,05 A 2
5	x	30 -Z	S	1000	12,30 A 2
5	x	35 -Z	S	1000	15,35 A 2
5	x	40 -Z	S	1000	15,85 A 2
5	x	45 -Z	S	1000	17,90 A 2
5	x	50 -Z	S	500	18,40 A 2
5	x	60 -Z	S	500	20,45 A 2
5	x	70 -Z	S	500	32,75 A 2
6	x	40 -Z	S	500	24,55 A 2
6	x	45 -Z	S	500	26,10 A 2
6	x	50 -Z	S	200	28,15 A 2
6	x	60 -Z	S	200	31,70 A 2
6	x	70 -Z	S	200	40,90 A 2

Article	88097.920	RAZ 815

88097 A 2 CSK-Z

Chipboard screws, CSK = countersunk head, Z = Pozidriv cross recess

Caution! Lower tightness compared to hardened steel.

Dimensions → TI-52

3	x	12 -Z	S	1000	5,25 A 2
3	x	12 -Z	K	200	7,30 A 2
3	x	16 -Z	S	1000	5,25 A 2
3	x	16 -Z	K	200	7,30 A 2
3	x	20 -Z	S	1000	5,75 A 2
3	x	20 -Z	K	200	7,80 A 2
3	x	25 -Z	S	1000	6,00 A 2
3	x	25 -Z	K	200	8,05 A 2
3	x	30 -Z	S	1000	6,35 A 2
3	x	30 -Z	K	200	8,40 A 2
3,5	x	16 -Z	S	1000	6,10 A 2
3,5	x	16 -Z	K	200	8,15 A 2
3,5	x	20 -Z	S	1000	6,35 A 2
3,5	x	20 -Z	K	200	8,40 A 2
3,5	x	25 -Z	S	1000	6,65 A 2
3,5	x	25 -Z	K	200	8,70 A 2
3,5	x	30 -Z	S	1000	7,05 A 2
3,5	x	30 -Z	K	200	9,10 A 2
3,5	x	35 -Z	S	1000	8,30 A 2
3,5	x	35 -Z	K	200	10,35 A 2
3,5	x	40 -Z	S	1000	8,55 A 2
3,5	x	40 -Z	K	200	10,60 A 2
3,5	x	45 -Z	S	1000	9,25 A 2
3,5	x	45 -Z	K	200	12,75 A 2

Dimensions			PU	Pieces	€/100/Mat.
3,5	x	50 -Z	S	1000	11,50 A 2
3,5	x	50 -Z	K	200	14,40 A 2
4	x	16 -Z	S	1000	7,35 A 2
4	x	16 -Z	K	200	9,40 A 2
4	x	20 -Z	S	1000	7,95 A 2
4	x	20 -Z	K	200	10,00 A 2
4	x	25 -Z	S	1000	8,30 A 2
4	x	25 -Z	K	200	10,35 A 2
4	x	30 -Z	S	1000	9,25 A 2
4	x	30 -Z	K	200	11,30 A 2
4	x	35 -Z	S	1000	10,20 A 2
4	x	35 -Z	K	200	12,25 A 2
4	x	40 -Z	S	1000	10,80 A 2
4	x	40 -Z	K	200	12,85 A 2
4	x	45 -Z	S	1000	11,50 A 2
4	x	45 -Z	K	200	13,55 A 2
4	x	50 -Z	S	1000	12,10 A 2
4	x	50 -Z	K	200	14,15 A 2
4	x	60 -Z	S	500	14,70 A 2
4	x	60 -Z	K	100	16,75 A 2
4	x	70 -Z	S	500	18,10 A 2
4	x	70 -Z	K	100	20,50 A 2
4	x	80 -Z	S	500	23,95 A 2
4	x	80 -Z	K	100	27,50 A 2
4,5	x	20 -Z	S	1000	6,65 A 2
4,5	x	20 -Z	K	200	11,35 A 2
4,5	x	25 -Z	S	1000	9,50 A 2
4,5	x	25 -Z	K	200	11,85 A 2
4,5	x	30 -Z	S	1000	10,00 A 2
4,5	x	30 -Z	K	200	12,05 A 2
4,5	x	35 -Z	S	500	10,70 A 2
4,5	x	35 -Z	K	200	12,75 A 2
4,5	x	40 -Z	S	500	11,40 A 2
4,5	x	40 -Z	K	200	13,45 A 2
4,5	x	45 -Z	S	500	12,50 A 2
4,5	x	45 -Z	K	200	14,55 A 2
4,5	x	50 -Z	S	500	15,60 A 2
4,5	x	50 -Z	K	200	17,65 A 2
4,5	x	60 -Z	S	500	21,10 A 2
4,5	x	60 -Z	K	100	23,15 A 2
4,5	x	70 -Z	S	500	25,00 A 2
4,5	x	70 -Z	K	100	28,25 A 2
5	x	20 -Z	S	1000	12,00 A 2
5	x	20 -Z	K	200	15,00 A 2
5	x	25 -Z	S	1000	11,80 A 2
5	x	25 -Z	K	200	13,85 A 2
5	x	30 -Z	S	1000	11,80 A 2
5	x	30 -Z	K	200	13,85 A 2
5	x	35 -Z	S	1000	14,80 A 2
5	x	35 -Z	K	200	16,85 A 2
5	x	40 -Z	S	1000	15,00 A 2
5	x	40 -Z	K	200	17,05 A 2
5	x	50 -Z	S	1000	18,20 A 2
5	x	50 -Z	K	200	20,25 A 2
5	x	60 -Z	S	500	25,50 A 2
5	x	60 -Z	K	100	27,55 A 2
5	x	70 -Z	S	500	32,60 A 2
5	x	70 -Z	K	100	34,65 A 2
5	x	80 -Z	S	500	36,40 A 2
5	x	80 -Z	K	100	38,45 A 2
5	x	90 -Z	S	200	39,60 A 2
5	x	90 -Z	K	100	41,65 A 2
5	x	100 -Z	S	200	43,40 A 2
5	x	100 -Z	K	100	45,45 A 2
6	x	40 -Z	S	500	19,10 A 2
6	x	40 -Z	K	200	21,15 A 2
6	x	50 -Z	S	200	26,70 A 2
6	x	60 -Z	S	200	31,10 A 2
6	x	60 -Z	K	100	33,15 A 2
6	x	70 -Z	S	200	40,30 A 2
6	x	70 -Z	K	100	42,35 A 2
6	x	80 -Z	S	200	43,40 A 2
6	x	80 -Z	K	100	45,45 A 2
6	x	90 -Z	S	200	47,20 A 2
6	x	90 -Z	K	100	49,25 A 2

Dimensions			PU	Pieces	€/100/Mat.
6	x	100 -Z	S	100	51,60 A 2
6	x	110 -Z	S	100	62,00 A 2
6	x	120 -Z	S	100	62,80 A 2
6	x	130 -Z	S	100	75,00 A 2
6	x	140 -Z	S	100	85,00 A 2
6	x	150 -Z	S	100	100,00 A 2

Article	88098.920	RAZ 815

88098 A 2 CSK-T

Chipboard screws,
CSK = countersunk head,
T = hexalobular socket

Length ≥ 60mm mostly with partial thread

Caps ➔ article 88006

Dimensions ➔ TI-52

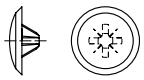
3	x	12 -T10	S	1000	9,20
3	x	12 -T10	K	200	13,00
3	x	16 -T10	S	1000	9,20
3	x	16 -T10	K	200	13,00
3	x	20 -T10	S	1000	10,10
3	x	20 -T10	K	200	13,75
3	x	25 -T10	S	1000	10,50
3	x	25 -T10	K	200	14,25
3	x	30 -T10	S	1000	11,20
3	x	30 -T10	K	200	14,75
3	x	35 -T10	S	1000	14,00
3	x	35 -T10	K	200	18,00
3	x	40 -T10	S	1000	18,40
3	x	40 -T10	K	200	21,00
3,5	x	16 -T15	S	1000	10,75
3,5	x	16 -T15	K	200	14,50
3,5	x	20 -T15	S	1000	11,20
3,5	x	20 -T15	K	200	14,75
3,5	x	25 -T15	S	1000	11,75
3,5	x	25 -T15	K	200	15,50
3,5	x	30 -T15	S	1000	12,35
3,5	x	30 -T15	K	200	16,00
3,5	x	35 -T15	S	1000	14,55
3,5	x	35 -T15	K	200	18,25
3,5	x	40 -T15	S	1000	15,00
3,5	x	40 -T15	K	200	18,75
4	x	16 -T20	S	1000	13,00
4	x	16 -T20	K	200	16,50
4	x	20 -T20	S	1000	14,00
4	x	20 -T20	K	200	17,50
4	x	25 -T20	S	1000	14,55
4	x	25 -T20	K	200	18,25
4	x	30 -T20	S	1000	16,20
4	x	30 -T20	K	200	20,00
4	x	35 -T20	S	1000	17,85
4	x	35 -T20	K	200	21,75
4	x	40 -T20	S	1000	18,90
4	x	40 -T20	K	200	22,50
4	x	45 -T20	S	1000	20,20
4	x	45 -T20	K	200	23,75
4	x	50 -T20	S	1000	21,20
4	x	50 -T20	K	200	25,00
4	x	60 -T20	S	500	25,75
4	x	60 -T20	K	100	29,75
4	x	70 -T20	S	500	31,75
4	x	70 -T20	K	100	36,00
4	x	80 -T20	S	500	42,00
4	x	80 -T20	K	100	48,25

Dimensions			PU	Pieces	€/100/Mat.
4,5	x	16 -T20	S	1000	15,00
4,5	x	16 -T20	K	200	22,00
4,5	x	20 -T20	S	1000	12,00
4,5	x	20 -T20	K	200	20,00
4,5	x	25 -T20	S	1000	16,65
4,5	x	25 -T20	K	200	20,75
4,5	x	30 -T20	S	1000	17,50
4,5	x	30 -T20	K	200	21,35
4,5	x	35 -T20	S	500	18,75
4,5	x	35 -T20	K	200	22,50
4,5	x	40 -T20	S	500	20,00
4,5	x	40 -T20	K	200	23,65
4,5	x	45 -T20	S	500	22,00
4,5	x	45 -T20	K	200	25,50
4,5	x	50 -T20	S	500	27,30
4,5	x	50 -T20	K	200	31,00
4,5	x	60 -T20	S	500	37,00
4,5	x	60 -T20	K	100	40,75
4,5	x	70 -T20	S	500	49,00
4,5	x	70 -T20	K	100	56,00
5	x	20 -T25	S	1000	21,00
5	x	20 -T25	K	200	26,25
5	x	25 -T25	S	1000	20,75
5	x	25 -T25	K	200	25,00
5	x	30 -T25	S	1000	20,75
5	x	30 -T25	K	200	25,00
5	x	35 -T25	S	1000	26,00
5	x	35 -T25	K	200	30,00
5	x	40 -T25	S	1000	26,25
5	x	40 -T25	K	200	30,00
5	x	50 -T25	S	1000	32,00
5	x	50 -T25	K	200	35,50
5	x	60 -T25	S	500	44,75
5	x	60 -T25	K	100	48,50
5	x	70 -T25	S	500	57,05
5	x	70 -T25	K	100	60,65
5	x	80 -T25	S	500	63,70
5	x	80 -T25	K	100	67,75
5	x	90 -T25	S	200	69,30
5	x	90 -T25	K	100	73,00
5	x	100 -T25	S	200	75,95
5	x	100 -T25	K	100	80,00
6	x	40 -T30	S	500	33,50
6	x	40 -T30	K	200	37,05
6	x	50 -T30	S	200	46,75
6	x	50 -T30	K	100	50,75
6	x	60 -T30	S	200	54,50
6	x	60 -T30	K	100	58,20
6	x	70 -T30	S	200	70,75
6	x	70 -T30	K	100	74,25
6	x	80 -T30	S	200	80,00
6	x	80 -T30	K	100	79,85
6	x	90 -T30	S	200	82,60
6	x	90 -T30	K	100	86,20
6	x	100 -T30	S	100	90,30
6	x	110 -T30	S	100	108,50
6	x	120 -T30	S	100	125,00
6	x	130 -T30	S	100	132,00
6	x	140 -T30	S	100	148,75
6	x	150 -T30	S	100	175,00
6	x	160 -T30	S	100	135,00
6	x	180 -T30	S	100	175,00
6	x	180 -T30	S	100	225,00
8	x	70 -T40	S	50	100,75
8	x	80 -T40	S	50	125,95
8	x	90 -T40	S	50	158,00
8	x	100 -T40	S	50	197,50
8	x	120 -T40	S	50	260,00
8	x	140 -T40	S	50	325,00

Dimensions | PU Pieces | €/100/Mat.

Article 88002.(*) RAZ 800

88002 Plastic Z



Caps for countersunk head screws with Pozidriv cross recess Z

white RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Cross recess no.	x	caps ∅/for screws ∅		PU	Pieces	€/100/Mat.
1	x	8 / 3		S	1000	1,30 plastic
2	x	12 / 3,5-5		S	1000	1,30 plastic
3	x	13 / 5,5-6		S	1000	1,40 plastic

Article 88104.920 RAZ 840

88104 A 2

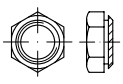
Washers with large outside diameter,product grade C (g)

Dimensions → TI-85

Inside ∅	x	outside ∅	x	thickness		PU	Pieces	€/100/Mat.
4,3	x	20	x	1,5	S	100		20,00 A 2
5,3	x	20	x	1,5	S	100		24,90 A 2
5,3	x	30	x	1,5	S	100		56,00 A 2
6,4	x	20	x	1,5	S	100		24,90 A 2
6,4	x	25	x	1,5	S	100		31,50 A 2
6,4	x	30	x	1,5	S	100		46,50 A 2
8,4	x	20	x	1,5	S	100		24,90 A 2
8,4	x	25	x	1,5	S	100		31,50 A 2
8,4	x	30	x	1,5	S	100		46,50 A 2
8,4	x	40	x	1,5	S	100		54,00 A 2
10,5	x	25	x	1,5	S	100		35,50 A 2
10,5	x	30	x	1,5	S	100		46,50 A 2
10,5	x	40	x	1,5	S	100		58,00 A 2
12,5	x	30	x	1,5	S	100		46,50 A 2

Article 88106.910 RAZ 850

88106 A 1



Rivet nuts

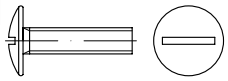
Dimensions → TI-76

Thread M/collar height		PU	Pieces	€/100/Mat.
M 3 / 0,9		S	100	83,00 A 1
M 4 / 0,9		S	100	146,00 A 1
M 5 / 0,9		S	100	154,00 A 1
M 6 / 0,9		S	100	163,00 A 1
M 8 / 1,9		S	100	193,00 A 1
M 10 / 1,9		S	100	210,00 A 1
M 12 / 2,9		S	50	410,00 A 1
M 16 / 2,4		S	50	640,00 A 1

Dimensions | PU Pieces | €/100/Mat.

Article 88107.920 RAZ 851

88107 A 2



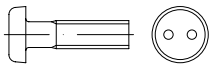
Slotted mushroom head screws with thread up to head

Dimensions → TI-41

					PU	Pieces	€/100/Mat.
M 5	x	10			S	500	58,00 A 2
M 6	x	10			S	500	43,00 A 2
M 6	x	12			S	500	41,00 A 2
M 6	x	16			S	500	41,00 A 2
M 6	x	20			S	500	63,00 A 2
M 6	x	25			S	500	69,00 A 2
M 8	x	16			S	200	83,00 A 2
M 8	x	20			S	200	90,00 A 2
M 8	x	25			S	200	102,00 A 2
M 8	x	30			S	200	122,00 A 2
M 8	x	35			S	200	128,00 A 2
M 8	x	40			S	200	133,00 A 2
M 8	x	50			S	200	145,00 A 2
M 8	x	60			S	100	240,00 A 2

Article 88111.920 RAZ 855

88111 A 2 snake eyes



Theft resistant screws with pan head ~ DIN 85, metric thread, snake eyes drive

Bits → article 88665

Dimensions → TI-27

					PU	Pieces	€/100/Mat.
M 3	x	6			S	100	150,00 A 2
M 3	x	8			S	100	150,00 A 2
M 3	x	10			S	10	110,00 A 2
M 3	x	12			S	10	110,00 A 2
M 3	x	16			S	10	110,00 A 2
M 3	x	20			S	100	125,00 A 2
M 4	x	6			S	100	150,00 A 2
M 4	x	10			S	10	116,00 A 2
M 4	x	12			S	10	116,00 A 2
M 4	x	16			S	10	116,00 A 2
M 4	x	20			S	10	116,00 A 2
M 4	x	25			S	10	116,00 A 2
M 5	x	12			S	10	130,00 A 2
M 5	x	16			S	10	130,00 A 2
M 5	x	20			S	10	130,00 A 2
M 5	x	25			S	10	130,00 A 2
M 5	x	30			S	10	130,00 A 2
M 6	x	12			S	10	135,00 A 2
M 6	x	16			S	100	135,00 A 2
M 6	x	20			S	10	135,00 A 2
M 6	x	25			S	10	150,00 A 2
M 6	x	30			S	10	164,00 A 2
M 6	x	40			S	10	183,00 A 2

Dimensions | PU Pieces | €/100/Mat.

Article 88112.920 RAZ 855

88112 A 2 snake eyes

Theft resistant screws with countersunken head ~ DIN 963, metric thread, snake eyes drive

Bits → article 88665

Dimensions → TI-27

					PU	Pieces	€/100/Mat.
M 3	x	6			S	100	150,00 A 2
M 3	x	8			S	100	150,00 A 2
M 3	x	10			S	10	110,00 A 2
M 3	x	12			S	10	110,00 A 2
M 3	x	16			S	10	110,00 A 2
M 3	x	20			S	100	125,00 A 2
M 4	x	10			S	10	116,00 A 2
M 4	x	12			S	10	116,00 A 2
M 4	x	16			S	10	116,00 A 2
M 4	x	20			S	10	116,00 A 2
M 4	x	25			S	10	116,00 A 2
M 4	x	50			S	100	250,00 A 2
M 5	x	12			S	10	130,00 A 2
M 5	x	16			S	10	130,00 A 2
M 5	x	20			S	10	130,00 A 2
M 5	x	25			S	10	130,00 A 2
M 5	x	30			S	10	130,00 A 2
M 5	x	35			S	100	235,00 A 2
M 6	x	12			S	10	135,00 A 2
M 6	x	16			S	100	135,00 A 2
M 6	x	20			S	10	135,00 A 2
M 6	x	25			S	10	150,00 A 2
M 6	x	30			S	10	164,00 A 2
M 6	x	40			S	10	183,00 A 2

Article 88113.920 RAZ 855

88113 A 2 Pin-hex

Theft resistant screws with button head ~ ISO 7380, with metric thread, hexagon socket with pin

Bits → article 88666

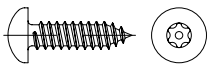
Dimensions → TI-27

					PU	Pieces	€/100/Mat.
M 3	x	6			S	10	120,00 A 2
M 3	x	8			S	10	105,00 A 2
M 3	x	10			S	10	80,00 A 2
M 3	x	12			S	10	80,00 A 2
M 3	x	16			S	10	80,00 A 2
M 3	x	20			S	10	85,00 A 2
M 4	x	6			S	10	120,00 A 2
M 4	x	8			S	10	120,00 A 2
M 4	x	10			S	10	77,00 A 2
M 4	x	12			S	10	79,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	16	S	10	79,00 A 2
M 4	x	20	S	10	85,00 A 2
M 4	x	25	S	10	101,00 A 2
M 4	x	30	S	10	114,00 A 2
M 4	x	40	S	10	150,00 A 2
M 5	x	10	S	10	89,00 A 2
M 5	x	12	S	10	91,00 A 2
M 5	x	16	S	10	91,00 A 2
M 5	x	20	S	10	99,00 A 2
M 5	x	25	S	10	116,00 A 2
M 5	x	30	S	10	132,00 A 2
M 5	x	35	S	10	175,00 A 2
M 5	x	40	S	10	205,00 A 2
M 5	x	50	S	10	225,00 A 2
M 5	x	60	S	10	280,00 A 2
M 6	x	10	S	10	125,00 A 2
M 6	x	12	S	10	116,00 A 2
M 6	x	16	S	10	117,00 A 2
M 6	x	20	S	10	127,00 A 2
M 6	x	25	S	10	145,00 A 2
M 6	x	30	S	10	161,00 A 2
M 6	x	35	S	10	200,00 A 2
M 6	x	40	S	10	207,00 A 2
M 6	x	45	S	10	245,00 A 2
M 6	x	50	S	10	260,00 A 2
M 6	x	60	S	10	320,00 A 2
M 8	x	10	S	10	225,00 A 2
M 8	x	12	S	10	200,00 A 2
M 8	x	16	S	10	179,00 A 2
M 8	x	20	S	10	188,00 A 2
M 8	x	25	S	10	202,00 A 2
M 8	x	30	S	5	234,00 A 2
M 8	x	35	S	5	265,00 A 2
M 8	x	40	S	5	295,00 A 2
M 8	x	45	S	5	325,00 A 2
M 8	x	50	S	5	340,00 A 2
M 8	x	60	S	5	450,00 A 2
M 10	x	16	S	10	450,00 A 2
M 10	x	20	S	10	500,00 A 2
M 10	x	25	S	10	605,00 A 2
M 10	x	30	S	5	710,00 A 2
M 10	x	40	S	5	885,00 A 2
M 10	x	50	S	5	1050,00 A 2
M 10	x	60	S	5	1350,00 A 2
M 12	x	25	S	500	2875,00 A 2

Article	88114.920	RAZ 855

88114 A 2



Theft resistant screws with pan head DIN 7981, tapping screw thread ST, hexalobular socket with pin

Bits ➔ article 88667

Dimensions ➔ TI-48

3,5	x	13	S	10	70,00 A 2
3,5	x	16	S	100	90,00 A 2
3,5	x	19	S	10	72,00 A 2
3,5	x	25	S	100	105,00 A 2
3,5	x	32	S	100	113,00 A 2
3,5	x	38	S	100	115,00 A 2
4,2	x	9,5	S	100	82,00 A 2
4,2	x	13	S	10	76,00 A 2
4,2	x	16	S	100	87,00 A 2
4,2	x	19	S	10	88,00 A 2
4,2	x	25	S	100	100,00 A 2
4,2	x	32	S	10	112,00 A 2
4,2	x	38	S	10	124,00 A 2
4,2	x	50	S	100	145,00 A 2
4,8	x	13	S	100	100,00 A 2
4,8	x	16	S	100	113,00 A 2
4,8	x	19	S	10	114,00 A 2
4,8	x	25	S	10	129,00 A 2
4,8	x	32	S	10	148,00 A 2
4,8	x	38	S	10	162,00 A 2
4,8	x	50	S	100	175,00 A 2
5,5	x	16	S	100	210,00 A 2
5,5	x	19	S	100	220,00 A 2
5,5	x	25	S	10	144,00 A 2
5,5	x	32	S	100	285,00 A 2
5,5	x	38	S	10	167,00 A 2
5,5	x	50	S	10	206,00 A 2
5,5	x	63	S	100	390,00 A 2
5,5	x	75	S	100	400,00 A 2
6,3	x	13	S	100	565,00 A 2
6,3	x	16	S	100	260,00 A 2
6,3	x	19	S	100	305,00 A 2
6,3	x	25	S	100	345,00 A 2
6,3	x	32	S	100	370,00 A 2
6,3	x	38	S	100	400,00 A 2
6,3	x	50	S	100	470,00 A 2

Article	88115.920	RAZ 855

88115 A 2

Theft resistant screws with countersunk head DIN 7982, tapping screw thread ST, hexalobular socket with pin

Bits ➔ article 88667

Dimensions ➔ TI-48

2,9	x	13	S	100	95,00 A 2
2,9	x	19	S	100	100,00 A 2
3,5	x	9,5	S	100	80,00 A 2
3,5	x	13	S	100	74,00 A 2
3,5	x	16	S	100	76,00 A 2
3,5	x	19	S	100	78,00 A 2
3,5	x	25	S	10	80,00 A 2
3,5	x	38	S	10	99,00 A 2
4,2	x	13	S	10	72,00 A 2
4,2	x	16	S	100	82,00 A 2
4,2	x	19	S	10	88,00 A 2
4,2	x	25	S	10	100,00 A 2
4,2	x	32	S	10	112,00 A 2
4,2	x	38	S	10	124,00 A 2
4,2	x	50	S	100	150,00 A 2
4,8	x	13	S	100	102,00 A 2
4,8	x	16	S	100	112,00 A 2
4,8	x	19	S	100	120,00 A 2
4,8	x	25	S	10	129,00 A 2
4,8	x	32	S	10	148,00 A 2
4,8	x	38	S	10	162,00 A 2
4,8	x	50	S	10	153,00 A 2
5,5	x	16	S	100	245,00 A 2
5,5	x	25	S	100	255,00 A 2
5,5	x	38	S	10	153,00 A 2
5,5	x	50	S	10	206,00 A 2
5,5	x	63	S	100	411,00 A 2
5,5	x	75	S	100	425,00 A 2
6,3	x	19	S	100	320,00 A 2
6,3	x	50	S	100	500,00 A 2

Article	88116.920	RAZ 855

88116 A 2

Theft resistant screws with button head ~ ISO 7380, metric thread, hexalobular socket with pin

Bits ➔ article 88667

Dimensions ➔ TI-27

M 3	x	6-T10	S	100	96,00 A 2
M 3	x	8-T10	S	100	96,00 A 2
M 3	x	10-T10	S	100	96,00 A 2
M 3	x	12-T10	S	100	98,00 A 2
M 3	x	16-T10	S	100	98,00 A 2
M 3	x	20-T10	S	100	105,00 A 2
M 4	x	6-T20	S	100	98,00 A 2
M 4	x	8-T20	S	100	98,00 A 2
M 4	x	10-T20	S	100	103,00 A 2
M 4	x	12-T20	S	100	108,00 A 2
M 4	x	16-T20	S	100	115,00 A 2
M 4	x	20-T20	S	100	122,00 A 2
M 4	x	25-T20	S	100	130,00 A 2
M 4	x	30-T20	S	100	145,00 A 2
M 4	x	40-T20	S	100	182,00 A 2
M 4	x	50-T20	S	100	200,00 A 2
M 5	x	8-T25	S	100	140,00 A 2
M 5	x	10-T25	S	100	140,00 A 2
M 5	x	12-T25	S	100	140,00 A 2
M 5	x	16-T25	S	100	147,00 A 2
M 5	x	20-T25	S	100	152,00 A 2
M 5	x	25-T25	S	100	170,00 A 2
M 5	x	30-T25	S	100	190,00 A 2
M 5	x	35-T25	S	100	205,00 A 2
M 5	x	40-T25	S	100	220,00 A 2
M 5	x	50-T25	S	100	280,00 A 2
M 5	x	60-T25	S	100	350,00 A 2
M 6	x	10-T30	S	100	167,00 A 2
M 6	x	12-T30	S	100	170,00 A 2
M 6	x	16-T30	S	100	180,00 A 2
M 6	x	20-T30	S	100	191,00 A 2
M 6	x	25-T30	S	100	215,00 A 2
M 6	x	30-T30	S	100	216,00 A 2
M 6	x	35-T30	S	100	236,00 A 2
M 6	x	40-T30	S	100	275,00 A 2
M 6	x	45-T30	S	100	295,00 A 2
M 6	x	50-T30	S	100	315,00 A 2
M 6	x	60-T30	S	100	410,00 A 2
M 8	x	12-T40	S	100	285,00 A 2
M 8	x	16-T40	S	100	310,00 A 2
M 8	x	20-T40	S	100	350,00 A 2
M 8	x	25-T40	S	100	380,00 A 2
M 8	x	30-T40	S	100	410,00 A 2
M 8	x	35-T40	S	100	475,00 A 2
M 8	x	40-T40	S	100	480,00 A 2
M 8	x	45-T40	S	100	530,00 A 2
M 8	x	50-T40	S	100	535,00 A 2
M 8	x	60-T40	S	100	575,00 A 2
M 8	x	80-T40	S	100	705,00 A 2
M10	x	12-T45	S	100	475,00 A 2
M10	x	20-T45	S	100	530,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M10	x	25-T45	S	100	560,00 A 2
M10	x	30-T45	S	100	580,00 A 2
M10	x	40-T45	S	100	630,00 A 2
M10	x	45-T45	S	100	670,00 A 2
M10	x	50-T45	S	100	735,00 A 2
M10	x	60-T45	S	100	765,00 A 2
M10	x	65-T45	S	100	790,00 A 2
M10	x	80-T45	S	100	865,00 A 2

Article 88117.920 RAZ 855

88117 A 2

Theft resistant screws with countersunk head ~ ISO 10642, metric thread, hexalobular socket with pin

Bits ➔ article 88667

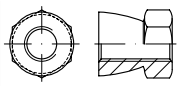
Dimensions ➔ TI-27

M 3	x	6-T10	S	100	77,00 A 2
M 3	x	8-T10	S	100	81,00 A 2
M 3	x	10-T10	S	100	86,00 A 2
M 3	x	12-T10	S	100	90,00 A 2
M 3	x	16-T10	S	100	100,00 A 2
M 3	x	20-T10	S	100	110,00 A 2
M 3,5	x	6-T15	S	100	80,00 A 2
M 3,5	x	12-T15	S	100	90,00 A 2
M 4	x	6-T20	S	100	90,00 A 2
M 4	x	8-T20	S	100	93,00 A 2
M 4	x	10-T20	S	100	95,00 A 2
M 4	x	12-T20	S	100	97,00 A 2
M 4	x	16-T20	S	100	100,00 A 2
M 4	x	20-T20	S	100	115,00 A 2
M 4	x	25-T20	S	100	125,00 A 2
M 4	x	30-T20	S	100	140,00 A 2
M 4	x	40-T20	S	100	160,00 A 2
M 4	x	50-T20	S	100	190,00 A 2
M 5	x	8-T25	S	100	135,00 A 2
M 5	x	10-T25	S	100	135,00 A 2
M 5	x	12-T25	S	100	135,00 A 2
M 5	x	16-T25	S	100	145,00 A 2
M 5	x	20-T25	S	100	165,00 A 2
M 5	x	25-T25	S	100	170,00 A 2
M 5	x	30-T25	S	100	190,00 A 2
M 5	x	35-T25	S	100	225,00 A 2
M 5	x	40-T25	S	100	230,00 A 2
M 5	x	50-T25	S	100	300,00 A 2
M 5	x	60-T25	S	100	355,00 A 2
M 5	x	70-T25	S	100	415,00 A 2
M 5	x	80-T25	S	100	420,00 A 2
M 6	x	10-T30	S	100	155,00 A 2
M 6	x	12-T30	S	100	160,00 A 2
M 6	x	16-T30	S	100	170,00 A 2
M 6	x	20-T30	S	100	185,00 A 2
M 6	x	25-T30	S	100	205,00 A 2
M 6	x	30-T30	S	100	220,00 A 2
M 6	x	35-T30	S	100	235,00 A 2
M 6	x	40-T30	S	100	265,00 A 2
M 6	x	45-T30	S	100	300,00 A 2
M 6	x	50-T30	S	100	325,00 A 2
M 6	x	60-T30	S	100	420,00 A 2
M 8	x	16-T40	S	100	355,00 A 2
M 8	x	20-T40	S	100	405,00 A 2
M 8	x	25-T40	S	100	440,00 A 2
M 8	x	30-T40	S	100	475,00 A 2
M 8	x	40-T40	S	100	555,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	50-T40	S	100	615,00 A 2
M 8	x	60-T40	S	100	665,00 A 2
M 8	x	80-T40	S	100	815,00 A 2
M10	x	60-T45	S	100	815,00 A 2
M10	x	80-T45	S	100	995,00 A 2

Article 88118.910 RAZ 855

88118 A 1

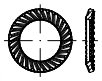


Theft resistant nuts/pull-off nuts, flat round type, hexagon, for one-way assembly (unscrewable)

M 6	x	6	S	500	97,95 A 1
M 6	x	6	K	50	107,00 A 1
M 8	x	6	S	500	129,00 A 1
M 8	x	6	K	50	138,00 A 1
M 10	x	8	S	500	499,00 A 1
M 10	x	8	K	25	520,00 A 1
M 12	x	9	S	250	880,00 A 1
M 12	x	9	K	25	980,00 A 1
M 16	x	14	S	100	2065,00 A 1
M 16	x	14	K	25	2265,00 A 1

Article 88120.924 RAZ 860

88120 A 2 type S



SCHNORR safety washers with serrations on both sides, S = standard

Caution! Lower tightness compared to hardened steel.

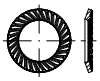
Dimensions ➔ TI-103

For screw M x outside ∅ x thickness

S 2	x	4	x	0,35	S	1000	1,50 A 2
S 2	x	4	x	0,35	K	200	2,50 A 2
S 2,5	x	4,8	x	0,45	S	2000	1,50 A 2
S 2,5	x	4,8	x	0,45	K	200	2,50 A 2
S 3	x	5,5	x	0,45	S	2000	1,50 A 2
S 3	x	5,5	x	0,45	K	200	2,50 A 2
S 4	x	7	x	0,5	S	1000	1,80 A 2
S 4	x	7	x	0,5	K	200	2,80 A 2
S 5	x	9	x	0,6	S	1000	3,05 A 2
S 5	x	9	x	0,6	K	200	4,05 A 2
S 6	x	10	x	0,7	S	1000	3,85 A 2
S 6	x	10	x	0,7	K	200	4,85 A 2
S 8	x	13	x	0,8	S	1000	6,80 A 2
S 8	x	13	x	0,8	K	200	7,80 A 2
S10	x	16	x	1	S	1000	12,40 A 2
S10	x	16	x	1	K	200	13,40 A 2
S12	x	18	x	1,1	S	500	17,35 A 2
S12	x	18	x	1,1	K	100	18,35 A 2
S16	x	24	x	1,3	S	250	33,40 A 2
S16	x	24	x	1,3	K	100	34,60 A 2
S20	x	30	x	1,5	S	250	62,20 A 2
S20	x	30	x	1,5	K	100	63,40 A 2
S24	x	36	x	1,8	S	100	88,65 A 2

Dimensions			PU	Pieces	€/100/Mat.
Article	88121.924				RAZ 860

88121 A 2 type VS



SCHNORR safety washers with serrations on both sides, VS = extra strong

Caution! Lower tightness compared to hardened steel.

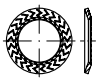
Dimensions ➔ TI-103

For screw M x outside ∅ x thickness

VS 5	x	9	x	1	S	1000	12,30 A 2
VS 6	x	10	x	1	S	1000	14,55 A 2
VS 8	x	13	x	1,2	S	1000	20,70 A 2
VS 10	x	16	x	1,5	S	1000	43,90 A 2
VS 12	x	18	x	1,5	S	500	61,50 A 2
VS 16	x	24	x	2	S	250	123,00 A 2
VS 20	x	30	x	2	S	250	219,00 A 2

Article 88123.940 RAZ 865

88123 A 4 type S



TECKENTRUP lock washers, S = for normal and small connecting surfaces

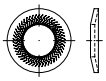
Dimensions ➔ TI-104

For screw ∅ x outside ∅ x thickness

S 4	x	8,2	x	0,8	S	1000	10,80 A 4
S 5	x	10,2	x	1	S	1000	13,65 A 4
S 6	x	12,2	x	1,2	S	1000	14,55 A 4
S 8	x	16,2	x	1,4	S	1000	24,40 A 4
S 10	x	20,25	x	1,6	S	1000	40,00 A 4
S 12	x	24,25	x	1,6	S	1000	72,00 A 4

Article 88124.940 RAZ 865

88124 A 4 type M



TECKENTRUP lock washers, M = for normal connecting surface

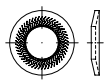
Dimensions ➔ TI-104

For screw ∅ x outside ∅ x thickness

M 4	x	10,2	x	1	S	1000	13,20 A 4
M 5	x	12,2	x	1,2	S	1000	16,20 A 4
M 6	x	14,2	x	1,4	S	1000	20,40 A 4
M 8	x	18,2	x	1,4	S	1000	30,00 A 4
M 10	x	22,25	x	1,6	S	500	53,20 A 4
M 12	x	27,25	x	1,8	S	500	90,80 A 4

Dimensions | PU Pieces | €/100/Mat.

Article	88125.940	RAZ 865
88125	**A 4**	**type B**



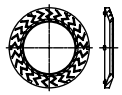
TECKENTRUP lock washers, B = for large connecting surface

Dimensions → TI-104

For screw ∅ x outside ∅ x thickness

B 6	x	18,2	x	1,4	S	1000	30,00 A4
B 8	x	22,25	x	1,9	S	500	53,20 A4
B 10	x	27,25	x	2,4	S	500	105,40 A4

Article	88129.940	RAZ 865
88129	**A 4**	**type K**



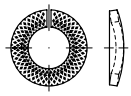
TECKENTRUP lock washers, K = with contact serrations

Dimensions → TI-104

For screw ∅ x outside ∅ x thickness

K 4	x	8,2	x	0,8	S	1000	14,00 A4
K 5	x	10,2	x	1	S	1000	16,40 A4
K 6	x	12,2	x	1,2	S	1000	18,60 A4
K 8	x	16,2	x	1,4	S	1000	30,00 A4
K 10	x	20,25	x	1,6	S	500	85,00 A4
K 12	x	24,25	x	1,6	S	500	130,00 A4

Article	88130.960	RAZ 870
88130	**1.4310**	**VSK-D**



Lock rings, VSK-D = standard type

Caution! Lower tightness compared to hardened steel.

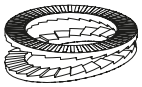
Dimensions → TI-104

For screw ∅ x outside ∅ x thickness

5	x	9,2	x	1,2	S	5000	5,60
6	x	11,8	x	1,6	S	2000	9,80
8	x	14	x	2	S	1000	15,60
10	x	18	x	2,2	S	500	24,70
12	x	21	x	2,5	S	500	36,00
14	x	24	x	3	S	250	60,00
16	x	27,3	x	3,5	S	200	81,00
18	x	29,4	x	3,5	S	150	131,00
20	x	33,6	x	4	S	100	131,00
24	x	40	x	5	S	50	246,00

Dimensions | PU Pieces | €/100/Mat.

Article	88132.940	RAZ 870
88132	**A 4**	



NORD-LOCK washers, standard, preassembled pairs

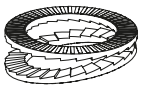
Caution!
- **Lower tightness compared to hardened steel.**
- **When assembling take care to position the washer pairs correctly!**

Dimensions → TI-105

For screw ∅

NL 5 SS	S	200	200,00 A4
NL 6 SS	S	200	240,00 A4
NL 8 SS	S	200	255,00 A4
NL 10 SS	S	200	290,00 A4
NL 12 SS	S	200	520,00 A4
NL 16 SS	S	100	740,00 A4
NL 18 SS	S	100	990,00 A4
NL 20 SS	S	100	990,00 A4
NL 24 SS	S	100	1490,00 A4

Article	88132.945	RAZ 870
88132	**A 4**	**SP**



NORD-LOCK washers, preassembled pairs SP = with enlarged outer diameter

Caution!
- **Lower tightness compared to hardened steel.**
- **When assembling take care to position the washer pairs correctly!**

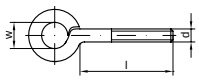
Dimensions → TI-105

For screw ∅

NL 3,5	SP SS	S	200	270,00 A4
NL 4	SP SS	S	200	280,00 A4
NL 5	SP SS	S	200	290,00 A4
NL 6	SP SS	S	200	302,00 A4
NL 8	SP SS	S	200	372,00 A4
NL 10	SP SS	S	200	610,00 A4
NL 12	SP SS	S	100	1104,00 A4
NL 14	SP SS	S	100	1217,00 A4
NL 16	SP SS	S	100	1230,00 A4
NL 18	SP SS	S	100	1857,00 A4
NL 20	SP SS	S	100	1880,00 A4
NL 22	SP SS	S	50	3158,00 A4
NL 24	SP SS	S	50	4294,00 A4
NL 27	SP SS	S	25	4294,00 A4
NL 30	SP SS	S	25	5367,00 A4

Dimensions | PU Pieces | €/100/Mat.

Article	88136.920	RAZ 872
88136	**A 2**	**type 48**



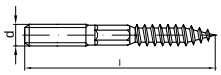
Screw eyes type 48, with metric thread

Dimensions → TI-36

d x l x D

M 4	x	10 D 6	S	50	91,00 A2
M 4	x	15 D 6	S	50	88,00 A2
M 4	x	20 D 6	S	50	91,00 A2
M 4	x	30 D 6	S	50	94,60 A2
M 5	x	15 D 8	S	50	97,20 A2
M 5	x	20 D 8	S	50	101,80 A2
M 5	x	30 D 8	S	50	104,00 A2
M 5	x	40 D 8	S	50	110,00 A2
M 6	x	15 D 10	S	50	113,00 A2
M 6	x	20 D 10	S	50	122,50 A2
M 6	x	25 D 10	S	50	124,60 A2
M 6	x	30 D 10	S	50	130,60 A2
M 6	x	40 D 10	S	50	136,00 A2
M 6	x	50 D 10	S	50	142,00 A2
M 6	x	60 D 10	S	50	144,00 A2
M 8	x	20 D 12	S	50	212,00 A2
M 8	x	25 D 12	S	50	220,00 A2
M 8	x	30 D 12	S	50	230,00 A2
M 8	x	40 D 12	S	50	253,00 A2
M 8	x	50 D 12	S	50	266,00 A2
M 8	x	60 D 12	S	50	284,00 A2
M 10	x	40 D 14	S	50	421,82 A2
M 10	x	70 D 14	S	50	665,70 A2

Article	88149.920	RAZ 874
88149	**A 2**	



Hanger bolts, one side = metric thread other side = wood screw thread

Dimensions → TI-55

∅ M x overall length

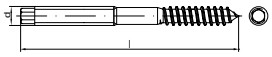
M 6	x	50	S	100	99,00 A2
M 6	x	60	S	100	119,00 A2
M 6	x	70	S	100	141,00 A2
M 6	x	80	S	100	162,00 A2
M 6	x	100	S	100	200,00 A2
M 6	x	120	S	100	241,00 A2
M 6	x	130	S	100	265,00 A2
M 6	x	140	S	100	285,00 A2
M 6	x	150	S	100	305,00 A2
M 6	x	160	S	100	325,00 A2
M 6	x	180	S	100	365,00 A2
M 8	x	50	S	100	133,00 A2
M 8	x	60	S	100	159,00 A2
M 8	x	70	S	100	187,00 A2
M 8	x	80	S	50	233,00 A2
M 8	x	90	S	50	241,00 A2
M 8	x	100	S	50	265,00 A2
M 8	x	110	S	50	280,00 A2

Article 88149

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	120	S	50	295,00 A 2
M 8	x	130	S	50	345,00 A 2
M 8	x	140	S	50	375,00 A 2
M 8	x	150	S	50	400,00 A 2
M 8	x	160	S	50	425,00 A 2
M 8	x	180	S	50	480,00 A 2
M 8	x	200	S	50	530,00 A 2
M 10	x	80	S	25	350,00 A 2
M 10	x	100	S	25	435,00 A 2
M 10	x	120	S	25	485,00 A 2
M 10	x	140	S	25	570,00 A 2
M 10	x	160	S	25	700,00 A 2
M 10	x	180	S	25	790,00 A 2
M 10	x	200	S	25	870,00 A 2

Article 88149.925 RAZ 874

88149 A 2 – 70 Hex



Hanger bolts, one side = metric thread other side = wood screw thread, Hex = with hexagon

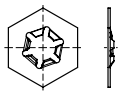
Dimensions → TI-55 Mech. properties → TI-224

∅ M x overall length – wrench size

M 10	x	180 SW7	S	25	790,00 A 2
M 10	x	200 SW7	S	25	870,00 A 2
M 10	x	250 SW7	S	25	1200,00 A 2
M 12	x	180 SW9	S	25	1290,00 A 2
M 12	x	200 SW9	S	25	1480,00 A 2
M 12	x	250 SW9	S	25	1830,00 A 2

Article 88151.920 RAZ 857

88151 A 2 RUV



REYHER captivity washers for metric screws

For usage acc. to EC machinery directive

Matching screws → DIN 7964 A 2

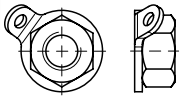
Product informaton → TI-247

Thread ∅ x SW x thickness

M 6	x	12	x	0,5	S	100	24,00 A 2
M 8	x	16	x	0,5	S	100	25,00 A 2
M10	x	18	x	0,5	S	100	26,00 A 2
M12	x	21	x	0,6	S	50	38,00 A 2
M16	x	27	x	0,7	S	50	45,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
Article		88153.920			RAZ 857

88153 A 2 RUV



REYHER captivity nuts

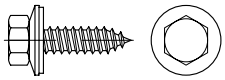
For usage acc. to EC machinery directive

Product information → TI-247 Mech. properties → TI-224

M 5	K	25	400,00 A 2
M 6	K	25	420,00 A 2
M 8	K	25	450,00 A 2
M 10	K	10	500,00 A 2
M 12	K	10	590,00 A 2

Article 88176.920 RAZ 876

88176 A 2 type A



Tapping screws for facing with assembled sealing washer A = with cone end

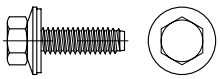
Wrench size = 3/8", ∅ sealing washer = 16 mm

Dimensions → TI-50

A 6,5	x	16	S	500	34,50 A 2
A 6,5	x	19	S	500	36,00 A 2
A 6,5	x	25	S	500	40,50 A 2
A 6,5	x	32	S	400	46,00 A 2
A 6,5	x	38	S	400	54,00 A 2
A 6,5	x	45	S	300	58,00 A 2
A 6,5	x	50	S	250	59,00 A 2
A 6,5	x	64	S	200	76,00 A 2
A 6,5	x	75	S	200	85,00 A 2
A 6,5	x	85	S	200	95,00 A 2
A 6,5	x	90	S	150	95,00 A 2
A 6,5	x	100	S	100	105,00 A 2
A 6,5	x	115	S	100	112,00 A 2
A 6,5	x	130	S	100	130,00 A 2
A 6,5	x	150	S	100	157,00 A 2
A 6,5	x	175	S	100	199,00 A 2
A 6,5	x	200	S	100	246,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
Article		88276.920			RAZ 876

88276 A 2 type BZ



Tapping screws for facing with assembled sealing washer BZ = with flat end

Wrench size = 3/8", ∅ sealing washer = 16 mm

Caps → article 88008

Dimensions → TI-50

BZ 6,3	x	16	S	500	36,35 A 2
BZ 6,3	x	19	S	500	38,50 A 2
BZ 6,3	x	25	S	500	40,50 A 2
BZ 6,3	x	32	S	400	46,00 A 2
BZ 6,3	x	38	S	400	54,00 A 2
BZ 6,3	x	45	S	300	58,00 A 2
BZ 6,3	x	50	S	250	59,00 A 2
BZ 6,3	x	64	S	200	76,00 A 2
BZ 6,3	x	75	S	200	85,00 A 2
BZ 6,3	x	90	S	150	95,00 A 2
BZ 6,3	x	100	S	100	105,00 A 2
BZ 6,3	x	115	S	100	112,00 A 2
BZ 6,3	x	130	S	100	130,00 A 2
BZ 6,3	x	150	S	100	157,00 A 2
BZ 6,3	x	175	S	100	199,00 A 2

Article 88008.(*) RAZ 800

88008 Plastic

Caps for tapping screws for facing

White RAL 9010 (*630),
light grey RAL 9002 (*640),
light ivory RAL 1015 (*670),
red brown RAL 8012 (*650)

For articles 88176, 88276 with wrench size SW 3/8"

F. SW 3/8	S	200	7,00 plastic

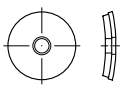
RKP® REYHER KITTING & PACKAGING

Customized sets and assembly kits

- From the smallest sets to complex assembly kits
- Gathering together individual articles
- Customized packaging

€/100 = price in € plus VAT when ordering full package unit

Dimensions					PU	Pieces	€/100/Mat.
Article		88277.920					RAZ 890
88277		**A 2**					



Sealing washers, convex metal washers with vulcanised sealing

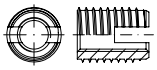
Thickness of sealing ~ 1,5 mm

Aluminium → S. 597

Outside ∅ x inside ∅ x thickness of metal washer

16	x	6,8	x	1	S	1000	8,20 A 2
19	x	6,8	x	1	S	1000	11,00 A 2
25	x	6,8	x	1	S	1000	21,00 A 2
25	x	8,5	x	1	S	1000	23,00 A 2
29	x	6,8	x	1	S	1000	27,00 A 2

Article	88302.910	RAZ 899
88302	**A 1**	**type 302**



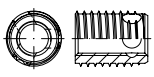
ENSAT threaded inserts type 302, self tapping with cutting slot, Inside = metric thread

ENSAT driving tools → S. 417

Internal thread M x length

M 3	x	6	S	50	159,00	A 1
M 4	x	8	S	50	160,00	A 1
M 5	x	10	S	50	165,00	A 1
M 6	x	14	S	25	191,00	A 1
M 8	x	15	S	25	260,00	A 1
M 10	x	18	S	25	340,00	A 1
M 12	x	22	S	25	465,00	A 1
M 16	x	22	S	10	1290,00	A 1
M 20	x	27	S	10	1670,00	A 1

Article	88307.300	RAZ 899
88307	**1. 4105**	**type 307**



ENSAT threaded inserts type 307, short, self tapping with cutting bores, Inside = metric thread

ENSAT driving tools → S. 417

Internal thread M x length

M 5	x	7	S	50	184,00
M 6	x	8	S	25	213,00
M 8	x	9	S	25	255,00
M 10	x	10	S	25	315,00

Dimensions					PU	Pieces	€/100/Mat.
Article		88330.921					RAZ 910
88330		**A 2**					**type A-SR**

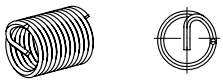
Wire thread inserts DIN 8140, with engaging tang, A = for metric thread, SR = AMECOIL type SR

Product information → TI-150

Thread M x length installed

M 3	x	3	S	25	61,00	A 2
M 3	x	4,5	S	25	70,00	A 2
M 3	x	6	S	25	77,00	A 2
M 4	x	4	S	200	44,50	A 2
M 4	x	4	K	25	52,00	A 2
M 4	x	6	S	200	52,00	A 2
M 4	x	6	K	25	60,00	A 2
M 4	x	8	S	200	55,00	A 2
M 4	x	8	K	25	62,00	A 2
M 5	x	5	S	200	57,00	A 2
M 5	x	5	K	25	64,00	A 2
M 5	x	7,5	S	200	67,00	A 2
M 5	x	7,5	K	25	73,00	A 2
M 5	x	10	S	200	69,00	A 2
M 5	x	10	K	25	77,00	A 2
M 6	x	6	S	200	67,00	A 2
M 6	x	6	K	25	73,00	A 2
M 6	x	9	S	200	73,00	A 2
M 6	x	9	K	25	80,00	A 2
M 6	x	12	S	200	77,00	A 2
M 6	x	12	K	25	84,00	A 2
M 6	x	15	S	200	90,00	A 2
M 7	x	10,5	S	25	84,00	A 2
M 8	x	8	S	100	69,00	A 2
M 8	x	8	K	25	77,00	A 2
M 8	x	12	S	100	80,00	A 2
M 8	x	12	K	25	87,00	A 2
M 8	x	16	S	100	85,00	A 2
M 8	x	16	K	25	92,00	A 2
M 8	x	20	S	100	100,00	A 2
M 10	x	10	S	100	96,00	A 2
M 10	x	10	K	25	103,00	A 2
M 10	x	15	S	100	111,00	A 2
M 10	x	15	K	25	118,00	A 2
M 10	x	20	S	100	116,00	A 2
M 10	x	20	K	25	124,00	A 2
M 12	x	12	S	100	190,00	A 2
M 12	x	12	K	15	201,00	A 2
M 12	x	18	S	100	221,00	A 2
M 12	x	18	K	15	231,00	A 2
M 12	x	24	S	100	230,00	A 2
M 12	x	24	K	15	240,00	A 2
M 14	x	14	S	10	295,00	A 2
M 14	x	21	S	10	335,00	A 2
M 14	x	28	S	10	350,00	A 2
M 16	x	16	S	50	375,00	A 2
M 16	x	16	K	10	390,00	A 2
M 16	x	24	S	50	435,00	A 2
M 16	x	24	K	10	445,00	A 2
M 16	x	32	S	50	455,00	A 2
M 16	x	32	K	10	470,00	A 2
M 18	x	18	S	10	460,00	A 2
M 18	x	27	S	10	530,00	A 2
M 20	x	20	S	10	520,00	A 2
M 20	x	30	S	10	610,00	A 2
M 20	x	40	S	10	630,00	A 2
M 24	x	24	S	10	860,00	A 2
M 24	x	36	S	10	1010,00	A 2
M 24	x	48	S	10	1030,00	A 2

Article	88331.926	RAZ 910
88331	**A 2**	**type A-fine**



Wire thread inserts DIN 8140, with engaging tang, A = for metric fine pitch thread

Product information → TI-150

Thread M x length installed

M 8	x	1	x	8	S	25	77,00 A 2
M 8	x	1	x	12	S	25	87,00 A 2
M 8	x	1	x	16	S	25	92,00 A 2
M 10	x	1	x	10	S	25	103,00 A 2
M 10	x	1,25	x	10	S	25	103,00 A 2
M 10	x	1	x	15	S	25	118,00 A 2
M 10	x	1,25	x	15	S	25	118,00 A 2
M 10	x	1	x	20	S	25	124,00 A 2
M 10	x	1,25	x	20	S	25	124,00 A 2
M 12	x	1,25	x	12	S	15	201,00 A 2
M 12	x	1,5	x	12	S	15	201,00 A 2
M 12	x	1,25	x	18	S	15	231,00 A 2
M 12	x	1,5	x	18	S	15	231,00 A 2
M 12	x	1,25	x	24	S	15	240,00 A 2
M 12	x	1,5	x	24	S	15	240,00 A 2
M 14	x	1,25	x	8,4	S	15	175,00 A 2
M 14	x	1,25	x	12,4	S	15	175,00 A 2
M 14	x	1,5	x	14	S	10	295,00 A 2
M 14	x	1,25	x	16,4	S	15	175,00 A 2
M 14	x	1,5	x	21	S	10	335,00 A 2
M 14	x	1,5	x	28	S	10	350,00 A 2
M 16	x	1,5	x	16	S	10	390,00 A 2
M 16	x	1,5	x	24	S	10	445,00 A 2
M 16	x	1,5	x	32	S	10	470,00 A 2
M 20	x	1,5	x	20	S	10	520,00 A 2
M 20	x	2	x	20	S	10	520,00 A 2
M 20	x	1,5	x	30	S	10	610,00 A 2
M 20	x	2	x	30	S	10	610,00 A 2
M 20	x	1,5	x	40	S	10	630,00 A 2
M 20	x	2	x	40	S	10	630,00 A 2
M 24	x	1,5	x	24	S	10	860,00 A 2
M 24	x	2	x	24	S	10	860,00 A 2
M 24	x	1,5	x	36	S	10	1010,00 A 2
M 24	x	2	x	36	S	10	1010,00 A 2
M 24	x	1,5	x	48	S	10	1030,00 A 2
M 24	x	2	x	48	S	10	1030,00 A 2

RKP®
REYHER KITTING & PACKAGING

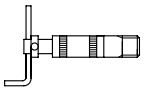
Individual trade packaging

- Packaging design
- Label design
- Packing quantities to match your needs

Dimensions | PU Pieces | €/100/Mat.

Article 88333.000 RAZ 915

88333 fine



AMECOIL multidimensional hand fitting tools, basic tool without mandrel and without threaded nose, fine = for thread inserts article 88331

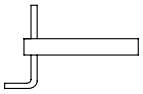
Product information → TI-150

Size/for thread M

NR. 2 M 6 -M 8	S	1	2032,00
NR. 3 M10 -M12	S	1	2500,00
NR. 4 M14 -M16	S	1	3600,00

Article 88333.004 RAZ 915

88333 SR



AMECOIL specific hand fitting tools, without threaded mandrel, SR = for thread inserts article 88330 and 88346

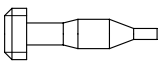
Product information → TI-150

Size/for thread M

Nr.1-M 2,5-M 8	S	1	2110,00
Nr.2-M10 -M16	S	1	2110,00

Article 88334.000 RAZ 915

88334 fine



AMECOIL accessories for fitting tool, mandrel and threaded nose for basic fitting tool, fine = for thread inserts article 88331

Product information → TI-150

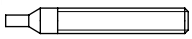
For inserts with thread M

M 8	x	1	S	1	2650,00
M 10	x	1	S	1	2900,00
M 10	x	1,25	S	1	2900,00
M 12	x	1,25	S	1	3000,00
M 12	x	1,5	S	1	3000,00
M 14	x	1,25	S	1	1780,00
M 14	x	1,5	S	1	1780,00
M 16	x	1,5	S	1	3500,00

Dimensions | PU Pieces | €/100/Mat.

Article 88334.004 RAZ 915

88334 SR



AMECOIL threaded mandrels, for specific hand fitting tool, article 88330 and 88346, SR = for thread inserts

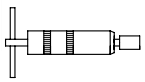
Product information → TI-150

For inserts with thread M/mandrel no.

M 3 / Nr.1	S	1	5300,00
M 4 / Nr.1	S	1	5300,00
M 5 / Nr.1	S	1	5300,00
M 6 / Nr.1	S	1	5300,00
M 7 / Nr.1	S	1	5300,00
M 8 / Nr.1	S	1	5300,00
M 10 / Nr.2	S	1	6400,00
M 12 / Nr.2	S	1	6400,00
M 14 / Nr.2	S	1	6400,00
M 16 / Nr.2	S	1	6400,00

Article 88335.000 RAZ 915

88335 fine



AMECOIL unidim. hand fitting tools: for each diameter, fine = for thread inserts article 88331

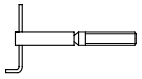
Product information → TI-150

For inserts with thread M

M 20	x	1,5	S	1	10300,00
M 20	x	2	S	1	10600,00
M 24	x	1,5	S	1	11200,00
M 24	x	2	S	1	11600,00

Article 88335.004 RAZ 915

88335 SR



AMECOIL specific hand fitting tools, for each diameter, SR = for thread inserts article 88330 and 88346

Product information → TI-150

For inserts with thread M

M 18	S	1	34700,00
M 20	S	1	34700,00
M 24	S	1	34700,00

Dimensions | PU Pieces | €/100/Mat.

Article 88336.000 RAZ 915

88336

AMECOIL tang breaks for the removal of the engaging tang, for type SR and fine

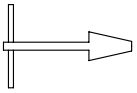
Product information → TI-150

For threads exceeding ∅ 18 use a tapered pliers

M 3	S	1	390,00
M 4	S	1	450,00
M 5	S	1	570,00
M 6	S	1	830,00
M 8	S	1	890,00
M 10	S	1	900,00
M 12	S	1	1000,00
M 14	S	1	1080,00
M 16	S	1	1170,00
M 18	S	1	1250,00

Article 88337.000 RAZ 915

88337



AMECOIL extractors for type SR and fine

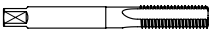
Product information → TI-150

Size for inserts with thread M

NR.1 M 2,5-M 8	S	1	1740,00
NR.2 M 5 -M12	S	1	1870,00
NR.3 M 10 -M24	S	1	2000,00

Article 88338.000 RAZ 915

88338



AMECOIL finish taps for through and blind holes, manual or machine, 2 pitch point

Product information → TI-150

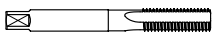
For inserts with thread M

M 3			S	1	1200,00
M 4			S	1	1240,00
M 5			S	1	1280,00
M 6			S	1	1430,00
M 7			S	1	1450,00
M 8			S	1	1760,00
M 8	x	1	S	1	2280,00
M 10			S	1	2260,00

Dimensions			PU	Pieces	€/100/Mat.
M 10	x	1	S	1	2550,00
M 10	x	1,25	S	1	2600,00
M 12			S	1	3000,00
M 12	x	1,25	S	1	3500,00
M 12	x	1,5	S	1	3350,00
M 14			S	1	3800,00
M 14	x	1,25	S	1	3950,00
M 14	x	1,5	S	1	3950,00
M 16			S	1	4400,00
M 16	x	1,5	S	1	4550,00
M 18			S	1	6300,00
M 20			S	1	8000,00
M 20	x	1,5	S	1	7200,00
M 20	x	2	S	1	9100,00
M 24			S	1	9900,00
M 24	x	1,5	S	1	9400,00
M 24	x	2	S	1	11500,00

Article 88339.000 RAZ 915

88339



AMECOIL roughing taps for through and blind holes, 4-pitch point

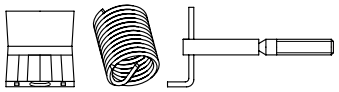
Product information → TI-150

For inserts with thread M

M 18	S	1	6600,00
M 20	S	1	8300,00
M 22	S	1	8800,00
M 24	S	1	10300,00

Article 88342.000 RAZ 913

88342 AMECOIL assortment MINIKIT type SR



Content: 5 thread inserts, drillbit, tap, fitting tool

M 4	S	1	7800,00
M 5	S	1	7800,00
M 6	S	1	7800,00
M 8	S	1	8600,00
M 10	S	1	10500,00

Dimensions	PU	Pieces	€/100/Mat.
Article 88343.000			RAZ 913

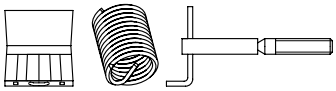
88343

AMECOIL boxes, without content

box	S	1	2475,00

Article 88344.000 RAZ 913

88344 AMECOIL assortment type SR



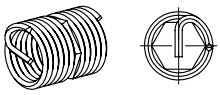
AMECOIL assortments, in each case complete with fitting tools

no.1 = 15 pieces each M 2,5–M 5, length = 1,5 d
no.2 = 15 pieces each M 4–M 8, length = 1,5 d
no.3 = 15 pieces each M 6–M 12, length = 1,5 d

Nr.1	S	1	31500,00
Nr.2	S	1	31500,00
Nr.3	S	1	31500,00

Article 88346.922 RAZ 910

88346 A 2 type B SR



Wire thread inserts DIN 8140, with engaging tang, B = with locking, for metric thread SR = AMECOIL type SR

Product information → TI-150

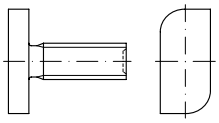
Nominal size/thread M x installed length

BM 3	x	3	S	25	73,00 A 2
BM 3	x	4,5	S	25	84,00 A 2
BM 3	x	6	S	25	92,00 A 2
BM 4	x	4	S	25	62,00 A 2
BM 4	x	6	S	25	71,00 A 2
BM 4	x	8	S	25	74,00 A 2
BM 5	x	5	S	25	77,00 A 2
BM 5	x	7,5	S	25	88,00 A 2
BM 5	x	10	S	25	91,00 A 2
BM 6	x	6	S	25	88,00 A 2
BM 6	x	9	S	25	96,00 A 2
BM 6	x	12	S	25	100,00 A 2
BM 8	x	8	S	25	91,00 A 2
BM 8	x	12	S	25	104,00 A 2
BM 8	x	16	S	25	109,00 A 2
BM 10	x	10	S	25	124,00 A 2
BM 10	x	15	S	25	142,00 A 2
BM 10	x	20	S	25	148,00 A 2

Dimensions			PU	Pieces	€/100/Mat.
BM 12	x	12	S	15	241,00 A 2
BM 12	x	18	S	15	280,00 A 2
BM 12	x	24	S	15	290,00 A 2
BM 16	x	16	S	10	465,00 A 2
BM 16	x	24	S	10	540,00 A 2
BM 16	x	32	S	10	560,00 A 2
BM 20	x	20	S	10	630,00 A 2
BM 20	x	30	S	10	720,00 A 2
BM 20	x	40	S	10	750,00 A 2
BM 24	x	24	S	10	1030,00 A 2
BM 24	x	36	S	10	1210,00 A 2

Article 88928.925 RAZ 985

88928 A 2 type 28/15



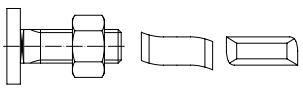
T-head bolts without square

For profiles 28/15, 28/12, 28/28, 26/26

M 8	x	20	S	200	192,00 A 2
M 8	x	25	S	200	202,00 A 2
M 8	x	30	S	200	224,00 A 2
M 8	x	35	S	200	221,00 A 2
M 10	x	20	S	100	227,00 A 2
M 10	x	25	S	100	233,00 A 2
M 10	x	30	S	100	245,00 A 2
M 10	x	40	S	100	266,00 A 2

Article 88928.940 RAZ 985

88928 Mu A 4 HS 28/15



T-head bolts for Halfen channels, Mu = with hexagon nut

For profiles 28/15, 28/12, 28/28, 26/26, head types subject to confirmation, head width ~22,5 mm

Mech. properties → TI-224

Steel → S. 422

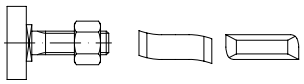
ETA
CE

M 10	x	40	S	50	430,00 A 4
M 10	x	50	S	50	465,00 A 4
M 10	x	60	S	50	495,00 A 4
M 10	x	80	S	25	630,00 A 4

Dimensions | PU Pieces | €/100/Mat.

Article 88938.940 RAZ 985

88938 Mu A 4 HS 38/17



T-head bolts for Halfen channels, Mu = with hexagon nut

For profiles 38/17, 36/20, 36/36, 35/50, head types subject to confirmation, head width ~30,5 mm

Mech. properties ➔ TI-224

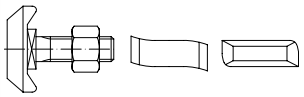
Steel ➔ S. 422

ETA
CE

M 10	x	30	S	50	620,00	A4
M 10	x	40	S	50	700,00	A4
M 10	x	50	S	50	670,00	A4
M 10	x	60	S	50	720,00	A4
M 12	x	30	S	25	610,00	A4
M 12	x	40	S	25	650,00	A4
M 12	x	50	S	25	700,00	A4
M 12	x	60	S	25	770,00	A4
M 12	x	80	S	25	790,00	A4
M 16	x	30	S	10	860,00	A4
M 16	x	40	S	10	930,00	A4
M 16	x	50	S	10	1030,00	A4
M 16	x	60	S	10	1100,00	A4
M 16	x	80	S	10	1260,00	A4
M 16	x	100	S	10	1410,00	A4

Article 88940.940 RAZ 985

88940 Mu A 4 HS 40/22



Hook bolts/suspension bolts, Mu = with hexagon nut

For profiles 40/22, 40/25, 422, head types subject to confirmation, head width ~32,5 mm

Steel ➔ S. 422

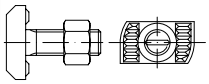
ETA
CE

M 10	x	30	S	50	1340,00	A4
M 10	x	40	S	50	1370,00	A4
M 10	x	50	S	50	1420,00	A4
M 12	x	30	S	25	900,00	A4
M 12	x	40	S	25	1000,00	A4
M 12	x	50	S	25	1090,00	A4
M 12	x	80	S	25	1260,00	A4
M 16	x	40	S	10	1100,00	A4
M 16	x	50	S	10	1190,00	A4
M 16	x	60	S	10	1240,00	A4
M 16	x	80	S	10	1340,00	A4
M 16	x	100	S	10	1700,00	A4

Dimensions | PU Pieces | €/100/Mat.

Article 88941.940 RAZ 985

88941 Mu A 4 HZS 41/22



T-head bolts, Mu = with hexagon nut

For profiles HZA/HZM 41/22, head width ~34,5 mm

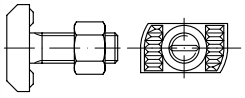
Mech. properties ➔ TI-224

Steel ➔ S. 422

M 12	x	35	S	25	2130,00	A4
M 12	x	50	S	25	2280,00	A4
M 12	x	80	S	25	2390,00	A4
M 16	x	35	S	25	2250,00	A4
M 16	x	50	S	25	2500,00	A4

Article 88943.940 RAZ 985

88943 Mu A 4 HZS 38/23



T-head/Halfen bolts, Mu = with hexagon nut

For profile 38/23 DYNAGRIP, head width ~28,8 mm

Mech. properties ➔ TI-224

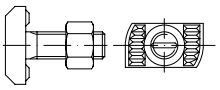
Steel ➔ 424

M 16	x	60	S	25	2150,00	A4
M 16	x	80	S	25	2350,00	A4

Dimensions | PU Pieces | €/100/Mat.

Article 88944.940 RAZ 985

88944 Mu A 4 – 70 HZS 53/34



T-head/Halfen bolts, Mu = with hexagon nut

For profile HZA 53/34, head width ~41,6 mm

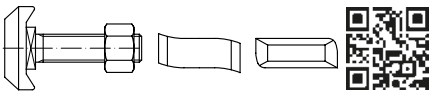
Mech. properties ➔ TI-224

Steel ➔ S. 424

M 16	x	60	S	25	2650,00	A4
M 16	x	100	S	25	2950,00	A4
M 20	x	65	S	25	2850,00	A4
M 20	x	100	S	25	3250,00	A4

Article 88950.940 RAZ 985

88950 Mu A 4 HS 50/30



Hook bolts/suspension bolts, Mu = with hexagon nut

For profiles 50/30, 50/40, 49/30, 52/34, 54/33, 486, head types subject to confirmation, head width ~41 mm

Mech. properties ➔ TI-224

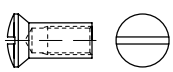
Steel ➔ S. 424

ETA
CE

M 12	x	30	S	25	1120,00	A4
M 12	x	40	S	25	1130,00	A4
M 12	x	50	S	25	1140,00	A4
M 16	x	40	S	10	2000,00	A4
M 16	x	50	S	10	2130,00	A4
M 16	x	60	S	10	2260,00	A4
M 16	x	80	S	10	2700,00	A4
M 20	x	55	S	10	2330,00	A4
M 20	x	75	S	10	2650,00	A4
M 20	x	100	S	10	2750,00	A4

Article 88964.910 RAZ 996

88964 A 1



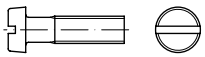
Sleeve nuts with raised countersunk head, with internal thread

Dimensions ➔ TI-77

Internal thread M x length

M 4	x	14	S	100	140,00	A1
M 5	x	15	S	100	181,00	A1
M 6	x	15	S	100	208,00	A1
M 6	x	20	S	100	220,00	A1
M 8	x	15	S	100	375,00	A1
M 8	x	20	S	100	400,00	A1

DIN	00084.704	RAZ 30
84	**Brass**	**turned bare**



Slotted cheese head screws

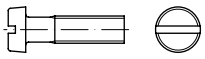
Dimensions → TI-37 Standard conversion → TI-11

Steel → S. 61
Stainless → S. 429

DIN 84 → replaced by ISO 1207 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 1	x	2	S	100	12,00 brass turned
M 1	x	3	S	100	12,10 brass turned
M 1	x	4	S	100	12,40 brass turned
M 1	x	5	S	100	12,90 brass turned
M 1	x	6	S	100	14,30 brass turned
M 1	x	8	S	100	15,80 brass turned
M 1	x	10	S	100	17,90 brass turned
M 1,4	x	3	S	100	11,60 brass turned
M 1,4	x	4	S	100	12,00 brass turned
M 1,4	x	5	S	100	12,40 brass turned
M 1,4	x	6	S	100	13,50 brass turned
M 1,4	x	8	S	100	15,60 brass turned
M 1,4	x	10	S	100	17,50 brass turned
M 1,4	x	12	S	100	21,70 brass turned
M 1,4	x	16	S	100	22,70 brass turned
M 1,6	x	4	S	100	10,80 brass turned
M 1,6	x	5	S	100	11,00 brass turned
M 1,6	x	6	S	100	11,40 brass turned
M 1,6	x	8	S	100	12,90 brass turned
M 1,6	x	10	S	100	12,00 brass turned
M 1,6	x	12	S	100	15,20 brass turned
M 1,6	x	16	S	100	17,10 brass turned

DIN	00084.700	RAZ 30
84	**Brass**	



Slotted cheese head screws

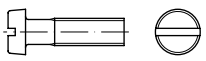
Dimensions → TI-37 Standard conversion → TI-11

Steel → S. 61
Stainless → S. 429

DIN 84 → replaced by ISO 1207 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2	x	4	K	200	4,30 brass
M 2	x	5	K	200	4,00 brass
M 2	x	6	K	200	3,65 brass
M 2	x	8	K	200	3,15 brass
M 2	x	10	K	200	3,30 brass
M 2	x	12	K	200	3,50 brass
M 2	x	16	K	200	4,00 brass
M 2	x	20	K	200	4,50 brass
M 2,5	x	3	K	200	9,00 brass
M 2,5	x	4	K	200	3,20 brass
M 2,5	x	5	K	200	3,40 brass
M 2,5	x	6	K	200	3,40 brass
M 2,5	x	8	K	200	3,15 brass
M 2,5	x	10	K	200	3,30 brass
M 2,5	x	12	K	200	3,50 brass
M 2,5	x	16	K	200	4,00 brass
M 2,5	x	20	K	200	4,50 brass
M 3	x	4	S	1000	3,50 brass
M 3	x	4	K	200	3,50 brass
M 3	x	5	S	1000	3,25 brass
M 3	x	5	K	200	3,25 brass
M 3	x	6	S	1000	2,60 brass
M 3	x	6	K	200	2,60 brass
M 3	x	8	S	1000	2,65 brass
M 3	x	8	K	200	2,65 brass
M 3	x	10	S	1000	2,75 brass
M 3	x	10	K	200	2,75 brass
M 3	x	12	S	1000	2,90 brass
M 3	x	12	K	200	2,90 brass
M 3	x	16	S	1000	3,30 brass
M 3	x	16	K	200	3,30 brass
M 3	x	18	K	200	3,80 brass
M 3	x	20	S	1000	3,80 brass
M 3	x	20	K	200	3,80 brass
M 3	x	25	S	1000	4,25 brass
M 3	x	25	K	200	4,25 brass
M 3	x	30	S	1000	5,20 brass
M 3	x	30	K	200	5,20 brass
M 3	x	35	K	200	5,50 brass
M 3	x	40	K	200	7,80 brass
M 3	x	45	K	200	10,60 brass
M 3	x	50	K	200	12,90 brass
M 3,5	x	8	K	200	4,20 brass
M 3,5	x	10	K	200	4,40 brass
M 3,5	x	12	K	200	4,50 brass
M 3,5	x	16	K	200	5,40 brass
M 3,5	x	20	K	200	6,30 brass
M 4	x	5	S	1000	4,00 brass
M 4	x	5	K	200	4,00 brass
M 4	x	6	S	1000	3,55 brass
M 4	x	6	K	200	3,55 brass
M 4	x	8	S	1000	3,85 brass
M 4	x	8	K	200	3,85 brass
M 4	x	10	S	1000	4,00 brass
M 4	x	10	K	200	4,00 brass
M 4	x	12	S	1000	4,10 brass
M 4	x	12	K	200	4,10 brass
M 4	x	16	S	1000	4,90 brass
M 4	x	16	K	200	4,90 brass
M 4	x	20	S	1000	5,70 brass
M 4	x	20	K	200	5,70 brass
M 4	x	25	S	1000	6,00 brass
M 4	x	25	K	200	6,00 brass
M 4	x	30	S	1000	7,10 brass
M 4	x	30	K	200	7,10 brass
M 4	x	35	S	1000	7,90 brass
M 4	x	35	K	200	7,90 brass
M 4	x	40	S	1000	8,60 brass
M 4	x	40	K	200	8,60 brass
M 4	x	45	K	200	10,60 brass
M 4	x	50	K	200	11,40 brass
M 4	x	60	K	200	20,00 brass
M 5	x	6	K	200	6,70 brass
M 5	x	8	K	200	5,90 brass
M 5	x	10	S	1000	6,00 brass
M 5	x	10	K	200	6,00 brass
M 5	x	12	S	1000	6,20 brass
M 5	x	12	K	200	6,20 brass
M 5	x	16	S	1000	7,10 brass
M 5	x	16	K	200	7,10 brass
M 5	x	20	S	1000	7,80 brass
M 5	x	20	K	200	7,80 brass
M 5	x	22	K	200	13,00 brass
M 5	x	25	S	1000	8,70 brass
M 5	x	25	K	200	8,70 brass
M 5	x	30	S	1000	10,10 brass
M 5	x	30	K	200	10,10 brass
M 5	x	35	S	1000	13,00 brass
M 5	x	35	K	200	13,00 brass
M 5	x	40	S	500	13,90 brass
M 5	x	40	K	200	13,90 brass
M 5	x	45	K	200	15,10 brass
M 5	x	50	K	200	15,00 brass
M 5	x	60	K	200	20,00 brass
M 5	x	70	K	200	24,80 brass
M 6	x	8	K	200	10,00 brass
M 6	x	10	S	1000	8,10 brass
M 6	x	10	K	200	8,10 brass
M 6	x	12	S	1000	9,10 brass
M 6	x	12	K	200	9,10 brass
M 6	x	16	S	1000	10,40 brass
M 6	x	16	K	200	10,40 brass
M 6	x	18	K	200	17,30 brass
M 6	x	20	S	1000	11,50 brass
M 6	x	20	K	200	11,50 brass
M 6	x	25	S	1000	12,30 brass
M 6	x	25	K	200	12,30 brass
M 6	x	30	S	500	14,10 brass
M 6	x	30	K	200	14,10 brass
M 6	x	35	K	200	16,10 brass
M 6	x	40	K	200	17,40 brass
M 6	x	45	K	200	20,00 brass
M 6	x	50	K	200	20,90 brass
M 6	x	60	K	100	27,00 brass
M 6	x	70	K	100	31,00 brass
M 6	x	80	K	100	33,50 brass
M 8	x	10	K	100	26,50 brass
M 8	x	12	K	100	26,50 brass
M 8	x	16	K	100	22,90 brass
M 8	x	20	K	100	24,50 brass
M 8	x	25	K	100	25,50 brass
M 8	x	30	K	100	29,50 brass
M 8	x	35	K	100	31,50 brass
M 8	x	40	K	100	33,50 brass
M 8	x	45	K	100	39,00 brass
M 8	x	50	K	100	41,50 brass
M 8	x	60	K	100	49,50 brass
M 10	x	16	K	100	37,00 brass
M 10	x	20	K	100	36,00 brass
M 10	x	25	K	100	41,00 brass
M 10	x	30	K	100	44,50 brass
M 10	x	35	K	100	49,50 brass
M 10	x	40	K	100	55,00 brass
M 10	x	45	K	100	59,00 brass
M 10	x	50	K	100	63,00 brass

DIN	00084.730	RAZ 30
84	**Brass nickel plated**	



Slotted cheese head screws

Dimensions → TI-37 Standard conversion → TI-11

Steel → S. 61
Stainless → S. 429

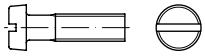
DIN 84 → replaced by ISO 1207 (compatible)

Dimensions			PU	Pieces	€/100/Mat.
M 2,5	x	6	K	200	3,85 brass Ni
M 2,5	x	8	K	200	3,55 brass Ni
M 2,5	x	10	K	200	3,70 brass Ni
M 2,5	x	16	K	200	4,45 brass Ni
M 3	x	6	K	200	3,05 brass Ni
M 3	x	8	K	200	3,05 brass Ni
M 3	x	10	K	200	3,15 brass Ni
M 3	x	12	K	200	3,35 brass Ni
M 3	x	16	K	200	3,75 brass Ni
M 3	x	20	K	200	4,20 brass Ni
M 3	x	25	K	200	4,65 brass Ni
M 3	x	30	K	200	5,70 brass Ni

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	6	K	200	4,00 brass Ni
M 4	x	8	K	200	4,25 brass Ni
M 4	x	10	K	200	4,45 brass Ni
M 4	x	12	K	200	4,55 brass Ni
M 4	x	16	K	200	5,40 brass Ni
M 4	x	20	K	200	6,30 brass Ni
M 4	x	25	K	200	6,70 brass Ni
M 4	x	30	K	200	7,90 brass Ni
M 4	x	40	K	200	9,60 brass Ni
M 5	x	10	K	200	6,70 brass Ni
M 5	x	16	K	200	8,00 brass Ni
M 5	x	20	K	200	8,80 brass Ni
M 5	x	30	K	200	11,40 brass Ni
M 6	x	10	K	200	9,20 brass Ni
M 6	x	16	K	200	11,70 brass Ni
M 6	x	20	K	200	12,60 brass Ni

DIN	00084.600	RAZ 30

84 Plastic PA



Slotted cheese head screws

Caution! Rough tolerances as per VDI 2544.

Nuts ➔ DIN 555

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

Steel ➔ S. 61
Stainless ➔ S. 429

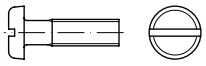
DIN 84 ➔ replaced by ISO 1207 (compatible)

M 2,5	x	6	S	200	8,20 plastic
M 2,5	x	10	S	200	8,20 plastic
M 2,5	x	16	S	200	8,50 plastic
M 3	x	4	S	200	5,80 plastic
M 3	x	5	S	200	5,80 plastic
M 3	x	6	S	200	5,80 plastic
M 3	x	8	S	200	5,80 plastic
M 3	x	10	S	200	5,90 plastic
M 3	x	12	S	200	5,90 plastic
M 3	x	16	S	200	6,10 plastic
M 3	x	20	S	200	6,40 plastic
M 3	x	25	S	200	6,60 plastic
M 3	x	30	S	200	6,80 plastic
M 4	x	6	S	200	6,00 plastic
M 4	x	8	S	200	6,10 plastic
M 4	x	10	S	200	6,30 plastic
M 4	x	12	S	200	6,50 plastic
M 4	x	16	S	200	6,60 plastic
M 4	x	20	S	200	6,90 plastic
M 4	x	25	S	200	7,20 plastic
M 4	x	30	S	200	7,70 plastic
M 4	x	35	S	200	8,10 plastic
M 4	x	40	S	200	8,30 plastic
M 5	x	6	S	200	6,80 plastic
M 5	x	8	S	200	6,90 plastic
M 5	x	10	S	200	7,20 plastic
M 5	x	12	S	200	7,20 plastic
M 5	x	16	S	200	7,90 plastic
M 5	x	20	S	200	9,20 plastic
M 5	x	25	S	200	9,60 plastic
M 5	x	30	S	200	10,30 plastic
M 5	x	35	S	200	11,00 plastic
M 5	x	40	S	200	11,60 plastic
M 5	x	50	S	200	12,90 plastic
M 6	x	8	S	200	18,60 plastic
M 6	x	10	S	200	8,20 plastic
M 6	x	12	S	200	8,30 plastic

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	16	S	200	8,70 plastic
M 6	x	20	S	200	9,60 plastic
M 6	x	25	S	200	10,40 plastic
M 6	x	30	S	200	12,60 plastic
M 6	x	35	S	200	13,20 plastic
M 6	x	40	S	200	13,60 plastic
M 6	x	45	S	200	14,00 plastic
M 6	x	50	S	200	14,40 plastic
M 6	x	60	S	100	15,70 plastic
M 6	x	70	S	100	16,60 plastic
M 8	x	16	S	200	17,30 plastic
M 8	x	20	S	200	18,90 plastic
M 8	x	25	S	200	20,10 plastic
M 8	x	30	S	200	21,60 plastic
M 8	x	40	S	100	23,90 plastic
M 8	x	50	S	100	25,50 plastic

DIN	00085.700	RAZ 30

85 Brass



Slotted pan head screws

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

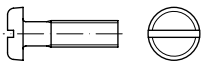
Steel ➔ S. 63
Stainless ➔ S. 431

DIN 85 ➔ replaced by ISO 1580 (compatible)

M 3	x	4	K	200	3,75 brass
M 3	x	5	K	200	3,45 brass
M 3	x	6	K	200	2,80 brass
M 3	x	8	K	200	2,85 brass
M 3	x	10	K	200	2,95 brass
M 3	x	12	K	200	3,15 brass
M 3	x	16	K	200	3,60 brass
M 3	x	20	K	200	4,10 brass
M 3	x	25	K	200	4,65 brass
M 3	x	30	K	200	5,70 brass
M 4	x	6	K	200	3,90 brass
M 4	x	8	K	200	4,15 brass
M 4	x	10	K	200	4,35 brass
M 4	x	12	K	200	4,35 brass
M 4	x	16	K	200	5,30 brass
M 4	x	20	K	200	6,20 brass
M 4	x	25	K	200	6,50 brass
M 4	x	30	K	200	7,70 brass
M 4	x	35	K	200	8,70 brass
M 4	x	40	K	200	9,40 brass
M 5	x	6	K	200	7,30 brass
M 5	x	8	K	200	6,40 brass
M 5	x	10	K	200	6,50 brass
M 5	x	12	K	200	6,70 brass
M 5	x	16	K	200	7,70 brass
M 5	x	20	K	200	8,50 brass
M 5	x	25	K	200	9,60 brass
M 5	x	30	K	200	11,00 brass
M 5	x	35	K	200	14,30 brass
M 5	x	40	K	200	15,00 brass
M 6	x	10	K	200	8,90 brass
M 6	x	12	K	200	10,00 brass
M 6	x	16	K	200	11,40 brass
M 6	x	20	K	200	12,70 brass
M 6	x	25	K	200	13,40 brass
M 6	x	30	K	200	15,50 brass
M 6	x	35	K	200	17,70 brass
M 6	x	40	K	200	19,20 brass

Dimensions			PU	Pieces	€/100/Mat.
DIN	00085.600				RAZ 30

85 Plastic PA



Slotted pan head screws

Caution! Rough tolerances as per VDI 2544.

Nuts ➔ DIN 555

Dimensions ➔ TI-37 Standard conversion ➔ TI-11

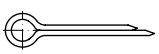
Steel ➔ S. 63
Stainless ➔ S. 431

DIN 85 ➔ replaced by ISO 1580 (compatible)

M 3	x	6	S	200	6,40 plastic
M 3	x	8	S	200	6,40 plastic
M 3	x	10	S	200	6,90 plastic
M 3	x	12	S	200	6,90 plastic
M 4	x	5	S	200	10,00 plastic
M 4	x	6	S	200	10,50 plastic
M 4	x	8	S	200	12,00 plastic
M 4	x	10	S	200	7,00 plastic
M 4	x	12	S	200	7,00 plastic
M 4	x	16	S	200	7,30 plastic
M 4	x	20	S	200	7,60 plastic
M 5	x	8	S	200	7,60 plastic
M 5	x	10	S	200	7,90 plastic
M 5	x	12	S	200	8,30 plastic
M 5	x	16	S	200	8,70 plastic
M 5	x	20	S	200	10,10 plastic
M 6	x	10	S	200	9,00 plastic
M 6	x	16	S	200	9,60 plastic
M 6	x	20	S	200	10,60 plastic
M 6	x	25	S	200	12,50 plastic
M 6	x	30	S	200	13,80 plastic

DIN	00094.700	RAZ 40

94 Brass



Split pins

Dimensions ➔ TI-120 Standard conversion ➔ TI-10

Steel ➔ S. 65
Stainless ➔ S. 432

DIN 94 ➔ replaced by ISO 1234

Nominal ∅ = drilling ∅ x length

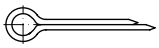
1,6	x	10	S	200	4,80 brass
1,6	x	12	S	200	4,80 brass
1,6	x	16	S	200	4,80 brass
1,6	x	20	S	200	4,95 brass
1,6	x	25	S	200	5,30 brass
2	x	10	S	100	5,80 brass
2	x	12	S	100	5,80 brass
2	x	16	S	100	5,80 brass
2	x	20	S	100	6,00 brass
2	x	25	S	100	6,40 brass
2	x	32	S	100	7,10 brass
2	x	40	S	100	7,80 brass
2	x	50	S	100	11,30 brass
3,2	x	16	S	100	8,40 brass

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
3,2	x	20	S	100	8,80 brass
3,2	x	25	S	100	9,80 brass
3,2	x	32	S	100	11,20 brass
3,2	x	36	S	100	11,90 brass
3,2	x	40	S	100	12,70 brass
3,2	x	50	S	100	14,70 brass
3,2	x	63	S	100	17,30 brass
4	x	20	S	100	12,40 brass
4	x	25	S	100	14,00 brass
4	x	32	S	100	16,20 brass
4	x	36	S	100	17,50 brass
4	x	40	S	100	18,80 brass
4	x	50	S	100	21,90 brass
4	x	63	S	100	26,00 brass
5	x	32	S	100	23,10 brass
5	x	36	S	100	24,90 brass
5	x	40	S	100	27,00 brass
5	x	50	S	100	31,50 brass
5	x	63	S	100	38,50 brass
6,3	x	50	S	100	46,50 brass
6,3	x	63	S	50	58,00 brass
6,3	x	100	S	50	84,00 brass

DIN 94 | 00094.301 | RAZ 40

Copper



Split pins

Dimensions → TI-120 Standard conversion → TI-10

Steel → S. 65
Stainless → S. 432

DIN 94 → replaced by ISO 1234

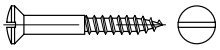
Nominal ∅ = drilling ∅ x length

2	x	16	S	100	5,80 Cu
2	x	20	S	100	6,00 Cu
2	x	25	S	100	6,50 Cu
2	x	40	S	100	7,80 Cu
3,2	x	20	S	100	9,00 Cu
3,2	x	25	S	100	10,00 Cu
3,2	x	32	S	100	11,40 Cu
3,2	x	36	S	100	12,20 Cu
3,2	x	40	S	100	13,00 Cu
3,2	x	50	S	100	15,10 Cu
4	x	25	S	100	14,50 Cu
4	x	32	S	100	16,80 Cu
4	x	36	S	100	18,10 Cu
4	x	40	S	100	19,50 Cu
4	x	50	S	100	22,80 Cu
4	x	63	S	100	27,50 Cu
5	x	32	S	100	24,20 Cu
5	x	36	S	100	26,50 Cu
5	x	40	S	100	28,50 Cu
5	x	50	S	100	33,50 Cu
5	x	63	S	100	40,50 Cu
5	x	71	S	100	44,50 Cu
5	x	80	S	100	48,50 Cu
6,3	x	50	S	100	46,00 Cu
6,3	x	63	S	50	56,00 Cu
6,3	x	80	S	50	68,00 Cu

Dimensions			PU	Pieces	€/100/Mat.
1,6	x	10	S	500	2,20 brass
1,6	x	12	S	500	2,20 brass
2	x	8	S	500	2,25 brass
2	x	10	S	500	2,20 brass
2	x	12	S	500	2,15 brass
2	x	16	S	500	2,55 brass
2	x	20	S	500	2,65 brass
2,5	x	10	S	500	2,10 brass
2,5	x	12	S	500	2,10 brass
2,5	x	16	S	500	2,15 brass
2,5	x	20	S	500	2,35 brass
2,5	x	25	S	500	3,15 brass
3	x	10	S	200	2,05 brass
3	x	12	S	200	2,05 brass
3	x	16	S	200	1,75 brass
3	x	20	S	200	1,95 brass
3	x	25	S	200	2,20 brass
3	x	30	S	200	2,60 brass
3	x	35	S	200	3,50 brass
3	x	40	S	200	4,65 brass
3,5	x	10	S	200	3,05 brass
3,5	x	12	S	200	2,95 brass
3,5	x	16	S	200	1,90 brass
3,5	x	20	S	200	2,10 brass
3,5	x	25	S	200	2,55 brass
3,5	x	30	S	200	3,05 brass
3,5	x	35	S	200	3,50 brass
3,5	x	40	S	200	4,65 brass
3,5	x	45	S	200	5,60 brass
3,5	x	50	S	200	6,80 brass
4	x	12	S	200	4,00 brass
4	x	16	S	200	2,90 brass
4	x	20	S	200	2,80 brass
4	x	25	S	200	3,10 brass
4	x	30	S	200	3,55 brass
4	x	35	S	200	4,00 brass
4	x	40	S	200	4,50 brass
4	x	45	S	200	5,20 brass
4	x	50	S	200	6,15 brass
4	x	55	S	200	10,25 brass
4	x	60	S	200	9,25 brass
4,5	x	16	S	200	5,75 brass
4,5	x	20	S	200	4,15 brass
4,5	x	25	S	200	4,15 brass
4,5	x	30	S	200	5,10 brass
4,5	x	35	S	200	5,30 brass
4,5	x	40	S	200	5,50 brass
4,5	x	45	S	200	6,20 brass
4,5	x	50	S	200	7,10 brass
4,5	x	60	S	200	9,25 brass
4,5	x	70	S	200	19,95 brass
5	x	16	S	200	8,80 brass
5	x	20	S	200	6,30 brass
5	x	25	S	200	6,35 brass
5	x	30	S	200	6,35 brass
5	x	35	S	200	7,00 brass
5	x	40	S	200	7,40 brass

DIN 95 | 00095.700 | RAZ 50

Brass



Slotted raised countersunk head wood screws

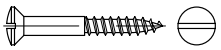
Dimensions → TI-51

Steel → S. 66
Stainless → S. 433

Dimensions			PU	Pieces	€/100/Mat.
5	x	45	S	200	7,60 brass
5	x	50	S	200	8,40 brass
5	x	55	S	200	11,10 brass
5	x	60	S	200	10,05 brass
5	x	70	S	200	12,80 brass
5	x	80	S	200	19,95 brass
5	x	90	S	200	27,10 brass
5	x	100	S	200	28,15 brass
6	x	20	S	200	13,35 brass
6	x	25	S	200	13,35 brass
6	x	30	S	200	13,15 brass
6	x	35	S	200	13,40 brass
6	x	40	S	200	12,80 brass
6	x	50	S	200	12,95 brass
6	x	60	S	100	14,50 brass
6	x	70	S	100	19,95 brass
6	x	80	S	100	22,50 brass
6	x	90	S	100	24,80 brass
6	x	100	S	100	24,80 brass
8	x	50	S	100	41,95 brass

DIN 95 | 00095.730 | RAZ 50

Brass nickel plated



Slotted raised countersunk head wood screws

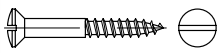
Dimensions → TI-51

Steel → S. 66
Stainless → S. 433

1,6	x	10	S	500	2,65 brass Ni
1,6	x	12	S	500	2,65 brass Ni
2	x	10	S	500	2,55 brass Ni
2	x	12	S	500	2,50 brass Ni
2	x	16	S	500	3,05 brass Ni
2,5	x	10	S	500	2,65 brass Ni
2,5	x	12	S	500	2,60 brass Ni
2,5	x	16	S	500	2,70 brass Ni
2,5	x	20	S	500	3,05 brass Ni
2,5	x	25	S	500	3,75 brass Ni
3	x	10	S	200	2,40 brass Ni
3	x	12	S	200	2,45 brass Ni
3	x	16	S	200	2,15 brass Ni
3	x	20	S	200	2,40 brass Ni
3	x	25	S	200	2,80 brass Ni
3	x	30	S	200	3,55 brass Ni
3	x	35	S	200	4,30 brass Ni
3	x	40	S	200	5,60 brass Ni
3,5	x	12	S	200	3,35 brass Ni
3,5	x	16	S	200	2,35 brass Ni
3,5	x	20	S	200	2,60 brass Ni
3,5	x	25	S	200	3,20 brass Ni
3,5	x	30	S	200	3,75 brass Ni
3,5	x	35	S	200	4,35 brass Ni
3,5	x	40	S	200	5,65 brass Ni
4	x	12	S	200	4,55 brass Ni
4	x	16	S	200	3,35 brass Ni
4	x	20	S	200	3,40 brass Ni
4	x	25	S	200	3,80 brass Ni
4	x	30	S	200	4,35 brass Ni
4	x	35	S	200	4,90 brass Ni
4	x	40	S	200	5,50 brass Ni
4	x	45	S	200	6,30 brass Ni
4	x	50	S	200	7,40 brass Ni
4	x	60	S	200	10,85 brass Ni
4	x	70	S	200	19,70 brass Ni

Dimensions			PU	Pieces	€/100/Mat.
4,5	x	16	S	200	5,05 brass Ni
4,5	x	20	S	200	4,85 brass Ni
4,5	x	25	S	200	4,95 brass Ni
4,5	x	30	S	200	6,10 brass Ni
4,5	x	35	S	200	6,40 brass Ni
4,5	x	40	S	200	6,70 brass Ni
4,5	x	45	S	200	7,60 brass Ni
4,5	x	50	S	200	8,65 brass Ni
4,5	x	60	S	200	11,15 brass Ni
5	x	20	S	200	7,15 brass Ni
5	x	25	S	200	7,40 brass Ni
5	x	30	S	200	7,40 brass Ni
5	x	35	S	200	8,40 brass Ni
5	x	40	S	200	8,90 brass Ni
5	x	45	S	200	9,25 brass Ni
5	x	50	S	200	10,25 brass Ni
5	x	60	S	200	12,30 brass Ni
5	x	70	S	200	15,60 brass Ni
5	x	80	S	200	27,10 brass Ni
6	x	40	S	200	15,15 brass Ni
6	x	50	S	200	15,85 brass Ni
6	x	60	S	100	17,90 brass Ni
6	x	70	S	100	23,80 brass Ni
6	x	80	S	100	27,90 brass Ni
6	x	90	S	100	29,65 brass Ni
6	x	100	S	100	30,20 brass Ni

DIN	00095.740	RAZ 50
95	**Brass chrome plated**	



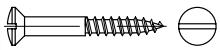
Slotted raised countersunk head wood screws

Dimensions → TI-51

Steel → S. 66
Stainless → S. 433

3	x	12	S	200	2,80 brass Cr
3	x	16	S	200	2,60 brass Cr
3	x	20	S	200	2,95 brass Cr
3	x	25	S	200	3,40 brass Cr
3	x	30	S	200	4,35 brass Cr
3	x	35	S	200	5,20 brass Cr
3	x	40	S	200	6,60 brass Cr
3,5	x	12	S	200	3,85 brass Cr
3,5	x	16	S	200	2,95 brass Cr
3,5	x	20	S	200	3,35 brass Cr
3,5	x	25	S	200	4,05 brass Cr
3,5	x	30	S	200	4,55 brass Cr
3,5	x	35	S	200	5,55 brass Cr
3,5	x	40	S	200	6,95 brass Cr
3,5	x	45	S	200	8,00 brass Cr
3,5	x	50	S	200	9,45 brass Cr
4	x	16	S	200	4,15 brass Cr
4	x	20	S	200	4,30 brass Cr
4	x	25	S	200	4,80 brass Cr
4	x	30	S	200	5,60 brass Cr
4	x	35	S	200	6,35 brass Cr
4	x	40	S	200	7,05 brass Cr
4	x	45	S	200	8,05 brass Cr
4	x	50	S	200	9,30 brass Cr
4	x	60	S	200	13,25 brass Cr
4,5	x	16	S	200	6,00 brass Cr
4,5	x	20	S	200	6,00 brass Cr
4,5	x	25	S	200	6,25 brass Cr
4,5	x	30	S	200	7,65 brass Cr
4,5	x	35	S	200	8,15 brass Cr
4,5	x	40	S	200	8,65 brass Cr
4,5	x	45	S	200	9,75 brass Cr
4,5	x	50	S	200	11,05 brass Cr
4,5	x	60	S	200	14,00 brass Cr
4,5	x	70	S	200	26,35 brass Cr
5	x	20	S	200	8,65 brass Cr
5	x	25	S	200	8,95 brass Cr
5	x	30	S	200	9,45 brass Cr
5	x	35	S	200	10,50 brass Cr
5	x	40	S	200	11,30 brass Cr
5	x	45	S	200	11,95 brass Cr
5	x	50	S	200	13,20 brass Cr
5	x	60	S	200	15,85 brass Cr
5	x	70	S	200	19,70 brass Cr
6	x	30	S	200	18,40 brass Cr
6	x	35	S	200	18,95 brass Cr
6	x	40	S	200	18,95 brass Cr
6	x	45	S	200	19,45 brass Cr
6	x	50	S	200	19,95 brass Cr
6	x	60	S	100	23,00 brass Cr
6	x	70	S	100	29,95 brass Cr
6	x	80	S	100	34,80 brass Cr
6	x	90	S	100	37,35 brass Cr
6	x	100	S	100	38,35 brass Cr

DIN	00095.750	RAZ 50
95	**Brass browned**	



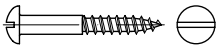
Slotted raised countersunk head wood screws

Dimensions → TI-51

Steel → S. 66
Stainless → S. 433

3	x	16	S	200	2,40 brass br
3	x	20	S	200	2,70 brass br
3	x	25	S	200	3,10 brass br
3	x	30	S	200	4,00 brass br
3	x	35	S	200	5,05 brass br
3	x	40	S	200	6,45 brass br
3,5	x	16	S	200	2,60 brass br
3,5	x	20	S	200	2,95 brass br
3,5	x	25	S	200	3,55 brass br
3,5	x	30	S	200	4,25 brass br
3,5	x	35	S	200	4,85 brass br
3,5	x	40	S	200	6,30 brass br
4	x	16	S	200	4,05 brass br
4	x	20	S	200	3,80 brass br
4	x	25	S	200	4,25 brass br
4	x	30	S	200	4,90 brass br
4	x	35	S	200	5,55 brass br
4	x	40	S	200	6,20 brass br
4	x	45	S	200	8,20 brass br
4	x	50	S	200	8,30 brass br
4,5	x	45	S	200	9,90 brass br
4,5	x	50	S	200	11,25 brass br
4,5	x	60	S	200	14,25 brass br

Dimensions			PU	Pieces	€/100/Mat.
DIN	00096.700				RAZ 50
96	**Brass**				



Slotted round head wood screws

Dimensions → TI-51

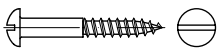
Steel → S. 66
Stainless → S. 434

1,6	x	8	S	500	2,40 brass
1,6	x	10	S	500	2,40 brass
1,6	x	12	S	500	2,40 brass
1,6	x	16	S	500	2,90 brass
2	x	8	S	500	2,45 brass
2	x	10	S	500	2,45 brass
2	x	12	S	500	2,45 brass
2	x	16	S	500	2,85 brass
2	x	20	S	500	3,20 brass
2,5	x	8	S	500	2,55 brass
2,5	x	10	S	500	2,30 brass
2,5	x	12	S	500	2,30 brass
2,5	x	16	S	500	2,75 brass
2,5	x	20	S	500	3,10 brass
2,5	x	25	S	500	4,15 brass
3	x	8	S	200	2,55 brass
3	x	10	S	200	2,50 brass
3	x	12	S	200	2,50 brass
3	x	16	S	200	2,15 brass
3	x	20	S	200	2,30 brass
3	x	25	S	200	2,90 brass
3	x	30	S	200	3,35 brass
3	x	35	S	200	4,85 brass
3	x	40	S	200	6,70 brass
3,5	x	10	S	200	3,00 brass
3,5	x	12	S	200	3,05 brass
3,5	x	16	S	200	2,50 brass
3,5	x	20	S	200	2,50 brass
3,5	x	25	S	200	3,00 brass
3,5	x	30	S	200	3,45 brass
3,5	x	35	S	200	4,60 brass
3,5	x	40	S	200	5,15 brass
3,5	x	45	S	200	11,45 brass
3,5	x	50	S	200	12,60 brass
4	x	10	S	200	3,60 brass
4	x	12	S	200	3,60 brass
4	x	16	S	200	3,00 brass
4	x	20	S	200	3,00 brass
4	x	25	S	200	3,40 brass
4	x	30	S	200	3,95 brass
4	x	35	S	200	5,35 brass
4	x	40	S	200	5,95 brass
4	x	45	S	200	6,85 brass
4	x	50	S	200	6,65 brass
4	x	60	S	200	14,20 brass
4,5	x	16	S	200	6,25 brass
4,5	x	20	S	200	6,10 brass
4,5	x	25	S	200	4,55 brass
4,5	x	30	S	200	5,55 brass
4,5	x	35	S	200	5,85 brass
4,5	x	40	S	200	7,15 brass
4,5	x	45	S	200	7,60 brass
4,5	x	50	S	200	9,55 brass
4,5	x	60	S	200	14,90 brass
5	x	12	S	200	7,15 brass
5	x	16	S	200	7,15 brass
5	x	20	S	200	6,95 brass
5	x	25	S	200	6,95 brass

Dimensions			PU	Pieces	€/100/Mat.
5	x	30	S	200	6,95 brass
5	x	35	S	200	7,75 brass
5	x	40	S	200	8,30 brass
5	x	45	S	200	9,55 brass
5	x	50	S	200	10,30 brass
5	x	60	S	200	13,55 brass
5	x	70	S	200	14,40 brass
5	x	80	S	200	24,30 brass
6	x	20	S	200	13,20 brass
6	x	25	S	200	13,20 brass
6	x	30	S	200	13,15 brass
6	x	35	S	200	13,50 brass
6	x	40	S	200	12,80 brass
6	x	45	S	200	14,35 brass
6	x	50	S	200	14,35 brass
6	x	60	S	100	19,20 brass
6	x	70	S	100	22,50 brass
6	x	80	S	100	26,10 brass
6	x	100	S	100	44,00 brass

DIN 00096.730 RAZ 50

96 Brass nickel plated



Slotted round head wood screws

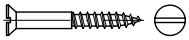
Dimensions → TI-51

Steel → S. 66
Stainless → S. 434

2	x	10	S	500	3,05 brass Ni
2,5	x	12	S	500	3,05 brass Ni
2,5	x	16	S	500	3,65 brass Ni
3	x	16	S	200	2,80 brass Ni
3	x	20	S	200	3,00 brass Ni
3	x	25	S	200	3,75 brass Ni
3,5	x	16	S	200	3,30 brass Ni
3,5	x	20	S	200	3,45 brass Ni
3,5	x	25	S	200	4,10 brass Ni
4	x	16	S	200	4,10 brass Ni
4	x	20	S	200	4,30 brass Ni
4	x	25	S	200	4,85 brass Ni
4	x	30	S	200	5,65 brass Ni
4	x	35	S	200	7,20 brass Ni
4	x	40	S	200	8,05 brass Ni

DIN 00097.700 RAZ 50

97 Brass



Slotted countersunk head wood screws

Dimensions → TI-51

Steel → S. 66
Stainless → S. 434

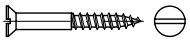
1,6	x	8	S	500	2,20 brass
1,6	x	10	S	500	2,20 brass
1,6	x	12	S	500	2,20 brass
1,6	x	16	S	500	2,65 brass
2	x	8	S	500	2,20 brass
2	x	10	S	500	2,20 brass

Dimensions			PU	Pieces	€/100/Mat.
2	x	12	S	500	2,15 brass
2	x	16	S	500	2,55 brass
2	x	20	S	500	2,65 brass
2,5	x	8	S	500	2,05 brass
2,5	x	10	S	500	2,10 brass
2,5	x	12	S	500	2,10 brass
2,5	x	16	S	500	2,15 brass
2,5	x	20	S	500	2,35 brass
2,5	x	25	S	500	3,15 brass
2,5	x	30	S	500	3,65 brass
3	x	8	S	200	2,95 brass
3	x	10	S	200	2,05 brass
3	x	12	S	200	2,05 brass
3	x	16	S	200	1,75 brass
3	x	20	S	200	1,95 brass
3	x	25	S	200	2,20 brass
3	x	30	S	200	2,60 brass
3	x	35	S	200	3,50 brass
3	x	40	S	200	4,65 brass
3	x	45	S	200	5,50 brass
3	x	50	S	200	6,70 brass
3,5	x	10	S	200	2,85 brass
3,5	x	12	S	200	2,95 brass
3,5	x	16	S	200	1,90 brass
3,5	x	20	S	200	2,10 brass
3,5	x	25	S	200	2,55 brass
3,5	x	30	S	200	3,05 brass
3,5	x	35	S	200	3,50 brass
3,5	x	40	S	200	4,65 brass
3,5	x	45	S	200	5,60 brass
3,5	x	50	S	200	6,80 brass
4	x	10	S	200	4,00 brass
4	x	12	S	200	4,05 brass
4	x	16	S	200	2,90 brass
4	x	20	S	200	2,80 brass
4	x	25	S	200	3,10 brass
4	x	30	S	200	3,55 brass
4	x	35	S	200	4,05 brass
4	x	40	S	200	4,50 brass
4	x	45	S	200	5,20 brass
4	x	50	S	200	6,15 brass
4	x	60	S	200	9,25 brass
4,5	x	16	S	200	5,75 brass
4,5	x	20	S	200	4,15 brass
4,5	x	25	S	200	4,15 brass
4,5	x	30	S	200	5,10 brass
4,5	x	35	S	200	5,30 brass
4,5	x	40	S	200	5,50 brass
4,5	x	45	S	200	6,20 brass
4,5	x	50	S	200	7,10 brass
4,5	x	60	S	200	9,25 brass
5	x	16	S	200	8,80 brass
5	x	20	S	200	6,30 brass
5	x	25	S	200	6,35 brass
5	x	30	S	200	6,35 brass
5	x	35	S	200	7,00 brass
5	x	40	S	200	7,40 brass
5	x	45	S	200	7,60 brass
5	x	50	S	200	8,40 brass
5	x	55	S	200	10,80 brass
5	x	60	S	200	10,05 brass
5	x	70	S	200	12,80 brass
5	x	80	S	200	19,95 brass
5	x	90	S	200	27,10 brass
5	x	100	S	200	28,15 brass
5,5	x	35	S	200	10,35 brass
5,5	x	40	S	200	10,10 brass
5,5	x	45	S	200	10,30 brass
5,5	x	50	S	200	10,70 brass
5,5	x	60	S	100	12,25 brass
6	x	20	S	200	13,35 brass
6	x	25	S	200	12,95 brass
6	x	30	S	200	13,15 brass
6	x	35	S	200	13,40 brass
6	x	40	S	200	12,80 brass

Dimensions			PU	Pieces	€/100/Mat.
6	x	45	S	200	12,95 brass
6	x	50	S	200	12,95 brass
6	x	60	S	100	14,50 brass
6	x	70	S	100	19,95 brass
6	x	80	S	100	22,50 brass
6	x	90	S	100	24,80 brass
6	x	100	S	100	24,80 brass
8	x	50	S	100	41,95 brass
8	x	60	S	100	43,45 brass
8	x	70	S	100	46,10 brass
8	x	80	S	100	63,40 brass
8	x	100	S	100	79,25 brass

DIN 00097.730 RAZ 50

97 Brass nickel plated



Slotted countersunk head wood screws

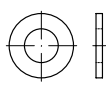
Dimensions → TI-51

Steel → S. 66
Stainless → S. 434

2,5	x	12	S	200	2,75 brass Ni
2,5	x	16	S	200	2,85 brass Ni
2,5	x	20	S	200	3,15 brass Ni
3	x	10	S	200	2,40 brass Ni
3	x	12	S	200	2,45 brass Ni
3	x	16	S	200	2,15 brass Ni
3	x	20	S	200	2,40 brass Ni
3	x	25	S	200	2,75 brass Ni
3	x	30	S	200	3,55 brass Ni
3,5	x	16	S	200	2,30 brass Ni
3,5	x	20	S	200	2,60 brass Ni
3,5	x	25	S	200	3,15 brass Ni
3,5	x	30	S	200	3,75 brass Ni
4	x	20	S	200	3,40 brass Ni
4	x	25	S	200	3,95 brass Ni
4	x	30	S	200	4,55 brass Ni
4	x	35	S	200	5,15 brass Ni
4	x	40	S	200	5,75 brass Ni
4	x	50	S	200	7,70 brass Ni
5	x	40	S	200	9,30 brass Ni
5	x	50	S	200	10,70 brass Ni

DIN 00125.701 RAZ 90

125-1 Brass type A



Plain washers, A = without chamfer*

*From 10,5 ∅ type B with chamfers

Dimensions → TI-84

Steel → S. 67
Stainless → S. 435

DIN 125-1 type A → replaced by ISO 7089

Inside ∅	x	outside ∅	x	thickness			
2,2	x	5	x	0,3	S	1000	0,99 brass
2,2	x	5	x	0,3	K	100	3,10 brass
2,5	x	6	x	0,5	S	1000	0,99 brass

Dimensions						PU	Pieces	€/100/Mat.
2,5	x	6	x	0,5		K	100	3,10 brass
2,7	x	6	x	0,5		S	1000	0,99 brass
2,7	x	6	x	0,5		K	100	3,10 brass
2,8	x	7	x	0,5		S	1000	0,99 brass
3,2	x	7	x	0,5		S	1000	0,69 brass
3,2	x	7	x	0,5		K	100	2,80 brass
3,7	x	8	x	0,5		K	100	3,40 brass
4,3	x	9	x	0,8		S	1000	1,30 brass
4,3	x	9	x	0,8		K	100	3,40 brass
5,3	x	10	x	1		S	1000	1,55 brass
5,3	x	10	x	1		K	100	3,60 brass
6,4	x	12	x	1,6		S	1000	3,35 brass
6,4	x	12	x	1,6		K	100	5,40 brass
8,4	x	16	x	1,6		S	1000	6,40 brass
8,4	x	16	x	1,6		K	100	9,40 brass
10,5	x	20	x	2		S	500	15,60 brass
10,5	x	20	x	2		K	100	20,10 brass
13	x	24	x	2,5		S	500	17,80 brass
13	x	24	x	2,5		K	100	21,10 brass
15	x	28	x	2,5		S	250	24,60 brass
15	x	28	x	2,5		K	100	28,50 brass
17	x	30	x	3		S	250	32,00 brass
17	x	30	x	3		K	100	35,00 brass
19	x	34	x	3		S	50	51,00 brass
21	x	37	x	3		S	50	53,00 brass
23	x	39	x	3		S	25	109,00 brass
25	x	44	x	4		S	25	146,00 brass
28	x	50	x	4		S	25	175,00 brass
31	x	56	x	4		S	25	218,00 brass
33	x	60	x	5		S	25	310,00 brass
37	x	66	x	5		S	1	500,00 brass
40	x	72	x	6		S	1	770,00 brass
43	x	78	x	7		S	1	1020,00 brass
46	x	85	x	7		S	1	1350,00 brass
50	x	92	x	8		S	1	1390,00 brass

DIN 00125.731 RAZ 90

125-1 Brass nickel plated type A

Plain washers, A = without chamfer

Dimensions → TI-84

Steel → S. 67
Stainless → S. 435

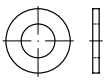
DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness

3,2	x	7	x	0,5		S	1000	1,03 brass Ni
4,3	x	9	x	0,8		S	1000	2,00 brass Ni
5,3	x	10	x	1		S	1000	2,40 brass Ni
6,4	x	12	x	1,6		S	1000	5,30 brass Ni
8,4	x	16	x	1,6		S	1000	10,00 brass Ni

DIN 00125.741 RAZ 90

125-1 Brass chrome plated type A



Plain washers, A = without chamfer

Dimensions → TI-84

Steel → S. 67
Stainless → S. 435

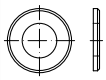
DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness

3,2	x	7	x	0,5		S	100	5,30 brass Cr
4,3	x	9	x	0,8		S	100	5,70 brass Cr
5,3	x	10	x	1		S	100	7,50 brass Cr
6,4	x	12	x	1,6		S	100	8,70 brass Cr
8,4	x	16	x	1,6		S	100	12,20 brass Cr

DIN 00125.704 RAZ 90

125-1 Brass turned type B



Plain washers, B = with chamfers

Dimensions → TI-84

Steel → S. 69
Stainless → S. 435

DIN 125-1 type B → replaced by ISO 7090

Inside ∅ x outside ∅ x thickness

1,1	x	3	x	0,3		S	100	10,80 brass turned
1,3	x	3,5	x	0,3		S	100	10,80 brass turned
1,5	x	4	x	0,3		S	100	10,80 brass turned
1,7	x	4	x	0,3		S	100	10,40 brass turned
2,2	x	5	x	0,3		S	100	10,40 brass turned
2,7	x	6	x	0,5		S	100	10,40 brass turned
3,2	x	7	x	0,5		S	100	11,20 brass turned
4,3	x	9	x	0,8		S	100	13,40 brass turned
5,3	x	10	x	1		S	100	14,70 brass turned
6,4	x	12	x	1,6		S	100	19,40 brass turned
8,4	x	16	x	1,6		S	100	24,00 brass turned
10,5	x	20	x	2		S	100	28,10 brass turned

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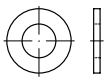
- Flexible exchangeable labels with product illustration

DIN 00125.300 RAZ 90

125-1 Copper type A



Plain washers, A = without chamfer

Dimensions → TI-84

Steel → S. 67
Stainless → S. 435

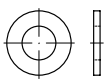
DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness

5,3	x	10	x	1		S	100	14,40 Cu
6,4	x	12	x	1,6		S	100	22,70 Cu
8,4	x	16	x	1,6		S	100	34,00 Cu
10,5	x	20	x	2		S	100	57,00 Cu
13	x	24	x	2,5		S	100	84,00 Cu
17	x	30	x	3		S	100	152,00 Cu

DIN 00125.301 RAZ 90

125-1 Aluminium type A



Plain washers, A = without chamfer

Dimensions → TI-84

Steel → S. 67
Stainless → S. 435

DIN 125-1 type A → replaced by ISO 7089

Inside ∅ x outside ∅ x thickness

3,2	x	7	x	0,5		K	500	1,65 Al
4,3	x	9	x	0,8		S	1000	2,45 Al
4,3	x	9	x	0,8		K	100	3,70 Al
5,3	x	10	x	1		S	1000	2,90 Al
5,3	x	10	x	1		K	100	4,10 Al
6,4	x	12	x	1,6		S	1000	4,50 Al
6,4	x	12	x	1,6		K	100	5,80 Al
8,4	x	16	x	1,6		S	500	5,70 Al
8,4	x	16	x	1,6		K	100	6,90 Al
10,5	x	20	x	2		S	500	9,00 Al
10,5	x	20	x	2		K	100	10,70 Al
13	x	24	x	2,5		S	100	17,40 Al
17	x	30	x	3		S	50	39,00 Al

Dimensions						PU	Pieces	€/100/Mat.
DIN		00125.601						RAZ 90
125-1		**Plastic PA**						**type A**

Plain washers,
A = without chamfer

Product grade C acc. to ISO 4759-3

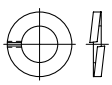
Dimensions → TI-84

Steel → S. 67
Stainless → S. 435

Mostly identical to DIN 34815

Inside ∅	x	outside ∅	x	thickness			
2,2	x	5	x	0,3	S	1000	7,50 plastic
2,7	x	6	x	0,5	S	1000	6,10 plastic
3,2	x	7	x	0,5	S	1000	2,55 plastic
3,2	x	7	x	0,5	K	200	4,20 plastic
4,3	x	9	x	0,8	S	1000	2,55 plastic
4,3	x	9	x	0,8	K	200	4,20 plastic
5,3	x	10	x	1	S	1000	3,25 plastic
5,3	x	10	x	1	K	200	5,00 plastic
6,4	x	12	x	1,6	S	1000	4,00 plastic
6,4	x	12	x	1,6	K	200	5,80 plastic
8,4	x	16	x	1,6	S	1000	5,30 plastic
8,4	x	16	x	1,6	K	200	7,30 plastic
10,5	x	20	x	2	S	500	8,20 plastic
10,5	x	20	x	2	K	200	10,60 plastic
13	x	24	x	2,5	S	500	11,50 plastic
13	x	24	x	2,5	K	100	13,40 plastic
17	x	30	x	3	S	250	15,20 plastic
17	x	30	x	3	K	100	17,20 plastic
21	x	37	x	3	S	100	24,00 plastic
23	x	39	x	3	S	100	60,00 plastic
25	x	44	x	4	S	100	65,00 plastic
28	x	50	x	4	S	50	114,00 plastic
31	x	56	x	4	S	50	130,00 plastic
34	x	60	x	5	S	50	150,00 plastic

DIN	00127.702	RAZ 110
127	**Bronze**	**type B**



Spring lock washers,
B = flat end

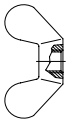
Caution! Reduced spring load.

Dimensions → TI-88

Spring steel → S. 71
Stainless → S. 436

B 3	S	1000	2,05 bronze
B 4	S	1000	2,65 bronze
B 5	S	1000	3,80 bronze
B 6	S	1000	6,20 bronze
B 8	S	500	15,41 bronze
B 10	S	500	16,50 bronze
B 12	S	500	25,00 bronze

Dimensions			PU	Pieces	€/100/Mat.
DIN	00315.700				RAZ 130
315	**Brass**				



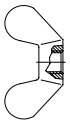
Wing nuts, rounded wings,
product grade C (g)

Dimensions → TI-70

Malleable cast iron → S. 75
Stainless → S. 438

M 3	S	100	16,50 brass
M 4	S	100	16,50 brass
M 5	S	100	20,40 brass
M 6	S	100	31,00 brass
M 8	S	100	54,00 brass
M 10	S	100	90,00 brass
M 12	S	50	160,00 brass
M 16	S	10	275,00 brass
M 20	S	1	660,00 brass

DIN	00315.730	RAZ 130
315	**Brass nickel plated**	



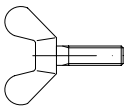
Wing nuts, rounded wings,
product grade C (g)

Dimensions → TI-70

Malleable cast iron → S. 75
Stainless → S. 438

M 6	S	100	35,50 NP
M 8	S	100	63,00 NP
M 10	S	100	109,00 NP

DIN	00316.700	RAZ 130
316	**Brass**	



Wing screws, rounded wings,
product grade C (g)

Dimensions → TI-29

Malleable cast iron → S. 75
Stainless → S. 439

M 4	x	10	S	100	37,00 brass
M 4	x	12	S	100	38,50 brass
M 4	x	16	S	100	42,50 brass
M 4	x	20	S	100	45,50 brass
M 5	x	10	S	100	41,00 brass
M 5	x	16	S	100	47,00 brass
M 5	x	20	S	100	57,00 brass
M 5	x	25	S	100	60,00 brass
M 5	x	30	S	100	65,00 brass
M 6	x	10	S	100	63,00 brass
M 6	x	12	S	100	66,00 brass
M 6	x	16	S	100	71,00 brass
M 6	x	20	S	100	79,00 brass
M 6	x	25	S	100	83,00 brass
M 6	x	30	S	100	92,00 brass
M 6	x	40	S	100	107,00 brass
M 8	x	10	S	50	95,00 brass
M 8	x	12	S	50	100,00 brass
M 8	x	16	S	50	103,00 brass
M 8	x	20	S	50	116,00 brass
M 8	x	25	S	50	125,00 brass
M 8	x	30	S	50	131,00 brass
M 8	x	40	S	50	155,00 brass
M 8	x	50	S	50	180,00 brass
M 10	x	16	S	25	188,00 brass
M 10	x	20	S	25	198,00 brass
M 10	x	25	S	25	205,00 brass
M 10	x	30	S	25	209,00 brass
M 10	x	35	S	25	222,00 brass
M 10	x	40	S	25	233,00 brass
M 10	x	50	S	25	270,00 brass
M 12	x	30	S	10	370,00 brass
M 12	x	40	S	10	395,00 brass
M 12	x	50	S	10	415,00 brass

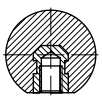
DIN	00319.633	RAZ 131
319	**Plastic black**	**type C**

Ball knobs,
C = with internal thread
(without bush insert)

Dimensions → TI-123

Ball ∅	- internal thread			
16	M 4	S	25	77,00 plastic
20	M 5	S	25	83,00 plastic
25	M 6	S	25	97,00 plastic
32	M 8	S	10	142,00 plastic
40	M 10	S	10	226,00 plastic
50	M 12	S	10	385,00 plastic

DIN	00319.644	RAZ 131
319	**Plastic black**	**type E-St**

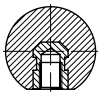


Ball knobs,
E = with threaded bush steel, ZP

Dimensions → TI-123

Ball ∅	- internal thread			
16	M 4	S	25	119,00 plastic
20	M 5	S	25	122,00 plastic
25	M 6	S	25	154,00 plastic
32	M 8	S	10	260,00 plastic
40	M 10	S	10	360,00 plastic
50	M 12	S	10	580,00 plastic

Dimensions	PU	Pieces	€/100/Mat.
DIN	00319.634		RAZ 131
319	**Plastic black**		**type E-brass**



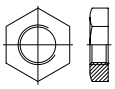
Ball knobs, E = with threaded bush brass

Dimensions → TI-123

Ball ∅ - internal thread

16	M 4	S	25	120,00 plastic
20	M 5	S	25	139,00 plastic
25	M 6	S	25	164,00 plastic
32	M 8	S	10	290,00 plastic
40	M 10	S	10	385,00 plastic
50	M 12	S	10	640,00 plastic

DIN	00431.702	RAZ 140
431	**Brass**	**type B**



Pipe nuts with inch pipe thread G, B = thread one-sided countersunk

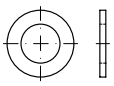
Dimensions → TI-59 Mech. properties → TI-227

Steel → S. 77
Stainless → S. 439

Nuts with wrench sizes acc. to ISO on request

BG	1/4 SW22	S	50	89,00 brass
BG	3/8	S	50	109,00 brass
BG	1/2 SW32	S	50	159,00 brass
BG	3/4	S	25	255,00 brass
BG	1	S	10	435,00 brass
BG	1 1/4	S	10	710,00 brass
BG	1 1/2	S	10	940,00 brass

DIN	00433.700	RAZ 140
433-1	**Brass**	



Washers

Primarily for cheese head screws

Dimensions → TI-84

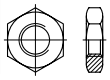
Steel → S. 78
Stainless → S. 440

DIN 433 → replaced by ISO 7092

Inside ∅ x outside ∅ x thickness

2,2	x	4,5	x	0,3	S	5000	0,42 brass
2,2	x	4,5	x	0,3	K	500	0,73 brass
2,7	x	5	x	0,5	S	5000	0,51 brass
2,7	x	5	x	0,5	K	500	0,87 brass
3,2	x	6	x	0,5	S	5000	0,42 brass
3,2	x	6	x	0,5	K	500	0,67 brass
4,3	x	8	x	0,5	S	5000	0,53 brass
4,3	x	8	x	0,5	K	500	0,85 brass
5,3	x	9	x	1	S	1000	1,55 brass
5,3	x	9	x	1	K	100	3,15 brass
6,4	x	11	x	1,6	S	1000	2,70 brass
6,4	x	11	x	1,6	K	100	4,35 brass
8,4	x	15	x	1,6	S	1000	5,20 brass
8,4	x	15	x	1,6	K	100	7,60 brass
10,5	x	18	x	1,6	S	1000	6,80 brass
10,5	x	18	x	1,6	K	100	10,20 brass
13	x	20	x	2	S	500	11,50 brass
13	x	20	x	2	K	100	13,80 brass
15	x	24	x	2,5	S	100	20,60 brass
17	x	28	x	2,5	S	100	23,90 brass
21	x	34	x	3	S	50	73,00 brass

DIN	00439.702	RAZ 170
439	**Brass**	**type B**



Hexagon thin nuts, B = with chamfers

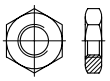
Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 79
Stainless → S. 441

DIN 439 → replaced by ISO 4035

BM 2	S	1000	1,45 brass
BM 2	K	100	2,95 brass
BM 2,5	K	100	2,90 brass
BM 3	S	1000	1,40 brass
BM 3	K	100	2,90 brass
BM 4	S	1000	1,75 brass
BM 4	K	100	3,25 brass
BM 5	S	1000	2,25 brass
BM 5	K	100	3,80 brass
BM 6	S	1000	3,25 brass
BM 6	K	100	5,50 brass
BM 8	S	500	7,00 brass
BM 8	K	100	9,00 brass
BM 10	S	500	11,80 brass
BM 10	K	100	15,20 brass
BM 12	S	100	28,00 brass
BM 16	S	50	60,00 brass
BM 20	S	50	110,00 brass

Dimensions	PU	Pieces	€/100/Mat.
DIN	00439.732		RAZ 170
439	**Brass nickel plated**		**type B**



Hexagon thin nuts, B = with chamfers

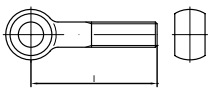
Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 79
Stainless → S. 441

DIN 439 → replaced by ISO 4035

BM 3	S	100	4,00 NP
BM 4	S	100	6,00 NP
BM 5	S	100	7,50 NP
BM 6	S	100	10,00 NP
BM 8	S	100	15,00 NP
BM 10	S	100	23,00 NP
BM 12	S	100	42,00 NP
BM 16	S	50	85,00 NP
BM 20	S	50	150,00 NP

DIN	00444.702	RAZ 180
444	**Brass**	**type B**



Eye bolts, B = product grade B (mg)

Dimensions → TI-30 Mech. properties → TI-227

Steel → S. 82
Stainless → S. 442

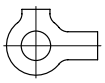
Thread M x length l

BM 6	x	40	S	25	154,00 brass
BM 6	x	50	S	25	162,00 brass
BM 6	x	60	S	25	173,00 brass
BM 8	x	40	S	25	198,00 brass
BM 8	x	50	S	25	209,00 brass
BM 8	x	60	S	25	223,00 brass
BM 8	x	70	S	25	240,00 brass
BM 8	x	80	S	25	265,00 brass
BM 10	x	50	S	10	270,00 brass
BM 10	x	60	S	10	290,00 brass
BM 10	x	70	S	10	315,00 brass
BM 10	x	80	S	10	340,00 brass
BM 10	x	90	S	10	360,00 brass
BM 10	x	100	S	10	385,00 brass
BM 12	x	60	S	10	360,00 brass
BM 12	x	70	S	10	380,00 brass
BM 12	x	80	S	10	420,00 brass
BM 12	x	90	S	10	440,00 brass
BM 12	x	100	S	10	490,00 brass
BM 16	x	70	S	10	660,00 brass
BM 16	x	80	S	10	700,00 brass
BM 16	x	90	S	10	740,00 brass
BM 16	x	100	S	1	770,00 brass
BM 16	x	110	S	1	830,00 brass
BM 16	x	120	S	1	870,00 brass
BM 16	x	130	S	1	940,00 brass
BM 16	x	140	S	1	1020,00 brass

Dimensions			PU	Pieces	€/100/Mat.
BM 20	x	80	S	1	1140,00 brass
BM 20	x	90	S	1	1180,00 brass
BM 20	x	100	S	1	1250,00 brass
BM 20	x	110	S	1	1330,00 brass
BM 20	x	120	S	1	1480,00 brass
BM 20	x	130	S	1	1540,00 brass
BM 20	x	140	S	1	1590,00 brass

~DIN | 00463.700 | RAZ 180

463 Brass



Washers with 2 taps

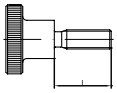
Dimensions → TI-91

Steel → S. 83
Stainless → S. 442

13	S	50	138,00 brass
17	S	50	280,00 brass
21	S	25	355,00 brass
23	S	25	445,00 brass
25	S	25	460,00 brass

DIN | 00464.700 | RAZ 190

464 Brass



Knurled thumb screws, high type

Dimensions → TI-30

Steel → S. 84
Stainless → S. 443

Thread M x length l

M 3	x	6	S	50	57,00 brass
M 3	x	8	S	50	57,00 brass
M 3	x	10	S	50	61,00 brass
M 3	x	12	S	50	67,00 brass
M 3	x	16	S	50	75,00 brass
M 4	x	8	S	50	75,00 brass
M 4	x	10	S	50	76,00 brass
M 4	x	12	S	25	81,00 brass
M 4	x	16	S	25	85,00 brass
M 4	x	20	S	25	93,00 brass
M 4	x	25	S	25	104,00 brass
M 5	x	8	S	50	117,00 brass
M 5	x	10	S	50	117,00 brass
M 5	x	12	S	25	121,00 brass
M 5	x	16	S	25	129,00 brass
M 5	x	20	S	25	140,00 brass
M 5	x	25	S	25	157,00 brass
M 5	x	30	S	25	179,00 brass
M 6	x	8	S	25	180,00 brass
M 6	x	10	S	25	181,00 brass
M 6	x	12	S	25	187,00 brass
M 6	x	16	S	25	197,00 brass
M 6	x	20	S	25	223,00 brass
M 6	x	25	S	25	243,00 brass
M 6	x	30	S	25	285,00 brass
M 8	x	30	S	10	390,00 brass

Dimensions		PU	Pieces	€/100/Mat.

DIN | 00466.700 | RAZ 190

466 Brass

Knurled nuts, high type

Dimensions → TI-70

Steel → S. 84
Stainless → S. 443

M 3	S	100	23,10 brass
M 4	S	100	36,50 brass
M 5	S	50	60,00 brass
M 6	S	50	103,00 brass
M 8	S	25	186,00 brass
M 10	S	10	300,00 brass

DIN | 00467.700 | RAZ 190

467 Brass

Knurled nuts, low type

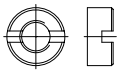
Dimensions → TI-70

Steel → S. 85
Stainless → S. 443

M 3	S	100	18,20 brass
M 4	S	100	27,00 brass
M 5	S	50	38,00 brass
M 6	S	50	65,00 brass
M 8	S	25	137,00 brass
M 10	S	10	210,00 brass

DIN | 00546.700 | RAZ 230

546 Brass



Slotted round nuts

Dimensions → TI-70

Steel → S. 88
Stainless → S. 444

M 3	S	100	9,10 brass
M 4	S	100	12,00 brass
M 5	S	100	16,50 brass

Dimensions		PU	Pieces	€/100/Mat.

DIN | 00551.700 | RAZ 230

551 Brass

Slotted grub screws with flat point

Dimensions → TI-19

Steel → S. 89
Stainless → S. 444

DIN 551 → replaced by ISO 4766 (compatible)

M 3	x	3	S	100	5,10 brass
M 3	x	4	S	100	5,10 brass
M 3	x	5	S	100	5,20 brass
M 3	x	6	S	100	5,40 brass
M 3	x	8	S	100	5,60 brass
M 3	x	10	S	100	5,70 brass
M 3	x	12	S	100	6,00 brass
M 3	x	16	S	100	6,40 brass
M 4	x	4	S	100	5,20 brass
M 4	x	5	S	100	5,30 brass
M 4	x	6	S	100	5,40 brass
M 4	x	8	S	100	5,50 brass
M 4	x	10	S	100	6,10 brass
M 4	x	12	S	100	6,40 brass
M 4	x	16	S	100	6,70 brass
M 5	x	5	S	100	5,50 brass
M 5	x	6	S	100	5,90 brass
M 5	x	8	S	100	6,00 brass
M 5	x	10	S	100	6,40 brass
M 5	x	12	S	100	6,90 brass
M 5	x	16	S	100	7,70 brass
M 6	x	6	S	100	6,20 brass
M 6	x	8	S	100	6,90 brass
M 6	x	10	S	100	7,10 brass
M 6	x	12	S	100	8,20 brass
M 6	x	16	S	100	8,80 brass
M 6	x	20	S	100	10,60 brass
M 6	x	25	S	100	11,60 brass
M 6	x	30	S	100	15,00 brass
M 8	x	10	S	100	20,00 brass
M 8	x	12	S	100	23,00 brass
M 8	x	16	S	100	25,00 brass
M 8	x	20	S	100	27,00 brass
M 8	x	25	S	100	29,00 brass
M 8	x	35	S	100	29,00 brass
M 8	x	40	S	100	31,50 brass
M 8	x	45	S	100	33,00 brass
M 8	x	50	S	100	33,00 brass
M 10	x	8	S	100	55,00 brass
M 10	x	12	S	100	56,00 brass
M 10	x	16	S	100	41,90 brass
M 10	x	20	S	100	58,00 brass

Dimensions			PU	Pieces	€/100/Mat.
DIN	00551.600				RAZ 230
551	**Plastic PA**				
M 4	x	6	S	100	22,00 plastic
M 4	x	8	S	100	23,00 plastic
M 4	x	10	S	100	23,00 plastic
M 4	x	12	S	100	24,00 plastic
M 4	x	16	S	100	26,00 plastic
M 4	x	20	S	100	28,00 plastic
M 4	x	25	S	100	30,00 plastic
M 5	x	6	S	100	24,00 plastic
M 5	x	8	S	100	25,00 plastic
M 5	x	10	S	100	26,00 plastic
M 5	x	12	S	100	28,00 plastic
M 5	x	16	S	100	30,00 plastic
M 6	x	6	S	100	5,70 plastic
M 6	x	8	S	100	27,00 plastic
M 6	x	10	S	100	28,00 plastic
M 6	x	12	S	100	29,00 plastic
M 6	x	16	S	100	30,00 plastic
M 6	x	20	S	100	32,00 plastic
M 6	x	25	S	100	34,00 plastic
M 8	x	8	S	100	30,00 plastic
M 8	x	10	S	100	32,00 plastic
M 8	x	12	S	100	35,00 plastic
M 8	x	16	S	100	38,00 plastic
M 10	x	16	S	100	40,00 plastic
M 10	x	20	S	100	45,00 plastic
M 10	x	30	S	100	50,00 plastic
M 10	x	40	S	100	55,00 plastic

Slotted grub screws with flat point

Dimensions → TI-19

Steel → S. 89
Stainless → S. 444

DIN 551 → replaced by ISO 4766 (compatible)

DIN	00553.700				RAZ 230
553	**Brass**				
M 3	x	4	S	100	5,10 brass
M 3	x	5	S	100	5,20 brass
M 3	x	6	S	100	5,40 brass
M 4	x	4	S	100	5,20 brass
M 4	x	5	S	100	5,30 brass
M 4	x	6	S	100	5,40 brass
M 4	x	8	S	100	5,50 brass
M 5	x	5	S	100	5,50 brass
M 5	x	6	S	100	5,90 brass
M 5	x	8	S	100	6,00 brass
M 5	x	10	S	100	6,40 brass
M 5	x	12	S	100	6,90 brass
M 5	x	16	S	100	7,70 brass
M 6	x	6	S	100	6,20 brass
M 6	x	8	S	100	6,90 brass
M 6	x	10	S	100	7,10 brass
M 6	x	20	S	100	10,60 brass

Slotted grub screws with cone point

Dimensions → TI-19

Steel → S. 90
Stainless → S. 444

DIN 553 → replaced by ISO 7434 (compatible)

DIN	00555.600				RAZ 240
555	**Plastic PA**				
M 3			S	1000	6,50 plastic
M 3			K	200	8,20 plastic
M 4			S	1000	7,10 plastic
M 4			K	200	8,90 plastic
M 5			S	1000	8,10 plastic
M 5			K	200	10,10 plastic
M 6			S	1000	8,70 plastic
M 6			K	100	10,80 plastic
M 8			S	100	13,50 plastic
M 10			S	100	23,60 plastic
M 12			S	100	28,50 plastic
M 16			S	100	50,00 plastic
M 20			S	100	85,00 plastic

Hexagon nuts

Wrench sizes acc. to DIN

Caution! Rough tolerance as per VDI 2544.

Dimensions → TI-61 Standard conversion → TI-7

Mostly identical to DIN 34814

DIN	00603.704				RAZ 300
603	**Brass**				
M 5	x	16	S	100	18,00 brass
M 5	x	20	S	100	19,70 brass
M 5	x	25	S	100	21,60 brass
M 5	x	30	S	100	23,30 brass
M 5	x	35	S	100	26,50 brass
M 5	x	40	S	100	28,00 brass
M 5	x	45	S	100	29,50 brass
M 5	x	50	S	100	32,00 brass
M 5	x	60	S	100	43,50 brass
M 5	x	70	S	100	54,00 brass
M 6	x	16	S	100	26,50 brass

Cup head square neck bolts

Nuts → DIN 934/ISO 4032

Dimensions → TI-32 Mech. properties → TI-227

Steel → S. 99
Stainless → S. 447

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	20	S	100	30,00 brass
M 6	x	25	S	100	31,50 brass
M 6	x	30	S	100	34,50 brass
M 6	x	35	S	100	41,50 brass
M 6	x	40	S	100	45,50 brass
M 6	x	45	S	100	49,00 brass
M 6	x	50	S	100	47,00 brass
M 6	x	60	S	100	58,00 brass
M 6	x	65	S	100	79,00 brass
M 6	x	70	S	100	72,00 brass
M 6	x	80	S	100	76,00 brass
M 8	x	25	S	50	70,00 brass
M 8	x	30	S	50	67,00 brass
M 8	x	40	S	50	89,00 brass
M 8	x	45	S	50	111,00 brass
M 8	x	50	S	50	101,00 brass
M 8	x	55	S	50	130,00 brass
M 8	x	60	S	50	118,00 brass
M 8	x	70	S	50	145,00 brass
M 8	x	80	S	50	156,00 brass

DIN	00660.700				RAZ 330
660	**Brass**				
2	x	4	S	1000	1,70 brass
2	x	6	S	1000	1,75 brass
2	x	8	S	1000	1,85 brass
2	x	10	S	1000	1,95 brass
3	x	4	S	1000	2,45 brass
3	x	5	S	1000	2,50 brass
3	x	6	S	1000	2,60 brass
3	x	8	S	1000	2,95 brass
3	x	10	S	1000	3,40 brass
3	x	12	S	1000	3,70 brass
3	x	20	S	1000	5,40 brass
3	x	25	S	1000	6,70 brass
4	x	6	S	1000	4,35 brass
4	x	8	S	1000	4,75 brass
4	x	10	S	1000	5,60 brass
4	x	12	S	1000	6,30 brass
4	x	16	S	1000	7,50 brass
4	x	20	S	1000	9,10 brass
4	x	25	S	500	11,10 brass
4	x	30	S	500	13,60 brass
5	x	8	S	1000	8,40 brass
5	x	12	S	1000	10,00 brass
5	x	16	S	1000	11,90 brass
5	x	20	S	500	14,60 brass
6	x	10	S	500	14,20 brass
6	x	30	S	250	30,00 brass

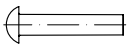
Round head rivets

Dimensions → TI-131

Steel → S. 105
Stainless → S. 448
Copper, aluminium → S. 575

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
DIN	00660.300				RAZ 330
660	**Copper**				



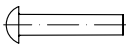
Round head rivets

Dimensions → TI-131

Steel → S. 105
Stainless → S. 448
Brass, aluminium → S. 574

2	x	3	S	1000	1,70 Cu
2	x	4	S	1000	1,70 Cu
2	x	5	S	1000	1,70 Cu
2	x	6	S	1000	1,75 Cu
2	x	8	S	1000	1,85 Cu
2	x	10	S	1000	1,95 Cu
2	x	12	S	1000	2,20 Cu
2	x	16	S	1000	2,65 Cu
2,5	x	5	S	1000	1,85 Cu
2,5	x	6	S	1000	1,95 Cu
2,5	x	8	S	1000	2,20 Cu
2,5	x	12	S	1000	2,90 Cu
2,5	x	16	S	1000	3,50 Cu
3	x	4	S	1000	2,45 Cu
3	x	5	S	1000	2,50 Cu
3	x	6	S	1000	2,60 Cu
3	x	8	S	1000	2,95 Cu
3	x	10	S	1000	3,40 Cu
3	x	12	S	1000	3,70 Cu
3	x	16	S	1000	4,45 Cu
3	x	20	S	1000	5,40 Cu
3	x	25	S	1000	6,70 Cu
3	x	30	S	1000	8,50 Cu
4	x	6	S	1000	4,35 Cu
4	x	8	S	1000	4,75 Cu
4	x	10	S	1000	5,60 Cu
4	x	12	S	1000	6,30 Cu
4	x	16	S	1000	7,50 Cu
4	x	20	S	1000	9,10 Cu
4	x	25	S	500	11,10 Cu
4	x	30	S	500	13,60 Cu
4	x	40	S	250	18,80 Cu
5	x	6	S	1000	8,40 Cu
5	x	8	S	1000	8,40 Cu
5	x	10	S	1000	9,10 Cu
5	x	12	S	1000	10,00 Cu
5	x	16	S	1000	11,90 Cu
5	x	20	S	500	14,60 Cu
5	x	25	S	500	17,40 Cu
5	x	30	S	500	20,10 Cu
5	x	40	S	250	27,00 Cu
6	x	10	S	500	14,20 Cu
6	x	12	S	500	15,40 Cu
6	x	16	S	500	18,10 Cu
6	x	18	S	500	22,40 Cu
6	x	20	S	500	22,40 Cu
6	x	25	S	250	26,00 Cu
6	x	30	S	250	30,00 Cu
6	x	40	S	250	37,50 Cu
6	x	45	S	250	41,50 Cu
6	x	50	S	250	45,50 Cu
8	x	12	S	250	31,00 Cu
8	x	16	S	250	35,00 Cu
8	x	20	S	250	40,50 Cu
8	x	25	S	250	47,00 Cu
8	x	30	S	250	54,00 Cu
8	x	40	S	100	67,00 Cu

Dimensions			PU	Pieces	€/100/Mat.
DIN	00660.301				RAZ 330
660	**Aluminium 99.5**				



Round head rivets

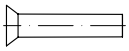
Dimensions → TI-131

Steel → S. 105
Stainless → S. 448
Brass, copper → S. 574

∅ ≤ 9 = DIN 660
∅ 10 = DIN 124

1	x	4	S	1000	0,76 Al
2	x	3	S	1000	1,55 Al
2	x	4	S	1000	1,55 Al
2	x	5	S	1000	1,55 Al
2	x	6	S	1000	1,60 Al
2	x	8	S	1000	1,60 Al
2	x	10	S	1000	1,65 Al
2	x	12	S	1000	1,70 Al
2	x	16	S	1000	1,85 Al
2,5	x	3	S	1000	1,55 Al
2,5	x	4	S	1000	1,55 Al
2,5	x	5	S	1000	1,60 Al
2,5	x	6	S	1000	1,60 Al
2,5	x	8	S	1000	1,65 Al
2,5	x	10	S	1000	1,65 Al
2,5	x	16	S	1000	2,10 Al
3	x	4	S	1000	1,65 Al
3	x	5	S	1000	1,65 Al
3	x	6	S	1000	1,65 Al
3	x	8	S	1000	1,75 Al
3	x	10	S	1000	1,90 Al
3	x	12	S	1000	2,00 Al
3	x	16	S	1000	2,40 Al
3	x	20	S	1000	3,05 Al
3	x	25	S	1000	3,75 Al
3	x	30	S	1000	4,45 Al
3	x	40	S	500	6,10 Al
4	x	6	S	1000	2,55 Al
4	x	8	S	1000	2,65 Al
4	x	10	S	1000	3,00 Al
4	x	12	S	1000	3,40 Al
4	x	16	S	1000	4,05 Al
4	x	18	S	1000	4,65 Al
4	x	20	S	1000	4,95 Al
4	x	25	S	500	6,20 Al
4	x	30	S	500	7,30 Al
4	x	35	S	500	8,50 Al
4	x	40	S	250	9,50 Al
4	x	50	S	250	12,10 Al
5	x	8	S	1000	4,35 Al
5	x	10	S	1000	4,45 Al
5	x	12	S	1000	5,00 Al
5	x	16	S	1000	5,80 Al
5	x	18	S	500	6,70 Al
5	x	20	S	500	7,20 Al
5	x	25	S	500	8,60 Al
5	x	30	S	500	9,80 Al
5	x	35	S	250	11,50 Al
5	x	40	S	250	12,80 Al
5	x	50	S	250	15,90 Al
5	x	60	S	100	19,00 Al
6	x	10	S	500	7,00 Al
6	x	12	S	500	7,50 Al
6	x	16	S	500	8,40 Al
6	x	18	S	500	9,50 Al
6	x	20	S	500	10,10 Al
6	x	25	S	250	12,20 Al
6	x	30	S	250	13,80 Al
6	x	35	S	250	15,90 Al
6	x	40	S	250	17,70 Al
6	x	50	S	250	21,60 Al
6	x	60	S	100	25,50 Al
8	x	12	S	250	15,70 Al
8	x	16	S	250	16,40 Al
8	x	20	S	250	19,10 Al
8	x	25	S	250	22,20 Al
8	x	30	S	250	24,90 Al
8	x	35	S	100	28,00 Al
8	x	40	S	100	31,00 Al
8	x	50	S	100	37,00 Al
8	x	55	S	100	41,00 Al
10	x	20	S	100	29,50 Al
10	x	25	S	100	34,00 Al
10	x	30	S	100	38,50 Al

Dimensions			PU	Pieces	€/100/Mat.
DIN	00661.700				RAZ 330
661	**Brass**				



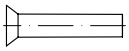
Countersunk head rivets

Dimensions → TI-131

Steel → S. 105
Stainless → S. 448
Copper, aluminium → S. 575

3	x	6	S	1000	2,60 brass
3	x	8	S	1000	2,95 brass
3	x	10	S	1000	3,40 brass
3	x	12	S	1000	3,70 brass
4	x	10	S	1000	5,60 brass
4	x	12	S	1000	6,30 brass
4	x	16	S	1000	7,50 brass
4	x	20	S	1000	9,10 brass
4	x	30	S	500	13,60 brass

DIN	00661.300		RAZ 330
661	**Copper**		



Countersunk head rivets

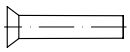
Dimensions → TI-131

Steel → S. 105
Stainless → S. 448
Brass, aluminium → S. 575

2	x	4	S	1000	1,70 Cu
2	x	5	S	1000	1,70 Cu
2	x	6	S	1000	1,75 Cu
2	x	10	S	1000	1,95 Cu
2	x	12	S	1000	2,20 Cu
2	x	16	S	1000	2,65 Cu
2,5	x	6	S	1000	1,95 Cu
2,5	x	8	S	1000	2,20 Cu
2,5	x	10	S	1000	2,50 Cu

Dimensions			PU	Pieces	€/100/Mat.
3	x	5	S	1000	2,50 Cu
3	x	6	S	1000	2,60 Cu
3	x	8	S	1000	2,95 Cu
3	x	10	S	1000	3,40 Cu
3	x	12	S	1000	3,70 Cu
3	x	16	S	1000	4,45 Cu
3	x	20	S	1000	5,40 Cu
3	x	25	S	1000	6,70 Cu
3	x	30	S	1000	8,50 Cu
3	x	40	S	500	11,80 Cu
4	x	6	S	1000	4,35 Cu
4	x	8	S	1000	4,75 Cu
4	x	10	S	1000	5,60 Cu
4	x	12	S	1000	6,30 Cu
4	x	16	S	1000	7,50 Cu
4	x	18	S	1000	9,10 Cu
4	x	20	S	1000	9,10 Cu
4	x	25	S	500	11,10 Cu
4	x	30	S	500	13,60 Cu
4	x	40	S	250	18,80 Cu
5	x	10	S	1000	9,10 Cu
5	x	12	S	1000	10,00 Cu
5	x	16	S	1000	11,90 Cu
5	x	20	S	500	14,60 Cu
5	x	25	S	500	17,40 Cu
5	x	30	S	500	20,10 Cu
5	x	35	S	250	23,00 Cu
5	x	40	S	250	27,00 Cu
5	x	50	S	250	34,00 Cu
6	x	10	S	500	14,20 Cu
6	x	12	S	500	15,40 Cu
6	x	16	S	500	18,10 Cu
6	x	18	S	500	22,40 Cu
6	x	20	S	500	22,40 Cu
6	x	25	S	250	26,00 Cu
6	x	30	S	250	30,00 Cu
6	x	35	S	250	33,50 Cu
6	x	40	S	250	37,50 Cu
6	x	45	S	250	41,50 Cu
6	x	50	S	250	45,50 Cu
8	x	12	S	250	31,00 Cu
8	x	16	S	250	35,00 Cu
8	x	20	S	250	40,50 Cu
8	x	25	S	250	47,00 Cu
8	x	30	S	250	54,00 Cu
8	x	35	S	100	60,00 Cu
8	x	40	S	100	67,00 Cu
8	x	45	S	100	74,00 Cu
8	x	50	S	100	81,00 Cu
8	x	60	S	100	101,00 Cu

DIN	00661.301	RAZ 330
661	Aluminium 99.5	



Countersunk head rivets

Dimensions → TI-131

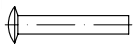
Steel → S. 105
Stainless → S. 448
Brass, copper → S. 575

∅ ≤ 9 = DIN 661
∅ 10 = DIN 124

2	x	4	S	1000	1,55 Al
2	x	5	S	1000	1,55 Al
2	x	6	S	1000	1,60 Al
2	x	8	S	1000	1,60 Al

Dimensions			PU	Pieces	€/100/Mat.
2	x	10	S	1000	1,65 Al
2	x	16	S	1000	1,85 Al
2,5	x	6	S	1000	1,60 Al
2,5	x	8	S	1000	1,65 Al
2,5	x	10	S	1000	1,65 Al
2,5	x	12	S	1000	1,75 Al
3	x	6	S	1000	1,65 Al
3	x	8	S	1000	1,75 Al
3	x	10	S	1000	1,90 Al
3	x	12	S	1000	2,00 Al
3	x	16	S	1000	2,40 Al
3	x	18	S	1000	2,75 Al
3	x	20	S	1000	3,05 Al
3	x	25	S	1000	3,75 Al
3	x	30	S	1000	4,45 Al
4	x	6	S	1000	2,55 Al
4	x	8	S	1000	2,65 Al
4	x	10	S	1000	3,00 Al
4	x	12	S	1000	3,40 Al
4	x	14	S	1000	3,80 Al
4	x	16	S	1000	4,05 Al
4	x	18	S	1000	4,65 Al
4	x	20	S	1000	4,95 Al
4	x	25	S	500	6,20 Al
4	x	30	S	500	7,30 Al
4	x	40	S	250	9,50 Al
5	x	8	S	1000	4,35 Al
5	x	10	S	1000	4,45 Al
5	x	12	S	1000	5,00 Al
5	x	16	S	1000	5,80 Al
5	x	20	S	500	7,20 Al
5	x	25	S	500	8,60 Al
5	x	30	S	500	9,80 Al
5	x	35	S	250	11,50 Al
5	x	40	S	250	12,80 Al
5	x	50	S	250	15,90 Al
6	x	10	S	500	7,00 Al
6	x	12	S	500	7,50 Al
6	x	16	S	500	8,40 Al
6	x	18	S	500	9,50 Al
6	x	20	S	500	10,10 Al
6	x	25	S	250	12,20 Al
6	x	30	S	250	13,80 Al
6	x	35	S	250	15,90 Al
6	x	40	S	250	17,70 Al
6	x	50	S	250	21,60 Al
6	x	60	S	100	25,50 Al
8	x	16	S	250	16,40 Al
8	x	20	S	250	19,10 Al
8	x	25	S	250	22,20 Al
8	x	30	S	250	24,90 Al
8	x	35	S	100	28,00 Al
8	x	40	S	100	31,00 Al
8	x	45	S	100	34,00 Al
8	x	50	S	100	37,00 Al
8	x	60	S	100	44,50 Al

Dimensions	PU	Pieces	€/100/Mat.
DIN	00662.700		RAZ 330
662	Copper		



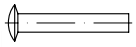
Mushroom head rivets

Dimensions → TI-131

Steel → S. 106
Aluminium → S. 576

2	x	4	S	2000	1,70 Cu
2,5	x	5	S	1000	1,85 Cu
3	x	6	S	1000	2,60 Cu
3,5	x	8	S	1000	3,85 Cu
4	x	8	S	1000	4,75 Cu
5	x	12	S	500	10,00 Cu

DIN	00662.300	RAZ 330
662	Aluminium 99.5	



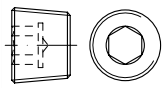
Mushroom head rivets

Dimensions → TI-131

Steel → S. 106
Copper → S. 576

3	x	6	S	1000	1,65 Al
3,5	x	8	S	1000	1,90 Al
4	x	8	S	1000	2,65 Al
5	x	12	S	500	5,00 Al
6	x	16	S	500	8,40 Al

DIN	00906.700	RAZ 350
906	Brass	taper fine



Hexagon socket pipe plugs with taper fine pitch thread

Dimensions → TI-22

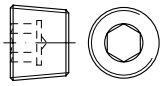
Steel → S. 107
Stainless → S. 449

M 10	x	1	S	100	35,00 brass
M 12	x	1,5	S	50	52,00 brass
M 14	x	1,5	S	50	55,00 brass
M 16	x	1,5	S	25	68,00 brass
M 20	x	1,5	S	25	117,00 brass
M 22	x	1,5	S	25	124,00 brass
M 24	x	1,5	S	25	183,00 brass
M 30	x	1,5	S	10	228,00 brass

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
DIN	00906.704		RAZ 350

906 Brass taper pipe R



Hexagon socket pipe plugs, R = with taper pipe thread

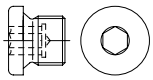
Dimensions → TI-22

Steel → S. 108
Stainless → S. 449

R 1/8	S	100	38,50 brass
R 1/4	S	100	48,50 brass
R 3/8	S	50	72,00 brass
R 1/2	S	50	111,00 brass
R 3/4	S	25	350,00 brass
R 1	S	10	440,00 brass

DIN	00908.704	RAZ 350

908 Brass cyl. pipe G



Hexagon socket screw plugs, G = with cylindrical pipe thread

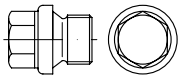
Dimensions → TI-22

Steel → S. 108
Stainless → S. 450

G 1/8 A	S	100	168,00 brass
G 1/4 A	S	100	64,00 brass
G 3/8 A	S	50	114,00 brass
G 1/2 A	S	50	154,00 brass
G 3/4 A	S	25	229,00 brass

DIN	00910.700	RAZ 350

910 Brass cyl. fine



Hexagon head screw plugs, heavy type, cylindrical fine pitch thread

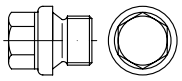
Dimensions → TI-23

Steel → S. 109
Stainless → S. 450

M 10	x	1	S	100	62,00 brass
M 12	x	1,5	S	50	113,00 brass
M 14	x	1,5	S	50	120,00 brass
M 16	x	1,5	S	25	128,00 brass
M 18	x	1,5	S	25	153,00 brass
M 20	x	1,5	S	25	183,00 brass
M 22	x	1,5	S	25	238,00 brass
M 24	x	1,5	S	25	310,00 brass
M 30	x	1,5	S	10	455,00 brass

DIN	00910.704	RAZ 350

910 Brass cyl. pipe G



Hexagon head screw plugs, heavy type, G = cylindrical pipe thread

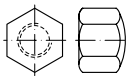
Dimensions → TI-23

Steel → S. 109
Stainless → S. 450

G 1/8 A	S	100	57,00 brass
G 1/4 A	S	100	75,00 brass
G 3/8 A	S	50	104,00 brass
G 1/2 A	S	50	162,00 brass
G 5/8 A	S	25	365,00 brass
G 3/4 A	S	25	360,00 brass
G 1 A	S	10	475,00 brass
G 1 1/4 A	S	1	820,00 brass
G 1 1/2 A	S	1	990,00 brass
G 2 A	S	1	1970,00 brass

DIN	00917.700	RAZ 380

917 Brass



Hexagon cap nuts, low type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-61 Mech. properties → TI-227

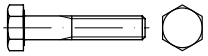
Steel → S. 135
Stainless → S. 457

SW = wrench size

M 4	S	1000	7,30 brass
M 4	K	100	10,80 brass
M 5	S	1000	9,20 brass
M 5	K	100	12,80 brass
M 6	S	1000	13,50 brass
M 6	K	100	18,20 brass
M 8	S	500	33,00 brass
M 8	K	100	39,00 brass
M 10 SW 17	S	100	49,50 brass
M 12 SW 19	S	50	73,00 brass
M 16	S	25	132,00 brass
M 20	S	25	219,00 brass

Dimensions	PU	Pieces	€/100/Mat.
DIN	00931.700		RAZ 400

931 Brass



Hexagon head bolts with shank

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-227 Standard conversion → TI-6

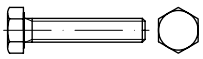
Steel → S. 137
Stainless → S. 458

DIN 931 → replaced by ISO 4014

M 8	x	40	S	100	101,00 brass
M 8	x	50	S	100	119,00 brass
M 8	x	60	S	100	138,00 brass
M 10	x	50	S	100	255,00 brass
M 10	x	60	S	100	325,00 brass
M 12	x	50	S	50	310,00 brass
M 12	x	60	S	50	395,00 brass
M 12	x	70	S	50	455,00 brass

DIN	00933.700	RAZ 400

933 Brass



Hexagon head screws with thread up to head

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-227 Standard conversion → TI-6

Steel → S. 148
Stainless → S. 462

DIN 933 → replaced by ISO 4017

M 4	x	6	S	100	9,50 brass
M 4	x	8	S	100	4,80 brass
M 4	x	10	S	100	4,80 brass
M 4	x	12	S	100	5,30 brass
M 4	x	16	S	100	5,70 brass
M 4	x	20	S	100	6,30 brass
M 4	x	25	S	100	7,20 brass
M 4	x	30	S	100	8,20 brass
M 4	x	35	S	100	9,20 brass
M 4	x	40	S	100	10,10 brass
M 4	x	50	S	100	16,00 brass
M 4	x	60	S	100	18,00 brass
M 5	x	8	S	100	6,60 brass
M 5	x	10	S	100	6,60 brass
M 5	x	12	S	100	7,30 brass
M 5	x	16	S	100	7,90 brass
M 5	x	20	S	100	9,00 brass
M 5	x	25	S	100	10,20 brass
M 5	x	30	S	100	11,30 brass
M 5	x	35	S	100	12,60 brass
M 5	x	40	S	100	12,90 brass
M 5	x	45	S	100	17,80 brass
M 5	x	50	S	100	16,20 brass
M 5	x	60	S	100	21,00 brass
M 6	x	8	S	100	10,10 brass
M 6	x	10	S	100	10,10 brass
M 6	x	12	S	100	10,30 brass

Dimensions			PU	Pieces	€/100/Mat.
M 6	x	16	S	100	11,20 brass
M 6	x	20	S	100	12,40 brass
M 6	x	25	S	100	13,80 brass
M 6	x	30	S	100	15,40 brass
M 6	x	35	S	100	16,90 brass
M 6	x	40	S	100	18,50 brass
M 6	x	45	S	100	21,90 brass
M 6	x	50	S	100	21,90 brass
M 6	x	60	S	100	28,50 brass
M 8	x	10	S	100	21,90 brass
M 8	x	12	S	100	23,00 brass
M 8	x	16	S	100	24,30 brass
M 8	x	20	S	100	26,50 brass
M 8	x	25	S	100	30,00 brass
M 8	x	30	S	100	33,00 brass
M 8	x	35	S	100	35,50 brass
M 8	x	40	S	100	38,50 brass
M 8	x	45	S	100	44,50 brass
M 8	x	50	S	100	44,50 brass
M 8	x	55	S	100	49,00 brass
M 8	x	60	S	100	49,00 brass
M 8	x	65	S	100	59,00 brass
M 8	x	70	S	100	59,00 brass
M 8	x	80	S	100	65,00 brass
M 8	x	90	S	100	72,00 brass
M 10	x	10	S	100	148,00 brass
M 10	x	12	S	100	49,50 brass
M 10	x	16	S	100	45,00 brass
M 10	x	20	S	100	42,50 brass
M 10	x	25	S	100	53,00 brass
M 10	x	30	S	100	56,00 brass
M 10	x	35	S	100	61,00 brass
M 10	x	40	S	100	65,00 brass
M 10	x	45	S	100	74,00 brass
M 10	x	50	S	100	74,00 brass
M 10	x	60	S	100	83,00 brass
M 10	x	65	S	100	96,00 brass
M 10	x	70	S	100	96,00 brass
M 10	x	80	S	100	111,00 brass
M 10	x	100	S	50	150,00 brass
M 12	x	16	S	50	69,00 brass
M 12	x	20	S	50	73,00 brass
M 12	x	25	S	50	81,00 brass
M 12	x	30	S	50	84,00 brass
M 12	x	35	S	50	93,00 brass
M 12	x	40	S	50	98,00 brass
M 12	x	45	S	50	104,00 brass
M 12	x	50	S	50	104,00 brass
M 12	x	55	S	50	110,00 brass
M 12	x	60	S	50	108,00 brass
M 12	x	70	S	50	127,00 brass
M 12	x	80	S	50	170,00 brass
M 12	x	90	S	50	173,00 brass
M 12	x	100	S	50	198,00 brass
M 16	x	20	S	50	247,00 brass
M 16	x	25	S	50	270,00 brass
M 16	x	30	S	50	295,00 brass
M 16	x	35	S	50	325,00 brass
M 16	x	40	S	50	365,00 brass
M 16	x	45	S	25	390,00 brass
M 16	x	50	S	25	415,00 brass
M 16	x	55	S	25	440,00 brass
M 16	x	60	S	10	475,00 brass
M 16	x	65	S	10	510,00 brass
M 16	x	70	S	10	540,00 brass
M 16	x	80	S	10	590,00 brass
M 16	x	90	S	10	670,00 brass
M 16	x	100	S	10	720,00 brass
M 20	x	30	S	10	510,00 brass
M 20	x	40	S	10	560,00 brass
M 20	x	50	S	10	650,00 brass
M 20	x	60	S	10	760,00 brass
M 20	x	80	S	1	980,00 brass
M 20	x	100	S	1	1200,00 brass

Dimensions			PU	Pieces	€/100/Mat.
DIN		00933.600			RAZ 400

933 Plastic PA

Hexagon head screws with thread up to head*

*Thread length max. 50 mm

Caution! Rough tolerances, possible cavity formation as per VDI 2544/Abs. 8.

Nuts ➔ DIN 555

Dimensions ➔ TI-15 Tightening torque ➔ TI-236
Mech. properties ➔ TI-227 Standard conversion ➔ TI-6

Steel ➔ S. 148
Stainless ➔ S. 462

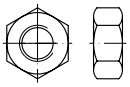
Mostly identical to DIN 34810

M 3	x	8	S	200	7,50 plastic
M 3	x	10	S	200	7,70 plastic
M 3	x	12	S	200	7,70 plastic
M 3	x	16	S	200	7,90 plastic
M 3	x	20	S	200	8,40 plastic
M 3	x	25	S	200	8,60 plastic
M 3	x	30	S	200	8,80 plastic
M 4	x	8	S	200	7,90 plastic
M 4	x	10	S	200	8,20 plastic
M 4	x	12	S	200	8,30 plastic
M 4	x	16	S	200	8,50 plastic
M 4	x	20	S	200	9,10 plastic
M 4	x	25	S	200	9,50 plastic
M 4	x	30	S	200	10,00 plastic
M 5	x	10	S	200	9,20 plastic
M 5	x	12	S	200	9,50 plastic
M 5	x	16	S	200	10,10 plastic
M 5	x	20	S	200	11,80 plastic
M 5	x	25	S	200	12,40 plastic
M 5	x	30	S	200	13,20 plastic
M 5	x	40	S	200	14,50 plastic
M 6	x	10	S	200	10,50 plastic
M 6	x	12	S	200	10,70 plastic
M 6	x	16	S	200	11,20 plastic
M 6	x	20	S	200	12,30 plastic
M 6	x	25	S	200	13,40 plastic
M 6	x	30	S	200	16,10 plastic
M 6	x	35	S	200	16,80 plastic
M 6	x	40	S	200	17,40 plastic
M 6	x	50	S	200	18,40 plastic
M 8	x	10	S	200	20,10 plastic
M 8	x	12	S	200	21,00 plastic
M 8	x	16	S	200	22,10 plastic
M 8	x	20	S	200	24,00 plastic
M 8	x	25	S	200	26,00 plastic
M 8	x	30	S	200	27,50 plastic
M 8	x	35	S	200	28,50 plastic
M 8	x	40	S	200	30,00 plastic
M 8	x	50	S	200	32,00 plastic
M 8	x	60	S	200	41,50 plastic
M 8	x	70	S	200	45,50 plastic
M 10	x	20	S	200	44,50 plastic
M 10	x	25	S	200	49,00 plastic
M 10	x	30	S	200	54,00 plastic
M 10	x	35	S	200	58,00 plastic
M 10	x	40	S	200	62,00 plastic
M 10	x	45	S	200	65,00 plastic
M 10	x	50	S	200	67,00 plastic
M 10	x	60	S	100	85,00 plastic
M 12	x	20	S	100	56,00 plastic

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	25	S	100	62,00 plastic
M 12	x	30	S	100	67,00 plastic
M 12	x	35	S	100	70,00 plastic
M 12	x	40	S	100	73,00 plastic
M 12	x	50	S	100	81,00 plastic
M 12	x	60	S	100	84,00 plastic

DIN	00934.700	RAZ 410

934 Brass



Hexagon nuts

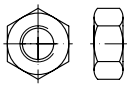
Dimensions ➔ TI-61 Standard conversion ➔ TI-7
Mech. properties ➔ TI-227

Steel ➔ S. 160
Stainless ➔ S. 466

DIN 934 ➔ replaced by ISO 4032

M 1	K	100		25,50 brass
M 1,2	K	100		16,90 brass
M 1,4	K	100		16,10 brass
M 1,6	K	100		11,50 brass
M 1,7	K	100		11,10 brass
M 2	S	1000		1,45 brass
M 2	K	100		3,00 brass
M 2,3	S	1000		1,45 brass
M 2,3	K	100		3,00 brass
M 2,5	S	1000		1,45 brass
M 2,5	K	100		3,00 brass
M 2,6	S	1000		1,45 brass
M 2,6	K	100		3,00 brass
M 3	S	1000		1,45 brass
M 3	K	100		3,00 brass
M 3,5	K	100		3,45 brass
M 4	S	1000		2,15 brass
M 4	K	100		3,65 brass
M 5	S	1000		2,70 brass
M 5	K	100		4,20 brass
M 6	S	1000		4,10 brass
M 6	K	100		6,40 brass
M 7	K	100		6,60 brass
M 8	S	1000		8,10 brass
M 8	K	100		10,30 brass
M 10	S	500		15,60 brass
M 10	K	100		19,10 brass
M 12	S	250		24,70 brass
M 12	K	100		28,00 brass
M 14	S	250		40,00 brass
M 14	K	50		47,00 brass
M 16	S	250		47,00 brass
M 16	K	50		53,00 brass
M 18	S	25		93,00 brass
M 20	S	25		116,00 brass
M 22	S	10		192,00 brass
M 24	S	10		215,00 brass
M 27	S	1		330,00 brass
M 30	S	1		400,00 brass
M 33	S	1		920,00 brass
M 36	S	1		920,00 brass
M 42	S	1		2470,00 brass

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.730		RAZ 410
934	**Brass nickel plated**		



Hexagon nuts

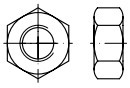
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 160
Stainless → S. 30190003842000

DIN 934 → replaced by ISO 4032

M 2	S	1000	1,70 brass Ni
M 2,5	S	1000	1,75 brass Ni
M 3	S	1000	1,75 brass Ni
M 3,5	S	1000	1,80 brass Ni
M 4	S	1000	2,60 brass Ni
M 5	S	1000	3,30 brass Ni
M 6	S	1000	6,00 brass Ni
M 8	S	100	12,90 brass Ni
M 10	S	100	25,00 brass Ni
M 12	S	100	45,00 brass Ni
M 16	S	100	90,00 brass Ni

DIN	00934.740	RAZ 410
934	**Brass chrome plated**	



Hexagon nuts

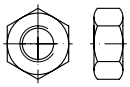
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 160
Stainless → S. 466

DIN 934 → replaced by ISO 4032

M 3	S	100	6,30 brass Cr
M 4	S	100	7,80 brass Cr
M 5	S	100	11,50 brass Cr
M 6	S	100	13,90 brass Cr
M 8	S	100	23,40 brass Cr

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.705		RAZ 410
934	**Brass**		**fine**



Hexagon nuts with metric fine pitch thread

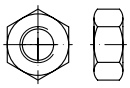
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 160
Stainless → S. 467

DIN 934 fine thread → replaced by ISO 8673

M 8	x	1	S	100	17,70 brass
M 10	x	1	S	100	24,30 brass
M 14	x	1,5	S	50	53,00 brass
M 16	x	1,5	S	25	77,00 brass
M 20	x	1,5	S	10	153,00 brass
M 22	x	1,5	S	10	217,00 brass

DIN	00934.704	RAZ 410
934	**Brass**	**Ww-BSW**

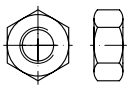


Hexagon nuts with Whitworth thread

Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

WW 1/2	S	50	58,00 brass Ww
WW 5/8	S	50	150,00 brass Ww
WW 3/4	S	25	197,00 brass Ww

DIN	00934.302	RAZ 410
934	**CuNiSi**	



Hexagon nuts

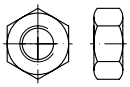
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 160
Stainless → S. 466
Brass, aluminium, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 6	S	100	26,50 CuNiSi
M 8	S	100	52,00 CuNiSi
M 10	S	100	86,00 CuNiSi
M 12	S	100	135,00 CuNiSi
M 16	S	100	265,00 CuNiSi
M 20	S	1	1240,00 CuNiSi
M 24	S	1	2020,00 CuNiSi

Dimensions	PU	Pieces	€/100/Mat.
DIN	00934.303		RAZ 410
934	**Aluminium**		



Hexagon nuts

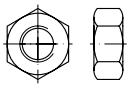
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 160
Stainless → S. 466
Brass, copper, titanium → S. 578

DIN 934 → replaced by ISO 4032

M 4	S	100	5,70 Al
M 5	S	100	7,30 Al
M 6	S	100	8,70 Al
M 8	S	100	17,80 Al
M 10	S	100	33,50 Al
M 12	S	50	46,00 Al
M 16	S	50	91,00 Al

DIN	00934.308	RAZ 410
934	**Titanium (grade 2)**	



Hexagon nuts

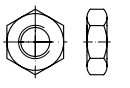
Dimensions → TI-61 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 160
Stainless → S. 466
Brass, copper, aluminium → S. 578

DIN 934 → replaced by ISO 4032

M 6	S	50	184,00 Ti
M 8	S	50	249,00 Ti
M 10	S	50	380,00 Ti
M 12	S	25	490,00 Ti
M 16	S	25	1620,00 Ti

DIN	00936.700	RAZ 420
936	**Brass**	



Hexagon thin nuts

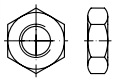
Dimensions → TI-62 Mech. properties → TI-227

Steel → S. 166
Stainless → S. 468

Nuts acc. to ISO → ISO 4035 (DIN 439)

M 12	S	100	26,00 brass
M 14	S	50	45,50 brass
M 16	S	50	53,00 brass
M 20	S	25	99,00 brass
M 24	S	25	187,00 brass
M 36	S	1	910,00 brass

Dimensions			PU	Pieces	€/100/Mat.
DIN	00936.705				RAZ 420
936	**Brass**				**fine**



Hexagon thin nuts with metric fine pitch thread

Dimensions → TI-62 Mech. properties → TI-227

Steel → S. 166
Stainless → S. 468

Nuts acc. to ISO → ISO 8675 (DIN 439)

M 10	x	1	S	100	19,30 brass
M 12	x	1,5	S	100	28,50 brass
M 14	x	1,5	S	50	49,50 brass
M 16	x	1,5	S	50	58,00 brass
M 18	x	1,5	S	25	99,00 brass
M 20	x	1,5	S	25	109,00 brass
M 24	x	1,5	S	25	206,00 brass
M 30	x	1,5	S	10	485,00 brass

DIN	00963.704	RAZ 450
963	**Brass turned bare**	

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 177
Stainless → S. 471

DIN 963 → replaced by ISO 2009

M 1,6	x	4	S	100	10,00 brass turned
M 1,6	x	6	S	100	10,40 brass turned
M 1,6	x	10	S	100	13,50 brass turned

DIN	00963.700	RAZ 450
963	**Brass**	

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 177
Stainless → S. 471

DIN 963 → replaced by ISO 2009

M 2	x	4	K	200	4,25 brass
M 2	x	5	K	200	3,90 brass
M 2	x	6	K	200	3,55 brass
M 2	x	8	K	200	3,15 brass
M 2	x	10	K	200	3,30 brass
M 2	x	12	K	200	3,50 brass
M 2	x	16	K	200	4,00 brass
M 2	x	20	K	200	4,50 brass
M 2,5	x	4	K	200	4,35 brass
M 2,5	x	5	K	200	3,80 brass
M 2,5	x	6	K	200	3,25 brass
M 2,5	x	8	K	200	3,15 brass
M 2,5	x	10	K	200	3,30 brass
M 2,5	x	12	K	200	3,50 brass
M 2,5	x	16	K	200	4,00 brass
M 2,5	x	18	K	200	6,80 brass
M 2,5	x	20	K	200	4,50 brass
M 3	x	4	S	1000	3,25 brass
M 3	x	4	K	200	3,25 brass
M 3	x	5	K	200	3,05 brass
M 3	x	6	S	1000	2,60 brass
M 3	x	6	K	200	2,60 brass
M 3	x	8	S	1000	2,65 brass
M 3	x	8	K	200	2,65 brass
M 3	x	10	S	1000	2,75 brass
M 3	x	10	K	200	2,75 brass
M 3	x	12	S	1000	2,90 brass
M 3	x	12	K	200	2,90 brass
M 3	x	16	S	1000	3,30 brass
M 3	x	16	K	200	3,30 brass
M 3	x	18	K	200	5,70 brass
M 3	x	20	S	1000	3,80 brass
M 3	x	20	K	200	3,80 brass
M 3	x	25	K	200	4,25 brass
M 3	x	30	K	200	5,20 brass
M 3	x	35	K	200	5,50 brass
M 3	x	40	K	200	7,80 brass
M 4	x	5	K	200	4,00 brass
M 4	x	6	S	1000	3,55 brass
M 4	x	6	K	200	3,55 brass
M 4	x	8	S	1000	3,85 brass
M 4	x	8	K	200	3,85 brass
M 4	x	10	S	1000	4,00 brass
M 4	x	10	K	200	4,00 brass
M 4	x	12	S	1000	4,10 brass
M 4	x	12	K	200	4,10 brass
M 4	x	16	S	1000	4,90 brass
M 4	x	16	K	200	4,90 brass
M 4	x	18	K	200	8,50 brass
M 4	x	20	S	1000	5,70 brass
M 4	x	20	K	200	5,70 brass
M 4	x	25	S	1000	6,00 brass
M 4	x	25	K	200	6,00 brass
M 4	x	30	S	1000	7,10 brass
M 4	x	30	K	200	7,10 brass
M 4	x	35	K	200	7,90 brass
M 4	x	40	K	200	8,60 brass
M 4	x	45	K	200	10,60 brass
M 4	x	50	K	200	11,40 brass
M 5	x	8	K	200	5,90 brass
M 5	x	10	S	1000	6,00 brass
M 5	x	10	K	200	6,00 brass
M 5	x	12	S	1000	6,20 brass
M 5	x	12	K	200	6,20 brass
M 5	x	16	S	1000	7,10 brass
M 5	x	16	K	200	7,10 brass
M 5	x	18	K	200	11,50 brass
M 5	x	20	S	1000	7,70 brass
M 5	x	20	K	200	7,70 brass
M 5	x	25	S	1000	8,70 brass
M 5	x	25	K	200	8,70 brass
M 5	x	30	S	1000	10,10 brass
M 5	x	30	K	200	10,10 brass
M 5	x	35	K	200	13,00 brass
M 5	x	40	K	200	13,60 brass
M 5	x	45	K	200	14,80 brass
M 5	x	50	K	200	15,70 brass
M 5	x	60	K	200	20,00 brass
M 6	x	10	S	1000	8,10 brass
M 6	x	10	K	200	8,10 brass
M 6	x	12	S	1000	9,10 brass
M 6	x	12	K	200	9,10 brass
M 6	x	16	S	1000	10,40 brass
M 6	x	16	K	200	10,40 brass
M 6	x	20	S	1000	11,50 brass
M 6	x	20	K	200	11,50 brass
M 6	x	25	S	1000	12,20 brass
M 6	x	25	K	200	12,20 brass
M 6	x	30	K	200	14,10 brass
M 6	x	35	K	200	16,10 brass
M 6	x	40	K	200	17,40 brass
M 6	x	45	K	200	20,00 brass
M 6	x	50	K	200	20,90 brass
M 6	x	60	K	100	27,00 brass
M 6	x	70	K	100	31,00 brass
M 6	x	80	K	100	33,50 brass
M 8	x	12	K	100	26,50 brass
M 8	x	16	K	100	22,90 brass
M 8	x	20	K	100	24,50 brass
M 8	x	25	K	100	25,50 brass
M 8	x	30	K	100	29,50 brass
M 8	x	35	K	100	31,50 brass
M 8	x	40	K	100	33,50 brass
M 8	x	45	K	100	39,00 brass
M 8	x	50	K	100	41,50 brass
M 8	x	60	K	100	49,50 brass
M 8	x	70	K	100	61,00 brass
M 8	x	80	K	100	65,00 brass
M 10	x	16	K	100	37,00 brass
M 10	x	20	K	100	36,00 brass
M 10	x	25	K	100	41,00 brass
M 10	x	30	K	100	44,50 brass
M 10	x	35	K	100	49,50 brass
M 10	x	40	K	100	55,00 brass
M 10	x	45	K	100	59,00 brass
M 10	x	50	K	100	63,00 brass
M 10	x	60	K	100	71,00 brass
M 10	x	70	K	100	92,00 brass
M 10	x	80	K	100	100,00 brass
M 12	x	20	K	50	108,00 brass
M 12	x	25	K	50	111,00 brass
M 12	x	30	K	50	123,00 brass
M 12	x	35	K	50	135,00 brass
M 12	x	40	K	50	147,00 brass
M 12	x	45	K	50	158,00 brass
M 12	x	50	K	50	170,00 brass
M 12	x	70	K	50	220,00 brass
M 16	x	25	K	25	440,00 brass
M 16	x	30	K	25	440,00 brass
M 16	x	35	K	25	475,00 brass
M 16	x	40	K	25	510,00 brass
M 16	x	45	K	25	550,00 brass
M 16	x	50	K	25	590,00 brass

DIN	00963.730	RAZ 450
963	**Brass nickel plated**	

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 177
Stainless → S. 471

DIN 963 → replaced by ISO 2009

M 3	x	10	K	200	3,15 NP
M 3	x	16	K	200	3,75 NP
M 3	x	20	K	200	4,20 NP
M 3	x	30	K	200	5,60 NP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	10	K	200	4,45 NP
M 4	x	16	K	200	5,30 NP
M 4	x	20	K	200	6,20 NP
M 4	x	30	K	200	7,80 NP
M 5	x	10	K	200	6,40 NP
M 5	x	16	K	200	7,70 NP
M 5	x	20	K	200	8,50 NP
M 6	x	10	K	200	8,80 NP
M 6	x	16	K	200	11,40 NP
M 6	x	20	K	200	12,70 NP

DIN 963 — 00963.600 — RAZ 450

963 Plastic PA

Slotted countersunk head screws

Caution! Rough tolerances as per VDI 2544.

Nuts ➔ DIN 555

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 177
Stainless ➔ S. 471

DIN 963 ➔ replaced by ISO 2009

M 3	x	6	S	200	5,50 plastic
M 3	x	8	S	200	5,70 plastic
M 3	x	10	S	200	5,90 plastic
M 3	x	12	S	200	6,00 plastic
M 3	x	16	S	200	6,10 plastic
M 3	x	20	S	200	6,40 plastic
M 4	x	10	S	200	6,80 plastic
M 4	x	12	S	200	7,10 plastic
M 4	x	16	S	200	7,20 plastic
M 4	x	20	S	200	7,50 plastic
M 4	x	25	S	200	7,80 plastic
M 4	x	30	S	200	8,20 plastic
M 5	x	10	S	200	7,30 plastic
M 5	x	12	S	200	7,80 plastic
M 5	x	16	S	200	8,50 plastic
M 5	x	20	S	200	9,40 plastic
M 5	x	25	S	200	10,00 plastic
M 6	x	10	S	200	8,20 plastic
M 6	x	12	S	200	9,00 plastic
M 6	x	16	S	200	9,50 plastic
M 6	x	20	S	200	10,50 plastic
M 6	x	25	S	200	12,00 plastic
M 6	x	30	S	200	13,00 plastic
M 8	x	16	S	200	17,40 plastic
M 8	x	20	S	200	18,50 plastic
M 8	x	25	S	200	20,60 plastic
M 8	x	30	S	200	23,50 plastic
M 8	x	40	S	200	27,50 plastic

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	K	200	3,05 brass
M 3	x	6	K	200	2,60 brass
M 3	x	8	K	200	2,65 brass
M 3	x	10	K	200	2,75 brass
M 3	x	12	K	200	2,90 brass
M 3	x	16	K	200	3,30 brass
M 3	x	20	K	200	3,80 brass
M 3	x	25	K	200	4,25 brass
M 3	x	30	K	200	5,20 brass
M 3	x	35	K	200	5,50 brass
M 3	x	40	K	200	7,80 brass
M 4	x	5	K	200	4,00 brass
M 4	x	6	K	200	3,55 brass
M 4	x	8	K	200	3,85 brass
M 4	x	10	K	200	4,00 brass
M 4	x	12	K	200	4,10 brass
M 4	x	16	K	200	4,90 brass
M 4	x	20	K	200	5,70 brass
M 4	x	25	K	200	6,00 brass
M 4	x	30	K	200	7,10 brass
M 4	x	35	K	200	7,90 brass
M 4	x	40	K	200	8,60 brass
M 4	x	45	K	200	10,60 brass
M 4	x	50	K	200	11,10 brass
M 4	x	60	K	200	20,00 brass
M 5	x	8	K	200	5,90 brass
M 5	x	10	K	200	6,00 brass
M 5	x	12	K	200	6,20 brass
M 5	x	16	K	200	7,10 brass
M 5	x	20	K	200	7,80 brass
M 5	x	25	K	200	8,70 brass
M 5	x	30	K	200	10,10 brass
M 5	x	35	K	200	13,00 brass
M 5	x	40	K	200	13,60 brass
M 5	x	45	K	200	14,80 brass
M 5	x	50	K	200	15,70 brass
M 5	x	60	K	200	20,00 brass
M 5	x	70	K	200	24,80 brass
M 5	x	80	K	200	31,00 brass
M 5	x	100	K	200	51,00 brass
M 6	x	8	K	200	10,00 brass
M 6	x	10	K	200	8,10 brass
M 6	x	12	K	200	9,10 brass
M 6	x	16	K	200	10,40 brass
M 6	x	20	K	200	11,50 brass
M 6	x	25	K	200	12,20 brass
M 6	x	30	K	200	14,10 brass
M 6	x	35	K	200	16,10 brass
M 6	x	40	K	200	17,40 brass
M 6	x	45	K	200	20,00 brass
M 6	x	50	K	200	20,90 brass
M 6	x	60	K	100	27,00 brass
M 6	x	70	K	100	31,00 brass
M 6	x	80	K	100	33,50 brass
M 6	x	100	S	100	37,50 brass
M 8	x	16	K	100	22,90 brass
M 8	x	20	K	100	24,50 brass

DIN — 00964.700 — RAZ 450

964 Brass

Slotted raised countersunk head screws

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

Steel ➔ S. 179
Stainless ➔ S. 473

DIN 964 ➔ replaced by ISO 2010

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	25	K	100	25,50 brass
M 8	x	30	K	100	29,50 brass
M 8	x	35	K	100	31,50 brass
M 8	x	40	K	100	33,50 brass
M 8	x	50	K	100	41,50 brass
M 8	x	60	K	100	49,50 brass

DIN — 00964.730 — RAZ 450

964 Brass nickel plated

Slotted raised countersunk head screws

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

Steel ➔ S. 179
Stainless ➔ S. 473

DIN 964 ➔ replaced by ISO 2010

M 3	x	8	K	200	3,05 brass Ni
M 3	x	10	K	200	3,15 brass Ni
M 3	x	12	K	200	3,35 brass Ni
M 3	x	16	K	200	3,75 brass Ni
M 3	x	20	K	200	4,20 brass Ni
M 3	x	25	K	200	4,65 brass Ni
M 4	x	8	K	200	4,25 brass Ni
M 4	x	10	K	200	4,45 brass Ni
M 4	x	12	K	200	4,50 brass Ni
M 4	x	16	K	200	5,40 brass Ni
M 4	x	20	K	200	6,20 brass Ni
M 4	x	25	K	200	6,60 brass Ni
M 4	x	30	K	200	7,80 brass Ni
M 4	x	35	K	200	8,80 brass Ni
M 4	x	40	K	200	9,60 brass Ni
M 4	x	45	K	200	11,10 brass Ni
M 4	x	50	K	200	12,60 brass Ni
M 4	x	60	K	200	22,10 brass Ni
M 5	x	10	K	200	6,50 brass Ni
M 5	x	12	K	200	6,80 brass Ni
M 5	x	16	K	200	7,80 brass Ni
M 5	x	20	K	200	8,60 brass Ni
M 5	x	25	K	200	9,70 brass Ni
M 5	x	30	K	200	11,30 brass Ni
M 5	x	35	K	200	14,30 brass Ni
M 5	x	40	K	200	15,20 brass Ni
M 5	x	45	K	200	16,50 brass Ni
M 5	x	50	K	200	17,60 brass Ni
M 5	x	60	K	200	22,20 brass Ni
M 5	x	70	K	200	27,50 brass Ni
M 5	x	80	K	200	34,00 brass Ni
M 6	x	10	K	200	8,90 brass Ni
M 6	x	12	K	200	10,00 brass Ni
M 6	x	16	K	200	11,40 brass Ni
M 6	x	20	K	200	12,80 brass Ni
M 6	x	25	K	200	13,20 brass Ni
M 6	x	30	K	200	15,90 brass Ni
M 6	x	35	K	200	18,10 brass Ni
M 6	x	40	K	200	19,70 brass Ni
M 6	x	45	K	200	22,50 brass Ni
M 6	x	50	K	200	23,60 brass Ni
M 6	x	60	K	100	30,00 brass Ni
M 6	x	70	K	100	34,50 brass Ni
M 6	x	80	K	100	38,00 brass Ni

Dimensions	PU Pieces	€/100/Mat.
DIN	00964.740	RAZ 450

964 Brass chrome plated

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 179
Stainless → S. 473

DIN 964 → replaced by ISO 2010

M 3	x	8	K	200	5,20 brass Cr
M 3	x	10	K	200	5,70 brass Cr
M 3	x	12	K	200	6,20 brass Cr
M 3	x	16	K	200	7,30 brass Cr
M 3	x	20	K	200	8,60 brass Cr
M 3	x	30	K	200	11,70 brass Cr
M 4	x	8	K	200	6,50 brass Cr
M 4	x	10	K	200	6,90 brass Cr
M 4	x	12	K	200	7,30 brass Cr
M 4	x	16	K	200	8,80 brass Cr
M 4	x	20	K	200	10,30 brass Cr
M 4	x	25	K	200	11,50 brass Cr
M 4	x	30	K	200	13,50 brass Cr
M 4	x	35	K	200	15,20 brass Cr
M 4	x	40	K	200	16,70 brass Cr
M 4	x	45	K	200	19,60 brass Cr
M 4	x	50	K	200	21,30 brass Cr
M 4	x	60	K	200	32,00 brass Cr
M 5	x	10	K	200	10,50 brass Cr
M 5	x	12	K	200	11,30 brass Cr
M 5	x	16	K	200	13,40 brass Cr
M 5	x	20	K	200	15,20 brass Cr
M 5	x	25	K	200	17,60 brass Cr
M 5	x	30	K	200	20,30 brass Cr
M 5	x	35	K	200	24,40 brass Cr
M 5	x	40	K	200	27,00 brass Cr
M 5	x	50	K	200	32,00 brass Cr
M 5	x	60	K	200	39,00 brass Cr
M 5	x	70	K	200	47,00 brass Cr
M 6	x	10	K	200	15,00 brass Cr
M 6	x	16	K	200	20,00 brass Cr
M 6	x	20	K	200	22,50 brass Cr
M 6	x	25	K	200	26,00 brass Cr
M 6	x	30	K	200	29,50 brass Cr
M 6	x	35	K	200	33,50 brass Cr
M 6	x	40	K	200	37,00 brass Cr
M 6	x	50	K	200	44,50 brass Cr
M 6	x	60	K	100	55,00 brass Cr
M 6	x	80	K	100	70,00 brass Cr
M 8	x	20	K	100	42,00 brass Cr
M 8	x	25	K	100	46,00 brass Cr

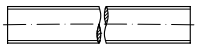
Colour marking for threaded rods

Property class/Material	Colour	~ Ral No.
St/4.6/4.8/5.8/MS/Kst.	none	–
5.6	brown	8015
5.8	blue	5010
8.8	yellow	1023
10.9	white	1013
12.9	black	9017

Colour instead of stamping according to DIN 976-1

Dimensions	PU Pieces	€/100/Mat.
~DIN	00975.700	RAZ 470

975 Brass



Threaded rods, length 1000 mm

As per DIN 976-1, type A

Steel → S. 182
Stainless → S. 478

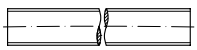
M 2	S	1	730,00 brass
M 3	S	1	360,00 brass
M 4	S	1	320,00 brass
M 5	S	1	490,00 brass
M 6	S	1	570,00 brass
M 8	S	1	880,00 brass
M 10	S	1	1290,00 brass
M 12	S	1	1720,00 brass
M 14	S	1	2490,00 brass
M 16	S	1	3270,00 brass
M 18	S	1	4860,00 brass
M 20	S	1	5150,00 brass
M 24	S	1	6540,00 brass

Important Note!

The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

~DIN	00975.600	RAZ 470

975 Plastic PA



Threaded rods, length 1000 mm

As per DIN 976-1, type A

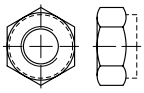
Caution! Rough tolerances as per VDI 2544.

Steel → S. 182
Stainless → S. 478

M 5	S	1	1060,00 plastic
M 6	S	1	1100,00 plastic
M 8	S	1	1340,00 plastic
M 10	S	1	1720,00 plastic
M 12	S	1	2180,00 plastic
M 16	S	1	3000,00 plastic
M 20	S	1	4500,00 plastic

Dimensions	PU Pieces	€/100/Mat.
~DIN	00985.700	RAZ 480

985 Brass



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use at temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 190
Stainless → S. 480

DIN 985 → replaced by ISO 10511

M 4	S	100	11,20 brass
M 5	S	100	12,40 brass
M 6	S	100	12,80 brass
M 8	S	100	21,60 brass
M 10	S	100	41,50 brass
M 12	S	50	64,00 brass

ISO	01207.705	RAZ 30

1207 Brass turned bare

Slotted cheese head screws

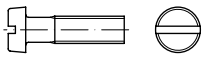
Dimensions → TI-37 Standard conversion → TI-11

Steel → S. 194
Stainless → S. 481

ISO 1207 → replaces DIN 84 (compatible)

M 1	x	2	S	100	12,00 brass turned
M 1	x	3	S	100	12,10 brass turned
M 1	x	4	S	100	12,40 brass turned
M 1	x	5	S	100	12,90 brass turned
M 1	x	6	S	100	14,30 brass turned
M 1	x	8	S	100	15,80 brass turned
M 1	x	10	S	100	17,90 brass turned
M 1,4	x	3	S	100	11,60 brass turned
M 1,4	x	4	S	100	12,00 brass turned
M 1,4	x	5	S	100	12,40 brass turned
M 1,4	x	6	S	100	13,50 brass turned
M 1,4	x	8	S	100	15,60 brass turned
M 1,4	x	10	S	100	17,50 brass turned
M 1,4	x	12	S	100	21,70 brass turned
M 1,4	x	16	S	100	22,70 brass turned
M 1,6	x	4	S	100	10,80 brass turned
M 1,6	x	5	S	100	11,00 brass turned
M 1,6	x	6	S	100	11,40 brass turned
M 1,6	x	8	S	100	12,90 brass turned
M 1,6	x	10	S	100	12,00 brass turned
M 1,6	x	12	S	100	15,20 brass turned
M 1,6	x	16	S	100	17,10 brass turned

Dimensions			PU	Pieces	€/100/Mat.
ISO	01207.700				RAZ 30
1207	**Brass**				



Slotted cheese head screws

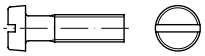
Dimensions → TI-37 Standard conversion → TI-11

Steel → S. 194
Stainless → S. 481

ISO 1207 → replaces DIN 84 (compatible)

M 2	x	4	K	200	4,30 brass
M 2	x	5	K	200	4,00 brass
M 2	x	6	K	200	3,65 brass
M 2	x	8	K	200	3,15 brass
M 2	x	10	K	200	3,30 brass
M 2	x	12	K	200	3,50 brass
M 2	x	16	K	200	4,00 brass
M 2	x	20	K	200	4,50 brass
M 2,5	x	3	K	200	9,00 brass
M 2,5	x	4	K	200	3,20 brass
M 2,5	x	5	K	200	3,40 brass
M 2,5	x	6	K	200	3,40 brass
M 2,5	x	8	K	200	3,15 brass
M 2,5	x	10	K	200	3,30 brass
M 2,5	x	12	K	200	3,50 brass
M 2,5	x	16	K	200	4,00 brass
M 2,5	x	20	K	200	4,50 brass
M 3	x	4	S	1000	3,50 brass
M 3	x	4	K	200	3,50 brass
M 3	x	5	S	1000	3,25 brass
M 3	x	5	K	200	3,25 brass
M 3	x	6	S	1000	2,60 brass
M 3	x	6	K	200	2,60 brass
M 3	x	8	S	1000	2,65 brass
M 3	x	8	K	200	2,65 brass
M 3	x	10	S	1000	2,75 brass
M 3	x	10	K	200	2,75 brass
M 3	x	12	S	1000	2,90 brass
M 3	x	12	K	200	2,90 brass
M 3	x	16	S	1000	3,30 brass
M 3	x	16	K	200	3,30 brass
M 3	x	18	K	200	3,80 brass
M 3	x	20	S	1000	3,80 brass
M 3	x	20	K	200	3,80 brass
M 3	x	25	S	1000	4,25 brass
M 3	x	25	K	200	4,25 brass
M 3	x	30	S	1000	5,20 brass
M 3	x	30	K	200	5,20 brass
M 3	x	35	K	200	5,50 brass
M 3	x	40	K	200	7,80 brass
M 3	x	45	K	200	10,60 brass
M 3	x	50	K	200	12,90 brass
M 3,5	x	8	K	200	4,20 brass
M 3,5	x	10	K	200	4,40 brass
M 3,5	x	12	K	200	4,50 brass
M 3,5	x	16	K	200	5,40 brass
M 3,5	x	20	K	200	6,30 brass
M 4	x	5	S	1000	4,00 brass
M 4	x	5	K	200	4,00 brass
M 4	x	6	S	1000	3,55 brass
M 4	x	6	K	200	3,55 brass
M 4	x	8	S	1000	3,85 brass
M 4	x	8	K	200	3,85 brass
M 4	x	10	S	1000	4,00 brass
M 4	x	10	K	200	4,00 brass
M 4	x	12	S	1000	4,10 brass
M 4	x	12	K	200	4,10 brass
M 4	x	16	S	1000	4,90 brass
M 4	x	16	K	200	4,90 brass
M 4	x	20	S	1000	5,70 brass
M 4	x	20	K	200	5,70 brass
M 4	x	25	S	1000	6,00 brass
M 4	x	25	K	200	6,00 brass
M 4	x	30	S	1000	7,10 brass
M 4	x	30	K	200	7,10 brass
M 4	x	35	S	1000	7,90 brass
M 4	x	35	K	200	7,90 brass
M 4	x	40	S	1000	8,60 brass
M 4	x	40	K	200	8,60 brass
M 4	x	45	K	200	10,60 brass
M 4	x	50	K	200	11,40 brass
M 4	x	60	K	200	20,00 brass
M 5	x	6	K	200	6,70 brass
M 5	x	8	K	200	5,90 brass
M 5	x	10	S	1000	6,00 brass
M 5	x	10	K	200	6,00 brass
M 5	x	12	S	1000	6,20 brass
M 5	x	12	K	200	6,20 brass
M 5	x	16	S	1000	7,10 brass
M 5	x	16	K	200	7,10 brass
M 5	x	20	S	1000	7,80 brass
M 5	x	20	K	200	7,80 brass
M 5	x	22	K	200	13,00 brass
M 5	x	25	S	1000	8,70 brass
M 5	x	25	K	200	8,70 brass
M 5	x	30	S	1000	10,10 brass
M 5	x	30	K	200	10,10 brass
M 5	x	35	S	1000	13,00 brass
M 5	x	35	K	200	13,00 brass
M 5	x	40	S	500	13,90 brass
M 5	x	40	K	200	13,90 brass
M 5	x	45	K	200	15,10 brass
M 5	x	50	K	200	15,00 brass
M 5	x	60	K	200	20,00 brass
M 5	x	70	K	200	24,80 brass
M 6	x	8	K	200	10,00 brass
M 6	x	10	S	1000	8,10 brass
M 6	x	10	K	200	8,10 brass
M 6	x	12	S	1000	9,10 brass
M 6	x	12	K	200	9,10 brass
M 6	x	16	S	1000	10,40 brass
M 6	x	16	K	200	10,40 brass
M 6	x	18	K	200	17,30 brass
M 6	x	20	S	1000	11,50 brass
M 6	x	20	K	200	11,50 brass
M 6	x	25	S	1000	12,30 brass
M 6	x	25	K	200	12,30 brass
M 6	x	30	S	500	14,10 brass
M 6	x	30	K	200	14,10 brass
M 6	x	35	K	200	16,10 brass
M 6	x	40	K	200	17,40 brass
M 6	x	45	K	200	20,00 brass
M 6	x	50	K	200	20,90 brass
M 6	x	60	K	100	27,00 brass
M 6	x	70	K	100	31,00 brass
M 6	x	80	K	100	33,50 brass
M 8	x	10	K	100	26,50 brass
M 8	x	12	K	100	26,50 brass
M 8	x	16	K	100	22,90 brass
M 8	x	20	K	100	24,50 brass
M 8	x	25	K	100	25,50 brass
M 8	x	30	K	100	29,50 brass
M 8	x	35	K	100	31,50 brass
M 8	x	40	K	100	33,50 brass
M 8	x	45	K	100	39,00 brass
M 8	x	50	K	100	41,50 brass
M 8	x	60	K	100	49,50 brass
M 10	x	16	K	100	37,00 brass
M 10	x	20	K	100	36,00 brass
M 10	x	25	K	100	41,00 brass
M 10	x	30	K	100	44,50 brass
M 10	x	35	K	100	49,50 brass
M 10	x	40	K	100	55,00 brass
M 10	x	45	K	100	59,00 brass
M 10	x	50	K	100	63,00 brass

ISO	01207.730	RAZ 30
1207	**Brass nickel plated**	



Slotted cheese head screws

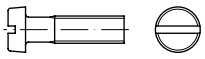
Dimensions → TI-37 Standard conversion → TI-11

Steel → S. 194
Stainless → S. 481

ISO 1207 → replaces DIN 84 (compatible)

M 2,5	x	6	K	200	3,85 brass Ni
M 2,5	x	8	K	200	3,55 brass Ni
M 2,5	x	10	K	200	3,70 brass Ni
M 2,5	x	16	K	200	4,45 brass Ni
M 3	x	6	K	200	3,05 brass Ni
M 3	x	8	K	200	3,05 brass Ni
M 3	x	10	K	200	3,15 brass Ni
M 3	x	12	K	200	3,35 brass Ni
M 3	x	16	K	200	3,75 brass Ni
M 3	x	20	K	200	4,20 brass Ni
M 3	x	25	K	200	4,65 brass Ni
M 3	x	30	K	200	5,70 brass Ni
M 4	x	6	K	200	4,00 brass Ni
M 4	x	8	K	200	4,25 brass Ni
M 4	x	10	K	200	4,45 brass Ni
M 4	x	12	K	200	4,55 brass Ni
M 4	x	16	K	200	5,40 brass Ni
M 4	x	20	K	200	6,30 brass Ni
M 4	x	25	K	200	6,70 brass Ni
M 4	x	30	K	200	7,90 brass Ni
M 4	x	40	K	200	9,60 brass Ni
M 5	x	10	K	200	6,70 brass Ni
M 5	x	16	K	200	8,00 brass Ni
M 5	x	20	K	200	8,80 brass Ni
M 5	x	30	K	200	11,40 brass Ni
M 6	x	10	K	200	9,20 brass Ni
M 6	x	16	K	200	11,70 brass Ni
M 6	x	20	K	200	12,60 brass Ni

ISO	01207.600	RAZ 30
1207	**Plastic PA**	



Slotted cheese head screws

Caution! Rough tolerances as per VDI 2544.

Nuts → DIN 555

Dimensions → TI-37 Standard conversion → TI-11

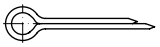
Steel → S. 194
Stainless → S. 481

M 2,5	x	6	S	200	8,20 plastic
M 2,5	x	10	S	200	8,20 plastic
M 2,5	x	16	S	200	8,50 plastic
M 3	x	4	S	200	5,80 plastic

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	S	200	5,80 plastic
M 3	x	6	S	200	5,80 plastic
M 3	x	8	S	200	5,80 plastic
M 3	x	10	S	200	5,90 plastic
M 3	x	12	S	200	5,90 plastic
M 3	x	16	S	200	6,10 plastic
M 3	x	20	S	200	6,40 plastic
M 3	x	25	S	200	6,60 plastic
M 3	x	30	S	200	6,80 plastic
M 4	x	6	S	200	6,00 plastic
M 4	x	8	S	200	6,10 plastic
M 4	x	10	S	200	6,30 plastic
M 4	x	12	S	200	6,50 plastic
M 4	x	16	S	200	6,60 plastic
M 4	x	20	S	200	6,90 plastic
M 4	x	25	S	200	7,20 plastic
M 4	x	30	S	200	7,70 plastic
M 4	x	35	S	200	8,10 plastic
M 4	x	40	S	200	8,30 plastic
M 5	x	6	S	200	6,80 plastic
M 5	x	8	S	200	6,90 plastic
M 5	x	10	S	200	7,20 plastic
M 5	x	12	S	200	7,20 plastic
M 5	x	16	S	200	7,90 plastic
M 5	x	20	S	200	9,20 plastic
M 5	x	25	S	200	9,60 plastic
M 5	x	30	S	200	10,30 plastic
M 5	x	35	S	200	11,00 plastic
M 5	x	40	S	200	11,60 plastic
M 5	x	50	S	200	12,90 plastic
M 6	x	8	S	200	18,60 plastic
M 6	x	10	S	200	8,20 plastic
M 6	x	12	S	200	8,30 plastic
M 6	x	16	S	200	8,70 plastic
M 6	x	20	S	200	9,60 plastic
M 6	x	25	S	200	10,40 plastic
M 6	x	30	S	200	12,60 plastic
M 6	x	35	S	200	13,20 plastic
M 6	x	40	S	200	13,60 plastic
M 6	x	45	S	200	14,00 plastic
M 6	x	50	S	200	14,40 plastic
M 6	x	60	S	100	15,70 plastic
M 6	x	70	S	100	16,60 plastic
M 8	x	16	S	200	17,30 plastic
M 8	x	20	S	200	18,90 plastic
M 8	x	25	S	200	20,10 plastic
M 8	x	30	S	200	21,60 plastic
M 8	x	40	S	100	23,90 plastic
M 8	x	50	S	100	25,50 plastic

ISO | 01234.700 | RAZ 40

1234 Brass



Split pins

Dimensions → TI-120 Standard conversion → TI-10

Steel → S. 194
Stainless → S. 481

ISO 1234 → replaces DIN 94 (compatible)

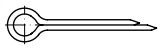
Nominal ∅ = drilling ∅ x length

1,6	x	10	S	200	4,80 brass
1,6	x	12	S	200	4,80 brass
1,6	x	16	S	200	4,80 brass
1,6	x	20	S	200	4,95 brass
1,6	x	25	S	200	5,30 brass
2	x	10	S	100	5,80 brass
2	x	12	S	100	5,80 brass

Dimensions			PU	Pieces	€/100/Mat.
2	x	16	S	100	5,80 brass
2	x	20	S	100	6,00 brass
2	x	25	S	100	6,40 brass
2	x	32	S	100	7,10 brass
2	x	40	S	100	7,80 brass
2	x	50	S	100	11,30 brass
3,2	x	16	S	100	8,40 brass
3,2	x	20	S	100	8,80 brass
3,2	x	25	S	100	9,80 brass
3,2	x	32	S	100	11,20 brass
3,2	x	36	S	100	11,90 brass
3,2	x	40	S	100	12,70 brass
3,2	x	50	S	100	14,70 brass
3,2	x	63	S	100	17,30 brass
4	x	20	S	100	12,40 brass
4	x	25	S	100	14,00 brass
4	x	32	S	100	16,20 brass
4	x	36	S	100	17,50 brass
4	x	40	S	100	18,80 brass
4	x	50	S	100	21,90 brass
4	x	63	S	100	26,00 brass
5	x	32	S	100	23,10 brass
5	x	36	S	100	24,90 brass
5	x	40	S	100	27,00 brass
5	x	50	S	100	31,50 brass
5	x	63	S	100	38,50 brass
6,3	x	50	S	100	46,50 brass
6,3	x	63	S	50	58,00 brass
6,3	x	100	S	50	84,00 brass

ISO | 01234.301 | RAZ 40

1234 Copper



Split pins

Dimensions → TI-120 Standard conversion → TI-10

Steel → S. 196
Stainless → S. 483

ISO 1234 → replaces DIN 94 (compatible)

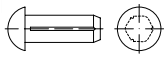
Nominal ∅ = drilling ∅ x length

2	x	16	S	100	5,80 Cu
2	x	20	S	100	6,00 Cu
2	x	25	S	100	6,50 Cu
2	x	40	S	100	7,80 Cu
3,2	x	20	S	100	9,00 Cu
3,2	x	25	S	100	10,00 Cu
3,2	x	32	S	100	11,40 Cu
3,2	x	36	S	100	12,20 Cu
3,2	x	40	S	100	13,00 Cu
3,2	x	50	S	100	15,10 Cu
4	x	25	S	100	14,50 Cu
4	x	32	S	100	16,80 Cu
4	x	36	S	100	18,10 Cu
4	x	40	S	100	19,50 Cu
4	x	50	S	100	22,80 Cu
4	x	63	S	100	27,50 Cu
5	x	32	S	100	24,20 Cu
5	x	36	S	100	26,50 Cu
5	x	40	S	100	28,50 Cu
5	x	50	S	100	33,50 Cu
5	x	63	S	100	40,50 Cu
5	x	71	S	100	44,50 Cu
5	x	80	S	100	48,50 Cu
6,3	x	50	S	100	46,00 Cu
6,3	x	63	S	50	56,00 Cu
6,3	x	80	S	50	68,00 Cu

Dimensions			PU	Pieces	€/100/Mat.

DIN | 01476.700 | RAZ 500

1476 Brass



Grooved pins with round head

Dimensions → TI-118 Standard conversion → TI-10

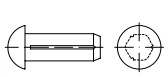
Steel → S. 202
Stainless → S. 485

DIN 1476 → replaced by ISO 8746 (compatible)

2	x	3	K	200	6,00 brass
2	x	4	S	1000	4,45 brass
2	x	4	K	200	6,10 brass
2	x	5	S	1000	4,55 brass
2	x	5	K	200	6,20 brass
2	x	6	S	1000	4,65 brass
2	x	6	K	200	6,30 brass
2	x	8	K	200	6,80 brass
3	x	5	K	200	8,20 brass
3	x	6	S	1000	6,90 brass
3	x	6	K	200	8,50 brass
3	x	8	S	1000	7,40 brass
3	x	8	K	200	9,10 brass
3	x	10	S	1000	8,30 brass
3	x	10	K	200	10,00 brass
3	x	12	S	1000	9,30 brass

DIN | 01476.300 | RAZ 500

1476 Aluminium



Grooved pins with round head

Dimensions → TI-118 Standard conversion → TI-10

Steel → S. 202
Stainless → S. 485

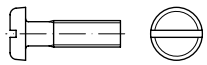
DIN 1476 → replaced by ISO 8746 (compatible)

1,4	x	4	S	500	1,90 Al
1,6	x	4	S	500	2,10 Al
1,6	x	5	S	500	2,10 Al
1,6	x	6	S	500	2,20 Al
2	x	3	S	500	2,15 Al
2	x	4	S	500	2,15 Al
2	x	5	S	500	2,15 Al
2	x	6	S	500	2,15 Al
2	x	8	S	500	2,20 Al
2	x	10	S	500	2,35 Al
2,3	x	5	S	500	2,35 Al
2,5	x	5	S	500	2,40 Al
2,5	x	6	S	500	2,40 Al
2,5	x	8	S	500	2,40 Al
3	x	4	S	500	2,75 Al
3	x	5	S	500	2,75 Al
3	x	6	S	500	2,75 Al
3	x	8	S	500	2,80 Al
3	x	10	S	500	3,00 Al
3	x	12	S	500	3,00 Al
4	x	6	S	500	4,45 Al
4	x	8	S	500	4,50 Al
4	x	10	S	500	4,50 Al
5	x	12	S	500	7,60 Al

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU Pieces	€/100/Mat.
ISO	01580.700	RAZ 30

1580 Brass



Slotted pan head screws

Dimensions → TI-37 Standard conversion → TI-11

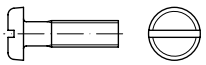
Steel → S. 209
Stainless → S. 487

ISO 1580 → replaces DIN 85 (compatible)

M 3	x	4	K	200	3,75 brass
M 3	x	5	K	200	3,45 brass
M 3	x	6	K	200	2,80 brass
M 3	x	8	K	200	2,85 brass
M 3	x	10	K	200	2,95 brass
M 3	x	12	K	200	3,15 brass
M 3	x	16	K	200	3,60 brass
M 3	x	20	K	200	4,10 brass
M 3	x	25	K	200	4,65 brass
M 3	x	30	K	200	5,70 brass
M 4	x	6	K	200	3,90 brass
M 4	x	8	K	200	4,15 brass
M 4	x	10	K	200	4,35 brass
M 4	x	12	K	200	4,35 brass
M 4	x	16	K	200	5,30 brass
M 4	x	20	K	200	6,20 brass
M 4	x	25	K	200	6,50 brass
M 4	x	30	K	200	7,70 brass
M 4	x	35	K	200	8,70 brass
M 4	x	40	K	200	9,40 brass
M 5	x	6	K	200	7,30 brass
M 5	x	8	K	200	6,40 brass
M 5	x	10	K	200	6,50 brass
M 5	x	12	K	200	6,70 brass
M 5	x	16	K	200	7,70 brass
M 5	x	20	K	200	8,50 brass
M 5	x	25	K	200	9,60 brass
M 5	x	30	K	200	11,00 brass
M 5	x	35	K	200	14,30 brass
M 5	x	40	K	200	15,00 brass
M 6	x	10	K	200	8,90 brass
M 6	x	12	K	200	10,00 brass
M 6	x	16	K	200	11,40 brass
M 6	x	20	K	200	12,70 brass
M 6	x	25	K	200	13,40 brass
M 6	x	30	K	200	15,50 brass
M 6	x	35	K	200	17,70 brass
M 6	x	40	K	200	19,20 brass

Dimensions	PU Pieces	€/100/Mat.
ISO	01580.600	RAZ 30

1580 Plastic PA



Slotted pan head screws

Caution! Rough tolerances as per VDI 2544.

Nuts → DIN 555

Dimensions → TI-37 Standard conversion → TI-11

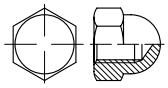
Steel → S. 209
Stainless → S. 487

ISO 1580 → replaces DIN 85 (compatible)

M 3	x	6	S	200	6,40 plastic
M 3	x	8	S	200	6,40 plastic
M 3	x	10	S	200	6,90 plastic
M 3	x	12	S	200	6,90 plastic
M 4	x	5	S	200	10,00 plastic
M 4	x	6	S	200	10,50 plastic
M 4	x	8	S	200	12,00 plastic
M 4	x	10	S	200	7,00 plastic
M 4	x	12	S	200	7,00 plastic
M 4	x	16	S	200	7,30 plastic
M 4	x	20	S	200	7,60 plastic
M 5	x	8	S	200	7,60 plastic
M 5	x	10	S	200	7,90 plastic
M 5	x	12	S	200	8,30 plastic
M 5	x	16	S	200	8,70 plastic
M 5	x	20	S	200	10,10 plastic
M 6	x	10	S	200	9,00 plastic
M 6	x	16	S	200	9,60 plastic
M 6	x	20	S	200	10,60 plastic
M 6	x	25	S	200	12,50 plastic
M 6	x	30	S	200	13,80 plastic

DIN	01587.700	RAZ 530

1587 Brass



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 209
Stainless → S. 488

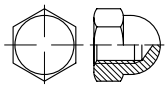
SW = wrench size

M 3	S	1000	6,60 brass
M 3	K	100	9,90 brass
M 4	S	1000	7,20 brass
M 4	K	100	10,40 brass
M 5	S	500	9,10 brass
M 5	K	100	12,30 brass
M 6	S	500	13,20 brass
M 6	K	100	16,70 brass
M 8	S	250	29,50 brass
M 8	K	100	35,00 brass
M 10 SW 17	S	100	56,00 brass
M 12 SW 19	S	50	76,00 brass

Dimensions	PU Pieces	€/100/Mat.
M 14 SW 22	S 50	137,00 brass
M 16	S 25	160,00 brass
M 18	S 25	385,00 brass
M 20	S 25	265,00 brass
M 24	S 1	550,00 brass

DIN	01587.730	RAZ 530

1587 Brass nickel plated



Hexagon domed cap nuts, high type

As from M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

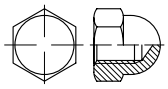
Steel → S. 209
Stainless → S. 488

SW = wrench size

M 3	S	100	10,40 NP
M 4	S	100	10,90 NP
M 5	S	100	13,00 NP
M 6	S	100	18,00 NP
M 8	S	100	37,50 NP
M 10 SW 17	S	100	61,00 NP
M 12 SW 19	S	50	81,00 NP

DIN	01587.740	RAZ 530

1587 Brass chrome plated



Hexagon domed cap nuts, high type

From M 12 with groove or appropriate screwing in depth t min.

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

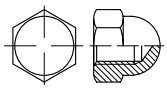
Steel → S. 209
Stainless → S. 488

SW = wrench size

M 3	K	100	14,10 brass Cr
M 4	S	1000	14,30 brass Cr
M 4	K	100	17,10 brass Cr
M 5	S	500	15,80 brass Cr
M 5	K	100	18,40 brass Cr
M 6	S	500	20,00 brass Cr
M 6	K	100	24,20 brass Cr
M 8	S	250	42,00 brass Cr
M 8	K	100	48,00 brass Cr
M 10 SW 17	S	100	78,00 brass Cr
M 12 SW 19	S	50	113,00 brass Cr
M 16	S	25	275,00 brass Cr
M 20	S	25	375,00 brass Cr

Dimensions	PU	Pieces	€/100/Mat.
DIN	01587.600		RAZ 530

1587 Plastic PA



Hexagon domed cap nuts, high type

Caution! Rough tolerances as per VDI 2544.

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 209
Stainless → S. 488

SW = wrench size

M 3		S	100	12,50 plastic
M 4		S	100	15,00 plastic
M 5		S	100	17,00 plastic
M 6		S	100	18,50 plastic
M 8		S	100	23,00 plastic
M 10	SW 17	S	100	42,00 plastic
M 12	SW 19	S	100	47,50 plastic
M 16		S	100	285,00 plastic

ISO	02009.704	RAZ 450

2009 Brass turned bare

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 212
Stainless → S. 489

ISO 2009 → replaces DIN 963

M 1,6	x	4	S	100	10,00 brass turned
M 1,6	x	6	S	100	10,40 brass turned
M 1,6	x	10	S	100	13,50 brass turned

ISO	02009.700	RAZ 450

2009 Brass

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 212
Stainless → S. 489

ISO 2009 → replaces DIN 963

M 2	x	4	K	200	4,25 brass
M 2	x	5	K	200	3,90 brass
M 2	x	6	K	200	3,55 brass
M 2	x	8	K	200	3,15 brass
M 2	x	10	K	200	3,30 brass
M 2	x	12	K	200	3,50 brass
M 2	x	16	K	200	4,00 brass
M 2	x	20	K	200	4,50 brass
M 2,5	x	4	K	200	4,35 brass
M 2,5	x	5	K	200	3,80 brass
M 2,5	x	6	K	200	3,25 brass
M 2,5	x	8	K	200	3,15 brass
M 2,5	x	10	K	200	3,30 brass
M 2,5	x	12	K	200	3,50 brass
M 2,5	x	16	K	200	4,00 brass
M 2,5	x	18	K	200	6,80 brass
M 2,5	x	20	K	200	4,50 brass
M 3	x	4	S	1000	3,25 brass
M 3	x	4	K	200	3,25 brass
M 3	x	5	K	200	3,05 brass
M 3	x	6	S	1000	2,60 brass
M 3	x	6	K	200	2,60 brass
M 3	x	8	S	1000	2,65 brass
M 3	x	8	K	200	2,65 brass
M 3	x	10	S	1000	2,75 brass
M 3	x	10	K	200	2,75 brass
M 3	x	12	S	1000	2,90 brass
M 3	x	12	K	200	2,90 brass
M 3	x	16	S	1000	3,30 brass
M 3	x	16	K	200	3,30 brass
M 3	x	18	K	200	5,70 brass
M 3	x	20	S	1000	3,80 brass
M 3	x	20	K	200	3,80 brass
M 3	x	25	K	200	4,25 brass
M 3	x	30	K	200	5,20 brass
M 3	x	35	K	200	5,50 brass
M 3	x	40	K	200	7,80 brass
M 4	x	5	K	200	4,00 brass
M 4	x	6	S	1000	3,55 brass
M 4	x	6	K	200	3,55 brass
M 4	x	8	S	1000	3,85 brass
M 4	x	8	K	200	3,85 brass
M 4	x	10	S	1000	4,00 brass
M 4	x	10	K	200	4,00 brass
M 4	x	12	S	1000	4,10 brass
M 4	x	12	K	200	4,10 brass
M 4	x	16	S	1000	4,90 brass
M 4	x	16	K	200	4,90 brass
M 4	x	18	K	200	8,50 brass
M 4	x	20	S	1000	5,70 brass
M 4	x	20	K	200	5,70 brass
M 4	x	25	S	1000	6,00 brass
M 4	x	25	K	200	6,00 brass
M 4	x	30	S	1000	7,10 brass
M 4	x	30	K	200	7,10 brass
M 4	x	35	K	200	7,90 brass
M 4	x	40	K	200	8,60 brass
M 4	x	45	K	200	10,60 brass
M 4	x	50	K	200	11,40 brass
M 5	x	8	K	200	5,90 brass
M 5	x	10	S	1000	6,00 brass
M 5	x	10	K	200	6,00 brass
M 5	x	12	S	1000	6,20 brass
M 5	x	12	K	200	6,20 brass
M 5	x	16	S	1000	7,10 brass
M 5	x	16	K	200	7,10 brass
M 5	x	18	K	200	11,50 brass
M 5	x	20	S	1000	7,70 brass
M 5	x	20	K	200	7,70 brass
M 5	x	25	S	1000	8,70 brass
M 5	x	25	K	200	8,70 brass
M 5	x	30	S	1000	10,10 brass
M 5	x	30	K	200	10,10 brass
M 5	x	35	K	200	13,00 brass
M 5	x	40	K	200	13,60 brass
M 5	x	45	K	200	14,80 brass
M 5	x	50	K	200	15,70 brass
M 5	x	60	K	200	20,00 brass
M 6	x	10	S	1000	8,10 brass
M 6	x	10	K	200	8,10 brass
M 6	x	12	S	1000	9,10 brass
M 6	x	12	K	200	9,10 brass
M 6	x	16	S	1000	10,40 brass
M 6	x	16	K	200	10,40 brass
M 6	x	20	S	1000	11,50 brass
M 6	x	20	K	200	11,50 brass
M 6	x	25	S	1000	12,20 brass
M 6	x	25	K	200	12,20 brass
M 6	x	30	K	200	14,10 brass
M 6	x	35	K	200	16,10 brass
M 6	x	40	K	200	17,40 brass
M 6	x	45	K	200	20,00 brass
M 6	x	50	K	200	20,90 brass
M 6	x	60	K	100	27,00 brass
M 6	x	70	K	100	31,00 brass
M 6	x	80	K	100	33,50 brass
M 8	x	12	K	100	26,50 brass
M 8	x	16	K	100	22,90 brass
M 8	x	20	K	100	24,50 brass
M 8	x	25	K	100	25,50 brass
M 8	x	30	K	100	29,50 brass
M 8	x	35	K	100	31,50 brass
M 8	x	40	K	100	33,50 brass
M 8	x	45	K	100	39,00 brass
M 8	x	50	K	100	41,50 brass
M 8	x	60	K	100	49,50 brass
M 8	x	70	K	100	61,00 brass
M 8	x	80	K	100	65,00 brass
M 10	x	16	K	100	37,00 brass
M 10	x	20	K	100	36,00 brass
M 10	x	25	K	100	41,00 brass
M 10	x	30	K	100	44,50 brass
M 10	x	35	K	100	49,50 brass
M 10	x	40	K	100	55,00 brass
M 10	x	45	K	100	59,00 brass
M 10	x	50	K	100	63,00 brass
M 10	x	60	K	100	71,00 brass
M 10	x	70	K	100	92,00 brass
M 10	x	80	K	100	100,00 brass
M 12	x	20	K	50	108,00 brass
M 12	x	25	K	50	111,00 brass
M 12	x	30	K	50	123,00 brass
M 12	x	35	K	50	135,00 brass
M 12	x	40	K	50	147,00 brass
M 12	x	45	K	50	158,00 brass
M 12	x	50	K	50	170,00 brass
M 12	x	70	K	50	220,00 brass
M 16	x	25	K	25	440,00 brass
M 16	x	30	K	25	440,00 brass
M 16	x	35	K	25	475,00 brass
M 16	x	40	K	25	510,00 brass
M 16	x	45	K	25	550,00 brass
M 16	x	50	K	25	590,00 brass

ISO	02009.730	RAZ 450

2009 Brass nickel plated

Slotted countersunk head screws

Dimensions → TI-38 Standard conversion → TI-11

Steel → S. 212
Stainless → S. 489

ISO 2009 → replaces DIN 963

M 3	x	10	K	200	3,15 NP
M 3	x	16	K	200	3,75 NP
M 3	x	20	K	200	4,20 NP
M 3	x	30	K	200	5,60 NP
M 4	x	10	K	200	4,45 NP

€/100 = price in € plus VAT when ordering full package unit

Dimensions			PU	Pieces	€/100/Mat.
M 4	x	16	K	200	5,30 NP
M 4	x	20	K	200	6,20 NP
M 4	x	30	K	200	7,80 NP
M 5	x	10	K	200	6,40 NP
M 5	x	16	K	200	7,70 NP
M 5	x	20	K	200	8,50 NP
M 6	x	10	K	200	8,80 NP
M 6	x	16	K	200	11,40 NP
M 6	x	20	K	200	12,70 NP

ISO | 02009.600 | RAZ 450

2009 Plastic PA

Slotted countersunk head screws

Caution! Rough tolerances as per VDI 2544.

Nuts ➔ DIN 555

Dimensions ➔ TI-38 Standard conversion ➔ TI-11

Steel ➔ S. 212
Stainless ➔ S. 489

ISO 2009 ➔ replaces DIN 963

M 3	x	6	S	200	5,50 plastic
M 3	x	8	S	200	5,70 plastic
M 3	x	10	S	200	5,90 plastic
M 3	x	12	S	200	6,00 plastic
M 3	x	16	S	200	6,10 plastic
M 3	x	20	S	200	6,40 plastic
M 4	x	10	S	200	6,80 plastic
M 4	x	12	S	200	7,10 plastic
M 4	x	16	S	200	7,20 plastic
M 4	x	20	S	200	7,50 plastic
M 4	x	25	S	200	7,80 plastic
M 4	x	30	S	200	8,20 plastic
M 5	x	10	S	200	7,30 plastic
M 5	x	12	S	200	7,80 plastic
M 5	x	16	S	200	8,50 plastic
M 5	x	20	S	200	9,40 plastic
M 5	x	25	S	200	10,00 plastic
M 6	x	10	S	200	8,20 plastic
M 6	x	12	S	200	9,00 plastic
M 6	x	16	S	200	9,50 plastic
M 6	x	20	S	200	10,50 plastic
M 6	x	25	S	200	12,00 plastic
M 6	x	30	S	200	13,00 plastic
M 8	x	16	S	200	17,40 plastic
M 8	x	20	S	200	18,50 plastic
M 8	x	25	S	200	20,60 plastic
M 8	x	30	S	200	23,50 plastic
M 8	x	40	S	200	27,50 plastic

Dimensions			PU	Pieces	€/100/Mat.
M 3	x	5	K	200	3,05 brass
M 3	x	6	K	200	2,60 brass
M 3	x	8	K	200	2,65 brass
M 3	x	10	K	200	2,75 brass
M 3	x	12	K	200	2,90 brass
M 3	x	16	K	200	3,30 brass
M 3	x	20	K	200	3,80 brass
M 3	x	25	K	200	4,25 brass
M 3	x	30	K	200	5,20 brass
M 3	x	35	K	200	5,50 brass
M 3	x	40	K	200	7,80 brass
M 4	x	5	K	200	4,00 brass
M 4	x	6	K	200	3,55 brass
M 4	x	8	K	200	3,85 brass
M 4	x	10	K	200	4,00 brass
M 4	x	12	K	200	4,10 brass
M 4	x	16	K	200	4,90 brass
M 4	x	20	K	200	5,70 brass
M 4	x	25	K	200	6,00 brass
M 4	x	30	K	200	7,10 brass
M 4	x	35	K	200	7,90 brass
M 4	x	40	K	200	8,60 brass
M 4	x	45	K	200	10,60 brass
M 4	x	50	K	200	11,10 brass
M 4	x	60	K	200	20,00 brass
M 5	x	8	K	200	5,90 brass
M 5	x	10	K	200	6,00 brass
M 5	x	12	K	200	6,20 brass
M 5	x	16	K	200	7,10 brass
M 5	x	20	K	200	7,80 brass
M 5	x	25	K	200	8,70 brass
M 5	x	30	K	200	10,10 brass
M 5	x	35	K	200	13,00 brass
M 5	x	40	K	200	13,60 brass
M 5	x	45	K	200	14,80 brass
M 5	x	50	K	200	15,70 brass
M 5	x	60	K	200	20,00 brass
M 5	x	70	K	200	24,80 brass
M 5	x	80	K	200	31,00 brass
M 5	x	100	K	200	51,00 brass
M 6	x	8	K	200	10,00 brass
M 6	x	10	K	200	8,10 brass
M 6	x	12	K	200	9,10 brass
M 6	x	16	K	200	10,40 brass
M 6	x	20	K	200	11,50 brass
M 6	x	25	K	200	12,20 brass
M 6	x	30	K	200	14,10 brass
M 6	x	35	K	200	16,10 brass
M 6	x	40	K	200	17,40 brass
M 6	x	45	K	200	20,00 brass
M 6	x	50	K	200	20,90 brass
M 6	x	60	K	100	27,00 brass
M 6	x	70	K	100	31,00 brass
M 6	x	80	K	100	33,50 brass
M 6	x	100	S	100	37,50 brass
M 8	x	16	K	100	22,90 brass
M 8	x	20	K	100	24,50 brass

ISO | 02010.700 | RAZ 450

2010 Brass

Slotted raised countersunk head screws

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

Steel ➔ S. 214
Stainless ➔ S. 491

ISO 2010 ➔ replaces DIN 964

Dimensions			PU	Pieces	€/100/Mat.
M 8	x	25	K	100	25,50 brass
M 8	x	30	K	100	29,50 brass
M 8	x	35	K	100	31,50 brass
M 8	x	40	K	100	33,50 brass
M 8	x	50	K	100	41,50 brass
M 8	x	60	K	100	49,50 brass

ISO | 02010.730 | RAZ 450

2010 Brass nickel plated

Slotted raised countersunk head screws

Dimensions ➔ TI-39 Standard conversion ➔ TI-11

Steel ➔ S. 214
Stainless ➔ S. 491

ISO 2010 ➔ replaces DIN 964

M 3	x	8	K	200	3,05 brass Ni
M 3	x	10	K	200	3,15 brass Ni
M 3	x	12	K	200	3,35 brass Ni
M 3	x	16	K	200	3,75 brass Ni
M 3	x	20	K	200	4,20 brass Ni
M 3	x	25	K	200	4,65 brass Ni
M 4	x	8	K	200	4,25 brass Ni
M 4	x	10	K	200	4,45 brass Ni
M 4	x	12	K	200	4,50 brass Ni
M 4	x	16	K	200	5,40 brass Ni
M 4	x	20	K	200	6,20 brass Ni
M 4	x	25	K	200	6,60 brass Ni
M 4	x	30	K	200	7,80 brass Ni
M 4	x	35	K	200	8,80 brass Ni
M 4	x	40	K	200	9,60 brass Ni
M 4	x	45	K	200	11,10 brass Ni
M 4	x	50	K	200	12,60 brass Ni
M 4	x	60	K	200	22,10 brass Ni
M 5	x	10	K	200	6,50 brass Ni
M 5	x	12	K	200	6,80 brass Ni
M 5	x	16	K	200	7,80 brass Ni
M 5	x	20	K	200	8,60 brass Ni
M 5	x	25	K	200	9,70 brass Ni
M 5	x	30	K	200	11,30 brass Ni
M 5	x	35	K	200	14,30 brass Ni
M 5	x	40	K	200	15,20 brass Ni
M 5	x	45	K	200	16,50 brass Ni
M 5	x	50	K	200	17,60 brass Ni
M 5	x	60	K	200	22,20 brass Ni
M 5	x	70	K	200	27,50 brass Ni
M 5	x	80	K	200	34,00 brass Ni
M 6	x	10	K	200	8,90 brass Ni
M 6	x	12	K	200	10,00 brass Ni
M 6	x	16	K	200	11,40 brass Ni
M 6	x	20	K	200	12,80 brass Ni
M 6	x	25	K	200	13,20 brass Ni
M 6	x	30	K	200	15,90 brass Ni
M 6	x	35	K	200	18,10 brass Ni
M 6	x	40	K	200	19,70 brass Ni
M 6	x	45	K	200	22,50 brass Ni
M 6	x	50	K	200	23,60 brass Ni
M 6	x	60	K	100	30,00 brass Ni
M 6	x	70	K	100	34,50 brass Ni
M 6	x	80	K	100	38,00 brass Ni

Dimensions	PU	Pieces	€/100/Mat.
ISO	02010.740		RAZ 450

2010 Brass chrome plated

Slotted raised countersunk head screws

Dimensions → TI-39 Standard conversion → TI-11

Steel → S. 214
Stainless → S. 491

ISO 2010 → replaces DIN 964

M 3	x	8	K	200	5,20	brass Cr
M 3	x	10	K	200	5,70	brass Cr
M 3	x	12	K	200	6,20	brass Cr
M 3	x	16	K	200	7,30	brass Cr
M 3	x	20	K	200	8,60	brass Cr
M 3	x	30	K	200	11,70	brass Cr
M 4	x	8	K	200	6,50	brass Cr
M 4	x	10	K	200	6,90	brass Cr
M 4	x	12	K	200	7,30	brass Cr
M 4	x	16	K	200	8,80	brass Cr
M 4	x	20	K	200	10,30	brass Cr
M 4	x	25	K	200	11,50	brass Cr
M 4	x	30	K	200	13,50	brass Cr
M 4	x	35	K	200	15,20	brass Cr
M 4	x	40	K	200	16,70	brass Cr
M 4	x	45	K	200	19,60	brass Cr
M 4	x	50	K	200	21,30	brass Cr
M 4	x	60	K	200	32,00	brass Cr
M 5	x	10	K	200	10,50	brass Cr
M 5	x	12	K	200	11,30	brass Cr
M 5	x	16	K	200	13,40	brass Cr
M 5	x	20	K	200	15,20	brass Cr
M 5	x	25	K	200	17,60	brass Cr
M 5	x	30	K	200	20,30	brass Cr
M 5	x	35	K	200	24,40	brass Cr
M 5	x	40	K	200	27,00	brass Cr
M 5	x	50	K	200	32,00	brass Cr
M 5	x	60	K	200	39,00	brass Cr
M 5	x	70	K	200	47,00	brass Cr
M 6	x	10	K	200	15,00	brass Cr
M 6	x	16	K	200	20,00	brass Cr
M 6	x	20	K	200	22,50	brass Cr
M 6	x	25	K	200	26,00	brass Cr
M 6	x	30	K	200	29,50	brass Cr
M 6	x	35	K	200	33,50	brass Cr
M 6	x	40	K	200	37,00	brass Cr
M 6	x	50	K	200	44,50	brass Cr
M 6	x	60	K	100	55,00	brass Cr
M 6	x	80	K	100	70,00	brass Cr
M 8	x	20	K	100	42,00	brass Cr
M 8	x	25	K	100	46,00	brass Cr

Dimensions	PU	Pieces	€/100/Mat.
DIN	03404.700		RAZ 556

3404 Brass MF

Lubricating nipples, button head, with round head, hexagon drive, MF = with metric fine pitch thread

Dimensions → TI-25

Steel → S. 222

Thread M x thread pitch – wrench size

M 10	x 1 SW 17	S	100	350,00	brass

ISO	04014.700	*

4014 Brass

Hexagon head bolts with shank

*M 10/12/14/22= RAZ 3210 other ∅ = RAZ 400

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-227 Standard conversion → TI-6

Steel → S. 224
Stainless → S. 496

ISO 4014 → replaces DIN 931

M 8	x	40	S	100	101,00	brass
M 8	x	50	S	100	119,00	brass
M 8	x	60	S	100	138,00	brass
M 10	x	50	S	100	255,00	brass
M 10	x	60	S	100	325,00	brass
M 12	x	50	S	50	310,00	brass
M 12	x	60	S	50	395,00	brass
M 12	x	70	S	50	455,00	brass

ISO	04017.700	*

4017 Brass

Hexagon head screws with thread up to head

*M 10/12/14/22= RAZ 3210 other ∅ = RAZ 400

Dimensions → TI-15 Tightening torque → TI-236
Mech. properties → TI-227 Standard conversion → TI-6

Steel → S. 240–241
Stainless → S. 502

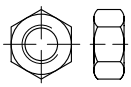
ISO 4017 → replaces DIN 933

M 4	x	6	S	100	9,50	brass
M 4	x	8	S	100	4,80	brass
M 4	x	10	S	100	4,80	brass
M 4	x	12	S	100	5,30	brass
M 4	x	16	S	100	5,70	brass
M 4	x	20	S	100	6,30	brass
M 4	x	25	S	100	7,20	brass
M 4	x	30	S	100	8,20	brass
M 4	x	35	S	100	9,20	brass
M 4	x	40	S	100	10,10	brass
M 4	x	50	S	100	16,00	brass
M 4	x	60	S	100	18,00	brass
M 5	x	8	S	100	6,60	brass
M 5	x	10	S	100	6,60	brass
M 5	x	12	S	100	7,30	brass
M 5	x	16	S	100	7,90	brass
M 5	x	20	S	100	9,00	brass
M 5	x	25	S	100	10,20	brass
M 5	x	30	S	100	11,30	brass
M 5	x	35	S	100	12,60	brass
M 5	x	40	S	100	12,90	brass
M 5	x	45	S	100	17,80	brass
M 5	x	50	S	100	16,20	brass
M 5	x	60	S	100	21,00	brass
M 6	x	8	S	100	10,10	brass
M 6	x	10	S	100	10,10	brass
M 6	x	12	S	100	10,30	brass
M 6	x	16	S	100	11,20	brass
M 6	x	20	S	100	12,40	brass
M 6	x	25	S	100	13,80	brass
M 6	x	30	S	100	15,40	brass
M 6	x	35	S	100	16,90	brass
M 6	x	40	S	100	18,50	brass
M 6	x	45	S	100	21,90	brass
M 6	x	50	S	100	21,90	brass
M 6	x	60	S	100	28,50	brass
M 8	x	10	S	100	21,90	brass
M 8	x	12	S	100	23,00	brass
M 8	x	16	S	100	24,30	brass
M 8	x	20	S	100	26,50	brass
M 8	x	25	S	100	30,00	brass
M 8	x	30	S	100	33,00	brass
M 8	x	35	S	100	35,50	brass
M 8	x	40	S	100	38,50	brass
M 8	x	45	S	100	44,50	brass
M 8	x	50	S	100	44,50	brass
M 8	x	55	S	100	49,00	brass
M 8	x	60	S	100	49,00	brass
M 8	x	65	S	100	59,00	brass
M 8	x	70	S	100	59,00	brass
M 8	x	80	S	100	65,00	brass
M 8	x	90	S	100	72,00	brass
M 10	x	10	S	100	148,00	brass
M 10	x	12	S	100	49,50	brass
M 10	x	16	S	100	45,00	brass
M 10	x	20	S	100	42,50	brass
M 10	x	25	S	100	53,00	brass
M 10	x	30	S	100	56,00	brass
M 10	x	35	S	100	61,00	brass
M 10	x	40	S	100	65,00	brass
M 10	x	45	S	100	74,00	brass
M 10	x	50	S	100	74,00	brass
M 10	x	60	S	100	83,00	brass
M 10	x	65	S	100	96,00	brass
M 10	x	70	S	100	96,00	brass
M 10	x	80	S	100	111,00	brass
M 10	x	100	S	50	150,00	brass
M 12	x	16	S	50	69,00	brass
M 12	x	20	S	50	73,00	brass
M 12	x	25	S	50	81,00	brass
M 12	x	30	S	50	84,00	brass
M 12	x	35	S	50	93,00	brass
M 12	x	40	S	50	98,00	brass
M 12	x	45	S	50	104,00	brass
M 12	x	50	S	50	104,00	brass
M 12	x	55	S	50	108,00	brass
M 12	x	60	S	50	108,00	brass
M 12	x	70	S	50	127,00	brass

Dimensions			PU	Pieces	€/100/Mat.
M 12	x	80	S	50	151,00 brass
M 12	x	90	S	50	173,00 brass
M 12	x	100	S	50	198,00 brass
M 16	x	20	S	50	247,00 brass
M 16	x	25	S	50	270,00 brass
M 16	x	30	S	50	295,00 brass
M 16	x	35	S	50	325,00 brass
M 16	x	40	S	50	365,00 brass
M 16	x	45	S	25	390,00 brass
M 16	x	50	S	25	415,00 brass
M 16	x	55	S	25	440,00 brass
M 16	x	60	S	10	475,00 brass
M 16	x	65	S	10	510,00 brass
M 16	x	70	S	10	540,00 brass
M 16	x	80	S	10	590,00 brass
M 16	x	90	S	10	670,00 brass
M 16	x	100	S	10	720,00 brass
M 20	x	30	S	10	510,00 brass
M 20	x	40	S	10	560,00 brass
M 20	x	45	S	10	620,00 brass
M 20	x	50	S	10	650,00 brass
M 20	x	60	S	10	760,00 brass
M 20	x	80	S	1	980,00 brass
M 20	x	100	S	1	1200,00 brass

ISO 04032.700 *

4032 Brass



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-227

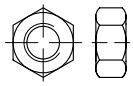
Steel → S. 263
Stainless → S. 511

M 1	K	100	25,50 brass
M 1,2	K	100	16,90 brass
M 1,4	K	100	16,10 brass
M 1,6	K	100	11,50 brass
M 1,7	K	100	11,10 brass
M 2	S	1000	1,45 brass
M 2	K	100	3,00 brass
M 2,3	S	1000	1,45 brass
M 2,3	K	100	3,00 brass
M 2,5	S	1000	1,45 brass
M 2,5	K	100	3,00 brass
M 2,6	S	1000	1,45 brass
M 2,6	K	100	3,00 brass
M 3	S	1000	1,45 brass
M 3	K	100	3,00 brass
M 3,5	K	100	3,45 brass
M 4	S	1000	2,15 brass
M 4	K	100	3,65 brass
M 5	S	1000	2,70 brass
M 6	S	1000	4,10 brass
M 8	S	1000	8,10 brass
M 10	S	500	15,60 brass
M 12	S	250	24,70 brass
M 14	S	100	40,00 brass
M 16	S	100	47,00 brass
M 18	S	25	93,00 brass
M 20	S	25	116,00 brass
M 22	S	10	192,00 brass
M 24	S	10	215,00 brass
M 27	S	10	330,00 brass

Dimensions	PU	Pieces	€/100/Mat.
M 30	S	10	400,00 brass
M 33	S	5	920,00 brass
M 36	S	5	920,00 brass
M 42	S	1	2470,00 brass

ISO 04032.730 *

4032 Brass nickel plated



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-227

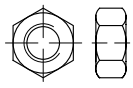
Steel → S. 263
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 2	S	1000	1,70 brass Ni
M 2,5	S	1000	1,75 brass Ni
M 3	S	1000	1,75 brass Ni
M 3,5	S	1000	1,80 brass Ni
M 4	S	1000	2,60 brass Ni
M 5	S	1000	3,30 brass Ni
M 6	S	1000	6,00 brass Ni
M 8	S	100	12,90 brass Ni
M 10	S	100	25,00 brass Ni
M 12	S	100	45,00 brass Ni
M 16	S	250	64,00 brass Ni

ISO 04032.740 *

4032 Brass chrome plated



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-227

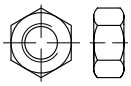
Steel → S. 263
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 3	S	100	6,30 brass Cr
M 4	S	100	7,80 brass Cr
M 5	S	100	11,50 brass Cr
M 6	S	100	13,90 brass Cr
M 8	S	100	23,40 brass Cr

ISO 04032.302 *

4032 CuNiSi



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-227

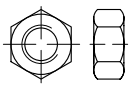
Steel → S. 263
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 6	S	100	26,50 CuNiSi
M 8	S	100	52,00 CuNiSi
M 10	S	100	86,00 CuNiSi
M 12	S	100	135,00 CuNiSi
M 16	S	100	265,00 CuNiSi
M 20	S	25	660,00 CuNiSi
M 24	S	25	1260,00 CuNiSi

ISO 04032.303 *

4032 Aluminium



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-227

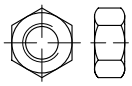
Steel → S. 263
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 4	S	100	5,70 Al
M 5	S	100	7,30 Al
M 6	S	100	8,70 Al
M 8	S	100	17,80 Al
M 10	S	100	33,50 Al
M 12	S	50	46,00 Al
M 16	S	50	91,00 Al

Dimensions	PU	Pieces	€/100/Mat.
ISO	04032.305		RAZ 3310

4032 Titanium (grade 2)



Hexagon nuts, ISO type 1

*M 5 – M 39 = RAZ 3310 other ∅ = RAZ 410

Dimensions → TI-61 Mech. properties → TI-227

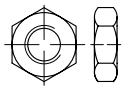
Steel → S. 263
Stainless → S. 511

ISO 4032 → replaces DIN 934

M 6	S	50	184,00 Ti
M 8	S	50	249,00 Ti
M 10	S	50	380,00 Ti
M 12	S	25	490,00 Ti
M 16	S	25	1620,00 Ti

ISO	04035.700	*

4035 Brass



Hexagon nuts, shallow pattern, with chamfers

*M 5–M 39 = RAZ 3370 other ∅ = RAZ 170

Dimensions → TI-62 Mech. properties → TI-227

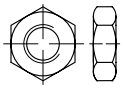
Steel → S. 268
Stainless → S. 513

ISO 4035 → replaces DIN 439 type B

M 2	S	1000	1,45 brass
M 2	K	100	2,95 brass
M 2,5	K	100	2,90 brass
M 3	S	1000	1,40 brass
M 3	K	100	2,90 brass
M 4	S	1000	1,75 brass
M 4	K	100	3,25 brass
M 5	S	1000	2,25 brass
M 5	K	100	3,80 brass
M 6	S	1000	3,25 brass
M 6	K	100	5,50 brass
M 8	S	500	7,00 brass
M 8	K	100	9,00 brass
M 10	S	500	11,80 brass
M 12	S	100	26,00 brass
M 14	S	50	45,50 brass
M 16	S	50	60,00 brass
M 20	S	50	110,00 brass

Dimensions	PU	Pieces	€/100/Mat.
ISO	04035.730		RAZ 170

4035 Brass nickel plated



Hexagon thin nuts chamfered

*M 10, 12 = RAZ 3370

Dimensions → TI-62 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 268
Stainless → S. 513

ISO 4035 → replaces DIN 439 type B

M 3	S	100	4,00 NP
M 4	S	100	6,00 NP
M 5	S	100	7,50 NP
M 6	S	100	10,00 NP
M 8	S	100	15,00 NP
M 10	S	100	23,00 NP
M 12	S	100	42,00 NP
M 16	S	50	85,00 NP
M 20	S	50	150,00 NP

ISO	04766.700	RAZ 230

4766 Brass

Slotted grub screws with flat point

Dimensions → TI-19

Steel → S. 287
Stainless → S. 518

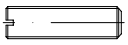
ISO 4766 → replaces DIN 551 (compatible)

M 3	x	3	S	100	5,10 brass
M 3	x	4	S	100	5,10 brass
M 3	x	5	S	100	5,20 brass
M 3	x	6	S	100	5,40 brass
M 3	x	8	S	100	5,60 brass
M 3	x	10	S	100	5,70 brass
M 3	x	12	S	100	6,00 brass
M 3	x	16	S	100	6,40 brass
M 4	x	4	S	100	5,20 brass
M 4	x	5	S	100	5,30 brass
M 4	x	6	S	100	5,40 brass
M 4	x	8	S	100	5,50 brass
M 4	x	10	S	100	6,10 brass
M 4	x	12	S	100	6,40 brass
M 4	x	16	S	100	6,70 brass
M 5	x	5	S	100	5,50 brass
M 5	x	6	S	100	5,90 brass
M 5	x	8	S	100	6,00 brass
M 5	x	10	S	100	6,40 brass
M 5	x	12	S	100	6,90 brass
M 5	x	16	S	100	7,70 brass
M 6	x	6	S	100	6,20 brass
M 6	x	8	S	100	6,90 brass

Dimensions	PU	Pieces	€/100/Mat.
M 6 x 10	S	100	7,10 brass
M 6 x 12	S	100	8,20 brass
M 6 x 16	S	100	8,80 brass
M 6 x 20	S	100	10,60 brass
M 6 x 25	S	100	11,60 brass
M 6 x 30	S	100	15,00 brass
M 8 x 10	S	100	20,00 brass
M 8 x 12	S	100	23,00 brass
M 8 x 16	S	100	25,00 brass
M 8 x 20	S	100	27,00 brass
M 8 x 25	S	100	29,00 brass
M 8 x 35	S	100	29,00 brass
M 8 x 40	S	100	31,50 brass
M 8 x 45	S	100	33,00 brass
M 8 x 50	S	100	33,00 brass
M 10 x 8	S	100	55,00 brass
M 10 x 12	S	100	56,00 brass
M 10 x 16	S	100	41,90 brass
M 10 x 20	S	100	58,00 brass

ISO	04766.600	RAZ 230

4766 Plastic PA



Slotted grub screws with flat point

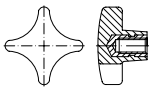
Dimensions → TI-19

Steel → S. 287
Stainless → S. 518

ISO 4766 → replaces DIN 551 (compatible)

M 4	x	6	S	100	22,00 plastic
M 4	x	8	S	100	23,00 plastic
M 4	x	10	S	100	23,00 plastic
M 4	x	12	S	100	24,00 plastic
M 4	x	16	S	100	26,00 plastic
M 4	x	20	S	100	28,00 plastic
M 4	x	25	S	100	30,00 plastic
M 5	x	6	S	100	24,00 plastic
M 5	x	8	S	100	25,00 plastic
M 5	x	10	S	100	26,00 plastic
M 5	x	12	S	100	28,00 plastic
M 5	x	16	S	100	30,00 plastic
M 6	x	6	S	100	5,70 plastic
M 6	x	8	S	100	27,00 plastic
M 6	x	10	S	100	28,00 plastic
M 6	x	12	S	100	29,00 plastic
M 6	x	16	S	100	30,00 plastic
M 6	x	20	S	100	32,00 plastic
M 6	x	25	S	100	34,00 plastic
M 8	x	8	S	100	30,00 plastic
M 8	x	10	S	100	32,00 plastic
M 8	x	12	S	100	35,00 plastic
M 8	x	16	S	100	38,00 plastic
M 10	x	16	S	100	40,00 plastic
M 10	x	20	S	100	45,00 plastic
M 10	x	30	S	100	50,00 plastic
M 10	x	40	S	100	55,00 plastic

Dimensions	PU	Pieces	€/100/Mat.
DIN 06335.634			RAZ 575
6335 Plastic black			type K-St



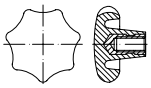
Palm grips, K = with threaded bush*

*Steel, zinc plated

Dimensions → TI-124

Grip ∅ - internal thread			
K 25 M 5	S	10	187,00 plast-st
K 32 M 6	S	10	204,00 plast-st
K 40 M 8	S	10	265,00 plast-st
K 50 M 10	S	10	350,00 plast-st
K 63 M 12	S	10	500,00 plast-st
K 80 M 16	S	10	960,00 plast-st
K 100 M 20	S	5	2300,00 plast-st

DIN 06336.644	RAZ 575
6336 Plastic black	type K-St



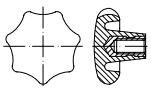
Star grips, K = with threaded bush*

*Steel, zinc plated

Dimensions → TI-124

Grip ∅ - internal thread			
K 25 M 5	S	10	255,00 plast-st
K 32 M 6	S	10	270,00 plast-st
K 40 M 6	S	10	325,00 plast-st
K 40 M 8	S	10	340,00 plast-st
K 50 M 8	S	10	460,00 plast-st
K 50 M 10	S	10	490,00 plast-st
K 63 M 10	S	10	680,00 plast-st
K 63 M 12	S	10	780,00 plast-st
K 80 M 12	S	10	1440,00 plast-st
K 80 M 16	S	10	1610,00 plast-st

DIN 06336.634	RAZ 575
6336 Plastic black	type K-brass



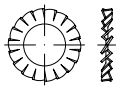
Star grips, K = with threaded bush*

*Brass

Dimensions → TI-124

Grip ∅ - internal thread			
K 20 M 4	S	10	248,00 plast-br
K 25 M 5	S	10	255,00 plast-br
K 32 M 6	S	10	270,00 plast-br
K 40 M 8	S	10	350,00 plast-br
K 50 M 8	S	10	450,00 plast-br
K 50 M 10	S	10	610,00 plast-br
K 63 M 10	S	10	740,00 plast-br
K 63 M 12	S	10	1000,00 plast-br
K 80 M 12	S	5	1540,00 plast-br
K 80 M 16	S	5	2080,00 plast-br

~DIN 06798.701	RAZ 580
6798 CuSn8 (bronze)	type A



Serrated lock washers, A = external teeth

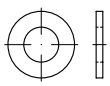
Caution! Reduced spring load.

Dimensions → TI-99

Spring steel → S. 294
Stainless → S. 519

A 3,2	S	2000	3,60 bronze
A 3,2	K	100	6,10 bronze
A 4,3	S	1000	4,75 bronze
A 4,3	K	100	7,40 bronze
A 5,3	S	1000	8,10 bronze
A 5,3	K	100	11,00 bronze
A 6,4	S	1000	10,40 bronze
A 6,4	K	100	13,50 bronze
A 8,4	S	1000	19,60 bronze
A 8,4	K	100	23,40 bronze
A 10,5	S	1000	34,50 bronze
A 10,5	K	100	39,50 bronze

ISO 07089.700	RAZ 90
7089 Brass	



Plain washers, normal series, product grade A, without chamfer

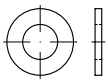
Dimensions → TI-84

Steel → S. 313
Stainless → S. 531

ISO 7089 → replaces DIN 125 type A

For screws M			
2	S	1000	0,99 brass
2	K	100	3,10 brass
2,3	S	1000	0,99 brass
2,3	K	100	3,10 brass
2,5	S	1000	0,99 brass
2,5	K	100	3,10 brass
2,6	S	1000	0,99 brass
3	S	1000	0,69 brass
3	K	100	2,80 brass
3,5	K	100	3,40 brass
4	K	100	3,40 brass
4,3	S	1000	1,30 brass
5	K	100	3,60 brass
5,3	S	1000	1,55 brass
6	K	100	5,40 brass
6,4	S	1000	3,35 brass
8	K	100	9,40 brass
8,4	S	1000	6,40 brass

ISO 07089.730	RAZ 90
7089 Brass nickel plated	



Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Stainless → S. 531

ISO 7089 → replaces DIN 125 type A

For screws M			
3	S	1000	1,03 brass Ni
4	S	1000	2,00 brass Ni
5	S	1000	2,40 brass Ni
6	S	1000	5,30 brass Ni
8	S	1000	10,00 brass Ni

ISO 07089.740	RAZ 90
7089 Brass chrome plated	

Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Stainless → S. 531

ISO 7089 → replaces DIN 125 type A

For screws M			
3	S	100	5,30 brass Cr
4	S	100	5,70 brass Cr
5	S	100	7,50 brass Cr
6	S	100	8,70 brass Cr
8	S	100	12,20 brass Cr

RKP® REYHER KITTING & PACKAGING

Individual trade packaging

- Packaging design
- Label design
- Packing quantities to match your needs

Dimensions	PU	Pieces	€/100/Mat.
ISO	07089.310		RAZ 90

7089 Copper

Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Stainless → S. 531

ISO 7089 → replaces DIN 125 type A

For screws M			
5	S	100	14,40 Cu
6	S	100	22,70 Cu
8	S	100	34,00 Cu
10	S	100	57,00 Cu
12	S	100	84,00 Cu
16	S	100	152,00 Cu

ISO	07089.311	RAZ 90

7089 Aluminium

Plain washers, normal series, product grade A, without chamfer

Dimensions → TI-84

Steel → S. 313
Stainless → S. 531

For screws M			
3	K	500	1,65 Al
4	S	1000	2,45 Al
4	K	100	3,70 Al
5	S	1000	2,90 Al
5	K	100	4,10 Al
6	S	1000	4,50 Al
6	K	100	5,80 Al
8	S	500	5,70 Al
8	K	100	6,90 Al
10	S	500	9,00 Al
10	K	100	10,70 Al
12	S	100	17,40 Al
16	S	50	39,00 Al

Dimensions	PU	Pieces	€/100/Mat.
ISO	07089.600		RAZ 90

7089 Plastic PA

Plain washers, normal series, product grade C*, without chamfer

*Acc. to ISO 4759-3

Dimensions → TI-84

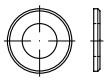
Steel → S. 313
Stainless → S. 531

ISO 7089 → replaces DIN 125 type A

For screws M			
2	S	1000	7,50 plastic
2,5	S	1000	6,10 plastic
3	S	1000	2,55 plastic
3,2	K	200	4,20 plastic
4	S	1000	2,55 plastic
4	K	200	4,20 plastic
5	K	200	5,00 plastic
6	S	1000	4,00 plastic
6	K	200	5,80 plastic
8	S	1000	5,30 plastic
8	K	200	7,30 plastic
10	S	500	8,20 plastic
10	K	200	10,60 plastic
12	S	500	11,50 plastic
12	K	100	13,40 plastic
16	S	250	15,20 plastic
16	K	100	17,20 plastic
20	S	100	24,00 plastic
22	S	100	60,00 plastic
24	S	100	65,00 plastic
27	S	50	114,00 plastic
30	S	50	130,00 plastic
33	S	50	150,00 plastic

ISO	07090.707	RAZ 90

7090 Brass turned



Plain washers, normal series, with chamfer, product grade A

Dimensions → TI-84

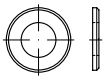
Steel → S. 315
Stainless → S. 532

ISO 7090 → replaces DIN 125 type B

For screws M			
1	S	100	10,80 brass
1,2	S	100	10,80 brass
1,4	S	100	10,80 brass
1,6	S	100	10,40 brass
2	S	100	10,40 brass
2,5	S	100	10,40 brass
3	S	100	11,20 brass
4	S	100	13,40 brass
5	S	100	14,70 brass
6	S	100	19,40 brass
8	S	100	24,00 brass
10	S	100	28,10 brass

ISO	07090.700	RAZ 90

7090 Brass



Plain washers, normal series, with chamfer, product grade A

Dimensions → TI-84

Steel → S. 315
Stainless → S. 532

ISO 7090 → replaces DIN 125 type B

Inside ∅ x outside ∅ x thickness			
10	S	500	15,60 brass
10	K	100	20,10 brass
12	S	500	17,80 brass
12	K	100	21,10 brass
14	S	250	24,60 brass
14	K	100	28,50 brass
16	S	250	32,00 brass
16	K	100	35,00 brass
18	S	50	51,00 brass
20	S	50	53,00 brass
22	S	25	109,00 brass
24	S	25	146,00 brass
27	S	25	175,00 brass
30	S	25	218,00 brass
36	S	1	500,00 brass
39	S	1	770,00 brass
42	S	1	1020,00 brass
45	S	1	1350,00 brass
48	S	1	1390,00 brass

ISO	07092.700	RAZ 140

7092 Brass

Plain washers, small series, product grade A

primarily for cap screws

Dimensions → TI-84

Steel → S. 317
Stainless → S. 532

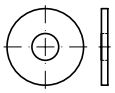
ISO 7092 → replaces DIN 433

For screws M			
2	S	5000	0,42 brass
2	K	500	0,73 brass
2,5	S	5000	0,51 brass
3	K	500	0,87 brass
3	S	5000	0,42 brass
3	K	500	0,67 brass
4	S	5000	0,53 brass
4	K	500	0,85 brass
5	S	1000	1,55 brass
5	K	100	3,15 brass
6	S	1000	2,70 brass

Dimensions	PU	Pieces	€/100/Mat.
6	K	100	4,35 brass
8	S	1000	5,20 brass
8	K	100	7,60 brass
10	S	1000	6,80 brass
10	K	100	10,20 brass
12	S	500	11,50 brass
12	K	100	13,80 brass
14	S	100	20,60 brass
16	S	100	23,90 brass
20	S	50	73,00 brass

ISO | 07093.702 | RAZ 750

7093-2 Brass



Plain washers, large series, product grade C

Dimensions ➔ TI-85

Steel ➔ S. 318
Stainless ➔ S. 533

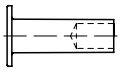
ISO 7093 ➔ replaces DIN 9021

For screws M

3	S	1000		1,80 brass
3	K	100		3,20 brass
4	S	1000		2,50 brass
4	K	100		3,85 brass
5	S	1000		4,25 brass
5	K	100		6,30 brass
6	S	1000		6,00 brass
6	K	100		8,10 brass
8	S	500		14,50 brass
8	K	100		16,80 brass
10	S	100		30,00 brass
12	S	100		59,00 brass
14	S	50		82,00 brass
16	S	50		99,00 brass

DIN | 07338.702 | RAZ 620

7338 Copper type B



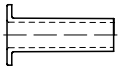
Rivets for brake linings and clutch linings, B = semi-tubular rivet

Dimensions ➔ TI-132

B 3	x	8	S	100	4,10 Cu
B 3	x	10	S	100	4,45 Cu
B 3	x	12	S	100	9,90 Cu
B 3	x	18	S	100	10,50 Cu
B 4	x	8	S	100	5,20 Cu
B 4	x	10	S	100	6,20 Cu
B 4	x	12	S	100	7,70 Cu
B 5	x	10	S	100	9,30 Cu
B 5	x	12	S	100	10,80 Cu
B 5	x	15	S	100	12,90 Cu
B 6	x	12	S	100	14,10 Cu
B 6	x	15	S	100	16,70 Cu
B 8	x	20	S	100	30,00 Cu
B 8	x	25	S	100	67,00 Cu
B 8	x	30	S	100	85,00 Cu

DIN | 07338.703 | RAZ 620

7338 Copper type C



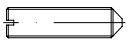
Rivets for brake linings and clutch linings, C = tubular rivet

Dimensions ➔ TI-132

C 3	x	10	S	100	6,10 Cu
C 4	x	8	S	100	7,10 Cu
C 4	x	10	S	100	7,60 Cu
C 4	x	12	S	100	9,70 Cu
C 4	x	15	S	100	14,30 Cu
C 5	x	10	S	100	9,80 Cu
C 5	x	12	S	100	11,30 Cu
C 5	x	15	S	100	15,00 Cu
C 5	x	20	S	100	20,80 Cu
C 6	x	12	S	100	14,40 Cu
C 6	x	15	S	100	16,00 Cu
C 6	x	20	S	100	28,00 Cu
C 6	x	25	S	100	37,50 Cu
C 8	x	20	S	100	28,50 Cu
C 8	x	25	S	100	53,00 Cu
C 8	x	30	S	100	73,00 Cu

ISO | 07434.700 | RAZ 230

7434 Brass



Slotted grub screws with cone point

Dimensions ➔ TI-19

Steel ➔ S. 324
Stainless ➔ S. 535

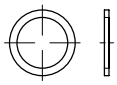
ISO 7434 ➔ replaces DIN 553 (compatible)

M 3	x	4	S	100	5,10 brass
M 3	x	5	S	100	5,20 brass
M 3	x	6	S	100	5,40 brass
M 4	x	4	S	100	5,20 brass
M 4	x	5	S	100	5,30 brass
M 4	x	6	S	100	5,40 brass
M 4	x	8	S	100	5,50 brass
M 5	x	5	S	100	5,50 brass
M 5	x	6	S	100	5,90 brass
M 5	x	8	S	100	6,00 brass
M 5	x	10	S	100	6,40 brass
M 5	x	12	S	100	6,90 brass
M 5	x	16	S	100	7,70 brass
M 6	x	6	S	100	6,20 brass
M 6	x	8	S	100	6,90 brass
M 6	x	10	S	100	7,10 brass
M 6	x	20	S	100	10,60 brass

Dimensions	PU	Pieces	€/100/Mat.

DIN | 07603.701 | RAZ 640

7603 Copper type A

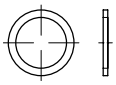


Sealing rings A = flat sealing rings

Dimensions ➔ TI-87

4	x	8	x 1	S	100	6,10 Cu
5	x	7,	x 1	S	100	43,00 Cu
5	x	9	x 1	S	100	6,40 Cu
6	x	10	x 1	S	100	7,90 Cu
6,5	x	9,5	x 1	S	100	45,00 Cu
6,5	x	11	x 1	S	100	24,90 Cu
8	x	11,5	x 1	S	100	24,80 Cu
8	x	12	x 1	S	100	7,70 Cu
8	x	12	x 1,5	S	100	8,50 Cu
8	x	14	x 1	S	100	26,00 Cu
10	x	13,5	x 1	S	100	25,50 Cu
10	x	14	x 1	S	100	21,10 Cu
10	x	14	x 1,5	S	100	24,50 Cu
10	x	15	x 1	S	100	22,10 Cu
10	x	16	x 1	S	100	30,50 Cu
10	x	18	x 1,5	S	100	38,00 Cu
12	x	15,5	x 1,5	S	100	33,50 Cu
12	x	16	x 1,5	S	100	35,00 Cu
12	x	17	x 1,5	S	100	43,00 Cu
12	x	18	x 1,5	S	100	48,50 Cu
13	x	18	x 1,5	S	100	42,95 Cu
14	x	18	x 1,5	S	100	36,00 Cu
14	x	20	x 1,5	S	100	41,00 Cu
15	x	19	x 1,5	S	100	58,00 Cu
16	x	20	x 1,5	S	100	57,00 Cu
16	x	22	x 1,5	S	100	54,00 Cu
17	x	21	x 1,5	S	100	57,00 Cu
17	x	23	x 1,5	S	100	63,00 Cu
18	x	22	x 1,5	S	100	46,00 Cu
18	x	24	x 1,5	S	100	50,00 Cu
20	x	24	x 1,5	S	100	68,00 Cu
20	x	26	x 1,5	S	100	54,00 Cu
21	x	26	x 1,5	S	100	68,00 Cu
22	x	27	x 1,5	S	100	65,00 Cu
22	x	29	x 1,5	S	100	90,00 Cu
23	x	28	x 2	S	100	95,00 Cu
24	x	29	x 2	S	100	91,00 Cu
24	x	32	x 2	S	100	90,00 Cu
26	x	31	x 2	S	100	101,00 Cu
26	x	34	x 2	S	100	91,00 Cu
27	x	32	x 2	S	100	97,00 Cu
28	x	33	x 2	S	100	104,00 Cu
30	x	36	x 2	S	100	104,00 Cu
32	x	38	x 2	S	100	86,00 Cu
33	x	39	x 2	S	100	129,00 Cu
33	x	41	x 2	S	100	105,00 Cu
36	x	42	x 2	S	50	147,00 Cu
38	x	44	x 2	S	50	124,00 Cu
42	x	49	x 2	S	50	185,00 Cu
45	x	52	x 2	S	50	189,00 Cu
48	x	55	x 2	S	50	226,00 Cu
60	x	68	x 2,5	S	25	440,00 Cu

Dimensions					PU	Pieces	€/100/Mat.
DIN		07603.300					RAZ 640
7603		**Aluminium**					**type A**

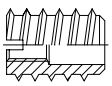


Sealing rings
A = flat sealing rings

Dimensions → TI-87

8	x	11,5	x	1	S	100	4,40 Al
10	x	13,5	x	1	S	100	12,70 Al
12	x	15,5	x	1,5	S	100	13,50 Al
14	x	18	x	1,5	S	100	8,10 Al
16	x	20	x	1,5	S	100	23,00 Al
17	x	21	x	1,5	S	100	24,30 Al
18	x	22	x	1,5	S	100	23,70 Al
18	x	24	x	1,5	S	100	26,50 Al
20	x	24	x	1,5	S	100	25,05 Al
21	x	26	x	1,5	S	100	11,50 Al
22	x	27	x	1,5	S	100	6,80 Al
24	x	29	x	2	S	100	10,80 Al
27	x	32	x	2	S	100	21,90 Al
33	x	39	x	2	S	100	124,00 Al
48	x	55	x	2	S	50	187,00 Al

DIN	07965.700	RAZ 640
7965	**Brass**	



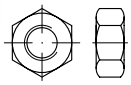
Screwed inserts "RAMPA"

Dimensions → TI-77

Steel → S. 330

internal thread		x length				
M 3	x	8	S	100	31,00 brass
M 3	x	10	S	100	32,50 brass
M 4	x	8	S	100	29,00 brass
M 4	x	10	S	100	31,50 brass
M 4	x	12	S	100	37,50 brass
M 4	x	15	S	100	43,00 brass
M 5	x	10	S	100	41,50 brass
M 5	x	12	S	100	45,50 brass
M 5	x	15	S	100	53,00 brass
M 5	x	20	S	100	75,00 brass
M 6	x	12	S	100	55,00 brass
M 6	x	15	S	100	64,00 brass
M 6	x	20	S	100	83,00 brass
M 6	x	30	S	100	171,00 brass
M 8	x	18	S	100	137,00 brass
M 8	x	30	S	100	237,00 brass
M 10	x	20	S	100	190,00 brass
M 10	x	25	S	100	231,00 brass
M 10	x	30	S	100	275,00 brass
M 12	x	25	S	100	365,00 brass
M 12	x	30	S	50	440,00 brass

Dimensions					PU	Pieces	€/100/Mat.
ISO		08673.700					RAZ 3310
8673		**Brass**					



Hexagon nuts, ISO type 1,
with metric fine pitch thread

*M 5–M 39 = RAZ 3310 other ∅/M = RAZ 410

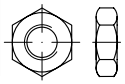
Dimensions → TI-61 Mech. properties → TI-227

Steel → S. 346
Stainless → S. 543

ISO 8673 → replaces DIN 934 fine thread

M 8	x	1	S	100	17,70 brass
M 10	x	1	S	100	24,30 brass
M 14	x	1,5	S	50	53,00 brass
M 16	x	1,5	S	25	77,00 brass
M 20	x	1,5	S	10	153,00 brass
M 22	x	1,5	S	10	217,00 brass

ISO	08675.700	RAZ 3370
8675	**Brass**	



Hexagon thin nuts
with chamfers,
with metric fine pitch thread

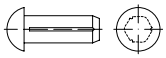
Dimensions → TI-62 Mech. properties → TI-227

Steel → S. 349
Stainless → S. 543

ISO 8675 → replaces DIN 439 fine thread

M 10	x	1	S	100	19,30 brass
M 12	x	1,5	S	100	28,50 brass
M 14	x	1,5	S	50	49,50 brass

ISO	08746.700	RAZ 500
8746	**Brass**	**type A**



Grooved pins with round head,
A = with chamfer

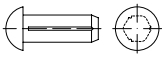
Dimensions → TI-118 Standard conversion → TI-10
Mech. properties → TI-227

Steel → S. 357
Stainless → S. 545

ISO 8746 → replaces DIN 1476 (compatible)

2	x	3	K	200	6,00 brass
2	x	4	S	1000	4,45 brass
2	x	4	K	200	6,10 brass
2	x	5	S	1000	4,55 brass
2	x	5	K	200	6,20 brass
2	x	6	S	1000	4,65 brass
2	x	6	K	200	6,30 brass
2	x	8	K	200	6,80 brass
3	x	5	K	200	8,20 brass
3	x	6	S	1000	6,90 brass
3	x	6	K	200	8,50 brass
3	x	8	S	1000	7,40 brass
3	x	8	K	200	9,10 brass
3	x	10	S	1000	8,30 brass
3	x	10	K	200	10,00 brass
3	x	12	S	1000	9,30 brass

ISO	08746.300	RAZ 500
8746	**Aluminium**	**type A**



Grooved pins with round head,
A = with chamfer

Dimensions → TI-118 Standard conversion → TI-10
Mech. properties → TI-227

Steel → S. 357
Stainless → S. 545

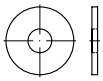
ISO 8746 → replaces DIN 1476 (compatible)

1,4	x	4	S	500	1,90 Al
1,6	x	4	S	500	2,10 Al
1,6	x	5	S	500	2,10 Al
1,6	x	6	S	500	2,20 Al
2	x	3	S	500	2,15 Al
2	x	4	S	500	2,15 Al
2	x	5	S	500	2,15 Al
2	x	6	S	500	2,15 Al
2	x	8	S	500	2,20 Al
2	x	10	S	500	2,35 Al
2,3	x	5	S	500	2,35 Al
2,5	x	5	S	500	2,40 Al
2,5	x	6	S	500	2,40 Al
2,5	x	8	S	500	2,40 Al
3	x	4	S	500	2,75 Al
3	x	5	S	500	2,75 Al
3	x	6	S	500	2,75 Al
3	x	8	S	500	2,80 Al
3	x	10	S	500	3,00 Al
3	x	12	S	500	3,00 Al
4	x	6	S	500	4,45 Al
4	x	8	S	500	4,50 Al
4	x	10	S	500	4,50 Al
5	x	12	S	500	7,60 Al

Dimensions | PU Pieces | €/100/Mat.

DIN | 09021.700 | RAZ 750

9021 Brass



Washers, outside Ø ≈ 3 x nom. thread Ø

Dimensions → TI-85

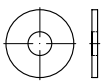
Steel → S. 364
Stainless → S. 547

DIN 9021 → replaced by ISO 7093

Inside Ø x outside Ø x thickness							
3,2	x	9	x	0,8	S	1000	1,80 brass
3,2	x	9	x	0,8	K	100	3,20 brass
4,3	x	12	x	1	S	1000	2,50 brass
4,3	x	12	x	1	K	100	3,85 brass
5,3	x	15	x	1,2	S	1000	4,25 brass
5,3	x	15	x	1,2	K	100	6,30 brass
6,4	x	18	x	1,6	S	1000	6,00 brass
6,4	x	18	x	1,6	K	100	8,10 brass
8,4	x	24	x	2	S	500	14,50 brass
8,4	x	24	x	2	K	100	16,80 brass
10,5	x	30	x	2,5	S	100	30,00 brass
13	x	37	x	3	S	100	59,00 brass
15	x	44	x	3	S	50	82,00 brass
17	x	50	x	3	S	50	99,00 brass

DIN | 09021.600 | RAZ 750

9021 Plastic PA



Washers, outside Ø ≈ 3 x nom. thread Ø

Product grade C acc. to ISO 4759-3

Dimensions → TI-85

Steel → S. 364
Stainless → S. 547

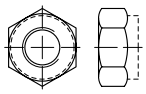
Mostly identical to DIN 34816

Inside Ø x outside Ø x thickness							
3,2	x	9	x	0,8	S	200	5,20 plastic
4,3	x	12	x	1	S	1000	6,60 plastic
4,3	x	12	x	1	K	100	9,10 plastic
5,3	x	15	x	1,2	S	1000	6,90 plastic
5,3	x	15	x	1,2	K	100	9,40 plastic
6,4	x	18	x	1,6	S	1000	7,60 plastic
6,4	x	18	x	1,6	K	100	10,10 plastic
8,4	x	24	x	2	S	500	13,60 plastic
8,4	x	24	x	2	K	100	16,10 plastic
10,5	x	30	x	2,5	S	250	21,40 plastic
10,5	x	30	x	2,5	K	100	23,90 plastic
13	x	37	x	3	S	100	49,50 plastic
17	x	50	x	3	S	100	58,00 plastic
22	x	60	x	4	S	100	85,00 plastic

Dimensions | PU Pieces | €/100/Mat.

~ISO | 10511.700 | RAZ 3395

10511 Brass



Prevailing torque type hexagon nuts with non-metallic insert, low type

For use under temperatures from -50 to +120 °C

Caution! Risk of cold shut. Please note the technical advice given in the information box.

Dimensions → TI-67 Standard conversion → TI-7
Mech. properties → TI-227

Steel → S. 364
Stainless → S. 547

ISO 10511 → replaces DIN 985

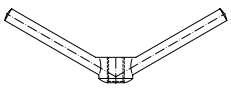
M 4	S	100	11,20
M 5	S	100	12,40
M 6	S	100	12,80
M 8	S	100	21,60
M 10	S	100	41,50
M 12	S	50	64,00

Important Note!

The current standards for prevailing torque type hexagon nuts apply for steel in the property classes 5, (6), 8, 10 and 12. The use of nuts from other materials (e. g. stainless steel, brass, aluminium) is carried out at your own risk. Nuts made from these softer materials sometimes tend to seize up because of the high flank pressure during forming of the bolt thread in the locking ring. The use of lubricant usually helps in such cases. The changes of the friction coefficient when tightening the fastener must be taken into account.

DIN | 80701.700 | RAZ 790

80701 Brass



Butterfly nuts

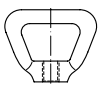
Dimensions → TI-127

M 16	S	1	3100,00 brass
M 20	S	1	3450,00 brass
M 24	S	1	6000,00 brass

Dimensions | PU Pieces | €/100/Mat.

DIN | 80704.700 | RAZ 790

80704 Brass



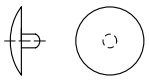
Bow nuts

Dimensions → TI-127

M 6	S	10	305,00 brass
M 8	S	10	405,00 brass
M 10	S	10	405,00 brass
M 12	S	10	520,00 brass
M 16	S	10	750,00 brass
M 20	S	1	1150,00 brass
M 22	S	1	1820,00 brass
M 24	S	1	2100,00 brass

Article | 88001.(*) | RAZ 800

88001 Plastic IL



Caps with pin for chipboard screws/ SPAX screws with inner hole

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Matching for screws Ø 4,5 - 6,0

Pin Ø x caps Ø				
2,5	x	12	S	1000	2,25 plastic
2,5	x	15	S	1000	2,25 plastic

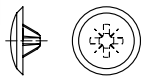
E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions | PU Pieces | €/100/Mat.

Article	88002.(*)	RAZ 800
88002	**Plastic**	**Z**



Caps for countersunk head screws with Pozidriv cross recess Z

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Cross recess no. x caps ∅	for screws ∅			
1	x	8 / 3	S 1000	1,30
2	x	12 / 3,5-5	S 1000	1,30
3	x	13 / 5,5-6	S 1000	1,40

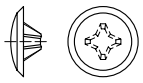
Article	88003.*	RAZ 800
88003	**Plastic**	

Decorative caps for cap screws Article 88981 Ø 3.9

White RAL 9010 (*630), grey RAL 7035 (*640),
black RAL 9005 (*650)

F. 3,9	S 1000	5,40

Article	88004.(*)	RAZ 800
88004	**Plastic**	**KS-H**



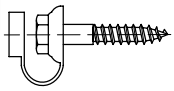
Caps for countersunk head screws with Phillips cross recess H

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650)

Cross recess no. x caps ∅	for screws ∅			
2	x	12 / 3,5-5	S 1000	1,95

Dimensions | PU Pieces | €/100/Mat.

Article	88005.630	RAZ 802
88005	**Plastic black**	



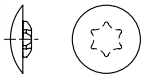
Plastic sealings and caps for hexagon wood screws

For corrugated roof panels

DIN 571 ∅ 7 mm

KD	S	100	4,25

Article	88006.(*)	RAZ 800
88006	**Plastic**	**T**

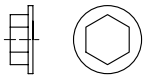


Caps for countersunk head screws with hexalobular socket T

White RAL 9010 (*630),
light brown RAL 8001 (*640),
dark brown RAL 8014 (*650),
fawn brown RAL 8007 (*660)

T no. x caps ∅	for screws		
15	x 12	/3,5	S 1000	2,15
20	x 12	/4-4,5	S 1000	2,15
25	x	13,5/5	S 1000	2,15
30	x	16,5/6	S 1000	2,15

Article	88008.(*)	RAZ 800
88008	**Plastic**	



Caps for tapping screws for facing

White RAL 9010 (*630),
light grey RAL 9002 (*640),
light ivory RAL 1015 (*670),
red brown RAL 8012 (*650)

For Articles 88176, 88276 with wrench size SW 3/8"

F. SW 3/8	S	200	7,00 plastic

Dimensions | PU Pieces | €/100/Mat.

Article	88095.700	RAZ 815
88095	**Brass**	**RCSK-Z**

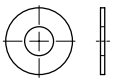
Chipboard screws, RCSK = raised countersunk head, Z = Pozidriv cross recess

Caution! Lower tightness compared to hardened steel.

Dimensions → TI-52

3,5	x	16 -Z	S 1000	6,00 brass
3,5	x	20 -Z	S 1000	5,80 brass
3,5	x	25 -Z	S 1000	5,10 brass
3,5	x	30 -Z	S 1000	5,40 brass
4	x	20 -Z	S 1000	6,20 brass
4	x	25 -Z	S 1000	6,30 brass
4	x	30 -Z	S 1000	6,30 brass
4	x	35 -Z	S 1000	6,60 brass
4	x	40 -Z	S 1000	6,90 brass

Article	88101.700	RAZ 830
88101	**CuAl***	**„Cupal“**

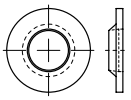


Plain washers/"Cupal" washers

*Approx. 70% Cu/30% Al

Nominal size/inside ∅	x outside ∅	x thickness			
4 4,5	x	10	x 1	S 200	63,00 Cu-Al
6 6,5	x	15	x 1	S 200	71,00 Cu-Al

Article	88152.601	RAZ 857
88152	**Plastic**	**RUV-A**



REYHER captivity washers RUV for screws with metric thread

For usage acc. to EC machinery directive

Matching screws → DIN 7964 A 2

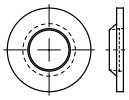
Product information → TI-247

For thread M x inside ∅	x outside ∅	x thickness			
4/4,2	x	9,0	x 1,2	S 100	3,45
5/5,0	x	10,1	x 1,6	S 100	4,30
6/6,3	x	12,5	x 1,3	S 100	5,90
8/8,2	x	16,2	x 1,6	S 100	7,95
10/10,5	x	15	x 2,1	S 100	10,75

Dimensions | PU Pieces | €/100/Mat.

Article 88152.602 RAZ 857

88152 Plastic RUV-B



REYHER captivity washers for tapping screws

For usage acc. to EC machinery directive

Product information → TI-247

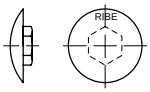
Identical to R 88152 type A

For thread ST x inside ∅ x outside ∅ x thickness

4,2/4,2	x	9	x	1,2	S	100	3,45
4,8/5	x	10,1	x	1,6	S	100	4,30

Article 88251.630 RAZ 880

88251 Plastic grey



Ribe caps

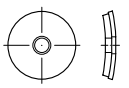
For hexagon socket head screws
DIN 912, 6912, ISO 4762

Nominal size/for screws

4 M 5	S	500	12,10 plastic
5 M 6	S	500	14,60 plastic
6 M 8	S	500	15,30 plastic
8 M 10	S	500	19,60 plastic
10 M 12	S	200	21,40 plastic
12 M 14	S	200	26,50 plastic
14 M 16, M 18	S	200	30,00 plastic
17 M 20, M 22	S	200	37,50 plastic

Article 88277.700 RAZ 890

88277 Aluminium



Sealing washers, convex metal washers with vulcanised sealing

Thickness of sealing ~ 1,5 mm

Stainless → S. 561

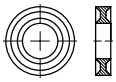
Outside ∅ x inside ∅ x thickness of metal washer

16	x	6,8	x	1	S	1000	6,90 Al

Dimensions | PU Pieces | €/100/Mat.

Article 88494.600 RAZ 930

88494 Plastic PA 6 natural colour



DUBO profile washers for hexagon head screws

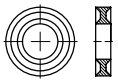
Dimensions → TI-108

Nominal no. - for screws x height

198 - M 3	x	2,2	S	100	22,60
199 - M 4	x	2,6	S	100	24,90
200 - M 5	x	3	S	100	26,50
201 - M 6	x	3,5	S	100	30,00
203 - M 8	x	4	S	100	38,50
205 - M10	x	4,7	S	100	48,00
207 - M12	x	5	S	100	71,00
209 - M14	x	5,5	S	50	141,00
211 - M16	x	6	S	50	114,00
213 - M18	x	6,5	S	50	231,00
215 - M20	x	7	S	50	179,00
217 - M22	x	7,5	S	25	295,00
219 - M24	x	8	S	25	295,00
222 - M27	x	8,5	S	25	395,00
225 - M30	x	8,5	S	25	400,00
231 - M36	x	10	S	1	720,00
243 - M48	x	17	S	1	1400,00

Article 88495.600 RAZ 930

88495 Plastic PA 6 natural colour



DUBO profile washers hexagon socket cap screws

Dimensions → TI-108

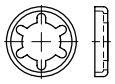
Nominal no. - for screws x height

299 - M 4	x	2	S	100	22,30
300 - M 5	x	3	S	100	23,60
301 - M 6	x	2,5	S	100	22,90
303 - M 8	x	3,3	S	100	31,00
305 - M 10	x	3,8	S	100	38,50
307 - M 12	x	4,4	S	100	48,50
311 - M 16	x	5,6	S	50	90,00
315 - M 20	x	6,5	S	50	110,00

Dimensions | PU Pieces | €/100/Mat.

Article 88496.010 RAZ 930

88496 Steel zinc plated



DUBO lock washers for DUBO profile washers

Dimensions → TI-109

Nominal no. - inner width x hole ∅

404-11,2	x	6,8	S	100	43,00 ZP
406-13,2	x	9	S	100	46,00 ZP
408-17,2	x	12	S	100	56,00 ZP
410-21,3	x	13,5	S	100	71,00 ZP
412-24,5	x	15,5	S	100	80,00 ZP
414-27	x	17,5	S	50	90,00 ZP
416-31,25	x	21	S	50	121,00 ZP
417-33	x	23	S	50	121,00 ZP
418-37,5	x	26	S	50	140,00 ZP
419-39,5	x	27	S	50	149,00 ZP
422-44	x	30,5	S	25	206,00 ZP
427-50,5	x	35	S	25	234,00 ZP
430-56	x	40	S	25	480,00 ZP
433-61	x	45	S	1	550,00 ZP
436-67	x	50	S	1	600,00 ZP

Article 88497.(*) RAZ 930

88497 Plastic

KORREX protection caps for hexagon nuts

White (*630), grey (*640), black (*650)

Temperature resistance: -50 up to +110 °C

Nominal no. - for nuts x inside depth

604 - M 4	x	6,8	S	100	12,20 plastic
605 - M 5	x	9,5	S	100	17,40 plastic
606 - M 6	x	12	S	100	15,00 plastic
607 - M 7	x	12,4	S	100	20,20 plastic
608 - M 8	x	13,3	S	100	16,30 plastic
610 - M10	x	18,5	S	100	19,70 plastic
612 - M12	x	20	S	100	30,00 plastic
616 - M16	x	23	S	50	49,50 plastic
620 - M20	x	31	S	50	77,00 plastic
624 - M24	x	38	S	50	300,00 plastic

Dimensions	PU Pieces	€/100/Mat.
Article	88498.630	RAZ 930

88498 Plastic PA 6 white

KORREX insulating tubes

Caution! Larger throughput drilling required.

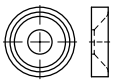
Dimensions → TI-112

For screws x rivet length

M 4	x	10	S	100	18,80
M 4	x	15	S	100	19,60
M 4	x	20	S	100	20,40
M 5	x	10	S	100	21,90
M 5	x	15	S	100	22,70
M 5	x	20	S	100	23,50
M 6	x	10	S	100	28,00
M 6	x	15	S	100	29,00
M 6	x	20	S	100	30,50
M 8	x	10	S	100	32,00
M 8	x	15	S	100	33,50
M 8	x	22	S	100	35,00
M 10	x	10	S	100	41,00
M 10	x	20	S	100	43,50
M 10	x	25	S	100	46,00
M 12	x	15	S	100	57,00
M 12	x	25	S	100	64,00
M 16	x	10	S	100	75,00
M 16	x	15	S	100	81,00
M 16	x	20	S	100	85,00
M 16	x	25	S	100	88,00
M 20	x	15	S	100	95,00
M 20	x	20	S	100	100,00
M 20	x	25	S	100	103,00

Article	88499.630	RAZ 930

88499 Plastic PA 6 white



KORREX rosettes for countersunk heads

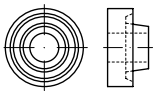
Dimensions → TI-112

Nominal no. - for screws ∅ x height

803 - M 3	x	2,0	S	100	9,00
804 - M 4	x	3,1	S	100	12,70
805 - M 5	x	3,5	S	100	16,40
806 - M 6	x	4,6	S	100	23,30
808 - M 8	x	6,0	S	100	36,50

Dimensions	PU Pieces	€/100/Mat.
Article	88917.334	RAZ 803

88917 EPDM black



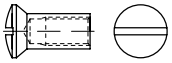
EPDM sealing for hangerbolts, for solar plants

For thread ∅ M 10 and M 12

for M 10/ M 12	S	5000	103,00	EPDM

Article	88964.730	RAZ 996

88964 Brass nickel plated



Sleeve nuts with raised countersunk head, with internal thread

Dimensions → TI-77

Internal thread M x length

M 4	x	7	S	200	21,40 brass Ni
M 4	x	12	S	200	12,70 brass Ni
M 4	x	20	S	200	36,50 brass Ni
M 5	x	15	S	100	20,70 brass Ni
M 6	x	15	S	100	22,20 brass Ni
M 6	x	20	S	100	36,00 brass Ni
M 8	x	20	S	100	58,00 brass Ni

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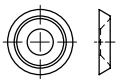
Dimensions	PU Pieces	€/100/Mat.
Article	88965.730	RAZ 997

88965 Brass nickel plated type R 1



Rosettes/finishing washers open connecting surface

For 90° countersunk head screws

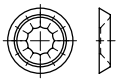
Dimensions → TI-113

Hole ∅ x for head up to ∅ x height

3,0	x	7,0	x	2,1	S	1000	3,30 brass Ni
4,1	x	6,5	x	1,8	S	1000	2,85 brass Ni
5,0	x	9,0	x	2,3	S	1000	4,25 brass Ni
6,0	x	10,0	x	2,3	S	1000	4,40 brass Ni
7,0	x	12,5	x	3,2	S	100	11,20 brass Ni
8,6	x	13,0	x	3	S	100	11,30 brass Ni

Article	88966.730	RAZ 997

88966 Brass nickel plated type R 4



Rosettes/finishing washers close connecting surface

For 90° countersunk head screws

Dimensions → TI-114

Hole ∅ x for head up to ∅ x height

4,8	x	8,8	x	2,7	S	200	11,30 brass Ni
5,0	x	8,0	x	2,4	S	200	9,50 brass Ni
6,0	x	10,5	x	3	S	100	11,50 brass Ni
7,0	x	12,0	x	3,4	S	100	17,00 brass Ni

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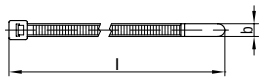
Dimensions	PU Pieces	€/100/Mat.
Article	82500.604	RAZ 4050
82500	**PA 6.6 natural (NA)**	**T**



Cable ties, inside serrations, T = standard

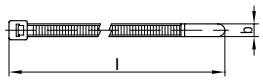
Dimensions → TI-143

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l closed/bundle ∅ max.

2,3	x 83/ 16	S	1000	5,70
2,5	x 100/ 22	S	100	5,10
2,5	x 145/ 35	S	100	7,90
2,5	x 200/ 50	S	100	9,50
2,8	x 240/ 65	S	100	15,00
3,3	x 260/ 65	S	100	20,90
3,5	x 150/ 35	S	100	9,10
3,5	x 200/ 50	S	100	12,80
3,5	x 285/ 80	S	100	24,60
4,0	x 175/ 40	S	100	11,70
4,6	x 150/ 35	S	100	12,30
4,6	x 390/ 108	S	100	33,00
4,7	x 210/ 55	S	100	12,00
4,7	x 300/ 85	S	100	33,00
7,6	x 225/ 55	S	50	46,50
7,6	x 365/ 100	S	100	43,50
7,6	x 390/ 108	S	100	48,50
7,6	x 460/ 125	S	100	51,00
7,6	x 760/ 220	S	50	112,00
8,9	x 530/ 150	S	25	92,00
8,8	x 820/ 245	S	25	118,00
8,9	x 1095/ 330	S	25	221,00

Article	82505.600	RAZ 4050
82505	**PA 6.6 HS natural (NA)**	**T-HS**



Cable ties, inside serrations, T = standard, HS = heat stabilised

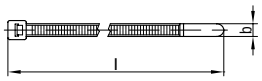
Dimensions → TI-143

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l closed/bundle ∅ max.

2,5	x 100 / 22	S	100	6,00
2,5	x 145 / 35	S	1000	9,50
2,5	x 200 / 50	S	100	11,30
3,3	x 260 / 65	S	100	25,50
3,5	x 150 / 35	S	100	10,90
3,5	x 200 / 50	S	100	15,60
3,5	x 300 / 75	S	100	35,00
4,0	x 180 / 42	S	100	14,00
4,6	x 150 / 35	S	100	14,70
4,6	x 300 / 81	S	100	30,00
4,7	x 210 / 55	S	100	14,40
4,7	x 390 /110	S	100	39,00
7,5	x 360 /100	S	100	52,00
7,5	x 390 /108	S	100	59,00

Dimensions	PU Pieces	€/100/Mat.
Article	82505.630	RAZ 4050
82505	**PA 6.6 HS black (BK)**	**T-HS**



Cable ties, inside serrations, T = standard, HS = heat stabilised

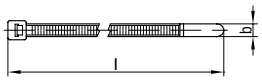
Dimensions → TI-143

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l closed/bundle ∅ max.

2,5	x 100 / 22	S	100	5,80
3,5	x 150 / 35	S	100	10,50
4,6	x 150 / 35	S	100	14,10
4,6	x 300 /81*	S	1000	38,00
7,6	x 365 /100	S	100	50,00
7,6	x 760 /220	S	50	129,00

Article	82510.630	RAZ 4050
82510	**PA 6.6 W black (BK)**	**T-W**



Cable ties, inside serrations, T = standard, W = UV stabilised

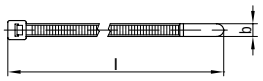
Dimensions → TI-143

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l closed/bundle ∅ max.

2,5	x 100 / 22	S	100	6,00
2,5	x 145 / 35	S	100	9,50
2,5	x 200 / 50	S	100	11,30
2,8	x 330 / 95	S	100	36,00
3,3	x 260 / 65	S	100	25,50
3,5	x 150 / 35	S	100	10,90
3,5	x 190/ 50	S	100	15,60
3,5	x 285 / 80	S	100	35,00
4,0	x 180 / 42	S	100	14,00
4,6	x 150 / 35	S	100	14,70
4,7	x 210 / 55	S	100	14,40
4,7	x 300 /85	S	100	39,50
4,7	x 390 /110	S	100	39,00
7,6	x 225 / 55	S	50	56,00
7,6	x 365 /100	S	100	52,00
7,6	x 390 /108	S	100	59,00
7,6	x 465 /130	S	100	61,00
7,6	x 760 /220	S	50	134,00
8,8	x 813 /222	S	25	140,00
8,9	x 525 /150	S	25	112,00

Dimensions	PU Pieces	€/100/Mat.
Article	82515.600	RAZ 4050
82515	**PA 4.6 HR/N46 natural (NA)**	**T-HR**



Cable ties, inside serrations, T = standard, HR = for high temperatures

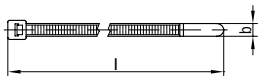
Dimensions → TI-143

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l closed/bundle ∅ max.

2,5	x 100 / 22	S	1000	29,00
3,5	x 150 / 35	S	100	58,00
4,6	x 200 / 50	S	100	115,00
4,6	x 390 /110	S	100	285,00
7,6	x 390 /108	S	100	375,00

Article	82520.600	RAZ 4050
82520	**PA 6.6 natural (NA)**	**LK 2/LK 5**



Cable ties, internal serrations, LK = higher tensile strength, LK 2: width = 4,8/LK 5: width = 13,0

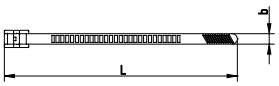
Dimensions → TI-143

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l closed/bundle ∅ max.

4,8	x 120/ 28	S	200	12,90
13,0	x 535/150	S	50	184,00

Article	82516.630	RAZ 4050
82516	**PA11 black**	**Robusto**



Cable ties, outside serrated, Robusto series, with flat head

Dimensions → TI-144

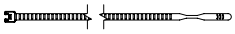
HF Halogen-frei | Brandschutz UL94 HB

Width B x length l bundle ∅ max.

9,0	x 180/42	S	100	63,00
9,0	x 260/62	S	100	92,00
9,0	x 355/92	S	100	132,00

Dimensions | PU Pieces | €/100/Mat.

Article	82517.630	RAZ 4050
82517	**PA66W* black**	**Q-tie**



Cable ties, inside serrated,
Q-tie = with open head
and pre-locking functionality

*W = UV-stabilised

Dimensions → TI-144

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

2,6	x	105/ 24	S	100	5,30
3,6	x	160/ 38	S	100	12,00
4,7	x	210/ 50	S	100	18,10
7,7	x	420/110	S	100	79,00

Article	82518.630	RAZ 4050
82518	**PA66HIR* black**	**Coupler**

2-piece fixing ties
for parallel separation

*HIR = impact resistant

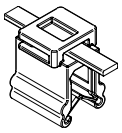
Dimensions → TI-144

HF Halogen-frei | Brandschutz UL94 HB

Width B x length l/bundle ∅ max.

4,6	x	200/ 50	S	500	153,00
7,6	x	380/100	S	500	236,00

Article	82521.634	RAZ 4050
82521	**PA66W* black**	**EdgeCl. O-A**



Fixing ties für edges, 2-pieces,
edge width 1- 3 mm
O = tie channel top
A = tie channel axial

*W = UV-stabilised

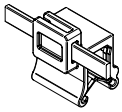
HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

4,6	x	200/45	S	500	143,00

Dimensions | PU Pieces | €/100/Mat.

Article	82522.635	RAZ 4050
82522	**PA66HS* black**	**EdgeCl. S-A**



Fixing ties für edges, 2-pieces,
edge width 1- 3 mm
S = tie channel lateral
A = tie channel axial

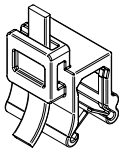
*HS = heat stabilised

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

4,6	x	150/31	S	500	114,00
4,6	x	200/45	S	500	120,00

Article	82522.634	RAZ 4050
82522	**PA66HS* black**	**EdgeCl. S-Q**



Fixing ties für edges, 2-pieces,
edge width 1- 3 mm
S = tie channel lateral
Q = tie channel cross

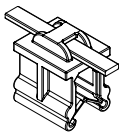
*HS = heat stabilised

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

3,6	x	150/33	S	500	113,00
4,6	x	200/45	S	500	117,00

Article	82523.634	RAZ 4050
82523	**PA66HS* black**	**EdgeCl. O-A**



Fixing ties für edges, 2-pieces,
edge width 3 - 6 mm
O = tie channel top
A = tie channel axial

*HS = heat stabilised

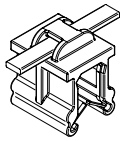
HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

4,6	x	200/45	S	500	184,00

Dimensions | PU Pieces | €/100/Mat.

Article	82523.635	RAZ 4050
82523	**PA66HS* black**	**EdgeCl. O-Q**



Fixing ties für edges, 2-pieces,
edge width 3 - 6 mm
O = tie channel top
Q = tie channel cross

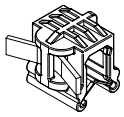
*HS = heat stabilised

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

4,6	x	150/35	S	500	182,00
4,6	x	200/45	S	500	184,00

Article	82523.637	RAZ 4050
82523	**PA66HS* black**	**EdgeCl. S-A**



Fixing ties für edges, 2-pieces,
edge width 3 - 6 mm
S = tie channel lateral
A = tie channel axial

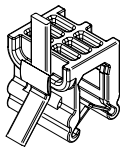
*HS = heat stabilised

HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

4,6	x	200/45	S	500	207,00

Article	82523.636	RAZ 4050
82523	**PA66HS* black**	**EdgeCl. S-Q**



Fixing ties für edges, 2-pieces,
edge width 3 - 6 mm
S = tie channel lateral
Q = tie channel cross

*HS = heat stabilised

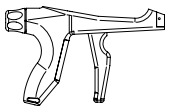
HF Halogen-frei | Brandschutz UL94 V2

Width B x length l/bundle ∅ max.

4,6	x	200	S	500	207,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
Article	82535.000		RAZ 4060
82535	**Plastic**		**EL07**



Manual application tools for cable ties with cutting device

Strap width max. 4,8 mm
Strap thickness max. 1,5 mm
weight 0,275 kg

EV07	S	1	55250,00

Article	82540.600	RAZ 4050
82540	**PA 6.6 natural (NA)**	**TY-G1/SK**

Cable tie mounts, type TY-G1, SK = self adhesive*

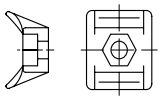
*Acrylate

Dimensions → TI-146

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max.			
4	S	100	94,00
8	S	100	122,00

Article	82543.600	RAZ 4050
82543	**PA 6.6 natural (NA)**	**NY/SB**



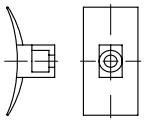
Cable tie mounts, type NY, SB = install with screw

Dimensions → TI-146

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max.			
8	S	1000	18,40

Dimensions	PU	Pieces	€/100/Mat.
Article	82546.600		RAZ 4050
82546	**PA 6.6 natural**		**LKC/SB**



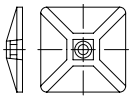
Cable tie mounts, type LKC, SB = install with screw

Dimensions → TI-146

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max.			
8	S	100	33,00

Article	82550.600	RAZ 4050
82550	**PA 6.6 natural (NA)**	**MB-ca./SK**



Cable tie mounts, type MB-ca., SK = self adhesive*

*Synthetic rubber

Dimensions → TI-146

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max.			
5,4	S	100	104,00

Article	82553.600	RAZ 4050
82553	**PA 6.6 natural (NA)**	**MB-A/SK**

Cable tie mounts, type MB-A, SK = self adhesive*

*Synthetic rubber

Dimensions → TI-147

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max.			
5,4	S	100	122,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82554.600		RAZ 4050
82554	**PA 6.6 natural**		**MB-AT**

Cable tie mounts, type MB-AT, SolidTack-Series with special glue*

*Mod. Acrylat

Dimensions → TI-147

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max. - L x W					
4,1 - 19	x	19	S	100	177,00
5,4 - 28	x	28	S	100	235,00

Article	82554.630	RAZ 4050
82554	**PA 6.6 black**	**MB-AT**

Cable tie mounts, type MB-AT, SolidTack-Series with special glue*

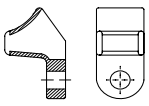
*Mod. acrylat

Dimensions → TI-147

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max. - L x W					
4,1 - 19	x	19	S	100	177,00
5,4 - 28	x	28	S	100	235,00
10 - 38	x	38	S	100	465,00

Article	82560.600	RAZ 4050
82560	**PA 6.6 natural (NA)**	**CL 8/SB**



Cable tie mounts, type CL 8, SB = install with screw

Dimensions → TI-147

HF Halogen-frei | Brandschutz UL94 V2

For cable tie width max.			
8	S	100	20,60

Dimensions	PU	Pieces	€/100/Mat.
Article	82580.640		RAZ 4050
82580	**PP grey**		**HWPP**

**Cable conduit Helawrap,
Length = 2 m,
inclusive tool kit**

Operating temperature -60 to +110 °C
temporary +140 °C

HF Halogen-frei | Brandschutz UL94 HB

For bundle ∅			
16	S	8	27,50
27	S	8	36,00

Article	82580.630	RAZ 4050
82580	**PP black**	**HWPP**

**Cable conduit Helawrap,
Length = 2 m,
inclusive tool kit**

Operating temperature -60 to +110 °C
temporary +140 °C

HF Halogen-frei | Brandschutz UL94 HB

For bundle ∅			
16	S	8	27,50
27	S	8	36,00

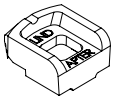
Article	82565.000	RAZ 4050
82565	**PA 6.6 natural black (NA/BK)**	**BMS-100**

**Assortment box "BMS - 100",
assortment of cable tie mounts,
17 types/192 pieces,
mounts, clips, snappers**

Setting tools on request

BMS - 100	S	1	8300,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82001.014		RAZ 4150
82001	**Malleable iron zinc plated**		**A-K**



**LINDAPTER clamps A-K,
A = with recess (head twist-lock),
K = short tail length**

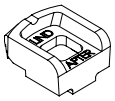
Clipped washer CW → 82011
Location plate P1K → 82012
Location plate P2K → 82013
Location plate T → 82018
Recess filling plate W → 82021

Product information → TI-154

High friction clamp
→ Type AF → Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length			
KM 10 / 4,0	S	1	156,00
KM 12 / 4,5	S	1	217,00
KM 16 / 5,5	S	1	300,00
KM 20 / 7,0	S	1	422,00
KM 24 / 9,0	S	1	1149,00

Article	82001.016	RAZ 4150
82001	**Malleable iron zinc plated**	**A-M**



**LINDAPTER clamps A-M,
A = with recess (head twist-lock),
M = medium tail length**

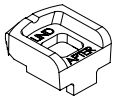
Clipped washer CW → 82011
Location plate P1K → 82012
Location plate P2K → 82013
Location plate T → 82018
Recess filling plate W → 82021

Product information → TI-154

High friction clamp
→ Type AF → Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length			
MM 8 / 4,0	S	1	78,00
MM 10 / 5,0	S	1	156,00
MM 12 / 6,0	S	1	217,00
MM 16 / 8,0	S	1	300,00
MM 20 / 10,0	S	1	422,00
MM 24 / 12,0	S	1	1149,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82001.015		RAZ 4150
82001	**Malleable iron zinc plated**		**A-L**



**LINDAPTER clamps A-L,
A = with recess (head twist-lock),
L = long tail length**

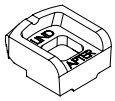
Clipped washer CW → 82011
Location plate P1K → 82012
Location plate P2K → 82013
Location plate T → 82018
Recess filling plate W → 82021

Product information → TI-154

High friction clamp
→ Type AF → Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length			
LM 10 / 7,0	S	1	156,00
LM 12 / 9,5	S	1	217,00
LM 16 / 11,0	S	1	300,00
LM 20 / 12,5	S	1	422,00
LM 24 / 16,0	S	1	1149,00

Article	82001.024	RAZ 4150
82001	**Malleable iron hot dip galvanized**	**A-K**



**LINDAPTER clamps A-K,
A = with recess (head twist-lock),
K = short tail length**

Clipped washer CW → 82011
Location plate P1K → 82012
Location plate P2K → 82013
Location plate T → 82018
Recess filling plate W → 82021

Product information → TI-154

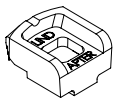
High friction clamp
→ Type AF → Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length			
KM 10 / 4,0	S	1	190,00
KM 12 / 4,5	S	1	265,00
KM 16 / 5,5	S	1	360,00
KM 20 / 7,0	S	1	510,00
KM 24 / 9,0	S	1	1380,00

Dimensions | PU Pieces | €/100/Mat.

Article 82001.026 RAZ 4150

82001 Malleable iron hot dip galvanized A-M



LINDAPTER clamps A-M, A = with recess (head twist-lock), M = medium tail length

Clipped washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

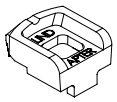
High friction clamp
➔ type AF ➔ Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length

MM 10 / 5,0	S	1	196,00
MM 12 / 6,0	S	1	265,00
MM 16 / 8,0	S	1	360,00
MM 20 / 10,0	S	1	510,00
MM 24 / 12,0	S	1	1380,00

Article 82001.025 RAZ 4150

82001 Malleable iron hot dip galvanized A-L



LINDAPTER clamps A-L, A = with recess (head twist-lock), L = long tail length

Equipment:
Clipped washer CW ➔ 82011, Location plate P1K ➔ 82012
Location plate P2K ➔ 82013, Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

High friction clamp
➔ type AF ➔ Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

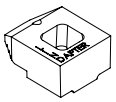
For screws ∅/tail length

LM 10	S	1	190,00
LM 12 / 9,5	S	1	265,00
LM 16 / 11,0	S	1	360,00
LM 20 / 12,5	S	1	510,00
LM 24 / 16,0	S	1	1380,00

Dimensions | PU Pieces | €/100/Mat.

Article 82002.014 RAZ 4150

82002 Malleable iron zinc plated B-K



LINDAPTER clamps B-K, B = with flat top, K = short tail length

Clipped washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

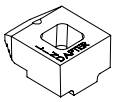
High friction clamp
➔ type AF ➔ Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length

KM 10 / 4,0	S	1	211,00
KM 12 / 4,5	S	1	284,00
KM 16 / 5,5	S	1	428,00
KM 20 / 7,0	S	1	705,00
KM 24 / 9,0	S	1	1499,00

Article 82002.016 RAZ 4150

82002 Malleable iron zinc plated B-M



LINDAPTER clamps B-M, B = with flat top, M = medium tail length

Clipped washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

High friction clamp
➔ type AF ➔ Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

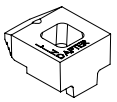
For screws ∅/tail length

MM 8 / 4,0	S	1	111,00
MM 10 / 5,0	S	1	211,00
MM 12 / 6,0	S	1	284,00
MM 16 / 8,0	S	1	428,00
MM 20 / 10,0	S	1	705,00
MM 24 / 12,0	S	1	1499,00

Dimensions | PU Pieces | €/100/Mat.

Article 82002.015 RAZ 4150

82002 Malleable iron zinc plated B-L



LINDAPTER clamps B-L, B = with flat top, L = long tail length

Clipped washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

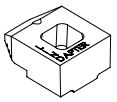
High friction clamp
➔ type AF ➔ Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length

LM 10 / 7,0	S	1	211,00
LM 12 / 9,5	S	1	284,00
LM 16 / 11,0	S	1	428,00
LM 20 / 12,5	S	1	705,00
LM 24 / 16,0	S	1	1499,00

Article 82002.024 RAZ 4150

82002 Malleable iron hot dip galvanized B-K



LINDAPTER clamps B-K, B = with flat top, K = short tail length

Clipped washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

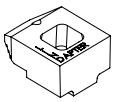
High friction clamp
➔ type AF ➔ Article 82040-82044
general technical approval: M 12 - M 24 Z-14.4-2

For screws ∅/tail length

KM 10 / 4,0	S	1	260,00
KM 12 / 4,5	S	1	345,00
KM 16 / 5,5	S	1	520,00
KM 20 / 7,0	S	1	850,00
KM 24 / 9,0	S	1	1800,00

Article 82002

Dimensions	PU Pieces	€/100/Mat.
Article	82002.026	RAZ 4150
82002	**Malleable iron hot dip galvanized**	**B-M**



LINDAPTER clamps B-M, B = with flat top, M = medium tail length

Clipped washer CW → 82011
Location plate P1K → 82012
Location plate P2K → 82013
Location plate T → 82018
Recess filling plate W → 82021

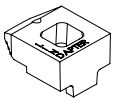
Product information → TI-154

High friction clamp
→ Type AF → Article 82040-82044
general technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/tail length

MM 10 / 5,0	S	1	260,00
MM 12 / 6,0	S	1	345,00
MM 16 / 8,0	S	1	520,00
MM 20 / 10,0	S	1	850,00
MM 24 / 12,0	S	1	1800,00

Article	82002.025	RAZ 4150
82002	**Malleable iron hot dip galvanized**	**B-L**



LINDAPTER clamps B-L, B = with flat top, L = long tail length

Clipped washer CW → 82011
Location plate P1K → 82012
Location plate P2K → 82013
Location plate T → 82018
Recess filling plate W → 82021

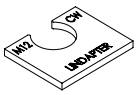
Product information → TI-154

High friction clamp
→ Type AF → Article 82040-82044
general technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/tail length

LM 10 / 7,0	S	1	260,00
LM 12 / 9,5	S	1	345,00
LM 16 / 11,0	S	1	520,00
LM 20 / 12,5	S	1	850,00
LM 24 / 16,0	S	1	1800,00

Dimensions	PU Pieces	€/100/Mat.
Article	82011.010	RAZ 4150
82011	**Steel zinc plated**	**CW**



LINDAPTER clipped washer CW

For clamps A, B, BS

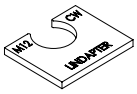
Product information → TI-154

General technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/thickness t

M 10 / 2,0	S	1	39,00
M 12 / 2,5	S	1	45,00
M 16 / 3,0	S	1	73,00
M 20 / 4,0	S	1	89,00
M 24 / 4,0	S	1	206,00

Article	82011.020	RAZ 4150
82011	**Steel hot dip galvanized**	**CW**



LINDAPTER location plates CW

For clamps A, B, BS

Product information → TI-154

General technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/thickness t

M 12 / 2,5	S	1	54,00
M 16 / 3,0	S	1	88,00
M 20 / 4,0	S	1	107,00
M 24 / 4,0	S	1	248,00

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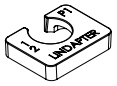
Dimensions	PU Pieces	€/100/Mat.
Article	82012.014	RAZ 4150
82012	**Malleable iron zinc plated**	**P 1-K**



LINDAPTER location plates P 1, K = short

For clamps A, B, BS

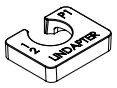
Product information → TI-154

General technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/thickness t

M 8 / 4,0	S	1	62,00
M 10 / 5,0	S	1	73,00
M 12 / 6,0	S	1	84,00
M 16 / 8,0	S	1	106,00
M 20 / 10,0	S	1	189,00
M 24 / 12,0	S	1	428,00

Article	82012.024	RAZ 4150
82012	**Malleable iron hot dip galvanized**	**P 1-K**



LINDAPTER location plates P 1, K = short

For clamps A, B, BS

Product information → TI-154

General technical approval: M 12 – M 24 Z-14.4-2

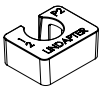
For screws ∅/thickness t

M 12 / 6,0	S	1	101,00
M 16 / 8,0	S	1	128,00
M 20 / 10,0	S	1	227,00
M 24 / 12,0	S	1	520,00

Dimensions | PU Pieces | €/100/Mat.

Article 82013.014 RAZ 4150

82013 Malleable iron zinc plated P 2-K



LINDAPTER location plates P 2, K = short

For clamps A, B, BS

Product information → TI-154

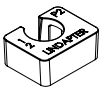
General technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/thickness t

M 8 / 8,0	S	1	89,00
M 10 / 10,0	S	1	111,00
M 12 / 12,0	S	1	123,00
M 16 / 16,0	S	1	189,00
M 20 / 20,0	S	1	339,00
M 24 / 24,0	S	1	1044,00

Article 82013.024 RAZ 4150

82013 Malleable iron hot dip galvanized P 2-K



LINDAPTER location plates P 2, K = short

For clamps A, B, BS

Product information → TI-154

General technical approval: M 12 – M 24 Z-14.4-2

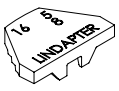
For screws ∅/thickness t

M 10 / 10,0	S	1	136,00
M 12 / 12,0	S	1	150,00
M 16 / 16,0	S	1	230,00
M 20 / 20,0	S	1	415,00
M 24 / 24,0	S	1	1270,00

Dimensions | PU Pieces | €/100/Mat.

Article 82018.010 RAZ 4150

82018 Malleable iron zinc plated T



LINDAPTER location plates T

To fill the nose of clamps A, B, D2, D3

Product information → TI-154

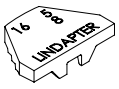
General technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/thickness t

M 12 / 3,0	S	1	150,00
M 16 / 4,0	S	1	206,00
M 20 / 5,0	S	1	411,00
M 24 / 6,5	S	1	694,00

Article 82018.020 RAZ 4150

82018 Malleable iron hot dip galvanized T



LINDAPTER location plates T

To fill the nose of clamps A, B, D2, D3

Product information → TI-154

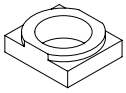
General technical approval: M 12 – M 24 Z-14.4-2

For screws ∅/thickness t

M 12 / 3,0	S	1	182,00
M 16 / 4,0	S	1	255,00
M 20 / 5,0	S	1	500,00
M 24 / 6,5	S	1	840,00

Article 82021.010 RAZ 4150

82021 Malleable iron zinc plated W



LINDAPTER recess filling plates W

For clamps A, C1, D2

Product information → TI-154

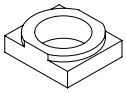
For screws ∅/thickness t

W 10 / 5,5	S	1	161,00
W 12 / 6,5	S	1	200,00
W 16 / 8,0	S	1	278,00
W 20 / 9,5	S	1	544,00

Dimensions | PU Pieces | €/100/Mat.

Article 82021.020 RAZ 4150

82021 Malleable iron hot dip galvanized W



LINDAPTER recess filling plates W

For clamps A, C1, D2

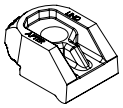
Product information → TI-154

For screws ∅/thickness t

W 10 / 5,5	S	1	198,00
W 12 / 6,5	S	1	244,00
W 16 / 8,0	S	1	340,00
W 20 / 9,5	S	1	660,00

Article 82040.024 RAZ 4150

82040 SG iron hot dip galvanized AF-K



LINDAPTER clamps AF for high friction, K = short tail length

Location plates AFCW → 82042
Location plates AFP1 → 82043
Location plates AFP2 → 82044
Recess filling plates AFW → 82041

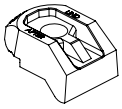
Product information → TI-154

For use with screws of property class 8.8 and 10.9 (HV-bolts acc. to EN 14399-4)

For screws ∅

KM 12	S	1	716,00
KM 16	S	1	999,00
KM 20	S	1	1294,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82040.025		RAZ 4150
82040	**SG iron hot dip galvanized**		**AF-M**



LINDAPTER clamps AF for high friction, M = medium tail length

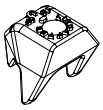
Location plate AFCW ➔ 82042
Location plate AFP1 ➔ 82043
Location plate AFP2 ➔ 82044
Recess filling plate AFW ➔ 82041

For use with screws of property class 8.8 and 10.9 (HV-bolts acc. to EN 14399-4)

For screws ∅

MM 12	S	1	716,00
MM 16	S	1	999,00
MM 20	S	1	1294,00

Article	82045.020	RAZ 4150
82045	**SG iron hot dip galvanized**	**CF**



LINDAPTER clamps CF with nose

For I-beams, angles and channels

Product information ➔ TI-154

For screws ∅

M 12	S	1	332,00
M 16	S	1	543,00
M 20	S	1	900,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82042.020		RAZ 4150
82042	**Steel hot dip galvanized**		**AF-CW**

LINDAPTER location plates AF-CW, thickness = 2 mm

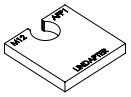
For clamps AF

Product information ➔ TI-154

For screws ∅

AF M 12 CW	S	1	78,00
AF M 16 CW	S	1	89,00
AF M 20 CW	S	1	134,00

Article	82043.020	RAZ 4150
82043	**Steel hot dip galvanized**	**AF-P 1**



LINDAPTER location plates AF-P 1, thickness = 5 mm

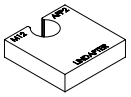
For clamps AF

Product information ➔ TI-154

For screws ∅

AF M 12 P1	S	1	267,00
AF M 16 P1	S	1	284,00
AF M 20 P1	S	1	333,00
AF M 24 P1	S	1	610,00

Article	82044.020	RAZ 4150
82044	**Steel hot dip galvanized**	**AF-P 2**



LINDAPTER location plates AF-P 2, thickness = 10 mm

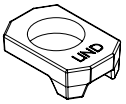
For clamps AF

Product information ➔ TI-154

For screws ∅

AF M 12 P2	S	1	295,00
AF M 16 P2	S	1	300,00
AF M 20 P2	S	1	361,00
AF M 24 P2	S	1	820,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82041.020		RAZ 4150
82041	**SG iron hot dip galvanized**		**AF-W**



LINDAPTER recess filling plates AF-W

For clamps AF

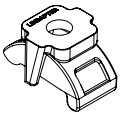
Product information ➔ TI-154

- Required for assembly about nut
- Inverted to use as captivate HV-bolts acc. to EN 14399-4 M 12 - M 20

For screws ∅

AFW M 12	S	1	173,00
AFW M 16	S	1	178,00
AFW M 20	S	1	245,00
AFW M 24	S	1	490,00

Article	82010.010	RAZ 4150
82010	**Malleable iron zinc plated**	**LR**



LINDAPTER clamps LR, two-parts, clamp with slot and saddle with leg

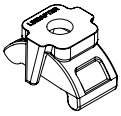
Location plate P1L ➔ 82015
Location plate P2L ➔ 82016
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

For screws ∅/clamping range min - max.

M 10 / 3 - 10	S	1	289,00
M 12 / 3 - 12	S	1	389,00
M 16 / 3 - 16	S	1	711,00
M 20 / 3 - 20	S	1	1288,00
M 24 / 3 - 24	S	1	2043,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82010.020		RAZ 4150
82010	**Malleable iron hot dip galvanized**		**LR**



LINDAPTER clamps LR, two-parts, clamp with slot and saddle with leg

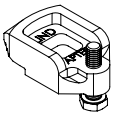
Location plate P1L ➔ 82015
Location plate P2L ➔ 82016
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

For screws ∅/clamping range min. - max.

M 10 / 3 - 10	S	1	355,00
M 12 / 3 - 12	S	1	470,00
M 16 / 3 - 16	S	1	860,00
M 20 / 3 - 20	S	1	1550,00
M 24 / 3 - 24	S	1	2460,00

Article	82007.010	RAZ 4150
82007	**Malleable iron zinc plated**	**D 2**



LINDAPTER clamps D 2 with set screw = variable tail, with recess (head twist-lock)

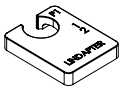
Location plate P1L ➔ 82015
Location plate P2L ➔ 82016
Location plate T ➔ 82018
Recess filling plate W ➔ 82021

Product information ➔ TI-154

For screws ∅/clamping range min. - max.

M 10 / 10 - 20	S	1	500,00
M 12 / 10 - 22	S	1	511,00
M 16 / 13 - 20	S	1	722,00
M 20 / 17 - 24	S	1	988,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82015.014		RAZ 4150
82015	**Malleable iron zinc plated**		**P 1-L**



LINDAPTER location plates P 1-L, L = long

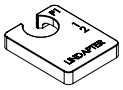
For clamps D2, D3, LR

Product information ➔ TI-154

For screws ∅/thickness t

M 10 / 5,0	S	1	189,00
M 12 / 6,0	S	1	228,00
M 16 / 8,0	S	1	267,00
M 20 / 10,0	S	1	374,00
M 24 / 12,0	S	1	766,00

Article	82015.024	RAZ 4150
82015	**Malleable iron hot dip galvanized**	**P 1-L**



LINDAPTER location plates P 1-L, L = long

For clamps D2, D3, LR

Product information ➔ TI-154

For screws ∅/thickness t

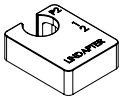
M 10 / 5,0	S	1	230,00
M 12 / 6,0	S	1	275,00
M 16 / 8,0	S	1	325,00
M 20 / 10,0	S	1	450,00
M 24 / 12,0	S	1	920,00

E-Business

Electronically supported processes make c-part sourcing easier

- RIO – REYHER Internet Order Webshop
- RIO | SCAN – barcodes from the Internet
- Electronic catalogue – BMEcat, DATANORM, Excel, OCI, also with classification data in line with eCl@ss, UNSPSC
- EDI – Electronic data interchange, e.g. EDIFACT, openTRANS, IDoc-XML

Dimensions	PU	Pieces	€/100/Mat.
Article	82016.014		RAZ 4150
82016	**Malleable iron zinc plated**		**P 2-L**



LINDAPTER location plates P 2-L, L = long

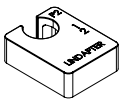
For clamps D2, D3, LR

Product information ➔ TI-154

For screws ∅/thickness t

M 10 / 10,0	S	1	195,00
M 12 / 12,0	S	1	250,00
M 16 / 16,0	S	1	367,00
M 20 / 20,0	S	1	711,00
M 24 / 24,0	S	1	1410,00

Article	82016.024	RAZ 4150
82016	**Malleable iron hot dip galvanized**	**P 2-L**



LINDAPTER location plates P 2-L, L = long

For clamps D2, D3, LR

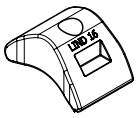
Product information ➔ TI-154

For screws ∅/thickness t

M 10 / 10,0	S	1	237,00
M 12 / 12,0	S	1	305,00
M 16 / 16,0	S	1	450,00
M 20 / 20,0	S	1	870,00
M 24 / 24,0	S	1	1710,00

Dimensions | PU Pieces | €/100/Mat.

Article	82046.940	RAZ 4150
82046	**A 4**	**LS**



LINDAPTER clamps LS for various flange thickness

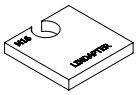
Location plates LSP2 ➔ 82047

Product information ➔ TI-154

For screws ∅/clamping range

LS 10/3 - 15	S	1	930,00
LS 12/3 - 20	S	1	1030,00
LS 16/3 - 25	S	1	1450,00
LS 20/3 - 30	S	1	2100,00

Article	82047.940	RAZ 4150
82047	**A 4**	**LS-P2**



LINDAPTER washers LS-P2, thickness = 10 mm

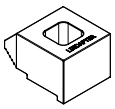
For clamps LS

Product information ➔ TI-154

For screws ∅

LS 10 P2	S	1	1110,00
LS 12 P2	S	1	1120,00
LS 16 P2	S	1	1230,00
LS 20 P2	S	1	1300,00

Article	82048.014	RAZ 4150
82048	**Malleable iron zinc plated**	**BR-K**



LINDAPTER clamps BR for steel beams or rails, K = short tail length

Clipped Washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013

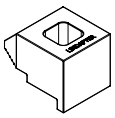
Product information ➔ TI-154

For screws ∅/tail length

BR 12 / 4,0	S	1	290,00
BR 16 / 6,0	S	1	435,00
BR 20 / 7,0	S	1	720,00
BR 24 / 9,0	S	1	1520,00

Dimensions | PU Pieces | €/100/Mat.

Article	82048.015	RAZ 4150
82048	**Malleable iron zinc plated**	**BR-M**



LINDAPTER clamps BR for steel beams or rails, M = medium tail length

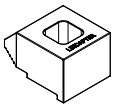
Clipped Washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013

Product information ➔ TI-154

For screws ∅/tail length

BR 12 / 6,0	S	1	290,00
BR 16 / 8,0	S	1	435,00
BR 20 /10,0	S	1	720,00
BR 24 /12,0	S	1	1520,00

Article	82048.024	RAZ 4150
82048	**Malleable iron hot dip galvanized**	**BR-K**



LINDAPTER clamps BR for steel beams or rails, K = short tail length

Clipped Washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013

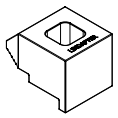
Product information ➔ TI-154

For screws ∅/tail length

BR 12 / 4,0	S	1	345,00
BR 16 / 6,0	S	1	520,00
BR 20 / 7,0	S	1	860,00
BR 24 / 9,0	S	1	1820,00

Dimensions | PU Pieces | €/100/Mat.

Article	82048.025	RAZ 4150
82048	**Malleable iron hot dip galvanized**	**BR-M**



LINDAPTER clamps BR for steel beams or rails, M = medium tail length

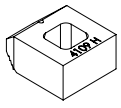
Clipped Washer CW ➔ 82011
Location plate P1K ➔ 82012
Location plate P2K ➔ 82013

Product information ➔ TI-154

For screws ∅/tail length

BR 12 / 6,0	S	1	345,00
BR 16 / 8,0	S	1	520,00
BR 20 /10,0	S	1	860,00
BR 24 /12,0	S	1	1820,00

Article	82003.010	RAZ 4150
82003	**Malleable iron zinc plated**	**BSNT**



LINDAPTER clamps BSNT with flat top, without tail

Product information ➔ TI-154

For screws ∅

M 12	S	1	467,00
M 16	S	1	661,00
M 20	S	1	927,00
M 24	S	1	2331,00

Article	82009.010	RAZ 4150
82009	**Malleable iron zinc plated**	**F 9**

LINDAPTER clamps F 9, two parts with zinc plated screws, Nuts and washers

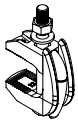
Product information ➔ TI-154

Screws ∅/clamping range min. - max.

M 10 / 19 - 42	S	1	933,00
M 12 / 26 - 60	S	1	1843,00
M 16 / 29 - 69	S	1	2653,00
M 20 / 32 - 82	S	1	3786,00
M 24 / 45 - 95	S	1	12194,00

Dimensions | PU | Pieces | €/100/Mat.

Article	82009.020	RAZ 4150
82009	**Malleable iron hot dip galvanized**	**F 9**



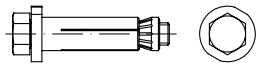
LINDAPTER clamps F 9, two parts with zinc plated screws, Nuts and washers

Product information → TI-154

Screws ∅/clamping range min. - max.

M 10 / 19 - 42	S	1	1130,00
M 12 / 26 - 60	S	1	2230,00
M 16 / 29 - 69	S	1	3250,00
M 20 / 32 - 82	S	1	4600,00
M 24 / 45 - 95	S	1	14800,00

Article	82031.010	RAZ 4150
82031	**Steel zinc plated***	**HB**



LINDAPTER HOLLO-BOLT HB for fixing onto hollow sections, with hexagon head screws 8.8

*With sealing JS500 (400h SS test)

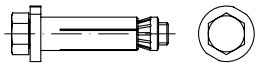
Product information → TI-154

Screws ∅ - length no. (length/max. clamp range)

M 8	x	50/22	S	1	500,00
M 8	x	70/41	S	1	870,00
M 8	x	90/60	S	1	920,00
M 10	x	55/22	S	1	617,00
M 10	x	75/41	S	1	1070,00
M 10	x	90/60	S	1	1180,00
M 12	x	60/25	S	1	711,00
M 12	x	90/47	S	1	1290,00
M 12	x	110/69	S	1	1420,00
M 16	x	75/29	S	1	972,00
M 16	x	100/50	S	1	1380,00
M 16	x	120/71	S	1	1600,00
M 20	x	90/34	S	1	2137,00
M 20	x	120/60	S	1	2800,00
M 20	x	150/86	S	1	3000,00

Dimensions | PU | Pieces | €/100/Mat.

Article	82031.020	RAZ 4150
82031	**Steel hot dip galvanized**	**HB**



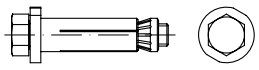
LINDAPTER HOLLO-BOLT HB for fixing onto hollow sections, with hexagon head screws 8.8

Product information → TI-154

Screws ∅ - length no. (length/max. clamp range)

M 8	x	50/22	S	1	510,00
M 8	x	70/41	S	1	780,00
M 8	x	90/60	S	1	870,00
M 10	x	55/22	S	1	630,00
M 10	x	75/41	S	1	960,00
M 10	x	90/60	S	1	1070,00
M 12	x	60/25	S	1	740,00
M 12	x	90/47	S	1	1140,00
M 12	x	110/69	S	1	1180,00
M 16	x	75/29	S	1	1000,00
M 16	x	100/50	S	1	1490,00
M 16	x	120/71	S	1	1620,00
M 20	x	90/34	S	1	2070,00
M 20	x	120/60	S	1	3000,00
M 20	x	150/86	S	1	3250,00

Article	82031.940	RAZ 4150
82031	**A 4**	**HB**



LINDAPTER HOLLO-BOLT HB for fixing onto hollow sections, with hexagon head screws

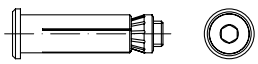
Product information → TI-154

Screws ∅ - length no. (length/max. clamp range)

M 8	x	50/22	S	1	1377,00
M 8	x	70/41	S	1	2370,00
M 8	x	90/60	S	1	2900,00
M 10	x	55/22	S	1	2198,00
M 10	x	75/41	S	1	3150,00
M 10	x	90/60	S	1	3300,00
M 12	x	60/25	S	1	2986,00
M 12	x	90/47	S	1	3700,00
M 12	x	110/69	S	1	4750,00
M 16	x	75/29	S	1	5467,00
M 16	x	100/50	S	1	5500,00
M 16	x	120/71	S	1	6800,00
M 20	x	90/34	S	1	8536,00
M 20	x	120/60	S	1	8700,00
M 20	x	150/86	S	1	9300,00

Dimensions | PU | Pieces | €/100/Mat.

Article	82031.013	RAZ 4150
82031	**Steel zinc plated***	**HBCSK**



LINDAPTER HOLLO-BOLT HBCSK for fixing onto hollow sections, with countersunk head screws 10.9

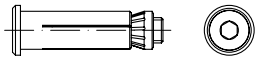
*With sealing JS500 (400h SS test)

Product information → TI-154

Screws ∅ - length no. (length/max. clamp range)

CSK 08-1 (50/22)	S	1	710,00
CSK 10-1 (55/22)	S	1	880,00
CSK 12-1 (60/25)	S	1	1020,00
CSK 16-1 (75/29)	S	1	1340,00

Article	82031.943	RAZ 4150
82031	**A 4**	**HBCSK**



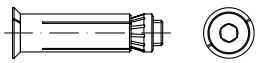
LINDAPTER HOLLO-BOLT HBCSK for fixing onto hollow sections, with countersunk head screws

Product information → TI-154

screws ∅ - length no. (length/max. clamp range)

CSK 08-1 (50/22)	S	1	1740,00
CSK 10-1 (55/22)	S	1	2550,00
CSK 12-1 (60/25)	S	1	3050,00
CSK 16-1 (75/29)	S	1	4850,00

Article	82031.014	RAZ 4150
82031	**Steel zinc plated***	**HBFF**



LINDAPTER-HOLLO-BOLT Flush Fit, for fixing onto hollow sections, fully sunk, with countersunk head screw 10.9

*With sealing JS500 (400h SS test)

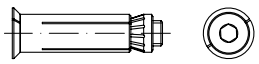
Attention!
Mounting with REYHER article 82033

Screws ∅ - length no. (length/max. clamp range)

FF 08-1 (50/27)	S	1	740,00
FF 08-2 (70/45)	S	1	1090,00
FF 08-3 (90/64)	S	1	1270,00

Dimensions	PU	Pieces	€/100/Mat.
FF 10-1 (50/27)	S	1	930,00
FF 10-2 (70/45)	S	1	1490,00
FF 10-3 (90/64)	S	1	1820,00
FF 12-1 (55/30)	S	1	1070,00
FF 12-2 (80/52)	S	1	1760,00
FF 12-3 (100/74)	S	1	2010,00

Article	82031.944	RAZ 4150
82031	**A 4**	**HBFF**



LINDAPTER HOLLO-BOLT Flush Fit for fixing onto hollow sections, fully sunk, with countersunk head screw

*With sealing JS500 (400h SS test)

Attention!
Mounting with REYHER article 82033

Screws ∅ - length no. (length/max. clamp range)

FF 08-1 (50/27)	S	1	1820,00
FF 08-2 (70/45)	S	1	2600,00
FF 08-3 (90/64)	S	1	2800,00
FF 10-1 (50/27)	S	1	2750,00
FF 10-2 (70/45)	S	1	2950,00
FF 10-3 (90/64)	S	1	3600,00
FF 12-1 (55/30)	S	1	3200,00
FF 12-2 (80/52)	S	1	4350,00
FF 12-3 (100/74)	S	1	5600,00

LINDAPTER assembly nut for HOLLO-BOLT Flush Fit HBFF

Steel, zinc plated, REYHER article 82033, dimension M 8, M 10 and M 12.
Packaging unit 1, discount category 4150

Article	82024.010	RAZ 4150
82024	**Malleable iron zinc plated**	**TC**

LINDAPTER toggle clamps TC with internal thread M for decking fixing

- Drill hole ∅: M 8 → ∅ 22, M 10 → ∅ 25
- Cavity depth min. 75

For screws ∅

TC 8	S	1	173,00
TC 10	S	1	173,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82008.010		RAZ 4150
82008	**Malleable iron zinc plated**		**FL-D**

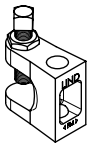
LINDAPTER clamps FL-D with set screw and lock nut, D = with clear rear hole

Clamping range:
FL 1 = 3 - 17 mm
FL 2 = 3 - 19 mm
FL 3 = 3 - 23 mm
FL 4 = 3 - 28 mm

Type no. - hole ∅

FL 1 - D 7	S	1	256,00
FL 1 - D 9	S	1	256,00
FL 2 - D 11	S	1	306,00
FL 3 - D 13	S	1	311,00
FL 4 - D 13	S	1	345,00

Article	82058.010	RAZ 4150
82058	**Malleable iron zinc plated**	**FL-M**



LINDAPTER clamps FL-M with set screw and lock nut, M = with tapped rear hole

Clamping range:
FL 1 = 3 - 17 mm
FL 2 = 3 - 19 mm
FL 3 = 3 - 23 mm
FL 4 = 3 - 28 mm

Type no. - connection thread M

FL 1 M 6	S	1	267,00
FL 1 M 8	S	1	267,00
FL 2 M 10	S	1	317,00
FL 3 M 12	S	1	322,00
FL 4 M 10	S	1	389,00

Dimensions	PU	Pieces	€/100/Mat.
Article	82025.010		RAZ 4150
82025	**Malleable iron zinc plated**		**LC**

LINDAPTER clamps LC with 2 connection threads, with set screw and lock nut M 6

Connection threads sidewise and bottom

Clamping range = 0 to 20 mm

Connection thread M

M 6	S	1	189,00
M 8	S	1	211,00

Article	82022.020	RAZ 4150
82022	**Malleable iron hot dip galvanized***	**F 3**

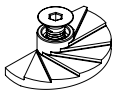
LINDAPTER flange clamps F 3, two-part, without screws/nuts**

*M 6 = zinc plated
**DIN 603 + 934/ISO 4032

For screws ∅/clamping range 0 - max.

M 8 / 25	S	1	444,00
M 10 / 30	S	1	639,00
M 12 / 40	S	1	977,00
M 16 / 55	S	1	1965,00
M 20 / 70	S	1	3497,00

Article	82019.010	RAZ 4150
82019	**Malleable iron zinc plated**	**FF**



LINDAPTER FLOOR-FAST-FF for floor plate fixings, with hexagon socket countersunk head screws

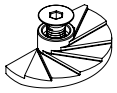
Nominal size = screws ∅

M 8	S	1	395,00
M 10	S	1	395,00
M 12	S	1	395,00

€/100 = price in € plus VAT when ordering full package unit

Dimensions	PU	Pieces	€/100/Mat.
Article 82019.940			RAZ 4150

82019 A 4 (1.4408) zinc plated **FF**



LINDAPTER FLOOR-FAST-FF
for floor plate fixings, with hexagon socket countersunk head screws

Nominal size = screws ∅

FF 08	S	1	2210,00
FF 10	S	1	2210,00
FF 12	S	1	2210,00

Article	83030.010	RAZ 4150

83030 Spring steel sheraplex **GF**

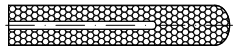
LINDAPTER clamps for gratings
Sheraplex = 500h salt spray test

- For grating height 30 mm and flange thicknesses 8 – 18 mm
- Or overall height 38 – 48 mm

F. 30	x	30	S	1	299,00

Article	88579.008	RAZ 4403

88579 Resin **FHB II-PF-L**



FISCHER resin capsules FHB II-PF-L
Particularly fast hardening

L = for use with highbond anchor FHB II-A L

Product information → TI-162

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

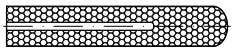
For anchor ∅ x anchorage depth

FHBII-PF 24	x	170	S	10	224,50
FHBII-PF 10	x	95	S	10	286,00
FHBII-PF 12	x	100	S	10	328,80
FHBII-PF 12	x	120	S	10	353,50
FHBII-PF 16	x	125	S	10	460,10
FHBII-PF 16	x	145	S	10	495,95

Dimensions	PU	Pieces	€/100/Mat.
FHBII-PF 16 x 160	S	10	508,10
FHBII-PF 20 x 210	S	4	1024,55
FHBII-PF 24 x 210	S	4	1049,15

Article	88579.007	RAZ 4403

88579 Resin **FHB II -PF-S**



FISCHER resin capsules FHB II-PF-S
Particularly fast hardening

S = for use with highbond anchor FHB II-A S

Product information → TI-162

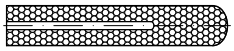
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For anchor ∅ x anchorage depth

FHBII-PF 10	x	60	S	10	255,05
FHBII-PF 10	x	75	S	10	265,60
FHBII-PF 12	x	75	S	10	287,80
FHBII-PF 16	x	95	S	10	410,30
FHBII-PF 20	x	170	S	4	903,40
FHBII-PF 24	x	170	S	4	960,75

Article	88579.004	RAZ 4403

88579 Resin **FHB II-P-L**



FISCHER resin capsules FHB II-P-L
L = for use with highbond anchor FHB II-A L

Product information → TI-162

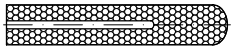
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For anchor ∅ x anchorage depth

FHBII-P 8	x	60	S	10	207,35
FHBII-P 10	x	95	S	10	267,25
FHBII-P 12	x	100	S	10	328,80
FHBII-P 12	x	120	S	10	332,85
FHBII-P 16	x	125	S	10	445,85
FHBII-P 16	x	145	S	10	495,95
FHBII-P 16	x	160	S	10	479,15
FHBII-P 20	x	210	S	4	960,70
FHBII-P 24	x	210	S	4	1049,15

Dimensions	PU	Pieces	€/100/Mat.
Article 88579.005			RAZ 4403

88579 Resin **FHB II-P-S**



FISCHER resin capsules FHB II-P-S
S = for use with highbond anchor FHB II-A S

Product information → TI-162

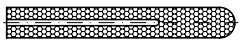
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For anchor ∅ x anchorage depth

FHBII-P 10	x	60	S	10	238,40
FHBII-P 12	x	75	S	10	271,80
FHBII-P 16	x	95	S	10	387,05
FHBII-P 20	x	170	S	4	903,40
FHBII-P 24	x	170	S	4	888,10

Article	88687.001	RAZ 4403

88687 Resin **RSB**



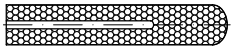
FISCHER resin capsules RSB
For use with threaded rod RG M

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For thread anchor RG M

RSB 8	S	10	222,25
RSB 10 mini	S	10	227,75
RSB 10	S	10	232,40
RSB 12 mini	S	10	242,40
RSB 12	S	10	252,95
RSB 16 mini	S	10	361,00
RSB 16	S	10	376,20
RSB 16 E	S	10	463,80
RSB 20	S	10	463,80
RSB 24	S	5	870,00
RSB 30	S	5	1390,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88533.000		RAZ 4402
88533	**Resin**		**RM**



FISCHER resin capsules RM

For use with threaded rod RG M

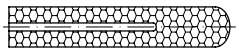
Product information → TI-162

ETA CE | R120 Feuerwiderstandsklasse

For thread anchor RG M

RM 8	S	10	206,70
RM 10	S	10	218,40
RM 12	S	10	238,40
RM 14	S	10	329,05
RM 16	S	10	354,60
RM 20	S	10	427,40
RM 22	S	5	533,95
RM 24	S	5	599,05
RM 27	S	10	810,00
RM 30	S	5	927,65

Article	88757.000	RAZ 4422
88757	**Resin**	**UMV-P**



FISCHER multicone capsules UMV-P

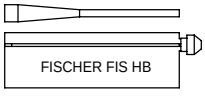
For use with multicone dynamic anchor rod UMV-A dyn

dynamic | Z Zugzonentauglich

Length - for UMV-A dyn

UMV 100 M 12 P	S	10	358,65
UMV 125 M 16 P	S	10	402,15
UMV 170 M 20 P	S	10	877,80
UMV 220 M 24 P	S	5	1035,95

Article	88578.000	RAZ 4403
88578	**Mortar**	**FIS HB**



FISCHER injection mortar FIS HB

incl. 2 static mixer / cartridge

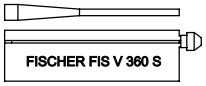
For use with highbond anchor FHB II

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Contents per cartridge (ml)

FIS HB 345 S	S	1	31350,00
FIS HB 150 C	S	1	14670,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88522.000		RAZ 4403
88522	**Mortar**		**FIS V 360 S**



FISCHER injection mortar FIS V 360 S

incl. 2 static mixer / cartridge

For use with threaded rod FIS A, RG M and internal threaded rod RG MI

ETA CE | R120 Feuerwiderstandsklasse

Contents per cartridge (ml)

FIS V 360 S	S	1	27210,00

Article	88522.005	RAZ 4403
88522	**Mortar**	**FIS EM 390 S**

FISCHER injection mortar FIS EM 390 S

incl. 2 static mixer / cartridge

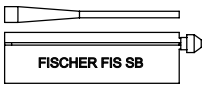
For use with rebar anchors and stand-off installation

ETA CE | Z Zugzonentauglich

Contents per cartridge (ml)

FIS EM 390 S	S	1	28320,00

Article	88686.000	RAZ 4403
88686	**Mortar**	**FIS SB**



FISCHER Superbond mortar FIS SB

incl. 2 static mixer / cartridge

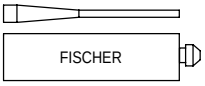
For use with threaded rod FIS A and internal threaded anchor RG M I

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Contents per cartridge (ml)

FIS SB 390 S	S	6	4805,00
FIS SB 1500 S	S	4	12150,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88527.(*)		RAZ 4403
88527	**Mortar**		



FISCHER injection mortar

incl. 2 static mixer / cartridge
(*): 150 C (D) = (003), 300 T (D) = (004)

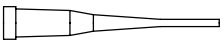
For use with threaded rod FIS A and internal threaded rod RG MI

ETA CE | R120 Feuerwiderstandsklasse

Contents per cartridge (ml)

150 C(D)	S	10	2040,00
300 T	S	6	2400,00

Article	88525.602	RAZ 4403
88525	**Plastic**	**FIS MR**



FISCHER static mixer FIS Mixer Red

For use with all FISCHER injection mortar cartridges

FIS Mi	x	er Red	S	10	1798,00

Article	88579.006	RAZ 4403
88579	**Steel**	**BS**

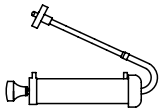
FISCHER cleaning brushes BS, for drill hole cleaning

For drill hole ∅

FHB-BS 10	S	1	1130,00
FHB-BS 12	S	1	1175,00
FHB-BS 14	S	1	1215,00
FHB-BS 16/18	S	1	1275,00
FHB-BS 24	S	1	1315,00
FHB-BS 25	S	1	1345,00
FHB-BS 28	S	1	1360,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88685.600		RAZ 4422

88685 Plastic **ABG**

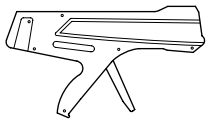


FISCHER blow-out pumps ABG, large

AGB large	S	1	2460,00

Article	88524.002	RAZ 4403

88524 Plastic **FIS DMS**



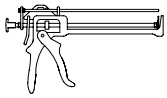
FISCHER dispenser FIS DMS

For use with all FISCHER injection mortar cartridges

FIS DMS	S	1	16400,00

Article	88524.004	RAZ 4403

88524 Metal **FIS AM**



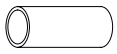
FISCHER dispenser FIS AM

For use with all FISCHER injection mortar cartridges

FIS - AM	S	1	6435,00

Article	88684.000	RAZ 4403

88684 Plastic **FIS VLS**



FISCHER extension tubes FIS VLS, length 1000 mm

FIS-VLS	S	1	172,50

Dimensions	PU	Pieces	€/100/Mat.
Article	88579.014		RAZ 4403

88579 Steel zinc plated **FHB II-A L**

FISCHER highbond-anchors FHB II-A L, L = large anchorage depth with max. load values

For use with injection mortar FIS HB, resin capsules FHB II-P and FHB II-PF

Dimensions → TI-162

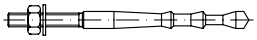
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor ∅ x anchor length/usable length

M 8	x	60/ 10	S	10	442,55
M 8	x	60/ 30	S	10	478,40
M 8	x	60/ 50	S	10	567,95
M 10	x	95/ 10	S	10	687,95
M 10	x	95/ 20	S	10	719,65
M 10	x	95/ 60	S	10	857,45
M 10	x	95/100	S	10	1083,55
M 12	x	100/ 10	S	10	730,15
M 12	x	100/ 25	S	10	791,40
M 12	x	100/ 60	S	10	907,35
M 12	x	100/100	S	10	1189,10
M 12	x	120/ 10	S	10	840,90
M 12	x	120/ 25	S	10	953,90
M 12	x	120/ 60	S	10	1093,20
M 12	x	120/100	S	10	1326,20
M 16	x	125/ 30	S	10	1062,95
M 16	x	125/ 60	S	10	1241,80
M 16	x	125/100	S	10	1612,45
M 16	x	160/ 30	S	10	1522,45
M 16	x	160/ 60	S	10	1708,15
M 16	x	160/100	S	10	2049,75
M 20	x	210/ 50	S	4	2269,50
M 20	x	210/150	S	8	4209,10
M 24	x	210/ 50	S	4	3045,15

Article	88579.944	RAZ 4403

88579 A 4 **FHB II-A L**



FISCHER highbond-anchors FHB II-A L, L = large anchorage depth with max. load values

For use with injection mortar FIS HB, resin capsules FHB II-P and FHB II-PF

Dimensions → TI-162

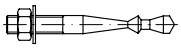
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor ∅ x anchor length/usable length

M 8	x	60/ 10	S	10	747,85
M 8	x	60/ 30	S	10	794,60
M 8	x	60/ 50	S	10	927,30
M 10	x	95/ 10	S	10	1340,80
M 10	x	95/ 20	S	10	1398,05
M 10	x	95/ 40	S	10	1429,20
M 10	x	95/ 60	S	10	1489,10
M 10	x	95/100	S	10	1887,05
M 12	x	100/ 10	S	10	1348,40
M 12	x	100/ 25	S	10	1452,25
M 12	x	100/ 40	S	10	1551,40
M 12	x	100/ 60	S	10	1735,40
M 12	x	100/100	S	10	2210,60
M 12	x	120/ 10	S	10	1923,50
M 12	x	120/ 25	S	10	2117,25
M 12	x	120/ 40	S	10	2331,80
M 12	x	120/ 60	S	10	2468,35
M 12	x	120/100	S	10	2854,60
M 16	x	125/30	S	10	2756,00
M 16	x	125/60	S	10	2910,35
M 16	x	125/100	S	10	3100,30
M 16	x	145/ 30	S	10	2832,75
M 16	x	145/ 60	S	10	3127,95
M 16	x	145/100	S	10	3642,15
M 16	x	160/ 30	S	10	3017,20
M 16	x	160/ 60	S	10	3196,65
M 16	x	160/100	S	10	3705,15
M 20	x	210/ 50	S	4	4604,30
M 24	x	210/ 50	S	4	6303,75

Article	88579.015	RAZ 4403

88579 Steel zinc plated **FHB II-A S**



FISCHER highbond-anchors FHB II-A S, S = reduced anchorage depth for optimized installation effort

For use with injection mortar FIS HB, resin capsules FHB II-P and FHB II-PF

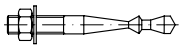
Dimensions → TI-162

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor ∅ x anchor length/usable length

M 10	x	60/ 10	S	10	398,50
M 10	x	60/ 20	S	10	445,35
M 10	x	60/ 60	S	10	563,85
M 10	x	60/100	S	10	729,30
M 10	x	75/ 10	S	10	452,15
M 10	x	75/ 20	S	10	511,90
M 10	x	75/ 60	S	10	636,35
M 10	x	75/100	S	10	836,30
M 12	x	75/ 10	S	10	499,05
M 12	x	75/ 25	S	10	554,20
M 12	x	75/ 60	S	10	606,55
M 12	x	75/100	S	10	817,50
M 12	x	75/165	S	10	1053,25
M 16	x	95/ 30	S	10	732,05
M 16	x	95/ 60	S	10	865,75
M 16	x	95/100	S	10	1083,55
M 16	x	95/165	S	10	1364,75
M 20	x	170/ 50	S	4	2209,30
M 24	x	170/ 50	S	4	2083,80

Dimensions	PU Pieces	€/100/Mat.
Article	88579.946	RAZ 4403
88579	**A 4**	**FHB II-A S**



FISCHER highbond-anchors FHB II-A S, S = reduced anchorage depth for optimized installation effort

For use with injection mortar FIS HB, resin capsules FHB II-P and FHB II-PF

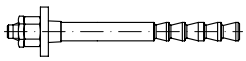
Dimensions → TI-162

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor ∅ x anchor length/usable length

M 10	x	60/ 10	S	10	662,00
M 10	x	60/ 20	S	10	734,80
M 10	x	60/ 40	S	10	866,15
M 10	x	60/ 60	S	10	941,60
M 10	x	60/100	S	10	1293,95
M 12	x	75/ 10	S	10	903,90
M 12	x	75/ 25	S	10	984,45
M 12	x	75/ 40	S	10	1031,30
M 12	x	75/ 60	S	10	1161,35
M 12	x	75/100	S	10	1465,70
M 12	x	75/165	S	10	2036,60
M 16	x	95/165	S	10	2435,80
M 16	x	95/ 30	S	10	1632,10
M 16	x	95/ 60	S	10	1801,20
M 16	x	95/100	S	10	2088,65
M 20	x	170/ 50	S	4	3906,10
M 24	x	170/ 50	S	4	3801,95

Article	88579.300	RAZ 4403
88579	**Steel zinc plated**	**FHB-A dyn**



FISCHER highbond anchor FHB-A dyn, for dynamic loadings

For use with injection mortar FIS HB

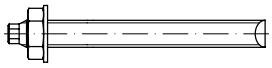
Dimensions → TI-162

dynamic | Z Zugzonentauglich

Anchor ∅ x anchor length/usable length

dyn 12	x	100/25	S	10	1022,95
dyn 12	x	100/50	S	10	1199,40
dyn 16	x	125/25	S	10	1336,40
dyn 16	x	125/50	S	10	1557,90
dyn 20	x	170/50	S	10	2449,40
dyn 24	x	220/50	S	10	3773,25

Dimensions	PU Pieces	€/100/Mat.
Article	88534.010	RAZ 4402
88534	**Steel zinc plated**	**RG M**



FISCHER anchor rods RG M, with nut and washer

For use with cartridge RM and RSB

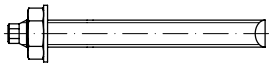
Dimensions → TI-164

ETA CE | F120 Feuerwiderstandsklasse

∅ M x length

RG M 8	x	110	S	10	104,80
RG M 8	x	250	S	10	274,35
RG M 10	x	130	S	10	146,20
RG M 10	x	165	S	10	180,65
RG M 10	x	190	S	10	201,30
RG M 10	x	250	S	10	325,55
RG M 10	x	350	S	10	508,55
RG M 12	x	160	S	10	205,45
RG M 12	x	220	S	10	259,20
RG M 12	x	250	S	10	293,65
RG M 12	x	300	S	10	358,40
RG M 12	x	380	S	10	522,85
RG M 16	x	190	S	10	413,55
RG M 16	x	165	S	10	319,85
RG M 16	x	250	S	10	453,60
RG M 16	x	300	S	10	496,30
RG M 16	x	380	S	10	695,20
RG M 16	x	500	S	10	998,00
RG M 20	x	260	S	10	802,05
RG M 20	x	350	S	10	1196,65
RG M 20	x	500	S	10	1619,50
RG M 24	x	300	S	10	1227,20
RG M 24	x	400	S	10	1840,50
RG M 24	x	600	S	10	2578,75
RG M 30	x	380	S	5	2639,15
RG M 30	x	500	S	5	3074,15

Article	88534.020	RAZ 4403
88534	**Steel hot dip galvanized**	**RG M**



FISCHER anchor rods RG M, with nut and washer

For use with cartridge RM and RSB

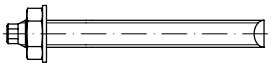
Dimensions → TI-164

ETA CE | F120 Feuerwiderstandsklasse

∅ M x length

RG M 12	x	160 fvz	S	10	268,90
RG M 16	x	190 fvz	S	10	516,10

Dimensions	PU Pieces	€/100/Mat.
Article	88534.810	RAZ 4403
88534	**8.8 zinc plated**	**RG M**



FISCHER anchor rods RG M, with nut and washer

For use with cartridge RM and RSB

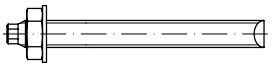
Dimensions → TI-164

ETA CE | F120 Feuerwiderstandsklasse

∅ M x length

RG M 8	x	150	S	10	235,90
RG M 10	x	220	S	10	307,20
RG M 12	x	220	S	10	305,00
RG M 16	x	270	S	10	559,25
RG M 20	x	290	S	10	1105,90
RG M 24	x	295	S	10	1419,00

Article	88534.940	RAZ 4402
88534	**A 4**	**RG M**



FISCHER anchor rods RG M, with nut and washer

For use with cartridge RM and RSB

Dimensions → TI-164

ETA CE | F120 Feuerwiderstandsklasse

∅ M x length

RG M 8	x	110	S	10	311,80
RG M 8	x	150	S	10	432,95
RG M 8	x	250	S	10	655,20
RG M 10	x	130	S	10	529,55
RG M 10	x	165	S	10	677,75
RG M 10	x	190	S	10	786,05
RG M 10	x	250	S	10	1001,40
RG M 10	x	350	S	10	1330,80
RG M 12	x	160	S	10	690,60
RG M 12	x	220	S	10	954,80
RG M 12	x	250	S	10	1243,30
RG M 12	x	300	S	10	1418,80
RG M 12	x	380	S	10	1794,65
RG M 12	x	600	S	10	2919,60
RG M 16	x	190	S	10	1300,05
RG M 16	x	165	S	10	1157,00
RG M 16	x	250	S	10	1736,25
RG M 16	x	300	S	10	2088,65
RG M 16	x	380	S	10	2709,00
RG M 16	x	500	S	10	3685,10
RG M 20	x	260	S	10	3212,25
RG M 20	x	350	S	10	4337,20
RG M 24	x	300	S	10	5377,55
RG M 24	x	400	S	10	7104,50

Dimensions	PU	Pieces	€/100/Mat.
Article	88523.011		RAZ 4403
88523	**Steel zinc plated**		**FIS A**

FISCHER threaded rods FIS A, with nut and washer

For use with injection mortar FIS V and injection mortar

Dimensions → TI-164

ETA CE | F120 Feuerwiderstandsklasse | Z Zugzonentauglich

∅ M x length						
FIS A M 6	x	75	S	20	87,50
FIS A M 6	x	85	S	20	91,50
FIS A M 6	x	110	S	20	107,35
FIS A M 8	x	90	S	10	96,75
FIS A M 8	x	110	S	10	112,70
FIS A M 8	x	130	S	10	151,10
FIS A M 10	x	110	S	10	140,50
FIS A M 10	x	130	S	10	152,50
FIS A M 10	x	150	S	10	172,30
FIS A M 10	x	200	S	10	224,00
FIS A M 12	x	140	S	10	201,50
FIS A M 12	x	160	S	10	214,65
FIS A M 12	x	180	S	10	233,30
FIS A M 12	x	210	S	10	253,20
FIS A M 12	x	260	S	10	314,05
FIS A M 16	x	175	S	10	381,70
FIS A M 16	x	200	S	10	424,05
FIS A M 16	x	250	S	10	467,85
FIS A M 16	x	300	S	10	522,20
FIS A M 20	x	245	S	10	755,45
FIS A M 20	x	290	S	10	915,85
FIS A M 24	x	290	S	5	1180,90
FIS A M 24	x	380	S	5	1565,20
FIS A M 30	x	340	S	5	1950,85
FIS A M 30	x	430	S	5	2476,95

Article	88523.941	RAZ 4403
88523	**A 4**	**FIS A**

FISCHER threaded rods FIS A, with nut and washer

For use with injection mortar FIS V and injection mortar

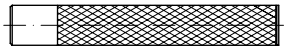
Dimensions → TI-164

ETA CE | F120 Feuerwiderstandsklasse | Z Zugzonentauglich

∅ M x length						
FIS A M 6	x	75	S	20	267,40
FIS A M 6	x	85	S	20	286,15
FIS A M 6	x	110	S	20	333,00
FIS A M 8	x	90	S	10	306,25
FIS A M 8	x	110	S	10	350,35
FIS A M 8	x	130	S	10	414,55
FIS A M 10	x	110	S	10	536,20

Dimensions			PU	Pieces	€/100/Mat.
FIS A M 10	x	130	S	10	593,65
FIS A M 10	x	150	S	10	672,50
FIS A M 10	x	200	S	10	902,55
FIS A M 12	x	140	S	10	699,25
FIS A M 12	x	160	S	10	775,55
FIS A M 12	x	180	S	10	887,80
FIS A M 12	x	210	S	10	989,45
FIS A M 12	x	260	S	10	1341,05
FIS A M 16	x	175	S	10	1306,40
FIS A M 16	x	200	S	10	1465,50
FIS A M 16	x	250	S	10	2030,15
FIS A M 16	x	300	S	10	2325,25
FIS A M 20	x	245	S	10	3253,15
FIS A M 20	x	290	S	10	3848,05
FIS A M 24	x	290	S	5	5578,25
FIS A M 24	x	380	S	5	6935,45
FIS A M 30	x	340	S	5	9978,80
FIS A M 30	x	430	S	5	12051,90

Article	88529.010	RAZ 4403
88529	**Steel zinc plated**	**FIS E**



FISCHER internal threaded sockets FIS E

Dimensions → TI-165

DIBt | ETA CE | F120 Feuerwiderstandsklasse

Matches FIS-HM sleeve/internal thread M						
FIS E11	x	85 M 6	S	10	210,70
FIS E11	x	85 M 8	S	10	227,60
FIS E15	x	85 M10	S	10	273,95
FIS E15	x	85 M12	S	10	295,00

Article	88562.600	RAZ 4403
88562	**Plastic**	**FIS H K**

FISCHER inj. anchor sleeves FIS H K

ETA-license only for 16 x 85, 16 x 130, 20 x 130 and 20 x 200

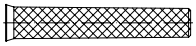
For use with threaded rod FIS A and internal thread sockets FIS E

Dimensions → TI-165

DIBt | ETA CE | F120 Feuerwiderstandsklasse

Drilling ∅ x anchorage depth						
FIS H 12	x	50 K	S	50	47,00
FIS H 12	x	85 K	S	50	59,00
FIS H 16	x	85 K	S	50	70,50
FIS H 16	x	130 K	S	20	176,15
FIS H 20	x	85 K	S	20	82,40
FIS H 20	x	130 K	S	20	225,50
FIS H 20	x	200 K	S	20	259,20

Dimensions	PU	Pieces	€/100/Mat.
Article	88526.600		RAZ 4403
88526	**Plastic**		**FIS H N**



FISCHER injection anchor sleeves with net FIS H N

Dimensions → TI-166

DIBt | ETA CE | F120 Feuerwiderstandsklasse

Drill ∅ x anchor length = anchorage depth						
FIS H 16	x	85 N	S	20	124,45
FIS H 18	x	85 N	S	20	132,70
FIS H 20	x	85 N	S	20	158,50

Article	88526.000	RAZ 4403
88526	**Metal**	**FIS H L**

FISCHER injection anchor sleeves FIS H L, 1 m length

Dimensions → TI-166

DIBt | ETA CE | F120 Feuerwiderstandsklasse

Drill ∅ x length						
FIS H 12	x	1000 L	S	1	1371,00
FIS H 16	x	1000 L	S	1	1413,00
FIS H 22	x	1000 L	S	1	1475,00

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Dimensions	PU	Pieces	€/100/Mat.
Article	88758.014		RAZ 4422
88758	**Steel zinc plated**		**UMV-A dyn**

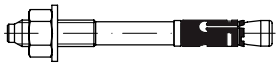
FISCHER multicone dynamic anchors UMV-A dyn, for dynamic alternating loads, with nut, washer and clamping sleeve

For use with multicone chemical anchor capsule UMV-P

Anchorage depth - thread ∅/max. usable length

100 M 12 / 10	S	10	903,00
100 M 12 / 15	S	10	984,60
100 M 12 / 25	S	10	1080,45
100 M 12 / 50	S	10	1263,65
125 M 16 / 30	S	10	1382,35
125 M 16 / 60	S	10	1641,45
170 M 20 / 40	S	10	2583,10
220 M 24 / 50	S	5	3868,15

Article	88561.010	RAZ 4403
88561	**Steel zinc plated**	**FAZ II**



FISCHER bolt anchors FAZ II with nut and washer

Dimensions → TI-167

Anchor/drill ∅ x clamp length

FAZ II 8/ 10	S	50	93,55
FAZ II 8/ 30	S	50	116,65
FAZ II 8/ 50	S	50	137,00
FAZ II 10/ 10	S	50	135,60
FAZ II 10/ 20	S	25	147,90
FAZ II 10/ 30	S	25	155,90
FAZ II 10/ 50	S	20	169,50
FAZ II 10/ 80	S	20	206,20
FAZ II 10/100	S	20	217,00
FAZ II 10/160	S	20	316,35
FAZ II 12/ 10	S	20	197,95
FAZ II 12/ 20	S	20	202,05
FAZ II 12/ 30	S	20	215,65
FAZ II 12/ 50	S	20	272,65
FAZ II 12/ 80	S	20	349,20
FAZ II 12/100	S	20	383,85
FAZ II 12/160	S	10	446,20
FAZ II 12/200	S	10	569,60
FAZ II 16/ 5	S	10	361,10
FAZ II 16/ 25	S	10	424,50
FAZ II 16/ 50	S	10	524,85
FAZ II 16/100	S	10	702,50
FAZ II 16/160	S	10	1237,45
FAZ II 20/ 30	S	5	831,70
FAZ II 20/ 60	S	5	1066,50
FAZ II 20/160	S	5	1602,00
FAZ II 24/ 30	S	5	1925,35
FAZ II 24/ 60	S	5	2138,10

Article	88561.940	RAZ 4403
88561	**A 4**	**FAZ II**

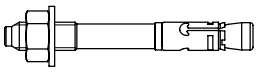
FISCHER anchor bolts FAZ II with nut and washer

Dimensions → TI-167

Anchor/drill ∅ x usable length

FAZ II 8/ 10	S	50	444,65
FAZ II 8/ 30	S	50	492,60
FAZ II 8/ 50	S	50	589,60
FAZ II 10/ 10	S	50	582,25
FAZ II 10/ 20	S	50	595,70
FAZ II 10/ 30	S	50	652,20
FAZ II 10/ 50	S	20	746,85
FAZ II 10/ 70	S	20	896,20
FAZ II 10/100	S	20	901,60
FAZ II 10/160	S	20	1174,10
FAZ II 12/ 10	S	20	805,70
FAZ II 12/ 20	S	20	814,40
FAZ II 12/ 30	S	20	881,90
FAZ II 12/ 50	S	20	1115,30
FAZ II 12/ 60	S	20	1173,00
FAZ II 12/100	S	20	1348,65
FAZ II 12/160	S	20	1481,05
FAZ II 16/ 5	S	20	1363,70
FAZ II 16/ 25	S	20	1574,60
FAZ II 16/ 50	S	20	1866,95
FAZ II 16/100	S	10	2145,70
FAZ II 20/ 30	S	4	3304,00
FAZ II 20/ 60	S	4	3633,25
FAZ II 24/ 30	S	4	5143,90
FAZ II 24/ 60	S	4	5657,95

Article	88561.015	RAZ 4403
88561	**Steel zinc plated**	**FAZ II K**



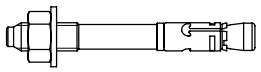
FISCHER bolt anchors FAZ II K with nut and washer, K = short format

Dimensions → TI-167

Anchor/drill ∅ x clamp length

FAZ II 10/ 10K	S	50	125,80
FAZ II 10/ 20K	S	25	138,70
FAZ II 12/ 10K	S	20	183,60
FAZ II 12/ 20K	S	20	188,10

Article	88561.945	RAZ 4403
88561	**A 4**	**FAZ II K**



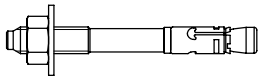
FISCHER bolt anchors FAZ II K with nut and washer, K = short format

Dimensions → TI-167

Anchor/drill ∅ x clamp length

FAZ II 10/ 10K	S	50	539,95
FAZ II 10/ 20K	S	50	554,00
FAZ II 12/ 10K	S	20	747,10
FAZ II 12/ 20K	S	20	755,15

Article	88561.014	RAZ 4403
88561	**Steel zinc plated**	**FAZ II GS**



FISCHER bolt anchors FAZ II GS with nut and big washer (GS)

Dimensions → TI-167

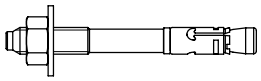
Anchor/drill ∅ x clamp length

FAZ II 8/ 10 GS	S	50	107,15
FAZ II 8/ 30 GS	S	50	139,55
FAZ II 10/ 10 GS	S	50	156,90
FAZ II 10/ 30 GS	S	25	178,95
FAZ II 12/ 10 GS	S	20	235,75
FAZ II 12/ 20 GS	S	20	240,80
FAZ II 12/ 30 GS	S	20	254,05
FAZ II 12/ 50 GS	S	20	313,00
FAZ II 12/100 GS	S	20	430,95
FAZ II 12/120 GS	S	20	466,10
FAZ II 16/160 GS	S	10	1015,85
FAZ II 16/200 GS	S	10	1120,30

Dimensions | PU | Pieces | €/100/Mat.

Article 88561.944 RAZ 4403

88561 A 4 **FAZ II GS**



FISCHER bolt anchors FAZ II GS with nut and big washer (GS)

Dimensions → TI-167

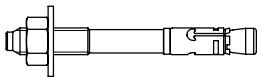
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x clamp length

FAZ II 8/ 10 GS	S	50	510,00
FAZ II 8/ 30 GS	S	50	562,45
FAZ II 10/ 10 GS	S	50	650,10
FAZ II 10/ 30 GS	S	50	726,90
FAZ II 12/ 10 GS	S	20	897,30
FAZ II 12/ 30 GS	S	20	978,10
FAZ II 12/160 GS	S	20	1700,00
FAZ II 16/ 160 GS	S	4	3435,05

Article 88561.016 RAZ 4403

88561 Stahl zinc plated **FAZ II K GS**



FISCHER bolt anchors FAZ II K GS with nut and big washer (GS), K = short format

Dimensions → TI-167

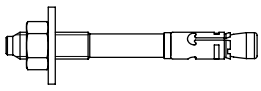
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x clamp length

FAZ II 10/ 10K GS	S	20	141,25
FAZ II 12/ 10K GS	S	20	212,20

Article 88561.017 RAZ 4403

88561 Steel zinc plated **FAZ II HBS**



FISCHER bolt anchors FAZ II HBS with nut and extra large washer (HBS) according to DIN 1052

Dimensions → TI-167

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

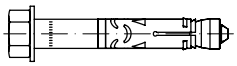
Anchor/drill ∅ x clamp length

FAZ II 12/100HBS	S	20	430,95
FAZ II 12/120HBS	S	20	466,10
FAZ II 16/160HBS	S	10	1015,85
FAZ II 16/200HBS	S	10	1120,30

Dimensions | PU | Pieces | €/100/Mat.

Article 88593.012 RAZ 4403

88593 Steel zinc plated **FH II-S**



FISCHER high performance anchors FH II-S with hexagon head

Dimensions → TI-167

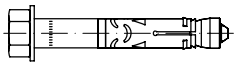
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/usable length

FH II 10/ 10 S	S	50	181,50
FH II 10/ 25 S	S	50	197,60
FH II 10/ 50 S	S	50	219,80
FH II 12/ 10 S	S	50	288,70
FH II 12/ 25 S	S	50	316,65
FH II 12/ 50 S	S	25	350,15
FH II 15/ 10 S	S	25	410,10
FH II 15/ 25 S	S	25	431,00
FH II 15/ 50 S	S	25	474,15
FH II 18/ 25 S	S	20	638,75
FH II 18/ 50 S	S	20	723,90
FH II 24/ 25 S	S	10	1376,60
FH II 24/ 50 S	S	10	1440,80
FH II 28/ 30 S	S	4	2350,65
FH II 28/ 60 S	S	4	2805,10
FH II 32/ 30 S	S	4	3614,75
FH II 32/ 60 S	S	4	4331,90

Article 88593.942 RAZ 4403

88593 A 4 **FH II-S**



FISCHER high performance anchors FH II-S with hexagon head

Dimensions → TI-167

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

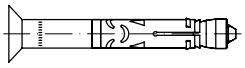
Anchor/drill ∅ x installation depth/usable length

FH II 10/ 10 S	S	50	791,35
FH II 10/ 25 S	S	50	987,45
FH II 12/ 10 S	S	50	997,50
FH II 12/ 25 S	S	20	1238,20
FH II 15/ 10 S	S	50	1042,20
FH II 15/ 25 S	S	20	1390,60
FH II 18/ 25 S	S	10	2135,55
FH II 24/ 25 S	S	8	7076,85

Dimensions | PU | Pieces | €/100/Mat.

Article 88594.012 RAZ 4403

88594 Steel zinc plated **FH II-SK**



FISCHER high performance anchors FH II-SK with countersunk head

Dimensions → TI-168

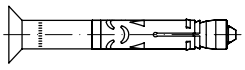
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/usable length

FH II 10/15 SK	S	50	198,70
FH II 10/25 SK	S	50	216,45
FH II 10/50 SK	S	50	240,90
FH II 12/15 SK	S	25	313,85
FH II 12/25 SK	S	25	345,90
FH II 12/50 SK	S	25	355,70
FH II 15/15 SK	S	25	470,05
FH II 15/25 SK	S	25	496,50
FH II 15/50 SK	S	25	514,60
FH II 18/15 SK	S	20	871,70
FH II 18/25 SK	S	20	910,70
FH II 18/50 SK	S	20	1050,25

Article 88594.942 RAZ 4403

88594 A 4 **FH II-SK**



FISCHER Hochleistungsanker FH II-SK with countersunk head

Dimensions → TI-168

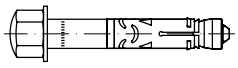
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/usable length

FH II 12/ 15 SK	S	25	1191,90
FH II 12/ 30 SK	S	25	1440,70
FH II 12/ 50 SK	S	25	1772,05
FH II 15/ 15 SK	S	25	1630,05
FH II 18/ 30 SK	S	20	3163,50

Dimensions | PU Pieces | €/100/Mat.

Article	88590.012	RAZ 4403
88590	**Steel zinc plated**	**FH II-H**



FISCHER high performance anchors FH II-H with hexagon cap nut

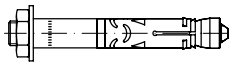
Dimensions → TI-168

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/usable length

FH II 10/ 10 H	S	50	205,35
FH II 10/ 25 H	S	50	227,55
FH II 10/ 50 H	S	50	253,10
FH II 12/ 10 H	S	50	334,75
FH II 12/ 25 H	S	50	364,00
FH II 12/ 50 H	S	25	401,70
FH II 15/ 10 H	S	25	453,35
FH II 15/ 25 H	S	25	495,10
FH II 15/ 50 H	S	25	545,35
FH II 18/ 25 H	S	20	732,30
FH II 18/ 50 H	S	20	831,15

Article	88592.012	RAZ 4403
88592	**Steel zinc plated**	**FH II-B**



FISCHER high performance anchors FH II-B with nut and threaded bolt

Dimensions → TI-174

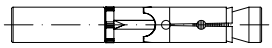
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/usable length

FH II 10/ 10 B	S	50	187,60
FH II 10/ 25 B	S	50	202,05
FH II 10/ 50 B	S	50	225,35
FH II 12/ 10 B	S	50	295,75
FH II 12/ 25 B	S	50	326,35
FH II 12/ 50 B	S	25	361,25
FH II 12/100 B	S	25	423,25
FH II 15/ 10 B	S	25	422,60
FH II 15/ 25 B	S	25	444,85
FH II 15/ 50 B	S	25	490,95
FH II 15/100 B	S	20	566,70
FH II 18/ 25 B	S	20	658,40
FH II 18/ 50 B	S	20	743,40
FH II 18/100 B	S	10	883,35
FH II 24/ 25 B	S	10	1569,10
FH II 24/ 50 B	S	10	1640,25
FH II 24/100 B	S	5	1916,00
FH II 28/ 30 B	S	4	2606,50
FH II 28/ 60 B	S	4	2939,50
FH II 32/ 30 B	S	4	3751,05
FH II 32/ 60 B	S	4	4444,10

Dimensions | PU Pieces | €/100/Mat.

Article	88689.012	RAZ 4403
88689	**Steel zinc plated**	**FH II-I**



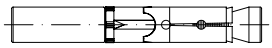
FISCHER high performance anchor FH II-I with internal thread M

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅/usable length

FH II 12/M 6 I	S	25	395,00
FH II 12/M 8 I	S	25	395,00
FH II 15/M 10 I	S	25	505,00
FH II 15/M 12 I	S	20	505,00

Article	88689.942	RAZ 4403
88689	**A 4**	**FH II-I**



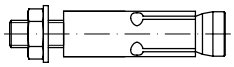
FISCHER high performance anchors FH II-I with internal thread M

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅/usable length

FH II 12/M 6 I	S	25	650,00
FH II 12/M 8 I	S	25	650,00
FH II 15/M 10 I	S	25	930,00
FH II 15/M 12 I	S	20	930,00

Article	88583.010	RAZ 4403
88583	**Steel zinc plated**	**FZA**



FISCHER ZYKON bolt anchors FZA with nut and washer for pre-positioned installation

Dimensions → TI-169

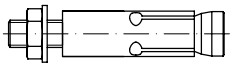
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅/usable length

10	x	40 M 6/10	S	25	158,80
12	x	40 M 8/15	S	25	269,75
12	x	50 M 8/15	S	20	356,00
14	x	40 M 10/25	S	25	304,00
14	x	60 M 10/25	S	10	464,20
18	x	80 M 12/25	S	10	679,20
22	x	100 M 16/60	S	10	1622,05
22	x	125 M 16/60	S	6	1952,65

Dimensions | PU Pieces | €/100/Mat.

Article	88583.940	RAZ 4403
88583	**A 4**	**FZA**



FISCHER ZYKON bolt anchors FZA with nut and washer for pre-positioned installation

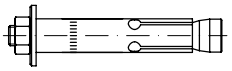
Dimensions → TI-169

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅/usable length

10	x	40 M 6/10	S	25	545,30
12	x	40 M 8/15	S	25	837,50
12	x	50 M 8/15	S	20	884,80
12	x	50 M 8/50	S	20	980,90
14	x	40 M 10/25	S	20	922,70
14	x	60 M 10/25	S	10	1605,90
14	x	60 M 10/50	S	10	1747,85
18	x	80 M 12/25	S	10	2439,30
18	x	80 M 12/55	S	10	2604,30
22	x	100 M 16/60	S	10	3911,45
22	x	125 M 16/60	S	6	4613,20

Article	88584.010	RAZ 4403
88584	**Steel zinc plated**	**FZA-D**



FISCHER ZYKON through anchors FZA-D with nut and washer, for push-through installation

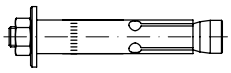
Dimensions → TI-170

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅/usable length

12	x	50 M 8D/10	S	25	356,00
12	x	60 M 8D/10	S	25	375,15
12	x	80 M 8D/30	S	25	410,80
14	x	80 M10D/20	S	10	555,90
14	x	100 M10D/40	S	10	606,60
18	x	100 M12D/20	S	10	785,25
18	x	130 M12D/50	S	10	909,40
22	x	125 M16D/25	S	10	1952,65

Dimensions	PU	Pieces	€/100/Mat.
Article	88584.940		RAZ 4403
88584	**A 4**		**FZA-D**



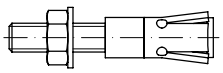
FISCHER ZYKON through anchors FZA-D with nut and washer, for push-through installation

Dimensions → TI-170

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅/usable length					
12	x	50 M 8D/10	S	25	884,80
12	x	60 M 8D/10	S	25	912,00
12	x	80 M 8D/30	S	25	1032,25
14	x	80 M10D/20	S	10	1649,20
14	x	100 M10D/40	S	10	2141,65
18	x	100 M12D/20	S	10	2526,20
18	x	130 M12D/50	S	10	3324,30
22	x	125 M16D/25	S	10	4530,05

Article	88589.940	RAZ 4402
88589	**A 4**	**FZA ST**

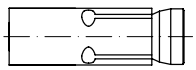


FISCHER ZYKON anchor for fixing step irons FZA ST

Dimensions → TI-170

Anchor/drill ∅/installation depth			
FZA 14 / 40 ST	S	20	1125,65
FZA 14 / 60 ST	S	20	1698,25

Article	88585.010	RAZ 4403
88585	**Steel zinc plated**	**FZA-I**



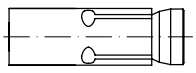
FISCHER ZYKON internally threaded anchor FZA-I for pre-positioned installation

Dimensions → TI-171

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅					
12	x	40 M 6 I	S	25	269,75
14	x	60 M 8 I	S	20	464,20
18	x	80 M10 I	S	10	679,20
22	x	100 M12 I	S	10	1622,05
22	x	125 M12 I	S	10	1952,65

Dimensions	PU	Pieces	€/100/Mat.
Article	88585.940		RAZ 4403
88585	**A 4**		**FZA-I**



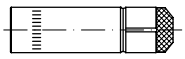
FISCHER ZYKON undercut anchor FZA-I, internally threaded for pre-positioned installation

Dimensions → TI-171

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅					
12	x	40 M 6 I	S	25	837,50
12	x	50 M 6 I	S	25	884,80
14	x	60 M 8 I	S	20	1605,90
18	x	80 M10 I	S	10	2122,35
22	x	100 M12 I	S	10	3840,95
22	x	125 M12 I	S	10	4530,05

Article	88597.012	RAZ 4402
88597	**Steel zinc plated**	**FZEA II**



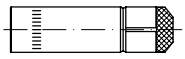
FISCHER ZYKON hammerset anchors FZEA II with internal metric thread, for pre-positioned installation

Dimensions → TI-171

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅					
10	x	40 M 8	S	100	69,15
12	x	40 M 10	S	100	77,50
14	x	40 M 12	S	50	114,75

Article	88597.942	RAZ 4402
88597	**A 4**	**FZEA II**



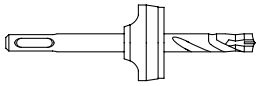
FISCHER ZYKON hammerset anchors FZEA II with internal metric thread, for pre-positioned installation

Dimensions → TI-171

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x installation depth/thread ∅					
10	x	40 M 8	S	100	521,75
12	x	40 M 10	S	100	661,05
14	x	40 M 12	S	50	1203,35

Dimensions	PU	Pieces	€/100/Mat.
Article	88587.000		RAZ 4403
88587	**Steel**		**FZUB**

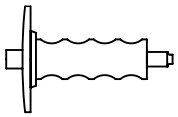


FISCHER drill bits FZUB

for FISCHER ZYKON anchors

Anchor ∅ x installation depth					
FZUB 10	x	40	S	1	4165,00
FZUB 12	x	40	S	1	4300,00
FZUB 12	x	50	S	1	4655,00
FZUB 12	x	60	S	1	5065,00
FZUB 12	x	80	S	1	5795,00
FZUB 14	x	40	S	1	4540,00
FZUB 14	x	60	S	1	5260,00
FZUB 14	x	80	S	1	6065,00
FZUB 14	x	100	S	1	6715,00
FZUB 18	x	80	S	1	9880,00
FZUB 18	x	100	S	1	10865,00
FZUB 18	x	130	S	1	12540,00
FZUB 22	x	100	S	1	11530,00
FZUB 22	x	125	S	1	12930,00

Article	88588.002	RAZ 4403
88588	**Steel**	**FZE plus**

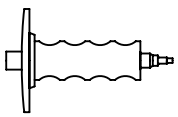


FISCHER setting tools FZE plus with centring pin

For manual hammer installation of FISCHER ZYKON anchors FZA

For anchor ∅			
FZE 10 plus	S	1	1365,00
FZE 12 plus	S	1	1365,00
FZE 14 plus	S	1	1365,00
FZE 18 plus	S	1	1510,00
FZE 22 plus	S	1	1750,00

Article	88595.000	RAZ 4401
88595	**Steel**	**FZED plus**



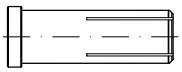
FISCHER setting tools FZED plus with centring pin

For manual hammer installation of FISCHER ZYKON anchors FZEA II

For anchor ∅			
FZED 10 plus	S	1	2120,00
FZED 12 plus	S	1	2145,00
FZED 14 plus	S	1	2170,00

Dimensions | PU Pieces | €/100/Mat.

Article	88567.010	RAZ 4402
88567	**Steel zinc plated**	**EA II**



FISCHER hammerset anchors EA II with expansion cone, for pre-positioned installation

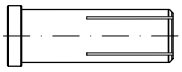
Dimensions → TI-172

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Internal thread M

EA/EA II M 6*			S	100	29,75
EA/EA II M 8			S	100	40,30
EA/EA II M8	x	40	S	50	54,10
EA/EA II M 10			S	50	62,70
EA/EA II M 12			S	25	94,35
EA/EA II M 16			S	20	158,60
EA/EA II M 20			S	10	296,95

Article	88567.940	RAZ 4402
88567	**A 4**	**EA II**



FISCHER hammerset anchors EA II with expansion cone, for pre-positioned installation

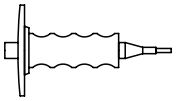
Dimensions → TI-172

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Internal thread M

EA/EA II M 6	S	100		338,05
EA/EA II M 8	S	100		428,50
EA/EA II M 10	S	50		541,10
EA/EA II M 12	S	25		942,35
EA/EA II M 16	S	20		1844,85

Article	88568.002	RAZ 4402
88568	**Steel**	**EAW H plus**



FISCHER setting tools EAW H plus with hand protection

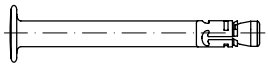
for hammerset anchor EA II

For nominal size EA II

EAW H 6 plus		S	1	1675,00
EAW H8	x 30 plus	S	1	1675,00
EAW H8	x 40 plus	S	1	1675,00
EAW H 10 plus		S	1	1675,00
EAW H 12 plus		S	1	1675,00
EAW H 16 plus		S	1	1760,00
EAW H 20 plus		S	1	2230,00

Dimensions | PU Pieces | €/100/Mat.

Article	88546.010	RAZ 4401
88546	**Steel zinc plated**	**FNA II**



FISCHER nail anchors FNA II with nail head

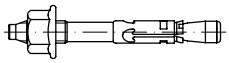
Dimensions → TI-172

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x anchoring depth/usable length

FNAII 6	x	25/ 5	S	100	43,00
FNAII 6	x	30/ 5	S	100	46,10
FNAII 6	x	30/ 30	S	50	59,10
FNAII 6	x	30/ 50	S	50	67,55
FNAII 6	x	30/ 75	S	50	87,00
FNAII 6	x	30/100	S	50	116,60
FNA I 6	x	30/120	S	50	122,65

Article	88547.010	RAZ 4401
88547	**Steel zinc plated**	**FNA II M**



FISCHER nail anchors FNA II M with thread and flange nut

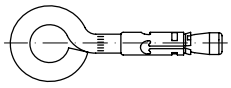
Dimensions → TI-173

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x anchoring depth - thread/usable length

FNAII 6	x	30M6/5	S	100	55,55

Article	88548.010	RAZ 4401
88548	**Steel zinc plated**	**FNA II-OE**



FISCHER nail anchors FNA II-OE, OE = with eye

Dimensions → TI-173

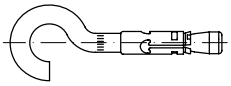
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x anchoring depth

FNA II 6	x	25 OE	S	50	71,65

Dimensions | PU Pieces | €/100/Mat.

Article	88549.010	RAZ 4401
88549	**Steel zinc plated**	**FNA II-H**



FISCHER nail anchors FNA II-H, H = with hook

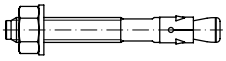
Dimensions → TI-174

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill ∅ x anchoring depth

FNA II 6	x	25 H	S	50	71,65

Article	88582.012	RAZ 4403
88582	**Steel zinc plated**	**FBN II**



FISCHER bolt anchor FBN II with expanding cone, nut and washer

Dimensions → TI-174

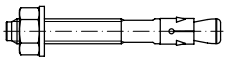
ETA CE | R120 Feuerwiderstandsklasse

Anchor/drill ∅/usable length

FBN II 6/ 5	S	100		65,85
FBN II 6/ 10	S	100		69,15
FBN II 6/ 30	S	100		78,95
FBN II 8/ 5	S	50		66,50
FBN II 8/ 10	S	50		67,10
FBN II 8/ 20	S	50		75,35
FBN II 8/ 30	S	50		82,20
FBN II 8/ 50	S	50		87,65
FBN II 8/ 70	S	20		107,05
FBN II 8/100	S	20		125,30
FBN II 10/ 10	S	50		99,95
FBN II 10/ 20	S	50		106,85
FBN II 10/ 30	S	50		108,20
FBN II 10/ 50	S	20		115,05
FBN II 10/ 70	S	20		137,95
FBN II 10/100	S	20		154,80
FBN II 10/140	S	20		202,20
FBN II 10/160	S	20		221,85
FBN II 12/ 10	S	20		151,95
FBN II 12/ 20	S	20		172,55
FBN II 12/ 30	S	20		180,75
FBN II 12/ 50	S	20		191,65
FBN II 12/ 80	S	20		231,35
FBN II 12/100	S	20		271,05
FBN II 12/120	S	20		305,45
FBN II 12/140	S	20		333,35
FBN II 12/160	S	20		361,25
FBN II 16/ 25	S	10		287,55
FBN II 16/ 50	S	10		469,65
FBN II 16/ 80	S	10		477,80
FBN II 16/100	S	10		486,00
FBN II 16/140	S	10		591,15
FBN II 16/160	S	10		636,25
FBN II 16/200	S	10		760,75
FBN II 20/ 30	S	10		641,90

Dimensions	PU	Pieces	€/100/Mat.
FBN II 20/ 60	S	10	839,35
FBN II 20/ 80	S	10	987,40
FBN II 20/120	S	10	1207,60

Article	88582.022	RAZ 4403
88582	**Steel hot dip galvanized**	**FBN II**



FISCHER bolt anchors FBN II with expanding cone, nut and washer

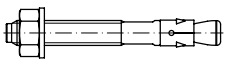
Dimensions → TI-174

ETA CE | R120 Feuerwiderstandsklasse

Anchor/drill ∅/usable length

FBN II 8/ 10	S	50	172,00
FBN II 8/ 30	S	50	199,90
FBN II 8/ 50	S	50	225,10
FBN II 8/ 70	S	20	257,05
FBN II 10/ 10	S	50	281,95
FBN II 10/ 30	S	50	290,85
FBN II 10/ 50	S	20	301,75
FBN II 10/100	S	20	350,00
FBN II 12/ 10	S	20	331,75
FBN II 12/ 30	S	20	395,00

Article	88582.942	RAZ 4403
88582	**A 4**	**FBN II**



FISCHER bolt anchors FBN II with expanding cone, nut and washer

Dimensions → TI-174

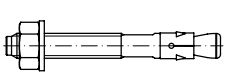
ETA CE | R120 Feuerwiderstandsklasse

Plug/drill ∅/clamp length

FBN II 6/ 10	S	100	240,00 A4
FBN II 6/ 30	S	100	260,00 A4
FBN II 8/ 10	S	50	295,00 A4
FBN II 8/ 30	S	50	330,00 A4
FBN II 8/ 50	S	50	395,00 A4
FBN II 10/ 10	S	50	430,00 A4
FBN II 10/ 20	S	50	440,00 A4
FBN II 10/ 30	S	50	455,00 A4
FBN II 10/ 50	S	20	540,00 A4
FBN II 10/100	S	20	765,00 A4
FBN II 12/ 10	S	20	640,00 A4
FBN II 12/ 20	S	20	660,00 A4
FBN II 12/ 30	S	20	670,00 A4
FBN II 12/ 50	S	20	775,00 A4
FBN II 12/100	S	20	1115,00 A4
FBN II 16/ 10	S	10	1160,00 A4
FBN II 16/ 25	S	10	1275,00 A4
FBN II 16/ 50	S	10	1480,00 A4
FBN II 20/ 30	S	10	3435,00 A4

Dimensions	PU	Pieces	€/100/Mat.

Article	88582.014	RAZ 4403
88582	**Steel zinc plated**	**FBN II K**



FISCHER bolt anchors FBN II K with expanding cone, nut and washer, K = short type

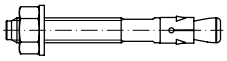
Dimensions → TI-174

ETA CE | R120 Feuerwiderstandsklasse

Plug/drill ∅/clamp length

FBN II 8/ 5K	S	50	65,70
FBN II 8/ 10K	S	50	67,10
FBN II 10/ 5K	S	50	97,25
FBN II 10/ 10K	S	50	98,65
FBN II 12/ 5K	S	20	147,90
FBN II 12/ 10K	S	20	147,90
FBN II 12/ 30K	S	20	151,95
FBN II 16/ 15K	S	10	256,10
FBN II 16/ 25K	S	10	277,90
FBN II 20/ 10K	S	10	613,80

Article	88582.944	RAZ 4403
88582	**A 4**	**FBN II K**



FISCHER bolt anchors FBN II K with expanding cone, nut and washer, K = short type

Dimensions → TI-174

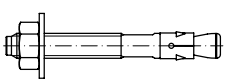
ETA CE | R120 Feuerwiderstandsklasse

Plug/drill ∅/clamp length

FBN II 8/ 5K	S	50	270,00 A4
FBN II 10/ 5K	S	50	385,00 A4
FBN II 12/ 5K	S	20	585,00 A4
FBN II 16/ 15K	S	10	1160,00 A4

Dimensions	PU	Pieces	€/100/Mat.

Article	88582.016	RAZ 4403
88582	**Steel zinc plated**	**FBN II GS**



FISCHER bolt anchors FBN II with expanding cone, nut and big washer

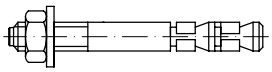
Dimensions → TI-174

ETA CE | R120 Feuerwiderstandsklasse

Anchor/drill ∅/usable length

FBN II 12/ 80 GS	S	20	305,75
FBN II 12/100 GS	S	20	324,20
FBN II 12/120 GS	S	20	347,05
FBN II 12/140 GS	S	10	362,60
FBN II 12/160 GS	S	10	389,40
FBN II 12/180 GS	S	10	445,00
FBN II 12/200 GS	S	10	473,40
FBN II 12/250 GS	S	10	617,25
FBN II 16/100 GS	S	10	588,65
FBN II 16/140 GS	S	10	715,00
FBN II 16/160 GS	S	10	759,90
FBN II 16/200 GS	S	10	898,05
FBN II 16/250 GS	S	10	1113,85
FBN II 16/300 GS	S	10	1195,40

Article	88715.310	RAZ 4422
88715	**Steel, ZP expanding clips A 2**	**EXA**



FISCHER bolt anchors EXA with 2 expanding clips, nut and washer

*Not with ETA approval

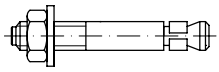
ETA CE | R120 Feuerwiderstandsklasse

Anchor/drill ∅ (usable length 5)

E	x	A 6/ 05 *	S	100	84,60
E	x	A 6/ 10 *	S	100	90,50
E	x	A 6/ 40 *	S	100	108,00
E	x	A 8/ 05	S	50	101,35
E	x	A 8/ 15	S	50	104,15
E	x	A 8/ 28	S	50	120,50
E	x	A 8/ 55	S	50	132,85
E	x	A 8/100	S	50	182,15
E	x	A 10/ 05	S	50	147,90
E	x	A 10/ 15	S	50	150,70
E	x	A 10/ 45	S	50	178,05
E	x	A 10/ 90	S	50	227,30
E	x	A 10/140	S	25	295,75
E	x	A 10/160	S	25	323,10
E	x	A 12/ 05	S	25	224,60
E	x	A 12/ 15	S	25	232,75
E	x	A 12/ 35	S	25	268,40
E	x	A 12/ 55	S	25	287,55
E	x	A 12/ 85	S	25	391,55
E	x	A 12/105	S	25	410,80

Dimensions			PU	Pieces	€/100/Mat.
E	x	A 16/ 10	S	20	390,25
E	x	A 16/ 30	S	10	434,00
E	x	A 16/ 75	S	20	709,20
E	x	A 20/ 10	S	10	835,15
E	x	A 20/ 25	S	10	890,00
E	x	A 20/ 80	S	10	1244,55
E	x	A 20/220	S	10	2155,00
E	x	A 24/ 40 *	S	10	2232,40

Article	88715.314	RAZ 4422
88715	**Steel, ZP**	**EXA-K**
	expanding clip A 2	



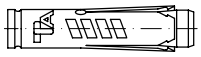
FISCHER bolt anchors EXA-K with 1 expanding clip, nut and washer, for reduced anchorage depths, K = short type

R120 Feuerwiderstandsklasse

Anchor/drill ∅ (usable length 5)

E	x	A M 8 K	S	100	78,05
E	x	A M 10 K	S	50	113,65

Article	88683.010	RAZ 4403
88683	**Steel**	**TA M**
	zinc plated	



FISCHER heavy duty anchors TA M for screws with metric thread

Dimensions → TI-175

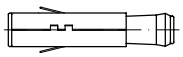
ETA CE | R120 Feuerwiderstandsklasse

For screws M

TA M 6	S	50	149,30
TA M 8	S	50	196,25
TA M 10	S	25	287,55
TA M 12	S	25	530,75

Dimensions	PU	Pieces	€/100/Mat.

Article	88530.010	RAZ 4403
88530	**Steel**	**SL M**
	zinc plated	



FISCHER heavy-duty anchors SL M for screws with metric thread

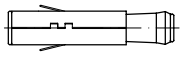
- Dimensions → TI-175
- M 6-M 12 → TA M article 88683

R120 Feuerwiderstandsklasse

For screws M

SL M 16 *	S	10	1123,60
SL M 20 *	S	5	1710,80
SL M 24 *	S	5	2683,70

Article	88530.940	RAZ 4403
88530	**A 4**	**SL M-N**



FISCHER heavy-duty anchors SL M-N for screws with metric thread

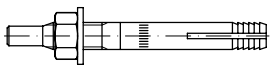
Dimensions → TI-175

R120 Feuerwiderstandsklasse

For screws M

SL M 8 N	S	25	756,05
SL M 10 N	S	20	1186,60

Article	88531.010	RAZ 4403
88531	**Steel**	**MR**
	zinc plated	



FISCHER wall screws MR with nut and washer

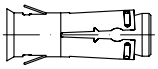
Dimensions → TI-176

Plug-/drill ∅ x plug length

MR 8	x	70	S	25	457,00
MR 10	x	85	S	20	688,60
MR 12	x	100	S	10	927,85

Dimensions	PU	Pieces	€/100/Mat.

Article	88513.010	RAZ 4403
88513	**Steel**	**FHY**
	zinc plated	



FISCHER hollow ceiling anc. FHY for screws with metric thread

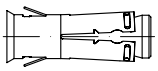
Dimensions → TI-176

R120 Feuerwiderstandsklasse

Internal thread M

FHY M 6	S	50	150,70
FHY M 8	S	25	225,25
FHY M 10	S	20	309,60

Article	88513.940	RAZ 4403
88513	**A 4**	**FHY**



FISCHER hollow ceiling anc. FHY for screws with metric thread

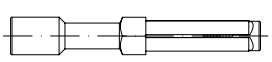
Dimensions → TI-176

R120 Feuerwiderstandsklasse

Internal thread M

FHY M 6	S	50	445,25
FHY M 8	S	50	581,00
FHY M 10	S	20	770,45

Article	88688.010	RAZ 4403
88688	**Steel**	**FPX-I**
	zinc plated	



FISCHER aircrete anchors FPX-I with internal thread M, with square expansion sleeve

ETA CE | R120 Feuerwiderstandsklasse

Internal thread M

FP	x	M 6 -I	S	25	265,00
FP	x	M 8 -I	S	25	270,00
FP	x	M 10 -I	S	25	275,00
FP	x	M 12 -I	S	25	280,00

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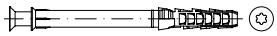
Dimensions	PU Pieces	€/100/Mat.
Article	88542.014	RAZ 4401
88542	**Plug nylon screw steel, ZP**	**SXR-T**



FISCHER frame fixings SXR-T with countersunk head screw, T = hexalobular socket

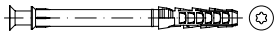
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x XR 10	x 80 T	S	50		76,25
S	x XR 10	x 100 T	S	50		81,55
S	x XR 10	x 120 T	S	50		94,10
S	x XR 10	x 140 T	S	50		101,20
S	x XR 10	x 160 T	S	50		152,80
S	x XR 10	x 180 T	S	50		258,70
S	x XR 10	x 200 T	S	50		289,55
S	x XR 10	x 230 T	S	50		316,15
S	x XR 10	x 260 T	S	50		446,05

Article	88542.944	RAZ 4401
88542	**Plug nylon screw A 4**	**SXR-T**



FISCHER frame fixings SXR-T with countersunk head screw, T = hexalobular socket

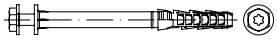
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x XR 10	x 80 T	S	50		219,00
S	x XR 10	x 100 T	S	50		270,45
S	x XR 10	x 120 T	S	50		312,10
S	x XR 10	x 140 T	S	50		382,50
S	x XR 10	x 160 T	S	50		494,80
S	x XR 10	x 180 T	S	50		611,75
S	x XR 10	x 200 T	S	50		672,00
S	x XR 10	x 230 T	S	50		833,00
S	x XR 10	x 260 T	S	50		1175,50

Dimensions	PU Pieces	€/100/Mat.
Article	88542.012	RAZ 4401
88542	**Plug nylon screw steel, ZP**	**SXR-FUS**



FISCHER frame fixings SXR-FUS with hexagon head (wrench size 13) and hexalobular socket T40

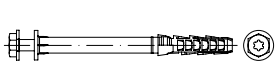
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x XR 10	x 60 FUS	S	50		71,80
S	x XR 10	x 80 FUS	S	50		80,10
S	x XR 10	x 100 FUS	S	50		85,30
S	x XR 10	x 120 FUS	S	50		98,85
S	x XR 10	x 140 FUS	S	50		106,35
S	x XR 10	x 160 FUS	S	50		160,45
S	x XR 10	x 180 FUS	S	50		271,55
S	x XR 10	x 200 FUS	S	50		304,05
S	x XR 10	x 230 FUS	S	50		331,80
S	x XR 10	x 260 FUS	S	50		441,95

Article	88542.942	RAZ 4401
88542	**Plug nylon screw A 4**	**SXR-FUS**



FISCHER frame fixings SXR-FUS with hexagon head (wrench size 13) and hexalobular socket T40

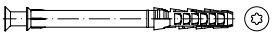
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x XR 10	x 60 FUS	S	50		214,75
S	x XR 10	x 80 FUS	S	50		234,25
S	x XR 10	x 100 FUS	S	50		283,10
S	x XR 10	x 120 FUS	S	50		333,55
S	x XR 10	x 140 FUS	S	50		405,70
S	x XR 10	x 160 FUS	S	50		528,85
S	x XR 10	x 180 FUS	S	50		654,80
S	x XR 10	x 200 FUS	S	50		734,95
S	x XR 10	x 230 FUS	S	50		877,05
S	x XR 10	x 260 FUS	S	50		1214,05

Dimensions	PU Pieces	€/100/Mat.
Article	88551.014	RAZ 4401
88551	**Plug nylon screw steel, ZP**	**SXRL-T**



FISCHER frame fixings SXRL-T with countersunk head screw, with hexalobular socket, with long expansion part

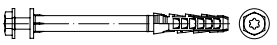
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x XRL 10	x 80 T	S	50		81,90
S	x XRL 10	x 100 T	S	50		87,30
S	x XRL 10	x 120 T	S	50		100,75
S	x XRL 10	x 140 T	S	50		108,35
S	x XRL 10	x 160 T	S	50		163,55
S	x XRL 10	x 180 T	S	50		258,07
S	x XRL 10	x 200 T	S	50		310,55
S	x XRL 10	x 230 T	S	50		339,15
S	x XRL 10	x 260 T	S	50		479,20
S	x XRL 10	x 290 T	S	50		525,00

Article	88551.945	RAZ 4401
88551	**Plug nylon screw A 4**	**SXRL-FUS**



FISCHER frame fixings SXRL-FUS with hexagon head (wrench size 13) and hexalobular socket T40, with long expansion part

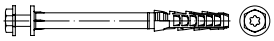
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x XRL 10	x 80 FUS	S	50		250,70
S	x XRL 10	x 100 FUS	S	50		305,20
S	x XRL 10	x 120 FUS	S	50		358,80
S	x XRL 10	x 140 FUS	S	50		437,60
S	x XRL 10	x 160 FUS	S	50		571,35
S	x XRL 10	x 180 FUS	S	50		651,33
S	x XRL 10	x 200 FUS	S	50		791,35
S	x XRL 10	x 230 FUS	S	50		941,25
S	x XRL 10	x 260 FUS	S	50		1306,70
S	x XRL 10	x 290 FUS	S	50		1395,00

Dimensions			PU	Pieces	€/100/Mat.
Article	88551.015				RAZ 4401
88551	**Plug nylon screw steel, ZP**				**SXRL-FUS**



FISCHER frame fixings SXRL-FUS with hexagon head (wrench size 13) and hexalobular socket T40, with long expansion part

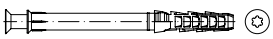
Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x	XRL 10	x	80 FUS	S	50	86,10
S	x	XRL 10	x	100 FUS	S	50	91,95
S	x	XRL 10	x	120 FUS	S	50	106,60
S	x	XRL 10	x	140 FUS	S	50	114,70
S	x	XRL 10	x	160 FUS	S	50	172,90
S	x	XRL 10	x	180 FUS	S	50	268,04
S	x	XRL 10	x	200 FUS	S	50	328,10
S	x	XRL 10	x	230 FUS	S	50	357,80
S	x	XRL 10	x	260 FUS	S	50	477,05
S	x	XRL 10	x	290 FUS	S	50	550,00

Article	88551.944	RAZ 4401
88551	**Plug nylon screw A 4**	**SXRL-T**



FISCHER frame fixings SXRL-T with countersunk head screw, T = hexalobular socket, with long expansion part

Dimensions → TI-177

ETA CE | R90 Feuerwiderstandsklasse

Plug-/drill ∅ x plug length

S	x	XRL 10	x	80 T	S	50	235,35
S	x	XRL 10	x	100 T	S	50	290,80
S	x	XRL 10	x	120 T	S	50	335,35
S	x	XRL 10	x	140 T	S	50	411,70
S	x	XRL 10	x	160 T	S	50	533,65
S	x	XRL 10	x	180 T	S	50	636,03
S	x	XRL 10	x	200 T	S	50	724,25
S	x	XRL 10	x	230 T	S	50	895,10
S	x	XRL 10	x	260 T	S	50	1264,35
S	x	XRL 10	x	290 T	S	50	1325,00

Dimensions			PU	Pieces	€/100/Mat.
Article	88563.010				RAZ 4401
88563	**Plug nylon screw steel, ZP**				**FUR-T**

FISCHER frame fixings FUR-T with countersunk head screw, with hexalobular socket

∅ 8 = T30/∅ 10 = T40

Product information → TI-178

caps → ADT → article 88528

ETA CE | HF Halogenfrei

Plug-/drill ∅ x plug length

FUR 8	x	80 T	S	50	65,30
FUR 8	x	100 T	S	50	77,75
FUR 8	x	120 T	S	50	84,85
FUR 10	x	80 T	S	50	78,70
FUR 10	x	100 T	S	50	84,05
FUR 10	x	115 T	S	50	91,90
FUR 10	x	135 T	S	50	103,70
FUR 10	x	160 T	S	50	157,30
FUR 10	x	185 T	S	50	265,90
FUR 10	x	200 T	S	50	288,10
FUR 10	x	230 T	S	50	322,10
FUR 14	x	100 T	S	50	208,40
FUR 14	x	165 T	S	50	306,30
FUR 14	x	180 T	S	50	459,15
FUR 14	x	210 T	S	50	585,00
FUR 14	x	240 T	S	50	697,60
FUR 14	x	270 T	S	50	738,00
FUR 14	x	300 T	S	20	923,70
FUR 14	x	330 T	S	20	1093,70
FUR 14	x	360 T	S	20	1246,55

Article	88563.940	RAZ 4401
88563	**Plug nylon screw A 4**	**FUR-T**

FISCHER frame fixings FUR-T with countersunk head screw, with hexalobular socket

∅ 8 = T30/∅ 10 = T40

Dimensions → TI-178

Caps → ADT → article 88528

ETA CE | HF Halogenfrei

Plug-/drill ∅ x plug length

FUR 8	x	80 T	S	50	184,45
FUR 8	x	100 T	S	50	252,80
FUR 8	x	120 T	S	50	280,05
FUR 10	x	80 T	S	50	227,30
FUR 10	x	100 T	S	50	276,45
FUR 10	x	115 T	S	50	309,50
FUR 10	x	135 T	S	50	391,45
FUR 10	x	160 T	S	50	534,00

Dimensions			PU	Pieces	€/100/Mat.
FUR 10	x	185 T	S	50	648,70
FUR 10	x	200 T	S	50	663,15
FUR 10	x	230 T	S	50	703,90
FUR 14	x	140 T	S	50	774,40
FUR 14	x	165 T	S	50	930,30
FUR 14	x	180 T	S	50	1113,35
FUR 14	x	210 T	S	50	1556,40

Article	88564.010	RAZ 4401
88564	**Plug nylon screw steel, ZP**	**FUR-SS**

FISCHER frame fixings FUR-SS with hexagon head wood screw

∅ 8 = wrench size 10/∅ 10 = wrench size 13

Dimensions → TI-178

ETA CE | HF Halogenfrei

Plug-/drill ∅ x plug length

FUR 8	x	80 SS	S	50	67,95
FUR 8	x	100 SS	S	50	80,90
FUR 8	x	120 SS	S	50	88,30
FUR 10	x	80 SS	S	50	81,90
FUR 10	x	100 SS	S	50	86,55
FUR 10	x	115 SS	S	50	94,30
FUR 10	x	135 SS	S	50	106,85
FUR 10	x	160 SS	S	50	162,10
FUR 10	x	185 SS	S	50	273,50
FUR 10	x	200 SS	S	50	295,75
FUR 10	x	230 SS	S	50	330,85

Article	88564.940	RAZ 4401
88564	**Plug nylon screw A 4**	**FUR-SS**

FISCHER frame fixings FUR-SS with hexagon head wood screw

∅ 8 = wrench size 10/∅ 10 = wrench size 13

Dimensions → TI-178

ETA CE | HF Halogenfrei

Plug-/drill ∅ x plug length

FUR 8	x	80 SS	S	50	182,60
FUR 8	x	100 SS	S	50	250,30
FUR 10	x	80 SS	S	50	220,75
FUR 10	x	100 SS	S	50	271,10
FUR 10	x	115 SS	S	50	312,65
FUR 10	x	135 SS	S	50	391,45
FUR 10	x	160 SS	S	50	528,80
FUR 10	x	185 SS	S	50	642,85
FUR 10	x	200 SS	S	50	663,15
FUR 10	x	230 SS	S	50	703,90

Dimensions | PU Pieces | €/100/Mat.

Article	88504.014	RAZ 4401
88504	**Plug nylon screw steel, ZP**	**SXS-T**

FISCHER long shaft anchors SXS-T with countersunk head screw, with hexalobular socket T40

Dimensions → TI-179

ETA CE | CC Zulassung | HF Halogen-frei

Anchor/drill ∅ x anchor length						
S	x	X 10	x	80 T	S 50	71,15
S	x	X 10	x	100 T	S 50	78,85
S	x	X 10	x	120 T	S 50	86,55
S	x	X 10	x	140 T	S 50	78,00
S	x	X 10	x	160 T	S 50	142,25
S	x	X 10	x	180 T	S 50	182,40

Article	88504.944	RAZ 4401
88504	**Plug nylon screw A 4**	**SXS-T**

FISCHER long shaft anchors SXS-T with countersunk head screw, with hexalobular socket T40

Dimensions → TI-179

ETA CE | CC Zulassung | HF Halogen-frei

Anchor/drill ∅ x anchor length						
S	x	X 10	x	80 T	S 50	211,60
S	x	X 10	x	100 T	S 50	243,75
S	x	X 10	x	120 T	S 50	306,65
S	x	X 10	x	140 T	S 50	375,55
S	x	X 10	x	160 T	S 50	419,00
S	x	X 10	x	160 T	S 50	485,85

Dimensions | PU Pieces | €/100/Mat.

Article	88504.010	RAZ 4401
88504	**Plug nylon screw steel, ZP**	**SXS-F US**

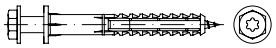
FISCHER long shaft anc. SXS-F US with flange head screws, F US = hexagon head

Dimensions → TI-179

ETA CE | CC Zulassung | HF Halogen-frei

Anchor/drill ∅ x anchor length						
S	x	X 10	x	60 FUS	S 50	68,10
S	x	X 10	x	80 FUS	S 50	75,80
S	x	X 10	x	100 FUS	S 50	83,50
S	x	X 10	x	120 FUS	S 50	91,25
S	x	X 10	x	140 FUS	S 50	98,90
S	x	X 10	x	160 FUS	S 50	146,85
S	x	X 10	x	180 FUS	S 50	185,45

Article	88504.940	RAZ 4401
88504	**Plug nylon screw A 4**	**SXS-F US**



FISCHER long shaft anc. SXS-F US with flange head screws, F US = hexagon head

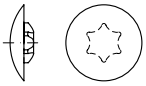
Dimensions → TI-179

ETA CE | CC Zulassung | HF Halogen-frei

Anchor/drill ∅ x anchor length						
S	x	X 10	x	60 FUS	S 50	202,00
S	x	X 10	x	80 FUS	S 50	224,65
S	x	X 10	x	100 FUS	S 50	257,70
S	x	X 10	x	120 FUS	S 50	319,30
S	x	X 10	x	140 FUS	S 50	389,05
S	x	X 10	x	160 FUS	S 50	435,70
S	x	X 10	x	180 FUS	S 50	441,25

Dimensions | PU Pieces | €/100/Mat.

Article	88528.630	RAZ 4401
88528	**Plastic white**	**ADT**

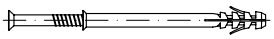


FISCHER caps ADT for countersunk head screw, with hexalobular socket

Caps ∅ → for screw ∅:
15 → 7
18 → 10

Caps ∅			
ADT 15	S	100	4,45
ADT 18	S	100	4,45

Article	88503.010	RAZ 4401
88503	**Nylon zinc plated**	**N-S**



FISCHER nail plugs N-S with self-piercing screw, with Pozidriv cross recess Z

Assembled and ready for installation (for < ∅ 10)

Dimensions → TI-180

HF Halogen-frei

Plug-/drill ∅ x plug length/usable length						
N-S 5	x	30/ 5	S	100	12,65
N-S 5	x	40/ 15	S	100	13,60
N-S 5	x	50/ 25	S	100	13,65
N-S 6	x	40/ 10	S	50	15,50
N-S 6	x	60/ 30	S	50	18,70
N-S 6	x	80/ 50	S	50	22,80
N-S 8	x	60/ 20	S	50	22,15
N-S 8	x	80/ 40	S	50	25,00
N-S 8	x	100/ 60	S	50	30,85
N-S 8	x	120/ 80	S	50	41,40
N-S 10	x	100/ 50	S	50	70,45
N-S 10	x	135/ 85	S	50	86,85
N-S 10	x	160/110	S	50	130,05
N-S 10	x	230/180	S	50	267,05

Dimensions | PU Pieces | €/100/Mat.

Article 88503.920 RAZ 4401

88503 Nylon A 2 N-S

FISCHER nail plugs N-S with self-piercing screw, with Pozidriv cross recess Z

Assembled and ready for installation

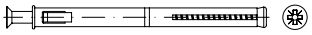
Dimensions → TI-180

HF Halogen-frei

Plug-/drill ∅ x plug length/usable length					
N-S 5	x	30/ 5	S	100	27,35
N-S 6	x	40/10	S	50	33,35
N-S 6	x	60/30	S	50	36,25
N-S 8	x	60/20	S	50	51,55
N-S 8	x	80/40	S	50	61,35
N-S 8	x	100/60	S	50	81,15

Article 88516.010 RAZ 4401

88516 Plug nylon screw steel, ZP F-S



FISCHER frame fixings F-S with Pozidriv cross recess Z 3, with countersunk head screw

Dimensions → TI-180

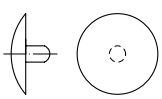
caps → ADF → article 88556

HF Halogen-frei

Plug-/drill ∅ x plug length			
F 8 S 100	S	50	90,95
F 8 S 120	S	50	98,15
F 8 S 140	S	50	109,25
F 10 S 75	S	50	92,00
F 10 S 100	S	50	95,85
F 10 S 120	S	50	106,10
F 10 S 140	S	50	116,95
F 10 S 165	S	50	155,85

Article 88556.630 RAZ 4401

88556 Plastic white ADF



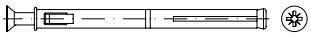
FISCHER caps ADF for window frame fixings F-S

Caps ∅ (matched for F-S 8 and 10 ∅)			
ADF 12	S	100	4,45

Dimensions | PU Pieces | €/100/Mat.

Article 88680.010 RAZ 4401

88680 Plug steel* screw steel, ZP F-M



FISCHER metal frame fixings F-M with countersunk head screw, with expanding cone, with Pozidriv cross recess Z 3

*Aluminium-zinc plated

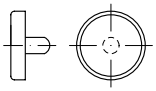
Dimensions → TI-181

R120 Feuerwiderstandsklasse

Plug-/drill ∅/plug length			
F 8 M 72	S	100	65,05
F 8 M 92	S	100	70,60
F 8 M 112	S	100	76,05
F 8 M 132	S	100	83,30
F 10 M 72	S	100	74,70
F 10 M 92	S	100	80,45
F 10 M 112	S	100	82,70
F 10 M 132	S	100	93,15
F 10 M 152	S	100	108,85
F 10 M 182	S	50	130,25
F 10 M 202	S	50	134,70

Article 88681.(*) RAZ 4401

88681 Plastic ADM



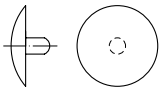
FISCHER caps ADM for metal frame fixings F-M

White (*630)/brown (*640)

10	S	100	5,15

Article 88682.(*) RAZ 4401

88682 Plastic ASM



FISCHER caps ASM for metal frame fixings F-M

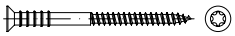
White (*630)/brown (*640)

10	S	100	5,15

Dimensions | PU Pieces | €/100/Mat.

Article 88515.010 RAZ 4401

88515 Steel zinc plated JUSS



FISCHER adjustment screws JUSS self-drilling, for wooden panels, with hexalobular socket T25

Dimensions → TI-181

∅ x length (installation depth 30 mm)					
JUSS 6	x	60/T25	S	100	32,85
JUSS 6	x	70/T25	S	100	33,70
JUSS 6	x	80/T25	S	100	35,55
JUSS 6	x	90/T25	S	100	36,85
JUSS 6	x	100/T25	S	100	37,95
JUSS 6	x	110/T25	S	100	39,60
JUSS 6	x	120/T25	S	100	41,45
JUSS 6	x	145/T25	S	100	45,15

Article 88520.600 RAZ 4400

88520 Nylon UX

FISCHER universal plugs UX for all walls, for wood and chipboard screws

Dimensions → TI-182

HF Halogen-frei

Plug/drill ∅ x length/for screws ∅ max.							
U	x	X 6	x	45/ 5	S	100	7,25
U	x	X 8	x	60/ 6	S	100	10,00
U	x	X 10	x	75/ 8	S	50	18,05
U	x	X 12	x	85/10	S	25	28,70
U	x	X 14	x	95/12	S	20	44,90

Article 88520.608 RAZ 4400

88520 Nylon UX R

FISCHER universal plugs UX R for all walls, for wood and chipboard screws, R = with collar

Dimensions → TI-182

HF Halogen-frei

Plug/drill ∅ x length/for screws ∅ max.							
U	x	X 6 R	x	45/5	S	100	7,35
U	x	X 8 R	x	60/6	S	100	10,10
U	x	X 10 R	x	75/8	S	50	18,15

Dimensions	PU Pieces	€/100/Mat.
Article	88554.600	RAZ 4403
88554	**Nylon**	**SX**

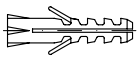
FISCHER expansion plugs SX, for wood and chipboard screws

Dimensions → TI-182

HF Halogen-frei

Plug/drill ∅ x plug length/for screws ∅ max.					
S	x	4	S	200	3,00
S	x	5	S	100	3,05
S	x	6	S	100	4,50
S	x	6 S/10	S	50	14,75
S	x	8	S	100	6,50
S	x	8 S/20	S	50	21,70
S	x	X 8 x 65	S	50	14,85
S	x	10	S	50	12,65
S	x	12	S	25	18,90
S	x	14	S	20	35,10
S	x	16	S	10	51,90

Article	88500.604	RAZ 4400
88500	**Nylon**	**S**



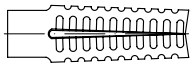
FISCHER expansion plugs S for wood and chipboard screws

Dimensions → TI-183

HF Halogen-frei

Plug/drill ∅ x length/for screws ∅ max.					
S 4	x	25/ 3,0	S	200	2,95
S 5	x	35/ 4,0	S	200	3,00
S 5	x	35/ 4,0	K	100	3,00
S 6	x	40/ 5,0	S	200	4,30
S 6	x	40/ 5,0	K	100	4,45
S 7	x	40/ 5,5	S	100	6,60
S 8	x	55/ 6,0	S	200	6,00
S 8	x	55/ 6,0	K	100	6,45
S 10	x	70/ 8,0	S	100	11,25
S 10	x	70/ 8,0	K	50	12,50
S 12	x	80/10,0	S	25	18,75
S 14	x	90/12,0	S	20	34,65
S 16	x	100/12,0	S	10	50,95
S 20	x	120/16,0	S	5	110,55

Dimensions	PU Pieces	€/100/Mat.
Article	88545.010	RAZ 4403
88545	**Steel zinc plated**	**FMD**

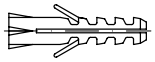


FISCHER steel expansion plugs FMD for wood screws

Dimensions → TI-183

For max. screws ∅ x plug length					
FMD 6	x	32	S	100	44,50
FMD 8	x	38	S	100	48,85
FMD 8	x	60	S	50	56,05
FMD 10	x	60	S	50	60,10

Article	88506.600	RAZ 4403
88506	**Nylon**	**M-S**



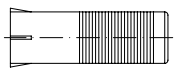
FISCHER expansion plugs M-S for screws with metric thread

Dimensions → TI-184

HF Halogen-frei

Plug-/screw ∅ x plug length			
M 6 S / 40	S	100	13,45
M 8 S / 50	S	50	26,10
M 10 S / 70	S	20	71,00
M 12 S / 80	S	10	94,00

Article	88510.700	RAZ 4403
88510	**Nylon Brass taper**	**M**



FISCHER anchors M with expantion brass unit for screws with metric thread

Dimensions → TI-184

HF Halogen-frei

Internal thread ∅ x plug length/drill ∅					
M 5	x	35 / 10	S	50	87,60
M 6	x	40 / 12	S	50	92,65
M 8	x	50 / 16	S	20	170,85
M 10	x	60 / 20	S	10	314,15
M 12	x	70 / 24	S	5	485,60

Dimensions	PU Pieces	€/100/Mat.
Article	88507.600	RAZ 4403
88507	**Nylon**	**GB**

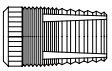
FISCHER aircrete anchors GB for assembly in aircrete, for FISCHER safety screws

Dimensions → TI-185

HF Halogen-frei

Drill ∅ x anchor length/for screws ∅					
GB 8	x	50 / 5	S	25	56,65
GB 10	x	55 / 7	S	20	66,15
GB 14	x	75 /10	S	10	103,75

Article	88521.700	RAZ 4403
88521	**Brass**	**PA 4**

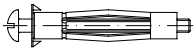


FISCHER brass fixings PA 4 for screws with metric thread

Dimensions → TI-185

Internal thread x anchor length			
PA 4 M 6/ 7,5	S	200	49,90
PA 4 M 6/10,5	S	100	61,75
PA 4 M 6/13,5	S	100	73,90
PA 4 M 8/25	S	50	96,15
PA 4 M 10/25	S	25	116,90

Article	88512.010	RAZ 4403
88512	**Steel zinc plated**	**HM-S**



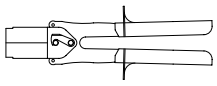
FISCHER cavity metal fixings HM-S for cavity assemblies, S = with metric screw

Dimensions → TI-186

For screws ∅					
HM 4	x	32 S	S	50	47,10
HM 4	x	46 S	S	50	50,55
HM 4	x	59 S	S	50	52,75
HM 5	x	37 S	S	50	54,25
HM 5	x	52 S	S	50	58,00
HM 5	x	65 S	S	50	70,35
HM 6	x	37 S	S	50	58,65
HM 6	x	52 S	S	50	62,80
HM 6	x	65 S	S	50	79,70
HM 6	x	80 S	S	50	83,30

Dimensions | PU Pieces | €/100/Mat.

Article	88511.000	RAZ 4403
88511	**Steel**	**HM-Z 1**

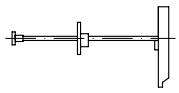


FISCHER professional tools HM-Z 1 for cavity fixing plugs HM-S

Cavity metal fixing HM-S → article 88512

HMZ 1	S	1	4800,00

Article	88509.600	RAZ 4403
88509	**Nylon**	**K**



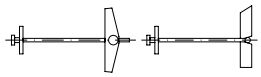
FISCHER toggle fixings K for cavity assembly, for wood screws Ø 4

Dimensions → TI-186

For screws Ø

K 54	S	25	57,90

Article	88518.010	RAZ 4403
88518	**Steel zinc plated**	**KD**



FISCHER spring toggles KD with screw for assembly in cavities

Dimensions → TI-187

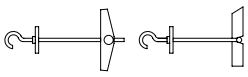
KD 3 – 4 = spring toggle
KD 5 – 8 = gravity toggle

Screws Ø x length

KD 3	x	95	S	50	74,65
KD 4	x	105	S	25	100,80
KD 5	x	100	S	25	133,45
KD 6	x	100	S	25	175,70
KD 8	x	100	S	20	253,80

Dimensions | PU Pieces | €/100/Mat.

Article	88519.010	RAZ 4403
88519	**Steel zinc plated**	**KDH**



FISCHER spring toggles KDH with hook screw for assembly in cavities

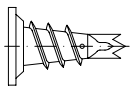
Dimensions → TI-187

KDH 3 – 4 = spring toggle
KDH 5 – 8 = gravity toggle

Screws Ø x length

KDH 3	x	105	S	25	92,55
KDH 4	x	95	S	25	117,40
KDH 5	x	130	S	20	178,10
KDH 6	x	130	S	20	208,25
KDH 8	x	130	S	20	266,75

Article	88598.010	RAZ 4403
88598	**Metal zinc plated**	**GKM**



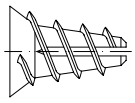
FISCHER plasterboard fixings GKM self-tapping thread, with Pozidriv cross recess Z2

Dimensions → TI-188

For screws Ø max. x length

5,0	x	31	S	100	25,40

Article	88598.600	RAZ 4403
88598	**Plastic**	**GK**



FISCHER plasterboard fixings GK with setting tool

Dimensions → TI-188

HF Halogen-frei

For screws Ø max. x length

5,0	x	22	S	100	16,00

Dimensions | PU Pieces | €/100/Mat.

Article	88558.630	RAZ 4403
88558	**Nylon grey**	**FC**

FISCHER pipe clips FC for conduits and pipes

Dimensions → TI-189

Further FISCHER electrical fixing on request

HF Halogen-frei

For pipe Ø from up - to

FC 6 - 9	S	100	16,20
FC 9 - 12	S	100	20,05
FC 12 - 16	S	50	24,40
FC 16 - 20	S	25	31,05

Article	88559.640	RAZ 4403
88559	**Nylon transparent**	**SCH**

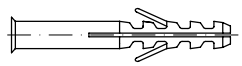
FISCHER saddle clips SCH, single/series clamps for conduits and plastic pipes

Dimensions → TI-189

For pipe Ø up to (e.g. 812 = 8-12)

SCH 812	S	100	23,35
SCH 1216	S	50	30,15
SCH 1619	S	50	53,70
SCH 1623	S	50	54,20
SCH 2332	S	25	89,35
SCH 3242	S	25	120,15

Article	88536.600	RAZ 4403
88536	**Nylon**	**S 14 ROE**



FISCHER plugs S 14 ROE for scaffold anchorage with GS 12, for use in solid bricks

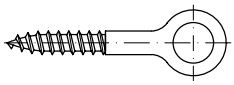
Dimensions → TI-190

For use in perforated bricks/cellular concrete
→ type S 16 on request

Plug-/drill Ø x plug length

S 14 ROE 70	S	25	50,65
S 14 ROE 100	S	25	64,75
S 14 ROE 135	S	25	76,55
S 14 ROE 185	S	25	109,45

Dimensions	PU	Pieces	€/100/Mat.
Article	88536.010		RAZ 4403
88536	**Steel zinc plated**		**GS 12**



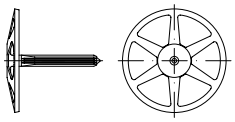
FISCHER scaffold eyebolts GS 12, welded eyes, inside Ø 23

For FISCHER plugs S 14 ROE/S 16 H R

Dimensions → TI-190

Screws Ø x length					
GS 12	x	90	S	25	274,60
GS 12	x	120	S	25	311,20
GS 12	x	160	S	25	332,35
GS 12	x	190	S	25	442,15
GS 12	x	230	S	25	499,90
GS 12	x	300	S	25	608,25
GS 12	x	350	S	25	792,65

Article	88514.600	RAZ 4403
88514	**Plastic**	**DHK**



FISCHER insulation supports DHK, plate Ø 90

Dimensions → TI-191

Usable length			
DHK 40	S	250	26,75
DHK 60	S	250	28,45
DHK 80	S	250	33,50
DHK 100	S	250	39,90
DHK 120	S	200	41,45
DHK 140	S	200	57,60
DHK 160	S	100	72,05
DHK 180	S	100	79,60
DHK 200	S	100	86,95
DHK 220	S	100	100,05

Article	88580.600	RAZ 4403
88580	**Plastic**	**DT**

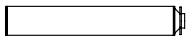
FISCHER insulation discs DT

For combining with nail anchors N-S or wall-ties VB

Dimensions → TI-191

Disc Ø/throughput hole Ø			
DT 90 / 4	S	250	22,20
DT 90 / 8	S	250	23,40

Dimensions	PU	Pieces	€/100/Mat.
Article	88565.000		RAZ 4403
88565	**Foam**		**1 K-PU**

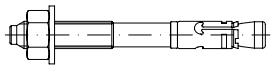


FISCHER rapid installation foam PU for filling, insulation, sealing, cart. with closure and dosage valve

Contents per cartridge/max. foam yield 500 ml ~ 28 l

content/ml			
PU 1 500	S	12	1185,00

Article	88741.010	RAZ 4422
88741	**Steel zinc plated**	**MAX**



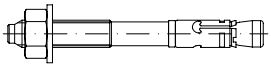
UPAT express anchors MAX with 2 expanding cones, nut and washer

Dimensions → TI-192

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Anchor/drill Ø/clamp length/anchor length					
MA	x	8/ 10/ 75	S	100	84,61
MA	x	8/ 30/ 95	S	100	108,34
MA	x	8/ 50/115	S	100	130,54
MA	x	10/ 10/ 95	S	50	121,84
MA	x	10/ 20/105	S	50	137,15
MA	x	10/ 30/115	S	50	143,75
MA	x	10/ 50/135	S	50	158,01
MA	x	10/ 80/165	S	40	195,20
MA	x	10/100/185	S	50	202,14
MA	x	12/ 10/110	S	20	176,00
MA	x	12/ 20/120	S	20	184,30
MA	x	12/ 30/130	S	20	195,17
MA	x	12/ 50/150	S	20	251,38
MA	x	12/ 80/180	S	20	327,06
MA	x	12/100/200	S	20	350,10
MA	x	12/120/220	S	20	399,23
MA	x	12/160/260	S	10	431,27
MA	x	12/200/300	S	10	531,41
MA	x	16/ 25/148	S	20	381,24
MA	x	16/ 50/173	S	20	479,12
MA	x	16/100/223	S	10	659,04
MA	x	16/160/283	S	10	861,41
MA	x	16/200/323	S	10	950,30
MA	x	16/250/373	S	10	1031,80
MA	x	16/300/423	S	10	1164,44
MA	x	20/ 30/172	S	10	791,16
MA	x	20/ 60/202	S	10	801,30

Dimensions	PU	Pieces	€/100/Mat.
Article	88741.940		RAZ 4422
88741	**A 4**		**MAX**



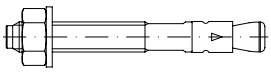
UPAT express anchors MAX with 2 expanding cones, nut and washer

Dimensions → TI-192

ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

anchor/drill Ø/clamp length/anchor length					
MA	x	8/ 10	S	50	369,00
MA	x	8/ 30/ 95	S	50	451,28
MA	x	8/ 50	S	50	481,00
MA	x	10/ 10/ 95	S	50	521,30
MA	x	10/ 20/105	S	50	540,10
MA	x	10/ 30/115	S	50	603,58
MA	x	10/ 50	S	50	675,00
MA	x	10/100/185	S	50	826,91
MA	x	12/ 10/110	S	20	715,00
MA	x	12/ 20	S	25	721,00
MA	x	12/ 30/130	S	20	815,24
MA	x	12/ 50	S	25	926,00
MA	x	12/100/200	S	20	1250,03
MA	x	16/ 25	S	20	1509,00
MA	x	16/ 50/173	S	20	1746,38
MA	x	16/100/223	S	10	2003,50
MA	x	20/ 30/172	S	10	3081,12
MA	x	20/ 60/202	S	10	3415,34

Article	88764.010	RAZ 4422
88764	**Steel zinc plated**	**IMC**



UPAT express anchors IMC with 1 expanding cone, nut and washer

Dimensions → TI-192

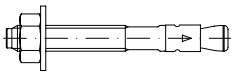
ETA CE | R120 Feuerwiderstandsklasse

Anchor/drill Ø/clamp length/anchor length			
6/ 05/ 40	S	100	41,95
8/ 05/ 56 K	S	100	59,98
8/ 05/ 66	S	100	60,12
8/ 10/ 71	S	100	60,55
8/ 20/ 81	S	100	68,42
8/ 30/ 91	S	100	75,58
8/ 50/111	S	100	87,24
8/100/161	S	50	119,87
10/ 05/ 71 K	S	50	89,66
10/ 10/ 86	S	50	88,76
10/ 20/ 96	S	50	95,46
10/ 30/106	S	50	99,01
10/ 50/126	S	50	106,24
10/100/176	S	50	143,00
12/ 05/ 86 K	S	20	134,00
12/ 10/106	S	20	134,57

Dimensions	PU	Pieces	€/100/Mat.
12/ 20/116	S	20	144,91
12/ 30/126	S	20	156,04
12/ 50/146	S	20	174,92
12/100/196	S	20	244,78
12/120/216	S	20	267,08
12/140/236	S	20	278,14
12/160/256	S	20	302,67
12/180/276	S	10	291,90
12/200/296	S	10	337,68
12/250/346	S	10	489,37
16/ 15/120 K	S	20	235,18
16/ 25/145	S	20	259,33
16/ 50/170	S	20	365,28
16/100/220	S	10	444,48
16/140/260	S	10	550,09
16/160/280	S	10	595,37
16/200/321	S	10	701,45
16/250/371	S	10	954,79
16/300/421	S	10	945,32
20/ 30/184	S	10	604,15
20/ 60/214	S	10	791,00

Article 88764.014 RAZ 4422

88764 Steel zinc plated IMC-GS



UPAT express anchors IMC with 1 expanding cone, nut and big washer

Dimensions → TI-192

ETA CE | R120 Feuerwiderstandsklasse

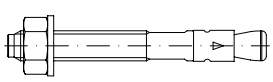
Anchor/drill ∅/clamp length/anchor length

12/ 80/176 GS	S	20	256,85
12/100/196 GS	S	20	269,17
12/120/216 GS	S	20	287,95
12/140/236 GS	S	10	305,87
12/160/256 GS	S	10	325,17
12/180/276 GS	S	10	375,48
12/200/296 GS	S	10	394,55
12/250/346 GS	S	10	513,84
16/100/220 GS	S	10	487,31
16/140/260 GS	S	10	601,11
16/160/280 GS	S	10	639,29
16/200/320 GS	S	10	751,14
16/250/370 GS	S	10	1078,51
16/300/420 GS	S	10	984,54

Dimensions	PU	Pieces	€/100/Mat.

Article 88764.940 RAZ 4422

88764 A 4 IMC



UPAT express anchors IMC with 1 expanding cone, nut and washer

Dimensions → TI-192

ETA CE | R120 Feuerwiderstandsklasse

Anchor/drill ∅/clamp length/anchor length

6/ 10/ 55	S	100	195,30
8/ 05/ 56	S	100	214,00
8/ 10/ 71	S	100	240,31
8/ 30/ 91	S	100	270,04
8/ 50/111	S	100	327,60
10/ 05/ 71 K	S	50	312,14
10/ 10/ 86	S	50	325,41
10/ 20/ 96	S	50	339,51
10/ 30/106	S	50	361,70
10/ 50/126	S	50	401,54
10/100/176	S	50	571,46
12/ 05/ 86 K	S	20	468,15
12/ 10/106	S	20	489,51
12/ 20/116	S	20	499,11
12/ 50/146	S	20	585,08
12/100/196	S	20	843,49
16/ 50/170	S	10	1169,48

Article 88716.010 RAZ 4422

88716 Steel zinc plated USA

UPAT impact anchors USA with internal thread M

Dimensions → TI-193

ETA CE | R120 Feuerwiderstandsklasse

Internal thread M

USA M 6			S	100	20,75
USA M 8			S	100	26,60
USA M 8	x	40	S	100	56,00
USA M 10			S	50	39,90
USA M 12			S	50	55,75
USA M 16			S	20	113,00
USA M 20			S	25	200,00

Dimensions	PU	Pieces	€/100/Mat.

Article 88716.940 RAZ 4422

88716 A 4 USA

UPAT impact anchors USA with internal thread M

Dimensions → TI-193

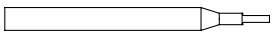
ETA CE | R120 Feuerwiderstandsklasse

Internal thread M

USA M 6	S	100	174,00
USA M 8	S	100	251,00
USA M 10	S	50	358,00
USA M 12	S	50	553,00

Article 88717.000 RAZ 4422

88717 Steel USA-SWZ



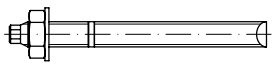
UPAT setting tools USA-SWZ

For use with USA hammerset anchors

USA-SWZ M 6			S	1	558,00
USA-SWZ M 8			S	1	665,00
USA-SWZ M 8	x	40	S	1	2105,00
USA-SWZ M 10			S	1	849,00
USA-SWZ M 12			S	1	1084,00
USA-SWZ M 16			S	1	1867,00
USA-SWZ M 20			S	1	1969,00

Article 88722.010 RAZ 4424

88722 Steel zinc plated UKA 3-ASTA



UPAT threaded rods UKA 3-ASTA with nut and washer

For use with UKA 3-cartridges
and injection mortar UPM 55, UPM 44, UPM 33

Dimensions → TI-193

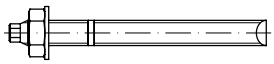
ETA CE | R120 Feuerwiderstandsklasse

∅ M x length

ASTA M 8	x	110	S	10	104,80
ASTA M 8	x	150	S	10	191,51
ASTA M 8	x	190	S	10	224,75
ASTA M 10	x	130	S	10	146,20
ASTA M 10	x	165	S	10	180,65
ASTA M 10	x	190	S	10	201,30
ASTA M 12	x	160	S	10	205,45

Dimensions			PU	Pieces	€/100/Mat.
ASTA M 12	x	180	S	10	224,75
ASTA M 12	x	220	S	10	259,20
ASTA M 12	x	250	S	10	293,65
ASTA M 12	x	300	S	10	358,40
ASTA M 14	x	170	S	10	335,00
ASTA M 16	x	190	S	10	413,55
ASTA M 16	x	165	S	10	319,85
ASTA M 16	x	250	S	10	453,60
ASTA M 16	x	300	S	10	496,30
ASTA M 20	x	260	S	10	802,05
ASTA M 20	x	220	S	10	708,65
ASTA M 20	x	220	S	10	962,10
ASTA M 20	x	350	S	10	1141,84
ASTA M 22	x	280	S	5	780,00
ASTA M 24	x	300	S	5	1227,20
ASTA M 27	x	340	S	5	1989,95
ASTA M 30	x	380	S	5	2639,15

Article	88722.020	RAZ 4424
88722	**Steel zinc plated**	**UKA 3-ASTA**



UPAT threaded rods UKA 3-ASTA with nut and washer

For use with UKA 3-cartridges
and injection mortar UPM 55, UPM 44, UPM 33

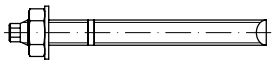
Dimensions → TI-193

ETA CE | R120 Feuerwiderstandsklasse

∅ M x length

ASTA M 8	x	110	S	10	157,21
ASTA M 10	x	130	S	10	212,75
ASTA M 12	x	160	S	10	234,70
ASTA M 16	x	190	S	10	461,87
ASTA M 20	x	260	S	5	1200,92

Article	88722.940	RAZ 4424
88722	**A 4**	**UKA 3-ASTA**



UPAT threaded rods UKA 3-ASTA with nut and washer

For use with UKA 3-cartridges
and injection mortar UPM 55, UPM 44, UPM 33

Dimensions → TI-193

ETA CE | R120 Feuerwiderstandsklasse

∅ M x length

ASTA M 8	x	110	S	10	311,80
ASTA M 8	x	170	S	10	569,59
ASTA M 8	x	190	S	10	535,90
ASTA M 10	x	130	S	10	529,55
ASTA M 10	x	150	S	10	510,00
ASTA M 10	x	165	S	10	677,75
ASTA M 10	x	190	S	10	786,05
ASTA M 10	x	250	S	10	1001,40
ASTA M 10	x	300	S	10	1088,55

Dimensions			PU	Pieces	€/100/Mat.
ASTA M 12	x	160	S	10	690,60
ASTA M 12	x	180	S	10	660,00
ASTA M 12	x	190	S	10	762,62
ASTA M 12	x	220	S	10	954,80
ASTA M 12	x	250	S	10	1243,30
ASTA M 12	x	300	S	10	1418,80
ASTA M 14	x	170	S	10	920,00
ASTA M 16	x	190	S	10	1300,05
ASTA M 16	x	165	S	10	1157,00
ASTA M 16	x	215	S	10	1270,00
ASTA M 16	x	250	S	10	1736,25
ASTA M 16	x	300	S	10	2088,65
ASTA M 20	x	260	S	10	3212,25
ASTA M 20	x	350	S	10	4589,17
ASTA M 22	x	280	S	5	3500,00
ASTA M 24	x	300	S	5	5377,55
ASTA M 27	x	340	S	5	6100,00
ASTA M 30	x	380	S	5	10864,30

Article	88714.010	RAZ 4424
88714	**Steel zinc plated**	**UKA 3-IST**

UPAT internal thread bushes UKA 3-IST

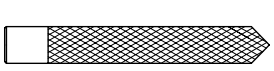
Dimensions → TI-194

ETA CE | R120 Feuerwiderstandsklasse

Internal thread M

IST M 5	x	75	S	10	142,00
IST M 6	x	75	S	10	170,00
IST M 8	x	90	S	10	229,00
IST M 10	x	90	S	10	290,00
IST M 12	x	100	S	10	350,00
IST M 16	x	120	S	10	540,00
IST M 16	x	120	S	5	1224,10

Article	88714.940	RAZ 4424
88714	**A 4**	**UKA 3-IST**



UPAT internal thread bushes UKA 3-IST

Dimensions → TI-194

ETA CE | R120 Feuerwiderstandsklasse

Internal thread ∅

IST M 8	S	10	958,36
IST M 10	S	10	1043,33
IST M 12	S	10	1001,05
IST M 16	S	5	3904,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88734.010		RAZ 4423
88734	**Steel zinc plated**		**UPM-A**

UPAT threaded rods UPM-A with nut and washer

For use with UKA 3-cartridges
and injection mortar UPM 55, UPM 44, UPM 33, UPM 11

ETA CE | F120 Feuerwiderstandsklasse

∅ M x length

UPM-A M 6/ 75	S	20		80,34
UPM-A M 8/110	S	20		101,24
UPM-A M 8/130	S	20		135,10
UPM-A M 10/110	S	10		120,00
UPM-A M 10/130	S	20		135,00
UPM-A M 10/170	S	20		185,64
UPM-A M 12/120	S	20		170,25
UPM-A M 12/140	S	20		180,37
UPM-A M 16/130	S	10		326,98
UPM-A M 16/175	S	10		349,57
UPM-A M 16/200	S	10		386,45

Article	88734.940	RAZ 4423
88734	**A 4**	**UPM-A**

UPAT threaded rods UPM-A with nut and washer

For use with UKA 3-cartridges
and injection mortar UPM 55, UPM 44, UPM 33, UPM 11

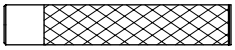
ETA CE | F120 Feuerwiderstandsklasse

∅ M x length

UPM-A M 8/110	S	20		315,24
UPM-A M 8/130	S	10		387,16
UPM-A M 10/110	S	10		370,00
UPM-A M 10/170	S	20		680,00
UPM-A M 12/140	S	20		634,15
UPM-A M 16/130	S	10		1068,34
UPM-A M 16/175	S	10		1215,80

Dimensions | PU Pieces | €/100/Mat.

Article	88770.010	RAZ 4423
88770	**Steel zinc plated**	**UPM-I**



UPAT internal thread anchors UPM-I

Dimensions → TI-195

ETA CE | F120 Feuerwiderstandsklasse

Internal thread ∅

UPM-I 6	S	10	201,54
UPM-I 8	S	10	219,88
UPM-I 10	S	10	259,47
UPM-I 12	S	10	277,96

Article	88735.600	RAZ 4423
88735	**Plastic**	**UPM-SH-K**

UPAT mesh bushes UPM-SH-K

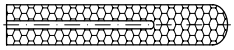
Dimensions → TI-195

Drilling ∅ x anchorage depth

UPM-SH 12/ 50	S	50	46,12
UPM-SH 12/ 85	S	50	56,27
UPM-SH 16/ 85	S	50	68,15
UPM-SH 16/ 130	S	20	126,89
UPM-SH 20/ 85	S	20	80,61
UPM-SH 20/ 130	S	20	202,40
UPM-SH 20/ 200	S	20	231,45

Dimensions | PU Pieces | €/100/Mat.

Article	88720.000	RAZ 4424
88720	**Resin**	**UKA 3-P**



UPAT resin capsules UKA 3-P

For use with threaded rod UKA 3-ASTA and internal thread bush UKA 3-IST

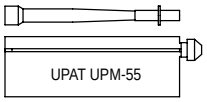
Dimensions → TI-195

ETA CE | F120 Feuerwiderstandsklasse

For ASTA anchors

UKA 3 M 8	S	10	206,70
UKA 3 M 10	S	10	218,40
UKA 3 M 12	S	10	238,40
UKA 3 M 14	S	10	299,70
UKA 3 M 16	S	10	354,60
UKA 3 M 20	S	10	427,40
UKA 3 21/110	S	10	536,60
UKA 3 M 22	S	5	475,20
UKA 3 M 24 K	S	5	599,05
UKA 3 M 27 K	S	5	698,20
UKA 3 M 30 K	S	5	927,65

Article	88772.000	RAZ 4422
88772	**Mortar**	**UPM 55**



UPAT injection mortar UPM 55

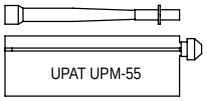
incl. 2 static mixer / cartridge

ETA CE | Z Zugzonentauglich

Contents per cartridge (ml)

UPM 55-390	S	6	4250,00

Article	88772.004	RAZ 4422
88772	**Mortar**	**UPM 55 HWK**



UPAT injection mortar UPM 55 in craftsman box

20 pieces and 40 static mixer per box

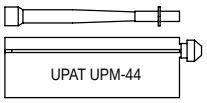
ETA CE | Z Zugzonentauglich

Contents per cartridge (ml)

UPM 55 HWK	S	1	83000,00

Dimensions | PU Pieces | €/100/Mat.

Article	88733.000	RAZ 4422
88733	**Mortar**	**UPM 44**



UPAT injection mortar UPM 44

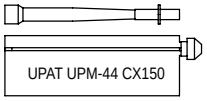
incl. 2 static mixer / cartridge

ETA CE | F120 Feuerwiderstandsklasse

Contents per cartridges (ml)

UPM 44 - 360	S	1	27210,00
UPM 44 - 950	S	6	7001,20

Article	88733.004	RAZ 4423
88733	**Mortar UPM 44 CX 150**	



UPAT injection mortar UPM 44 CX 150

incl. 2 static mixer and 1 plunger / cartridge

ETA CE | | F120 Feuerwiderstandsklasse

Contents per cartridges (ml)

UPM 44C	x	150	S	1	2005,00

Article	88733.005	RAZ 4422
88733	**Mortar UPM 44 CX 150+6**	

UPAT injection mortar UPM 44 CX 150+6

incl. 2 static mixers, 1 plunger and 1 bush UPM H 16 x 85 / cartridge

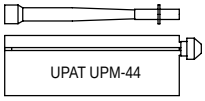
ETA CE | | F120 Feuerwiderstandsklasse

Contents per cartridges (ml)

UPM 44 C	x	150 + 6	S	1	1654,37

Dimensions	PU	Pieces	€/100/Mat.
Article 88733.006			RAZ 4422

88733 Mortar UPM 44 Profi-Box



UPAT injection mortar UPM 44 in a professional box

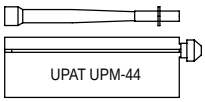
5 pieces / unit, complete with 10 static mixer, 1 blow-out pump, 1 brushes set ∅ 14/20, 1 application gun

ETA CE | F120 Feuerwiderstandsklasse

Contents per cartridges (ml)			
UPM 44 Profi-Bo	S	1	35005,60

Article 88733.007	RAZ 4422

88733 Mortar UPM 44 HWK



UPAT injection mortar UPM 44 in craftsman box

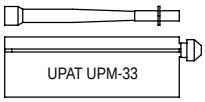
20 pieces and 40 static mixer per box

ETA CE | ETA CE

Contents per cartridges (ml)			
UPM 44	S	1	80024,00

Article 88774.000	RAZ 4423

88774 Mortar UPM 33



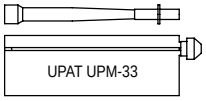
UPAT injection mortar UPM 33

ETA CE | F120 Feuerwiderstandsklasse

Contents per cartridge (ml)			
UPM 33-300	S	12	2103,00
UPM 33-360	S	6	2412,00

Dimensions	PU	Pieces	€/100/Mat.
Article 88774.004			RAZ 4423

88774 Mortar UPM 33 HWK



UPAT injection mortar UPM 33 in craftmans box

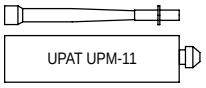
20 pieces and 40 static mixer per box

ETA CE | F120 Feuerwiderstandsklasse

Contents per cartridge (ml)			
UPM 33-360	S	1	48240,00

Article 88775.000	RAZ 4423

88775 Mortar UPM 11

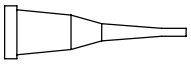


UPAT injection mortar UPM 11

Contents per cartridge (ml)			
UPM 11-300	S	12	1435,61
UPM 11-360	S	6	1764,15

Article 88738.600	RAZ 4423

88738 Plastic



UPAT static mixers

Package unit = 10 pieces

UPM 44 - SM	S	10	179,80

Article 88769.000	RAZ 4423

88769 Steel BS

UPAT cleaning brushes BS for cement

Diameter			
BS 8 - F. M 6	S	1	1100,00
BS 10 - F. M 8	S	1	1154,00
BS 12 - F. M10	S	1	485,00
BS 14 - F. M12	S	1	550,00
BS 18 - F. M16	S	1	650,00
BS 24 - F. M20	S	1	840,00
BS 28 - F. M24	S	1	970,00
BS 35 - F. M30	S	1	1475,38

Article 88769.001	RAZ 4423

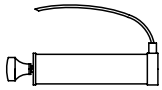
88769 Steel

UPAT brushing sets for masonry

Diameter			
14/20	S	1	556,38
20/30	S	1	1028,00

Article 88718.600	RAZ 4422

88718 Plastic

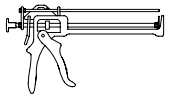


UPAT blow-out pumps for drilled hole

AUSBLÄSER	S	1	1530,00

Article 88771.000	RAZ 4423

88771 Steel metal

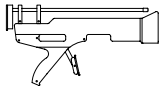


UPAT application guns metal

	S	1	6231,00

Article 88771.600	RAZ 4423

88771 Plastic

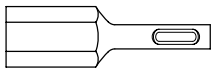


UPAT application guns

	S	1	14362,00

Dimensions	PU	Pieces	€/100/Mat.
Article 88760.000			RAZ 4422

88760 Steel MW-SDS

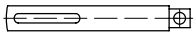


UPAT setting tools MW-SDS for UKA 3 and UMW anchors, with hexagon, shaft with SDS pick-up

For UKA 3/UMV nominal ∅			
MW-SDS M 8-M16	S	1	2810,00

Article 88765.000			RAZ 4423

88765 Steel SDS plus



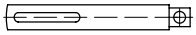
UPAT adapter with SDS plus pick up

For use with nut setters 1/2",
for installation of anchor studs with hexagon

SDS-PLUS 1/2VK	S	1	1550,00

Article 88766.000			RAZ 4423

88766 Steel SDS max



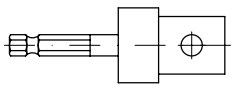
UPAT adapter with SDS max pick-up

For installation of anchor stud with hexagon

SDS-MA	x 1/2VK	S	1	2675,00
SDS-MA	x 3/4VK	S	1	3104,58

Article 88776.000			RAZ 4422

88776 Steel SK SW

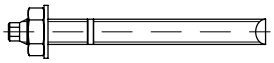


UPAT adapter SK SW

SW 8 1/2	S	1	1537,26

Dimensions	PU	Pieces	€/100/Mat.
Article 88777.020			RAZ 4422

88777 Steel hot dip galvanized

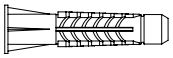


UPAT side rail anchors

∅ M x length				
M 16	x 165	S	10	481,27

Article 88381.600			RAZ 4300

88381 Plastic 4 AS-K

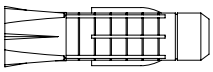


TOX hook plugs 4 AS-K with collar

Drill hole ∅ x plug length/for screws ∅ max.				
6	x 28 / 5,0	S	100	7,00
8	x 49 / 7,0	S	100	10,20

Article 88382.600			RAZ 4300

88382 Plastic TRI

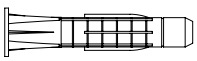


TOX all-purpose plugs TRI

Drill hole ∅ x plug length/for screws ∅ max.				
5	x 31 / 4,0	S	100	3,85
6	x 36 / 5,0	S	100	5,90
6	x 51 / 5,0	S	100	6,40
7	x 36 / 6,0	S	100	6,70
7	x 51 / 6,0	S	100	7,30
8	x 51 / 7,0	S	100	8,70
10	x 61 / 8,0	S	50	15,80
12	x 71 / 10,0	S	25	23,30
14	x 75 / 12,0	S	20	42,00

Article 88383.600			RAZ 4300

88383 Plastic TRIKA

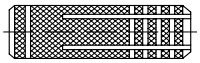


TOX all-purpose plugs TRIKA with collar

Drill hole ∅ x plug length/for screws ∅ max.				
5	x 32 / 4,0	S	100	4,20
6	x 37 / 5,0	S	100	6,50
7	x 37 / 6,0	S	100	7,20
7	x 52 / 6,0	S	100	7,80
8	x 52 / 7,0	S	100	9,50
10	x 62 / 8,0	S	50	17,40
12	x 72 / 10,0	S	25	25,50
14	x 76 / 12,0	S	20	44,50

Article 88910.700		RAZ 4472

88910 Brass

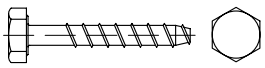


Brass explanding plugs with internal thread, outer surface knurled

Internal thread M/drill ∅ x approx. length				
M 4 / 5	x 16	S	100	12,90
M 5 / 6,5	x 21	S	100	15,40
M 6 / 8	x 23	S	100	18,80
M 8 /10	x 28	S	100	31,00
M 10 /12	x 34	S	100	46,00
M 12 /15	x 38	S	50	86,00
M 14 /18	x 43	S	25	166,00
M 16 /20	x 46	S	25	188,00

Article 88902.010		RAZ 4472

88902 Steel, hardened zinc plated S



MULTI-MONTI screw-in-anchors MMS/HMS*, S = hexagon head

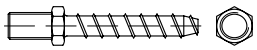
Product information → TI-196

6	x 40*	S	200	32,50
6	x 50	S	100	34,00
6	x 60	S	100	36,50
6	x 80	S	100	61,00
6	x 100	S	100	65,00
7,5	x 35*	S	100	36,00
7,5	x 40*	S	200	38,00
7,5	x 45	S	100	42,50
7,5	x 50	S	100	43,00
7,5	x 60	S	100	45,00
7,5	x 80	S	50	74,00
7,5	x 100	S	50	80,00
7,5	x 120	S	50	86,00
7,5	x 140	S	50	107,00
10	x 60	S	50	96,00
10	x 70	S	40	106,00
10	x 80	S	40	112,00
10	x 100	S	25	116,00
10	x 120	S	25	126,00
10	x 140	S	25	136,00
10	x 160	S	25	150,00
12	x 60*	S	25	118,00
12	x 80	S	25	131,00
12	x 90	S	25	141,00
12	x 100	S	25	145,00
12	x 120	S	25	158,00

Dimensions			PU	Pieces	€/100/Mat.
12	x	140	S	25	172,00
12	x	160	S	25	189,00
16	x	120*	S	10	660,00
16	x	130	S	10	720,00
16	x	150	S	10	830,00

Article 88903.010 RAZ 4472

88903 Steel, hardened zinc plated ST



MULTI-MONTI screw-in-anchors MMS, ST = with external metric stud

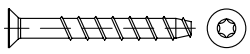
Product information ➔ TI-197

Anchor ∅ x length - metric thread

6	x	60 - M 6	S	100	34,50
7,5	x	70 - M 8	S	100	45,50
7,5	x	80 - M 8	S	100	48,50
7,5	x	100 - M 8	S	50	73,00
7,5	x	120 - M 8	S	50	79,00
7,5	x	140 - M 8	S	50	84,00
7,5	x	160 - M 8	S	50	94,00
10	x	80 - M10	S	50	94,00
10	x	100 - M10	S	50	102,00
10	x	120 - M10	S	25	111,00

Article 88905.060 RAZ 4472

88905 Steel, hardened zinc plated F



MULTI-MONTI screw-in-anchors MMS/HMS* with hexalobular socket, F = countersunk head

Product information ➔ TI-198

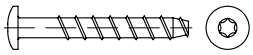
Anchor ∅ x length - wrench size

5	x	30-T25*	S	500	16,70
5	x	40-T25*	S	500	17,40
5	x	50-T25*	S	200	18,00
5	x	60-T25*	S	200	22,20
6	x	40-T30*	S	200	18,00
6	x	50-T30	S	200	19,00
6	x	60-T30	S	200	31,00
6	x	80-T30	S	50	49,00
6	x	100-T30	S	100	54,00
6	x	120-T30	S	50	74,00
6	x	140-T30	S	50	93,00
7,5	x	45-T40	S	200	29,00
7,5	x	50-T40	S	200	32,50
7,5	x	60-T40	S	100	37,50
7,5	x	80-T40	S	50	58,00
7,5	x	100-T40	S	100	65,00
7,5	x	120-T40	S	100	82,00
7,5	x	140-T40	S	50	102,00
7,5	x	160-T40	S	50	109,00

Dimensions			PU	Pieces	€/100/Mat.

Article 88908.060 RAZ 4472

88908 Steel, hardened zinc plated P



MULTI-MONTI screw-in-anchors MMS/HMS* with hexalobular socket, P = pan head

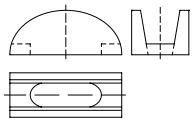
Product information ➔ TI-197

Anchor ∅ x length - wrench size

5	x	30 -T20*	S	200	18,10
5	x	50 -T20*	S	200	19,90
6	x	30 -T30*	S	200	18,80
6	x	40 -T30*	S	200	20,10
6	x	50 -T30	S	100	21,00
6	x	60 -T30	S	200	37,00
6	x	80 -T30	S	50	59,00
7,5	x	25 -T40*	S	200	21,20
7,5	x	45 -T40	S	200	33,00
7,5	x	50 -T40	S	100	37,50
7,5	x	70 -T40	S	100	68,00
10	x	70 -T40	S	50	86,00

Article 88060.000 RAZ 810

88060 Malleable iron**



Cam segments for tension anchors*, for diagonal pull tensioning

**Can be welded

Dimensions ➔ TI-133

*only to be used with adjusting washers ➔ article 88061

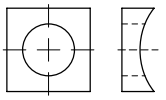
For screws M/tension anchor ∅

M 12/M 16	S	1	720,00
M 20	S	1	750,00
M 24/M 27/M 30	S	1	910,00

Dimensions			PU	Pieces	€/100/Mat.

Article 88061.020 RAZ 810

88061 Malleable iron hot dip galvanized



Adjusting washers, for cam segments*, screw head/nut face for diagonal pull tensioning

Dimensions ➔ TI-133

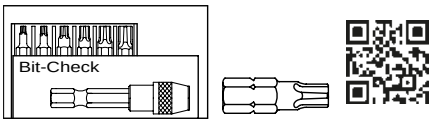
*Only to be used with cam segments ➔ article 88060

For screws M/tension anchor ∅

M 12	S	1	275,00 HDG
M 16	S	1	275,00 HDG
M 20	S	1	355,00 HDG
M 24	S	1	900,00 HDG
M 27	S	1	900,00 HDG
M 30	S	1	900,00 HDG

Article 88663.000 RAZ 816

88663 Steel, hardened T



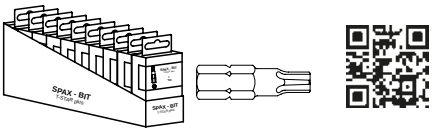
SPAX BITcheck assortments

Content: 1 Rapidaptor BIT holder 50 mm
each 1 bit T10; T15; T20; T30; T40

+6 T-Star plus	S	1	88400,00

Article 88654.000 RAZ 816

88654 Steel, hardened T/25



SPAX CUT-CASE, hexalobular bits T-STAR plus

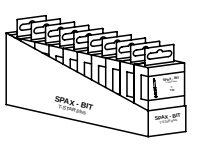
Bit length = 25 mm

Packing unit = quantity of bits in one CUT-CASE,
1 CUT-CASE = 10 cans

SW 1/4	x	25 T 10	K	50	153,00
SW 1/4	x	25 T 15	K	50	153,00
SW 1/4	x	25 T 20	K	50	153,00
SW 1/4	x	25 T 25	K	50	153,00
SW 1/4	x	25 T 30	K	50	153,00
SW 1/4	x	25 T 40	K	50	153,00

Dimensions			PU	Pieces	€/100/Mat.
Article	88654.002				RAZ 816

88654 Steel, hardened T/50



SPAX CUT-CASE, hexalobular bits T-STAR plus

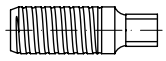
Bit length = 50 mm

Packing unit = quantity of bits in one CUT-CASE, 1 CUT-CASE = 10 cans

SW 1/4	x	50 T 15	S	50	214,00
SW 1/4	x	50 T 20	S	50	214,00
SW 1/4	x	50 T 25	S	50	214,00
SW 1/4	x	50 T 30	S	50	214,00

Article	89017.000	RAZ 816

89017 Steel



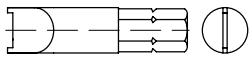
SPAX assembly tools for SPAX threaded rods without head

(Article 89017)
wrench size 11 mm

.	S	1	27930,00

Article	88665.000	RAZ 855

88665 Steel hardened snake eyes



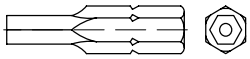
Special bits for theft resistant screws with snake eyes drive (article 88111, 88112)

Drive: 1/4" hexagon C

For thread ∅			
M 3	S	1	3100,00
M 4	S	1	3100,00
M 5	S	1	3100,00
M 6	S	1	3100,00

Article	88666.000	RAZ 855

88666 Steel hardened Pin-hex



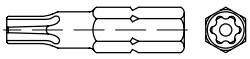
Special bits for theft resistant screws with hexagon socket and pin (article 88113)

Drive: 1/4" hexagon C

Wrench size/for thread ∅			
SW2 /M 3+M3,5	S	1	1860,00
SW2,5 /M 4	S	1	1860,00
SW3 /M 5	S	1	1860,00
SW4 /M 6	S	1	1860,00
SW5 /M 8	S	1	1860,00
SW6 /M10	S	1	2600,00

Article	88667.000	RAZ 855

88667 Steel hardened



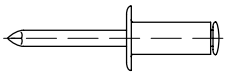
Special bits for theft resistant screws with hexalobular socket and pin (article 88114 to 88117)

Drive: 1/4" hexagon C

T 10	S	1	1610,00
T 15	S	1	1610,00
T 20	S	1	1610,00
T 25	S	1	1610,00
T 27	S	1	1970,00
T 30	S	1	3000,00
T 40	S	1	3000,00
T 45	S	1	3000,00

Article	88401.000	RAZ 4950

88401 Rivet steel, ZP A mandrel steel, ZP



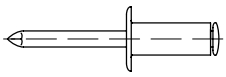
Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15979, A = protruding head

Dimensions → TI-200

Rivet ∅ x rivet length					
3	x	5	S	500	3,65
3	x	6	S	500	3,85
3	x	8	S	500	4,45
3	x	10	S	500	5,50
3	x	12	S	500	6,30
3	x	16	S	500	9,30
3	x	18	S	500	10,80
3	x	20	S	500	12,20
3,2	x	6	S	500	3,90
3,2	x	8	S	500	4,50
3,2	x	10	S	500	5,70
3,2	x	12	S	500	6,50
3,2	x	16	S	500	9,60
3,2	x	18	S	500	11,10
3,2	x	20	S	500	11,80
4	x	6	S	500	4,80
4	x	8	S	500	5,20
4	x	10	S	500	6,30
4	x	12	S	500	7,30
4	x	16	S	500	9,40
4	x	18	S	500	11,30
4	x	20	S	500	11,90
4	x	25	S	500	15,10
4,8	x	8	S	500	6,60
4,8	x	10	S	500	7,80
4,8	x	12	S	500	8,60
4,8	x	16	S	500	10,40
4,8	x	20	S	250	12,40
4,8	x	25	S	250	15,20
5	x	8	S	500	6,90
5	x	10	S	500	8,00
5	x	12	S	500	9,00
5	x	14	S	500	9,70
5	x	16	S	500	10,80
5	x	18	S	500	11,80
5	x	20	S	250	12,80
5	x	25	S	250	15,50
5	x	30	S	100	18,60
5	x	35	S	100	22,60
5	x	40	S	100	29,00
5	x	45	S	100	35,00
5	x	50	S	100	39,00
6	x	10	S	250	11,80
6	x	12	S	250	12,30
6	x	14	S	250	12,80
6	x	16	S	250	13,80
6	x	20	S	250	15,90
6	x	25	S	250	18,70
6,4	x	12	S	250	12,60
6,4	x	16	S	250	14,20
6,4	x	18	S	250	14,90
6,4	x	20	S	250	16,20
6,4	x	25	S	250	19,00

Article	88402.000	RAZ 4950

88402 Rivet Al A mandrel steel, ZP



Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15977, A = protruding head

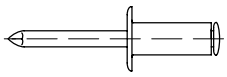
Dimensions → TI-200

Rivet ∅ x rivet length					
2,4	x	4	S	1000	2,75
2,4	x	6	S	1000	3,05
2,4	x	8	S	1000	3,35
3	x	4	S	500	2,75
3	x	5	S	500	2,80
3	x	6	S	500	2,80
3	x	7	S	500	2,85
3	x	8	S	500	3,15
3	x	10	S	500	3,35
3	x	12	S	500	3,70
3	x	14	S	500	4,30
3	x	16	S	500	5,00
3	x	18	S	250	5,70
3	x	20	S	250	6,30

Dimensions			PU	Pieces	€/100/Mat.
3	x	25	S	250	7,70
3	x	30	S	250	9,10
3,2	x	4	S	500	2,80
3,2	x	6	S	500	2,85
3,2	x	8	S	500	3,20
3,2	x	10	S	500	3,40
3,2	x	12	S	500	4,00
3,2	x	14	S	500	4,50
3,2	x	16	S	500	5,30
3,2	x	18	S	500	5,90
3,2	x	20	S	500	6,60
3,2	x	25	S	500	8,10
4	x	5	S	500	3,20
4	x	6	S	500	3,20
4	x	7	S	500	3,30
4	x	8	S	500	3,40
4	x	10	S	500	3,90
4	x	12	S	500	4,35
4	x	14	S	500	4,95
4	x	16	S	500	5,50
4	x	18	S	500	6,00
4	x	20	S	500	6,50
4	x	25	S	500	7,90
4	x	30	S	250	10,10
4	x	35	S	250	13,30
4	x	40	S	250	16,50
4,8	x	6	S	500	4,60
4,8	x	8	S	500	4,70
4,8	x	10	S	500	4,95
4,8	x	12	S	500	5,60
4,8	x	14	S	500	6,20
4,8	x	16	S	500	6,90
4,8	x	18	S	500	8,30
4,8	x	20	S	250	9,30
4,8	x	25	S	250	10,30
4,8	x	30	S	100	11,80
5	x	6	S	500	4,70
5	x	8	S	500	5,00
5	x	10	S	500	5,30
5	x	12	S	500	5,70
5	x	14	S	500	6,30
5	x	16	S	500	7,00
5	x	18	S	500	8,50
5	x	20	S	250	9,50
5	x	25	S	250	10,70
5	x	30	S	100	12,20
5	x	35	S	100	14,30
5	x	40	S	100	16,30
5	x	45	S	100	19,30
5	x	50	S	100	21,20
5	x	60	S	100	27,50
5	x	70	S	100	34,50
6	x	8	S	250	7,30
6	x	10	S	250	7,80
6	x	12	S	250	8,20
6	x	16	S	250	9,40
6	x	18	S	250	9,90
6	x	20	S	250	10,50
6	x	25	S	200	13,00
6	x	30	S	200	15,50
6	x	35	S	100	18,10
6	x	40	S	100	21,70
6,4	x	12	S	250	9,60
6,4	x	16	S	250	10,90
6,4	x	18	S	250	11,60
6,4	x	20	S	250	13,00
6,4	x	25	S	250	14,80
6,4	x	30	S	100	16,20

Article 88403.000 RAZ 4950

88403 Rivet Al mandrel A 2 A



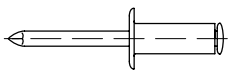
Open-end blind rivets with break pull mandrel, ~DIN 7337, A = protruding head

Dimensions → TI-200

Rivet ∅ x rivet length					
3	x	4	S	500	4,65
3	x	6	S	500	4,90
3	x	8	S	500	5,20
3	x	10	S	500	5,40
3	x	12	S	500	5,80
3	x	16	S	500	6,70
4	x	6	S	500	5,80
4	x	8	S	500	6,10
4	x	10	S	500	6,50
4	x	12	S	500	7,10
4	x	14	S	500	7,70
4	x	16	S	500	8,20
4	x	18	S	500	8,90
4	x	20	S	500	9,60
4	x	25	S	500	11,90
5	x	6	S	500	9,10
5	x	8	S	500	9,40
5	x	10	S	500	9,70
5	x	12	S	500	10,50
5	x	14	S	500	10,80
5	x	16	S	500	11,20
5	x	18	S	500	12,80
5	x	20	S	250	14,90
5	x	25	S	250	17,20
5	x	30	S	100	18,70
5	x	35	S	100	21,40
5	x	40	S	100	22,80

Article 88410.000 RAZ 4950

88410 Rivet Al mandrel Al A



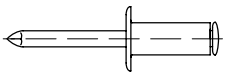
Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15981, A = protruding head

Dimensions → TI-200

Rivet ∅ x rivet length					
3,2	x	6,1	S	500	3,95
3,2	x	7,6	S	500	4,40
3,2	x	9,2	S	500	5,70
3,2	x	12,3	S	500	6,70
3,2	x	15,5	S	500	7,40
4	x	6,6	S	500	7,50
4	x	9,8	S	500	7,70
4	x	12,9	S	500	8,20
4	x	16,1	S	500	10,80
4,8	x	7,2	S	500	9,10
4,8	x	10,3	S	500	9,50
4,8	x	13,5	S	500	11,70
4,8	x	16,7	S	500	12,60
4,8	x	19,9	S	500	17,30

Article 88404.000 RAZ 4950

88404 Rivet A 2 mandrel A 2 A



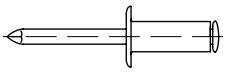
Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15983, A = protruding head

Dimensions → TI-200

Rivet ∅ x rivet length					
3	x	6	S	500	9,80
3	x	8	S	500	10,80
3	x	10	S	500	12,40
3	x	12	S	500	15,80
3	x	14	S	500	16,90
3	x	16	S	500	18,00
3,2	x	6	S	500	10,00
3,2	x	8	S	500	11,00
3,2	x	10	S	500	12,70
3,2	x	12	S	500	16,00
3,2	x	14	S	500	17,20
3,2	x	16	S	500	18,30
4	x	6	S	500	13,00
4	x	8	S	500	14,50
4	x	10	S	500	15,80
4	x	12	S	500	17,60
4	x	14	S	500	19,80
4	x	16	S	500	22,10
4	x	20	S	500	28,00
4	x	25	S	500	34,50
4,8	x	8	S	500	21,70
4,8	x	10	S	500	23,10
4,8	x	12	S	500	25,50
4,8	x	14	S	500	27,00
4,8	x	16	S	500	29,00
4,8	x	20	S	250	33,50
5	x	8	S	500	22,40
5	x	10	S	500	23,80
5	x	12	S	500	26,00
5	x	14	S	500	27,50
5	x	16	S	500	29,00
5	x	20	S	250	34,00
5	x	25	S	250	39,50
5	x	30	S	100	45,00
5	x	35	S	100	50,00
5	x	40	S	100	56,00

Article 88415.000 RAZ 4950

88415 Rivet A 4 mandrel A 4 A



Open-end blind rivets with break pull mandrel, ~DIN 7337, A = protruding head

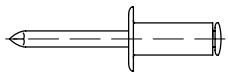
Dimensions → TI-200

Rivet ∅ x rivet length					
3	x	6	S	500	11,60
3	x	8	S	500	12,90
3	x	10	S	500	14,90
3	x	12	S	500	19,20
4	x	6	S	500	16,00
4	x	8	S	500	17,30

Dimensions			PU	Pieces	€/100/Mat.
4	x	10	S	500	19,10
4	x	12	S	500	21,00
4	x	16	S	500	26,50
5	x	8	S	500	26,00
5	x	10	S	500	27,50
5	x	12	S	500	30,00
5	x	16	S	500	33,50
5	x	20	S	250	39,00

Article 88493.000 RAZ 4950

88493 Rivet Monel* mandrel A 4 A



Open-end blind rivets with break pull mandrel, ISO 16584, A = protruding head *Nickel-Copper-Alloy

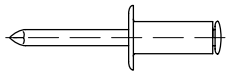
Dimensions → TI-200

Rivet ∅ x rivet length

3,2	x	6	S	500	18,50
3,2	x	8	S	500	19,50
3,2	x	10	S	500	20,00
4	x	6	S	500	23,70
4	x	8	S	500	24,90
4	x	10	S	500	27,00
4	x	12	S	500	28,50
4,8	x	8	S	500	38,50
4,8	x	10	S	500	41,00
4,8	x	12	S	500	43,00
4,8	x	16	S	500	48,50
4,8	x	20	S	500	55,00
6,4	x	12	S	250	68,00
6,4	x	16	S	250	82,00
6,4	x	18	S	250	87,00

Article 88405.000 RAZ 4950

88405 Rivet A 2 mandrel steel, ZP A



Open-end blind rivets with break pull mandrel, ~DIN 7337, A = protruding head

Dimensions → TI-200

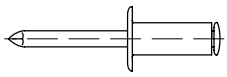
Rivet ∅ x rivet length

3	x	6	S	500	8,20
3	x	8	S	500	9,20
3	x	10	S	500	10,10
3,2	x	6	S	500	8,50
3,2	x	8	S	500	9,50
3,2	x	10	S	500	10,40
4	x	6	S	500	9,90
4	x	8	S	500	11,20
4	x	10	S	500	12,30
4	x	12	S	500	13,40
4	x	16	S	500	16,50
5	x	8	S	500	16,50
5	x	10	S	500	18,00
5	x	12	S	500	19,60

Dimensions			PU	Pieces	€/100/Mat.

Article 88406.000 RAZ 4950

88406 Rivet copper mandrel steel, ZP A



Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 16582, A = protruding head

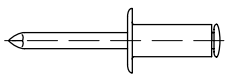
Dimensions → TI-200

Rivet ∅ x rivet length

3	x	4	S	500	3,55
3	x	6	S	500	3,75
3	x	8	S	500	4,20
3	x	10	S	500	4,50
3	x	12	S	500	4,85
4	x	6	S	500	6,00
4	x	8	S	500	6,60
4	x	10	S	500	7,20
4	x	12	S	500	7,80

Article 88407.000 RAZ 4950

88407 Rivet copper mandrel bronze A



Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 16582, A = protruding head

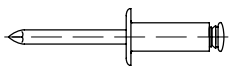
Dimensions → TI-200

Rivet ∅ x rivet length

3	x	4	S	500	7,10
3	x	6	S	500	7,30
3	x	8	S	500	8,00
3	x	10	S	500	8,30
3	x	12	S	500	8,60
4	x	6	S	500	11,00
4	x	8	S	500	11,60
4	x	10	S	500	12,30
4	x	12	S	500	12,90

Article 88408.000 RAZ 4950

88408 Rivet plastic* mandrel plastic* A



Open-end blind rivets with break pull mandrel, A = protruding head

*Plastic PA 6.6

Dimensions → TI-201

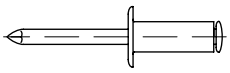
Rivet ∅ x rivet length

4	x	8	S	500	12,00
4	x	12	S	500	12,00
5	x	8	S	500	15,20
5	x	12	S	500	15,20
6	x	12	S	500	18,30

Dimensions			PU	Pieces	€/100/Mat.

Article 88417.004 RAZ 4950

88417 Rivet Al mandrel steel, ZP A white



Open-end blind rivets with break pull mandrel,~DIN 7337/ISO 15977, A = protruding head, painted white

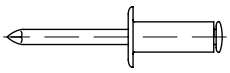
Dimensions → TI-200

Rivet ∅ x rivet length

3	x	8	S	500	4,90
4	x	8	S	500	5,90
4	x	10	S	500	6,10
4	x	12	S	500	6,80
5	x	10	S	500	7,90
5	x	12	S	500	8,40

Article 88417.006 RAZ 4950

88417 Rivet Al mandrel steel, ZP A black



Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15977, A = protruding head, painted black

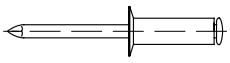
Dimensions → TI-200

Rivet ∅ x rivet length

3	x	6	S	500	4,50
3	x	8	S	500	4,90
4	x	6	S	500	5,60
4	x	8	S	500	5,90
4	x	10	S	500	6,10
4	x	12	S	500	6,80
5	x	10	S	500	7,90
5	x	12	S	500	8,40

Article 88411.000 RAZ 4950

88411 Rivet steel, ZP mandrel steel, ZP B



Open-end blind rivets with break pull mandrel,~DIN 7337/ISO 15980, B = countersunk head 120°

Dimensions → TI-202

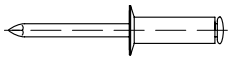
Rivet ∅ x rivet length

3	x	6	S	500	3,85
3	x	8	S	500	4,50
3	x	10	S	500	5,60
3	x	12	S	500	6,50
4	x	6	S	500	4,85
4	x	8	S	500	5,30
4	x	10	S	500	6,50
4	x	12	S	500	7,40

Dimensions			PU	Pieces	€/100/Mat.
4	x	16	S	500	9,50
4	x	20	S	500	12,20
5	x	8	S	500	7,00
5	x	10	S	500	8,20
5	x	12	S	500	9,10
5	x	14	S	500	9,90
5	x	16	S	500	11,00
5	x	20	S	250	13,00
5	x	25	S	250	15,90

Article 88412.000 RAZ 4950

88412 Rivet Al mandrel steel, ZP B



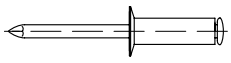
Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15978, B = countersunk head 120°

Dimensions → TI-202

Rivet ∅ x rivet length					
3	x	4	S	500	2,90
3	x	6	S	500	2,90
3	x	8	S	500	3,25
3	x	10	S	500	3,50
3	x	12	S	500	3,90
3	x	16	S	500	5,10
4	x	6	S	500	3,30
4	x	8	S	500	3,55
4	x	10	S	500	4,00
4	x	12	S	500	4,45
4	x	16	S	500	5,70
4	x	18	S	500	6,20
4	x	20	S	500	6,70
5	x	8	S	500	5,10
5	x	10	S	500	5,40
5	x	12	S	500	5,80
5	x	16	S	500	7,20
5	x	18	S	500	8,50
5	x	20	S	250	9,60
5	x	25	S	250	10,80
5	x	30	S	100	12,30
5	x	35	S	100	14,40

Article 88411.920 RAZ 4950

88411 Rivet A 2 mandrel A 2 B



Open-end blind rivets with break pull mandrel, ~DIN 7337/ISO 15980, B = countersunk head 120°

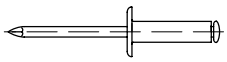
Dimensions → TI-202

Rivet ∅ x rivet length					
B 4	x	8	S	500	32,00
B 4	x	10	S	500	35,00
B 4	x	12	S	500	39,00
B 5	x	8	S	500	39,00
B 5	x	10	S	500	42,00
B 5	x	12	S	500	46,00
B 5	x	16	S	500	50,00

Dimensions			PU	Pieces	€/100/Mat.
3,2	x	6	S	500	3,90
3,2	x	8	S	500	4,20
3,2	x	10	S	500	4,85
3,2	x	12	S	500	5,20
3,2	x	16	S	500	5,80

Article 88409.004 RAZ 4950

88409 Rivet Al mandrel steel, ZP C-K 9,5



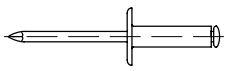
Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 9,5)

Dimensions → TI-201

Rivet ∅ x rivet length					
5	x	8	S	500	5,10
5	x	10	S	500	5,40
5	x	12	S	500	5,80
5	x	14	S	500	6,50
5	x	16	S	500	7,30
5	x	18	S	500	8,70
5	x	20	S	250	9,80
5	x	25	S	250	11,00
5	x	30	S	100	12,50

Article 88409.005 RAZ 4950

88409 Rivet Al mandrel steel, ZP C-K 11



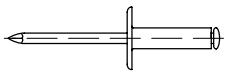
Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 11)

Dimensions → TI-201

Rivet ∅ x rivet length					
4	x	6	S	500	4,80
4	x	8	S	500	5,30
4	x	10	S	500	5,90
4	x	12	S	500	6,20
4	x	16	S	500	7,30
4	x	20	S	500	8,40

Article 88409.006 RAZ 4950

88409 Rivet Al mandrel steel, ZP C-K 12



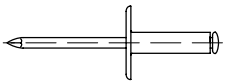
Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 12)

Dimensions → TI-201

Rivet ∅ x rivet length					
5	x	8	S	250	6,10
5	x	10	S	250	6,70
5	x	12	S	250	7,40
5	x	14	S	250	7,80
5	x	16	S	250	8,40
5	x	18	S	250	9,20
5	x	20	S	250	10,20
5	x	25	S	250	12,30
5	x	30	S	100	13,50

Article 88409.007 RAZ 4950

88409 Rivet Al mandrel steel, ZP C-K 14



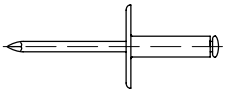
Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 14)

Dimensions → TI-201

Rivet ∅ x rivet length					
4,8	x	8	S	250	7,00
4,8	x	10	S	250	7,50
4,8	x	12	S	250	8,20
4,8	x	16	S	250	9,30
4,8	x	20	S	250	10,90
4,8	x	25	S	250	12,60

Article 88409.008 RAZ 4950

88409 Rivet Al mandrel steel, ZP C-K 16



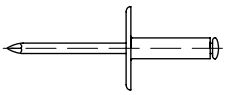
Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 16)

Dimensions → TI-201

Rivet ∅ x rivet length					
4,8	x	10,3	S	250	13,50
4,8	x	13,5	S	250	14,60
4,8	x	16,7	S	250	16,60
4,8	x	19,9	S	250	20,30

Article 88413.005 RAZ 4950

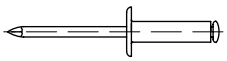
88413 Rivet steel, ZP mandrel steel, ZP C-K 16



Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 16)

Dimensions → TI-201

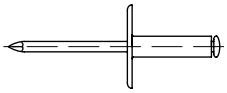
Dimensions			PU	Pieces	€/100/Mat.
Article	88414.004				RAZ 4950
88414	**Rivet Al mandrel Al**				**C-K 9,5**
3,2	x	6,1	S	500	6,80
3,2	x	9,2	S	500	6,90
3,2	x	12,3	S	500	8,50
Article	88414.005				RAZ 4950
88414	**Rivet Al mandrel Al**				**C-K 16**
4,8	x	10,3	S	250	14,00
4,8	x	13,5	S	250	15,20
4,8	x	16,7	S	250	16,50
4,8	x	19,9	S	250	20,60
4,8	x	23	S	250	24,70
Article	88416.004				RAZ 4950
88416	**Rivet Al mandrel A 2**				**C-K 11**
5	x	10	S	500	10,00
5	x	12	S	500	10,70
5	x	16	S	500	11,60
5	x	20	S	250	15,30
Article	88416.005				RAZ 4950
88416	**Rivet Al mandrel A 2**				**C-K 14**
5	x	10	S	250	11,50
5	x	12	S	250	12,30
5	x	16	S	250	13,70
5	x	20	S	250	16,20
Article	88419.000				RAZ 4950
88419	**Rivet Al mandrel steel, ZP**				**G-F**
3,2	x	10	S	500	4,15
3,2	x	16	S	500	5,80
4	x	8	S	500	4,20
4	x	12	S	500	5,10
4	x	16	S	500	6,20
4,8	x	10	S	500	6,00
4,8	x	14	S	500	7,40
4,8	x	18	S	500	9,10
4,8	x	20	S	250	9,90
4,8	x	25	S	250	12,10
Article	88420.004				RAZ 4950
88420	**Rivet Al mandrel steel***				**CAP- F**
3,2	x	6,5	S	500	4,90
3,2	x	8	S	500	4,95
3,2	x	9,5	S	500	5,00
3,2	x	10,5	S	500	5,40
3,2	x	12,5	S	500	5,70
4	x	8	S	500	6,00
4	x	9,5	S	500	6,10
4	x	11	S	500	6,60
4	x	12,5	S	500	6,90
4,8	x	8	S	500	6,90
4,8	x	9,5	S	500	7,00
4,8	x	11	S	500	7,20
4,8	x	12,5	S	500	7,20
4,8	x	14	S	500	7,80
4,8	x	16	S	500	8,00
4,8	x	18	S	500	8,40
4,8	x	21	S	250	10,70
Article	88420.005				RAZ 4950
88420	**Rivet Al mandrel A 2**				**CAP- F**
3,2	x	6,5	S	500	8,10
3,2	x	8	S	500	8,30
3,2	x	9,5	S	500	8,50
3,2	x	10,5	S	500	8,80
3,2	x	12,5	S	500	9,20
4	x	8	S	500	11,30
4	x	9,5	S	500	11,60
4	x	11	S	500	11,80
4	x	12,5	S	500	12,90
4,8	x	8	S	500	12,00
4,8	x	9,5	S	500	13,00
4,8	x	11	S	500	13,80
4,8	x	12,5	S	500	14,20
4,8	x	14	S	500	15,10
4,8	x	16	S	500	16,00
4,8	x	18	S	500	16,40
4,8	x	21	S	250	17,70
Article	88420.007				RAZ 4950
88420	**Rivet copper mandrel A 2**				**CAP- F**
3,2	x	6	S	500	11,00
3,2	x	9	S	500	12,00



Open-end blind rivets with break pull mandrel, ~DIN 7337, C = large protruding head (Ø = 9,5)

Dimensions → TI-201

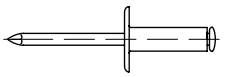
Rivet Ø x rivet length



Open-end blind rivets with break pull mandrel,~DIN 7337, C = large protruding head (Ø = 16)

Dimensions → TI-201

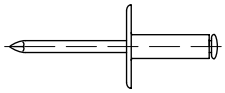
Rivet Ø x rivet length



Open-end blind rivets with break pull mandrel,~DIN 7337, C = large protruding head (Ø = 11)

Dimensions → TI-201

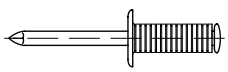
Rivet Ø x rivet length



Open-end blind rivets with break pull mandrel,~DIN 7337, C = large protruding head (Ø = 14)

Dimensions → TI-201

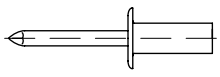
Rivet Ø x rivet length



Open-end blind rivets with break pull mandrel,F = protruding head G = grooved for blind hole rivetting

Dimensions → TI-202

Rivet Ø x rivet length

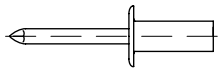


Closed-end blind rivets with break pull mandrel, ISO 15973, F = protruding head

CAP = closed for air- and water-tight riveting
*Phosphated

Dimensions → TI-202

Rivet Ø x rivet length

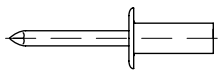


Closed-end blind rivets with break pull mandrel, F = protruding head

CAP = closed for air- and water-tight rivetting

Dimensions → TI-202

Rivet Ø x rivet length



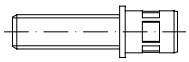
Closed-end blind rivets with break pull mandrel, F = protruding head

CAP = closed for air- and water-tight rivetting

Dimensions → TI-202

Rivet Ø x rivet length

Dimensions	PU	Pieces	€/100/Mat.
Article	88421.000		RAZ 4950
88421	**Rivet steel, ZP mandrel steel, ZP**		**M**



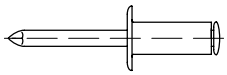
Open-end blind rivet with break pull mandrel, M = with connection thread M

property class bolt = 8.8

Dimensions → TI-203

Rivet ∅ x length/thread M x length						
M 4	x	10/ 6	x	11	S	200	42,50
M 5	x	11,5/ 7	x	11,5	S	150	46,00
M 6	x	13/ 9	x	15,5	S	100	53,00
M 8	x	15,5/11	x	17	S	100	67,00

Article	88422.000	RAZ 4950
88422	**Rivet Al mandrel steel, ZP**	**SS-F**

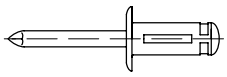


Open-end blind rivet with break pull mandrel, F = protruding head, SS = with peel rivet body

Dimensions → TI-203

Rivet ∅ x rivet length					
3,2	x	10	S	500	4,30
3,2	x	12	S	500	5,60
3,2	x	16	S	500	6,90
4	x	8	S	500	4,30
4	x	10	S	500	4,55
4	x	12	S	500	5,40
4	x	14	S	500	5,70
4	x	16	S	500	6,10
4	x	18	S	500	7,00
4	x	20	S	500	9,40
4,8	x	10	S	500	6,80
4,8	x	12	S	500	7,10
4,8	x	14	S	250	7,40
4,8	x	16	S	250	7,80
4,8	x	18	S	250	8,40
4,8	x	20	S	250	10,30
4,8	x	25	S	250	12,50

Dimensions	PU	Pieces	€/100/Mat.
Article	88488.700		RAZ 4950
88488	**Rivet Al mandrel Al**		**TRI-FOLD**



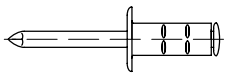
Open-end blind rivets with break pull mandrel, F = protruding head, TRI-FOLD = recessed crown for soft materials

press plate rivet for soft materials

Dimensions → TI-205

Rivet ∅ x rivet length					
4,1	x	19,5	S	500	18,80
4,1	x	21,1	S	500	19,80
4,1	x	24,3	S	500	20,80
4,8	x	22,2	S	250	21,00
4,8	x	25,4	S	250	21,80
4,8	x	31,7	S	100	23,00

Article	88474.010	RAZ 4950
88474	**Rivet steel, ZP mandrel steel, ZP**	**MG-A**

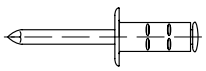


Open-end blind rivets with break pull mandrel, A = protruding head, MG = multigrip rivet body

Dimensions → TI-203

Rivet ∅ x rivet length					
3,2	x	8	S	1000	4,60
3,2	x	9,5	S	1000	5,60
3,2	x	11	S	1000	6,30
4	x	10	S	500	6,40
4	x	13	S	500	8,00
4	x	17	S	500	10,60
4,8	x	10	S	500	8,00
4,8	x	15	S	500	10,10
4,8	x	17	S	500	11,10

Article	88474.004	RAZ 4950
88474	**Rivet Al mandrel steel, ZP**	**MG-A**



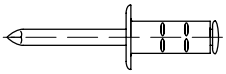
Open-end blind rivets with break pull mandrel, A = protruding head, MG = multigrip rivet body

Dimensions → TI-203

Rivet ∅ x rivet length					
3,2	x	8	S	1000	3,40
3,2	x	9,5	S	1000	3,60
3,2	x	11	S	1000	3,95
4	x	10	S	500	4,15
4	x	13	S	500	4,95
4	x	17	S	500	6,10

Dimensions	PU	Pieces	€/100/Mat.
4,8 x 10	S	500	5,30
4,8 x 15	S	500	6,90
4,8 x 17	S	500	7,90

Article	88474.704	RAZ 4950
88474	**Rivet Al mandrel A 2**	**MG-A**

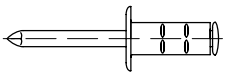


Open-end blind rivets with break pull mandrel, A = protruding head, MG = multigrip rivet body

Dimensions → TI-203

Rivet ∅ x rivet length					
3,2	x	8	S	1000	5,60
3,2	x	9,5	S	1000	5,80
3,2	x	11	S	1000	6,20
4	x	10	S	500	7,00
4	x	13	S	500	8,00
4	x	17	S	500	9,10
4,8	x	10	S	500	10,40
4,8	x	15	S	500	11,80
4,8	x	17	S	500	13,00
4,8	x	25	S	250	18,10
4,8	x	30	S	250	19,70

Article	88474.920	RAZ 4950
88474	**Rivet A 2 mandrel A 2**	**MG-A**

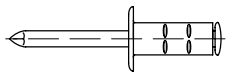


Open-end blind rivets with break pull mandrel, A = protruding head, MG = multigrip rivet body

Dimensions → TI-203

Rivet ∅ x rivet length					
3,2	x	8	S	1000	15,70
3,2	x	9,5	S	1000	18,00
3,2	x	11	S	1000	22,40
4	x	10	S	500	22,80
4	x	13	S	500	28,50
4	x	17	S	500	32,00
4,8	x	10	S	500	33,00
4,8	x	15	S	500	38,00
4,8	x	17	S	500	40,50
6,4	x	13	S	250	47,00
6,4	x	15	S	250	49,00
6,4	x	20	S	200	54,00

Dimensions			PU	Pieces	€/100/Mat.
Article	88474.940				RAZ 4950
88474	**Rivet A 4 mandrel A 4**				**MG-A**

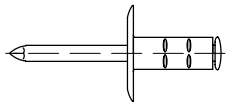


Open-end blind rivets with break pull mandrel, A = protruding head, MG = multigrip rivet body

Dimensions → TI-203

Rivet ∅ x rivet length					
3,2	x	11	S	1000	27,00
4	x	10	S	500	27,00
4,8	x	10	S	500	37,00
4,8	x	15	S	500	43,00

Article	88475.010	RAZ 4950
88475	**Rivet steel, ZP mandrel steel**	**MG-CK**

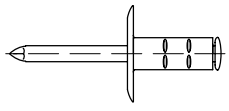


Open-end blind rivets with break pull mandrel, CK = large protruding head, MG = multigrip rivet body

Dimensions → TI-204

Rivet ∅ x rivet length - head ∅						
3,2	x	8	K 9,5	S	1000	5,50
3,2	x	9,5	K 9,5	S	1000	6,70
3,2	x	11	K 9,5	S	1000	7,50
4	x	10	K12	S	500	7,70
4	x	13	K12	S	500	9,50
4	x	17	K12	S	500	12,60
4,8	x	10	K16	S	250	9,60
4,8	x	15	K16	S	250	12,20
4,8	x	17	K16	S	250	13,30

Article	88475.004	RAZ 4950
88475	**Rivet Al mandrel steel, ZP**	**MG-CK**

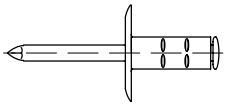


Open-end blind rivets with break pull mandrel, CK = large protruding head, MG = multigrip rivet body

Dimensions → TI-204

Rivet ∅ x rivet length - head ∅						
3,2	x	8	K 9,5	S	1000	4,50
3,2	x	9,5	K 9,5	S	1000	5,00
3,2	x	11	K 9,5	S	1000	5,40
4	x	10	K12	S	500	6,30
4	x	13	K12	S	500	6,90
4	x	17	K12	S	500	8,10
4,8	x	10	K16	S	250	7,80
4,8	x	15	K16	S	250	9,60
4,8	x	17	K16	S	250	10,10

Article	88475.704	RAZ 4950
88475	**Rivet Al mandrel A 2**	**MG-CK**

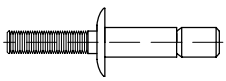


Open-end blind rivets with break pull mandrel, CK = large protruding head, MG = multigrip rivet body

Dimensions → TI-204

Rivet ∅ x rivet length - head ∅						
3,2	x	8	K 9,5	S	1000	6,80
3,2	x	9,5	K 9,5	S	1000	7,40
3,2	x	11	K 9,5	S	1000	7,90
4	x	13	K12	S	500	10,40
4	x	17	K12	S	500	11,50
4,8	x	10	K16	S	250	12,20
4,8	x	15	K16	S	250	14,10
4,8	x	17	K16	S	250	15,40
4,8	x	25	K16	S	100	19,00
4,8	x	30	K16	S	100	21,50

Article	88476.010	RAZ 4950
88476	**Rivet steel, ZP mandrel steel , YZP**	**MEGA-F**

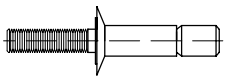


Open-end blind rivets with break pull mandrel, F = protruding head, MEGA = for high strength rivet ass.

Dimensions → TI-204

Rivet ∅ x rivet length					
4,8	x	10,5	S	5000	24,80
4,8	x	14,5	S	3000	26,50
6,4	x	14,1	S	2000	33,50
6,4	x	20,5	S	1500	44,00

Dimensions			PU	Pieces	€/100/Mat.
Article	88477.010				RAZ 4950
88477	**Rivet steel, ZP mandrel steel, YZP**				**MEGA-S**

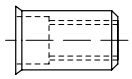


Open-end blind rivets with break pull mandrel, S = countersunk head 97°, MEGA = for high strength rivet ass.

Dimensions → TI-204

Rivet ∅ x rivet length					
4,8	x	10,5	S	5000	33,50
4,8	x	14,5	S	2500	35,00
6,4	x	14,1	S	2000	46,00

Article	88418.010	RAZ 4950
88418	**Steel zinc plated**	**S small**

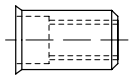


Blind rivet nuts, round, open-end, S small = small countersunk head 90°

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 /0,25-3,0	S	500	24,10
M 5 /0,25-3,0	S	500	24,90
M 6 /0,25-3,5	S	250	33,00
M 8 /0,25-3,5	S	100	46,00

Article	88418.700	RAZ 4950
88418	**Aluminium**	**S small**

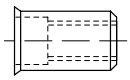


Blind rivet nuts, round, open-end, S small = small countersunk head 90°

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 /0,5 -3,0	S	500	18,30
M 5 /0,5 -3,0	S	500	20,10
M 6 /0,5 -3,5	S	250	29,50
M 8 /0,5 -3,5	S	100	41,50

Dimensions	PU Pieces	€/100/Mat.
Article	88418.920	RAZ 4950
88418	**A 2 (1.4567)**	**S small**

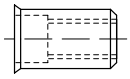


Blind rivet nuts, round, open-end, S small = small countersunk head 90°

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 /0,25-3,0	S	500	94,00
M 5 /0,25-3,0	S	500	101,00
M 6 /0,25-3,5	S	250	155,00
M 8 /0,25-3,5	S	100	207,00

Article	88418.940	RAZ 4950
88418	**A 4**	**S small**

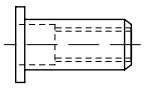


Blind rivet nuts, round, open-end, S small = small countersunk head 90°

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 / 0,25 - 3,0	S	500	29,00
M 5 / 0,25 - 3,0	S	500	31,00
M 6 / 0,25 - 3,5	S	250	38,50
M 8 / 0,25 - 3,5	S	100	55,00

Article	88423.000	RAZ 4950
88423	**Steel zinc plated**	**F**

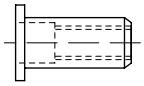


Blind rivet nuts, round, open-end, F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 /0,25-3,0	S	500	22,10
M 4 /2,5 -4,5	S	500	23,40
M 5 /0,25-3,0	S	500	24,70
M 5 /2,5 -5,0	S	500	27,00
M 6 /0,25-3,5	S	250	35,00
M 6 /3,0 -5,5	S	250	37,50
M 8 /0,25-3,5	S	100	46,50
M 8 /3,0 -6,0	S	100	49,00
M 10 /0,25-3,5	S	100	56,00
M 10 /3,0 -6,0	S	100	57,00

Dimensions	PU Pieces	€/100/Mat.
Article	88423.700	RAZ 4950
88423	**Aluminium**	**F**

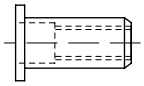


Blind rivet nuts, round, open-end, F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 /0,25-3,0	S	500	12,40
M 4 /2,5 -4,5	S	500	13,10
M 5 /0,25-3,0	S	500	13,90
M 5 /2,5 -5,0	S	500	14,60
M 6 /0,25-3,5	S	250	22,50
M 6 /3,0 -5,5	S	250	23,80
M 8 /0,25-3,5	S	100	29,50
M 8 /3,0 -6,0	S	100	30,00
M 10 /0,25-3,5	S	100	41,50
M 10 /3,0 -6,0	S	100	42,50

Article	88423.920	RAZ 4950
88423	**A 2 (1.4567)**	**F**

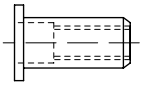


Blind rivet nuts, round, open-end, F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 /0,25-3,0	S	500	94,00
M 4 /2,5 -4,0	S	500	96,00
M 5 /0,25-3,0	S	500	101,00
M 5 /2,5 -4,5	S	500	104,00
M 6 /0,25-3,5	S	250	155,00
M 6 /3,0 -5,5	S	250	160,00
M 8 /0,25-3,5	S	100	207,00
M 8 /3,0 -6,0	S	100	212,00

Dimensions	PU Pieces	€/100/Mat.
Article	88423.940	RAZ 4950
88423	**A 4**	**F**

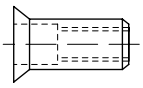


Blind rivet nuts, round, open-end, F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 / 0,25 - 3,0	S	500	30,00
M 4 / 2,5 - 4,0	S	500	30,50
M 5 / 0,25 - 3,0	S	500	31,50
M 5 / 2,5 - 4,5	S	500	33,50
M 6 / 0,25 - 3,5	S	250	42,50
M 6 / 3,0 - 5,5	S	250	43,50
M 8 / 0,25 - 3,5	S	100	60,00
M 8 / 3,0 - 6,0	S	100	63,00

Article	88424.010	RAZ 4950
88424	**Steel zinc plated**	**S**



Blind rivet nuts, round, open-end, S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 /1,5 -3,5	S	500	24,50
M 5 /1,5 -3,5	S	500	28,50
M 5 /3,5 -6,0	S	500	30,00
M 6 /1,5 -4,5	S	250	39,50
M 6 /4,0 -6,5	S	250	42,00
M 8 /1,5 -4,5	S	100	50,00
M 8 /4,0 -6,5	S	100	55,00
M 10 /1,5 -4,5	S	100	63,00
M 10 /4,0 -6,5	S	100	64,00

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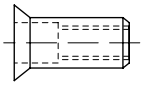
Dimensions	PU	Pieces	€/100/Mat.
Article	88424.700		RAZ 4950
88424	**Aluminium**		**S**

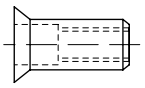


Blind rivet nuts, round, open-end,
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 /1,5 -3,5	S	500	14,10
M 5 /1,5 -4,0	S	500	16,00
M 5 /3,5 -6,0	S	500	17,00
M 6 /1,5 -4,5	S	250	25,50
M 6 /4,0 -6,5	S	250	27,00
M 8 /1,5 -4,5	S	100	33,00
M 8 /4,0 -6,5	S	100	33,50
M 10 /1,5 -4,5	S	100	47,00
M 10 /4,0 -6,5	S	100	48,00

Article	88424.920	RAZ 4950
88424	**A 2 (1.4567)**	**S**

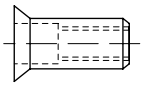


Blind rivet nuts, round, open-end,
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 /1,5 -3,0	S	500	94,00
M 4 /2,5 -4,0	S	500	96,00
M 5 /1,5 -4,0	S	500	101,00
M 5 /3,5 -6,0	S	500	104,00
M 6 /1,5 -4,5	S	250	155,00
M 6 /4,0 -6,0	S	250	160,00
M 8 /1,5 -4,5	S	100	207,00
M 8 /4,0 -6,0	S	100	212,00

Article	88424.940	RAZ 4950
88424	**A 4**	**S**

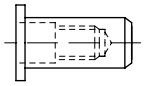


Blind rivet nuts, round, open-end,
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 / 1,5 - 3,0	S	500	30,00
M 4 / 2,5 - 4,0	S	500	30,50
M 5 / 1,5 - 4,0	S	500	32,50
M 5 / 3,5 - 6,0	S	500	34,00
M 6 / 1,5 - 4,5	S	250	41,00
M 6 / 4,0 - 6,0	S	250	41,50
M 8 / 1,5 - 4,5	S	100	59,00
M 8 / 4,0 - 6,0	S	100	60,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88480.010		RAZ 4950
88480	**Steel zinc plated**		**F**

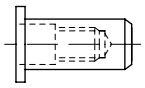


Blind rivet nuts, round, closed-end,
for air- and water-tight rivetting,
F = protruding head

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 5 /0,5 -3,0	S	500	31,00
M 5 /3,0 -5,5	S	500	34,00
M 6 /0,5 -3,0	S	500	41,00
M 6 /2,5 -5,5	S	500	43,00
M 8 /0,5 -3,5	S	200	57,00
M 8 /3,0 -6,0	S	200	62,00
M 10 /1,0 -3,0	S	250	71,00

Article	88480.700	RAZ 4950
88480	**Aluminium**	**F**

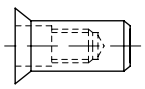


Blind rivet nuts, round, closed,
for air- and water-tight rivetting,
F = protruding head

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 5 /0,3 -3,0	S	500	16,00
M 5 /3,0 -4,0	S	500	17,50
M 6 /0,5 -3,0	S	500	26,00
M 6 /3,0 -4,5	S	500	27,50
M 8 /0,3 -3,0	S	250	36,00
M 8 /3,0 -5,5	S	250	38,00

Article	88481.010	RAZ 4950
88481	**Steel zinc plated**	**S**

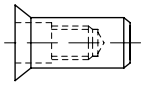


Blind rivet nuts, closed-end,
for air- and water-tight rivetting,
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 /1,5 -3,5	S	500	29,00
M 5 /1,5 -4,0	S	500	33,00
M 6 /1,5 -4,5	S	500	43,00
M 6 /4,5 -6,0	S	500	43,50
M 8 /1,5 -4,5	S	250	60,00
M 8 /4,5 -6,0	S	250	62,00

Dimensions	PU	Pieces	€/100/Mat.
Article	88481.700		RAZ 4950
88481	**Aluminium**		**S**

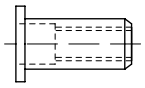


Blind rivet nuts, closed-end,
for air- and water-tight rivetting,
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 5 /1,5 -4,0	S	500	18,50
M 6 /1,5 -4,5	S	500	26,00
M 8 /1,5 -4,5	S	500	37,50

Article	88490.010	RAZ 4950
88490	**Steel zinc plated**	**MG-F**

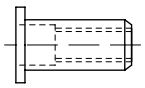


Blind rivet nuts, round, open-end,
MG = with multigrip rivet body
F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 / 0,5 - 6,0	S	500	19,60
M 5 / 0,5 - 6,0	S	500	23,20
M 6 / 0,5 - 6,0	S	500	31,50
M 8 / 0,5 - 7,5	S	500	41,50

Article	88490.700	RAZ 4950
88490	**Al-alloy**	**MG-F**



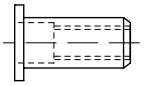
Blind rivet nuts, round, open-end,
MG = with multigrip rivet body
F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 4 / 0,5 - 6,0	S	500	11,40
M 5 / 0,5 - 6,0	S	500	13,20
M 6 / 0,5 - 6,0	S	500	20,40
M 8 / 0,5 - 7,5	S	500	26,00

Dimensions	PU Pieces	€/100/Mat.
Article	88490.920	RAZ 4950

88490 A 2 MG-F



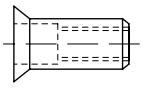
Blind rivet nuts, round, open-end,
MG = with multigrip rivet body
F = protruding head

Dimensions → TI-206

Internal thread M/min.-max. clamping range			
M 5 / 0,5 - 5,0	S	500	36,00
M 6 / 0,5 - 6,0	S	250	47,00
M 8 / 0,5 - 6,5	S	100	58,00

Article	88491.010	RAZ 4950

88491 Steel zinc plated MG-S



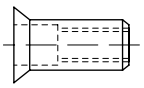
Blind rivet nuts, round, open-end,
MG = with multigrip rivet body
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 / 1,5 - 6,0	S	500	19,80
M 5 / 1,5 - 6,0	S	500	23,50
M 6 / 1,5 - 6,0	S	500	32,00
M 8 / 1,5 - 7,5	S	500	42,00

Article	88491.700	RAZ 4950

88491 Al-alloy MG-S



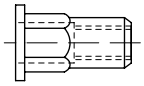
Blind rivet nuts, round, open-end,
MG = with multigrip rivet body
S = countersunk head 90°

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 / 1,5 - 6,0	S	500	11,90
M 5 / 1,5 - 6,0	S	500	13,50
M 6 / 1,5 - 6,0	S	500	20,70
M 8 / 1,5 - 7,5	S	500	26,50

Dimensions	PU Pieces	€/100/Mat.
Article	88483.060	RAZ 4950

88483 Steel zinc plated hex. F



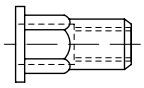
Blind rivet nuts, hexagon, open-end,
F = protruding head
With partially hexagon

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 /0,5 -2,0	S	500	19,50
M 5 /0,5 -3,5	S	500	22,40
M 6 /0,5 -3,5	S	250	32,00
M 8 /0,5 -3,5	S	100	40,50

Article	88483.920	RAZ 4950

88483 A 2 hex. F



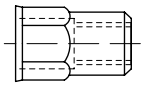
Blind rivet nuts, hexagon, open-end,
F = protruding head
With partially hexagon

Dimensions → TI-207

Internal thread M/min.-max. clamping range			
M 4 /0,5 -2,0	S	500	43,50
M 5 / 0,5 - 3,0	S	500	47,00
M 6 / 0,5 - 3,0	S	500	56,00
M 8 / 0,5 - 3,0	S	250	83,00
M 10 / 1,0 - 3,5	S	200	156,00

Article	88484.060	RAZ 4950

88484 Steel zinc plated hex. S small



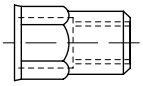
Blind rivet nuts, hexagon, open-end,
S small = small countersunk head
With partially hexagon

Dimensions → TI-208

Internal thread M/min.-max. clamping range			
M 4 /0,5 -2,0	S	500	20,20
M 5 /0,5 -3,0	S	500	23,00
M 6 /0,5 -3,0	S	250	32,00
M 8 /0,5 -3,0	S	100	41,00

Dimensions	PU Pieces	€/100/Mat.
Article	88484.920	RAZ 4950

88484 A 2 hex. S small



Blind rivet nuts, hexagon, open-end,
S small = small countersunk head
With partially hexagon

Dimensions → TI-208

Internal thread M/min.-max. clamping range			
M 4 /0,5 -2,0	S	500	42,00
M 5 /0,5 -3,0	S	500	45,00
M 6 /0,5 -3,0	S	500	54,00
M 8 /0,5 -3,0	S	250	74,00
M 10 /1,0 -3,5	S	200	146,00

TECHNICAL INFORMATION (TI)

We have added many new developments to the technical information (TI) that may be helpful to you when dealing with fasteners. These changes result from many consultations, in which customers have been able to benefit from our expertise.

New in this issue of the catalogue are comprehensive pages of measurement data. Sorted by product groups, the data will be especially supportive in the development and design of new products.

We have also significantly expanded the tables with tightening torques and pre-stressing forces for the assembly of fasteners.

An overview of laws and directives affecting fasteners and fixing technology provides important orientation on product selection, especially for designers and buyers.

With this technical information we live up to our claim, to support your day-to-day work with the latest information and individual solutions.

Mechanical fasteners from REYHER are mass produced items used worldwide in all areas of technology. Availability and inter-changeability must be ensured by appropriate standardisation.

With our participation in this standardisation work we make a contribution to unification and market-driven execution of our products.

REYHER's cooperation in standardising bodies provides a forum for technological observation of the market and timely information on new technologies and customer-specific requirements.

MEMBER OF DIN

Today, REYHER is helping to shape tomorrow's products!

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Standards conversion DIN → ISO/EN

The conversion of some national DIN standards to ISO or EN standards is (was) done with the aim of deconstructing trade barriers in international goods exchange and harmonising the technical rules in the common single European market.

Table 1 shows the ISO/EN standards for product standards and the most important thread and basic standards according to the corresponding DIN in ascending order (as of: 01.2016).

Table 2 (next page) shows the EN and DIN standards according to the corresponding ISO in ascending order.
The tables also include draft standards and withdrawn standards.

Table 1

Product standards	
DIN	ISO DIN ISO DIN EN ISO
1	2339
7	2338
39	–
84	1207
85	1580
93*	–
94	1234
95, 96, 97	–
98, 99	–
123.124	1051
125-1.2	7089, 7090
126	7091
127*, 128*	–
134*, 137*	–
186, 188	–
258	ISO 8737
261	–
302	1051
314–318	–
319	–
338, 340	–
388, 390	–
404	–
417	7435
427	2342
431	–
432*	–
433-1.2	7092
434–436	–
438	7436
439-1	4036
439-2 RG/FG	4035, 8675
440	7094
442, 443	–
444	–
462, 463*	–
464, 465*	–
466, 467	–
468, 469	–
470	–
471, 472	–
478–480	–
508	299
525, 529	–
546–548	–
551	4766
553	7434
555	4034
557	–
558	4018
561	–
562	–
564	–
571	–
580, 582	–
601	4016
603	–
604–608	–
609, 610*	–
653	–
660–662	1051
674, 675	1051
703*, 705	–
741	–
787	299
792	–
797, 798*	–
830*	–
835	–
906–910	–

Product standards	
DIN	ISO DIN ISO DIN EN ISO
911	2936
912 (RG)	4762
912 (FG)	12474
913	4026
914	4027
915	4028
916	4029
917	–
920–927	–
928, 929	–
931-1	4014
931-2	–
933	4017
934 RG	4032, 4033
934 FG	8673, 8674
935-1	–
935-3	–
936 RG/FG	(4035/8675)
937	–
938–940	–
949-1.2	–
950–959	–
960	8765
961	8676
963	2009
964	2010
965	7046-1, 2
966	7047
967, 968	–
(970)	4032
(971-1.2)	8673.8674
(972)	4034
975	DIN 976
976-1.2	–
977	–
979	–
980 RG	7042 (7719)
981	–
980 FG	10513
982 RG	7040
982 FG	10512
983	–
985	10511
986	–
987*	–
988	–
1052	–
1433–1436	–
1440	8738
1441	–
1443	2340
1444	2341
1445	–
1469	–
1470	8739
1471	8744
1472	8745
1473	8740
1474	8741
1475	8742/8743
1476	8746
1477	8747
1478–1480	–
1481	8752
1587	–
1592–1597	–
1804	–
1816	–
2093	–
2507	(EN 1515)

Product standards	
DIN	ISO DIN ISO DIN EN ISO
2509*	–
2510-1…8	–
3015–3016	–
3017	–
3220	–
3319	–
3404, 3405	–
3567	–
3568*	–
3570	–
3575	–
3670	–
3870, 3872	–
4109	–
5299	–
5406	–
5417	–
5525, 5526	–
5586	–
5903, 5906	–
5914	–
6303	–
6304–6307	–
6311	–
6319	–
6324	–
6325	8734
6330, 6331	–
6332	–
6334*	–
6335–6337	–
6340	–
6378	–
6379	–
6791, 6792	1051
6796	–
6797*	–
6798*	–
6799	–
6880	–
6881	–
6883, 6884	2492
6885-1, 2	–
6885-3	–
6886, 6887	–
6888	3912
6899	–
6900	10644
6901	10510
6902–6908	10669, 10673
6911	–
6912	–
6913*	–
6914–6915	EN 14399-4
6916	EN 14399-6
6917–6918	–
6921	EN 1665
6922	EN 1665
6923	EN 1661
6924 (RG)	7040
6924 (FG)	10512
6925 (RG)	7042
6925 (FG)	10513
6926 (RG)	EN 1663
6926 (FG)	EN 1666
6927 (RG)	EN 1664
6927 (FG)	EN 1667
6928 (RG)	7053
6928 (FG)	10509
7331	–

Product standards	
DIN	ISO DIN ISO DIN EN ISO
7337	15973–16585
7338–7340	–
7341	1051
7343	8750
7344	8748
7346	13337
7349	–
7500-1	–
7504	15480–15483
7513	–
7516	–
7603	–
7604	–
7642, 7643	–
7964	–
7965	–
7967*	–
7968	–
7969	–
7971	1481
7972	1482
7973	1483
7976	1479
7977	8737
7978	8736
7979	8733, 8735
7980*	–
7981	7049
7982	7050
7983	7051
7984	–
7985	7045
7987*, 7988*	–
7989-1.2	–
7990	–
7991	10642
7992	–
7993	–
7995–7997	–
7999	EN 14399-8
8140	–
9021	7093-1,-2
9045*	–
9841	7379
11014	–
11023, 11024	–
15058	–
15237	–
16903	–
18182	–
21346	–
21547	–
22424, 22425	–
25192	–
25193	–
25195	–
25197*	–
25200–25203	–
26020	–
28030	–
28129	–
28152	–
32500, 32501	13918
34800–34802	–
34803, 34804	–
34810–34816	–
34817–34819	–
34820	–
46258, 46320	–
46288	–

Product standards	
DIN	ISO DIN ISO DIN EN ISO
58450	–
70613–70618	–
70851*	–
70852	–
70951*	–
70952	–
71412	–
71752	–
71802–71805	–
74361	–
80403	–
80701	–
80704	–
80705	–
81698	–
82006–82010	–
82013	–
82101	–

Thread standards	
13-1…11	724
13-12	261
13-13	262, 965-2
13-14, 15	965-1, 2
13-16…18	1502
13-19	68-1
13-20…26	–
13-27	965-3
13-28	–
13-50…52	–
14	–
103-1	2901
103-2	2902
103-3	2903
103-4	2904
103-5…9	–
202	–
2244	5408
2510-2	–
7952	–
7970	1478
7998	–
8140, 8141	–
66	15065
69	273
74	–
76-1	3508, 4755
76-2	228-1
78	4753
101	1051

Basic/Functional standards	
DIN	ISO DIN ISO DIN EN ISO
267-1	8992
267-2	4759-1
267-3	898-1
267-4	898-2
267-5	3269 (16426)
267-6	4759-1
267-7	898-1
267-8	898-2
267-9	4042
267-10	10684
267-11	3506-1-4
267-12	2702
267-13	–
267-15	2320
267-18	8839
267-19	6157-1, 3
267-20	6157-2
267-21	10484
267-23	898-6
267-24	–
267-25	898-7
267-26-30	–
475**	272 (EN 1660)
522	4759-3
918	1891
946	16047
962 (34803)	7378, 8991
969	–
974	–
2510-2, 8	–
7150–7152	286
7154–7157	–
7160, 7161	286
7168	2768, 8015
7172, 7182	286
7184	1101
7337	14588–589
7500-2/7504	-/10666
7962	4757
7970	1478
7998	–
8140-1-3	–
9830	–
18800	–
34803, 34804	–
40080	2859-1-3
50049	EN 10204

What you need to know about standardisation

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Fax: +49 40 85363-602

– ISO/EN standard not yet known (as of 01.2016)

( ) Transitional standards (dimensions identical with ISO)

* withdrawn DIN standard without replacement, because, for example, technically reworked
(On issue of DIN EN-/DIN EN ISO standards the corresponding DIN/DIN ISO are/were withdrawn)

Legend for table 2

HV	high strength steel
Csk.	countersunk
Rcsk.	raised countersunk
CT/FT	coarse pitch thread/fine pitch thread
CH/TC/CD/CP	with flat point/with cone point/with dog point/ with cup point
Hex.	hexagon
CR	cross recess
MP	Mechanical Properties
S/H/L	standard/heavy/light version
Ww	Withworth
TDC	technical delivery conditions

Table 2

Product standards				Product standards				Product standards			
ISO DIN ISO DIN EN ISO	EN DIN EN	DIN	Title keyword	ISO DIN ISO DIN EN ISO	EN DIN EN	DIN	Title keyword	ISO DIN ISO DIN EN ISO	EN DIN EN	DIN	Title keyword
-	1515	2507	Flange joints	7379	-	9841	Hex. socket head shoulder screws	**Basic/Functional standards**			
-	1661	6923	Hexagon nuts with flange	7380	-	-	Hex. socket button head screws	225	20225	-	Fasteners: Dimensions
-	(1662), 1665	6921, 6922	Hexagon bolts with flange	7434	27434	553	Slotted set screws TC	272	1660	475 - 1	Hexagon wrench sizes
-	1663, 1664	6926, 6927	Hexagon nuts with flange	7435	27435	417	Slotted set screws CD	273	20273	69	Clearance holes for bolts
-	1666, 1667FG	6926, 6927FG	and prevailing torque type	7436	27436	438	Slotted set screws CP	286 -1, 2	20286	7150-7182	ISO System of limits and fits
-	14218.14219	-	Hex. bolts/nuts with flange FT	7719, 7720	-	980, 6925	Prevailing torque type hex. nuts	885	-	-	Radii under screw head
-	14399-4	6914-6915	Hexagon bolts/nuts (HV)	8100, 8102	1665	6921	Hexagon bolts with flange	887	-	-	Plain washers - general plan
-	14399-6	6916	Plain chamfered washers (HV)	8104	1662	6922	Hexagon bolts with flange	888	-	-	Nominal lengths screws/threads
-	14399-8	7999	Hexagon fit bolts (HV)	8673	-	934, 971 -1	Heaxgon nuts FT	898 -1	-	267 - 3, 7	TDC fasteners: bolts
299	-	508/787	Screws/Nuts for T-slots	8674	-	934, 972 -2	Hexagon nuts FT	898 -2	-	267 - 4, 8	TDC fasteners: nuts CT
773	-	6885 -1, 2	Parallel keys	8675	-	439 -2, 936	Hexagon thin nuts (chamfered) FT	898 -5	-	267 - 3	TDC fasteners: set screws
774	-	6886, 6887	Taper keys with gip head	8676	-	961	Hexagon head screws FT	898 -6	-	267 - 23	TDC fasteners: nuts FT
1051	-	660	Rivet, rivet pins	8733	-	7979	Parallel pins, internal thread	898 -7	-	267 - 25	Torsional test M 1-M 10
1207	-	84	Slotted cheese head screws	8734	-	6325	Parallel pins, hardened	1051	-	101	Rivets: technical specifications
1234	-	94	Split pins	8735	-	7979	Parallel pins, internal thread	1101	-	7184	Tolerances of form/position
1479	-	7976	Hexagon head tapping screws	8736	28736	7978	Taper pins, internal thread	1891	-	918	Fasteners - terminology
1481	-	7971	Pan head tapping screws	8737	28737	7977, 258	Taper pins CD thread	2320	-	267 - 15	TDC fasteners: locking nuts
1482	-	7972	Csk. head tapping screws	8738	28738	1440	Washers for clevis pins	2702	-	267 - 12	TDC fasteners: tapping screws
1483	-	7973	Rcsk. head tapping screws	8739	-	1470	Grooved pins	2768 -1...2	-	7168 - 1, 2	General tolerances
1580	-	85	Pan head screws	8740	-	1473	Grooved pins with chmafer	2859	-	40080	Sampling plans
2009	-	963	Countersunk head screws	8741	-	1474	Grooved pins	3269	-	267 - 5	TDC fasteners: acceptance inspection
2010	-	964	Rcsk. head screws	8742	-	1475	Grooved pins	3506 -1...4	-	267 - 11	TDC fasteners: stainless steel
2338	-	7	Parallel pins	8743	28743	1475	Grooved pins	3508	-	76 - 1	Thread runouts/undercuts
2339	22339	1	Taper pins	8744	-	1471	Grooved pins	4042	-	267 - 9	TDC fasteners: electroplated coatings
2340	22340	1443	Clevis pins without head	8745	-	1472	Grooved pins	4753	-	78	Thread ends/protrusions
2341	22341	1444	Clevis pins with head	8746	-	1476	Round head grooved pins	4755	-	76 - 1	Thread runouts/undercuts
2342	-	427	Headless screws	8747	-	1477	Grooved pins with csk. head	4757	-	7962	Cross recess for screws
2491	-	6885 -3	Parallel keys	8748	-	7344	Spring-type straight pins H	4759 -1...3	-	267 - 2, 6, 522	Tolerances for fasteners
2492	-	6883, 6884	Gib head/parallel keys	8750	-	7343	Spring-type straight pins S	6157 -1...3	-	267 - 19	Surface discontinuities, bolts
2936	-	911	Hexagon socket screw keys	8751	-	7343	Spring-type straight pins L	6157 -2	(493)	267 - 20, 21	Surface discontinuities, nuts
3912	-	6888	Woodruff Keys	8752	-	1481	Spring pins H	7085/7500-1	-	-	Thread rolling screws
4014	-	931 -1	Hexagon head bolts	8765	-	960	Hexagon head bolts FT	7378	-	962	Split pin holes/wire holes
4016	-	601	Hexagon head bolts	10509	-	6928	Hex. flange head tapping screws	7721	-	-	Csk. head screws: configuration
4017	-	933	Hexagon head screws	10510	-	6901	Tapping screws	8749	-	-	Determ. of shear strength of pins
4018	-	558	Hexagon head screws	10511	-	985	Hexagon, thin locking nuts	8839	28839	267 - 18	TDC fasteners: non-ferrous metal
4026	-	913	Hexagon socket set screws CH	10512	-	982, 6924	Hexagon locking nuts	8991	-	962	Designation system for fasteners
4027	-	914	Hexagon socket set screws TC	10513	-	980, 6925	Hexagon locking nuts	8992	-	267 - 1	TDC fasteners: general requirements
4028	-	915	Hexagon socket set screws CD	10642	-	7991	Hex. socket csk. head screws	-	10204	50049	Certificates
4029	-	916	Hexagon socket set screws CP	10644	-	6900	Screw and washer assemblies	10484	(493)	267 - 21	Widening test on nuts
4032	-	934	Hexagon nuts CT	10663	1661	6923	Hexagon nuts with flange FT	10644	-	6900-1	Screw/washer ass. hardness cl.
4033	-	934	Hexagon nuts II CT	10666	-	7504	Drilling screws with tapping screw thread	10664	-	-	Hexalobular socket
4034	-	555	Hexagon nuts	10669/10673	-	6903/6902	Washers for assemblies	10666	-	7504	MP drilling screws
4035	-	439 -2, 936	Hexagon thin nuts (chamfered)	12125	-	6926	Hexagon locking nuts with flange	10683	-	-	Zinc flake coatings
4036	-	439 - 1	Hexagon thin nuts (unchamfered)	12126	-	6927	Hexagon locking nuts with flange	10684	-	267-10	Hot dip galvanized coatings
4161	1661	6923	Hexagon nuts with flange	12474	-	912 (FG)	Hex. socket head cap screws FT	12683	-	-	Mechanical zinc coatings
4162	1662, 1665	6922	Hexagon bolts with flange	13337	-	7346	Spring-type straight pins L	-	13811	-	Sherardizing
4762	-	912	Hexagon socket head cap screws	13918	-	32500	Welding studs for stud welding	15065	-	66	Countersinking
4766	24766	551	Set screws CR	14579...587	-	-	Hex. socket head cap screws	15330	-	-	Hydrogen embrittlement
4775	780, 783	6915	Hexagon nuts (HV)	14588, 14589	-	7337	Blind rivets, terms	16047	-	946	Torque/clamp force testing
7040, 7041	-	982, 6924	Prevailing torque type hex. nuts	15071...073	-	-	Hex. bolts with flange, small S	16048	-	-	Passivation of stainless-steel
7042	-	980, 6925	Prevailing torque type hex. nuts	15480...483	-	7504	Drilling screws	16426	-	-	Fasteners QA system
7043	1663/1666	6926	Hexagon locking nuts with flange	15973...986	-	7337	Blind rivets				
7044	1664/1667	6927	Hexagon locking nuts with flange	16582 - 585	-	7337	Blind rivets				
7045	-	7985	Raised cheese head screws CR	21269	-	-	Hex. socket head cap screws FT				
7046 -1, 2	-	965	Countersunk head screws CR	21670	-	977	Hexagon weld nuts with flange				
7047	-	966	Rcsk. head screws CR	68	-	13 T 19	Metric screw threads - profile				
7048	-	-	Cheese head screws CR	228 -1...3	-	259-1...3	Ww head cap pipe thread G				
7049	-	7981	Pan head tapping screws CR	261	-	13-12	Selection of pitch threads CT/FT				
7050	-	7982	Csk. head tapping screws CR	262	-	13-13	Thread selection series				
7051	-	7983	Raised countersunk head	724	-	13	ISO thread: Basic dimensions				
7053	-	6928	Hex. washer head tapping screws	965 -1...5	-	13-13...15.27	Metric threads, data/principles				
7089	-	125 -1.2	Washers, grade A	1478	-	7970	Tapping screws thread				
7090	-	125 -1, 2	Washers, grade B	1502	-	13-16...18	Thread gauges				
7091	-	126	Washers, standard design	2901-2904	-	103-1...4	Trapezoidal thread				
7092	-	433 -1, 2	Washers, small series	5408	-	2244	Thread: Terms				
7093 - 1, 2	-	9021	Washers, large series	6410 -1...3	-	27	Threads description in drawing				
7094	-	440	Washers, extra large								

Standard types, relations, publishers:

DIN National German standard (Deutsches Institut für Normung). DIN standards shall still be given for the products/services for which there are no ISO/EN standards and no standardisation necessity.

ISO International Standardization Organisation

DIN ISO National German issue of an unmodified, adopted ISO standard

EN **E**uropean **N**orm (CEN = Comité Européen de Normalisation). In general, existing ISO standards should be adopted as EN standards with the ISO standard number → EN ISO. If this does not happen at European standards levels, independent EN standards shall be generated with EN standard numbers which are different to those of the ISO.

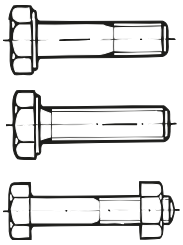
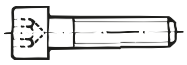
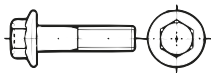
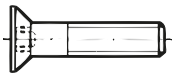
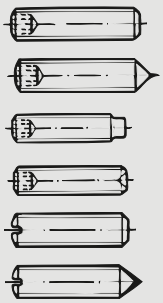
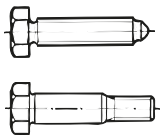
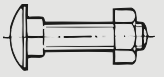
DIN EN National German issue of an unmodified, adopted EN standard.
According to the resolution of the European Council, EN standards are to be adopted unmodified and immediately by the EU member states and the corresponding national standards are to be withdrawn.

EN ISO European standard issue which was adopted unmodified by ISO (EN and ISO standard numbers are identical – the earlier practice of "ISO number + 20,000" has not been in use since Jan. 95. Standards still in use according to this mode are to be converted accordingly). **The description is carried out according to ISO.**

DIN EN ISO National German issue of an unchanged EN standard adopted by ISO. The article naming is done according to ISO.

Publisher and author of the standards for "Mechanical fasteners" is the German National Standards Organisation (DIN – Deutsches Institut für Normung e.V.), Berlin, www.fmv.din.de. Reference to the standards sheets from Beuth Verlag GmbH, Burggrafenstrasse 6, 10787 Berlin, www.beuth.de, Fax +030 2601-1260

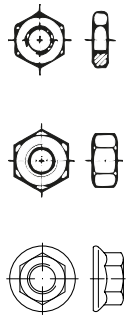
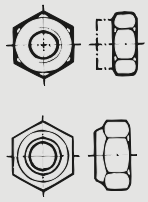
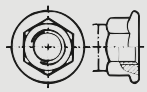
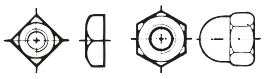
Table 3: Overview of standards conversion DIN → ISO/EN – Screws/bolts with drive, set screws, screws/bolts without drive

Article group	DIN	→	ISO/EN	Dimension range	Changes	Labelling ①
1. Screws/bolts with ISO/EN standards 	**558 931 933 960 961**		**ISO 4018 ISO 4014 ISO 4017 ISO 8765 ISO 8676**	M 10, 12, 14, 22	new ISO wrench sizes	ISO standard numbers
				all other ∅	none = DIN and ISO identical	1. ISO standard numbers 2. DIN standard numbers
	601 Nut with nut DIN 555		**ISO 4016 Nut** with nut ISO 4034	M 10, 12, 14, 22	screws: new ISO wrench sizes nuts: new wrench size acc. to ISO + ISO heights	ISO standard numbers
				other ∅ up to M 39	screws: none = DIN and ISO identical nuts: new ISO heights	1. ISO standard numbers 2. DIN standard numbers
				other ∅ greater than M 39	none = DIN and ISO identical	
	6914		**EN 14399-4**	all ∅	modified calculation of clamping length lubrication	EN standards numbers
	7999		**EN 14399-8**			
	**912**		**ISO 4762 (RG) ISO 12474 (FG)**	all ∅	none	1. ISO standard numbers 2. DIN standard numbers
	**6921**		**EN 1665 (EN 1662 – leichte Reihe)**	all ∅	marginally increased head heights and wrenching height, property class 12.9 discontinued	ISO standard numbers
				≥ ∅ M 10	new ISO wrench sizes	
	**7991**		**ISO 10642**	M 22, M 24	dimensions discontinued	
				all other ∅	modified head heights + head ∅-adjusted shaft lengths	ISO standard numbers
2. Set screws with ISO/EN standards 	**913 914 915 916 551 553**		**ISO 4026 ISO 4027 ISO 4028 ISO 4029 ISO 4766 ISO 7434**	all ∅	none	1. ISO standard numbers 2. DIN standard numbers
3. Hexagon head screws without ISO/EN standards	**561 564**		**– –**	∅ M 12, 16	new ISO wrench sizes	DIN standard numbers + wrench size specifications
				all other ∅	none	DIN standard numbers
	609 ~ 610		**– –**	∅ M 10, 12, 14, 22	new ISO wrench sizes	DIN standard numbers + wrench size specification
				all other ∅	none	DIN standard numbers
	7968 Nut 7990 Nut with nut DIN 555		screw: – with nut ISO 4034	M 12, (22)	screws: new ISO wrench sizes nuts: new ISO-SW + ISO heights	DIN standard numbers + wrench size specification
				all other ∅	screws: none nuts: new ISO heights	DIN standard numbers
4. Screws/bolts without drive and without ISO/EN standards **– with hexagonal nuts with ISO/EN standards** 	**186/261 Nut 525 Nut 529 Nut 603 Nut 604 Nut 605 Nut 607 Nut 608 Nut 7969 Nut 11014 Nut** with nut DIN 555		screw: – with nut ISO 4034	∅ M 10, 12, 14, 22	screws: none nuts: new wrench size acc. to ISO + ISO heights	DIN standard numbers + wrench size specifications
				all other ∅	screws: none nuts: new ISO heights	DIN standard numbers

① Labelling with ISO and DIN standard numbers are valid for the transition period, later only the ISO standard number will apply.

Table 4: Overview standards conversion DIN→ ISO/EN

– Hexagon/square nuts
– Hexagon nuts with prevailing torque element

Article group	DIN	→ ISO/EN	Dimension range ①	Changes ①	Labelling ②
1. Hexagon nuts with ISO/EN standards ① 	**439-1** (A = without chamfer) **439-2** (B = with chamfer)	**ISO 4036** **ISO 4035** = coarse pitch thread **ISO 8675** = fine pitch thread	∅ M 10, 12, 14, 22	new ISO wrench sizes (minor height change)	ISO standard numbers
			all other ∅	none = DIN and ISO identical (minor height change)	1. ISO standard numbers 2. DIN standard numbers
	555 **934** Fkl. 6, 8, 10 Fkl. 12 Fkl. 6, 8, 10	**ISO 4034** (ISO-Typ 1) **ISO 4032** = coarse pitch thread (ISO-Typ 1) **ISO 4033** = coarse pitch thread (ISO-Typ 2) **ISO 8673** = fine pitch thread (ISO-Typ 1)	∅ M 10, 12, 14, 22	new ISO wrench sizes + new ISO heights	ISO standard number
			other ∅ M 5 – M 39	new ISO heights (no wrench sizes change)	
			∅ less than M 5 ∅ over M 39	none = DIN and ISO identical	1. ISO standard number 2. DIN standard numbers
	6915	**EN 14399-4**	all ∅	without coating = lubricated	EN standard number
	6923	**EN 1661**	∅ M 10	new ISO – wrench sizes	EN standard number
			other ∅	none = DIN and EN identical	1. EN standard no. 2. DIN standard no.
2. Hexagon nuts with prevailing torque element, with ISO/EN standards ① 	**980** **6925**	**ISO 7042** = coarse pitch thread **ISO 10513** = fine pitch thread	∅ M 10, 12, 14, 22	new ISO wrench sizes (DIN 6925 already includes the new ISO wrench sizes) changed nut heights larger wrenching height	ISO standard numbers
			other ∅	changed nut heights larger wrenching height	ISO standard numbers
	982	**DIN 6924**	∅ M 10, 12, 14, 22	new ISO wrench sizes changed nut heights	
			other ∅	changed nut heights	
	6924	**ISO 7040** = coarse pitch thread **ISO 10512** = fine pitch thread	all ∅	greater tolerance range for nut heights (DIN↔ISO exchangeable)	1. ISO standard number 2. DIN standard numbers
	985	**ISO 10511**	∅ M 10, 12, 14,	new ISO wrench sizes	ISO standard numbers
			other ∅	reduced nut heights	ISO standard numbers
	**6926**	**EN 1663** = coarse pitch thread **EN 1666** = fine pitch thread	∅ M 10	new ISO wrench sizes	EN-standard numbers
			other ∅	none (DIN ←→ EN exchangeable)	1. EN-standard numbers 2. DIN standard numbers
	6927	**EN 1664** = coarse pitch thread **EN 1667** = fine pitch thread	∅ M 10	new ISO wrench sizes	EN-standard numbers
			other ∅	none (DIN ↔ EN exchangeable)	1. EN-standard numbers 2. DIN standard numbers
3. Nuts without ISO/EN standards 	**557** **917** **935** **986** **1587**	– – – – –	∅ M 10, 12, 14, 22	new ISO wrench sizes	DIN standard numbers + wrench size specifications
			all other ∅	other	DIN standard numbers

① Comparison of wrench sizes and nut heights DIN : ISO and classification of standards, mechanical properties for steel nuts, see Table 5

② Labelling with ISO and DIN standard numbers are valid for the transition period, later only the ISO standard number will apply.

Table 5: Comparison DIN : ISO – Wrench sizes for screws and nuts with standard wrench sizes – Nut heights

Nominal size d	Wrench size s		Nut height m min. – max.				
(sizes to be avoided as much as possible)	DIN	ISO	DIN 555	DIN 4034 ISO-Typ 1	DIN 934	ISO 4032 (RG) 8673 (FG) ISO-Typ 1	ISO 4033 (RG) ISO-Typ 2
M 1	2.5		–	–	0.55 – 0.8	–	–
M 1, 2	3		–	–	0.75 – 1	–	–
M 1, 4	3		–	–	0.95 – 1.2	–	–
M 1, 6	3.2		–	–	1.05 – 1.3	1.05 – 1.3	–
M 2	4		–	–	1.35 – 1.6	1.35 – 1.6	–
M 2.5	5		–	–	1.75 – 2	1.75 – 2	–
M 3	5.5		–	–	2.15 – 2.4	2.15 – 2.4	–
(M 3.5)	6		–	–	2.55 – 2.8	2.55 – 2.8	–
M 4	7		–	–	2.9 – 3.2	2.9 – 3.2	–
M 5	8		3.4 – 4.6	4.4 – 5.6	3.7 – 4	4.4 – 4.7	4.8 – 5.1
M 6	10		4.4 – 5.6	4.6 – 6.1	4.7 – 5	4.9 – 5.2	5.4 – 5.7
(M 7)	11		–	–	5.2 – 5.5	–	–
M 8	13		5.75 – 7.25	6.4 – 7.9	6.14 – 6.5	6.44 – 6.8	7.14 – 7.5
M 10	17	16	7.25 – 8.75	8 – 9.5	7.64 – 8	8.04 – 8.4	8.94 – 9.3
M 12	19	18	9.25 – 10.75	10.4 – 12.2	9.64 – 10	10.37 – 10.8	11.75 – 12
(M 14)	22	21	–	12.1 – 13.9	10.3 – 11	12.1 – 12.8	13.4 – 14.1
M 16	24		12.1 – 13.9	14.1 – 15.9	12.3 – 13	14.1 – 14.8	15.7 – 16.4
(M 18)	27		–	15.1 – 16.9	14.3 – 15	15.1 – 15.8	–
M 20	30		15.1 – 16.9	16.9 – 19	14.9 – 16	16.9 – 18	19 – 20.3
(M 22)	32	34	17.1 – 18.9	18.1 – 20.2	16.9 – 18	18.1 – 19.4	–
M 24	36		17.95 – 20.05	20.2 – 22.3	17.7 – 19	20.2 – 21.5	22.6 – 23.9
(M 27)	41		20.95 – 23.05	22.6 – 24.7	20.7 – 22	22.5 – 23.8	–
M 30	46		22.95 – 25.05	24.3 – 26.4	22.7 – 24	24.3 – 25.6	27.3 – 28.6
(M 33)	50		24.95 – 27.05	27.4 – 29.5	24.7 – 26	27.4 – 28.7	–
M 36	55		27.95 – 30.05	28 – 31.5	27.4 – 29	29.4 – 31	33.1 – 34.7
(M 39)	60		29.75 – 32.25	31.8 – 34.3	29.4 – 31	31.8 – 33.4	–
M 42	65		32.75 – 35.25	32.4 – 34.9	32.4 – 34	32.4 – 34	–
(M 45)	70		34.75 – 37.25	34.4 – 36.9	34.4 – 36	34.4 – 36	–
M 48	75		36.75 – 39.25	36.4 – 38.9	36.4 – 38	36.4 – 38	–
(M 52)	80		40.75 – 43.25	40.4 – 42.9	40.4 – 42	40.4 – 42	–
M 56	85		43.75 – 46.25	43.4 – 45.9	43.4 – 45	43.4 – 45	–
(M 60)	90		46.75 – 49.25	46.4 – 48.9	46.4 – 48	46.4 – 48	–
M 64	95		49.5 – 52.5	49.4 – 52.4	49.1 – 51	49.1 – 51	–

Nut height factor Nut height m / Nominal thread diameter M	≤ M 4	–	–	0.8	0.8	–
	M 5 – M 39	0.8	0.83 – 1.12		0.84 – 0.93	0.93 – 1.03
	≥ M 42		~ 0.8		0.8	–
Product class		C (coarse)		≤ M 16 = A (medium) > M 16 = B (medium coarse)		
Thread tolerance		7 H		6 H		
Property class Steel	Core range ~ M 5 – M 39	5 (M 16 < d ≤ M 39 = 4.5)		6, 8, 10 (ISO 8673 = Fkl. 10 ≤ M 16)		12 (9 – 12)
	≥ M 39	to be agreed upon		to be agreed upon		–
Mechanical properties according to standard		DIN 267-4	ISO 898-2	DIN 267-4	ISO 898 -2 (RG) -6 (FG)	ISO 898-2

Notes: ISO 4032 = also replacement for DIN 970 – RG = Coarse pitch thread ISO 4034 = also replacement for DIN 972
ISO 8673 = also replacement for DIN 971-1 – FG = Fine pitch thread ISO 4033 = also replacement for DIN 971-2 (fine pitch thread ➔ ISO 8674)

Table 6: Comparison DIN : ISO – Nuts with prevailing torque element according to DIN 980, DIN 6925, ISO 7042, ISO 10513

Nominal size d	Wrench size s		Nut height h min. – max.		Minimum wrenching height m'/m_w	
(sizes to be avoided as much as possible)	DIN 980	DIN 6925 ISO 7042 ISO 10513	DIN 980 DIN 6925	ISO 7042 ISO 10513	DIN 980 DIN 6925	ISO 7042 ISO 10513
M 3	5.5		3.4 – 3.7	–	1,65	–
M 4	7		3.9 – 4.2	–	2,2	–
M 5	8		4.8 – 5.1	4.8 – 5.1	2,75	3,52
M 6	10		5.7 – 6.0	5.4 – 6.0	3,3	3,92
(M 7)	11		6.5 – 7.0	–	3,85	–
M 8	13		7.5 – 8.0	7.14 – 8.00	4,4	5,15
M 10	17	16	9 – 10	8.94 – 10.0	5,5	6,43
M 12	19	18	11 – 12	11.57 – 12.00	6,6	8,30
(M 14)	22	21	12 – 14	13.4 – 14.1	7,7	9,68
M 16	24		14 – 16	15.7 – 16.4	8,8	11,28
(M 18)	27		16 – 18	–	9,9	–
M 20	30		18 – 20	19.0 – 20.3	11	13,52
(M 22)	32	–	20 – 22	–	12,2	–
M 24	36		22 – 24	22.6 – 23.9	13,2	16,16
(M 27)	41		25 – 27	–	14,8	–
M 30	46		28 – 30	27.3 – 30.0	16,5	19,44
(M 33)	50		31 – 33	–	18,2	–
M 36	55		34 – 36	33.1 – 36.1	19,8	23,52
(M 39)	60		37 – 39	–	21,5	–

Table 7: Comparison DIN : ISO – Nuts with prevailing torque element according to DIN 982, DIN 6924, ISO 7040, ISO 10512

Nominal size d	Wrench size s		Nut height h min. – max.			Minimum wrenching height m'/m_w	
(sizes to be avoided as much as possible)	DIN 982	DIN 6924 ISO 7040 ISO 10512	DIN 982	DIN 6924	ISO 7040 ISO 10512	DIN 982 DIN 6924	ISO 7040 ISO 10512
M 3	5.5		–	4.2 – 4.5	4.02 – 4.50	1,72	1,72
M 4	7		–	5.7 – 6.0	5.52 – 6.00	2,32	2,32
M 5	8		6.00 – 6.30	6.44 – 6.80	6.22 – 6.80	3,52	3,52
M 6	10		7.70 – 8.00	7.64 – 8.00	7.42 – 8.00	3,92	3,92
(M 7)	11		8.20 – 8.50	8.64 – 9.00	–	4,91	–
M 8	13		9.14 – 9.50	9.14 – 9.50	8.92 – 9.50	5,15	5,15
M 10	17	16	11.14 – 11.50	11.14 – 11.90	11.2 – 11.9	6,43	9,43
M 12	19	18	13.64 – 14.00	14.47 – 14.90	14.2 – 14.9	8,30	8,3
(M 14)	22	21	15.3 – 16.0	16.3 – 17.0	15.9 – 17.0	9,68	9,68
M 16	24		17.3 – 18.0	18.26 – 19.10	17.8 – 19.1	11,28	11,28
(M 18)	27		19.16 – 20.00	19.76 – 20.60	–	12,08	–
M 20	30		20.7 – 22.0	21.5 – 22.8	20.7 – 22.8	13,52	13,52
(M 22)	32	34	23.7 – 25.0	23.2 – 24.5	–	14,48	–
M 24	36		26.7 – 28.0	25.8 – 27.1	25.0 – 27.1	16,16	16,16
(M 27)	41		–	29.4 – 31.0	–	18,00	–
M 30	46		–	31.0 – 32.6	30.1 – 32.6	19,44	19,44
(M 33)	50		–	33.9 – 35.5	–	21,92	–
M 36	55		–	37.3 – 38.9	36.4 – 38.9	23,52	23,52
(M 39)	60		–	40.4 – 42.0	–	25,44	–
M 42	65		–	43.4 – 45.0	–	27,20	–
(M 45)	70		–	46.4 – 48.0	–	28,80	–
M 48	75		–	48.4 – 50.0	–	30,40	–

Table 8: Comparison DIN : ISO – Nuts with prevailing torque element according to DIN 985, ISO 10511

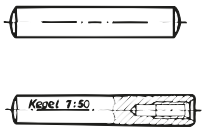
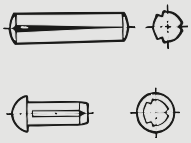
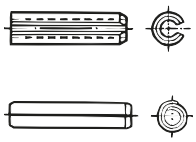
Nominal size d	Wrench size s		Nut height h min. – max.		Minimum wrenching height m'/m_w	
(sizes to be avoided as much as possible)	DIN 985	ISO 10511	DIN 985	ISO 10511	DIN 985	ISO 10511
M 3	5,5		3.7 – 4.0	3.42 – 3.90	1,65	1,24
M 4	7		4.7 – 5.0	4.52 – 5.00	2,2	1,56
M 5	8		4.7 – 5.0	4.52 – 5.00	2,75	1,96
M 6	10		5.7 – 6.0	5.52 – 6.00	3,3	2,32
(M 7)	11		7.14 – 7.50	–	3,85	–
M 8	13		7.64 – 8.00	6.18 – 6.76	4,4	2,96
M 10	17	16	9.64 – 10.0	7.98 – 8.56	5,5	3,76
M 12	19	18	11.57 – 12.00	9.53 – 10.23	6,6	4,56
(M 14)	22	21	13.3 – 14.0	10.22 – 11.32	7,7	5,14
M 16	24		15.3 – 16.0	11.32 – 12.42	8,8	5,94
(M 18)	27		17.66 – 18.50	–	9,9	–
M 20	30		18.7 – 20.0	13.1 – 14.9	11	7,28
(M 22)	32	34	20.7 – 22.0	–	12,2	–
M 24	36		22.7 – 24.0	16.0 – 17.8	13,2	8,72
(M 27)	41		25.7 – 27.0	–	14,8	–
M 30	46		28.7 – 30.0	20.1 – 22.2	16,5	11,12
(M 33)	50		31.4 – 33.0	–	18,2	–
M 36	55		34.4 – 36.0	23.4 – 25.5	19,8	13,52
(M 39)	60		37.4 – 39.0	–	21,5	–
M 42	65		40.4 – 42.0	–	23,1	–
(M 45)	70		43.4 – 45.0	–	24,8	–
M 48	75		46.4 – 48.0	–	26,5	–

Overview of standards conversion DIN → ISO: Bolts, pins, washers for bolts

The most important changes are listed in Table 9. For some articles, the DIN and ISO versions are identical or the minor changes are hardly relevant to the function at all so that exchangeability is possible.

The conversion is done in an appropriate transition time according to the availability from manufacturing or according to the customer's wishes. Further information on request.

Table 9

Article group	DIN	ISO DIN ISO DIN EN ISO	The most important changes
Taper pins, Parallel pins	1	2339	length l new according to ISO incl. round end (previously according to DIN excl. round end)
	7	2338	length l new according to ISO incl. round end (previously according to DIN excl. round end) types: A, B, C (type A/tol. m6 new with chamfer/round end)
	6325	8734	new: type A with chamfer/round end, fully hardened (for the most part identical with DIN 6325) type B with chamfer, case hardened
	7977 7978	8737 8736	no serious changes
	7979/D	8733 8735	DIN 7979/C ~ ISO 8733 [unhardened] DIN 7979/D ~ ISO 8735/A [fully hardened] lower hardness for ISO
Grooved pins	1470 1471 1472 1473 1474 1475	8739 8744 8745 8740 8741 8742	length l new according to ISO incl. round end (previously according to DIN excl. round end)
	–	8743	new: grooved pins, half-length centre grooved
	1476 1477	8746 8747	type A = no serious changes additonal: type B with pilot end
Spring-type straight pin	1481	8752	regular finish to ∅ of ≤ 8 mm with 2 chamfers (previously to a ∅ of ≤ 6 mm)
	7343 7344 7346	8750 8748 13337	no serious changes
	– –	8749 8751	new: pins, grooved pins: shear test new: spring-types straight pin, light duty
Split pins	94	1234	no serious changes
Clevis pins,	1443 1444	2340 2341	} partially other nominal lengths } length tolerances changed
	1433 1434 1435 1436	– – – –	these DIN standards were withdrawn ISO standards are not planned
Washers for pins	1440	8738	some outer ∅ and thicknesses changed (in general not in danger of being replaced)
	1441	–	no ISO standard planned

Overview of standards conversion DIN → ISO: Thread srews and tapping screws

ISO standards for thread screws and tapping screws include the following changes different to DIN standards:

– new countersunk angle for tapping screws with countersunk/raised countersunk head = 90° according to DIN 66/ISO 7721 (previously 80°)

– tapping screws: cancellation of diameter ST 3.9

– partial changes to the head dimensions

The tables show the standard numbers change DIN : ISO (Tab. 10) and head dimension changes DIN : ISO (Tab. 11–13)

Table 10: Standard numbers change DIN : ISO

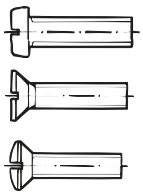
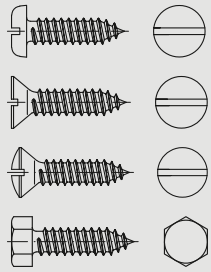
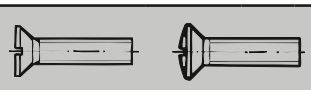
Article group	DIN	ISO	The most important changes
Thread screws 	84	1207	no serious changes
	85	1580	no serious changes
	963	2009	minor differences in head height and head diameter (see Table 11)
	964	2010	
	965	7046-1, -2	
	966	7047	
	7985	7045	no serious changes
Tapping screws 	7971	1481	no serious changes
	7972	1482	changed countersunk angle (DIN = 80° : ISO = 90°) minor differences in head height and head diameter (see Table 12)
	7973	1483	
	7976	1479	minor differences in the head height – no risk of being replaced (see Table 13)
	7981	7049	no serious changes
	7982	7050	changed countersunk angle (DIN = 80° : ISO = 90°) minor differences in head height and head diameter (see Table 12)
	7983	7051	

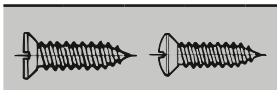
Table 11: Slotted and cross recessed countersunk head screws with metric thread



Metric screws
ISO 2009, 2010, 7046, 7047
DIN 963, 964, 965, 966

	Thread	M 1.6	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
max. Diameter of head	ISO (new)	3	3.8	4.7	5.5	7.3	8.4	9.3	11.3	15.8	18.3
	DIN (old)	3	3.8	4.7	5.6	6.5	7.5	9.2	11	14.5	18
max. Head height	ISO (new)	1	1.2	1.5	1.65	2.35	2.7	2.7	3.3	4.65	5
	DIN (old)	0.96	1.2	1.5	1.65	1.93	2.2	2.5	3	4	5

Table 12: Countersunk head tapping screws



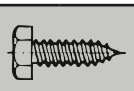
Tapping screws
ISO 1482, 1483, 7050, 7051 (⊰ = 90°)
DIN 7972, 7973, 7982, 7983 (⊰ = 80°)

ST 2.2	ST 2.9	ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5	ST 6.3	ST 8	ST 9.5
3.8	5.5	7.3	–	8.4	9.3	10.3	11.3	15.8	18.3
4.3	5.5	6.8	7.5	8.1	9.5	10.8	12.4	–	–
1.1	1.7	2.35	–	2.6	2.8	3	3.15	4.65	5.25
1.3	1.7	2.1	2.3	2.5	3	3.4	3.8	–	–

Note on countersunk head screws with metric threading

When countersinking according to ISO 15065 (for ISO countersunk heads) screws can also be used according to DIN 963 – 966.
These merely lie a little deeper in the countersink.
If the countersink is executed according to the withdrawn DIN 74-1:1980, a protrusion may, under certain circumstances, be visible when using ISO countersunk heads above the component part (especially with the diameters M 3.5, M 4 and M 8).

Table 13: Hexagon head tapping screws



Tapping screws ISO 1479 DIN 7976

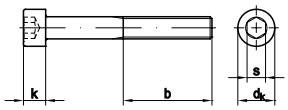
Thread		ST 2.2	ST 2.9	ST 3.5	(ST 3.9)	ST 4.2	ST 4.8	(ST 5.5)	ST 6.3	ST 8	ST 9.5
max. head height	ISO (new)	1.6	2.3	2.6	–	3	3.8	4.1	4.7	6	7.5
	DIN (old)	1.42	1.62	2.42	2.42	2.92	3.12	4.15	4.95	5.95	–

Hexagon and hexalobular socket screws

ISO 4762, 12474

similar DIN 912

Hexagon socket head cap screws
ISO 12474 with metric fine pitch thread



Dimensions	M 1.4	M 1.6	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8	M 10
d_k	2.6	3	3.8	4.5	5.5	7	8.5	10	13	16
k	1.4	1.6	2	2.5	3	4	5	6	8	10
s	1.3	1.5	1.5	2	2.5	3	4	5	6	8
b	14	15	16	17	18	20	22	24	28	32

Dimensions	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30	M 33
d_k	18	21	24	27	30	33	36	40	45	50
k	12	14	16	18	20	22	24	27	30	33
s	10	12	14	14	17	17	19	19	22	24
b	36	40	44	48	52	56	60	66	72	78

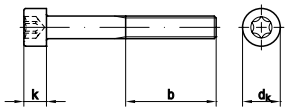
Dimensions	M 36	M 39	M 42	M 45	M 48	M 52*	M 56	M 64	M 72	
d_k	54	58	63	68	72	78	84	96	108	
k	36	39	42	45	48	52	56	64	72	
s	27	27	32	36	36	36	41	46	55	
b	84	90	96	102	108	116	124	140	156	

*not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 270, 370, 110 | Stainless steel: 513, 450

ISO 14579

Hexalobular socket head cap screws



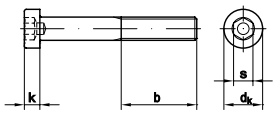
Dimensions	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8
d_k	3.8	4.5	5.5	7	8.5	10	13
k	2	2.5	3	4	5	6	8
ISR	T6	T8	T10	T20	T25	T30	T45
b	16	17	18	20	22	24	28

Dimensions	M 10	M 12	M 14	M 16	M 18	M 20	
d_k	16	18	21	24	27	30	
k	10	12	14	16	18	20	
ISR	T50	T55	T60	T70	T80	T90	
b	32	36	40	44	48	52	

Dimensions in stock:
Steel/Steel coated: 380

DIN 6912

Hexagon socket head cap screws, low head, with centre



Dimensions	M 4	M 5	M 6	M 8	M 10	M 12	M 14
d_k	7	8.5	10	13	16	18	21
k	2.8	3.5	4	5	6.5	7.5	8.5
s	3	4	5	6	8	10	12
b^1	14	16	18	22	26	30	34
b^2	–	–	–	–	32	36	40
b^3	–	–	–	–	–	–	–

Dimensions	M 16	M 20	M 22	M 24	M 30	M 36	
d_k	24	30	33	36	45	54	
k	10	12	13	14	17.5	21.5	
s	14	17	17	19	22	27	
b^1	38	46	50	54	66	78	
b^2	44	52	56	60	72	84	
b^3	57	65	69	73	85	97	

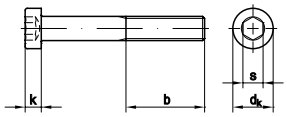
b^1 for l ≤ 125 mm
b^2 for 125 mm
b^3 for l > 200mm

Dimensions in stock:
Steel/Steel coated: 298 | Stainless steel: 521

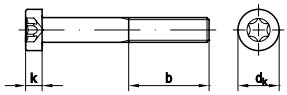
Hexagon and hexalobular socket screws

DIN 7984

Hexagon or hexalobular socket head cap screws with low head



with hexagon socket



with hexalobular socket
~ISO 14580

b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

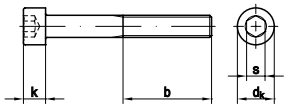
Dimensions	M 3	M 4	M 5	M 6	M 8
d_k	5.5	7	8.5	10	13
k	2	2.5	3.5	4	5
s	2	2.5	3	4	5
ISR size	T10	T20	T25	T30	T40
b^1	12	14	16	18	22
b^2	–	–	–	–	28
b^3	–	–	–	–	–

Dimensions	M 10	M 12	M 16	M 20	M 24
d_k	16	18	24	30	36
k	6	7	9	11	13
s	7	8	12	14	17
ISR size	T50	–	–	–	–
b^1	26	30	38	46	54
b^2	32	36	44	52	60
b^3	–	–	57	65	73

Dimensions in stock:
Steel/Steel coated: 340 | Stainless steel: 540

ASME B 18.3

Hexagon socket head cap screws* with unified inch thread



all dimensions in inches
*acc. to ASME B 18.3: 2003 table 1A

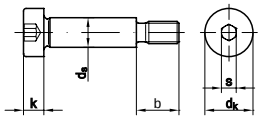
Dimensions	#2	#4	#5	#6	#8	#10	1/4	5/16
d	0.086	0.112	0.125	0.138	0.164	0.190	0.250	0.3125
d_k	0.140	0.183	0.205	0.226	0.270	0.312	0.375	0.469
k	0.086	0.112	0.125	0.138	0.164	0.190	0.250	0.312
s	5/64	3/32	3/32	7/64	9/64	5/32	3/16	1/4
b	0.62	0.75	0.75	0.75	0.88	0.88	1.00	1.12

Dimensions	3/8	1/2	5/8	7/8	1	1 1/4	1 1/2	
d	0.375	0.500	0.625	0.875	1.000	1.250	1.500	
d_k	0.562	0.750	0.938	1.312	1.500	1.875	1.250	
k	0.375	0.500	0.625	0.875	1.000	1.250	1.500	
s	5/16	3/8	1/2	3/4	3/4	7/8	1	
b	1.25	1.50	1.75	2.25	2.50	3.12	3.75	

Dimensions in stock:
Steel/Steel coated: 390

ISO 7379

Hexagon socket head shoulder screws



*adjusting shank tolerance:
• steel h8 or f9
• stainless steel f9
**on stock ∅12, standard value ∅13
***not standardized dimensions

Dimensions	M 5	M 6	M 8
d_k	10	13	16
d_s*	6***	8	10
k	4.5	5.5	7
s	3	4	5
b	9.75	11.25	13.25

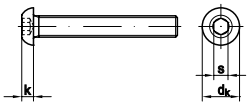
Dimensions	M 10	M 12	M 16
d_k	18	24	30
d_s*	12**/13	16	20
k	9	11	14
s	6	8	10
b	16.4	18.4	22.4

Dimensions in stock:
Steel/Steel coated: 322 | Stainless steel: 534

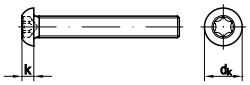
Hexagon and hexalobular socket screws

ISO 7380 -1/-2

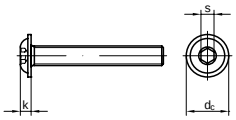
Hexagon or hexalobular socket button head screws



ISO 7380-1 with hexagon socket



ISO 7380-1 with hexalobular socket



ISO 7380-2 with hexagon socket and collar

Dimensions	M 3	M 4	M 5	M 6
d_k	5.7	7.6	9.5	10.5
d_c	6.9	9.4	11.8	13.6
k	1.65	2.2	2.75	3.3
s	2	2.5	3	4
ISR	T10	T20	T25	T30

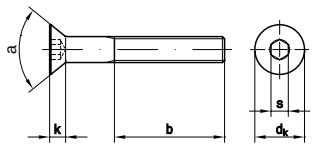
Dimensions	M 8	M 10	M 12	M 16
d_k	14	17.5	21	28
d_c	17.8	21.9	26	-
k	4.4	5.5	6.6	8.8
s	5	6	8	10
ISR	T40	T50	T50	-

Dimensions in stock:
Steel/Steel coated: 322 | Stainless steel: 534

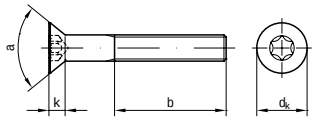
ISO 10642

replaces DIN 7991

Hexagon or hexalobular socket countersunk head screws



with hexagon socket



with hexalobular socket

dimensions for countersinks ➔ DIN 74
*dimensions acc. to DIN 7991

Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
d_k	6.72	8.96	10.2	13.44	17.92	22.4
$k_{max.}$	1.86	2.48	3.1	3.72	4.96	6.2
s	2	2.5	3	4	5	6
ISR	-	T20	T25	T30	T40	-
a	90°	90°	90°	90°	90°	90°
b	18	20	22	24	28	32

Dimensions	M 12	M 14	M 16	M 20	M 22*	M 24*
d_k	26.8	30.88	33.6	40.32	36	39
$k_{max.}$	7.44	8.4	8.8	10.16	13.1	14
s	8	10	10	12	14	14
ISR	-	-	-	-	-	-
a	90°	90°	90°	90°	60°	60°
b	36	40	44	52	(56)	(60)

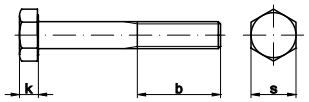
Dimensions in stock:
Steel/Steel coated: 366 | Stainless steel: 548

Hexagon screws/bolts

ISO 4014, 8765, 4016

replaces DIN 931, 960, 601

Hexagon head bolts with shank
ISO 8765/DIN 960 with fine pitch thread



Dimensions	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 10	M 12
$s_{ISO/DIN}$	4	5.5	7	8	10	11	13	16/17	18/19
k	1.4	2	2.8	3.5	4	4.8	5.3	6.4	7.5
b^1	10	12	14	16	18	20	22	26	30
b^2	–	–	–	22	24	26	28	32	36
b^3	–	–	–	–	–	–	–	45	49

Dimensions	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30	M 33
$s_{ISO/DIN}$	21/22	24	27	30	34/32	36	41	46	50
k	8.8	10	11.5	12.5	14	15	17	18.7	21
b^1	34	38	42	46	50	54	60	66	72
b^2	40	44	48	52	56	60	66	72	78
b^3	53	57	61	65	69	73	79	85	91

Dimensions	M 36	M 39	M 42	M 45	M 48	M 52	M 56	M 64	
$s_{ISO/DIN}$	55	60	65	70	75	80	85	95	
k	22.5	25	26	28	30	33	35	40	
b^1	78	84	90	96	102	–	–	–	
b^2	84	90	96	102	108	116	124	140	
b^3	97	103	109	115	121	129	137	153	

b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

Dimensions in stock:
Steel/Steel coated: 224, 362, 137, 173, 95 | Stainless steel: 496, 458 | Non-ferrous materials: 588, 577

ISO 4017, 8676

replaces DIN 933, 961

Hexagon head screws with thread up to head
ISO 8676/DIN 961 with fine pitch thread

Dimensions	M 3	M 4	M 5	M 6	M 7	M 8	M 10	M 12	M 14
$s_{ISO/DIN}$	5.5	7	8	10	11	13	16/17	18/19	21/22
k	2	2.8	3.5	4	4.8	5.3	6.4	7.5	8.8
$a_{max.}$	1.5	2.1	2.4	3	3	3.75	4.5	5.25	6

Dimensions	M 16	M 18	M 20	M 22	M 24	M 27	M 30	M 33	M 36
$s_{ISO/DIN}$	24	27	30	34/32	36	41	46	50	55
k	10	11.5	12.5	14	15	17	18.7	21	22.5
$a_{max.}$	6	7.5	7.5	7.5	9	9	10.5	10.5	12

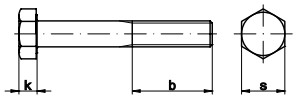
Dimensions	M 39	M 42	M 45	M 48	M 52	M 56	M 64		
$s_{ISO/DIN}$	60	65	70	75	80	85	95		
k	25	26	28	30	33	35	40		
$a_{max.}$	12	13.5	13.5	15	15	16.5	18		

Dimensions in stock:
Steel/Steel coated: 240–241, 350, 148, 175 | Stainless steel: 502, 462 | Non-ferrous materials: 588, 577

Hexagon screws/bolts

ASME B 18.2.1

Hex cap screws*



short dimensions with shank
long dimensions with shank

Dimensions	1/4	5/16	3/8	7/16	1/2	5/8
s	7/16	1/2	9/16	5/8	3/4	15/16
k	5/32	13/64	15/64	9/32	5/16	25/64
b^1	0.750	0.875	1.000	1.125	1.250	1.500
b^2	1.000	1.125	1.250	1.375	1.500	1.750

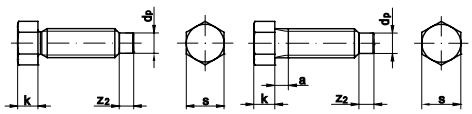
Dimensions	3/4	7/8	1	1 1/4	1 1/2	
s	1 1/8	1 5/16	1 1/2	1 7/8	2 1/4	
k	15/32	35/64	39/64	25/32	15/16	
b^1	1.750	2.000	2.250	2.750	3.250	
b^2	2.000	2.250	2.500	3.000	3.500	

all dimensions in inches
*acc. to ASME B 18.2.1: 2010 table 6,
b^1 for length 2 for length > 6 inch

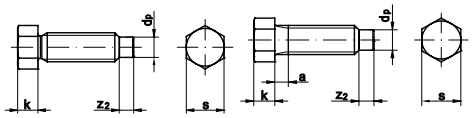
Dimensions in stock:
Steel/Steel coated: 386, 387

DIN 561, 564

Hexagon head set screws with small hexagon and dog point or short dog point



DIN 561 type A = with thread undercut
DIN 561 type B = with thread run-cut



DIN 564 type A = with thread undercut
DIN 564 Form B = with thread run-cut

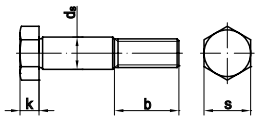
Dimensions	M 6	M 8	M 10	M 12
k	5	6	7	9
s	8	10	13	16
a (type B)	2.5	3	4	4
z_2	3	4	5	6
d_p	4	5.5	7	8.5

Dimensions	M 16	M 20	M 24	M 30
k	11	14	17	21
s	18	24	30	36
a (type B)	4.5	6	7	7.5
z_2	8	10	12	15
d_p	12	15	18	23

Dimensions in stock:
Steel/Steel coated: 91, 93

DIN 609

Hexagon fit bolts with long thread



Dimensions	M 8	M 10	M 12	M 14	M 16
k	5.3	6.4	7.5	8.8	10
s	13	16	18	21	24
d_s*	9	11	13	15	17
b^1	14.5	17.5	20.5	22	25
b^2	16.5	19.5	22.5	24	27
b^3	21.5	24.5	27.5	29	32

Dimensions	M 20	M 24	M 30	M 36	
k	12.5	15	19	22	
s	30	36	46	55	
d_s*	21	25	32	38	
b^1	28.5	-	-	-	
b^2	30.5	36.5	43	49	
b^3	35.5	41.5	48	54	

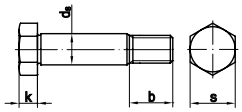
* adjusting shank tol. k6 for drill tol. H7
b^1 for l ≤ 50 mm
b^2 for 50 mm 3 for l > 150mm
b^3 for l > 150 mm

Dimensions in stock:
Steel/Steel coated: 102

Hexagon screws/bolts

DIN 610

Hexagon fit bolts with short thread



Dimensions	M 8	M 10	M 12	M 14	M 16
k	5.3	6.4	7.5	8.8	10
s	13	16	18	21	24
d_s*	9	11	13	15	17
b^1	11.5	13.5	15.5	17	19
b^2	13.5	15.5	17.5	19	21
b^3	18.5	20.5	22.5	24	26

Dimensions	M 20	M 24	M 30	M 36	
k	12.5	15	19	22	
s	30	36	46	55	
d_s*	21	25	32	38	
b^1	22.5	25.5	–	–	
b^2	24.5	28.5	34	40	
b^3	29.5	33.5	39	45	

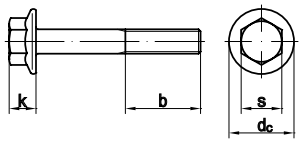
* adjusting shank tol. k6 for drill tol. H7
b^1 for l ≤ 50 mm
b^2 for 50 mm 3 for l > 150mm
b^3 for l > 150 mm

Dimensions in stock:
Steel/Steel coated: 103

EN 1665

replaces DIN 6921

Hexagon flange bolts, heavy series



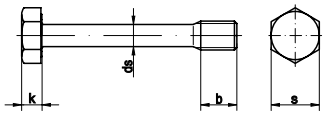
Dimensions	M 5	M 6	M 8	M 10	M 12	M 16
$k_{EN/DIN}$	5.8/5.4	6.6/6.6	8.1/8.1	10.4/9.2	11.8/11.5	15.4/14.4
$s_{EN/DIN}$	8/8	10/10	13/13	16/15	18/16	24/21
d_c	11.58	14.2	18	22.3	26.6	35
b^1	16	18	22	26	30	38
b^2	–	–	28	32	36	44
b^3	–	–	–	–	–	57

b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

Dimensions in stock:
Steel/Steel coated: 210, 302 | Stainless steel: 489, 522

~DIN 7964

Bolts with waisted shank
type D1 = hexagon head acc. to ISO 4014, with short thread



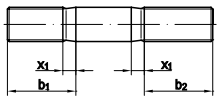
Dimensions	M 8	M 10
s	13	16
k	5.3	6.4
$d_{s\ min.}$	6	7.5
b	10	12.5

Dimensions in stock:
Stainless steel: 535

Studs

DIN 835

Studs



screwed-in end ≈ 2 d
b_1 = screwed-in end
b_2 = nut end

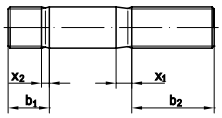
b_2 [1] for l ≤ 125 mm
b_2 [2] for 125 mm
b^3 for l > 200 mm

Dimensions	M 6	M 8	M 10	M 12	M 16
b^1	12	16	20	24	32
x_1	2.5	3.2	3.8	4.3	5.0
b_2 [1]	18	22	26	30	38
b_2 [2]	24	28	32	36	44
b_2 [3]	–	–	45	49	57

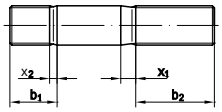
Dimensions in stock:
Steel/Steel coated: 107 | Stainless steel: 449

DIN 938, 939

Studs



DIN 938 = with screwed-in end ≈ 1 d



DIN 939 = with screwed-in end ≈ 1,25 d

b_1 = screwed-in end
b_2 = nut end

b_2 [1] for l ≤ 125 mm
b_2 [2] for 125 mm
b^3 for l > 200 mm

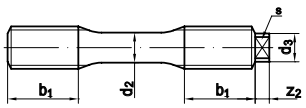
Dimensions	M 5	M 6	M 8	M 10	M 12	M 14
$b_{1\ (DIN\ 938)}$	5	6	8	10	12	14
$b_{1\ (DIN\ 939)}$	6.5	7.5	10	12	15	18
x_1	2	2.5	3.2	3.8	4.3	5
x_2	1	1.25	1.6	1.9	2.2	2.5
b_2 [1]	16	18	22	26	30	34
b_2 [2]	22	24	28	32	36	40
b_2 [3]	–	–	–	45	49	53

Dimensions	M 16	M 20	M 24	M 27	M 30	
$b_{1\ (DIN\ 938)}$	16	20	24	27	30	
$b_{1\ (DIN\ 939)}$	20	25	30	35	38	
x_1	5	6.3	7.5	7.5	9	
x_2	2.5	3.2	3.8	3.8	4.5	
b_2 [1]	38	46	54	60	66	
b_2 [2]	44	53	60	66	72	
b_2 [3]	57	65	73	79	85	

Dimensions in stock:
Steel/Steel coated: 168, 170 | Stainless steel: 469, 470

DIN 2510

Bolts with waisted shank
type L = with long thread



Dimensions	M 12	M 16	M 20	M 22	M 24
d_2	8.5	12	15	16.5	18
d_3	8	12	14	14	14
b^1	20	23	28	30	32
z_2	4	5	6	6	6
s	7	10	11	11	11

Dimensions	M 27	M 30	M 33	M 36	M 39
d_2	20.5	23	25.5	27.5	30.5
d_3	18	18	25	25	28
b^1	35	39	42	45	48
z_2	6	6	9	9	10
s	13	13	22	22	24

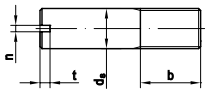
Dimensions in stock:
Steel/Steel coated: 220

Set screws/grub screw

ISO 2342

similar DIN 427

Slotted headless screws with shank



Dimensions	M 3	M 4	M 5	M 6	M 8
d_s	3	4	5	6	8
b*	3.6	4.8	6	7.2	9.6
n	0.4	0.6	0.8	1	1.2
t	0.8	1.12	1.28	1.6	2

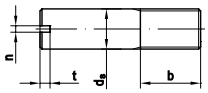
Dimensions	M 10	M 12	M 16	M 20	
d_s	10	12	16	20	
b*	12	14	18	22	
n	1.6	2	2.5	3	
t	2.4	2.8	3.2	4	

Dimensions in stock:
Steel/Steel coated: 219, 76 | Stainless steel: 495, 439

ISO 7435

similar DIN 417

Slotted headless screws with shank



Dimensions	M 3	M 4	M 5	M 6
d_p	2	2.5	3.5	4
b*	1.5	2	2.5	3
n	0.4	0.6	0.8	1
t	0.8	0.96	1.12	1.28

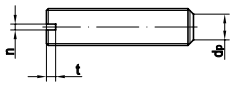
Dimensions	M 8	M 10	M 12	M 16
d_p	5.5	7	8.5	12
b*	4	5	6	7
n	1.2	1.6	2	2.5
t	1.6	2	2.4	2.8

Dimensions in stock:
Steel/Steel coated: 325, 76

ISO 4766

similar DIN 551

Slotted grub screws with flat point



Dimensions	M 1	M 1.4	M 1.6	M 2	M 2.5	M 3	M 3.5
n	0.2	0.2	0.25	0.25	0.4	0.4	0.5
t	0.4	0.48	0.56	0.64	0.72	0.8	0.96
d_p	0.5	0.7	0.8	1	1.5	2	2.2

Dimensions	M 4	M 5	M 6	M 8	M 10	M 12*	
n	0.6	0.8	1	1.2	1.6	2	
t	1.12	1.28	1.6	2	2.4	2.8	
d_p	2.5	3.5	4	5.5	7	8.5	

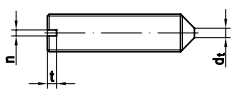
*dimensions acc. to DIN 551: 1956-04

Dimensions in stock:
Steel/Steel coated: 287, 89 | Stainless steel: 518, 444 | Non-ferrous materials: 590, 573

ISO 7434

similar DIN 553

Slotted grub screws with cone point



Dimensions	M 1*	M 1.2*	M 1.4	M 1.6	M 2	M 2.5	M 3
n	0.2	0.2	0.2	0.25	0.25	0.4	0.4
t	0.4	0.4	0.48	0.56	0.64	0.72	0.8
$d_{t\ max.}$	0.1	0.12	0.14	0.16	0.2	0.25	0.3

Dimensions	M 3.5	M 4	M 5	M 6	M 8	M 10	
n	0.5	0.6	0.8	1	1.2	1.6	
t	0.96	1.12	1.28	1.6	2	2.4	
$d_{t\ max.}$	0.35	0.4	0.5	1.5	2	2.5	

* dimensions acc. to DIN 553

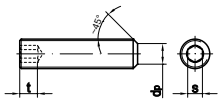
Dimensions in stock:
Steel/Steel coated: 324, 90 | Stainless steel: 535, 444 | Non-ferrous materials: 593, 574

Set screws/grub screw

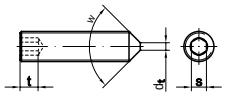
ISO 4026, 4027

similar DIN 913, 914

Hexagon socket set screws, with flat point or cone point
screws only for pressure load, hardness class 45H



ISO 4026, DIN 913 = with flat point



ISO 4027, DIN 914 = with cone point

t_1 for l above the dashed step line with angle $W_{DIN\ 914}$ = 120°
t_2 for below the dashed step line with angle $W_{DIN\ 914}$ = 90°

➔ step line see product standard

Dimensions	M 1.4	M 1.6	M 2	M 2.5	M 3
s	0.7	0.7	0.9	1.3	1.5
$d_{p\ max.}/d_{t\ max.}$	0.45	0.8	1	1.5	2
t_1	0.6	0.7	0.8	1.2	1.2
t_2	1.4	0.5	0.7	2	2

Dimensions	M 4	M 5	M 6	M 8	M 10
s	2	2.5	3	4	5
$d_{p\ max.}/d_{t\ max.}$	2.5	3.5	4	5.5	7
t_1	1.5	2	2	3	4
t_2	2.5	3	3.5	5	6

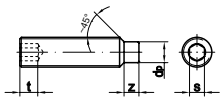
Dimensions	M 12	M 14	M 16	M 20	M 24
s	6	6	8	10	12
$d_{p\ max.}/d_{t\ max.}$	8.5	10	12	15	18
t_1	4.8	5.6	6.4	8	10
t_2	8	9	10	12	15

Dimensions in stock:
Steel/Steel coated: 257, 259, 128, 131 | Stainless steel: 507, 509, 454, 455

ISO 4028

similar DIN 915

Hexagon socket set screws with full dog point



z_1 and t_1 for above dashed step line
z_2 and t_2 for below the dashed step line

* dimensions acc. to DIN 915

Dimensions	M 1.4*	M 2*	M 3	M 4	M 5	M 6	M 8
s	0.7	0.9	1.5	2	2.5	3	4
$z_{1\ max.\ (short)}$	0.65	0.75	1	1.25	1.5	1.75	2.25
t_1	0.6	0.8	1.2	1.5	2	2	3
d_p	0.7	1	2	2.5	3.5	4	5.5
$z_{2\ max.\ (long)}$	1.05	1.25	1.75	2.25	2.75	3.25	4.3
t_2	1.4	1.7	2	2.5	3	3.5	5

Dimensions	M 10	M 12	M 14	M 16	M 20	M 24	
s	5	6	6	8	10	12	
$z_{1\ max.\ (short)}$	2.75	3.25	3.8	4.3	5.3	6.3	
t_1	4	4.8	5.6	6.4	8	10	
d_p	7	8.5	10	12	15	18	
$z_{2\ max.\ (long)}$	5.3	6.3	7.36	8.36	10.36	12.43	
t_2	6	8	9	10	12	15	

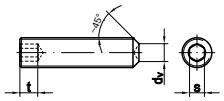
Dimensions in stock:
Steel/Steel coated: 260, 132 | Stainless steel: 509, 456

Set screws/grub screw

ISO 4029

similar DIN 916

Hexagon socket set screws with cup point



t_1 for l above the dashed step line
t_2 for l below the dashed step line

➔ step line see product standard

Dimensions	M 1.4	M 1.6	M 1.8	M 2	M 2.5	M 3	M 4	M 5
s	0.7	0.7	0.7	0.9	1.3	1.5	2	2.5
$d_{v\ max.}$	0.7	0.8	0.9	1	1.2	1.4	2	2.5
t_1	0.6	0.7	0.8	0.8	1.2	1.2	1.5	2
t_2	1.4	1.5	1.6	1.7	2	2	2.5	3

Dimensions	M 6	M 8	M 10	M 12	M 14	M 16	M 20	M 24
s	3	4	5	6	6	8	10	12
$d_{v\ max.}$	3	5	6	8	9	10	14	16
t_1	2	3	4	4.8	5.6	6.4	8	10
t_2	3.5	5	6	8	9	10	12	15

Dimensions in stock:
Steel/Steel coated: 262, 133 | Stainless steel: 510, 456

REYHER

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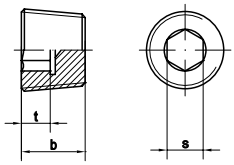
Screw plugs/pipe plugs

DIN 906

Hexagon socket pipe plugs with taper thread



Dimensions	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24
s	4	5	6	7	8	8	10	10	12
$t_{min.}$	4	4	5	5	5	5	5	5	6
b*	8	8	10	10	10	10	10	10	12

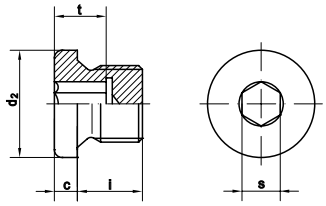
Dimensions	M 26	M 27	M 30	M 33	M 36	M 38	M 42	R 1/8	R 1/4
s	12	12	17	17	19	19	22	5	7
$t_{min.}$	6	6	6	6	7.5	7.5	11.5	4	5
b*	12	12	12	12	15	15	18	8	10

Dimensions	R 3/8	R 1/2	R 3/4	R 1	R 1 1/4	R 1 1/2	R 1 3/4	R 2	
s	8	10	12	17	22	24	32	32	
$t_{min.}$	5	5	6	6	11.5	11.5	13	13	
b*	10	10	12	12	18	20	22	22	

Dimensions in stock:
Steel/Steel coated: 107 | Stainless steel: 449 | Non-ferrous materials: 576

DIN 908

Hexagon socket screw plugs with cylindrical thread



Dimensions	M 8x1*	M 10x1	M 12x1.5	M 14x1.5	M 16x1.5	M 18x1.5	M 20x1.5
s	5	5	6	6	8	8	10
$t_{min.}$	2.4	5	7	7	7.5	7.5	7.5
d_2	12	14	17	19	21	23	25
c	3	3	3	4	3	4	4
i	8	8	12	12	12	12	14

Dimensions	M 22x1.5	M 24x1.5	M 26x1.5	M 27x2	M 30x1.5	M 30x2	M 33x2
s	10	12	12	12	17	17	17
$t_{min.}$	7.5	7.5	9	9	9	9	9
d_2	27	29	31	32	36	36	39
c	4	4	4	4	4	4	5
i	14	14	16	16	16	16	16

Dimensions	M 36x1.5	M 36x2	M 38x1.5	M 42x1.5	M 45x1.5	M 48x1.5	M 52x1.5
s	19	19	19	22	22	24	24
$t_{min.}$	10.5	10.5	10.5	10.5	10.5	10.5	10.5
d_2	42	42	42	49	52	55	60
c	5	5	5	5	5	5	5
i	16	16	16	16	16	16	16

Dimensions	M 52x2	M 56x2	M 64x2	G 1/8 A	G 1/4 A	G 3/8 A	G 1/2 A
s	32	32	32	5	6	8	10
$t_{min.}$	10.5	14	14	5	7	7.5	7.5
d_2	64	72	72	14	12	22	26
c	5	5	5	3	3	3	4
i	16	20	20	8	12	12	14

Dimensions	G 3/4 A	G 1 A	G 1 1/8 A	G 1 1/4 A	G 1 1/2 A	G 1 3/4 A	G 2 A
s	12	17	19	22	24	32	32
$t_{min.}$	9	9	10.5	10.5	10.5	14	14
d_2	32	39	44	49	55	62	68
c	4	5	5	5	5	5	5
i	16	16	16	16	16	20	20

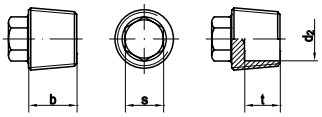
* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 108 | Stainless steel: 449 | Non-ferrous materials: 577

Screw plugs/pipe plugs

DIN 909

Hexagon head pipe plugs with taper thread



Dimensions	M 10x1	M 12x1.5	M 14x1.5	M 16x1.5	M 18x1.5	M 20x1.5	M 22x1.5
b*	8	10	10	10	10	10	10
d_2	–	–	–	–	–	12	14
s	7	7	9	10	10	13	13
t	–	–	–	–	–	6	6

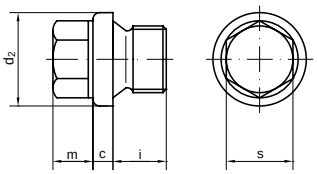
Dimensions	M 24x1.5	M 26x1.5	M 27x2	M 30x1.5	M 30x2	M 33x2	R 1/8
b*	12	12	12	12	12	12	8
d_2	16	16	16	20	23	23	–
s	17	17	17	19	19	19	7
t	7	7	7	7	7	7	–

Dimensions	R 1/4	R 3/8	R 1/2	R 3/4	R 1	R 1 1/4	
b*	10	10	10	12	12	18	
d_2	–	–	12	16	23	32	
s	9	10	13	17	19	24	
t	–	–	6	7	7	13	

Dimensions in stock:
Steel/Steel coated: 109

DIN 910

Hexagon head screw plugs, heavy type, cylindrical thread



Dimensions	M 8x1*	M 10x1	M 12x1.5	M 14x1.5	M 16x1.5	M 18x1.5	M 20x1.5	M 22x1.5
c	3	3	3	3	3	4	4	4
d_2	14	14	17	19	21	23	25	27
m	6	6	6	6	6	6	8	8
s	10	10	13	13	17	17	19	19
i	8	8	12	12	12	12	14	14

Dimensions	M 24x1.5	M 26x1.5	M 27x2	M 30x1.5	M 30x2	M 33x2	M 36x1.5	M 36x2
c	4	4	4	4	4	5	5	5
d_2	29	31	32	36	36	39	42	42
m	9	10	10	10	10	11	11	11
s	22	24	24	24	24	27	27	27
i	14	16	16	16	16	16	16	16

Dimensions	M 38x1.5	M 42x1.5	M 42x2	M 45x1.5	M 45x2	M 48x1.5	M 48x2	M 52x1.5
c	4	5	5	5	5	5	5	5
d_2	44	49	49	55	52	55	55	60
m	11	12	12	12	12	12	12	12
s	27	30	30	30	30	36	30	30
i	16	16	16	16	16	16	16	16

Dimensions	M 56x2	M 64x2	G 1/8 A	G 1/4 A	G 3/8 A	G 1/2 A	G 5/8 A*	G 3/4 A
c	5	5	3	3	3	4	4	4
d_2	64	72	14	18	22	26	28	32
m	15	15	6	6	6	8	8	10
s	36	36	10	13	17	19	22	24
i	20	20	8	12	12	14	14	16

Dimensions	G 7/8 A*	G 1 A	G 1 1/8 A	G 1 1/4 A	G 1 1/2 A	G 1 3/4 A	G 2 A	
c	4	5	4	5	5	5	5	
d_2	36	39	44	49	55	62	68	
m	10	11	11	12	12	15	15	
s	24	27	27	30	30	36	36	
i	14	16	16	16	16	20	20	

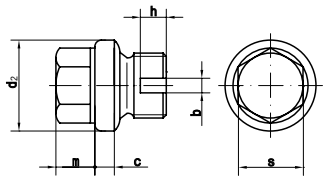
* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 109 | Stainless steel: 450 | Non-ferrous materials: 577

Screw plugs/pipe plugs

DIN 5586

Hexagon head screw plugs with collar and vent
type B = with melted sealing

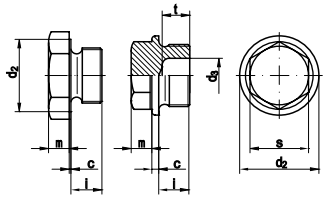


Dimensions	G 1/8 A	G 1/4 A	G 1/2 A	G 3/4 A	G 1 A	G 1 1/2 A	G 2 A
a	4	6	7	7	7	7	7
h	3	3	4	6	6	6	6
h	5	7	8	10	10	10	10
c	3	3	4	4	5	5	5
d_2	14	18	26	32	39	55	68
m	8	6	8	10	11	12	15

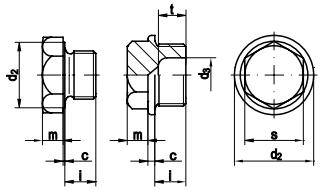
Dimensions in stock:
Steel/Steel coated: 289

DIN 7604

Hexagon head screw plugs with collar, light type, cylindrical fine pitch thread



≤M 16 ≥M 18
type A = short stud end



≤M 16 ≥M 18
type C = long stud end

Dimensions	M 8x1	M 10x1	M 12x1.5	M 14x1.5	M 16x1.5	M 18x1.5
c	0.5	0.5	0.5	0.5	0.5	2
d_2	12	14	17	19	21	23
d_3	–	–	–	–	–	10
$i_{\text{type A/type C}}$	–/8	6/8	9	9/–	9/–	9/–
$l_{\text{type A/type C}}$	–/12.5	10.5/12.5	15.5	15.5/–	15.5/–	17/–
m	4	4	6	6	6	6
s	12	14	17	19	22	17
$t_{\text{type A/type C}}$	–	–	–	–	–	8/–

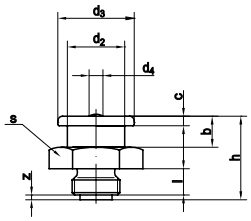
Dimensions	M 22x1.5	M 26x1.5	M 30x1.5	M 38x1.5	M 45x1.5	M 52x1.5
c	2	2.5	2.5	3	3	3
d_2	27	31	36	44	52	60
d_3	14	16	20	26	32	38
$i_{\text{type A/type C}}$	9/–	9/12	9/12	–/12	–/12	–/12
$l_{\text{type A/type C}}$	17/–	19.5/22.5	19.5/22.5	–/23	–/23	–/23
m	6	8	8	8	8	8
s	19	22	22	22	24	27
$t_{\text{type A/type C}}$	8/–	8/10	8/10	–/10	–/10	–/10

Dimensions in stock:
Steel/Steel coated: 330 | Stainless steel: 535

Lubricating nipples

DIN 3404

Lubricating nipples



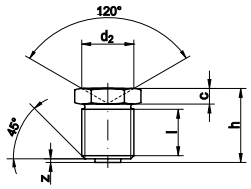
Dimensions	M 6x1	M 6x1	M 8x1	M 8x1	M 10x1
b	4.8	6.5	4.8	6.5	6.5
c	1.7	2.0	1.7	2.0	2.0
d_2	7.2	12	7.2	12	12
d_3	10	16	10	16	16
d_4	1.5	1.5	2.5	2.5	2.9
$h_{max.}$	13	17	13.7	16.7	17.6
l	4.9	5.3	4.9	5.3	5.5
s	11	17	11	17	17
$z_{max.}$	0.6	0.8	0.6	0.8	1.0

Dimensions	M 16x1.5	G 1/4	G 1/4	G 3/8	
b	8.5	6.5	8.5	8.5	
c	3.0	2.0	3.0	3.0	
d_2	18	12	18	18	
d_3	22	16	22	22	
d_4	5.0	2.9	5.0	5.0	
$h_{max.}$	23.1	16	22	22	
l	7.5	5.5	7.5	7.5	
s	22	17	22	22	
$z_{max.}$	1.5	1	1.5	1.5	

Dimensions in stock:
Steel/Steel coated: 222 | Non-ferrous materials: 588

DIN 3405

Lubricating nipples, cupped type
type A = with thread acc. to DIN 13-5

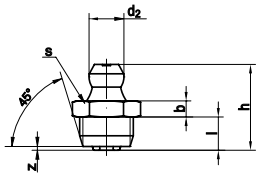


Dimensions	M 6x1	M 8x1
$h_{max.}$	9.5	9.5
l	5.5	5.5
d_2	6	8
c	3	3
s	7	9
$z_{max.}$	0.7	0.7

Dimensions in stock:
Steel/Steel coated: 222

DIN 71412

Lubricating nipples, cone type, with hexagon
type A = cone head straight/axial



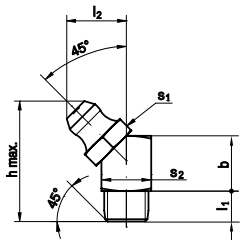
Dimensions	M 6x1	M 6x1	M 8x1	AR 1/8	M 10x1	AR 1/4
$h_{max.}$	16	16	16	16	16	16
l	5.5	5.5	5.5	5.5	5.5	5.5
d_2	6.5	6.5	6.5	6.5	6.5	6.5
b*	3	3	3	3	3	3
s	7	9	9	11	11	14
$z_{max.}$	0.7	0.7	0.7	0.7	0.7	0.7

Dimensions in stock:
Steel/Steel coated: 384 | Stainless steel: 551

Lubricating nipples

DIN 71412

Lubricating nipples, cone type, with hexagon or square
type B = cone head 45° angled

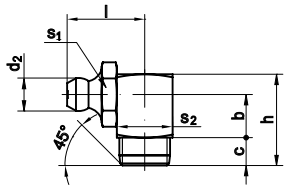


Dimensions	M 6x1	M 8x1	M 10x1
$h_{max.}$	21	21	21
l_1	5.5	5.5	5.5
l_2	10	10	11
b	10	10	10
s_1	7	9	11
$s_{2\ square}$	9	9	11

Dimensions in stock:
Steel/Steel coated: 384

DIN 71412

Lubricating nipples, cone type, with hexagon or square
type C = cone head 90° angled



Dimensions	M 6x1	M 8x1	M 8x1.5*	M 10x1
$h_{max.}$	18	18	18	18
c	5.5	5.5	5.5	5.5
d_2	6.5	6.5	6.5	6.5
b	8.5	8.5	8.5	8.5
s_1	9	9	9	11
$s_{2\ square}$	9	9	9	11
l	14.3	14.3	14.3	15.3

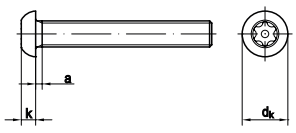
* intermediate sizes not included in the standard

Dimensions in stock:
Steel/Steel coated: 384

Theft resistant screw/locking screws

Article 88116

Theft resistant screws with button head, metric thread and pin hex. socket drive
similar to ISO 7380



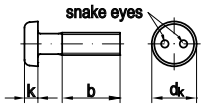
Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
d_k	5.7	7.6	9.5	10.5	14	17.5
$a_{min.}$	0.5	0.7	0.8	1	1.25	1.5
$k_{min.}$	1.4	1.95	2.5	3	4.1	5.2
ISR size	T10	T20	T25	T30	T40	T45

Dimensions in stock:
Stainless steel: 557

Theft resistant screw/locking screws

Article 88111

Theft resistant screws with pan head, metric thread and snake eyes drive
similar to DIN 85

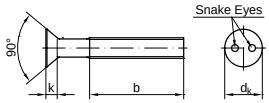


Dimensions	M 3	M 4	M 5	M 6
$b_{min.}$	25	38	38	38
d_k	6	8	10	12
k	1.8	2.4	3	3.6

Dimensions in stock:
Stainless steel: 556

Artikel 88112

Theft resistant screws with pan head, metric thread and snake eyes drive
similar to DIN 963

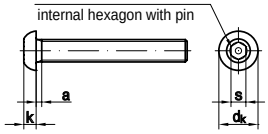


Dimensions	M 3	M 4	M 5	M 6
$b_{min.}$	19	22	25	28
d_k	5.6	7.5	9.2	11
k	1.65	2.2	2.5	3

Dimensions in stock:
Stainless steel: 556

Article 88113

Theft resistant screws with button head, metric thread and hexagon socket with pin
similar to ISO 7380

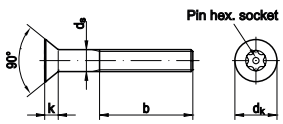


Dimensions	M 3	M 4	M 5	M 6	M 8	M 10	M 12
$a_{min.}$	0.5	0.7	0.8	1	1.25	1.5	1.75
$d_{K\ max.}$	5.7	7.6	9.5	10.5	14	17.5	21
$k_{min.}$	1.4	1.95	2.5	3	4.1	5.2	6.24
s	2	2.5	3	4	5	6	8

Dimensions in stock:
Stainless steel: 556

Article 88117

Theft resistant screws with countersunk head, metric thread and pin hex. socket drive
similar to ISO 10642



b_1 for l ≤ 125 mm
b_2 for 125 mm, b_3 for > 200 mm

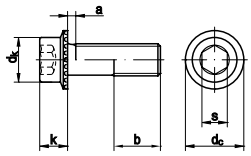
Dimensions	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
$d_{K\ max.}$	5.7	6.6	7.6	9.5	10.5	14	17.5
$a_{min.}$	0.5	0.6	0.7	0.8	1	1.25	1.5
$k_{min.}$	1.4	1.9	1.95	2.5	3	4.1	5.2
ISR size	T10	T15	T20	T25	T30	T40	T45
b_1	12	12	14	16	18	22	26
b_2	–	–	–	–	24	28	32
b_3	–	–	–	–	–	–	45

Dimensions in stock:
Stainless steel: 558

Theft resistant screw/locking screws

Article 88912

Hexagon socket cap screws with flange and ribs

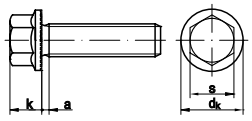


Dimensions	M 5	M 6	M 8	M 10	M 12
$a_{max.}$	2.4	3	3.7	4.5	5.2
b	22	24	28	32	36
d_c	11	13.5	17	19.5	22.5
d_k	9	11	14	17	19
k	5	6	8	10	12
s	4	5	6	8	10
qty. ribs	28	36	48	60	72

Dimensions in stock:
Steel/Steel coated: 418

Article 88913

Hexagon head screws with flange and ribs

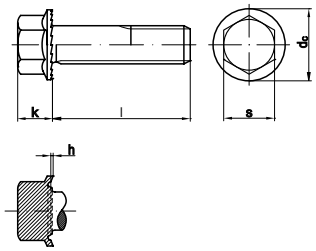


Dimensions	M 5	M 6	M 8	M 10	M 12	M 14	M 16
$a_{max.}$	1.6	2	2.5	3	3.5	4	4
d_k	11.2	14.2	18.2	21	24	27.5	31
k	4.3	5.5	7	8.5	10	12	14
s	8	10	13	15	17	19	22
qty. ribs	28	36	48	48	60	60	72

Dimensions in stock:
Steel/Steel coated: 418

Article 88933

Hexagon head locking screws with flange



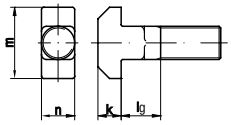
Dimensions	M 5	M 6	M 8	M 10	M 12	M 16
d_c	11.2	14.25	18.25	21	24	31
$h_{min.}$	0.15	0.17	0.2	0.25	0.25	0.28
k	4.3	5.5	7	7.9	8.7	11.2
s	8	10	13	15	17	22
qty. serrations	24	24	24	24	24	24

Dimensions in stock:
Steel/Steel coated: 420

Other screws with metric thread

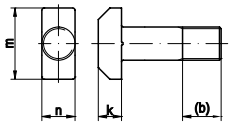
DIN 186, 261

T-head bolts



DIN 186 type B = with square neck and long thread

Dimensions	M 6	M 8	M 10	M 12
m	16	18	21	26
n	6	8	10	12
k	4.5	5.5	7	8
$l_{g\ (186\ B)}$	10	13	16	19
b_1	18	22	26	30
b_2	–	–	–	–



DIN 261

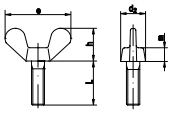
Dimensions	M 16	M 20	M 24	
m	30	36	43	
n	16	20	24	
k	10.5	13	15	
$l_{g\ (186\ B)}$	25	31	37	
b_1	38	46	54	
b_2	44	52	60	

b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

Dimensions in stock:
Steel/Steel coated: 74, 75

DIN 316

Wing screws with rounded wings

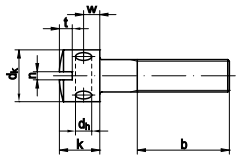


Dimensions	M 4	M 5	M 6	M 8	M 10	M 12	M 16
d_2	7	9.5	11.5	14.5	18.5	21.5	27.5
e	20	25	31.5	37	49.5	63.5	71.5
g	1.5	1.9	1.9	2.4	4	4.5	6
h	9.5	12	16	19	24	32.3	36.3
m	3.9	5.3	6.5	8.3	10	12	15

Dimensions in stock:
Steel/Steel coated: 75 | Stainless steel: 439 | Non-ferrous materials: 571

DIN 404

Slotted capstan screws



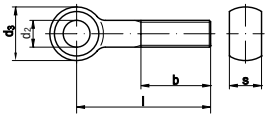
Dimensions	M 3	M 4	M 5	M 6
∅ d_k	5.5	7	8.5	10
k	4	5	6.5	8
n	0.8	1	1.2	1.6
$t_{min.}$	1	1.4	1.7	2.2
∅ d_h	1.5	2	2.5	3
w	1.5	2	2.5	3
b	19	22	25	28

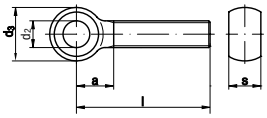
Dimensions in stock:
Steel/Steel coated: 76 | Stainless steel: 439

Other screws with metric thread

DIN 444

Eye bolts
type B = product grade B





with thread near the eye

b^1 for l ≤ 125 mm
b^2 for 125 mm
b^3 for l > 200mm

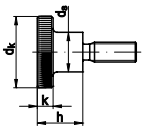
Dimensions	M 5	M 6	M 8	M 10	M 12
d_2	5	6	8	10	12
d_3	12	14	18	20	25
s	6	7	9	12	14
a	11	14	16	18	23
b_1	16	18	22	26	30
b_2	–	–	28	32	36
b_3	–	–	–	–	49

Dimensions	M 16	M 20	M 24	M 30	
d_2	16	18	22	27/28	
d_3	32	40	45	55	
s	17	22	25	30	
a	27	32	40	46	
b_1	38	46	54	66	
b_2	44	52	60	72	
b_3	57	65	73	85	

Dimensions in stock:
Steel/Steel coated: 82 | Stainless steel: 442 | Non-ferrous materials: 572

DIN 464

Knurled thumb screws, high type

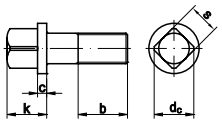


Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
d_k	12	16	20	24	30	36
k	2.5	3.5	4.0	5.0	6.0	8.0
h	5.7	7.64	9.64	11.57	15.57	19.48
d_s	6	8	10	12	16	20

Dimensions in stock:
Steel/Steel coated: 84 | Stainless steel: 443 | Non-ferrous materials: 573

DIN 478

Square head bolts with collar



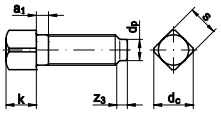
[1] acc. to ISO 272

Dimensions	M 8	M 10	M 12	M 16
k	10	13	15	20
c	2	3	3	4
b	22	26	30	38
d_c	13.5	16.5	19.5	25
s	8	10	13	16[1]/17

Dimensions in stock:
Steel/Steel coated: 87

DIN 479

Square head bolts with short dog point



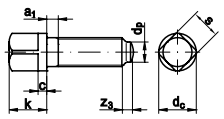
Dimensions	M 6	M 8	M 10	M 12	M 16	M 20
k	6	8	10	12	16	20
a_1	3	4	4.5	5.3	6	7.5
s	6	8	10	13	16[1]/17	21[1] /22
d_p	4	5.5	7	8.5	12	15
z_1	1.5	2	2.5	3	4	5

Dimensions in stock:
Steel/Steel coated: 87

Other screws with metric thread

DIN 480

Square head bolts with collar and short dog point with rounded end



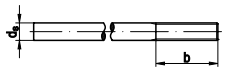
Dimensions	M 10	M 12	M 16	M 20
k	13	16	20	25
$c_{max.}$	3.12	4.15	4.15	5.15
a_1	4.5	5.3	6	7.5
s	10	13	16[1] /17	21[1] /22
d_c	13	17	21[1] /22	27[1] /28
z_3	2.5	3	4	5

[1] acc. to ISO 272

Dimensions in stock:
Steel/Steel coated: 88

DIN 525

Studs for welding



Dimensions	M 6	M 8	M 10	M 12	M 14*	M 16
b	35	40	45	55	60	65
d_s	6	8	10	12	14	16

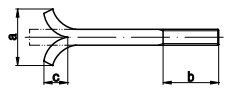
Dimensions	M 20	M 22*	M 24	M 27*	M 30	M 36
b	75	80	85	95	105	125
d_s	20	22	24	27	30	36

* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 88

DIN 529

Masonry bolts
type C = with split swivel



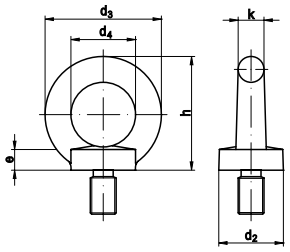
Dimensions	M 8	M 10	M 12	M 16	M 20	M 24	M 30
b	20	25	30	40	50	60	75
a	24	30	36	48	60	75	95
c	12	15	18	24	30	36	45

Dimensions in stock:
Steel/Steel coated: 88

Other screws with metric thread

DIN 580

Lifting eye bolts



Dimensions	M 6**	M 8	M 10	M 12	M 14*	M 16	M 18
d_2	17	20	25	30	35	35	40
d_3	28	36	45	54	63	63	72
d_4	16	20	25	30	35	35	40
h	31	36	45	53	62	62	71
e	4	6	8	10	12	12	14
k	6	8	10	12	14	14	16

Dimensions	M 20	M 22*	M 24	M 27*	M 30	M 33*	M 36
d_2	40	50	50	65	65	75	75
d_3	72	90	90	108	108	126	126
d_4	40	50	50	60	60	70	70
h	71	90	90	109	109	128	128
e	14	18	18	22	22	26	26
k	16	20	20	14	14	28	28

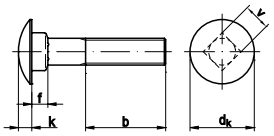
Dimensions	M 39	M 42	M 45	M 48	M 52	M 56	M 64
d_2	85	85	100	100	110	110	120
d_3	144	144	166	166	184	184	206
d_4	80	80	90	90	100	100	110
h	147	147	168	168	187	187	208
e	30	30	35	35	38	38	42
k	32	32	38	38	42	42	48

more information ➔ TI-148
*dimensions not standardized, geometry of the next higher dimension
**small type

Dimensions in stock:
Steel/Steel coated: 94 | Stainless steel: 446

DIN 603

Cup head square neck bolts



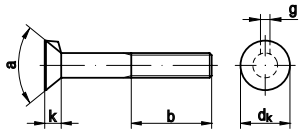
Dimensions	M 5	M 6	M 8	M 10	M 12	M 16	M 20
d_k	13.5	16.55	20.65	24.65	30.65	38.8	46.8
k	3.3	3.88	4.88	5.38	6.95	8.95	11.05
f	4.1	4.6	5.6	6.6	8.75	12.9	15.9
v	5.48	6.48	8.58	10.58	12.7	16.7	20.84
b_1	16	18	22	26	30	38	46
b_2	22	24	28	32	36	44	52
b_3	-	-	41	45	49	57	65

b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

Dimensions in stock:
Steel/Steel coated: 99 | Stainless steel: 447 | Non-ferrous materials: 574

DIN 604

Flat countersunk nib bolts



Dimensions	M 6	M 8	M 10	M 12	M 16	M 20	M 24
d_k	12.55	16.55	19.65	24.65	32.8	32.8	38.8
k	4	5	5.5	7	9	11.5	13
a	90°	90°	90°	90°	90°	60°	60°
g	2.5	3	3.2	3.6	4.2	5.4	6.6
b_1	18	22	26	30	38	46	54
b_2	24	28	32	36	44	52	60
b_3	-	41	45	49	57	65	73

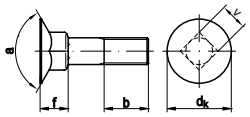
b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

Dimensions in stock:
Steel/Steel coated: 101

Other screws with metric thread

DIN 605

Flat countersunk square neck bolts with long square

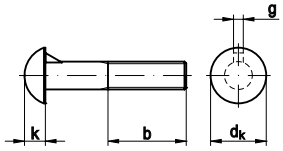


Dimensions	M 6	M 8	M 10
d_k	16.55	20.65	24.65
f	7.45	9.45	11.55
b	18	22	26
v	6.48	8.58	10.58
countersunk angle	120°	120°	120°

Dimensions in stock:
Steel/Steel coated: 102

DIN 607

Cub head nib bolts



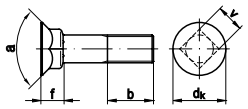
b^1 for l ≤ 125 mm
b^2 for l ≤ 200 mm
b^3 for l > 200 mm

Dimensions	M 8	M 10	M 12	M 16
d_k	16.55	19.65	24.65	30.65
k	6.38	7.45	9.65	11.75
g	3	3.2	3.6	4.2
b_1	22	26	30	38
b_2	28	32	36	44
b_3	–	–	–	57

Dimensions in stock:
Steel/Steel coated: 102

DIN 608

Flat countersunk square neck bolts with short square

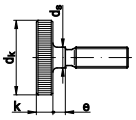


Dimensions	M 8	M 10	M 12	M 16
d_k	16	19.65	24.65	32
f	7	8.45	11.05	13.5
b	22	26	30	38
v	8	10.58	12.7	16
countersunk angle	90°	90°	90°	90°

Dimensions in stock:
Steel/Steel coated: 102

DIN 653

Knurled thumb screws, low type



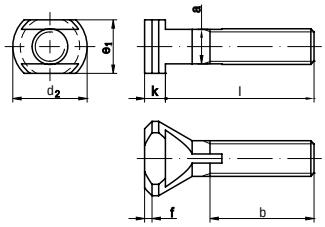
Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
∅ d_k	12	16	20	24	30	36
$k_{max.}$	2.5	3.5	4	5	6	8
∅ d_s	3	4	5	6	8	10
e	2	3	3	4	5	6

Dimensions in stock:
Steel/Steel coated: 104 | Stainless steel: 448

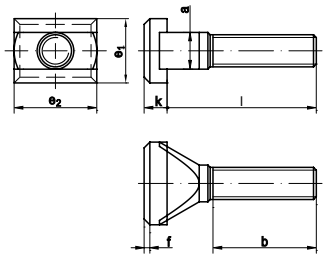
Other screws with metric thread

DIN 787

T-slot screws



head shape up to M 12x12



head shape from M 12x14*

*$e_2 \geq e_1$

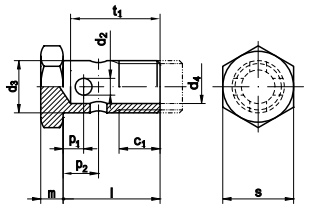
Dimensions	M 8	M 10	M 12	M 16
$a_{max.}$	7.7	9.7	11.7	15.7
l	32/40/50/ 65/80	32/40/50/ 65/100	40/50/65/80/100/ 125/200/250/320	65/80/10/ 125/160/ 200/250
b	20/30/35/ 40/45	20/30/35/ 40/60	30/35/40/ 50/60/70/ 100/120/120	40/50/60/ 70/80/ 100/120
e_1/d_2	13/16	15/20	18/25	25
f	1.6	1.6	2.5	2.5
k	6	6	7	9
for T-slots	8	10	12	16

Dimensions	M 16	M 20	M 24	M 24
$a_{max.}$	17.7	19.7	23.7	27.7
l	65/80/100/ 125/160/ 200/250	65/80/100/ 125/160/200/ 250/320/400	100/160/ 250/315	100/160/ 250/315
b	40/50/60/ 70/80/ 100/120	40/50/60/ 70/80/100 / 120/120/120	60/80 / 120/120	60/80/ 120/120
e_1/d_2	25	32	40	44
f	2.5	2.5	(4)	4
k	9	12	16	18
for T-slots	18	20	24	28

Dimensions in stock:
Steel/Steel coated: 107

DIN 7643

Hollow screws for ring type banjos short thread length



Dimensions	M 8x1	M 10x1	M 12x1.5	M 14x1.5
pipe ∅	4 und 5	5	8	10
c_1	8.5	8.5	11	11
l_1	17	19	24	26
t_1	15	17	22	24
b_2	–	2.8	3.5	4.5
d_3	8	10	12	14
d_4	4	5.5	7	9
m	5	6	6	6
p_1	–	4.5	5	5.5
p_2	–	6.5	8	9.5
s	12	14	17	19

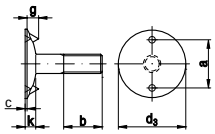
Dimensions	M 16x1.5	M 18x1.5	M 22x1.5	M 26x1.5
pipe ∅	12	15	18	22
c_1	11	11	13	13
l_1	28	32	39	45
t_1	26	29	35.5	41
b_2	5.5	7	9	11
d_3	16	18	22	26
d_4	11	13	16	20
m	6	6	7	7
p_1	6.5	7.5	9	10.5
p_2	11.5	14	18	22.5
s	22	24	27	32

Dimensions in stock:
Steel/Steel coated: 330

Other screws with metric thread

DIN 15237

Seating screws
for the attachment of components

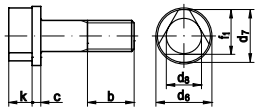


Dimensions	M 6	M 8	M 10	M 12
d_3	20	28	35	42
a	14	20	25	30
$c_{max.}$	1	1	1	1.2
g	3.5	5	6	7
k	2.5	3.5	4.5	5.2
l	20	25/30/35/40	30/35/40/50	35/40/50/60
b	12	15/18/18/20	18/20/20/20	20/25/28/28

Dimensions in stock:
Steel/Steel coated: 383

DIN 22424

Triangle head bolts
type A = with full shank

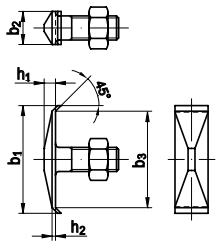


Dimensions	M 8	M 10	M 12
$c_{max.}$	1	1	1.2
k	3.5	4.5	5.2
$d_{6\ max.}$	15.2	18.2	
$d_{7\ min.}$	13.9	16.9	
$d_{8\ min.}$	9.3	11.8	
b	15/18/18/20	18/20/20/20	20/25/28/28
$f_{1\ min.}$	11.55	14.3	

Dimensions in stock:
Steel/Steel coated: 383

DIN 25193

Mushroom head anchor screws

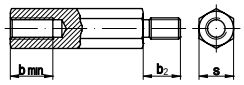


Dimensions	M 8	M 10
b_1	55	55
b_2	20	20
b_3	49	49
h_1	5	5
h_2	1.5	1.5

Dimensions in stock:
Steel/Steel coated: 383

Article 88086

Spacers with thread



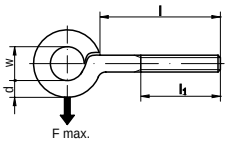
Dimensions	M 3	M 4	M 5	M 6
$b_{min.}$	2.5/3/3.5/ 5/6/7	5/6/8/9	11	10/15/16
b_2	6	8	10	13
s	5.5	7	8	10

Dimensions in stock:
Steel/Steel coated: 391

Other screws with metric thread

Article 88136

Screw eyes
type 48



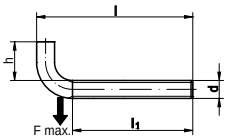
Dimensions	M 3	M 4	M 5	M 6
w	5	6	8	10
d	2.6	3.5	4.4	5.2
l	11/16	11/16/21/26/32/42	16/21/26/32/42/52/62	11/16/21/26/32/42/52/62/72/82
l_1	10/15	10/15/20/25/30/40	15/20/25/30/40/50/60	10/15/20/25/30/40/50/60/70/80
$F_{max.}$	7.50 kg	12.50 kg	20 kg	35 kg

Dimensions	M 8	M 10	M 12	
w	12	14	18	
d	7	8.9	10.6	
l	21/26/32/42/52/62/82/102	32/42/52/62/72/82/102	102	
l_1	20/25/30/40/50/60/80/100	30/40/50/60/80/70/100	100	
$F_{max.}$	50 kg	100 kg	175 kg	

Dimensions in stock:
Steel/Steel coated: 413 | Stainless steel: 559

Article 88138

Straight screw hooks
type 4E

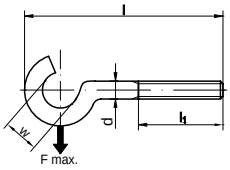


Dimensions	M 4	M 5	M 6	M 8
h	10	12	14	18
d	3.5	4.4	5.2	7
l	40	50	60	60
l_1	25	35	45	45
$F_{max.}$	12.5 kg	20 kg	35 kg	50 kg

Dimensions in stock:
Steel/Steel coated: 415

Article 88142

Cup hooks
type 11E



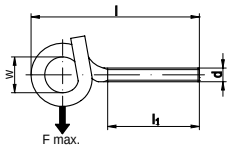
Dimensions	M 4	M 5	M 6	M 8
w	12/16	16	18	22
d	3.5	4.4	5.2	7
l	40/50	50/60	50/60	70/80
l_1	20/25	23/30	20/30	32/42
$F_{max.}$	9 kg	12.50 kg	25 kg	40 kg

Dimensions in stock:
Steel/Steel coated: 415

Other screws with metric thread

Article 88145

Heavy ceiling hooks
type 18E



Dimensions	M 10	M 12	M 12
w	22	22	22
d	8.9	10.6	10.6
l	120/140	160	180
l_1	73	93	115
$F_{max.}$	125 kg	175 kg	175 kg

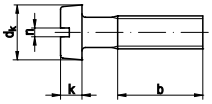
Dimensions in stock:
Steel/Steel coated: 416

Slotted and cross recessed screws with metric thread

ISO 1207

similar DIN 84

Slotted cheese head screws



Dimensions	M 1	M 1.2	M 1.4	M 1.6	M 1.8	M 2	M 2.5
d_k	2	2.3	2.6	3	3.4	3.8	4.5
k	0.7	0.8	0.9	1.1	1.2	1.3	1.6
n	0.25	0.3	0.3	0.4	0.4	0.5	0.6
b	25	25	25	25	25	25	25

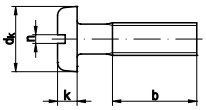
Dimensions	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
d_k	5.5	6	7	8.5	10	13	16
k	2	2.4	2.6	3.3	3.9	5	6
n	0.8	1	1.2	1.2	1.6	2	2.5
b	25	38	38	38	38	38	38

Dimensions in stock:
Steel/Steel coated: 194, 61 | Stainless steel: 481, 429 | Non-ferrous materials: 582, 565

ISO 1580

similar DIN 85

Slotted pan head screws

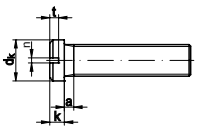


Dimensions	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8
d_k	4	5	6	8	10	12	16
k	1.3	1.5	1.8	2.4	3	3.6	4.8
n	0.5	0.6	0.8	1.2	1.1	1.6	2
b	25	25	25	38	38	38	38

Dimensions in stock:
Steel/Steel coated: 209, 63 | Stainless steel: 487, 431 | Non-ferrous materials: 585, 566

DIN 920

Slotted pan head screws with small head



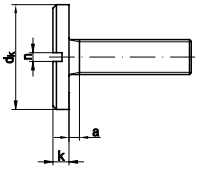
Dimensions	M 3	M 4	M 5
$a_{max.}$	1	1.4	1.6
d_k	4	5.5	6.5
k	1.8	2.4	2.7
n	0.5	0.6	0.8
$t_{max.}$	1.15	1.5	1.6

Dimensions in stock:
Steel/Steel coated: 135

Slotted and cross recessed screws with metric thread

DIN 921

Slotted pan head screws with large head

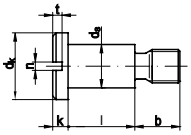


Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
$a_{max.}$	1	1.4	1.6	2	2.5	3
d_k	8	12	16	20	25	30
k	1.8	2.4	2.7	3.1	3.8	4.6
n	0.8	1	1.2	1.6	2	2.5
$t_{max.}$	1.15	1.5	1.6	1.9	2.4	2.8

Dimensions in stock:
Steel/Steel coated: 135

DIN 923

Slotted pan head screws with shoulder

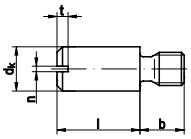


Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
d_k	7	8.5	11	13	16	20
k	1.8	2.4	2.7	3.1	3.8	4.6
b	4.5	6	7	9	11	13.5
d_s	4	5.5	7	8	10	13

Dimensions in stock:
Steel/Steel coated: 136 | Stainless steel: 458

DIN 927

Slotted shoulder screws



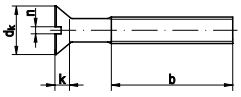
Dimensions	M 3	M 4	M 5	M 6	M 8
d_k	4	5.5	6.5	8	10
b	4.5	6	7	8	11
n	0.5	0.6	0.8	1	1.2
$t_{max.}$	1.05	1.42	1.63	2	1.9

Dimensions in stock:
Steel/Steel coated: 136

ISO 2009

replaces DIN 963

Slotted countersunk head screws



Dimensions	M 1	M 1.2	M 1.4	M 1 ,6	M 2	M 2.5
$d_{k\ ISO/DIN}$	1.9	2.3	2.6	3	3.8	4.7
$k_{\ ISO/DIN}$	0.6	0.72	0.84	1/0.96	1.2	1.5
b*	1)	1)	1)	15	16	18
n	0.25	0.3	0.3	0.4	0.5	0.6

Dimensions	M 3	M 3.5	M 4	M 5	M 6	M 8
$d_{k\ ISO/DIN}$	5.5/5.6	7.3/6.5	8.4/7.5	9.3/9.2	11.3/11	15.8/14.5
$k_{\ ISO/DIN}$	1.65	2.35/1.93	2.7/2.2	2.7/2.5	3.3/3	4.65/4
b*	19	38	22	25	28	34
n	0.8	1	1.2	1.2	1.6	2

Dimensions	M 10	M 12	M 16	M 20		
$d_{k\ ISO/DIN}$	18.3/18	22	29	36		
$k_{\ ISO/DIN}$	5	6	8	10		
b*	40	46	58	70		
n	2.5	3	4	5		

* minimum lengths
1) only with thread up to near the head

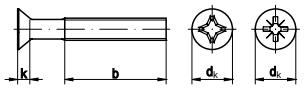
Dimensions in stock:
Steel/Steel coated: 212, 177 | Stainless steel: 489, 471 | Non-ferrous materials: 586, 580

Slotted and cross recessed screws with metric thread

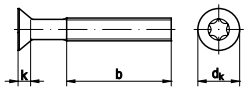
ISO 7046

replaces DIN 965

Countersunk head screws



with Phillips cross recess H
with Pozidriv cross recess Z



with hexalobular socket

* minimum length

Dimensions	M 1 ,6	M 2	M 2.5	M 3	M 4
$d_{k\ ISO/DIN}$	3	3.8	4.7	5.5/5.6	8.4/7.5
$k_{\ ISO/DIN}$	1/0.96	1.2	1.5	1.65	2.7/2.2
b*	15	16	18	19	22
n	0.4	0.5	0.6	0.8	1
cross recess size	0	1	1	1	2
ISR	T5	T6	T8	T10	T20

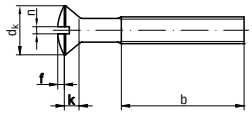
Dimensions	M 5	M 6	M 8	M 10
$d_{k\ ISO/DIN}$	9.3/9.2	11.3/11	15.8/14.5	18.3/18
$k_{\ ISO/DIN}$	2.7/2.5	3.3/3	4.65/4	5
b*	25	28	34	40
n	1.2	1.6	2	2.5
cross recess size	2	3	4	4
ISR	T25	T30	T40	T50

Dimensions in stock:
Steel/Steel coated: 308, 180 | Stainless steel: 526, 474

ISO 2010

replaces DIN 964

Slotted raised countersunk head screws



Dimensions	M 2	M 2.5	M 3	M 4
$d_{k\ ISO/DIN}$	3.8	4.7	5.6	8.4/7.5
$k_{\ ISO/DIN}$	1.2	1.5	1.65	2.7/2.2
b	16	18	19	22
f	0.5	0.6	0.75	1
n	0.5	0.6	0.8	1

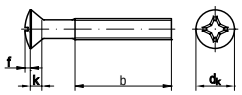
Dimensions	M 5	M 6	M 8	M 10
$d_{k\ ISO/DIN}$	9.3/9.2	11.3/11	15.8/14.5	18.3/18
$k_{\ ISO/DIN}$	2.7/2.5	3.3/3	4.65/4	5
b	25	28	34	40
f	1.25	1.5	2	2.5
n	1.2	1.6	2	2.5

Dimensions in stock:
Steel/Steel coated: 214, 179 | Stainless steel: 491, 473 | Non-ferrous materials: 587, 581

ISO 7047

replaces DIN 966

Raised countersunk head screws with Phillips cross recess H



Dimensions	M 2.5	M 3	M 4	M 5	M 6	M 8
$d_{k\ ISO/DIN}$	4.7	5.6	8.4/7.5	9.3/9.2	11.3/11	15.8/14.5
$k_{\ ISO/DIN}$	1.5	1.65	2.7/2.2	2.7/2.5	3.3(3	4.65/4
b	18	19	22	25	28	34
f	0.6	0.75	1	1.25	1.5	2
n	0.6	0.8	1	1.2	1.6	2
cross recess size	1	1	2	2	3	4

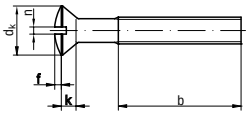
Dimensions in stock:
Steel/Steel coated: 310, 182 | Stainless steel: 528, 477

Slotted and cross recessed screws with metric thread

ISO 2010

replaces DIN 964

Slotted raised countersunk head screws



Dimensions	M 2	M 2.5	M 3	M 4
$d_{k\ ISO/DIN}$	3.8	4.7	5.6	8.4/7.5
$k_{\ ISO/DIN}$	1.2	1.5	1.65	2.7/2.2
b	16	18	19	22
f	0.5	0.6	0.75	1
n	0.5	0.6	0.8	1

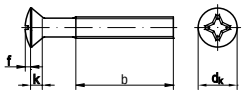
Dimensions	M 5	M 6	M 8	M 10
$d_{k\ ISO/DIN}$	9.3/9.2	11.3/11	15.8/14.5	18.3/18
$k_{\ ISO/DIN}$	2.7/2.5	3.3/3	4.65/4	5
b	25	28	34	40
f	1.25	1.5	2	2.5
n	1.2	1.6	2	2.5

Dimensions in stock:
Steel/Steel coated: 214, 179 | Stainless steel: 491, 473 | Non-ferrous materials: 587, 581

ISO 7047

replaces DIN 966

Raised countersunk head screws with Phillips cross recess H



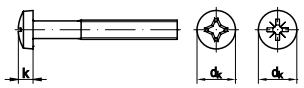
Dimensions	M 2.5	M 3	M 4	M 5	M 6	M 8
$d_{k\ ISO/DIN}$	4.7	5.6	8.4/7.5	9.3/9.2	11.3/11	15.8/14.5
$k_{\ ISO/DIN}$	1.5	1.65	2.7/2.2	2.7/2.5	3.3(3	4.65/4
b	18	19	22	25	28	34
f	0.6	0.75	1	1.25	1.5	2
n	0.6	0.8	1	1.2	1.6	2
cross recess size	1	1	2	2	3	4

Dimensions in stock:
Steel/Steel coated: 310, 182 | Stainless steel: 528, 477

ISO 7045

similar DIN 7985

Pan head screws with cross recess



with Phillips cross recess H
with Pozidriv cross recess Z

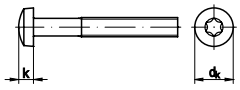
Dimensions	M 1.6	M 2	M 2.5	M 3
d_k	3.2	4	5	6
k	1.3	1.6	2	2.4
cross recess size	0	1	1	1

Dimensions in stock:
Steel/Steel coated: 342 | Stainless steel: 541

ISO 14583

~DIN 7985

Hexalobular socket pan head screws



Dimensions	M 1.6	M 2	M 2.5	M 3	M 4
d_k	3.2	4	5	6	8
k	1.3	1.6	2	2.4	3.1
ISR	T5	T6	T8	T10	T20

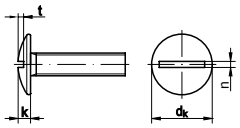
Dimensions	M 5	M 6	M 8	M 10	
d_k	10	12	16	20	
k	3.8	4.6	6	7.5	
ISR	T25	T30	T45	T50	

Dimensions in stock:
Steel/Steel coated: 380, 344 | Stainless steel: 549, 542

Slotted and cross recessed screws with metric thread

Article 88107

Slotted mushroom head screws with thread up to head



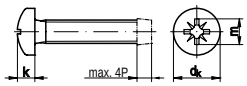
Dimensions	M 5	M 6	M 8
d_k	12	15	19
k	2.8	3.3	4.3
$n_{min.}$	1.3	1.6	1.8
t	1.5	2	2.7

Dimensions in stock:
Steel/Steel coated: 408 | Stainless steel: 556

Tapping screws, thread rolling screws and thread cutting screws

DIN 7500 C

Thread rolling screws with metric thread and Pozidriv cross recess Z
type C = pan head acc. to DIN 7985

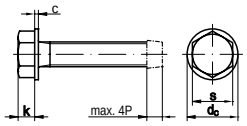


Dimensions	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8
max. groove section	1.6	1.8	2	2.4	2.8	3.2	4	5
cross recess size	1	1	1	2	2	2	3	4
$d_{k\ max.}$	4	5	6	7	8	10	12	16
$k_{max.}$	1.6	2	2.4	2.7	3.1	3.8	4.6	6

Dimensions in stock:
Steel/Steel coated: 325

DIN 7500 ~D

Thread rolling screws with metric thread
~ type D = hexagon head with collar

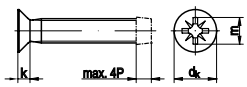


Dimensions	M 4	M 5	M 6	M 8
max. groove section	2.8	3.2	4	5
s	7	8	10	13
d_c	8.1	10.1	12.6	16.4
c	0.55	0.75	0.9	1.2
k	3.1	3.8	4.6	6

Dimensions in stock:
Steel/Steel coated: 326

DIN 7500 M

Thread rolling screws with metric thread and Pozidriv cross recess Z
type M = countersunk head acc. to DIN 965



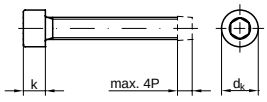
Dimensions	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8
max. groove section	1.6	1.8	2	2.4	2.8	3.2	4	5
cross recess size	1	1	1	2	2	2	3	4
$d_{k\ max.}$	3.5	4.7	5.6	6.5	7.5	9.2	11	14.5
$k_{max.}$	1.2	1.5	1.65	1.93	2.2	2.5	3	4

Dimensions in stock:
Steel/Steel coated: 326

Tapping screws, thread rolling screws and thread cutting screws

DIN 7500 E

Thread rolling screws with metric thread
type E = hexagon socket head cap
acc. to DIN 912

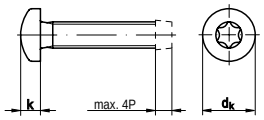


Dimensions	M 4	M 5	M 6	M 8
$d_{K\ max.}$	7	8.5	10	13
$k_{max.}$	4	5	6	8
s	2.5	3	4	5

Dimensions in stock:
Steel/Steel coated: 326

DIN 7500 CE/PE

Drilling screws
with tapping screw thread
type K = hexagon head with collar
acc. to DIN 6928

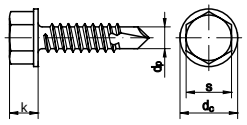


Dimensions	M 3	M 4	M 5	M 6	M 8
$d_{K\ max.}$	5.6	8	9.50	12	16
$d_{p\ max.}$	2.4	3.1	3.7	4.6	6
$d_{c\ max}$	T10	T20	T25	T30	T40

Dimensions in stock:
Steel/Steel coated: 325

DIN 7504 K

Drilling screws
with tapping screw thread
type K = hexagon head with collar acc. to
DIN 6928



Dimensions	St 2.9	St 3.5	St 3.9	St 4.2
f. sheet thicknesses	0.7 to 0.19	0.7 to 2.25	0.7 to 2.4	1.75 to 3.0
$d_{p\ max.}$	2.3	2.8	3.1	3.6
$d_{c\ max.}$	6.3	8.3	8.3	8.8
$k_{max.}$	2.8	3.4	3.4	4.1
s	4	5.5	5.5	7

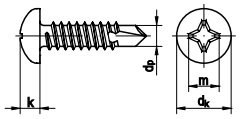
Dimensions	St 4.8	St 5.5	St 6.3	
f. sheet thicknesses	1.75 to 4.4	1.75 to 5.25	2.0 to 6.0	
$d_{p\ max.}$	4.1	4.8	5.8	
$d_{c\ max.}$	10.5	11	13.5	
$k_{max.}$	4.3	5.4	5.9	
s	8	8	10	

Dimensions in stock:
Steel/Steel coated: 327

Tapping screws, thread rolling screws and thread cutting screws

DIN 7504 N

Drilling screws
with tapping screw thread
and Phillips cross recess H
type N = pan head acc. to DIN 7981



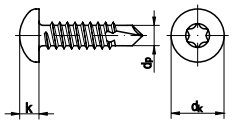
Dimensions	St 2.9	St 3.5	ST 3.9	St 4.2
f. sheet thicknesses	0.7 to 1.9	0.7 to 2.25	0.7 to 2.4	1.75 to 3.0
$d_{p\ max.}$	2.3	2.8	3.1	3.6
$d_{k\ max.}$	5.6	6.9	7.5	8.2
$k_{max.}$	2.2	2.6	2.8	3.05
cross recess size	1	2	2	2

Dimensions	St 4.8	St 5.5	St 6.3	
f. sheet thicknesses	1.75 to 4.4	1.75 to 5.25	2.0 to 6.0	
$d_{p\ max.}$	4.1	4.8	5.8	
$d_{k\ max.}$	9.5	10.8	12.5	
$k_{max.}$	3.7	4	4.6	
cross recess size	2	3	3	

Dimensions in stock:
Steel/Steel coated: 327

DIN 7504 N

Drilling screws
with tapping screw thread
and hexalobular socket
type N = pan head acc. to ISO 14583



* not standardized, reference values

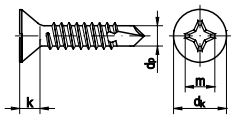
Dimensions	ST 2.9	ST 3.5	ST 3.9*	ST 4.2
f. sheet thicknesses	0.7 to 1.9	0.7 to 2.25	0.7 to 2.4	1.75 to 3.0
$d_{p\ max.}$	2.3	2.8	3.2	3.6
$d_{K\ max.}$	5.6	7	7.5	8
$k_{max.}$	2.4	2.6	2.8	3.1
ISR size	T10	T15	T20	T20

Dimensions	ST 4.8	ST 5.5	ST 6.3	
f. sheet thicknesses	1.75 to 4.4	1.75 to 5.25	2.0 to 6.0	
$d_{p\ max.}$	4.1	4.8	5.8	
$d_{K\ max.}$	9.5	11	12	
$k_{max.}$	3.7	4	4.6	
ISR size	T25	T25	T30	

Dimensions in stock:
Steel/Steel coated: 327

DIN 7504 P

Drilling screws
with tapping screw thread
and Phillips cross recess H
type P = countersunk head acc. to DIN 7982



countersunk head = 80°

Dimensions	ST 2.9	ST 3.5	ST 3.9	ST 4.2
f. sheet thicknesses	0.7 to 1.9	0.7 to 2.25	0.7 to 2.4	1.75 to 3.0
$d_{p\ max.}$	2.3	2.8	3.2	3.6
$d_{K\ max.}$	5.5	6.8	7.5	8.1
$k_{max.}$	1.7	2.1	2.3	2.5
cross recess size	1	2	2	2

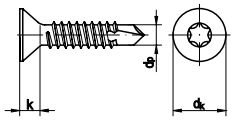
Dimensions	ST 4.8	ST 5.5	ST 6.3	
f. sheet thicknesses	1.75 to 4.4	1.75 to 5.25	2.0 to 6.0	
$d_{p\ max.}$	4.1	4.8	5.8	
$d_{K\ max.}$	9.5	10.8	12.4	
$k_{max.}$	3.0	3.4	3.8	
cross recess size	2	3	3	

Dimensions in stock:
Steel/Steel coated: 328

Tapping screws, thread rolling screws and thread cutting screws

DIN 7504 P

Drilling screws with tapping screw thread and hexalobular socket
type P = countersunk head acc. to DIN 7982



countersunk head = 80°

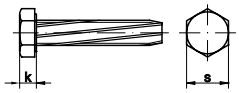
Dimensions	ST 2.9	ST 3.5	ST 3.9	ST 4.2
f. sheet thicknesses	0.7 to 1.9	0.7 to 2.25	0.7 to 2.4	1.75 to 3.0
$d_{p\ max.}$	2.3	2.8	3.2	3.6
$d_{K\ max.}$	5.5	6.8	7.5	8.1
$k_{max.}$	1.7	2.1	2.3	2.5
ISR size	T10	T15	T20	T20

Dimensions	ST 4.8	ST 5.5	ST 6.3	
f. sheet thicknesses	1.75 to 4.4	1.75 to 5.25	2.0 to 6.0	
$d_{p\ max.}$	4.1	4.8	5.8	
$d_{K\ max.}$	9.5	10.8	12.4	
$k_{max.}$	3	3.4	3.8	
ISR size	T25	T25	T30	

Dimensions in stock:
Steel/Steel coated: 328

DIN 7513 A

Thread cutting screws
type A = hexagon head acc. to DIN 933



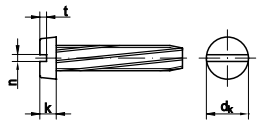
* for materials with medium property classes

Dimensions	M 4	M 5	M 6	M 8
s	7	8	10	13
k	2.8	3.5	4	5.3
core hole ∅*	3.6	4.5	5.5	7.4

Dimensions in stock:
Steel/Steel coated: 328

DIN 7513 B

Thread cutting screws
type B = slotted cheese head acc. to DIN 84



* for materials with medium property classes

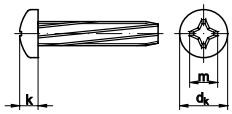
Dimensions	M 3	M 4	M 5	M 6
$d_{k\ max.}$	5.5	7	8.5	10
k	2	2.6	3.3	3.9
n	0.8	1.2	1.2	1.6
$t_{min.}$	0.85	1.1	1.3	1.6
core hole ∅*	2.7	3.6	4.5	5.5

Dimensions in stock:
Steel/Steel coated: 329

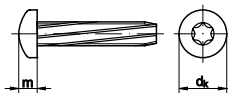
Tapping screws, thread rolling screws and thread cutting screws

DIN 7516 A

Thread cutting screws
type A = pan head acc. to DIN 7985



with Phillips cross recess H



with hexalobular socket

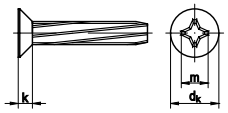
Dimensions	M 3	M 4	M 5	M 6	M 8
$d_{k\ max.}$	6	8	10	12	16
$k_{max.}$	2.4	3.1	3.8	4.6	6
cross recess size	1	2	2	3	4
ISR	T10	T20	T25	T30	T40
core hole ∅*	2.7	3.6	4.5	5.5	7.4

* for materials with medium property classes

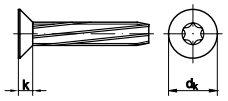
Dimensions in stock:
Steel/Steel coated: 329

DIN 7516 D

Thread cutting screws
type D = countersunk head acc. to DIN 965



with Phillips cross recess H



with hexalobular socket

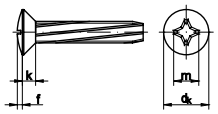
Dimensions	M 3	M 4	M 5	M 6	M 8
$d_{k\ max.}$	5.6	7.5	9.2	11	14.5
$k_{max.}$	1.65	2.2	2.5	3	4
cross recess size	1	2	2	3	4
ISR	T10	T20	T25	T30	T40

* for materials with medium property classes

Dimensions in stock:
Steel/Steel coated: 329

DIN 7516 E

Thread cutting screws
with Phillips cross recess H
type E = raised countersunk head acc. to DIN 966



* for materials with medium property classes

Dimensions	M 3	M 4	M 5	M 6	M 7
$d_{k\ max.}$	5.6	7.5	9.2	11	14.5
f	0.75	1	1.25	1.5	2
$k_{max.}$	1.65	2.2	2.5	3	4
cross recess size	1	2	2	3	4
core hole ∅*	2.7	3.6	4.5	5.5	7.4

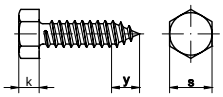
Dimensions in stock:
Steel/Steel coated: 329

Tapping screws, thread rolling screws and thread cutting screws

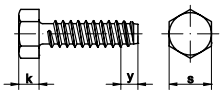
ISO 1479

replaces DIN 7976

Hexagon head tapping screws



type C = with cone end



type F = with flat end

Dimensions	ST 2.9	ST 3.5	ST 3.9	ST 4.2
$k_{ISO/DIN}$	2.3/1.5	2.6/2.3	2.3	3/2.8
s	5	5.5	7	7
$y_{type\ C}$	2.6	3.2	3.5	3.7
$y_{type\ F}$	–	–	–	2.8

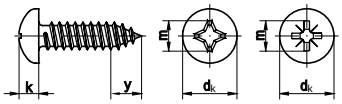
Dimensions	ST 4.8	ST 5.5	ST 6.3	ST 8
$k_{ISO/DIN}$	3.8/3	4.1/4	4.7/4.8	6/5.8
s	7	8	10	13
$y_{type\ C}$	4.2	5	6	7.5
$y_{type\ F}$	3.2	–	3.6	–

Dimensions in stock:
Steel/Steel coated: 203, 333 | Stainless steel: 486, 536

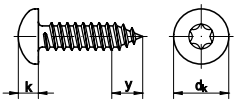
ISO 7049, 14585

replaces DIN 7981

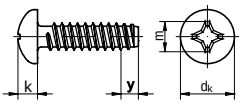
Pan head tapping screws with cross recess or hexalobular socket



type C–H = with cone end and Phillips cross recess H
type C–Z = with cone end and Pozidriv cross recess Z



type C–ISR = with cone end and hexalobular drive



type F–H = with flat end and Phillips cross recess H

* dimension not ISO standardized, values from DIN 7981

Dimensions	ST 2.2	ST 2.9	ST 3.5	ST 3.9*
$d_{k\ ISO/DIN}$	4/4.2	5.6	7/6.9	7.5
$k_{max.\ ISO/DIN}$	1.6/1.8	2.4/2.2	2.6	2.8
cross recess size	1	1	2	2
ISR	T6	T10	T15	T15
$y_{type\ C}$	2	2.6	3.2	3.5
$y_{type\ F}$	1.6	2.1	2.5	2.7

Dimensions	ST 4.2	ST 4.8	ST 5.5	ST 6.3
$d_{k\ ISO/DIN}$	8/8.2	9.5	11/10.8	12/12.5
$k_{max.\ ISO/DIN}$	3.1/3.05	3.7/3.5	4/3.95	4.6/4.55
cross recess size	2	2	3	3
ISR	T20	T25	T25	T30
$y_{type\ C}$	3.7	4.2	5	6
$y_{type\ F}$	2.8	3.2	3.6	3.6

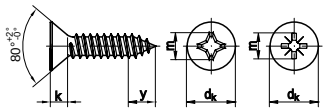
Dimensions in stock:
Steel/Steel coated: 310, 380, 335 | Stainless steel: 529, 550, 537

Tapping screws, thread rolling screws and thread cutting screws

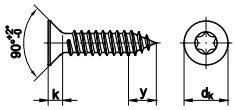
ISO 7050, 14586

replaces DIN 7982

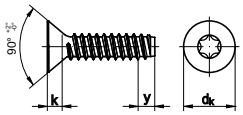
Countersunk head tapping screws with cross recess or hexalobular drive



type C-H = with cone end and Phillips cross recess H
type C-Z = with cone end and Pozidriv cross recess Z



type C-ISR = with cone end and hexalobular drive



type F-ISR = with flat end and hexalobular drive

assembly instructions ➔ TI-184

Dimensions	ST 2.2	ST 2.9	ST 3.5	ST 3.9
$d_{k\ ISO/DIN}$	3.8/4.3	5.5	7.3/6.8	-/7.5
$k_{max.\ ISO/DIN}$	1.1/1.3	1.7	2.35/2.1	-/2.3
cross recess size	0	1	2	2
ISR	-	10	15	15
$y_{type\ C}$	2	2.6	3.2	3.2
$y_{type\ F}$	1.6	2.1	2.5	2.7

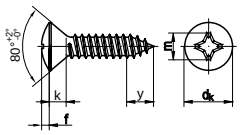
Dimensions	ST 4.2	ST 4.8	ST 5.5	ST 6.3
$d_{k\ ISO/DIN}$	8.4/8.1	9.3/9.5	10.3/10.8	11.3/12.4
$k_{max.\ ISO/DIN}$	2.6/2.5	2.8/3	3/3.4	3.15/3.8
cross recess size	2	2	3	3
ISR	20	25	25	30
$y_{type\ C}$	3.7	4.3	5	6
$y_{type\ F}$	2.8	3.2	3.6	3.6

Dimensions in stock:
Steel/Steel coated: 312, 381, 338 | Stainless steel: 530, 550, 538

ISO 7051

replaces DIN 7983

Countersunk head tapping screws with Phillips cross recess H
type C = with cone end



* dimensions acc. to DIN 7983

Dimensions	ST 2.9	ST 3.5	ST 3.9*	ST 4.2
$d_{k\ ISO/DIN}$	5.5	7.3/6.8	-/7.5	8.4/8.1
$k_{max.\ ISO/DIN}$	1.7/1.7	2.35/2.1	-/2.3	2.6/2.5
cross recess size	1	2	2	2
$y_{type\ C}$	2.6	3.2	3.5	3.7

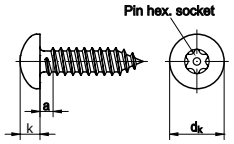
Dimensions	ST 4.8	ST 5.5	ST 6.3	
$d_{k\ ISO/DIN}$	9.3/9.5	10.3/10.8	11.3/12.4	
$k_{max.\ ISO/DIN}$	2.8/3	3/3.4	3.15/3.8	
cross recess size	2	3	3	
$y_{type\ C}$	4.3	5	6	

Dimensions in stock:
Steel/Steel coated: 313, 339 | Stainless steel: 530, 539

Tapping screws, thread rolling screws and thread cutting screws

Article 88114

Theft resistant screws with raised head and hex. socket drive
type C = with cone end

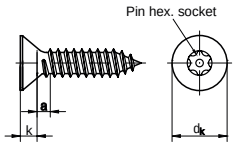


Dimensions	ST 3.5	ST 4.2	ST 4.8	ST 5.5	ST 6.3
d_k	6.9	8.2	9.5	10.8	12.5
k	2.6	3.05	3.55	3.95	4.55
$a_{max.}$	1.3	1.4	1.6	1.8	1.8
Pin – ISR – size	T10	T15	T25	T27	T27

Dimensions in stock:
Stainless steel: 557

Article 88115

Theft resistant screws with countersunk head and hex. socket drive
type C = with cone end

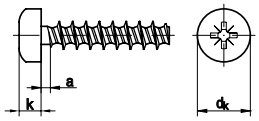


Dimensions	ST 2.9	ST 3.5	ST 4.2	ST 4.8	ST 5.5	ST 6.3
d_k	5.5	6.8	8.1	9.5	10.8	12.4
k	1.7	2.1	2.5	3	3.4	3.8
$a_{max.}$	1.1	1.3	1.4	1.6	1.8	1.8
Pin – ISR – size	T10	T15	T20	T25	T27	T30

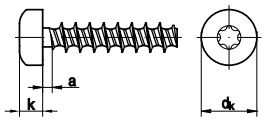
Dimensions in stock:
Stainless steel: 557

Article 88200

Pan head screws with thread for plastic (thermoplastics)



with Pozidriv cross recess Z



with hexalobular socket

Dimensions	2.2	2.5	3	3.5
dk KS /ISR	3.9/4	4.4/4.2	5.3/5.6	6.1/6.9
k CR/ISR	1.5/1.5	1.7/1.6	2/2.1	2.5/2.3
a_1	2.2	2.5	3	3.5
a_2	1.1	1.3	1.5	1.8
cross recess size	1	1	1	1
ISR size	T6	T8	T10	T10

Dimensions	4	5	6	
dk KS /ISR	7/7.5	8.8/8.2	10.5/10.8	
k CR/ISR	2.7/2.6	3.4/2.9	4/3.8	
a_1	4	6	7	
a_2	2	3	3.5	
cross recess size	2	2	2	
ISR size	T20	T20	T25	

a_1 for (L > 3xd)
a_2 for (L > 3xd)

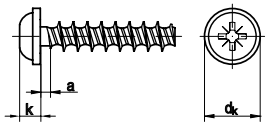
ISR = hexalobular socket
CR = cross recess

Dimensions in stock:
Steel/Steel coated: 416, 416

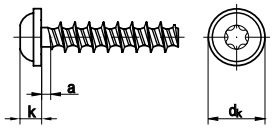
Tapping screws, thread rolling screws and thread cutting screws

Article 88202

Pan head screws with collar with screw thread for plastic (thermoplastics)



with Pozidriv cross recess Z



with hexalobular socket

a_1 for (L > 3xd)
a_2 for (L > 3xd)

ISR = hexalobular socket
CR = cross recess

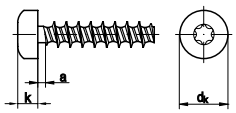
Dimensions	2.2	2.5	3	3.5
$d_{k\ KS/ISR}$	4.4/4.5	5	6	7
$k_{\ CR/ISR}$	1.6/1.4	1.8/1.5	2.1	2.4
a_1	2.2	2.5	3	3.5
a_2	1.1	1.3	1.5	1.8
cross recess size	1	1	1	1
ISR size	T6	T6	T10	T10

Dimensions	4	5	6	
$d_{k\ KS/ISR}$	8	10	12	
$k_{\ CR/ISR}$	2.5/2.6	3.2/3.3	4/3.6	
a_1	4	6	7	
a_2	2	3	3.5	
cross recess size	2	2	2	
ISR size	T20	T20	T25	

Dimensions in stock:
Steel/Steel coated: 416, 416

Article 88203

Pan head screws with screw thread for plastic (thermoplastics), with hexalobular socket
RSTplus = higher preloads



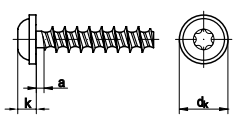
Dimensions	2.2	2.5	3	3.5
d_k	3.9	4.4	5.3	6.1
k	1.6	1.9	2.3	2.7
$a_{max.}$	1.1	1.3	1.5	1.8
ISR size	T6	T8	T10	T15

Dimensions	4	5	6	
d_k	7	8.8	10.5	
k	3.1	3.5	4.2	
$a_{max.}$	2	2.5	3	
ISR size	T20	T25	T30	

Dimensions in stock:
Steel/Steel coated: 417

Article 88204

Pan head screws with collar with screw thread for plastic (thermoplastics), with hexalobular socket
RSTplus = higher preloads



Dimensions	2.2	2.5	3	3.5
d_k	5	5.5	6.5	7.5
k	1.6	1.9	2.3	2.7
$a_{max.}$	1.1	1.3	1.5	1.8
ISR size	T6	T8	T10	T15

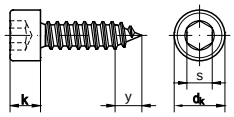
Dimensions	4	5	6	
d_k	9	11	13.5	
k	3.1	3.5	4.2	
$a_{max.}$	2	2.5	3	
ISR size	T20	T25	T30	

Dimensions in stock:
Steel/Steel coated: 417

Tapping screws, thread rolling screws and thread cutting screws

Article 88312

Cylindrical head tapping screws with hexagon socket
type C = with cone end

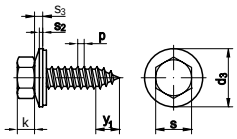


Dimensions	ST 4.8	ST 5.5	ST 6.3
d_k	8.5	10	10
k	5	6	6
s	4	5	5
y~	4.3	5	6

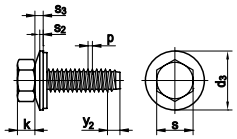
Dimensions in stock:
Stainless steel: 536

Article 88176, 88276

Tapping screws for facing with assembled sealing washer



88176 type A = with cone end



88276 type BZ = with flat end

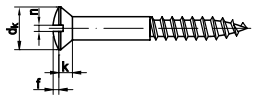
Dimensions	88176 6.5
s	3/8 “
k	4
p	2.54
y_1	6
y_2	–
$d_{3\ (washer)}$	16/18*
$s_{2\ (washer)}$	1
$s_{3\ (washer)}$	2
f. sheet thicknesses	0.60 – 1.50
for drilling ∅	4.5

Dimensions in stock:
Stainless steel: 560, 560

Wood screws

DIN 95

Slotted raised countersunk head wood screws



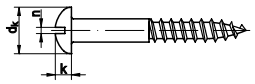
Dimensions	1.6	2	2.5	3	3.5
d_k	3	3.8	4.7	5.6	6.5
k	0.96	1.2	1.5	1.65	1.93
f	0.4	0.5	0.6	0.75	0.9
n	0.4	0.5	0.6	0.8	0.8

Dimensions	4	4.5	5	6	8
d_k	7.5	8.3	9.2	11	14.5
k	2.2	2.35	2.5	3	4
f	1	1.1	1.25	1.5	2
n	1	1	1.2	1.6	2

Dimensions in stock:
Steel/Steel coated: 66 | Stainless steel: 433 | Non-ferrous materials: 567

DIN 96

Slotted round head wood screws



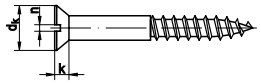
Dimensions	1.6	2	2.5	3	3.5
d_k	3.2	4	5	6	7
k	1.1	1.4	1.7	2.1	2.4
n	0.4	0.5	0.6	0.8	0.8

Dimensions	4	4.5	5	6	8
d_k	8	9	10	12	16
k	2.8	3.1	3.5	4.2	5.6
n	1	1	1.2	1.6	2

Dimensions in stock:
Steel/Steel coated: 66 | Stainless steel: 434 | Non-ferrous materials: 568

DIN 97

Slotted countersunk head wood screws



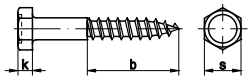
Dimensions	1.6	2	2.5	3	3.5	4
d_k	3	3.8	4.7	5.6	6.5	7.5
k	0.96	1.2	1.5	1.65	1.93	2.2
n	0.4	0.5	0.6	0.8	0.8	1

Dimensions	4.5	5	5.5	6	7	8
d_k	8.3	9.2	10.2	11	12.5	14.5
k	2.35	2.5	2.75	3	3.5	4
n	1	1.2	1.2	1.6	2	2

Dimensions in stock:
Steel/Steel coated: 66 | Stainless steel: 434 | Non-ferrous materials: 569

DIN 571

Hexagon head wood screws



Dimensions	5	6	7	8
b	> 0.6 l	> 0.6 l	> 0.6 l	> 0.6 l
k	3.5	4	5	5.5
s	8	10	12	13

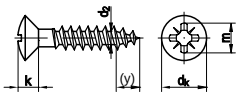
Dimensions	10	12	16	20
b	> 0.6 l	> 0.6 l	> 0.6 l	> 0.6 l
k	7	8	10	13
s	17	19	24	30

Dimensions in stock:
Steel/Steel coated: 93 | Stainless steel: 445

Chipboard screws

Article 88095

Chipboard screws with countersunk head and Pozidriv cross recess Z

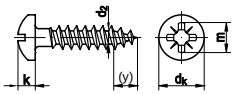


Dimensions	ST 3.5	ST 4
d_k	7	8
$k_{min.}$	2.1	2.4
d_2	2.5	2.67
cross recess size	2	2

Dimensions in stock:
Non-ferrous materials: 596

Article 88096

Chipboard screws with round head and Pozidriv cross recess Z

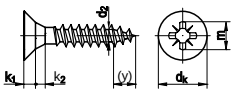


Dimensions	ST 3	ST 3.5	ST 4	ST 4.5	ST 5	ST 6
d_2	1.9	2.5	2.67	2.7	3	3.7
d_k	6	7	8	9	10	12
$k_{1\ max.}$	2.25	2.6	2.8	3	3.5	4.1
y	3	3.4	4	4.3	4.8	5.7
cross recess size	1	2	2	2	2	3

Dimensions in stock:
Steel/Steel coated: 404 | Stainless steel: 554

Article 88097

Chipboard screws with countersunk head and Pozidriv cross recess Z

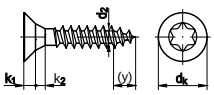


Dimensions	ST 3	ST 3.5	ST 4	ST 4.5	ST 5	ST 6
d_2	1.9	2.5	2.67	2.7	3	3.7
d_k	6	7	8	9	10	12
$k_{1\ max.}$	1.9	2.1	2.5	2.7	3	3.6
$k_{2\ max.}$	1.6	1.8	2	2.2	2.5	3
y	3	3.4	4	4.3	4.8	5.7
cross recess size	1	2	2	2	2	3

Dimensions in stock:
Steel/Steel coated: 404 | Stainless steel: 554

Article 88098

Chipboard screws with countersunk head and hexalobular socket



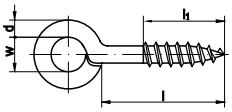
Dimensions	ST 3	ST 3.5	ST 4	ST 4.5	ST 5	ST 6	ST 8
d_2	1.9	2.5	2.67	2.7	3	3.7	5
d_k	6	7	8	9	10	12	15.1
$k_{1\ max.}$	1.9	2.1	2.5	2.7	3	3.6	4.4
$k_{2\ max.}$	1.6	1.8	2	2.2	2.5	3	3.8
y	3	3.4	4	4.3	4.8	5.7	6.5
cross recess size	T10	T15	T20	T20	T25	T30	T40

Dimensions in stock:
Steel/Steel coated: 406 | Stainless steel: 555

Hooks/special bolts with wood screw thread

Article 88133

Screw eyes
with wood screw thread
type 1



Dimensions	6x3	8x3	8x4	10x3	10x4	10x6	12x3	12x4
w	3	8	4	3	4	6	3	4
d	2	2	2.3	2	2.3	2.9	2	2.3
l	6	8	8	10	10	10	12	12
l_1	4	5	5	7	7	7	8	8

Dimensions	12x6	12x8	12x10	16x4	16x6	16x8	16x10	16x12
w	6	8	10	4	6	8	10	12
d	2.9	3.3	3.7	2.3	2.9	3.3	3.7	3.9
l	12	12	12	16	16	16	16	16
l_1	8	8	8	10	10	10	10	10

Dimensions	20x6	20x8	20x10	20x12	25x8	25x10	25x12	25x14
w	6	8	10	12	8	10	12	14
d	2.9	3.3	3.7	3.9	3.3	3.7	3.7	4
l	20	20	20	20	25	25	25	25
l_1	12	12	12	12	15	15	15	15

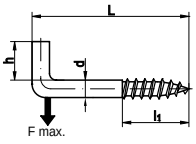
Dimensions	25x16	30x8	30x10	30x12	30x14	30x16	30x18	40x12
w	16	8	10	12	14	16	18	12
d	4.6	3.3	3.7	3.9	4	4.6	5	3.9
l	25	30	30	30	30	30	30	40
l_1	15	18	18	18	20	18	18	22

Dimensions	40x14	40x16	40x18	40x20	50x14	50x16	50x18	50x20
w	14	16	18	20	14	16	18	20
d	4	4.6	5	5.2	4	4.6	5	5.2
l	40	40	40	40	50	50	50	50
l_1	25	22	22	22	25	25	25	25

Dimensions in stock:
Steel/Steel coated: 413

Article 88137

Square bend screw hooks
with wood screw thread
type 4



Dimensions	2.8	2.8	3.3	4.1
h	8	10	11	11
d	2.3	2.3	2.6	3.2
l	20	25	30	40
l_1	8	10	12	15
$F_{max.}$	7.5 kg	7.5 kg	10 kg	12.5 kg
for plugs	4	4	5	6

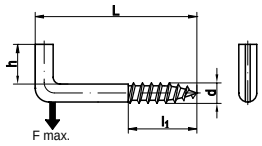
Dimensions	4.8	4.8	5.5	6
h	13	13	18	18
d	3.8	3.8	4.2	4.7
l	50	60	80	100
l_1	22	25	32	38
$F_{max.}$	15 kg	15 kg	20 kg	25 kg
for plugs	6	6	8	8

Dimensions in stock:
Steel/Steel coated: 415

Hooks/special bolts with wood screw thread

Article 88139

Square bend slotted screw hooks with wood screw thread
type 7

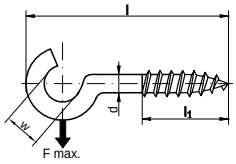


Dimensions	4.4	5.2	5.8
h	9	10	12
d	4.4	5.2	5.8
l	40/50	30/40/50/60	80/100
l_1	18/22	13/18/22/25	30/38
$F_{max.}$	25 kg	40 kg	50 kg
for plugs	6	8	8

Dimensions in stock:
Steel/Steel coated: 415

Article 88140/88141

Screw hooks/Cup hooks with wood screw thread
type 11/type 11 k



type 11 k = coated white

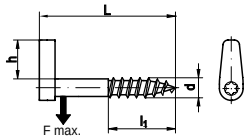
Dimensions	2.8	3.3	3.6	4.1
w	6/8	10 – 11	12 – 14	16 – 20
d	2.3	2.6	2.8	3.2
l	20/25	30	40	50/60
l_1	6/8	10	12	15 /22
$F_{max.}$	4 kg	4 kg	7.5 kg	9 kg
for plugs	4	5	5	6

Dimensions	4.8	5.5	6	6.4
w	22 – 23	25 – 26	25 – 30	25
d	3.8	4.2	4.7	5.2
l	70	80	100	80
l_1	22	26	30	24
$F_{max.}$	10 kg	12.5 kg	15 kg	25 kg
for plugs	6	8	8	10

Dimensions in stock:
Steel/Steel coated: 415, 415

Article 88143

Right angle screw hooks with hexalobular drive and wood screw thread
type 10



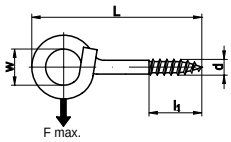
Dimensions	5.2	5.8
h	9	10
d	5.2	5.8
l	50	
l_1	25	30
ISR	T15	T20
$F_{max.}$	40 kg	50 kg
for plugs	8	8

Dimensions in stock:
Steel/Steel coated: 415

Hooks/special bolts with wood screw thread

Article 88144

Heavy duty screw eyes with wood screw thread
type 18



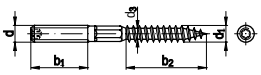
Caution: unfit for swings

Dimensions	8.2	9	10
w	22	22	22
d	8.2	8.9	9.9
l	100	120/140	140
l_1	40	45/48	48
$F_{max.}$	100 kg	125 kg	150 kg
for plugs	12	12	14

Dimensions in stock:
Steel/Steel coated: 415

Article 88149

Hanger bolts



d = nominal size,
*hexalobular socket only for steel zinc plated,depending on producer

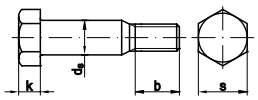
Dimensions	M 6	M 8	M 10	M 12
d_1	5	7	8.9	10.7
d_3	3.8	5.4	7	8.5
SW	–	6	8	10
ISR size*	T15	T25	T25	T30

Dimensions in stock:
Steel/Steel coated: 416 | Stainless steel: 559

Steel constr. bolts, nuts and washers

DIN 7968

Hexagon fit bolts for steel structure



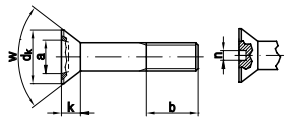
Dimensions	M 12	M 16	M 20	M 24	M 27	M 30
b	20.5	24.5	28.5	33	35.5	38.5
k	8	10	13	15	17	19
$d_{s\ min.}$	12.74	16.74	20.71	24.71	27.71	30.67
s	18	24	30	36	41	46

with nut acc. to ISO 4032 or ISO 4034

Dimensions in stock:
Steel/Steel coated: 331

DIN 7969

Slotted countersunk head bolts for steel structures



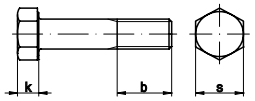
Dimensions	M 12	M 16	M 20	M 24
W	75°	75°	60°	60°
b_1	22	28	32	38
b_2	28	35	40	50
$d_{k\ max.}$	21	28	32	38
k	7	9	11.5	13
n	2.5	2.5	3	3
t	3	3	3.5	3.5
$a_{max.}$	14.7	19.6	22.4	26.6

with nut acc. to ISO 4032 or ISO 4034,
b_1 for l ≤ 60 with M 12 and l ≤ 80 with M 16 – M 24
b_2 for l > 60 with M 12 and l > 80 with M 16 – M 24

Dimensions in stock:
Steel/Steel coated: 332

DIN 7990

Hexagon head bolts with hexagon nut for steel structures



Dimensions	M 12	M 16	M 20	M 24	M 27	M 30
k	8	10	13	15	17	19
s	18	24	30	36	41	46
b	20.5	24.5	28.5	33	35.5	38.5

with nut acc. to ISO 4032 or ISO 4034

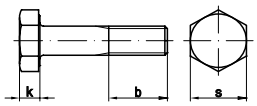
Dimensions in stock:
Steel/Steel coated: 345

Steel constr. bolts, nuts and washers

EN 14399-4

replaces DIN 6914

Hexagon bolts with large head for high-strength structural bolting, system HV



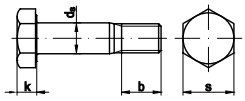
Dimensions	M 12	M 16	M 20	M 22	M 24	M 27	M 30	M 36
k	8	10	13	14	15	17	19	23
s	22	27	32	36	41	46	50	60
b	23	28	33	34	39	41	44	52

Dimensions in stock:
Steel/Steel coated: 373

EN 14399-8

replaces DIN 7999

Hexagon fit bolts with large head for high-strength structural bolting, system HV



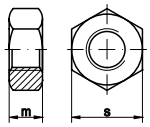
Dimensions	M 12	M 16	M 20	M 22	M 24	M 27	M 30	M 36
k	8	10	13	14	15	17	19	23
d_s	13	17	21	23	25	28	31	37
b	23	28	33	34	39	41	44	52
s	22	27	32	36	41	46	50	60

Dimensions in stock:
Steel/Steel coated: 379

EN 14399-4

replaces DIN 6915

Hexagon nuts for high-strength structural bolting, system HV



Dimensions	M 12	M 16	M 20	M 22
m	10	13	16	18
s	22	27	32	36

Dimensions	M 24	M 27	M 30	M 36
m	20	22	24	29
s	41	46	50	60

Dimensions in stock:
Steel/Steel coated: 379

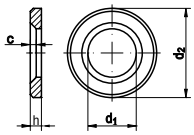
DIN 6917 Square taper washers for friction grip bolts	**Dimensions see TI-86 (washers/rings - square washers)**
DIN 6918 Square taper washers for friction grip bolts	

Steel constr. bolts, nuts and washers

EN 14399-6

replaces DIN 6916

Plain chamfered washers for high-strength structural bolting, system HV

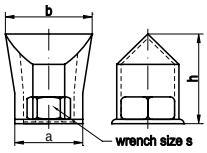


Dimensions	M 12	M 16	M 20	M 22	M 24	M 27	M 30	M 36
$d_{1\ min.}$	13	17	21	23	25	28	31	37
$d_{2\ max.}$	24	30	37	39	44	50	56	66
h	3	4	4	4	4	5	5	6
$c_{min.}$	1.6	1.6	2	2	2	2.5	2.5	2.5

Dimensions in stock:
Steel/Steel coated: 379

Article 88916

Safety sockets for HV

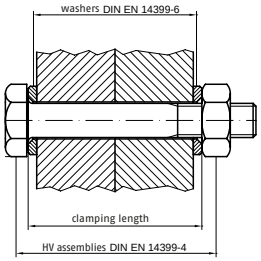


Dimensions	M 12	M 16	M 20	M 24	M 27	M 30	M 36
a	32	40	45	56	61	69	76
b	45	54	61	80	85	89	110
h	39	52	54	64	68	73	86
s	22	27	32	41	46	50	60

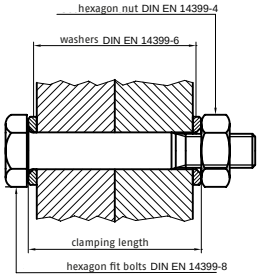
Dimensions in stock:
Steel/Steel coated: 379

Clamping length for bolts for steel constructions

Bolts, system HV acc. to EN 14399 - 4



fit bolts acc. to EN 14399 - 8



Thread	M 12		M 16		M 20		M 22		M 24		M 27		M 30		M 36	
Nominal length	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
30	11	16														
35	16	21	12	17												
40	21	26	17	22	13	18										
45	26	31	22	27	18	23										
50	31	36	27	32	23	28	22	27	19	24						
55	36	41	32	37	28	33	27	32	24	29						
60	41	46	37	42	33	38	32	37	29	34	26	31				
65	46	51	42	47	38	43	37	42	34	39	31	36				
70	51	56	47	52	43	48	42	47	39	44	36	41	34	39		
75	56	61	52	57	48	53	47	52	44	49	41	46	39	44		
80	61	66	57	62	53	58	52	57	49	54	46	51	44	49		
85	66	71	62	67	58	63	57	62	54	59	51	56	49	54	43	48
90	71	76	67	72	63	68	62	67	59	64	56	61	54	59	48	53
95	76	81	72	77	68	73	67	72	64	69	61	66	59	64	53	58
100	81	86	77	82	73	78	72	77	69	74	66	71	64	69	58	63
105	86	91	82	87	78	83	77	82	74	79	71	76	69	74	63	68
110	91	96	87	92	83	88	82	87	79	84	76	81	74	79	68	73
115	96	101	92	97	88	93	87	92	84	89	81	86	79	84	73	78
120	101	106	97	102	93	98	92	97	89	94	86	91	84	89	78	83
125			102	107	98	103	97	102	94	99	91	96	89	94	83	88
130			107	112	103	108	102	107	99	104	96	101	94	99	88	93
135			112	117	108	113	107	112	104	109	101	106	99	104	93	98
140			117	122	113	118	112	117	109	114	106	111	104	109	98	103
145			122	127	118	123	117	122	114	119	111	116	109	114	103	108
150			127	132	123	128	122	127	119	124	116	121	114	119	108	113
155			132	137	128	133	127	132	124	129	121	126	119	124	113	118
160			137	142	133	138	132	137	129	134	126	131	124	129	118	123
165			142	147	138	143	137	142	134	139	131	136	129	134	123	128
170			147	152	143	148	142	147	139	144	136	141	134	139	128	133
175			152	157	148	153	147	152	144	149	141	146	139	144	133	138
180			157	162	153	158	152	157	149	154	146	151	144	149	138	143
185			162	166	158	162	157	161	154	159	151	156	149	154	143	148
190			167	171	163	167	162	166	159	164	156	161	154	159	148	153
195			172	176	168	172	167	171	164	169	161	166	159	164	153	158
200			177	181	173	177	172	176	169	174	166	171	164	169	158	163
210			187	191	183	187	182	186	179	184	176	181	174	179	168	173
220			197	201	193	197	192	196	189	194	186	191	184	189	178	183
230					203	207	202	206	199	204	196	201	194	199	188	193
240					213	217	212	216	209	214	206	211	204	209	198	203
250					223	227	222	226	219	224	216	221	214	219	208	213
260					233	237	232	236	229	233	226	230	224	228	218	222

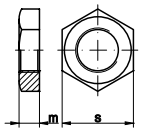
The maximum clamping length values are set in such a way that the bolt thread in preload condition exceeds the nuts by min. 1P. Details on washer thickness EN 14399-6
➔ TI-58, -85, -86

Design standards and assembly instructions ➔ EN 1090-1/EN 1993-1, -8

Hexagon nuts

DIN 431

Pipe nuts with thread acc. to ISO 228-1
type B = with thread one-sided countersunk



Dimensions	G 1/8	G 1/4	G 3/8	G	G
$m_{max.}$	6.48	6.48	7.58	5.58	9.58
$s_{max.}$	18	21	27	34	36

Dimensions	G 1	G 1	G 1	G 1	G 2
$m_{max.}$	10.58	11.7	12.7	13.7	13.7
$s_{max.}$	46	55	60	70	75

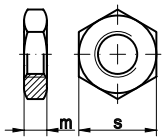
Dimensions in stock:
Steel/Steel coated: 77 | Stainless steel: 439 | Non-ferrous materials: 572

Hexagon nuts

ISO 4035

replaces DIN 439

Hexagon thin nuts
type B = chamfered



Dimensions	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8
$m_{max.}$	1.2	1.6	1.8	2	2.2	2.7	3.2	4
$s_{ISO/DIN}$	4	5	5.5	6	7	8	10	13

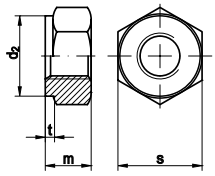
Dimensions	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24
$m_{max.}$	5	6	7	8	9	10	11	12
$s_{ISO/DIN}$	16/17	18/19	21/22	24	27	30	34/32	36

Dimensions	M 27	M 30	M 33	M 35	M 36	M 39	M 42	M 48
$m_{max.}$	13.5	15	16.5	17.5	18	19.5	21	24
$s_{ISO/DIN}$	41	46	50	55	55	60	65	75

Dimensions in stock:
Steel/Steel coated: 268, 79 | Stainless steel: 513, 441 | Non-ferrous materials: 590, 572

DIN 2510

Hexagon nuts
for bolted connections with reduced shank
type NF = standard



Dimensions	M 12	M 14*	M 16	M 20	M 24	M 27	M 30
s	22	24	27	32	36	41	46
m	12	14	16	20	24	27	30
d_2	21	23	26	31	35	40	45
t	2	2	2	2	3	3	3

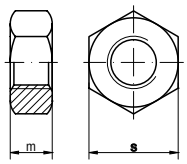
Dimensions	M 33	M 36	M 39	M 42	M 45	M 48	
s	50	55	60	65	70	75	
m	33	36	39	42	45	48	
d_2	49	53.5	58.5	63.5	68.5	73.5	
t	3	3	3	3	3	4	

* not standardized, reference values

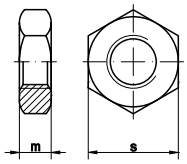
Dimensions in stock:
Steel/Steel coated: 220

ASME B 18.2.2

Nuts with unified inch thread



Hex nuts*



Hex jam nuts*

all dimensions in inches
*acc. to ASME B 18.2.2: 2010 table 4

Dimensions	1/4	5/16	3/8	7/16	1/2	9/16	5/8
s	7/16	1/2	9/16	11/16	3/4	7/8	15/16
m (hex nuts)	0.226	0.273	0.337	0.385	0.448	0.496	0.559
m (jam nuts)	0.163	0.195	0.227	0.26	0.323	0.324	0.387

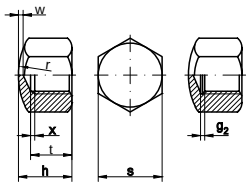
Dimensions	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4
s	1 1/8	1 5/16	1 1/2	1 11/16	1 7/8	2 1/4	2 5/8
m (hex nuts)	0.665	0.776	0.887	0.999	1.094	1.317	1.540
m (jam nuts)	0.446	0.51	0.575	0.639	0.751	0.88	1.009

Dimensions in stock:
Steel/Steel coated: 389, 389 | Stainless steel: 551 | |

Hexagon nuts

DIN 917

Hexagon cap nuts, low type



from M 10 thread undercuts acc. to DIN 76-1 (type D short) with the dimension $g_{2\ MAX}$

Dimensions	M 4	M 5	M 6	M 8	M 10	M 12
$x_{max.}/g_{2\ max.}$	1.05	1.2	1.5	1.87	2.25	6.4
h	5.5	7	9	12	14	16
r	8	10	12	15	20	25
$s_{ISO/DIN}$	7	8	10	13	16/17	18/19
$t_{min.}$	4.16	4.96	6.71	9.21	10.65	13.15
$w_{min.}$	1	1	1.5	2	2	2

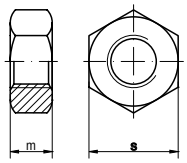
Dimensions	M 14	M 16	M 20	M 24	M 30	M 36
$x_{max.}/g_{2\ max.}$	7.3	7.3	9.3	10.7	12.7	14
h	18	20	25	30	34	44
r	28	30	35	40	60	70
$s_{ISO/DIN}$	21/22	24	30	36	46	55
$t_{min.}$	14.65	16.65	20.58	23.58	27.58	35.5
$w_{min.}$	2	2	2.5	3	3	4

Dimensions in stock:
Steel/Steel coated: 135 | Stainless steel: 457 | Non-ferrous materials: 577

ISO 4032, 4033, 8673, 4034

replaces DIN 934, 555

Hexagon regular nuts
ISO 8673 with metric fine pitch thread



Dimensions	M 1	M 1.2	M 1.4	M 1.6	M 1.7*	M 2	M 2.3*	M 2.5
$m_{ISO/DIN}$	0.8	1	1.2	1.3	1.4	1.6	1.8	2
$s_{ISO/DIN}$	2.5	3	3	3.2	3.5	4	4.5	5

Dimensions	M 2.6*	M 3	M 3.5	M 4	M 5	M 6	M 7	M 8
$m_{ISO/DIN}$	2	2.4	2.8	3.2	4.7/4	5.2/5	5.5	6.8/6.5
$s_{ISO/DIN}$	5	5.5	6	7	8	10	11	13

Dimensions	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24
$m_{ISO/DIN}$	8.4/8	10.8/10	12.8/11	14.8/13	15.8/15	18/16	19.4/18	21.5/19
$s_{ISO/DIN}$	16/17	18/19	21/22	24	27	30	34/32	36

Dimensions	M 26*	M 27	M 28**	M 30	M 32**	M 33	M 35**	M 36
$m_{ISO/DIN}$	22	23.8/22	22	25.6/24	26	28.7/26	29	31/29
$s_{ISO/DIN}$	41	41	41	46	50	50	55	55

Dimensions	M 38**	M 39	M 40**	M 42	M 45	M 48	M 50	M 52
$m_{ISO/DIN}$	31	33.4/31	31	34	36	38	38	42
$s_{ISO/DIN}$	60	60	60	65	70	75	75	80

Dimensions	M 56	M 58**	M 60	M 64	M 68	M 72	M 76	M 80
$m_{ISO/DIN}$	45	48	48	51	54	58	61	64
$s_{ISO/DIN}$	85	90	90	95	100	105	110	115

Dimensions	M 85	M 90	M 95*	M 100	M 105*	M 110	M 120*	
$m_{ISO/DIN}$	68	72	75	80	82	88	95	
$s_{ISO/DIN}$	120	130	135	145	150	155	175	

DIN 555 product grade C
* dimensions acc. to DIN 934:1963
** not standardized, reference values

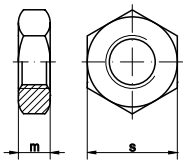
Dimensions in stock:
Steel/Steel coated: 263, 268, 346 | Stainless steel: 511, 543, 466 | Non-ferrous materials: 589, 594, 578

Hexagon nuts

ISO 4035, 8675

replaces DIN 439-2, 936

Hexagon thin nuts chamfered
ISO 8675 with metric fine pitch thread



Dimensions	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8
$m_{ISO/DIN}$	1.2	1.6	1.8	2	2.2	2.7	3.2	4/5
$s_{ISO/DIN}$	4	5	5.5	6	7	8	10	13

Dimensions	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24
$m_{ISO/DIN}$	5/6	6/7	7/8	8	9	10/9	11/10	12/10
$s_{ISO/DIN}$	16/17	18/19	21/22	24	27	30	34/32	36

Dimensions	M 26	M 27	M 28*	M 30	M 32*	M 33	M 35*	M 36
$m_{ISO/DIN}$	13/12	13.5/12	14/12	15/12	16/14	16.5/14	17.5/14	18/14
$s_{ISO/DIN}$	41	41	41	46	50	50	55	55

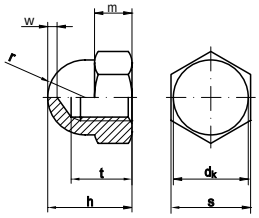
Dimensions	M 38*	M 39	M 40*	M 42	M 45	M 48	M 50*	M 52
$m_{ISO/DIN}$	19/16	19.5/16	20/16	21/16	22.5/18	24/18	25/20	26/20
$s_{ISO/DIN}$	60	60	60	65	70	75	75	80

* acc. to DIN 936:1963

Dimensions in stock:
Steel/Steel coated: 268, 349, 166 | Stainless steel: 513, 543, 468 | Non-ferrous materials: 590, 594, 579

DIN 1587

Hexagon domed cap nuts, high type



Dimensions	M 3*	M 4	M 5	M 6	M 8	M 10	M 12	M 14
$d_{k\ max.}$	5.8	6.5	7.5	9.5	12.5	15	17	20
$m_{max.}$	2.4	3.2	4	5	6.5	8	10	11
r	2.9	3.25	3.75	4.75	6.25	7.5	8.5	10
$s_{ISO/DIN}$	5.5	7	8	10	13	16/17	18/19	21/22
$t_{min.}$	4.5	5.26	7.21	7.71	10.65	12.65	15.65	17.65
$w_{min.}$	2	2	2	2	2	2	3	4
h	6	8	10	12	15	18	22	25

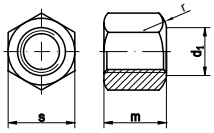
Dimensions	M 16	M 18	M 20	M 22	M 24	M 27*	M 30*	
$d_{k\ max.}$	23	26	28	33	34	39	44	
$m_{max.}$	13	15	16	18	19	22	24	
r	11.5	13	14	16.5	17	19.5	22	
$s_{ISO/DIN}$	24	27	30	34/32	36	41	46	
$t_{min.}$	20.58	24.58	25.58	28.58	30.5	35	39	
$w_{min.}$	4	5	5	5	6	7	7	
h	28	32	34	39	42	45	50	

* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 209 | Stainless steel: 488 | Non-ferrous materials: 585

DIN 6330

Hexagon nuts with a height of 1,5 d
type B = with one spherical bearing face



Dimensions	M 6	M 8	M 10	M 12	M 14	M 16
d_1	7	9	11.5	14	16	18
m	9	12	15	18	21	24
r	9	11	15	17	20	22
s	10	13	16/17*	18/19*	22	24

Dimensions	M 18	M 20	M 22	M 24	M 27	M 30
d_1	20	22	25	26	29	32
m	27	30	33	36	40	45
r	25	27	29	32	37	41
s	27	30	32	36	41	46

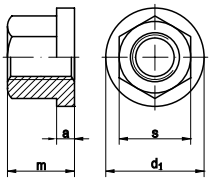
* wrench sizes acc. to DIN 6330: 1965-03

Dimensions in stock:
Steel/Steel coated: 291 | Stainless steel: 518

Hexagon nuts

DIN 6331

Hexagon nuts with a height of 1.5 d, with collar



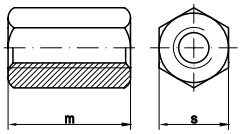
Dimensions	M 6	M 8	M 10	M 12	M 14	M 16	M 18
a	3	3.5	4	4	4	5	5
d_1	14	18	22	25	28	31	34
m	9	12	15	18	21	24	27
s	10	13	16	18	22	24	27

Dimensions	M 20	M 22	M 24	M 27	M 30	M 36	M 42
a	6	6	6	7	8	10	12
d_1	37	40	45	50	58	68	80
m	30	33	36	40	45	54	63
s	30	32	36	41	46	55	65

Dimensions in stock:
Steel/Steel coated: 291 | Stainless steel: 518

~DIN 6334

Hexagon nuts, with a height of 3 d



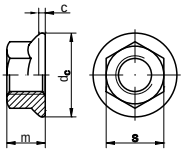
Dimensions	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36
m	18	24	30	36	48	60	72	90	108
s	10	13	17	19	24	30	36	46	55

Dimensions in stock:
Steel/Steel coated: 292 | Stainless steel: 519

EN 1661

replaces DIN 6923

Hexagon flange nuts

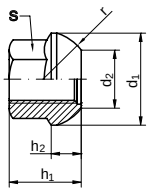


Dimensions	M 4	M 5	M 6	M 8	M 10	M 12	M 16	M 20
$d_{c\ max.}$	10	11.8	14.2	17.9	21.8	26	34.5	42.8
$m_{max.}$	4.65	5	6	8	10	12	16	20
s	7	8	10	13	15	18	24	30

Dimensions in stock:
Steel/Steel coated: 210, 303 | Stainless steel: 488, 522

DIN 74361

Domed anchor nuts
type A



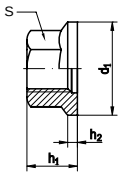
Dimensions	M 18x1.5	M 20x1.5
d_1	28	33
d_2	21	24.5
h_1	25	27
h_2	75	9
r	16	18
s	24	27

Dimensions in stock:
Steel/Steel coated: 385

Hexagon nuts

DIN 74361

Flat collar nuts
type B

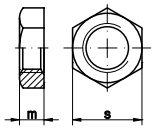


Dimensions	M 14x1.5	M 18x1.5	M 20x1.5	M 22x1.5
d_1	27	29	34	36
h_1	15	18	20	22
h_2	3	4	5	6
s	19	24	27	30

Dimensions in stock:
Steel/Steel coated: 385

DIN 80705

Thin hexagonal nuts
with small wrench size

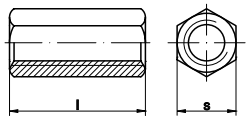


Dimensions	M 14x1.5	M 16x1.5	M 18x1.5	M 20x1.5	M 22x1.5	M 26x1.5	M 30x2
m	6	6	6	6	7	8	8
s	19	22	24	27	30	36	41

Dimensions in stock:
Steel/Steel coated: 385

Article 88087

Hexagon couplings
with continuous metric internal thread

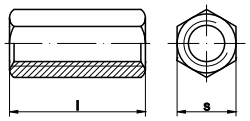


Dimensions	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30
s	10	13	17	19	24	30	36	46
l	20/25/ 30/40	30	30	40/50	50	50	50	90

Dimensions in stock:
Steel/Steel coated: 391 | Stainless steel: 551

Article 88090

Hexagon nuts with trapezoidal thread,
with a height of 1.5 d



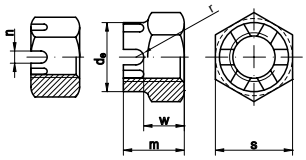
Dimensions	TR 16x4	TR 20x4	TR 24x5	TR 30x6
s	27	30	36	46
m	24	30	36	45

Dimensions in stock:
Steel/Steel coated: 392

Locking nuts

DIN 935-1

Hexagon slotted and castle nuts



≤ M 10 ≥ M 12

Dimensions	M 4	M 5	M 6	M 8	M 10	M 12	M 14	M 16
$d_{e\ max.}$	–	–	–	–	–	16	18	22
m	5	6	7.5	9.5	12	15	16	19
$n_{min.}$	1.2	1.4	2	2.5	2.8	3.5	3.5	4.5
$s_{ISO/DIN}$	7	8	10	13	16/17	18/19	21/22	24
$w_{max.}$	3.2	4	5	6.5	8	10	11	13
split pin	1x10	1.2x12	1.6x14	2x16	2.5x20	3.2x22	3.2x25	4x28

Dimensions	M 18	M 20	M 22	M 24	M 27	M 28*	M 30	M 32*
$d_{e\ max.}$	25	28	32	34	38	38	42	46
m	21	22	26	27	30	30	33	35
$n_{min.}$	4.5	4.5	5.5	5.5	5.5	5.5	7	7
$s_{ISO/DIN}$	27	30	34/32	36	41	41	46	50
$w_{max.}$	15	16	18	19	22	22	24	26
split pin	4x32	4x36	5x36	5x40	5x45	5x50	6.3x50	6.3x56

Dimensions	M 33	M 36	M 38*	M 39	M 40*	M 42	M 45	M 48
$d_{e\ max.}$	46	50	55	55	55	58	62	65
m	35	38	40	40	48	46	48	50
$n_{min.}$	7	7	7	7	7	9	9	9
$s_{ISO/DIN}$	50	55	60	60	60	65	70	75
$w_{max.}$	26	29	31	31	31	34	36	38
split pin	6.3x56	6.3x63	6.3x70	6.3x71	6.3x70	8x71	8x80	8x80

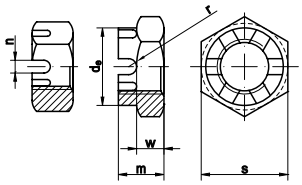
Dimensions	M 52	M 56	M 60	M 64	M 68	M 72	M 76	M 80
$d_{e\ max.}$	70	75	80	85	90	95	100	105
m	54	57	63	66	69	73	76	79
$n_{min.}$	9	9	11	11	11	11	11	11
$s_{ISO/DIN}$	80	85	90	95	100	105	110	115
$w_{max.}$	42	45	48	51	54	58	61	64
split pin	8x90	8x100	10x100	10x100	10x112	10x112	10x125	10x140

* acc. to DIN 935: 1963

Dimensions in stock:
Steel/Steel coated: 165 | Stainless steel: 468

DIN 937

Hexagon thin slotted and castle nuts



≤ M 10 ≥ M 12

Dimensions	M 6	M 8	M 10	M 12	M 14	M 16	M 18	M 20
$d_{e\ max.}$	–	–	–	17	19	22	25	28
m	6	8	9	10	11	12	13	13
$n_{min.}$	2	2.5	2.8	3.5	3.5	4.5	4.5	4.5
s	10	13	17	19	22	24	27	30
$w_{max.}$	3.5	4.5	5	6	7	7	8	8
split pin	1.6x14	2x16	2.5x20	3.2x22	3.2x25	4x28	4x32	4x36

Dimensions	M 22	M 24	M 26*	M 27	M 28*	M 30	M 32*	M 33
$d_{e\ max.}$	30	34	38	38	38	42	46	46
m	15	15	30	17	30	18	20	20
$n_{min.}$	5.5	5.5	5.5	5.5	5.5	7	7	7
s	32	36	41	41	41	46	50	50
$w_{max.}$	9	9	22	11	22	11	13	13
split pin	5x36	5x40	5x50	5x45	5x50	6.3x50	6x60	6.3x56

Dimensions	M 35*	M 36	M 39	M 40*	M 42	M 48	M 52	
$d_{e\ max.}$	50	50	55	55	58	65	70	
m	20	20	22	22	23	25	27	
$n_{min.}$	7	7	7	7	9	9	9	
s	55	55	60	60	65	75	80	
$w_{max.}$	13	13	13	13	14	16	18	
split pin	6x65	6.3x63	6.3x71	6x70	8x71	8x80	8x90	

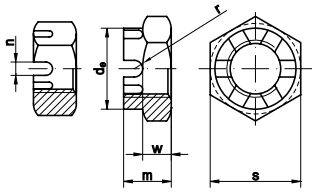
* acc. to DIN 937: 1963

Dimensions in stock:
Steel/Steel coated: 168

Locking nuts

DIN 979

Hexagon thin slotted and castle nuts



≤ M 10 ≥ M 12

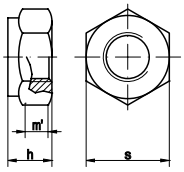
Dimensions	M 16	M 18	M 20	M 24	M 30	M 36	M 42	M 48	M 52
$d_{e\ max.}$	22	25	28	34	42	50	58	65	70
m	13	15	16	19	24	29	33	36	38
$n_{min.}$	4.5	4.5	4.5	5.5	7	7	9	9	9
s	24	27	30	36	46	55	65	75	80
$w_{max.}$	7	9	10	11	15	20	22	24	26
split pin	4x28	4x32	4x36	5x40	6.3x50	6.3x63	8x71	8x80	8x90

Dimensions in stock:
Steel/Steel coated: 187

ISO 7042, 10513

replaces DIN 980, 6925

Prevailing torque type hexagon high nuts
all-metal nuts,
ISO 10513 with metric fine pitch thread



standard conversion ➔ TI-9

Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
$h_{max.}$	3.7	4.2	5.1	6	8	10
$m'_{min.\ ISO/DIN}$	-/1.65	-/2.2	3.52/2.75	3.92/3.3	5.15/4.4	6.43/5.5
$s_{980/6925}$	5.5	7	8	10	13	17/16

Dimensions	M 12	M 14	M 16	M 18	M 20	M 22
$h_{max.}$	12	14	16	18	20	22
$m'_{min.\ ISO/DIN}$	8.30/6.6	9.68/7.7	11.28/8.8	-/9.9	13.52/11	-/12.2
$s_{980/6925}$	19/18	22/21	24	27	30	32/-

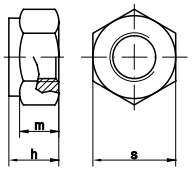
Dimensions	M 24	M 27	M 30	M 33	M 36	
$h_{max.}$	24	27	30	33	36	
$m'_{min.\ ISO/DIN}$	16.16/13.2	-/14.8	19.44/16.5	-/18.2	23.52/19.8	
$s_{980/6925}$	36	41	46	50	55	

Dimensions in stock:
Steel/Steel coated: 305, 365, 187, 304 | Stainless steel: 523, 479

ISO 7040, 10512

replaces DIN 982, 6924

Prevailing torque type hexagon regular nuts
with non-metallic insert,
ISO 10512 with metric fine pitch thread



temperature resistance of the insert
see price pages,
standard conversion ➔ TI-9

Dimensions	M 3	M 4	M 5	M 6	M 8	M 10
$h_{ISO/DIN}$	4.5	6	6.8/6.3	8	9.5	11.9/11.5
$m_{min.}$	2.15	2.9	4.4	4.9	6.44	8.04
$s_{ISO/DIN}$	5.5	7	8	10	13	16/17

Dimensions	M 12	M 14	M 16	M 20	M 24	
$h_{ISO/DIN}$	14.9/14	17/16	19.1/18	22.8/22	27.1/28	
$m_{min.}$	10.37	12.1	14.1	16.9	20.2	
$s_{ISO/DIN}$	18/19	21/22	24	30	36	

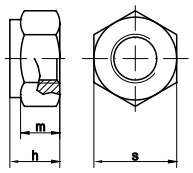
Dimensions in stock:
Steel/Steel coated: 305, 365, 189 | Stainless steel: 523, 480

Locking nuts

ISO 10511

replaces DIN 985

Prevailing torque type hexagon thin nuts
with non-metallic insert



temperature resistance of the insert
see price pages
* not ISO standardized, reference values
** not ISO standardized

Dimensions	M 2.5*	M 3	M 4	M 5	M 6	M 7	M 8	M 10
$h_{max.\ ISO/DIN}$	3,6	3.9/4	5	5	6	7.5	6.8/8	5,6/10
$m_{min.\ ISO/DIN}$	-	1.55/2.4	1.9/2.9	2.5/3.2	2.9/4	4.7	3.7/5.5	4.7/6.5
$s_{ISO/DIN}$	5	5.5	7	8	10	11	13	16/17

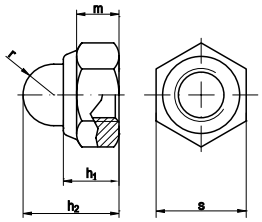
Dimensions	M 12	M 14	M 16	M 18**	M 20	M 22**	M 24	M 27**
$h_{max.\ ISO/DIN}$	10.2/12	11.3/14	12,4/16	18.5	14.9/20	22	17.8/24	27
$m_{min.\ ISO/DIN}$	5.7/8	6.4/9.5	7.4/10.5	13	9.1/14	15	10.9/15	17
$s_{ISO/DIN}$	18/19	21/22	24	27	30	34/32	36	41

Dimensions	M 30	M 33**	M 36	M 39**	M 42**	M 45**	M 48**	
$h_{max.\ ISO/DIN}$	22.2/30	33	25.5/36	39	42	45	48	
$m_{min.\ ISO/DIN}$	13.9/19	22	16.9/25	27	29	32	36	
$s_{ISO/DIN}$	46	50	55	60	65	70	75	

Dimensions in stock:
Steel/Steel coated: 364, 190 | Stainless steel: 547, 480 | Non-ferrous materials: 595, 582

DIN 986

Prevailing torque type hexagon domed cap nuts
with non-metallic insert



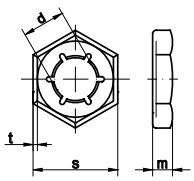
temperature resistance of the insert
see price pages

Dimensions	M 4	M 5	M 6	M 8	M 10	M 12	M 16
h_1	5.6	6	7.5	8.9	10.5	13.5	16.5
h_2	9.6	10.5	12	14	18.1	22.5	27.5
$m_{min.}$	2.9	4.4	4.9	6.44	8.04	10.37	14.1
r	2.5	3	3.5	4.6	5.8	6.8	8.8
s	7	8	10	13	17	19	24

Dimensions in stock:
Steel/Steel coated: 191 | Stainless steel: 480

DIN 7967

Self locking counter nuts



Dimensions	M 6	M 8	M 10	M 12	M 14	M 16	M 20	M 22
d	5.3	6.9	8.6	10.4	12	14.1	17.6	19.6
m	3	3.5	4	4.5	5	5	6	6
s	10	13	17	19	22	24	30	32
t	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8

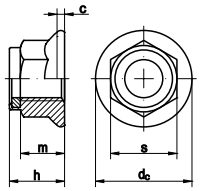
Dimensions	M 24	M 27	M 30	M 33	M 36	M 42	M 48	
d	21	24.2	26.6	29.8	32.2	37.6	43.9	
m	7	7	8	8	9	11	14	
s	36	41	46	50	55	65	75	
t	0.9	1	1.1	1.2	1.3	1.4	1.6	

Dimensions in stock:
Steel/Steel coated: 331 | Stainless steel: 536

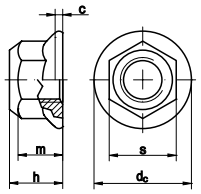
Locking nuts

EN 1663, 1664

Prevailing torque type hexagon nuts with flange



EN 1663 = with non-metallic insert



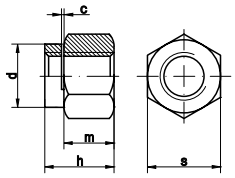
EN 1664 = all-metal hexagon nut

Dimensions	M 5	M 6	M 8	M 10	M 12	M 16
$c_{min.}$	1	1.1	1.2	1.5	1.8	2.4
d_c	11.8	14.2	17.9	21.8	26	34.5
$h_{max.\ (1663)}$	7.1	9.1	11.1	13.5	16.1	20.3
$h_{max.\ (1664)}$	6.2	7.3	9.4	11.4	13.8	18.3
$m_{min.}$	4.7	5.7	7.6	9.6	11.6	15.3
s	8	10	13	16	18	24

Dimensions in stock:
Steel/Steel coated: 210, 210

Article 88105

Prevailing torque type hexagon nuts, THERMAG nuts
all-metal nut

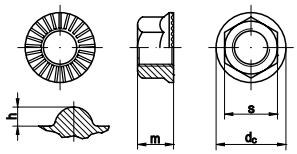


Dimensions	M 8 SW12	M 8 SW13	M 10 SW14	M 10 SW17	M 12 SW17	M 12 SW19
d	11.5	12.5	13.5	16.5	16.5	18.5
s	12	13	14	17	17	19
m	5.5	5.5	6.5	6.5	7.5	7.5
c	0.5	0.5	0.5	0.5	0.5	0.5

Dimensions in stock:
Steel/Steel coated: 188

Article 88914

Hexagon nuts with flange and lock ribs



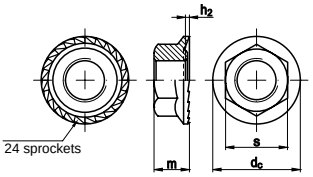
Dimensions	M 5	M 6	M 8	M 10	M 12	M 14	M 16
d_c	11.2	14.2	18.2	21	24	27.5	31
m	4.3	5.5	7	8.5	10	12	14
h	0.1	0.1	0.1	0.1	0.1	0.1	0.1
s	8	10	13	15	17	19	22
qty. ribs	28	36	48	48	60	60	72

Dimensions in stock:
Steel/Steel coated: 420

Locking nuts

Article 88934

Hexagon locking nuts with flange

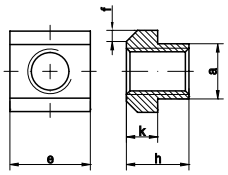


Dimensions	M 5	M 6	M 8	M 10	M 12	M 16
d_c	11.2	14.25	18.25	21	24	31
m	4.3	5.5	7	7.9	8.7	11.2
$h_{2\ min.}$	0.15	0.17	0.2	0.25	0.25	0.28
qty. serrations	24	24	24	24	24	24

Dimensions in stock:
Steel/Steel coated: 421

DIN 508

T-slot nuts



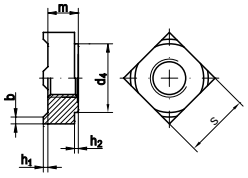
Dimensions	M 5	M 6	M 8	M 10	M 12	M 14	M 16	M 20	M 24
a	6	8	10	12	14	16	18	22	28
e	10	13	15	18	22	25	28	35	44
f	1.6	1.6	1.6	2.5	2.5	2.5	2.5	2.5	4
h	8	10	12	14	16	18	20	28	36
k	4	6	6	7	8	9	10	14	18

Dimensions in stock:
Steel/Steel coated: 88

Welding nuts

DIN 928

Square weld nuts

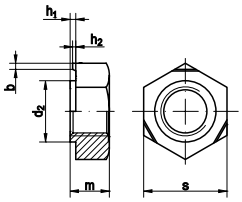


Dimensions	M 4	M 5	M 6	M 8	M 10	M 12
b	0.8	1	1.2	1.5	1.8	2
$d_{4\ min.}$	6.4	8.2	9.1	12.8	15.6	17.4
h_1	0.6	0.8	0.8	1	1.2	1.4
$h_{2\ min.}$	0.4	0.6	0.7	1.1	1.25	1.75
m	3.5	4.2	5	6.5	8	9.5
s	7	9	10	14	17	19

Dimensions in stock:
Steel/Steel coated: 137

DIN 929

Hexagon weld nuts



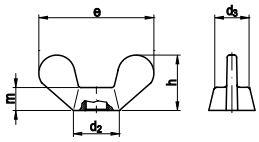
Dimensions	M 3	M 4	M 5	M 6	M 8	M 10	M 12	M 14	M 16
b	0.8	0.8	0.8	0.9	1	1.25	1.25	1.5	1.5
d_2	4.5	6	7	8	10.5	12.5	14.8	16.8	18.8
h_1	0.55	0.65	0.7	0.75	0.9	1.15	1.4	1.8	1.8
h_2	0.25	0.35	0.4	0.4	0.5	0.65	0.8	1	1
m	3	3.5	4	5	6.5	8	10	11	13
s	7.5	9	10	11	14	17	19	22	24

Dimensions in stock:
Steel/Steel coated: 137 | Stainless steel: 458

Special forms

DIN 315

Wing nuts
rounded wings



Dimensions	M 3*	M 4	M 5	M 6	M 8	M 10
$e_{max.}$	19	20	26	33	39	51
$h_{max.}$	9.5	10.5	13	17	20	25
$m_{max.}$	3.9	4.6	6.5	8	10	12
$d_{2\ max.}$	7	8	11	13	16	20
$d_{3\ max.}$	6	7	9	11	12.5	16.5

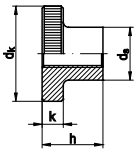
Dimensions	M 12	M 14**	M 16	M 20	M 24	
$e_{max.}$	65	63.5	73	90	110	
$h_{max.}$	33.5	32.3	37.5	46.5	56.5	
$m_{max.}$	14	12	17	21	25	
$d_{2\ max.}$	23	21.5	29	35	44	
$d_{3\ max.}$	19.5	–	23	29	37.5	

* acc. to DIN 315:1956
** not standardized, reference values

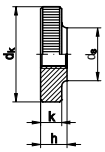
Dimensions in stock:
Steel/Steel coated: 75 | Stainless steel: 438 | Non-ferrous materials: 571

DIN 466, 467

Knurled nuts



DIN 466 = high type



DIN 467 = low type

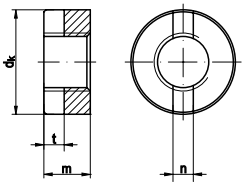
Dimensions	M 3	M 4	M 5	M 6	M 8	M 10	M 12*
d_k	12	16	20	24	30	36	35
d_s	6	8	10	12	16	20	20
k	2.5	3.5	4	5	6	8	8
$h_{DIN\ 466}$	7.5	9.5	11.5	15	18	23	23
$h_{DIN\ 467}$	3	4	5	6	8	10	10

* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 84, 85 | Stainless steel: 443, 443 | Non-ferrous materials: 573, 573

DIN 546

Slotted round nuts



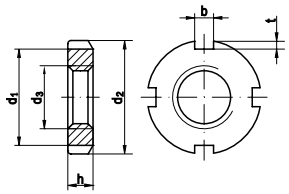
Dimensions	M 3	M 4	M 5	M 6	M 8	M 10	M 12	M 16
$d_{k\ max.}$	6	8	9	11	14	18	21	26
$m_{max.}$	2.5	3.5	4.2	5	6.5	8	10	12
n	1.2	1.4	2	2.5	3	3.5	4	4
t	1	1.2	1.5	2	2.5	3.2	3.8	3.8

Dimensions in stock:
Steel/Steel coated: 88 | Stainless steel: 444 | Non-ferrous materials: 573

Special forms

DIN 981

Locknuts for rolling bearings



Dimensions	KM 0	KM 1	KM 2	KM 3	KM 4	KM 5	KM 6
d_1	M 10x0.75	M 12x1	M 15x1	M 17x1	M 20x1	M 25x1.5	M 30
d_2	18	22	25	28	32	38	45
d_3	13.5	17	21	24	26	32	38
h	4	4	5	5	6	7	7
b	3	3	4	4	4	5	5
t	2	2	2	2	2	2	2
lockwasher*	MB 0	MB 1	MB 2	MB 3	MB 4	MB 5	MB 7

Dimensions	KM 7	KM 8	KM 9	KM 10	KM 11	KM 12	KM 13
d_1	M 35x1.5	M 40x1.5	M 45x1.5	M 50x1.5	M 55x2	M 60x2	M 65x2
d_2	52	58	65	70	75	80	85
d_3	44	50	56	61	67	73	79
h	8	9	10	11	11	11	12
b	5	6	6	6	7	7	7
t	2	2.5	2.5	2.5	3	3	3
lockwasher*	MB 7	MB 8	MB 9	MB 10	MB 11	MB 12	MB 13

Dimensions	KM 14	KM 15	KM 16	KM 17	KM 18	KM 19	KM 20
d_1	M 70x2	M 75x2	M 80x2	M 85x2	M 90x2	M 95x2	M 100x2
d_2	92	98	105	110	120	125	130
d_3	85	90	95	102	108	113	120
h	12	13	15	15	16	17	18
b	8	8	8	8	10	10	10
t	3.5	3.5	3.5	3.5	4	4	4
lockwasher*	MB 14	MB 15	MB 16	MB 17	MB 18	MB 19	MB 20

Dimensions	KM 21	KM 22	KM 23	KM 24	KM 25	KM 26	KM 27
d_1	M 105x2	M 110x2	M 115x2	M 120x2	M 125x2	M 130x2	M 135x2
d_2	140	145	150	155	160	165	175
d_3	126	133	137	138	148	149	160
h	18	19	19	20	21	21	22
b	12	12	12	12	12	12	14
t	5	5	5	5	5	5	6
lockwasher*	MB 21	MB 22	MB 23	MB 24	MB 25	MB 26	MB 27

Dimensions	KM 28	KM 29	KM 30	KM 31	KM 32	KM 34	
d_1	M 140x2	M 145x2	M 150x2	M 155x3	M 160x3	M 165x3	
d_2	180	190	195	200	210	210	
d_3	160	171	171	182	182	193	
h	22	24	24	25	25	26	
b	14	14	14	16	16	16	
t	6	6	6	7	7	7	
lockwasher*	MB 28	MB 29	MB 30	MB 31	MB 32	MB 33	

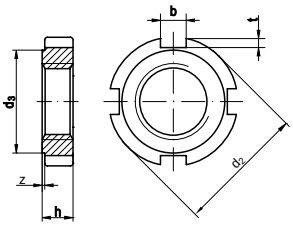
* Lockwashers DIN 5406

Dimensions in stock:
Steel/Steel coated: 189

Special forms

DIN 1804

Slotted round nuts



Dimensions	M 8x1	M 10x1	M 12x1.5	M 14x1.5	M 16x1.5	M 18x1.5	M 20x1.5	M 22x1.5
d_2	20	25	28	30	32	34	36	40
d_3	16	20	23	25	27	28	30	34
b	4	5	5	5	5	6	6	6
h	5	6	6	7	7	8	8	9
t	1.5	2	2	2	2	2.5	2.5	2.5
z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
qty. slots	4	4	4	4	4	4	4	4

Dimensions	M 24x1.5	M 26x1.5	M 28x1.5	M 30x1.5	M 32x1.5	M 35x1.5	M 38x1.5	M 40x1.5
d_2	42	45	50	50	52	55	58	62
d_3	36	38	43	43	45	48	50	54
b	6	7	7	7	7	7	8	8
h	9	10	10	10	11	11	11	12
t	2.5	3	3	3	3	3	3.5	3.5
z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
qty. slots	4	4	4	4	4	4	4	4

Dimensions	M 42x1.5	M 45x1.5	M 48x1.5	M 50x1.5	M 52x1.5	M 55x1.5	M 58x1.5	M 60x1.5
d_2	62	68	75	75	80	80	90	90
d_3	54	60	67	67	70	70	80	80
b	8	8	8	8	10	10	10	10
h	12	12	13	13	13	13	13	13
t	3.5	3.5	3.5	3.5	4	4	4	4
z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
qty. slots	4	6	6	6	6	6	6	6

Dimensions	M 62x1.5	M 65x1.5	M 68x1.5	M 70x1.5	M 72x1.5	M 75x1.5	M 80x2	M 85x2
d_2	95	95	100	100	110	110	115	120
d_3	85	85	90	90	100	100	105	110
b	10	10	10	10	10	10	10	10
h	14	14	14	14	14	14	16	16
t	4	4	4	4	4	4	4	4
z	0.5	0.5	0.5	0.5	0.5	0.5	1	1
qty. slots	6	6	6	6	6	6	6	6

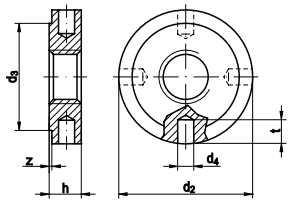
Dimensions	M 90x2	M 95x2	M 100x2	M 110x2	M 120x2			
d_2	130	135	145	155	165			
d_3	120	120	130	140	150			
b	10	12	12	12	12			
h	16	16	16	16	18			
t	4	5	5	5	5			
z	1	1	1	1	1			
qty. slots	6	6	6	6	6			

Dimensions in stock:
Steel/Steel coated: 212 | Stainless steel: 489

Special forms

DIN 1816

Round nuts
with set pin holes inside



Dimensions	M 12x1.5	M 16x1.5	M 18x1.5	M 20x1.5	M 22x1.5	M 24x1.5	M 26x1.5
d_2	28	32	34	36	40	42	45
d_3	23	27	28	30	34	36	38
d_4	3	4	4	4	4	4	5
h	6	7	8	8	9	9	10
t	5	6	6	6	6	6	6
z	0.5	0.5	0.5	0.5	0.5	0.5	0.5
qty. slots	4	4	4	4	4	4	4

Dimensions	M 28x1.5	M 30x1.5	M 35x1.5	M 40x1.5	M 42x1.5	M 45x1.5	M 48x1.5
d_2	50	50	55	62	62	68	75
d_3	43	43	48	54	54	60	67
d_4	5	5	5	6	6	6	6
h	10	10	11	12	12	12	13
t	7	7	7	8	8	8	10
z	0.5	0.5	0.5	0.5	0.5	0.5	0.5
qty. slots	4	4	4	4	4	6	6

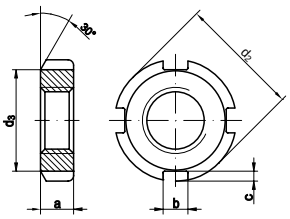
Dimensions	M 50x1.5	M 55x1.5	M 60x1.5	M 70x1.5	M 75x2	M 80x2	
d_2	75	80	90	100	110	115	
d_3	67	70	80	90	100	105	
d_4	6	6	6	8	8	8	
h	13	13	13	14	14	16	
t	10	10	10	12	12	12	
z	0.5	0.5	0.5	0.5	0.5	1	
qty. slots	6	6	6	6	6	6	

Dimensions in stock:
Steel/Steel coated: 212

Special forms

DIN 70852

Locknuts for hook spanners



Dimensions	M 10x1	M 12x1.5	M 14x1.5	M 16x1.5	M 18x1.5	M 20x1.5	M 22x1.5	M 24x1.5
a	5	6	6	6	6	6	7	7
b	4.5	4.5	4.5	5.5	5.5	5.5	6.5	6.5
c	1.8	1.8	1.8	2.3	2.3	2.3	2.8	2.8
d_2	20	22	24	28	30	32	36	38
d_3	18	18	20	23	25	27	30	32
qty. slots	4	4	4	4	4	4	4	4
lockwasher*	10	12	14	16	18	20	22	24

Dimensions	M 26x1.5	M 28x1.5	M 30x1.5	M 32x1.5	M 35x1.5	M 38x1.5	M 40x1.5	M 42x1.5
a	7	7	7	8	8	8	8	8
b	6.5	6.5	6.5	7	7	7	7	8
c	2.8	2.8	2.8	3.3	3.3	3.3	3.3	3.3
d_2	40	42	44	48	50	54	56	60
d_3	34	36	38	41	43	47	49	52
qty. slots	4	4	4	4	4	4	4	4
lockwasher*	26	28	30	32	35	38	40	42

Dimensions	M 45x1.5	M 48x1.5	M 50x1.5	M 52x1.5	M 55x1.5	M 60x1.5	M 65x1.5	M 70x1.5
a	8	8	8	8	8	9	9	9
b	8	8	8	8	8	11	11	11
c	3.3	3.3	3.3	3.3	3.3	4.3	4.3	4.3
d_2	62	65	68	70	75	80	85	90
d_3	54	57	60	62	67	71	76	81
qty. slots	6	6	6	6	6	6	6	6
lockwasher*	45	48	50	52	55	60	65	70

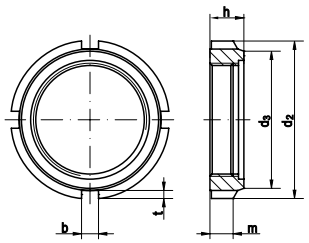
Dimensions	M 75x1.5	M 80x1.5	M 85x1.5	M 90x1.5	M 95x1.5
a	10	10	10	10	10
b	11	11	11	11	11
c	4.3	4.3	4.3	4.3	4.3
d_2	95	100	108	112	118
d_3	86	91	99	103	109
qty. slots	6	6	6	6	6
lockwasher*	75	80	85	90	95

* Lockwashers DIN 70952

Dimensions in stock:
Steel/Steel coated: 384

Article 88081

Locknuts GUK
with non-metallic insert



Dimensions	M 12x1	M 15x1	M 17x1	M 20x1	M 25x1.5	M 30x1.5
d_2	21	24	28	32	38	44
d_3	18	21	24	27	33	38
h	7.6	8.6	8.7	9.6	10.5	10.7
m	4.5	5.5	5.5	6	6.5	6.6
b	3	4	4	4	5	5
t	1.5	1.5	2	2.5	2.5	3
qty. slots	4	4	4	4	4	4

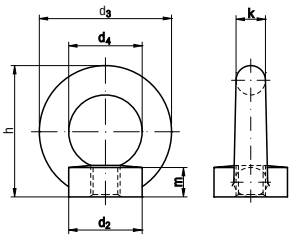
Dimensions	M 35x1.5	M 40x1.5	M 45x1.5	M 50x1.5	M 55x2	M 60x2
d_2	50	56	62	68	75	80
d_3	44	50	55	61	68	73
h	11.3	12.3	12.3	12.9	13.4	13.4
m	7	7.7	7.8	8.1	8.2	8.2
b	5	6	6	6	7	7
t	3	3	3.5	3.5	3.5	3.5
qty. slots	4	4	4	4	6	6

Dimensions in stock:
Steel/Steel coated: 391

Special forms

DIN 582

Lifting eye nuts



Dimensions	M 6*	M 8	M 10	M 12	M 14*	M 16	M 18*	M 20	M 22*
d_2	17	20	25	30	35	35	40	40	45
d_3	28	36	45	54	63	63	72	72	81
d_4	16	20	25	30	35	35	40	40	45
m	8.5	8.5	10	11	13	13	16	16	18
h	31	36	45	53	62	62	71	71	80.5
k	6	8	10	12	14	14	16	16	18

Dimensions	M 24	M 27*	M 30	M 33*	M 36	M 42	M 48	M 56
d_2	50	50	65	65	75	85	100	110
d_3	90	90	108	108	126	144	166	184
d_4	50	50	60	60	70	80	90	100
m	20	20	25	25	30	35	40	45
h	90	90	109	109	128	147	168	187
k	20	20	24	24	28	32	38	42

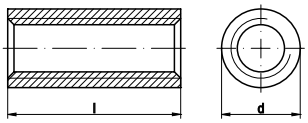
more information ➔ TI-148

* not standardized,
geometry of the next higher dimension

Dimensions in stock:
Steel/Steel coated: 95 | Stainless steel: 446

Article 88088

Round couplings with metric thread



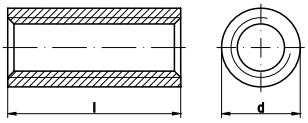
Dimensions	M 6	M 8	M 10
d	10	11	13
l	20/25/30/40	20/25/30/40/45	25/30/40/50

Dimensions	M 12	M 16	M 20
d	15	20	25
l	30/40/50	40	50

Dimensions in stock:
Steel/Steel coated: 391 | Stainless steel: 551

Article 88089

Round nuts with trapezoidal thread



Dimensions	TR 12x3	TR 14x4	TR 16x4	TR 18x4	TR 20x4	TR 22x5	TR 24x5
d	22	36	36	36	36	50	50
l	18	21	24	27	30	33	36

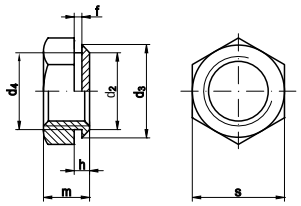
Dimensions	TR 26x5	TR 28x5	TR 30x6	TR 32x6	TR 36x6	TR 40x7	TR 44x7
d	50	60	60	60	75	75	75
l	39	42	45	48	54	60	66

Dimensions in stock:
Steel/Steel coated: 392 | Stainless steel: 551

Special forms

Article 88106

Rivet nuts



Dimensions	M 3	M 4	M 5	M 6
d_2*	4.5	5.5	6.5	8
d_3	4.7	5.7	6.75	8.3
d_4	4.5	5.5	6.5	8
m	3	3.2	4	5
f	0.4	0.4	0.4	0.4
h	0.9	0.9	0.9	0.9
s	5.5	7	8	10

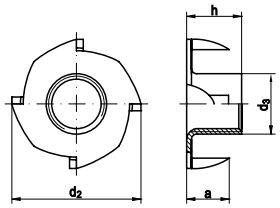
Dimensions	M 8	M 10	M 12	M 16
d_2*	10	12.5	14.5	18.5
d_3	10.3	12.85	14.85	18.85
d_4	10	12.5	14.5	18.5
m	6.5	8	10	13
f	0.9	0.9	1.3	1.5
h	1.9	1.9	2.9	2.4
s	13	15	17	22

* corresponds to drill hole diameter with tol. H11

Dimensions in stock:
Steel/Steel coated: 408 | Stainless steel: 556

Article 88108

Tee nuts with pronge

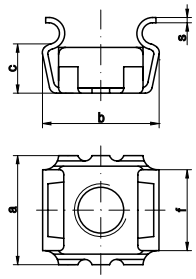


Dimensions	M 4	M 5	M 6	M 8	M 10
d_2	15	17	19	22	25
d_3	5	6.5	7.5	10	11.5
h	6	8	9/12	11/15	13
a	5	7	7	9	11

Dimensions in stock:
Steel/Steel coated: 409

Article 88109

Square caged nuts
type SMG



Dimensions	M 4 – 8/9.5	M 5 – 8/9.5	M 6 – 6/9.5
s	0.5	0.5	0.5
c	4.6	6.3	6.4
b	13.5	13.7	13.9
a	13.1	13.1	13.4
f	8.7	8.8	8.8
f. sheet thicknesses	1.8 – 2.6	1.8 – 2.6	0.7 – 1.7

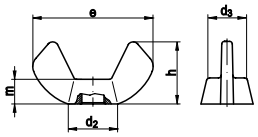
Dimensions	M 6 – 8/9.5	M 8 – 8/12.5	M 10 – 8/12.5
s	0.5	0.6	0.6
c	6.3	7.4	7.4
b	13.7	17.8	17.8
a	13.1	16.6	16.6
f	8.8	11.4	11.4
f. sheet thicknesses	1.8 – 2.6	1.8 – 2.6	1.8 – 2.6

Dimensions in stock:
Steel/Steel coated: 409

Special forms

Article 88215

**Wing nuts,
small type, edged wings**

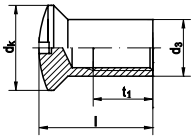


Dimensions	M 3	M 4	M 5	M 6	M 8	M 10	M 12
e	18.5	18.5	22	26.8	30.3	35.3	47.5
h	8.8	8.8	10.5	12.9	14.8	17.3	22.5
m	3	3	4	4.9	5.4	6.3	7.9
D	7.8	7.8	9.5	11.9	13.5	15.3	20.5

Dimensions in stock:
Steel/Steel coated: 75 | Stainless steel: 438

Article 88964

**Sleeve nut
with raised countersunk head**

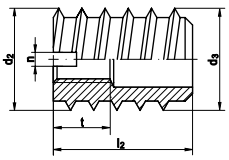


Dimensions	M 4	M 5	M 6	M 8
l	7/12/14/20	15	15/20	15/20
t_1	3/7/8/13	9	9 /13	7/12
d_3	5	6	7.5	10
d_k	7	9	10	15

Dimensions in stock:
Stainless steel: 564 | Non-ferrous materials: 598

DIN 7965

Screwed inserts "RAMPA"



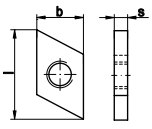
Dimensions	M 3	M 4	M 5	M 6	M 8	M 10	M 12
d_2	6	8	10	12	16	18.5	22
d_3	4.5	5.5	7.5	9.5	12.5	15	18
l_2	5	6	7	9	11	13	16
n	1	1.2	1.6	2	2.5	3	3
t	2	2	3	3	4	5	5
for drilling ∅	5.0	6.5	8.5	10.5	14.5	17	20

Dimensions in stock:
Steel/Steel coated: 330 | Non-ferrous materials: 594

Threaded plates

Article 88951

**T-Head thread plates/slide nuts
type 28/15**
for profiles 28/15, 28/12,28/28, 26/26, 26/18



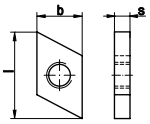
Dimensions	M 6	M 8	M 10
l	27.7	27.7	29.3
b	12.6	12.6	17.4
h	4	4	5

Dimensions in stock:
Steel/Steel coated: 424

Threaded plates

Article 88952

T-Head thread plates/slide nuts type 38/17
for profiles 35/45, 38/17, 36/36, 36/20

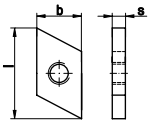


Dimensions	M 6	M 8	M 10	M 12
l	34	34	34	34
b	17.6	17.6	17.6	17.6
h	6.5	6.5	6.5	6.5

Dimensions in stock:
Steel/Steel coated: 424

Article 88953

T-Head thread plates/slide nuts type 50/40
for profiles 50/40, 486

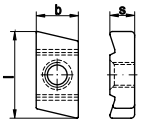


Dimensions	M 6	M 8	M 10	M 12	M 16
l	41.5	41.5	41.5	41.5	41.5
b	20.5	20.5	20.5	20.5	20.5
h	2.2	4	4	4	4

Dimensions in stock:
Steel/Steel coated: 425

Article 88954

T-Head thread plates/slide nuts type 40/22
for profiles 40/22, 40/25, K422

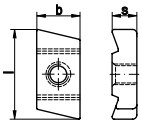


Dimensions	M 5	M 6	M 8	M 10	M 12
l	35	35	35	35	35
b	17	17	17	17	17
h	10	10	10	10	11.5

Dimensions in stock:
Steel/Steel coated: 425

Article 88955

T-Head thread plates/slide nuts type 50/30
for profiles 54/33, 52/34, 50/40, 49/30, 486



Dimensions	M 8	M 10	M 12	M 16
l	42	42	42	42
b	21	21	21	21
h	12	12	12	13

Dimensions in stock:
Steel/Steel coated: 425

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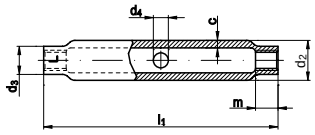
Turnbuckles

DIN 1478

Turnbuckles made from tubes or bars



Loadability only for turnbuckles with ÜZ

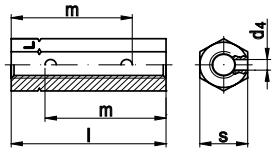
Dimensions	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36
d_2	17.2	17.2	21.3	25	30	33.7	42.4	51	63.5
d_3	9	12	15	18	22.5	27	32	38	47.5
D	6	8	8	10	10	12	12	16	16
c	2.9	3.6	4	4	4.5	5	5.6	6.3	8
l_1	110	110	125	125	170	200	255	255	295
m	7.5	10	12	15	20	24	29	36	43
adjustability	90	85	95	90	120	140	180	160	180
loadability [kN]	3.9	7.2	11	16	30	48	69	110	160

Dimensions in stock:
Steel/Steel coated: 202

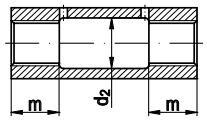
DIN 1479

Hexagon turnbuckles

≤ M 16



≥ M 20



Loadability only for turnbuckles with ÜZ

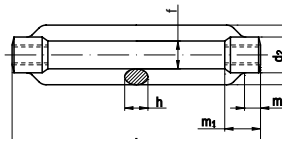
Dimensions	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36
d_2	–	–	–	–	–	21	26	32	38
d_4	4	4	4	4	4	4	4	4	4
l	30	35	45	55	75	95	115	125	145
m	22.5	25	33	40	55	24	29	36	45
s	10	13	17	19	24	30	36	46	55
adjustability	15	15	21	25	35	47	57	53	70
loadability [kN]	3.9	7.2	11	16	30	48	69	110	160

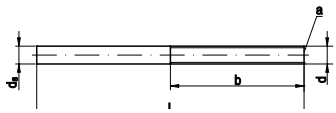
Dimensions in stock:
Steel/Steel coated: 203 | Stainless steel: 486

Turnbuckles

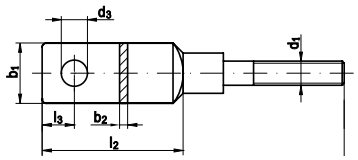
DIN 1480

Forged turnbuckles

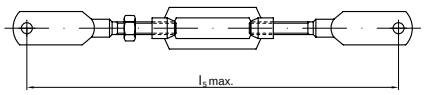




with welding studs (AE) acc. to DIN 34828
(ds ~ pitch diameter)



with flat leaf screw (BS)



Dimensions	M 6	M 8	M 10	M 12	M 14*	M 16	M 20
d_2	12	15	18	21	25	27	34
e	19	23	30	34	38	42	52
$h_{min.}$	6	8	9	11	10	14	17
l_1	110	110	125	125	140	170	200
m_1	12	15	18	21	24	27	34
m_2	6	8	9	11	9	14	17
l	120	120	150	150	165	200	220
b	65	65	75	75	85	100	120
adjustability with AE**	80	75	85	80	92	110	130
loadability with AE [kN]**	5.7	10	16	24	32	44	69
d_3**	–	–	–	13.5	–	17.5	22
b_1**	–	–	–	45	–	55	70
l_3**	–	–	–	30	–	40	50
b_2**	–	–	–	6	–	7	9
l_2**	–	–	–	90	–	100	110
l_4**	–	–	–	200	–	230	260
$l_5$max.**	–	–	–	423	–	496	552
adjustability with BS**	–	–	–	87.2	–	112.2	154
loadability with AE [kN]**	–	–	–	9.3	–	11.2	14.8

Dimensions	M 22*	M 24	M 27*	M 30	M 36	M 42	M 48
d_2	36	39	45	45	55	63	80
e	57	60	74	74	86	104	135
$h_{min.}$	16	20	20	23	28	32	40
l_1	220	255	255	255	295	330	355
m_1	37	39	42	45	55	63	78
m_2	15	20	22	23	28	32	39
l	220	260	260	260	300	350	380
b	130	150	150	160	180	200	220
adjustability with AE**	146	170	171	160	180	200	195
loadability with AE [kN]**	85	100	129	158	160	–	–
d_3**	–	26	–	–	–	–	–
b_1**	–	80	–	–	–	–	–
l_3**	–	55	–	–	–	–	–
b_2**	–	11	–	–	–	–	–
l_2**	–	120	–	–	–	–	–
l_4**	–	320	–	–	–	–	–
l_5 max.**	–	707	–	–	–	–	–
adjustability with BS**	–	220.5	–	–	–	–	–
loadability with AE [kN]**	–	27.6	–	–	–	–	–

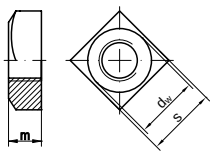
* not standardized, reference values, loadability only for turnbuckles with ÜZ and the material S235JR

Dimensions in stock:
Steel/Steel coated: 204

Square nuts

DIN 557

Square nuts



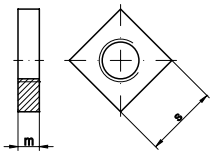
Dimensions	M 5	M 6	M 8	M 10	M 12	M 16
$d_{w\ min.}$	6.7	8.7	11.5	14.5/15.5	16.5/17.2	22
m	4	5	6.5	8	10	13
s	8	10	13	16/17	18/19	24

Dimensions in stock:
Steel/Steel coated: 91 | Stainless steel: 445

Square nuts

DIN 562

Square thin nuts



Dimensions	M 2	M 3	M 4	M 5	M 6	M 8	M 10
m	1.2	1.8	2.2	2.7	3.2	4	5
s	4	5.5	7	8	10	13	16/17*

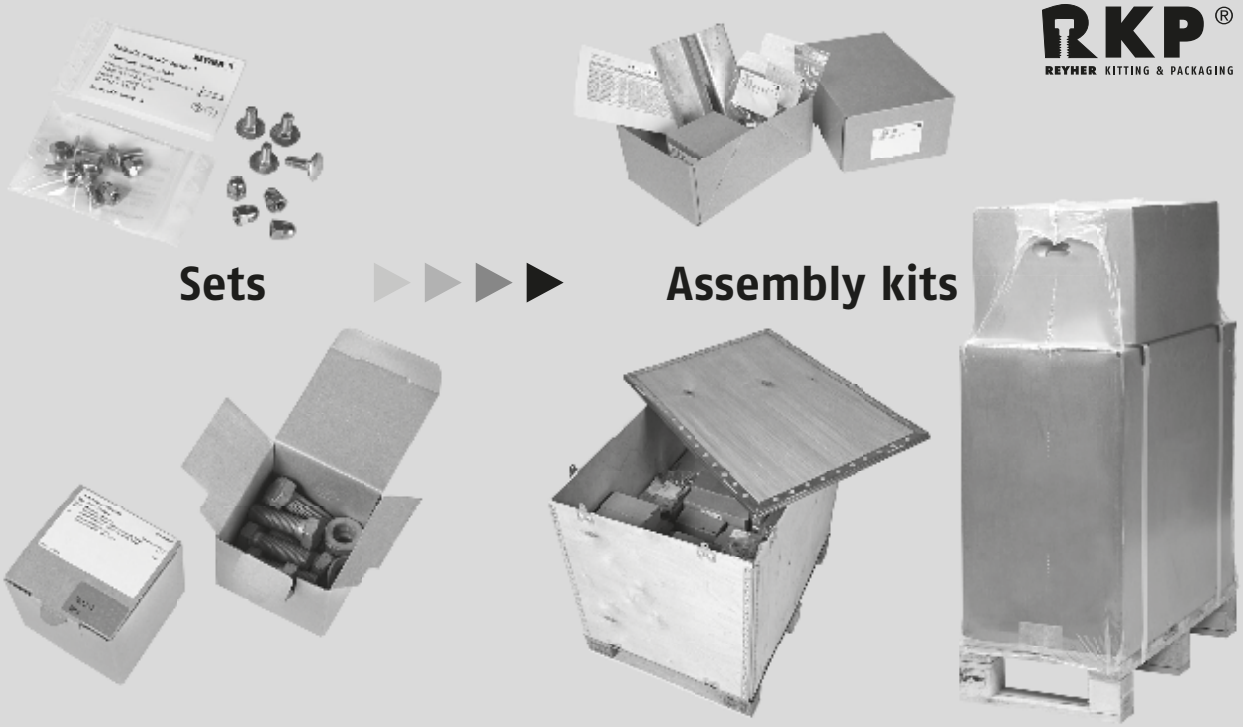
* former DIN width across flats

Dimensions in stock:
Steel/Steel coated: 92 | Stainless steel: 445

REYHER

CUSTOMER-SPECIFIC SETS & CONSTRUCTION KITS

RKP®
REYHER KITTING & PACKAGING



Whether it is production, assembly or maintenance work – REYHER provides components as required, according to size, in sets or assembly kits.
This saves not only the customer's own kitting work but also optimizes processes for example with pre-determined package sequencing.

Application-friendly sets or complex assembly kits are put together precisely according to customer specifications. This includes packaging and labelling. REYHER also offers pre-assembly of single components, and, on request adds assembly instructions, tools or other materials.

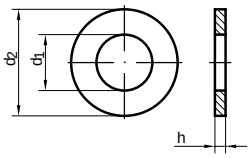
For more information, see www.reyher.de

Plain washers (round)

Pk = product (tolerance) class
A = medium
C = coarse

Tolerances for washers acc. to ISO 4759-3 (DIN 522)

General overview of "plain washers for general use" ➔ ISO 887



Nominal size = for screws		ISO 7089, 7090 (DIN 125-1 Pk A)			ISO 7091 (DIN 126 Pk C)			Art. 1/88100 (C) –			ISO 7092 (DIN 433 Pk A)			ISO 7094 (DIN 440 R Pk C)			DIN 6340 (Pk A) –		
M	Ww	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h
1		1.1	3	0.3	In the ISO standards, the nominal sizes for screw diameters and the dimensions (d1/ d2/n) for some washers have been minimally adjusted.						1.1	2.5	0.3						
1.2		1.3	3.5	0.3							1.3	3	0.3						
1.4		1.5	4	0.3							1.5	3	0.3						
1.6		1.7	4	0.3							1.7	3.5	0.3						
*1.7		1.8	4.5	0.3	The functional compliance/exchangeability DIN:ISO washers are given.														
1.8		2.0	4.5	0.3							2.0	4	0.3						
2		2.2	5	0.3	In this catalogue, the new dimensions are specified in dimension & price tables. Conversion to new dimensions is done according to the production conversion and sale of stock items.						2.2	4.5	0.3						
2.2		2.4	6	0.5							2.4	4.5	0.3						
2.5		2.7	6	0.5							2.7	5	0.5						
*2.6		2.8	7	0.5															
3		3.2	7	0.5				3.2	8	0.5	3.2	6	0.5						
3.5		3.7	8	0.5							3.7	7	0.5						
4	*1/8"	4.3	9	0.8				4.3	10	0.8	4.3	8	0.5						
5	*3/16"	5.3	10	1	5.5	10	1	5.3	12	1	5.3	9	1	5.5	18	2			
6		6.4	12	1.6	6.6	12	1.6	6.5	13	1.25	6.4	11	1.6	6.6	22	2	6.4	17	3
7	*1/4"	7.4	14	1.6	7.6	14	1.6	8	16	1.25	7.4	12	1.6	7.6	24	2			
8	*5/16"	8.4	16	1.6	9	16	1.6	10	20	1.5	8.4	15	1.6	9	28	3	8.4	23	4
10	*3/8"	10.5	20	2	11	20	2	11.5	23	1.5	10.5	18	1.6	11	34	3	10.5	28	4
12	*7/16"	13	24	2.5	13.5	24	2.5	13	26	1.75	13	20	2	13.5	44	4	13	35	5
	*1/2"	13.5	24	2.5	13.5	24	2.5	14.5	29	1.75				13.5	44	4			
14		15	28	2.5	15.5	28	2.5	14.5	29	1.75	15	24	2.5	15.5	50	4			
	*9/16"							16	32	2									
16	*5/8"	17	30	3	17.5	30	3	17.5	35	2	17	28	2.5	17.5	56	5	17	45	6
18		19	34	3	20	34	3	19.5	39	2.5	19	30	3	20	60	5			
20	*3/4"	21	37	3	22	37	3	21	42	2.5	21	34	3	22	72	6	21	50	6
	*13/16"							23	46	3									
22	*7/8"	23	39	3	24	39	3	24.5	49	3	23	37	3	24	80	6			
24		25	44	4	26	44	4	27.5	55	3.5	25	39	4	26	85	6	25	60	8
	*1"	27	50	4	26	44	4	27.5	55	3.5				26	85	6			
27		28	50	4	30	50	4	29	58	3.5	28	44	4	30	98	6			
30	*1 1/8"	31	56	4	33	56	4	31	62	3.5	31	50	4	33	105	6	31	68	10
33	*1 1/4"	34	60	5	36	60	5	34	68	4	34	56	5	36	115	8			
	*1 3/8"							36	72	5									
36	*1 3/8"	37	66	5	39	66	5	40	80	5	37	60	5	39	125	8			
39	*1 1/2"	42 (40)	72	6	42	72	6	40	80	5				42	140	10			
42		45 (43)	78	8	45	78	8	43	85	5				*45	150	8			
45	*1 3/4"	48 (46)	85	8	48	85	8	46	90	5				*48	160	8			
48		52 (50)	92	8	52	92	8	50	97	6				*52	170	10			
52	*2"	56 (54)	98	8	56	98	8	54	105	7				*56	180	10			
56		62 (58)	105	10	62	105	10	58	110	8									
	*2 1/4"	60	110	9	62	105	10												
60		66 (62)	110	10.0	66	110	10												
64	*2 1/2"	70 (66)	115	10	70	115	10												
68		74 (70)	120	10	74	120	10												
72	*2 3/4"	78 (74)	125	10	78	125	10												
76	*3"	82 (78)	135	10	82	135	10												
80		86 (82)	140	12	86	140	12												
90	*3 1/2"	96 (93)	160	12	96	160	12												

Suitable combinations of plain washers for screws/nuts acc. to property and product classes (excerpt from ISO 887 informative Annex). For more exact information, see "Application area" of the corresponding washers product standard

Washers	Hardness class/product class		100 HV/C	200 HV/A	300 HV/A
Screws/nuts	Property class	Product grade	Combination matching?		
Stahl	≤ 6.8/ 6	A, B	yes	yes	yes
	≤ 6.8/ 6	C	yes	no	no
	8.8/ 8	A, B	no	yes	yes
	10.9/10	A, B	no	no	yes
	12.9/12	A, B	no	no	no
A 1 - A 5	-50, -70, -80	A, B	–	yes	–

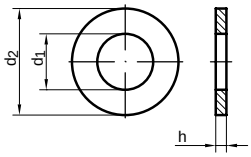
* Not included in ISO product standards ➔ ISO 887

Plain washers (round)

Pk = product (tolerance) class
A = medium
C = coarse

Tolerances for washers acc. to ISO 4759-3 (DIN 522)

General overview of "plain washers for general use" ➔ ISO 887



Nominal size = for screws		EN 14399-6 (Pk A) DIN 34820 (Pk A)*			DIN 7349 (Pk A) –			DIN 7989-1 (Pk C) DIN 7989-2 (Pk A)			ISO 7093-1.2 (DIN 9021 Pk A/Pk C)			ANSI B 18.22.1 Typ A N = narrow			ANSI B 18.22.1 Typ A W = wide		
M	Ww	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	$d_1$①	$d_2$①	h①	$d_1$①	$d_2$①	h①
3		* d_1 and d_2 conform to EN 14399-6 and DIN 34820:h dimensions DIN 34820 in			3.2	9	1				3.2	9	0.8						
3.5											3.7	11	0.8						
4	*1/8"				4.3	12	1.6				4.3	12	1						
5	*3/16"				5.3	15	2				5.3	15	1.2						
6					6.4	17	3				6.4	18	1.6						
7	*1/4"										7.4	22	2	0,281	0,625	0,065	0,312	0,734	0,065
8	*5/16"				8.4	21	4				8.4	24	2	0,344	0,688	0,065	0,375	0,875	0,083
10	*3/8"				10.5	25	4	11	20	8	10.5	30	2.5	0,406	0,812	0,065	0,438	1,000	0,083
12	*7/16"	13	24	3 (2.5)	13	30	6	13.5	24	8	13	37	3	0,469	0,922	0,065	0,500	1,250	0,083
	*1/2"													0,531	1,062	0,095	0,562	1,375	0,109
14					15	36	6				15	44	3						
	*9/16"													0,594	1,156	0,095	0,625	1,469	0,109
16	*5/8"	17	30	4 (3)	17	40	6	17.5	30	8	17	50	3	0,656	1,312	0,095	0,688	1,750	0,134
18					19	44	8				20	56	4						
20	*3/4"	21	37	4 (3)	21	44	8	22	37	8	22	60	4	0,812	1,469	0,134	0,812	2,000	0,148
22	*7/8"	23	39	4 (3)	23	50	8	24	39	8	23/24	66	5						
24		25	44	4 (4)	25	50	10	26	44	8	26	72	5						
27	*1"	28	50	5 (4)	28	60	10	30	50	8	30	85	6						
30	*1 1/8"	31	56	5 (4)	31	68	10	33	56	8	33	92	6						
33	*1 1/4"							36	60	8	36	105	6						
36	*1 3/8"	37	66	6 (5)				39	66	8	39	110	8						

① Dimensions in inch

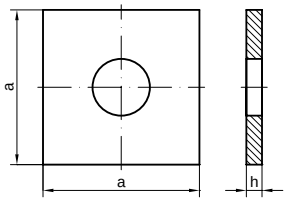
Nominal size = screws/pins		DIN 1052 (Pk C) –			ISO 8738 (Pk A) (DIN 1440 (Pk A)) DIN 1441 (Pk C)			DIN 988 -S (Pk C) –			Art. 88104 (Pk C) –		
M/Ø	Ww	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h
3					d_1-dimensions DIN 1441 ( ) d_2-dimensions DIN 1441 in ( )			3	6	1	3.2	20	1.25
3.5													
4	*1/8"							4	8	1	4.3	15/20/25	1.25
5	*3/16"				5 (5.5)	10 (10)	0.8				5.3	20/25/30	1.5
6					6 (7)	12 (12)	1.6	6	12	1.2	6.4	20/25/30/35	1.5
7	*1/4"				7 (8)	– (14)	1.6						
8	*5/16"				8 (9)	15 (16)	2	8	14	1.2	8.4	20/25/30/35/40	1.5
10	*3/8"				10 (11)	18 (20)	2.5	10	13	1.2	10.5	25/30/35/40	1.5
12	*7/16"	14	58	6	12 (13)	20 (25)	3	12	18	1.2	12.5	30/35/40	1.5
14					14 (15)	22 (28)	3	14	20	1.5			
15								15	21	1.5			
16	*5/8"	18	68	6	16 (17)	24 (28)	3	16	22	1.5			
17								17	24	1.5			
18					18 (19)	– (30)	4	18	25	1.5			
20	*3/4"	23	80	8	20 (21)	30 (32)	4	20	28	2			
22	*7/8"	25	92	8	22 (23)	34 (34)	4	22	30/32	2			
24		27	105	8	24 (25)	37 (38)	4						
25								25	35/36	2			
26								26	37	2			
27	*1"				27 (28)	39 (40)	5						
28								28	40	2			
30	*1 1/8"				30 (31)	44 (45)	5	30	42	2.5			
33	*1 1/4"				33 (34)	47 (50)	5						

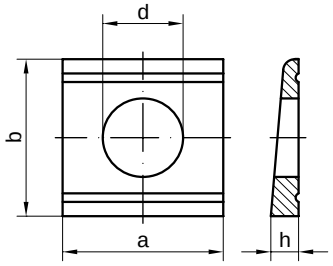
Continued ➔ TI-86

Plain washers (round)

Nominal size = screws/pins		DIN 1052 (Pk C) –			DIN 1440 (Pk C) DIN 1441 (Pk C)*			DIN 988 –S (Pk C) –			Note
M/Ø	Ww	d_1	d_2	h	d_1	d_2	h	d_1	d_2	h	
35					35	52	6	35	45	2.5	Washers of special design – punched – turned – burned – in all sizes and materials **on request**
36	*1 3/8“				36 (37)	52	6				
37								37	47	2.5	
40					40 (41)	58	6	40	50	2.5	
45	*1 3/4“				45 (46)	62	7	45	55	3	
50					50 (51)	68	8	50	62/63	3	
55					55 (56)	75	9	55	68	3	
60					60 (62)	80	9	60	75	3	
63								63	80	3	
65					65 (68)	90	9	65	85	3.5	
70					70 (72)	95	10	70	90	3.5	
75					75 (78)	100	10	75	95	3.5	
80					80 (82)	110	12	80	100	3.5	
85					85 (86)	110	12	85	105	3.5	
90					90 (92)	115	12	90	110	3.5	
100					100 (102)	125	14	100	120/125	3.5	

Square washers/taper washers





Nominal size = for screws		DIN 436 (Pk C) 0%			DIN 434 (Pk C) 8%			DIN 435 (Pk C) 14%			DIN 6917 (Pk C) 14%			DIN 6918 (Pk C) 8%		
M	Ww	d	a	h	d	a/b	h	d	a/b	h	d	a/b	h	d	a/b	h
8	5/16“				9	22/22	3.8/2	9	22/22	4.6/1.5						
10	3/8“	11	30	3	11	22/22	3.8/2	11	22/22	4.6/1.5	13	26/30	6.2/2	13	26/30	4.9/2.5
12	7/16“	13.5	40	4	13.5	26/30	4.9/2.5	13.5	26/30	6.2/2						
	1/2“	13.5	40	4	13.5	26/30	4.9/2.5	13.5	26/30	6.2/2						
14																
16	5/8“	17.5	50	5	17.5	32/36	5.9/3	17.5	32/36	7.5/2.5	17	32/36	7.5/2.5	17	32/36	5.9/3
18																
20	3/4“	22	60	5	22	40/44	7/3.5	22	40/44	9.2/3	21	40/44	9.2/3	21	40/44	7/3.5
22	7/8“	24	70	6	24	44/50	8/4	24	44/50	10/3	23	44/50	10/3	23	44/50	8/4
24		26	80	6	26	56/56	8.5/4	26	56/56	10.8/3	25	56/56	10.8/3	25*	56/56	8.5/4
	1“	26	80	6	26	56/56	8.5/4	26	56/56	10.8/3						
27		30	90	6	30	56/56	8.5/4	30	56/56	10.8/3	28	56/56	10.8/3	28*	56/56	8.5/4
30	1 1/8“	33	95	6	33	62/62	9/4	33	62/62	11.7/3	31	62/62	11.7/3	31*	62/62	9/4
33	1 1/4“	36	100	6												
36	1 3/8“	39	110	8							37	68/68	12.5/3	37*	68/68	9.4/4
39	1 1/2“	42	125	8												
42		45	135	8												
45	1 3/4“	48	140	8												
48		52	150	10												
52	2“	56	160	10												

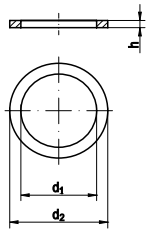
Marking:

DIN	Pitch	Groove qty.
434	8%	2
435	14%	1
6917	14%	1
6918	8%/5%	2/0 – „Form A“

Sealing washers (plain)

DIN 7603

Flat sealing rings



Dimensions	4x8	5x7.5	5x9*	6x10*	6.5x9.5	6.5x11*
d_1	4.2	5.2	5.2	6.2	6.7	6.7
d_2	7.9	7.4	8.9	9.9	9.4	10.9
h	1	1	1	1	1	1

Dimensions	8x11.5	8x12*	8x14	10x13.5	10x14*	10x15*
d_1	8.2	8.2	8.2	10.2	10.2	10.2
d_2	11.4	11.9	13.9	13.4	13.9	14.9
h	1	1/1.5	1	1	1/1.5	1

Dimensions	10x16	10x18	12x15.5	12x16	12x17*	12x18*
d_1	10.2	10.2	12.2	12.2	12.2	12.2
d_2	15.9	17.9	15.4	15.9	16.9	17.9
h	1	1.5	1.5	1.5	1.5	1.5

Dimensions	13x18*	14x18	14x20	15x19	16x20	16x22*
d_1	13.2	14.2	14.2	15.2	16.2	16.2
d_2	17.9	17.9	19.9	18.9	19.9	21.9
h	1.5	1.5	1.5	1.5	1.5	1.5

Dimensions	17x21	17x23*	18x22	18x24	20x24	20x26
d_1	17.2	17.2	18.2	18	20.2	20
d_2	20.9	22.9	21.9	24	23.9	26
h	1.5	1.5	1.5	1.5	1.5	1.5

Dimensions	21x26	22x27	22x29*	23x28	24x29	24x32
d_1	21.2	22.2	22.2	23.3	24.3	24.3
d_2	25.9	26.9	28.9	27.9	28.9	31.9
h	1.5	1.5	1.5	2	2	2

Dimensions	26x31	26x34*	27x32	28x33	30x36	32x38
d_1	26.3	26.3	27.3	28.3	30.3	32.3
d_2	30.9	33.9	31.9	32.9	35.9	37.9
h	2	2	2	2	2	2

Dimensions	33x38	33x41*	36x42	38x44	42x49	45x52
d_1	33.3	33.3	36.3	38.3	42.3	45.3
d_2	37.9	40.9	41.9	43.9	48.9	51.9
h	2	2	2	2	2	2

Dimensions	48x55*	60x68*				
d_1	48.3	60.5				
d_2	54.9	67.8				
h	2	2.5				

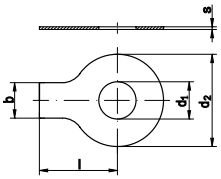
material: Al operating temperature: max. 200 °C
material: Cu operating temperature: max. 300 °C
* not standardized, reference values

Dimensions in stock:
Non-ferrous materials: 593

Retaining/lock washers and rings

DIN 93

Tap washers with a long tap



Dimensions	3.2	4.3	4.3	5.3	6.4	8.4	10.5	13
d_2	12	14	14	17	19	22	26	30
b	4	5	5	6	7	8	10	12
l	13	14	14	16	18	20	22	28
s	0.38	0.38	0.38	0.5	0.5	0.75	0.75	1
for thread ∅	3	4	4	5	6	8	10	12

Dimensions	15	17	19	21	23	25	28	31
d_2	33	36	40	42	50	50	58	63
b	12	15	18	18	20	20	23	26
l	28	32	36	36	42	42	48	52
s	1	1	1	1	1	1	1.6	1.6
for thread ∅	14	16	18	20	22	24	27	30

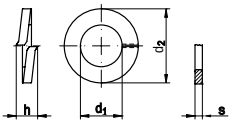
Dimensions	34	37	40	43	46	50	54
d_2	68	75	82	88	95	100	105
b	28	30	32	35	38	40	44
l	56	60	64	70	75	80	85
s	1.6	1.6	1.6	1.6	1.6	1.6	1.6
for thread ∅	33	36	39	42	45	48	52

d_1 = nominal size

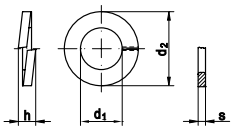
Dimensions in stock:
Steel/Steel coated: 64 | Stainless steel: 432

DIN 127

Spring lock washers with bent end or flat end



type A = bent end



type B = flat end

Dimensions	2	2.3	2.5	2.6 *	3	3.5	4	5	6
d_1	2.1	2.3	2.6	3	3.1	3.6	4.1	5.1	6.1
d_2	4.4	4.8	5.1	5.2	6.2	6.7	7.6	9.2	11.8
s	0.5	0.6	0.6	0.6	0.8	0.8	0.9	1.2	1.6
$h_{tpye\ A}$	–	–	–	–	1.9	1.9	2.1	2.7	3.6
$h_{tpye\ B}$	1.2	1.4	1.4	1.4	1.6	1.6	1.8	2.4	3.2

Dimensions	7	8	10	12	14	16	18	20	22
d_1	7.1	8.1	10.2	12.2	14.2	16.2	18.2	20.2	22.5
d_2	12.8	14.8	18.1	21.1	24.1	27.4	29.4	33.6	35.9
s	1.6	2	2.2	2.5	3	3.5	3.5	4	4
$h_{tpye\ A}$	3.6	4.6	5	5.8	6.8	7.8	7.8	8.8	8.8
$h_{tpye\ B}$	3.2	4	4.4	5	6	7	7	8	8

Dimensions	24	27	30	33	36	39	42	45	48
d_1	24.5	27.5	30.5	33.5	36.5	39.5	42.5	45.5	49
d_2	40	43	48.2	53.2	58.2	61.2	68.2	71.2	75
s	5	5	6	6	6	6	7	7	7
$h_{tpye\ A}$	11	11	13.6	13.6	13.6	13.6	15.6	15.6	15.6
$h_{tpye\ B}$	10	10	12	12	12	12	14	14	14

Dimensions	52	56	64	80	90	100			
d_1	53	57	65	81	91	101			
d_2	82	87	95	111	121	131			
s	8	8	8	8	8	8			
$h_{tpye\ A}$	18	18	18	18	18	18			
$h_{tpye\ B}$	16	16	16	16	16	16			

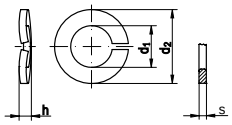
* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 70 | Stainless steel: 436 | Non-ferrous materials: 571

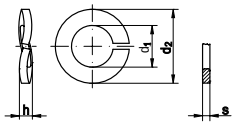
Retaining/lock washers and rings

DIN 128

Curved or waved spring lock washers



type A = curved



type B = waved

* not standardized, reference values

Dimensions	2.2 *	2.5	3	4	5	6
d_1	2.4	2.6	3.1	4.1	5.1	6.1
d_2	4.8	5.1	6.2	7.6	9.2	11.8
s	0.6	0.6	0.7	0.8	1	1.3
h	1	1.1	1.3	1.4	1.7	2.2

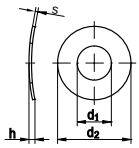
Dimensions	8	10	12	14	16	18
d_1	8.1	10.2	12.2	14.2	16.2	18.2
d_2	14.8	18.1	21.1	24.1	27.4	29.4
s	1.6	1.8	2.1	2.4	2.8	2.8
h	2.75	3.15	3.65	4.3	5.1	5.1

Dimensions	20	22	24	27	30	36
d_1	20.2	22.5	24.5	27.5	30.5	35.5
d_2	33.6	35.9	40	43	30.5	58.2
s	3.2	3.2	4	4	6	3
h	5.9	5.9	7.5	7.5	10.5	11.3

Dimensions in stock:
Steel/Steel coated: 72 | Stainless steel: 437

DIN 137

Spring washers
type A = curved



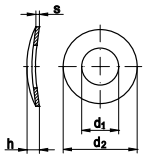
Dimensions	2	2.3	2.6	3	3.5	4
d_1	2.2	2.5	2.8	3.2	3.7	4.3
d_2	4.5	5	5.5	6	7	8
s	0.3	0.3	0.3	0.4	0.4	0.5
h	1	1	1.1	1.3	1.4	1.6

Dimensions	5	6	7	8	10	
d_1	5.3	6.4	7.4	8.4	10.5	
d_2	10	11	12	15	18	
s	0.5	0.5	0.5	0.5	0.8	
h	1.8	2.2	2.4	3.4	4	

Dimensions in stock:
Steel/Steel coated: 73 | Stainless steel: 437

DIN 137

Spring washers
type B = waved



Dimensions	3	3.5	4	5	6	7	8
d_1	3.2	3.7	4.3	5.3	6.4	7.4	8.4
d_2	8	8	9	11	12	14	15
s	0.5	0.5	0.5	0.5	0.5	0.8	0.8
h	1.6	1.8	2	2.2	2.6	3	3

Dimensions	10	12	14	16	18	20	22
d_1	10.5	13	15	17	19	21	23
d_2	21	24	28	30	34	36	40
s	1	1.2	1.6	1.6	1.6	1.6	1.8
h	4.2	5	6	6.4	6.6	7.4	7.8

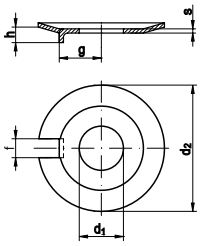
Dimensions	24	27	30	33	36		
d_1	25	28	31	34	37		
d_2	44	50	56	60	68		
s	1.8	2	2.2	2.2	2.5		
h	8.2	9.4	10	10.6	11.6		

Dimensions in stock:
Steel/Steel coated: 73 | Stainless steel: 438

Retaining/lock washers and rings

DIN 432

Washers with external tap



Dimensions	4.3	5.3	6.4	8.4	10.5	13	15	17
d_2	14	17	19	22	26	30	33	36
f	2.5	3.5	3.5	3.5	4.5	4.5	4.5	5.5
g	5.5	7	7.5	8.5	10	12	13	15
h ≈	2	2.5	3	4	4	4.5	4.5	4.5
s	0.4	0.75	0.75	1	1	1.2	1.2	1.2

Dimensions	19	21	23	25	28	31	34	37
d_2	40	42	50	50	58	63	68	75
f	6.5	6.5	7.5	7.5	8.5	8.5	9.5	11
g	18	18	20	21	23	25	28	31
h ≈	4.5	4.5	6.5	6.5	9.5	9.5	9.5	9.5
s	1.2	1.6	1.6	1.6	1.6	1.6	1.6	2

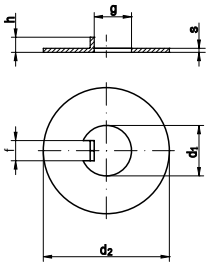
Dimensions	40	43	46	50	54	58	66	
d_2	82	88	95	100	105	112	125	
f	11	11	13	13	13	16	18	
g	33	36	38	40	42	45	52	
h ≈	11	11	12	13	13	14	13.5	
s	2	2	2	2	2	2.5	2.5	

d_1 = nominal size

Dimensions in stock:
Steel/Steel coated: 77 | Stainless steel: 440

DIN 462

Internal tap washers



Dimensions	8	10	14	16	18	20	22	24
d_2	20	25	30	32	34	36	40	42
s	0.8	0.8	0.8	11	1	1	1	1
f	3	4	5	5	6	6	6	6
g	5.9	7.4	11.4	13.5	15.4	17.5	19.5	21.6
h	2.5	3	3	3	4	4	4	4

Dimensions	28	30	32	35	38	40	42	45
d_2	50	50	52	55	58	62	62	68
s	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f	7	7	7	7	8	8	8	8
g	25.5	27.5	29.6	32.6	35.3	37.3	39.3	42.4
h	5	5	5	5	5	5	5	5

Dimensions	48	50	52	55	58	60	62	65
d_2	75	75	80	80	90	90	95	95
s	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.5
f	8	8	10	10	10	10	10	10
g	45.4	47.4	49.3	52.3	55.3	57.3	59.3	62.4
h	5	5	6	6	6	6	6	6

Dimensions	70	72	75	80	85	95	100	
d_2	100	110	110	115	120	135	145	
s	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
f	10	10	10	10	10	12	12	
g	67.4	68.9	71.9	76.9	81.9	91.8	96.9	
h	6	7	7	7	7	8	8	

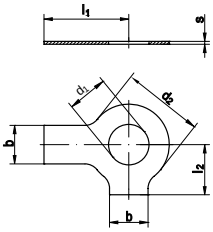
d_1 = nominal size

Dimensions in stock:
Steel/Steel coated: 83

Retaining/lock washers and rings

DIN 463

Washers with 2 taps



Dimensions	3.2	4.3	5.3	6.4	8.4	10.5	13
d_2	7	9	10	12.5	17	21	24
b	4	5	6	7	8	10	12
l_1	13	14	16	18	20	22	28
l_2	5	6.5	8	9	11	13	15
s	0.38	0.38	0.5	0.5	0.75	0.75	1
for thread ∅	3	4	5	6	8	10	12

Dimensions	15	17	19	21	23	25	28
d_2	28	30	34	37	39	44	50
b	12	15	18	18	20	20	23
l_1	28	32	36	36	42	42	48
l_2	16	18	20	21	23	25	29
s	1	1	1	1	1	1	1.6
for thread ∅	14	16	18	20	22	24	27

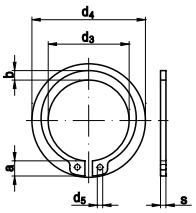
Dimensions	31	34	37	40	43	50	54
d_2	56	60	66	72	78	92	98
b	26	28	30	32	35	40	44
l_1	52	56	60	64	70	80	85
l_2	32	34	38	41	44	50	53
s	1.6	1.6	1.6	1.6	1.6	1.6	1.6
for thread ∅	30	33	36	39	42	48	52

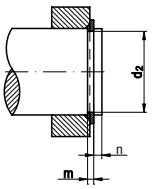
d_1 = nominal size

Dimensions in stock:
Steel/Steel coated: 83 | Stainless steel: 442 | Non-ferrous materials: 573

DIN 471

Retaining rings for shafts
normal type





Dimensions	3	4	5	6	7	8	9	10	11	12
s	0.4	0.4	0.6	0.7	0.8	0.8	1	1	1	1
d_3	2.7	3.7	4.7	5.6	6.5	7.4	8.4	9.3	10.2	11
a	1.9	2.2	2.5	2.7	3.1	3.2	3.3	3.3	3.3	3.3
b	0.8	0.9	1.1	1.3	1.4	1.5	1.7	1.8	1.8	1.8
d_5	1	1	1	1.2	1.2	1.2	1.2	1.5	1.5	1.7
d_2	2.8	3.8	4.8	5.7	6.7	7.6	8.6	9.6	10.5	11.5
m	0.5	0.5	0.7	0.8	0.9	0.9	1.1	1.1	1.1	1.1
n	0.3	0.3	0.3	0.5	0.5	0.6	0.6	0.6	0.8	0.8
d_4	7	8.6	10.3	11.7	13.5	14.7	16	17	18	19

Dimensions	13	14	15	16	17	18	19	20	21	22
s	1	1	1	1	1	1.2	1.2	1.2	1.2	1.2
d_3	11.9	12.9	13.8	14.7	15.7	16.5	17.5	18.5	19.5	20.5
a	3.4	3.5	3.6	3.7	3.8	3.9	3.9	4	4.1	4.2
b	2	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8
d_5	1.7	1.7	1.7	1.7	1.7	2	2	2	2	2
d_2	12.4	13.4	14.3	15.2	16.2	17	18	19	20	21
m	1.1	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.3	1.3
n	0.9	0.9	1.1	1.2	1.2	1.5	1.5	1.5	1.5	1.5
d_4	20.2	21.4	22.6	23.8	25	26.2	27.2	28.4	29.6	30.8

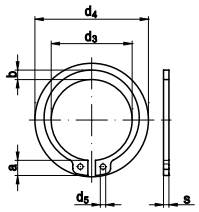
nominal size = for shafts ∅
* intermediate size not included in the standard

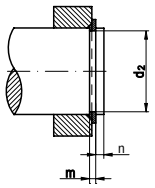
Dimensions in stock:
Steel/Steel coated: 85 | Stainless steel: 443

Retaining/lock washers and rings

DIN 471

Retaining rings for shafts
normal type





Dimensions	23*	24	25	26	27*	28	29	30	31*	32
s	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5
d_3	21.5	22.2	23.2	24.2	24.9	25.9	26.9	27.9	28.6	29.6
a	4.3	4.4	4.4	4.5	4.6	4.7	4.8	5	5.1	5.2
b	2.9	3	3	3.1	3.1	3.2	3.4	3.5	3.5	3.6
d_5	2	2	2	2	2	2	2	2	2.5	2.5
d_2	22	22.9	23.9	24.9	25.6	26.6	27.6	28.6	29.3	30.3
m	1.3	1.3	1.3	1.3	1.3	1.6	1.6	1.6	1.6	1.6
n	1.5	1.7	1.7	1.7	2.1	2.1	2.1	2.1	2.6	2.6
d_4	–	33.2	34.2	35.5	–	37.9	39.1	40.5	–	43

Dimensions	33*	34	35	36	37*	38	39*	40	41*	42
s	1.5	1.5	1.5	1.75	1.75	1.75	1.75	1.75	1.75	1.75
d_3	30.5	31.5	32.2	33.2	34.2	35.2	36	36.5	37.5	38.5
a	5.2	5.4	5.6	5.6	5.7	5.8	5.9	6	6.2	6.5
b	3.7	3.8	3.9	4	4.1	4.2	4.3	4.4	4.5	4.5
d_5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
d_2	31.3	32.3	33	34	35	36	37	37.5	38.5	39.5
m	1.6	1.6	1.6	1.85	1.85	1.85	1.85	1.85	1.85	1.85
n	2.6	2.6	3	3	3	3	3	3.8	3.8	3.8
d_4	–	45.4	46.8	47.8	–	50.2	–	52.6	–	55.7

Dimensions	44*	45	46*	47*	48	50	52	54*	55	56
s	1.75	1.75	1.75	1.75	1.75	2	2	2	2	2
d_3	40.5	41.5	42.5	43.5	44.5	45.8	47.8	49.8	50.8	51.8
a	6.6	6.7	6.7	6.8	6.9	6.9	7	7.1	7.2	7.3
b	4.6	4.7	4.8	4.9	5	5.1	5.2	5.3	5.4	5.5
d_5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
d_2	41.5	42.5	43.5	44.5	45.5	47	49	51	52	53
m	1.85	1.85	1.85	1.85	1.85	2.15	2.15	2.15	2.15	2.15
n	3.8	3.8	3.8	3.8	3.8	4.5	4.5	4.5	4.5	4.5
d_4	–	59.1	–	–	62.5	64.5	66.7	–	70.2	71.6

Dimensions	57*	58	60	62	63	65	67*	68	70	72
s	2	2	2	2	2	2.5	2.5	2.5	2.5	2.5
d_3	52.8	53.8	55.8	57.8	58.8	60.8	62.5	63.5	65.5	67.5
a	7.3	7.3	7.4	7.5	7.6	7.8	7.9	8	8.1	8.2
b	5.5	5.6	5.8	6	6.2	6.3	6.4	6.5	6.6	6.8
d_5	2.5	2.5	2.5	2.5	2.5	3	3	3	3	3
d_2	54	55	57	59	60	62	64	65	67	69
m	2.15	2.15	2.15	2.15	2.15	2.65	2.65	2.65	2.65	2.65
n	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
d_4	–	73.6	75.6	77.8	79	81.4	–	84.8	87	89.2

Dimensions	75	77*	78	80	82	85	87*	88	90	92*
s	2.5	2.5	2.5	2.5	2.5	3	3	3	3	3
d_3	70.5	72.5	73.5	74.5	76.5	79.5	81.5	82.5	84.5	86.5
a	8.4	8.5	8.6	8.6	8.7	8.7	8.8	8.8	8.8	9
b	7	7.2	7.3	7.4	7.6	7.8	7.9	8	8.2	8.4
d_5	3	3	3	3	3	3.5	3.5	3.5	3.5	3.5
d_2	72	74	75	76.5	78.5	81.5	83.5	84.5	86.5	88.5
m	2.65	2.65	2.65	2.65	2.65	3.15	3.15	3.15	3.15	3.15
n	4.5	4.5	4.5	5.3	5.3	5.3	5.3	5.3	5.3	5.3
d_4	92.7	–	96.1	98.1	100.3	103.3	–	106.5	108.5	–

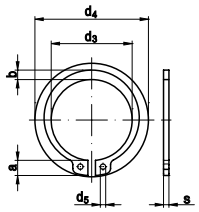
nominal size = for shafts ∅
* intermediate size not included in the standard

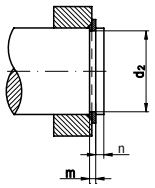
Dimensions in stock:
Steel/Steel coated: 85 | Stainless steel: 443

Retaining/lock washers and rings

DIN 471

Retaining rings for shafts
normal type





Dimensions	97*	98*	100	102*	105	107*	108*	110	112*	115	117*
s	3	3	3	4	4	4	4	4	4	4	4
d_3	91.5	91.5	94.5	95	98	100	100	103	105	108	110
a	9.4	9.4	9.6	9.7	9.9	10	10	10.1	103	10.6	10.8
b	8.8	8.8	9	9.2	9.3	9.5	9.5	9.6	9.7	9.8	10
d_5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
d_2	93.5	94.5	96.5	98	101	103	104	106	108	111	113
m	3.15	3.15	3.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
n	5.3	5.3	5.3	6	6	6	6	6	6	6	6
d_4	–	–	120.2	–	125.8	–	–	131.2	–	137.3	–

Dimensions	118*	120	122*	125	127*	128*	130	132*	135	137*	138*
s	4	4	4	4	4	4	4	4	4	4	4
d_3	110	113	115	118	120	120	123	125	128	130	130
a	10.8	11	11.2	11.4	11.4	11.4	11.6	11.7	11.8	11.9	11.9
b	10	10.2	10.3	10.4	10.5	10.5	10.7	10.8	11	11	11
d_5	3.5	3.5	4	4	4	4	4	4	4	4	4
d_2	114	116	118	121	123	124	126	128	131	133	134
m	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
n	6	6	6	6	6	6	6	6	6	6	6
d_4	–	143.1	–	149	–	–	154.4	–	159.8	–	–

Dimensions	140	142*	145	147*	148*	150	155	160	165	168*	170
s	4	4	4	4	4	4	4	4	4	4	4
d_3	133	135	138	140	140	142	146	151	155.5	157.5	160.5
a	12	12.1	12.2	12.3	12.3	13	13	13.3	13.5	13.5	13.5
b	11.2	11.3	11.5	11.6	11.6	11.8	12	12.2	12.5	12.9	12.9
d_5	4	4	4	4	4	4	4	4	4	4	4
d_2	136	138	141	143	144	145	150	155	160	163	165
m	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
n	6	6	6	6	6	7.5	7.5	7.5	7.5	7.5	7.5
d_4	165.2	–	170.6	–	–	177.3	182.3	188	193.4	–	198.4

Dimensions	175	180	185	190	195	200	210	215*	220	230	240
s	4	4	4	4	4	4	5	5	5	5	5
d_3	165.5	170.5	175.5	180.5	185.5	190.5	198	203	208	218	228
a	13.5	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
b	12.9	13.5	13.5	14	14	14	14	14	14	14	14
d_5	4	4	4	4	4	4	4	4	4	4	4
d_2	170	175	180	185	190	195	204	209	214	224	234
m	4.15	4.15	4.15	4.15	4.15	4.15	5.15	5.15	5.15	5.15	5.15
n	7.5	7.5	7.5	7.5	7.5	7.5	9	9	9	9	9
d_4	203.4	210	215	220	225	230	240	–	250	260	270

Dimensions	250	255*	260	270	280	290	300				
s	5	5	5	5	5	5	5				
d_3	238	240	245	255	265	275	285				
a	14.2	16.2	16.2	16.2	16.2	16.2	16.2				
b	14	16	16	16	16	16	16				
d_5	4	5	5	5	5	5	5				
d_2	244	247	252	262	272	282	292				
m	5.15	5.15	5.15	5.15	5.15	5.15	5.15				
n	9	12	12	12	12	12	12				
d_4	280	–	294	304	314	324	334				

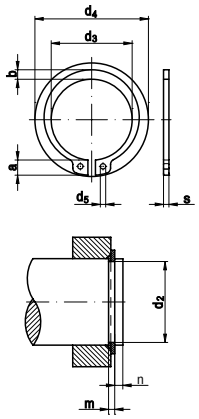
nominal size = for shafts ∅
* intermediate size not included in the standard

Dimensions in stock:
Steel/Steel coated: 85 | Stainless steel: 443

Retaining/lock washers and rings

DIN 471

Retaining rings for shafts
heavy type



nominal size = for shafts ∅

Dimensions	15	16	20	25	30	35
s	1.5	1.5	1.75	2	2	2.5
d_3	13.8	14.7	18.5	23.2	27.9	32.2
a	4.8	5	5.5	6.4	6.5	6.7
b	2.4	2.5	3	3.4	4.1	4.2
d_5	2	2	2	2	2	2.5
d_2	14.3	15.2	19	23.9	28.6	33
m	1.6	1.6	1.85	2.15	2.15	2.65
n	1.1	1.2	1.5	1.7	2.1	3
d_4	25.1	26.5	31.6	38.5	43.7	49.1

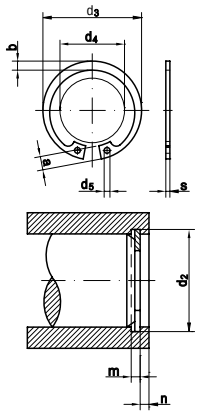
Dimensions	40	45	50	55	60	
s	2.5	2.5	3	3	3	
d_3	36.5	41.5	45.8	50.8	55.8	
a	7	7.5	8	8.5	9	
b	4.4	4.7	5.1	5.4	5.8	
d_5	2.5	2.5	2.5	2.5	2.5	
d_2	37.5	42.5	47	52	57	
m	2.65	2.65	3.15	3.15	3.15	
n	3.8	3.8	4.5	4.5	4.5	
d_4	54.7	60.8	66.8	72.9	78.9	

Dimensions in stock:
Steel/Steel coated: 85

Retaining/lock washers and rings

DIN 472

Retaining rings for bores
normal type



Dimensions	8	9	10	11	12	13	14	15
s	0.8	0.8	1	1	1	1	1	1
d_3	8.7	9.8	10.8	11.8	13	14.1	15.1	16.2
a	2.4	2.5	3.2	3.3	3.4	3.6	3.7	3.7
b	1.1	1.3	1.4	1.5	1.7	1.8	1.9	2
d_5	1	1	1.2	1.2	1.5	1.5	1.7	1.7
d_2	8.4	9.4	10.4	11.4	12.5	13.6	14.6	15.7
m	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.1
n	0.6	0.6	0.6	0.6	0.8	0.9	0.9	1.1
d_4	3	3.7	3.3	4.1	4.9	5.4	6.2	7.2

Dimensions	16	17	18	19	20	21	22	23*
s	1	1	1	1	1	1	1	1.2
d_3	17.3	18.3	19.5	20.5	21.5	22.5	23.5	24.6
a	3.8	3.9	4.1	4.1	4.2	4.2	4.2	4.2
b	2	2.1	2.2	2.2	2.3	2.4	2.5	2.5
d_5	1.7	1.7	2	2	2	2	2	2
d_2	16.8	17.8	19	20	21	22	23	24.1
m	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.3
n	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.7
d_4	8	8.8	9.4	10.4	11.2	12.2	13.2	–

Dimensions	24	25	26	27*	28	29*	30	31
s	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
d_3	25.9	26.9	27.9	29.1	30.1	31.1	32.1	33.4
a	4.4	4.5	4.7	4.7	4.8	4.8	4.8	5.2
b	2.6	2.7	2.8	2.9	2.9	3	3	3.2
d_5	2	2	2	2	2	2	2	2.5
d_2	25.2	26.2	27.2	28.4	29.4	30.4	31.4	32.7
m	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
n	1.8	1.8	1.8	2.1	2.1	2.1	2.1	2.6
d_4	14.8	15.5	16.1	–	17.9	–	19.9	20

Dimensions	32	33*	34	35	36	37	38	39*
s	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5
d_3	34.4	35.5	36.5	37.8	38.8	39.8	40.8	42
a	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.6
b	3.2	3.3	3.3	3.4	3.5	3.6	3.7	3.8
d_5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
d_2	33.7	34.7	35.7	37	38	39	40	41
m	1.3	1.3	1.6	1.6	1.6	1.6	1.6	1.6
n	2.6	2.6	2.6	3	3	3	3	3
d_4	20.6	–	22.6	23.6	24.6	25.4	26.4	–

Dimensions	40	41*	42	44*	45	46*	47	48
s	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
d_3	43.5	44.5	45.5	47.5	48.5	49.5	50.5	51.5
a	5.8	5.9	5.9	6	6.2	6.3	6.4	6.4
b	3.9	4	4.1	4.2	4.3	4.4	4.4	4.5
d_5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
d_2	42.5	43.5	44.5	46.5	47.5	48.5	49.5	50.5
m	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
n	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
d_4	27.8	–	29.6	–	32	–	33.5	34.5

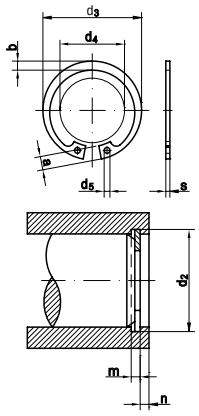
nominal size = for shafts ∅
* intermediate size not included in the standard

Dimensions in stock:
Steel/Steel coated: 86 | Stainless steel: 443

Retaining/lock washers and rings

DIN 472

Retaining rings for bores
normal type



Dimensions	50	51*	52	53*	54*	55	56	57*
s	2	2	2	2	2	2	2	2
d_3	54.2	55.2	56.2	57.2	58.2	59.2	60.2	61.2
a	6.5	6.5	6.7	6.7	6.7	6.8	6.8	6.8
b	4.6	4.7	4.7	4.9	5	5	5.1	5.1
d_5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
d_2	53	54	55	56	57	58	59	60
m	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
n	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
d_4	36.3	–	37.9	–	–	40.7	41.7	–

Dimensions	58	60	62	63	64*	65	67*	68
s	2	2	2	2	2	2.5	2.5	2.5
d_3	62.2	64.2	66.2	67.2	68.2	69.2	71.5	72.5
a	6.9	7.3	7.3	7.3	7.4	7.6	7.7	7.8
b	5.2	5.4	5.5	5.6	5.7	5.8	6	6.1
d_5	2.5	2.5	2.5	2.5	2.5	3	3	3
d_2	61	63	65	66	67	68	70	71
m	2.15	2.15	2.15	2.15	2.15	2.65	2.65	2.65
n	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
d_4	43.5	44.7	46.7	47.7	–	49	–	51.6

Dimensions	70	72	75	77*	78	80	82	85
s	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3
d_3	74.5	76.5	79.5	82.5	82.5	85.5	87.5	90.5
a	7.8	7.8	7.8	8.5	8.5	8.5	8.5	8.6
b	6.2	6.4	6.6	6.8	6.8	7	7	7.2
d_5	3	3	3	3	3	3	3	3.5
d_2	73	75	78	80	81	83.5	85.5	88.5
m	2.65	2.65	2.65	2.65	2.65	2.65	2.65	3.15
n	4.5	4.5	4.5	4.5	4.5	5.3	5.3	5.3
d_4	53.6	55.6	58.6	–	60.1	62.1	64.1	66.9

Dimensions	88	90	92	95	97*	98	100	102
s	3	3	3	3	3	3	3	4
d_3	93.5	95.5	97.5	100.5	103.5	103.5	105.5	108
a	8.6	8.6	8.7	8.8	9	9	9.2	9.5
b	7.4	7.6	7.8	8.1	8.3	8.3	8.4	8.5
d_5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
d_2	91.5	93.5	95.5	98.5	100.5	101.5	103.5	106
m	3.15	3.15	3.15	3.15	3.15	3.15	3.15	4.15
n	5.3	5.3	5.3	5.3	5.3	5.3	5.3	6
d_4	69.9	71.9	73.7	76.5	–	79	80.6	82

Dimensions	105	108	110	112	115	118*	120	122*
s	4	4	4	4	4	4	4	4
d_3	112	115	117	119	122	125	127	129
a	9.5	9.5	10.4	10.5	10.5	10.7	11	11
b	8.7	8.9	9	9.1	9.3	9.6	9.7	9.8
d_5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4
d_2	109	112	114	116	119	122	124	126
m	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
n	6	6	6	6	6	6	6	6
d_4	85	88	88.2	90	93	–	96.9	–

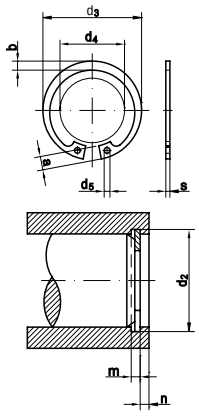
nominal size = for shafts ∅
* intermediate size not included in the standard

Dimensions in stock:
Steel/Steel coated: 86 | Stainless steel: 443

Retaining/lock washers and rings

DIN 472

Retaining rings for bores
normal type



Dimensions	125	128*	130	132*	135	138*	140	142*	145	148*
s	4	4	4	4	4	4	4	4	4	4
d_3	132	135	137	139	142	145	147	149	152	155
a	11	11	11	11	11.2	11.2	11.2	11.3	11.4	11.8
b	10	10.2	10.2	10.3	10.5	10.6	10.7	10.8	10.9	11.1
d_5	4	4	4	4	4	4	4	4	4	4
d_2	129	132	134	136	139	142	144	146	149	152
m	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
n	6	6	6	6	6	6	6	6	6	6
d_4	101.9	–	106.9	–	111.5	–	116.5	–	121	–

Dimensions	150	152*	155	160	165	168*	170	175	180	185
s	4	4	4	4	4	4	4	4	4	4
d_3	158	161	164	169	174.5	177.5	179.5	184.5	189.5	194.5
a	12	12	12	13	13	13.5	13.5	13.5	14.2	14.2
b	11.2	11.3	11.4	11.6	11.8	12.1	12.2	12.7	13.2	13.7
d_5	4	4	4	4	4	4	4	4	4	4
d_2	155	157	160	165	170	173	175	180	185	190
m	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
n	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
d_4	124.8	–	129.8	132.7	137.7	–	141.6	146.6	150.2	155.2

Dimensions	190	195	200	205*	210	215*	220	225*	230	240
s	4	4	4	5	5	5	5	5	5	5
d_3	199.5	204.5	209.5	217	222	227	232	237	242	252
a	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
b	13.8	13.8	14	14	14	14	14	14	14	14
d_5	4	4	4	4	4	4	4	4	4	4
d_2	195	200	205	211	216	221	226	231	236	246
m	4.15	4.15	4.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
n	7.5	7.5	7.5	9	9	9	9	9	9	9
d_4	160.2	165.2	170.2	–	180.2	–	190.2	–	200.2	210.2

Dimensions	245*	250	255*	260	265*	270	275*	280	285*	290
s	5	5	5	5	5	5	5	5	5	5
d_3	257	262	270	275	280	285	290	295	300	305
a	14.2	14.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
b	14	14	16	16	16	16	16	16	16	16
d_5	4	4	5	5	5	5	5	5	5	5
d_2	251	256	263	268	273	278	283	288	293	298
m	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
n	9	9	12	12	12	12	12	12	12	12
d_4	–	220.2	–	226	–	236	–	246	–	256

Dimensions	295*	300	310*	320*	340*	360*				
s	5	5	6	6	6	6				
d_3	310	315	327	337	357	377				
a	16.2	16.2	–	–	–	–				
b	16	16	20	20	20	20				
d_5	5	5	6	6	6	6				
d_2	303	308	320	330	350	370				
m	5.15	5.15	3.2	6.2	6.2	6.2				
n	12	12	15	15	15	15				
d_4	–	266	–	–	–	–				

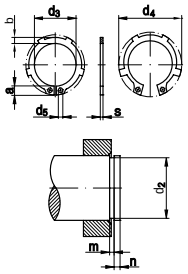
nominal size = for shafts ∅
* intermediate size not included in the standard

Dimensions in stock:
Steel/Steel coated: 86 | Stainless steel: 443

Retaining/lock washers and rings

DIN 983

Retaining rings with lugs for shafts (retainer rings)



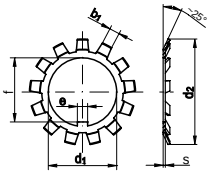
nominal size = for shafts ∅

Dimensions	20	25	30	35	40	45	50
s	1.2	1.2	1.5	1.5	1.75	1.75	2
d_3	18.5	23.2	27.9	32.2	36.5	41.5	45.8
a	3.8	4.3	4.7	5.2	7.2	7.2	8.2
b	2.6	3	3.5	3.9	4.4	4.7	5.1
d_5	2	2	2	2.5	2.5	2.5	2.5
d_2	19	23.9	28.6	33	37.5	42.5	47
m	1.3	1.3	1.6	1.6	1.85	1.85	2.15
n	1.5	1.7	2.1	3	3.8	3.8	4.5
d_4	28	34	39.9	45.9	55.1	60.1	67.2

Dimensions in stock:
Steel/Steel coated: 190

DIN 5406

Lockwashers/safety plates
for locknuts acc. to DIN 981



Dimensions	MB 0	MB 1	MB 2	MB 3	MB 4	MB 5	MB 6	MB 7
d_1	10	12	15	17	20	25	30	35
d_2	21	25	28	32	36	42	49	57
e	3	3	4	4	4	5	5	6
f	8.5	10.5	13.5	15.5	18.5	23	27.5	32.5
b_1	3	3	4	4	4	5	5	5
s	1	1	1	1	1	1.25	1.25	1.25
for locknut DIN 981	KM 0	KM 1	KM 2	KM 3	KM 4	KM 5	KM 6	KM 7

Dimensions	MB 8	MB 9	MB 10	MB 11	MB 12	MB 13	MB 14	MB 15
d_1	40	45	50	55	60	65	70	75
d_2	62	69	74	81	864	92	98	104
e	6	6	6	8	8	8	8	8
f	37.5	42.5	47.5	52.5	57.5	62.5	66.5	71.5
b_1	6	6	6	7	7	7	8	8
s	1.25	1.25	1.25	1.5	1.5	1.5	1.5	1.5
for locknut DIN 981	KM 8	KM 9	KM 10	KM 11	KM 12	KM 13	KM 14	KM 15

Dimensions	MB 16	MB 17	MB 18	MB 19	MB 20	MB 21	MB 22	MB 23
d_1	80	85	90	95	100	105	110	115
d_2	112	119	126	133	142	145	154	159
e	10	10	10	10	12	12	12	12
f	76.5	81.5	86.5	91.5	96.5	100.5	105.5	110.5
b_1	8	8	10	10	10	12	12	12
s	1.75	1.75	1.75	1.75	1.75	1.75	1.75	2
for locknut DIN 981	KM 16	KM 17	KM 18	KM 19	KM 20	KM 21	KM 22	KM 23

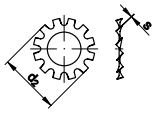
Dimensions	MB 24	MB 25	MB 26	MB 27	MB 28	MB 29	MB 30	
d_1	120	125	130	135	140	145	150	
d_2	164	170	175	185	192	202	205	
e	14	14	14	14	16	16	16	
f	115	120	125	130	135	140	145	
b_1	12	12	12	14	14	14	14	
s	2	2	2	2	2	2	2	
for locknut DIN 981	KM 24	KM 25	KM 26	KM 27	KM 28	KM 29	KM 30	

Dimensions in stock:
Steel/Steel coated: 288

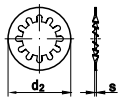
Retaining/lock washers and rings

DIN 6797

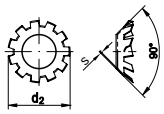
Toothed lock washers



type A = external teeth



type I = internal teeth



Type V = countersunk

* acc. to DIN 6797:1971

Dimensions	3.2	3.7	4.3	5.3	6.4	7.4
$d_{2\ form\ A/I}$	6	7	8	10	11	12.5
$d_{2\ type\ V}$	6	7	8	9.8	11.8	–
$s_{type\ A/I}$	0.4	0.5	0.5	0.6	0.7	0.8
$s_{type\ V}$	0.2	0.25	0.25	0.3	0.4	–
for thread ∅	3	3.5	4	5	6	7

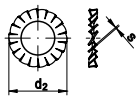
Dimensions	8.4	10.5	12.5*	13	15	17
$d_{2\ form\ A/I}$	15	18	20.5	20.5	24	26
$d_{2\ type\ V}$	15.3	19	23	23	–	–
$s_{type\ A/I}$	0.8	0.9	1	1	1	1.2
$s_{type\ V}$	0.4	0.5	0.5	0.5	–	–
for thread ∅	8	10	12	12	14	16

Dimensions	19	21	23	25	28	31
$d_{2\ form\ A/I}$	30	33	36	38	44	48
$d_{2\ type\ V}$	–	–	–	–	–	–
$s_{type\ A/I}$	1.4	1.4	1.5	1.5	1.6	1.6
$s_{type\ V}$	–	–	–	–	–	–
for thread ∅	18	20	22	24	27	30

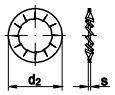
Dimensions in stock:
Steel/Steel coated: 293 | Stainless steel: 519

DIN 6798

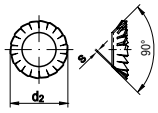
Serrated lock washers



type A = external teeth



type I = internal teeth



type V = countersunk

* acc. to DIN 6798:1971

Dimensions	2.2	2.5*	2.7	3.2	3.7	4.3	5.3
$d_{2\ form\ A/I}$	4.5	5	5.5	6	7	8	10
$d_{2\ type\ V}$	–	–	–	6	7	8	9.8
$s_{type\ A/I}$	0.3	0.4	0.4	0.4	0.5	0.5	0.6
$s_{type\ V}$	–	–	–	0.2	0.25	0.25	0.3
for thread ∅	2	2.3	2.5	3	3.5	4	5

Dimensions	6.4	7.4	8.4	10.5	13	15	17
$d_{2\ form\ A/I}$	11	12.5	15	18	20.5	24	26
$d_{2\ type\ V}$	11.8	–	15.3	19	23	–	–
$s_{type\ A/I}$	0.7	0.8	0.8	0.9	1	1	1.2
$s_{type\ V}$	0.4	–	0.4	0.5	0.5	–	–
for thread ∅	6	7	8	10	12	14	16

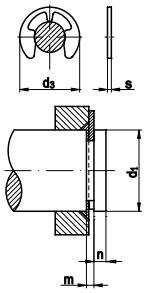
Dimensions	19	21	23	25	28	31
$d_{2\ form\ A/I}$	30	33	36	38	44	48
$d_{2\ type\ V}$	–	–	–	–	–	–
$s_{type\ A/I}$	1.4	1.4	1.5	1.5	1.6	1.6
$s_{type\ V}$	–	–	–	–	–	–
for thread ∅	18	20	22	24	27	30

Dimensions in stock:
Steel/Steel coated: 294 | Stainless steel: 519 | Non-ferrous materials: 591

Retaining/lock washers and rings

DIN 6799

Retaining rings for shafts



Dimensions	0.8	1.2	1.5	1.9	2.3	3.2
d_3	2.25	3.25	4.25	4.8	6.3	7.3
s	0.2	0.3	0.4	0.5	0.6	0.6
for shafts ∅ d_1	1 – 1.4	1.4 – 2	2 – 2.5	2.5 – 3	3 – 4	4 – 5
m	0.24	0.34	0.44	0.54	0.64	0.64
n	0.4	0.6	0.8	1	1	1

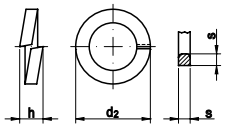
Dimensions	4	5	6	7	8	9
d_3	9.3	11.3	12.3	14.3	16.3	18.8
s	0.7	0.7	0.7	0.9	1	1.1
for shafts ∅ d_1	5 – 7	6 – 8	7 – 9	8 – 11	9 – 12	10 – 14
m	0.74	0.74	0.74	0.94	1.05	1.15
n	1.2	1.2	1.2	1.5	1.8	2

Dimensions	10	12	15	19	24	
d_3	20.4	23.4	29.4	37.6	44.6	
s	1.2	1.3	1.5	1.75	2	
for shafts ∅ d_1	11 – 15	13 – 18	16 – 24	20 – 31	25 – 38	
m	1.25	1.35	1.55	1.80	2.05	
n	2	2.5	3	3.5	4	

Dimensions in stock:
Steel/Steel coated: 296 | Stainless steel: 520

DIN 7980

Spring lock washers for cheese head screws



Dimensions	3	4	5	6	8	10	12
d_2	5.6	7	8.8	9.9	12.7	16	18
s	1	1.2	1.6	1.6	2	2.5	2.5
h	2	2.4	3.2	3.2	4	5	5
for thread ∅	3	4	5	6	8	10	12

Dimensions	14	16	18	20	22	24	27
d_2	21.1	24.4	26.4	30.6	32.9	35.9	38.9
s	3	3.5	3.5	4.5	4.5	5	5
h	6	7	7	9	9	10	10
for thread ∅	14	16	18	20	22	24	27

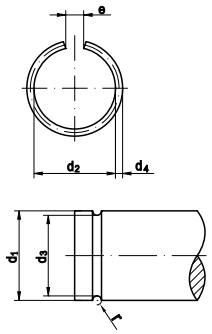
Dimensions	30	33	36	42	48		
d_2	44.1	47.1	52.2	60.2	67		
s	6	6	7	8	8		
h	12	12	14	16	16		
for thread ∅	30	33	36	42	48		

Dimensions in stock:
Steel/Steel coated: 335 | Stainless steel: 536

Retaining/lock washers and rings

DIN 7993

Snap rings
type A = for shafts



Dimensions	4	5	6	7	8	10	12	16	18
d_2	3.1	4.1	5.1	6.1	7.1	9.1	10.8	14.2	16.2
d_4	0.8	0.8	0.8	0.8	0.8	0.8	1	1.6	1.6
e	1	1	1	2	2	2	3	3	3
for shafts ∅ d_1	4	5	6	7	8	10	12	16	18
∅ d_3	3.2	4.2	5.2	6.2	7.2	9.2	11	14.4	16.4
r	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.9	0.9

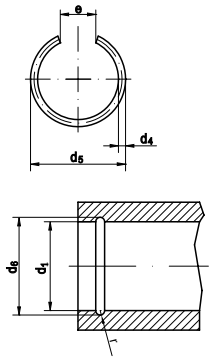
Dimensions	20	22	25	26	28	30	35	38	40
d_2	17.7	19.7	22.7	23.7	25.7	27.7	32.1	35.1	37.1
d_4	2	2	2	2	2	2	2.5	2.5	2.5
e	3	3	3	3	3	3	4	4	4
for shafts ∅ d_1	20	22	25	26	28	30	35	38	40
∅ d_3	18	20	23	24	26	28	32.5	35.5	37.5
r	1.1	1.1	1.1	1.1	1.1	1.1	1.4	1.4	1.4

Dimensions	45	48	50	55	60	65	70		
d_2	42	45	47	51.1	56.1	61.1	66		
d_4	2.5	2.5	2.5	3.2	3.2	3.2	3.2		
e	4	4	4	4	4	4	5		
for shafts ∅ d_1	45	48	50	55	60	65	70		
∅ d_3	42.5	45.5	47.5	51.8	56.8	61.8	66.8		
r	1.4	1.4	1.4	1.8	1.8	1.8	1.8		

Dimensions in stock:
Steel/Steel coated: 346

DIN 7993

Snap rings
type B = for bores



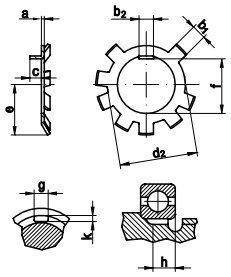
Dimensions	7	8	10	12	16	18
d_4	0.8	0.8	0.8	1	1.6	1.6
d_5	7.9	8.9	10.9	13.2	17.8	19.8
e	4	4	4	6	8	8
for drilling ∅ d_1	7	8	10	12	16	18
∅ d_6	7.8	8.8	10.8	13	17.6	19.6
r	0.5	0.5	0.5	0.6	0.9	0.9

Dimensions in stock:
Steel/Steel coated: 346

Retaining/lock washers and rings

DIN 70952

Safety plates
for locknuts acc. to DIN 70852



Dimensions	10	12	14	16	18	20	22	24	26
a	0.75	0.75	0.75	1	1	1	1	1	1
b_1	4	4	4	5	5	5	6	6	6
b_2	4	4	5	5	5	5	6	6	6
c	3	3	3	3	4	4	4	4	5
d_2	16	18	20	23	25	27	30	32	34
e	11	12	13	14.5	16.5	17.5	19	20	22
f	8.9	10.9	12.9	14.9	16.9	18.9	20.9	22.9	24.9
g_{shaft}*	4	4	5	5	5	5	6	6	6
h_{shaft}	3	3	3	3	4	4	4	4	5
k_{shaft}	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

Dimensions	28	30	32	35	38	40	42	45	48
a	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
b_1	6	6	6	6	6	6	7	7	7
b_2	7	7	7	7	8	8	8	8	8
c	5	5	5	5	5	5	5	5	5
d_2	36	38	41	43	47	49	52	54	57
e	23	24	25.5	26.5	28.5	29.5	31	32	33.5
f	26.9	28.9	30.9	33.9	36.6	38.6	40.6	43.6	46.7
g_{shaft}*	7	7	7	7	8	8	8	8	8
h_{shaft}	5	5	5	5	5	5	5	5	5
k_{shaft}	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

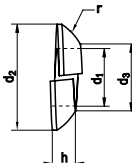
Dimensions	50	52	55	60	65	70	75	80	90
a	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5
b_1	7	7	7	10	10	10	10	10	10
b_2	8	8	10	10	10	10	10	10	10
c	5	6	6	6	6	6	7	7	7
d_2	60	62	67	71	76	81	86	91	103
e	35	37	39.5	41.5	44	46.5	50	52.5	58.5
f	48.7	50.7	53.7	58.7	63.7	68.7	73.2	78.2	88.2
g_{shaft}*	8	8	10	10	10	10	10	10	10
h_{shaft}	5	6	6	6	6	6	7	7	7
k_{shaft}	1.5	1.5	1.5	2	2	2	2	2	2

* tolerance C11 on the shaft

Dimensions in stock:
Steel/Steel coated: 384

DIN 74361

Spherical springwashers
type C



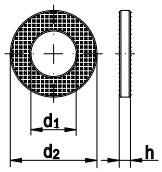
Dimensions	12.5	14.5	16.5	18.5	20.5	22.5
d_2	23	26	26.5	29	34	34
d_3	14.5	17	18	20	24	24
h	5	6	6.5	7	8	8
r	12	14	15	16	18	18

Dimensions in stock:
Steel/Steel coated: 385

Retaining/lock washers and rings

Article 88119

Locktix-washers



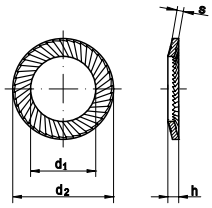
for screws with property class 8.8/10.9/12.9

Dimensions	8	10	12	16
$d_{1\ min.}$	8.4	10.5	13	16.5
$d_{2\ max.}$	16	20	24	30
h	2.5	2.5	3	4

Dimensions in stock:
Steel/Steel coated: 412

Article 88120

SCHNORR safety washers
type S = standard



Dimensions	2	2.5	3	3.5	4	5	6
d_1	2.2	2.7	3.2	3.7	4.3	5.3	6.4
d_2	4	4.8	5.5	6	7	9	10
s	0.35	0.45	0.45	0.45	0.5	0.6	0.7
h	0.6	0.9	0.9	0.9	1	1.1	1.2
for inch thread ∅	–	–	1/8"	–	5/32"	3/16"	–

Dimensions	7	8	10	12	14	16	18
d_1	7.4	8.4	10.5	13	15	17	19
d_2	12	13	16	18	22	24	27
s	0.7	0.8	1	1.1	1.2	1.3	1.5
h	1.3	1.4	1.6	1.7	2	2.1	2.3
for inch thread ∅	–	5/16"	3/8"	–	9/16"	5/8"	–

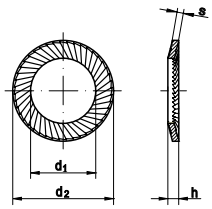
Dimensions	20	22	24	27	30	36	
d_1	21	23	25.6	28.6	31.6	38	
d_2	30	33	36	39	45	54	
s	1.5	1.5	1.8	2	2	2.5	
h	2.5	2.7	2.9	3.1	3.6	4.2	
for inch thread ∅	–	7/8"	–	–	1 1/8"	1 3/8"	

for screws with property class ≤ 5.8

Dimensions in stock:
Steel/Steel coated: 409 | Stainless steel: 558

Article 88121

SCHNORR safety washers
type VS = extra strong



Dimensions	5	6	8	10	12	14	16
d_1 [1]	5.3	6.4	8.4	10.5	13	15	17
d_2 [2]	9	10	13	16	18	22	24
s	1	1	1.2	1.5	1.5	1.5	2
h	1.3	1.4	1.7	2	2.1	2.2	2.6
for inch thread ∅	3/16"	–	5/16"	3/8"	–	9/16"	5/8"

Dimensions	18	20	22	24	27	30	
d_1 [1]	19	21	23	25.6	28.6	31.6	
d_2 [2]	27	30	33	36	39	45	
s	2	2	2	2.5	2.5	2.5	
h	2.7	2.8	3	3.4	3.5	3.8	
for inch thread ∅	–	–	7/8"	–	–	1 1/8"	

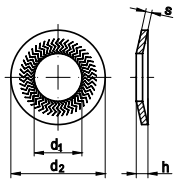
for screws with property class 8.8/10.9

Dimensions in stock:
Steel/Steel coated: 409 | Stainless steel: 558

Retaining/lock washers and rings

Article 88123

TECKENTRUP lock washers
type S = standard



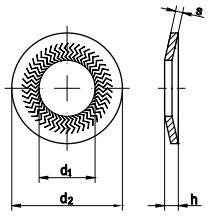
Dimensions	4	5	6	8	10	12
d_1	4.1	5.1	6.1	8.2	10.2	12.4
d_2	8.2	10.2	12.2	16.2	20.25	24.25
s	1	1	1.2	1.4	1.6	1.6
h	1.35	1.5	1.8	2.4	2.4	2.6

for screws with property class ≤ 5.8

Dimensions in stock:
Steel/Steel coated: 411 | Stainless steel: 558

Article 88124

TECKENTRUP lock washers
type M = medium



Dimensions	4	5	6	8	10
d_1	4.1	5.1	6.1	8.2	10.2
d_2	10.2	12.2	14.2	18.2	22.25
s	1	1.2	1.4	1.4	1.6
h	1.5	1.8	2.2	2.4	2.75

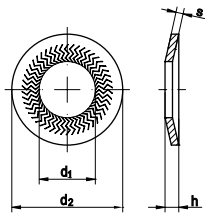
Dimensions	12	14	16	20	
d_1	12.4	14.4	16.4	21	
d_2	27.25	30.25	32.5	40	
s	1.8	2.4	2.5	3	
h	3.05	3.5	3.95	4.7	

for screws with property class ≤ 10.9

Dimensions in stock:
Steel/Steel coated: 411 | Stainless steel: 558

Article 88125

TECKENTRUP lock washers
type B = wide



Dimensions	6	8	10	12
d_1	6.1	8.2	10.2	12.4
d_2	18.2	22.25	27.25	32.3
s	1.4	1.9	2.4	2.8
h	2.55	2.9	3.65	4.5

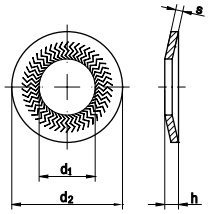
for screws with property class ≤ 10.9

Dimensions in stock:
Steel/Steel coated: 411 | Stainless steel: 559

Retaining/lock washers and rings

Article 88126

TECKENTRUP lock washers
type Z = for cylindrical head screws



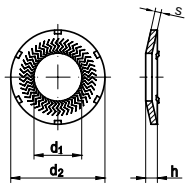
for cap screws with property class ≤ 10.9

Dimensions	6	8	10	12	16
d_1	6.1	8.2	10.2	12.4	16.4
d_2	9.9	12.7	16.1	18.3	24.6
s	1.4	1.4	1.6	1.8	2.5
h	1.6	1.7	2	2.2	3.1

Dimensions in stock:
Steel/Steel coated: 411

Article 88129

TECKENTRUP lock washers
type K = with contact serrations



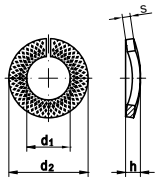
for screws with property class ≤ 5.8

Dimensions	4	5	6	8	10	12
d_1	4.1	5.1	6.1	8.2	10.2	12.4
d_2	8.2	10.2	12.2	16.2	20.25	24.25
s	1	1	1.2	1.4	1.6	1.6
h	1.35	1.5	1.8	2.4	2.6	2.6

Dimensions in stock:
Steel/Steel coated: 412 | Stainless steel: 559

Article 88130

Lock rings
type VSK = standard type



for screws with property class ≤ 8.8

Dimensions	4	5	6	8	10	12	14
d_1	4.1	5.1	6.1	8.1	10.2	12.2	14.2
d_2	7.6	9.2	11.8	14.8	18.1	21.1	24.1
s	0.8	1	1.3	1.6	1.8	2.1	2.4
$h_{max.}$	1.4	1.7	2.2	2.75	3.15	3.15	4.3

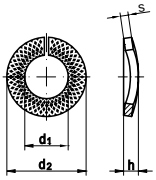
Dimensions	16	18	20	22	24	27	30
d_1	16.2	18.2	20.2	22.5	24.5	27.5	30.5
d_2	27.4	29.4	33.6	35.9	40	43	48.2
s	2.8	2.8	3.2	3.2	4	4	6
$h_{max.}$	5.1	5.1	5.9	5.9	7.5	7.5	10.5

Dimensions in stock:
Steel/Steel coated: 412 | Stainless steel: 559

Retaining/lock washers and rings

Article 88131

Lock rings
type VSK-Z = for cylindrical head screws



for cap screws with property class ≤ 8.8

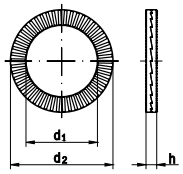
Dimensions	4	5	6	8
d_1	4.1	5.1	6.1	8.1
d_2	7	8.8	9.9	12.7
s	1.2	1.6	1.6	2
h	1.7	2.1	2.1	2.8

Dimensions	10	12	16	20
d_1	10.2	12.2	16.2	20.2
d_2	16.1	18.3	24.6	30.6
s	2.5	2.5	3.5	4.5
h	3.7	3.7	5.2	6.4

Dimensions in stock:
Steel/Steel coated: 412

Article 88132

NORD-LOCK washers
standard type



for screws with property class ≤ 12.9

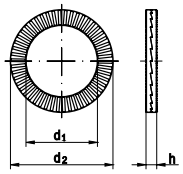
Dimensions	5	6	8	10	12	14	16	18
d_1	5.4	6.5	8.7	10.7	13	15.2	17	19.5
d_2	9	10.8	13.5	16.6	19.5	23	25.4	29
h	1.8	1.8	2.5	2.5	2.5	3.4	3.4	3.4
for inch thread ∅	No. 10	–	5/16"	–	–	9/16"	5/8"	–

Dimensions	20	22	24	27	30	33	36	
d_1	21.4	23.4	25.3	28.4	31.4	34.4	37.4	
d_2	30.7	34.5	39	42	47	48.5	55	
h	3.4	3.4	3.4	6.6	6.6	6.6	6.6	
for inch thread ∅	–	7/8"	–	–	1 1/8"	1 1/4"	1 3/8"	

Dimensions in stock:
Steel/Steel coated: 412 | Stainless steel: 559

Article 88132

NORD-LOCK washers
type SP = with enlarged outer diameter



for screws with property class ≤ 12.9

Dimensions	3.5	4	5	6	8	10
d_1	3.9	4.4	5.4	6.5	8.7	10.7
d_2	9	9	10.8	13.5	16.6	21
h	2.2	2.2	1.8	2.5	2.5	2.5
for inch thread ∅	6	8	No. 10	–	5/16"	–

Dimensions	12	14	16	18	20	22
d_1	13	15.2	17	19.5	21.4	23.4
d_2	25.4	30.7	30.7	34.5	39	42
h	3.4	3.4	3.4	3.4	3.4	4.6
for inch thread ∅	–	9/16"	5/8"	–	–	7/8"

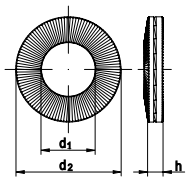
Dimensions	24	27	30	33	36	
d_1	25.3	28.4	32.4	34.4	37.4	
d_2	48.5	48.5	58.5	58.5	63	
h	4.6	6.6	6.6	6.6	6.6	
for inch thread ∅	–	–	1 1/8"	1 1/4"	1 3/8"	

Dimensions in stock:
Steel/Steel coated: 412

Retaining/lock washers and rings

Article 88132

NORD-LOCK washers X-series
standard type



for screws with property class ≤ 12.9

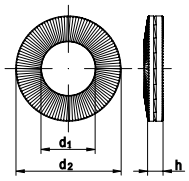
Dimensions	6	8	10	11	12	14	16
d_1	6.3	8.4	10.5	11.5	12.5	14.6	16.6
d_2	10.8	13.5	16.6	18.5	19.5	23	25.4
h	1.77	2.29	2.95	3.24	3.5	4.03	4.74
for inch thread ∅	–	5/16"	–	7/16"	–	9/16"	5/8"

Dimensions	18	20	22	24	27	30	
d_1	18.7	20.7	22.8	24.8	27.9	31	
d_2	29	30.7	34.5	39	42	47	
h	5.36	6.01	6.8	7.19	8.28	9.06	
for inch thread ∅	–	–	7/8"	–	–	1 1/8"	

Dimensions in stock:
Steel/Steel coated: 413

Article 88132

NORD-LOCK washers X-series
type SP = with enlarged outer diameter



for screws with property class ≤ 12.9

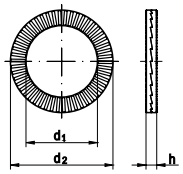
Dimensions	6	8	10	12	14	16
d_1	6.3	8.4	10.5	12.5	14.6	16.6
d_2	13.5	16.6	21	25.4	29	30.7
h	1.77	2.29	2.95	3.5	4.03	4.74
for inch thread ∅	–	5/16"	–	–	9/16"	5/8"

Dimensions	18	20	22	24	27	30
d_1	18.7	20.7	22.8	24.8	27.9	31
d_2	34.5	39	42	47	51	55
h	5.36	6.01	6.8	7.19	8.28	9.06
for inch thread ∅	–	–	7/8"	–	–	1 1/8"

Dimensions in stock:
Steel/Steel coated: 413

Article 88132

NORD-LOCK washers
type SC = for usage with HV assemblies acc. to EN 14399-4



Dimensions	12	16	20	22
d_1	13.1	17.1	21.4	23.4
d_2	23.7	29.7	36.7	38.7
h	4.64	4.6	4.6	4.6

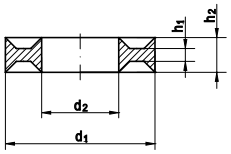
Dimensions	24	27	30	36
d_1	25.3	28.4	31.4	37.4
d_2	43.7	49.5	55.4	65.4
h	4.6	5.8	5.8	6

Dimensions in stock:
Steel/Steel coated: 413

Retaining/lock washers and rings

Article 88494

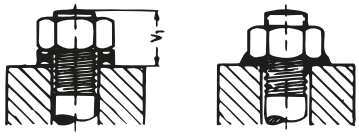
DUBO profile washers
for hexagon head screws



Examples:

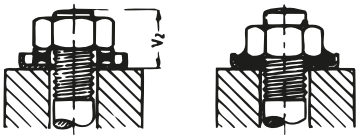
without plate ring (V_1)

before tightening | after tightening



with plate ring (V_2)

before tightening | after tightening



Dimensions	198	199	200	201	202	203
for thread	M 3	M 4	M 5	M 6	M 7	M 8
d_1	8	9.5	10.6	12.7	14.5	16.2
d_2	3.2	4.15	5.15	6.2/6.5	7.1	8.1
h_2	2.2	2.6	3	3.5	3.8	4
h_1	0.8	1	1.2	1.4	1.5	1.6
V_1	5	6	7	8.5	9	10.5
V_2	–	–	–	9.25	9.75	11.5

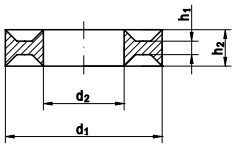
Dimensions	205	207	209	211	213	215
for thread	M 10	M 12	M 14	M 16	M 18	M 20
d_1	19.6	23.6	25.4	29.4	35.1	35.7
d_2	10.2	12.2	14.2	16.2	18.2	20.3
h_2	4.5	5	5.5	6	6.5	7
h_1	1.8	2	2.1	2.2	2.3	2.4
V_1	12.5	14.5	16.5	19	21.5	23
V_2	13.5	16	18	20.75	23.25	24.75

Dimensions	217	219	222	225	231	243
for thread	M 22	M 24	M 27	M 30	M 36	M 48
d_1	41.6	41.6	47.3	53.1	63.5	86.5
d_2	22.5	24.3	27.3	30.2	36.2	48.2
h_2	7.5	8	8.5	8.5	10	17
h_1	2.5	2.6	2.7	2.8	3.2	4.5
V_1	24.5	26	28.5	30.5	38	55
V_2	26.5	28	30.5	–	–	–

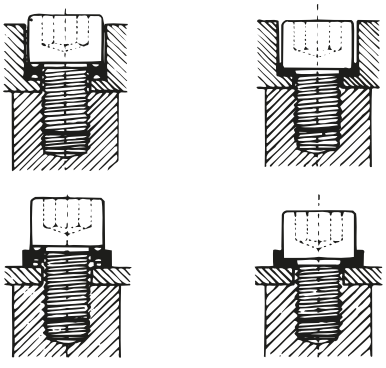
Dimensions in stock:
Non-ferrous materials: 597

Article 88495

DUBO profile washers
for hexagon socket cap screws



Examples:



Dimensions	299	300	301	303
for thread	M 4	M 5	M 6	M 8
d_1	7.7	9.8	10.5	14
d_2	4.1	5.15	6.1	8.1
h_2	2	3	2.5	3.3
h_1	0.8	2	1	1.5

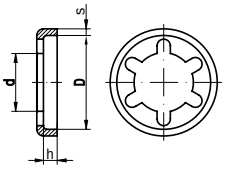
Dimensions	305	307	311	315
for thread	M 10	M 12	M 16	M 20
d_1	17	19	25	31.5
d_2	10.2	12.2	16.2	20.2
h_2	3.8	4.4	5.6	6.5
h_1	1.5	2	2	2.5

Dimensions in stock:
Non-ferrous materials: 597

Retaining/lock washers and rings

Article 88496

**DUBO lock washers,
for DUBO profile washers**



Dimensions	404	406	408	410	412
D	11.2	13.2	17.2	21.3	24.5
d	6.8	9	12	13.5	15.5
h	2.5	3.4	3.8	4.2	4.5
s	0.65	0.75	1	1.5	1.5
f. hexagon head screws	M 4/5 3/16"	M 6 1/4"	M 8 5/16"	M 10 3/8"	M 12 7/16"
f. cheese head screws	M 6 1/4"	–	M 10 3/8"	M 12 1/2"	M 14

Dimensions	414	416	417	418	419
D	27	31.25	33	37.5	39.5
d	17.5	21	23	26	27
h	4.8	5	5	5.5	5.5
s	1.5	1.75	1.75	1.75	2
f. hexagon head screws	1/2"	M 16	5/8"	M 18/20	3/4"
f. cheese head screws	M 16 5/8"	M 18	M 20	M 22 7/8"	M 24

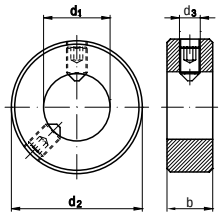
Dimensions	422	427	430	433	436
D	44	50.5	56	61	67
d	30.5	35	40	45	50
h	6	7	7.5	8	8.3
s	2	2	2.5	2.5	2.75
f. hexagon head screws	7/8"	M 27 1"	M 30 1 1/8"	M 33 1 1/4"	M 36 1 3/8"
f. cheese head screws	–	–	–	–	–

Dimensions in stock:
Steel/Steel coated: 597

Retaining/lock washers and rings

DIN 703

Adjusting rings



Dimensions	20	25	30	35	40	45
d_2	40	56	63	70	80	80
d_3	M 10	M 10	M 10	M 10	M 12	M 12
b	20	22	22	22	28	28
grub screw*	M 10x15	M 10x15	M 10x15	M 10x15	M 12x20	M 12x20

Dimensions	50	60	70	80	90	100
d_2	90	100	110	125	125	140
d_3	M 12	M 12	M 16	M 16	M 16	M 16
b	28	28	32	32	32	32
grub screw*	M 12x20	M 12x20	M 16x20	M 16x20	M 16x20	M 16x25

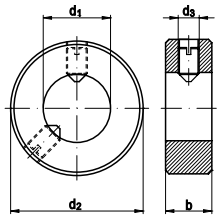
* $d_1 \leq 65$: one set screw with slot
$d_1 \geq 68$: two set screws with hexagon socket

Dimensions in stock:
Steel/Steel coated: 106

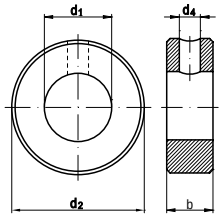
Retaining/lock washers and rings

DIN 705

Adjusting rings



type A = with set screws



type B = with drilling for grooved or taper pins

Dimensions	4	5	6	8	9	10	12	13	14
b	5	6	8	8	10	10	12	12	12
d_2	8	10	12	16	18	20	22	22	25
d_3	M 2.5	M 3	M 4	M 4	M 4	M 5	M 6	M 6	M 6
d_4	1	1.5	1.5	2	2	3	4	4	4
A with pins [1]	M 2.5x4	M 3x4	M 4x5	M 4x6	M 4x6	M 5x8	M 6x8	M 6x8	M 6x8
B for pins [2]	1x8	1.5x10	1.5x12	2x16	2x16	3x20	4x22	4x22	4x24

Dimensions	15	16	17	18	20	22	24	25	26
b	12	12	12	14	14	14	16	16	16
d_2	25	28	28	32	32	36	40	40	40
d_3	M 6	M 6	M 6	M 6	M 6	M 6	M 8	M 8	M 8
d_4	4	4	4	5	5	5	6	6	6
A with pins [1]	M 6x8	M 6x8	M 6x8	M 6x8	M 6x8	M 6x10	M 8x12	M 10x16	M 10x16
B for pins [2]	4x24	4x28	4x28	5x32	5x32	5x36	6x40	6x40	6x40

Dimensions	28	30	32	34	35	36	38	40	42
b	16	16	16	16	16	16	16	18	18
d_2	45	45	50	50	56	56	56	63	63
d_3	M 8	M 8	M 8	M 8	M 8	M 8	M 8	M 10	M 10
d_4	6	6	8	8	8	8	8	8	8
A with pins [1]	M 8x12	M 8x10	M 8x12	M 8x12	M 8x12	M 8x12	M 8x12	M 10x16	M 10x16
B for pins [2]	6x45	6x45	8x50	8x50	8x55	8x55	8x55	8x60	8x60

Dimensions	45	50	55	60	65	70	75	80	85
b	18	18	18	20	20	20	22	22	22
d_2	70	80	80	90	100	100	110	110	125
d_3	M 10	M 10	M 10	M 10	M 10	M 10	M 12	M 12	M 12
d_4	8	10	10	10	10	10	10	10	12
A with pins [1]	M 10x16	M 10x16	M 10x16	M 10x16	M 10x20	M 10x20	M 12x20	M 12x20	M 12x25
B for pins [2]	8x70	10x80	10x80	10x90	10x100	10x100	10x100	10x110	12x120

Dimensions	90	100	110	120	125	130	140		
b	22	25	25	25	28	28	28		
d_2	125	140	160	160	180	180	200		
d_3	M 12	M 12	M 12	M 12	M 16	M 16	M 16		
d_4	12	12	12	12	16	16	16		
A with pins [1]	M 12x20	M 12x25	M 12x30	M 12x25	M 16x35	M 16x35	M 16x35		
B for pins [2]	12x120	12x140	12x160	12x160	16x180	16x180	16x200		

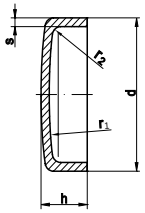
[1] $d_1 \leq 70$ one set screw with slot
[2] $d_2 \geq 75$ one set screw with hexagon socket

Dimensions in stock:
Steel/Steel coated: 106 | Stainless steel: 448

Special forms

DIN 443

Sealing push-in caps



Dimensions	8	10	12	14	16	18	20	22	25	28
h	3	3	4	5	5	6	6	7	8	9
r_1	20	25	30	35	40	45	50	55	60	70
r_2	1	1	1	1	1	1	1	1.6	1.6	1.6
s	0.75	0.75	1	1	1	1	1	1.6	1.6	1.6

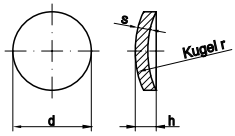
Dimensions	30	32	36	38	40	42	45	50	56	
h	9	10	11	12	12	13	14	15	17	
r_1	75	80	90	95	100	105	110	125	140	
r_2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.5	
s	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2	

d = nominal size

Dimensions in stock:
Steel/Steel coated: 81

DIN 470

Sealing discs



Dimensions	6	8	10	12	14	16	18	20	22	25
h	1.67	1.94	2.67	2.77	2.94	3.11	3.28	3.45	4.09	4.38
r	7	9	12	16	19	22	25	28	30	34
s	1	1	1.6	1.6	1.6	1.6	1.6	1.6	2	2

Dimensions	28	30	32	34	36	38	40	42	45	48
h	4.53	4.77	4.95	5.11	5.36	5.6	5.7	5.8	6.15	6.38
r	40	42	45	48	50	52	56	60	63	68
s	2	2	2	2	2	2	2	2	2	2

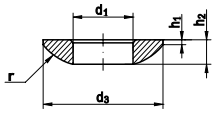
Dimensions	50	52	56	60	63	80	100	125		
h	6.62	6.66	7.06	7.47	7.7	10.41	12.23	14.2		
r	70	75	80	85	90	112	140	180		
s	2	2	2	2	2	3	3	3		

d = nominal size

Dimensions in stock:
Steel/Steel coated: 85

DIN 6319

Spherical washers
type C



Dimensions	6.4	8.4	10.5	13	17	21
d_3	12	17	21	24	30	36
h_1	0.7	0.6	0.8	1.1	1.3	2
h_2	2.3	3.2	4	4.6	5.3	6.3
r_{1b}	9	12	15	17	22	27

Dimensions	25	31	37	43	50
d_3	44	56	68	78	92
h_1	2.4	3.6	4.6	6.5	8
h_2	8.2	11.2	14	17	21
r_{1b}	32	41	50	58	67

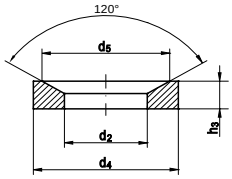
d_1 = nominal size

Dimensions in stock:
Steel/Steel coated: 289

Special forms

DIN 6319

Conical seats
type D



d_2 = nominal size

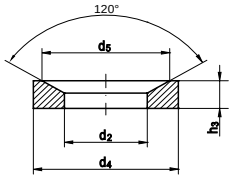
Dimensions	7.1	9.6	12	14.2	19	23.2
d_4	12	17	21	24	30	36
d_5	11	14.5	18.5	20	26	31
h_3	2.8	3.5	4.2	5	6.2	7.5

Dimensions	28	35	42	49	56	
d_4	44	56	68	78	92	
d_5	37	49	60	70	82	
h_3	9.5	12	15	18	22	

Dimensions in stock:
Steel/Steel coated: 290

DIN 6319

Conical seats
type G



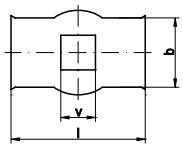
d_2 = nominal size

Dimensions	12	14.2	19	23.2	28	35
d_4	30	36	44	50	60	68
d_5	18.5	20	26	31	37	49
h_3	5	6	7	8	10	12

Dimensions in stock:
Steel/Steel coated: 290

Article 88102

Joint washers
to use with DIN 603

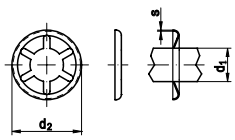


Dimensions	9	11
b	22	22
l	40	40
v	9	11
for screw	M 8	M 10

Dimensions in stock:
Steel/Steel coated: 408

Article 88122

Axle locking rings
quick fixing elements for shafts



d_1 = nominal size

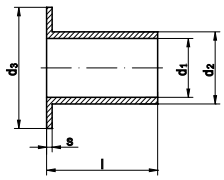
Dimensions	3	4	5	6	8	10	12
d_2	11	11	11	15	15	18	21
d_3	1.3	1.3	1.3	1.6	1.6	2.1	3
s	0.2	0.2	0.2	0.25	0.25	0.3	0.4
F_a	200 N	400 N	600 N	800 N	1000 N	1100 N	2500 N

Dimensions in stock:
Steel/Steel coated: 411

Special forms

Article 88498

KORREX Insulating tubes



Dimensions	M 4/10	M 4/15	M 4/20	M 5/10	M 5/15	M 5/20	M 6/10	M 6/15
for screw	M 4	M 4	M 4	M 5	M 5	M 5	M 6	M 6
l	10	15	20	10	15	20	10	15
d_1	4.3	4.3	4.3	5.3	5.3	5.3	6.5	6.5
d_2	5.8	5.8	5.8	6.8	6.8	6.8	8	8
d_3	9.5	9.5	9.5	12	12	12	13	13
s	1	1	1	1	1	1	1	1

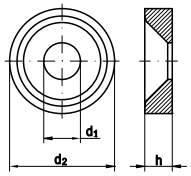
Dimensions	M 6/20	M 8/10	M 8/15	M 8/22	M 10/10	M 10/20	M 10/25	M 12/15
for screw	M 6	M 8	M 8	M 8	M 10	M 10	M 10	M 12
l	20	10	15	22	10	20	25	15
d_1	6.5	8.2	8.2	8.2	10.2	10.2	10.2	12.3
d_2	8	10.4	10.4	10.4	12.5	12.5	12.5	15
d_3	13	18	18	18	21	21	21	24
s	1	1	1	1	1	1	1	1

Dimensions	M 12/25	M 16/10	M 16/15	M 16/20	M 16/25	M 20/15	M 20/20	M 20/25
for screw	M 12	M 16	M 16	M 16	M 16	M 20	M 20	M 20
l	25	10	15	20	25	15	20	25
d_1	12.3	16.3	16.3	16.3	16.3	20.3	20.3	20.3
d_2	15	19.3	19.3	19.3	19.3	23.3	23.3	23.3
d_3	24	30	30	30	30	36	36	36
s	1	2	2	2	2	2	2	2

Dimensions in stock:
Non-ferrous materials: 598

Article 88499

KORREX rosettes
for countersunk heads

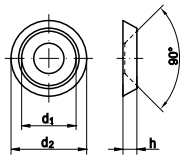


Dimensions	803	804	805	806	808
d_1	3.1	4.1	5.2	6.3	8.2
d_2	8.1	7.6	11.3	13.4	18
h	2.2	2	2.4	2.6	4
for screw	M 3	M 4	M 5	M 6	M 8

Dimensions in stock:
Non-ferrous materials: 598

Article 88965

Rosettes/finishing washers, open connecting surface
for countersunk heads



hole ∅ = nominal sizes

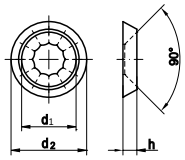
Dimensions	3	4.1	5	6	7	8.6
d_1	7	6.5	9	10	12.5	13
d_2	9.8	9	12.5	13	18	18
h	2.1	1.8	2.3	2.3	3.2	3
for screws acc. to DIN 95	3	3.5	4	5	6.0/7.0	6.0/7.0
for screws acc. to DIN 964	M 3	M 3.5	M 4	M 5	M 6	M 6/M 8
for screws acc. to DIN 7973	ST 2.9	ST 3.5	ST 3.9/4.2	ST 4.8	ST 5.5	ST 6.3

Dimensions in stock:
Non-ferrous materials: 598

Special forms

Article 88966

Rosettes/finishing washers
open connecting surface
for countersunk heads



Dimensions	4.8	5	6	7
d_1	8.8	8	10.5	12
d_2	12.7	11	13	15
h	2.7	2.4	3	3.4
for screws acc. to DIN 95	4	4.5	5	6
for screws acc. to DIN 964	M 4	M 4	M 5	M 6
for screws acc. to DIN 7973	ST 4.2	ST 4.2	ST 4.8	ST 5.5

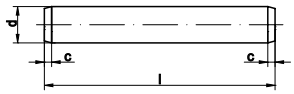
Dimensions in stock:
Non-ferrous materials: 598

Paralellel pins

ISO 2338

replaces DIN 7

Parallel pins



d = nominal size
tolerance m6

Dimensions	0.8	1	1.5	2	2.5	3	4	5	6
$c_{max.\ ISO}$	0.16	0.2	0.3	0.35	0.4	0.5	0.63	0.8	1.2
$c_{max.\ DIN}$	0.12	0.15	0.23	0.3	0.4	0.45	0.6	0.75	0.9
r	0.8	1	1.6	2	2.5	3	4	5	6

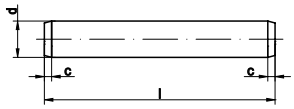
Dimensions	8	10	12	13	14	16	20	25	30
$c_{max.\ ISO}$	1.6	2	2.5	–	–	3	3.5	4	5
$c_{max.\ DIN}$	1.2	1.5	1.8	1.9	2	2.5	3	4	4.5
r	8	10	12	14	16	16	20	25	32

Dimensions in stock:
Steel/Steel coated: 216, 427 | Stainless steel: 492, 427

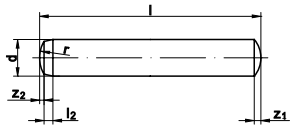
ISO 8734

replaces DIN 6325

Parallel pins
type A = through hardened



ISO 8734



DIN 6325

d = nominal size

Dimensions	1	1.5	2	2.5	3	4	5
l_2	0.4	0.5	0.6	0.7	0.8	1	1.2
r	1	1.5	2	2.5	3	4	5
z_1	0.15	0.23	0.3	0.4	0.45	0.6	0.75
z_2	0.08	0.12	0.18	0.25	0.3	0.4	0.5
c	0.2	0.3	0.35	0.4	0.5	0.63	0.98

Dimensions	6	8	10	12	14	16	20
l_2	1.5	1.8	2	2.5	2.5	3	4
r	6	8	10	12	16	16	20
z_1	0.9	1.2	1.5	1.8	2	2.5	3
z_2	0.6	0.8	1	1.3	1.3	1.7	2
c	1.2	1.6	2	2.5	–	3	3.5

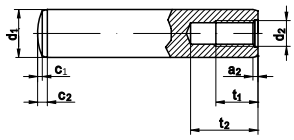
Dimensions in stock:
Steel/Steel coated: 352, 290

Paralellel pins

ISO 8735

similar DIN 7979

Parallel pins
with internal thread
type D = hardened



d = nominal size
tolerance m6
* dimension not standardized, standard values

Dimensions	4*	5*	6	8	10	12
a_2	0.5	0.6	0.8	1	1.2	1.6
c_1	0.4	0.5	0.6	0.8	1	1.2
c_2	1.3	1.7	2.1	2.6	3	3.8
d_2	(M 2)	(M 3)	M 4	M 5	M 6	M 6
t_1	6	6	6	8	10	10
$t_{2\ min.}$	7	7	10	12	16	16

Dimensions	14	16	20	25	30	40
a_2	1.8	2	2.5	3	4	5
c_1	1.4	1.6	2	2.5	3	4
c_2	4	4.7	6	6	7	8
d_2	M 8	M 8	M 10	M 16	M 20	M 20
t_1	12	12	16	24	30	30
$t_{2\ min.}$	20	20	25	34	42	42

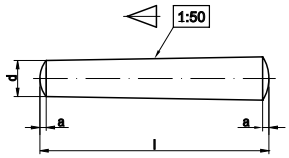
Dimensions in stock:
Steel/Steel coated: 334

Taper pins

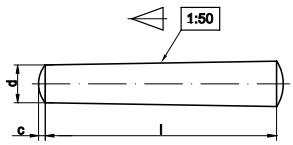
ISO 2339

replaces DIN 1

Taper pins
type B = turned



ISO 2339



DIN 1

* not standardized, reference values

Dimensions	1	1.5	2	2.5	3	4
a_{ISO}	0.12	0.2	0.25	0.3	0.4	0.5
$c_{max.\ DIN}$	0.15	0.23	0.3	0.4	0.45	0.6

Dimensions	5	6	6.5*	7*	8	10
a_{ISO}	0.63	0.8	0.8	0.9	1	1.2
$c_{max.\ DIN}$	0.75	0.9	1	1.1	1.2	1.5

Dimensions	12	13*	14	16	20	
a_{ISO}	1.6	1.7	1.8	2	2.5	
$c_{max.\ DIN}$	1.8	1.9	2	2.5	3	

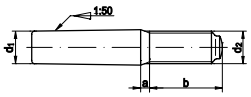
Dimensions in stock:
Steel/Steel coated: 217, 59 | Stainless steel: 494, 427

Taper pins

ISO 8737

similar DIN 7977

Taper pins with external thread and constant threaded part



d_1 = nominal size
* not standardized, reference values

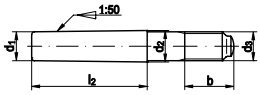
Dimensions	5	6	8	10	12
b	14	18	22	24	27
$a_{max.}$	2.4	3	4	4.5	5.3
d_2	M 5	M 6	M 8	M 10	M 12

Dimensions	13*	14	16	20	
b	27	30	35	35	
$a_{max.}$	5.3	6	6	6	
d_2	M 13	M 12	M 16	M 16	

Dimensions in stock:
Steel/Steel coated: 353, 333

DIN 258

Taper pins with thread ends and constant taper lengths



d_1 = nominal size

Dimensions	5	6	8	10
$b_{min.}$	14	18	22	24
d_2	5.5	6.6	8.8	10.9
d_3	M 5	M 6	M 8	M 10
l_2	25	30	40	45

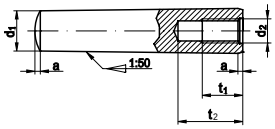
Dimensions	12	16	20	25
$b_{min.}$	27	35	35	40
d_2	13.1	17.4	21.7	27
d_3	M 12	M 16	M 20	M 25
l_2	55	72	85	100

Dimensions in stock:
Steel/Steel coated: 74

ISO 8736

similar DIN 7978

Taper pins with internal thread
type A = polished



d = nominal size

Dimensions	6	8	10
a	0.8	1	1.2
d_2	M 4	M 5	M 6
t_1	6	8	10
$t_{2\ min.}$	10	12	16

Dimensions	12	16	20
a	1.6	2	2.5
d_2	M 8	M 10	M 12
t_1	12	16	18
$t_{2\ min.}$	20	25	27

Dimensions in stock:
Steel/Steel coated: 353, 334

Grooved pins

ISO 8744

replaces DIN 1471

Grooved pins full-length taper grooved

Dimensions	1.5	2	2.5	3	4
d_2 [1]	1.60 – 1.63	2.10 – 2.15	2.60 – 2.70	3.20 – 3.30	4.15 – 4.30
c	0.2	0.25	0.3	0.4	0.5
shear strength ISO	1.6	2.84	4.4	6.4	11.3
shear strength[2] DIN	1.6	2.85	4.25	6.15	10.6

Dimensions	5	6	8	10	12
d_2 [1]	5.15 – 5.30	6.15 – 6.35	8.20 – 8.40	10.20 – 10.45	12.25 – 12.50
c	0.63	0.85	1	1.2	1.6
shear strength ISO	17.6	25.4	45.2	70.4	101.8
shear strength[2] DIN	16.5	22.8	40.5	63.2	91

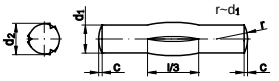
[1] ∅ depends on the length
[2] minimum shear strength, double kN

Dimensions in stock:
Steel/Steel coated: 356, 199 | Stainless steel: 544, 484

ISO 8742

replaces DIN 1475

Grooved pins, one-third-length centre grooved



Dimensions	1.5	2	2.5	3	4
d_2 [1]	1.60 – 1.63	2.10 – 2.15	2.60 – 2.70	3.20 – 3.30	4.15 – 4.30
c	0.2	0.25	0.3	0.4	0.5
shear strength ISO	1.6	2.84	4.4	6.4	11.3
shear strength[2] DIN	1.6	2.85	4.25	6.15	10.6

Dimensions	5	6	8	10	12
d_2 [1]	5.15 – 5.30	6.15 – 6.35	8.20 – 8.40	10.20 – 10.45	12.25 – 12.50
c	0.63	0.85	1	1.2	1.6
shear strength ISO	17.6	25.4	45.2	70.4	101.8
shear strength[2] DIN	16.5	22.8	40.5	63.2	91

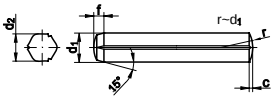
[1] ∅ depends on the length
[2] minimum shear strength, double Kn

Dimensions in stock:
Steel/Steel coated: 355, 201 | Stainless steel: 485

ISO 8740

replaces DIN 1473

Grooved pins, full-length parallel-grooved, with chamfer



Dimensions	1.5	2	2.5	3	4
d_2 [1]	1.60 – 1.63	2.10 – 2.15	2.60 – 2.70	3.20 – 3.30	4.15 – 4.30
c	0.2	0.25	0.3	0.4	0.5
shear strength ISO	1.6	2.84	4.4	6.4	11.3
shear strength[2] DIN	1.6	2.85	4.25	6.15	10.6

Dimensions	5	6	8	10	12
d_2 [1]	5.15 – 5.30	6.15 – 6.35	8.20 – 8.40	10.20 – 10.45	12.25 – 12.50
c	0.63	0.85	1	1.2	1.6
shear strength ISO	17.6	25.4	45.2	70.4	101.8
shear strength[2] DIN	16.5	22.8	40.5	63.2	91

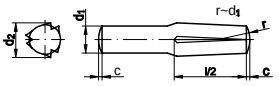
[1] ∅ depends on the length
[2] minimum shear strength, double kN

Dimensions in stock:
Steel/Steel coated: 354, 200 | Stainless steel: 544, 485

ISO 8741

replaces DIN 1474

Grooved pins, half-length reverse-taper grooved



Dimensions	1.5	2	2.5	3	4
d_2 [1]	1.60 – 1.63	2.10 – 2.15	2.60 – 2.70	3.20 – 3.30	4.15 – 4.30
c	0.2	0.25	0.3	0.4	0.5
shear strength ISO	1.6	2.84	4.4	6.4	11.3
shear strength[2] DIN	1.6	2.85	4.25	6.15	10.6

Dimensions	5	6	8	10	12
d_2 [1]	5.15 – 5.30	6.15 – 6.35	8.20 – 8.40	10.20 – 10.45	12.25 – 12.50
c	0.63	0.85	1	1.2	1.6
shear strength ISO	17.6	25.4	45.2	70.4	101.8
shear strength[2] DIN	16.5	22.8	40.5	63.2	91

[1] ∅ depends on the length
[2] minimum shear strength, double kN

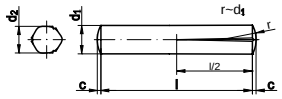
Dimensions in stock:
Steel/Steel coated: 355, 201

Grooved pins

ISO 8745

replaces DIN 1472

Grooved pins, half-length taper grooved



[1] ∅ depends on the length
[2] minimum shear strength, double kN

Dimensions	1.5	2	2.5	3	4
d_2 [1]	1.60 – 1.63	2.10 – 2.15	2.60 – 2.70	3.20 – 3.30	4.15 – 4.30
c	0.2	0.25	0.3	0.4	0.5
shear strength ISO	1.6	2.84	4.4	6.4	11.3
shear strength[2] DIN	1.6	2.85	4.25	6.15	10.6

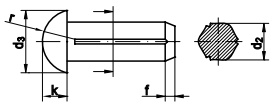
Dimensions	5	6	8	10	12
d_2 [1]	5.15 – 5.30	6.15 – 6.35	8.20 – 8.40	10.20 – 10.45	12.25 – 12.50
c	0.63	0.85	1	1.2	1.6
shear strength ISO	17.6	25.4	45.2	70.4	101.8
shear strength[2] DIN	16.5	22.8	40.5	63.2	91

Dimensions in stock:
Steel/Steel coated: 356, 200 | Stainless steel: 545, 485

ISO 8746

similar DIN 1476

Grooved pins with round head
type A = with chamfer



* not standardized, reference values

Dimensions	1.4	1.6	2	2.3	2.5
d_2	1.5	1.7	2.15	2.5	2.7
d_3	2.4	2.8	3.5	4.0	4.4
k	0.8	1	1.2	1.4	1.5
r	1.4	1.6	1.9	2.1	2.4
f	0.5	0.5	0.5	0.7	0.7

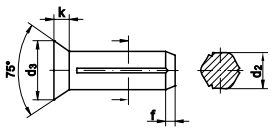
Dimensions	3	4	5	6	
d_2	3.2	4.25	5.25	6.3	
d_3	5.2	7	8.8	10.5	
k	1.8	2.4	3	3.6	
r	2.8	3.8	4.6	5.7	
f	4	1.5	1.5	2	

Dimensions in stock:
Steel/Steel coated: 357, 202 | Stainless steel: 545, 485 | Non-ferrous materials: 594, 584

ISO 8747

similar DIN 1477

Grooved pins with countersunk head
type A = with chamfer



Dimensions	2	3	4	5	6
d_2	2.15	3.20	4.25	5.25	6.30
d_3	3.5	5.2	7	8.8	10.5
k	1	1.4	2	2.5	3
f	0.5	1	1.15	1.15	2

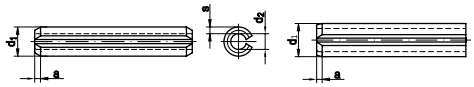
Dimensions in stock:
Steel/Steel coated: 357, 202

Spring-type straight pins

ISO 8752

replaces DIN 1481

Spring-type straight pins
slotted, heavy duty



Dimensions	1	1.5	2	2.5	3	3.5	4	4.5	5
$a_{ISO\ min.}$	0.15	0.25	0.35	0.4	0.5	0.6	0.65	0.8	0.9
$d_{1\ max.}$[1]	1.3	1.8	2.4	2.9	3.5	4	4.6	5.1	5.6
d_2[1]	0.8	1.1	1.5	1.8	2.1	2.3	2.8	2.9	3.4
s	0.2	0.3	0.4	0.5	0.6	0.75	0.8	1	1
shear strength[2]	0.7	1.58	2.82	4.38	6.32	9.06	11.24	15.36	17.54

Dimensions	6	7*	8	9*	10	12	13	14	16
$a_{ISO\ min.}$	1.2	1.8	2	2	2	2	2	2	2
$d_{1\ max.}$[1]	6.7	7.8	8.8	9.5	10.8	12.8	13.8	14.8	16.8
d_2[1]	3.9	4	5.5	6	6.5	7.5	8.5	8.5	10.5
s	1.25	1.5	1.5	2	2	2.5	2.5	3	3
shear strength[2]	26.04	–	42.76	–	70.16	104.1	115.12	144.7	171

Dimensions	18	20	21	25	28	30	35	40
$a_{ISO\ min.}$	2	3	3	3	3	3	3	4
$d_{1\ max.}$[1]	18.9	20.9	21.9	25.9	28.9	30.9	35.9	40.9
d_2[1]	11.5	12.5	13.5	15.5	17.5	18.5	21.5	25.5
s	3.5	4	4	5	5.5	6	7	7.5
shear strength[2]	222.5	280.6	298.2	438.5	542.6	631.4	859	1068

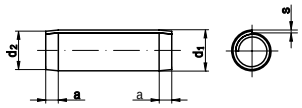
[1] dimensions before installation
[2] shear strength, double kN, only for spring steel
* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 358, 205 | Stainless steel: 546, 486

ISO 8750

similar DIN 7343

Spring-type straight pins
coiled, standard duty



Dimensions	1	1.5	2	2.5	3	3.5	4
a	0.3	0.5	0.7	0.8	1	1.2	1.3
s	0.08	0.13	0.17	0.21	0.25	0.29	0.33
d_1[1]	1.1	1.62	2.15	2.65	3.15	3.67	4.2
d_2[1]	0.95	1.4	1.9	2.35	2.85	3.35	3.8
shear strength[2]	0.6	1.45	2.5	3.9	5.5	7.5	9.6

Dimensions	5	6	8	10	12	14	16
a	1.7	2	3	3	4	4.5	5
s	0.42	0.5	0.67	0.84	1	1.2	1.3
d_1[1]	5.25	6.25	8.35	10.45	12.5	14.55	16.55
d_2[1]	4.8	5.8	7.75	9.6	11.5	13.5	15.4
shear strength[2]	15	22	39	62	89	120	155

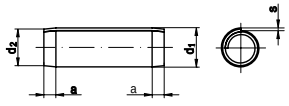
[1] dimensions before installation
[2] shear strength, double kN, only for spring steel

Dimensions in stock:
Steel/Steel coated: 358, 319 | Stainless steel: 545, 533

ISO 8748

similar DIN 7344

Spring-type straight pins
coiled, heavy duty



Dimensions	1.5	2	2.5	3
a	0.5	0.7	0.8	1
s	0.17	0.22	0.28	0.33
d_1[1]	1.6	2.1	2.6	3.12
d_2[1]	1.4	1.9	2.35	2.85
shear strength[2]	1.9	3.5	5.5	7.6

Dimensions	4	5	6	8*
a	1.3	1.7	2	2
s	0.45	0.56	0.67	0.9
d_1[1]	4.15	5.15	6.25	8.25
d_2[1]	3.8	4.8	5.8	7.8
shear strength[2]	13.5	20	30	53

[1] dimensions before installation
[2] shear strength, double kN, only for spring steel
* not standardized, reference values

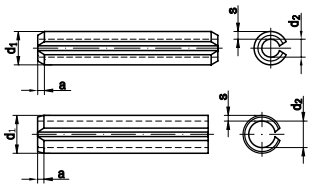
Dimensions in stock:
Steel/Steel coated: 357, 319

Spring-type straight pins

ISO 13337

similar DIN 7346

Spring-type straight pins
slotted, light duty



Dimensions	2	2.5	3	4	5	6
a	0.2	0.25	0.25	0.5	0.5	0.7
d_1 [1]	2.3	2.8	3.3	4.4	5.4	6.4
d_2 [1]	1.9	2.3	2.7	3.4	4.4	4.9
s	0.2	0.25	0.3	0.5	0.5	0.75
shear strength [2]	1.5	2.4	3.5	8	10.4	18

Dimensions	8	10	12	13	16	21
a	1.5	2	2	2	2	2
d_1 [1]	8.5	10.5	12.5	13.5	16.5	21.5
d_2 [1]	7	8.5	10.5	11	13.5	17.5
s	0.75	1	1	1.25	1.5	2
shear strength [2]	24	40	48	66	98	168

[1] dimensions before installation
[2] shear strength, double kN, only for spring steel

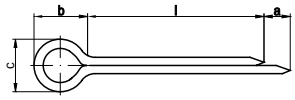
Dimensions in stock:
Steel/Steel coated: 371, 319

Linch pins/spring cotters/split pins

ISO 1234

similar DIN 94

Split pins



Dimensions	1	1.2	1.6	2	2.5	3.2	4
$a_{min.}$	0.8	1.25	1.25	1.25	1.25	1.6	2
b	3	3	3.2	4	5	6.4	8
$c_{max.}$	1.8	2	2.8	3.6	4.6	5.8	7.4
pin hole ∅	1	1.2	1.6	2	2.5	3.2	4
for screw ∅	3.5 – 4.5	4.5 – 5.5	5.5 – 7	7 – 9	9 – 11	11 – 14	14 – 20
for clevis pin ∅	3 – 4	4 – 5	5 – 6	6 – 8	8 – 9	9 – 12	12 – 17

Dimensions	5	5.5*	6.3	8	10	13	16
$a_{min.}$	2	2	2	2	3.2	3.2	3.2
b	10	12.6	12.6	16	20	26	32
$c_{max.}$	9.2	11	11.8	15	19	24.8	30.8
pin hole ∅	5	5.5	6.3	8	10	13	16
for screw ∅	20 – 27	21 – 27	27 – 39	39 – 56	56 – 80	80 – 120	120 – 170
for clevis pin ∅	17 – 23	18 – 23	23 – 29	29 – 44	44 – 69	69 – 110	110 – 160

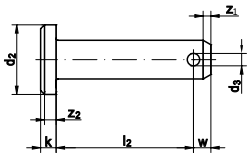
* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 196, 65 | Stainless steel: 483, 432 | Non-ferrous materials: 584, 566

ISO 2341

similar DIN 1444 B

Clevis pins with head
type B = with split pin hole



Dimensions	8	10	12	16	18	20
d_2	14	18	20	25	28	30
d_3	2	3.2	3.2	4	5	5
k	3	4	4	4.5	5	5
w	3.5	4.5	5.5	6	7	8
$z_{1\,max.}$	2	2	3	3	3	4
z_2	1	1	1.6	1.6	1.6	2
for split pin ∅	2	3.2	3.2	4	5	5

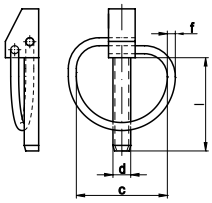
pin ∅ with tolerance h11

Dimensions in stock:
Steel/Steel coated: 199

Linch pins/spring cotters/split pins

~DIN 11023

Linch pins
light type



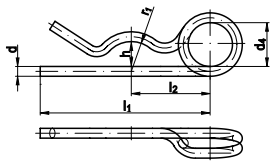
* specification:
shaft extension to the central drill point

Dimensions	4.5	6	8	10
c	34	41	41	41
f	3	3.4	3.4	3.4
l	42	42	42	42
for shafts ∅ max.	32	32	32	32
for drilling ∅	4.5	6	8	10
drill position*	8.5	10	12	14

Dimensions in stock:
Steel/Steel coated: 370

DIN 11024

Spring cotters of a bolt



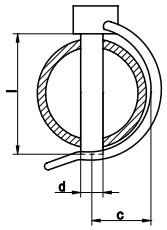
nominal size = drilling ∅

Dimensions	2.5	3.2	4	5	6.3	7	8
d_3	2.25	2.8	3.6	4.5	5.6	6.3	7
d_4	20	20	20	25	25	30	30
l_1	42	48	64	80	97	125	150
l_2	24	26	32	39	45	56	63
h	2.5	3	4.5	7	9	12.5	17.5
r_1	5.6	7	10	13	17	22.5	28
for shafts ∅	9 – 11.2	11.2 – 14	14 – 20	20 – 26	26 – 34	34 – 45	45 – 56

Dimensions in stock:
Steel/Steel coated: 370 | Stainless steel: 549

Article 88023

Linch pins for tubes



d = nominal size

Dimensions	6	8	8
c	22	22	25
l	40	40	50

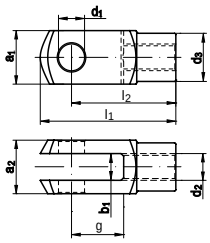
Dimensions	10	10	
c	25	32	
l	50	60	

Dimensions in stock:
Steel/Steel coated: 370

Linch pins/spring cotters/split pins

DIN 71752

Fork joints
type G = yokes,
matching spring flap bolts ➔ article 88752



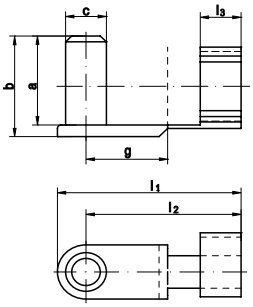
nominal size = drilling ∅
[1] not standardized, reference values

Dimensions	6	8	10	12	16	20 [1]
g	12/24	16/32	20/40	24/48	32/64	40
a_1	12	16	20	24	32	40
a_2	12	16	20	24	32	40
b_1	6	8	10	12	16	20
d_2	M 6	M 8	M 10	M 12	M 16	M 20
d_3	10	14	18	20	26	34
l_1	31/43	42/58	52/72	62/86	72/101	105
l_2	24/36	32/48	40/60	48/72	64/96	80

Dimensions in stock:
Steel/Steel coated: 385

Article 88752

Spring flap bolts ("ES bolts")
for fork joints ➔ DIN 71752



c x g = nominal size

Dimensions	6x12	6x24	8x16	8x32	10x20	10x40
c	6	6	8	8	10	10
a	14	14	19	19	23	23
b	16	16	21.5	21.5	26	26
l_1	28	40	37	52	45	65
l_2	23	35	30	46	38	58
l_3	6.5	6.5	8	8	10	10

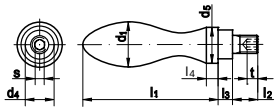
Dimensions	12x24	12x48	16x32	16x64	20x40	
c	12	12	16	16	20	
a	28	28	34	34	44	
b	31	31	38	38	47	
l_1	53	78	73	103	98	
l_2	45	69	62	92	81	
l_3	12	12	16	16	19	

Dimensions in stock:
Steel/Steel coated: 385

Grips

DIN 98

Rotatable ball handles
type E = with threaded shank and hexagon socket

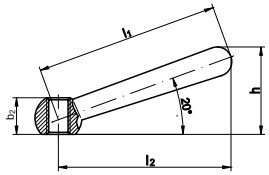


Dimensions	M 6	M 8	M 10	M 12	M 16
d_1	16	20	25	32	36
d_4	10	13	16	20	22
d_5	14	18	21	26	29
l_1	49	61	75	96	106
l_2	11	13	14	21	26
l_3	5.5	6	8	10.5	11
l_4	5	6	6.5	8	9
s	3	4	5	6	8
t	3.5	5	6	8	10

Dimensions in stock:
Steel/Steel coated: 67

DIN 99

Tapered handles
with handle bracket via thread
type N = tilted handle

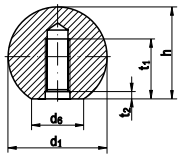


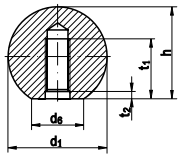
Dimensions	M 6	M 8	M 10	M 12	M 16	M 20	M 24
l_1	50	63	80	100	125	160	200
b_2	9.5	12.5	15	19	25	31	4
h	24	30.5	38	47	59.5	75.7	97
l_2	38	60	76	95	119	152	190
l_2	48	60	76	95	119	152	190

Dimensions in stock:
Steel/Steel coated: 67 | Stainless steel: 435

DIN 319

Ball knobs





type C = with thread
type E = with threaded bush

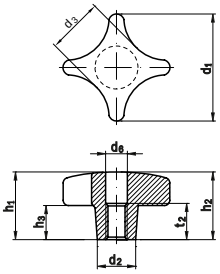
Dimensions	M 4	M 5	M 6	M 8	M 10	M 12
d_1	16	20	25	32	40	50
d_6	8	12	15	18	22	28
t_3	6	7.5	9	12	15	18
h	15	18	22.5	29	37	46
t_1	6	7.5	9	12	15	18
t_2	1.2	1.6	2.0	2.5	3	3

Dimensions in stock:
Non-ferrous materials: 571

Grips

DIN 6335

Palm grips
type D = with continuous thread

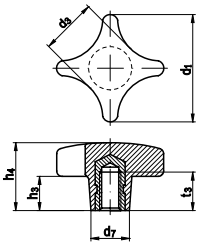


Dimensions	M 6	M 8	M 10	M 12	M 16	M 20
d_1	32	40	50	63	80	100
d_2	12	14	18	20	25	32
d_3	18	21	25	32	40	48
d_6	6.4	8.4	10.5	13	17	21
h_1	21	26	34	42	52	65
h_3	10	14	20	25	30	38
t_2	10	13	16	20	20	25

Dimensions in stock:
Steel/Steel coated: 292

DIN 6335

Palm grips
type K = with threaded bush



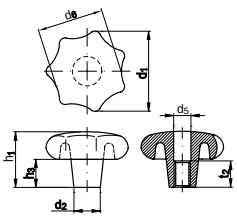
Dimensions	M 5	M 6	M 8	M 10	M 12	M 16	M 20*
d_1	25	32	40	50	63	80	100
d_3	15	18	21	25	32	40	50
d_7	12	14	18	22	26	35	34
h_3	8	10	13	20	25	30	38
h_4	16	20	25	32	40	50	65
$t_{3\ min.}$	9.5	12	14	18	22	30	30

* not standardized, reference values

Dimensions in stock:
Non-ferrous materials: 591

DIN 6336

Star grips
type D = with continuous thread



Dimensions	M 6	M 8	M 8*	M 10	M 10*	M 12	M 12*	M 16
d_1	32	40	50	50	63	63	80	80
d_2	12	14	18	18	20	20	25	25
d_5	6.4	8.4	8.4	10.5	10.5	13	13	17
d_6	26	34	42	42	52	52	64	64
h_1	21	26	32	34	40	42	50	52
h_3	10	13	18	17	20	21	25	25
t_2	10	13	16	16	20	20	20	20

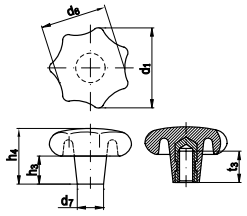
* not standardized, reference values

Dimensions in stock:
Steel/Steel coated: 292

Grips

DIN 6336

Star grips
type K = with threaded bush



Dimensions	M 4	M 5	M 6	M 6*	M 8	M 8*
d_1	20	25	32	40	40	50
d_6	16	20	26	34	34	42
d_7	10	12	14	18	18	21
h_3	7	8	10	13	13	17
h_4	13	16	20	25	25	32
$t_{3\ min.}$	6.5	9.5	12	16	14	18

Dimensions	M 10	M 10*	M 12	M 12*	M 16	
d_1	50	63	63	80	80	
d_6	42	52	52	64	64	
d_7	22	26	26	36	35	
h_3	17	21	21	25	25	
h_4	32	40	40	48	50	
$t_{3\ min.}$	18	25	22	27	30	

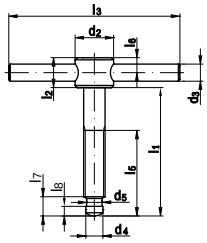
* not standardized, reference values

Dimensions in stock:
Non-ferrous materials: 591

Tommy screws/Tommy nuts

DIN 6304

Tommy screws with fixed clamping bolt
type E = without thrust pad



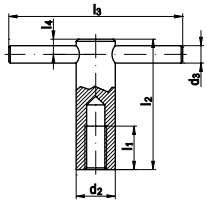
thrust pads ➔ DIN 6311

Dimensions	M 6	M 8	M 10	M 12	M 16	M 20
l_1	40/50	50/60	60/70	70/80	75/90/100	75/90/100
d_2	12	14	18	20	24	30
d_3	5	6	8	10	12	16
d_4	4.5	6	8	8	12	15.5
d_5	4	5.4	7.2	7.2	11	14.4
l_2	10	12	14	18	20	28
l_3	50	60	80	100	120	140
l_5	30/40	35/45	40/50	50/60	55/70/90	55/70/90
l_6	5	5	7	9	10	14
l_7	6	7.5	9	10	12	14
l_8	2.5	3	4.5	4.5	5	5.5

Dimensions in stock:
Steel/Steel coated: 289

DIN 6305

Tommy nuts with fixed clamping bolt



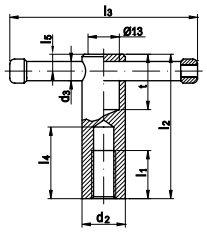
Dimensions	M 10	M 12	M 16	M 20
d_2	18	20	24	30
d_3	8	10	12	16
l_1	25	25	35	40
l_2	60	70	85	95
l_3	80	100	120	140
l_4	7	9	11	14

Dimensions in stock:
Steel/Steel coated: 289

Tommy screws/Tommy nuts

DIN 6307

Tommy nuts with movable clamping bolt

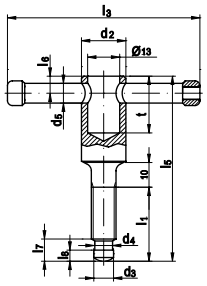


Dimensions	M 10	M 12	M 16	M 20
d_2	18	20	24	30
d_3	8	10	12	16
l_1	25	25	35	40
l_2	60	70	85	95
l_3	80	100	120	140
l_4	30	35	45	50
l_5	7	9	11	14
t	23	26	28	34

Dimensions in stock:
Steel/Steel coated: 289

DIN 6306

Tommy screw with movable clamping bolt
type D = without thrust pad



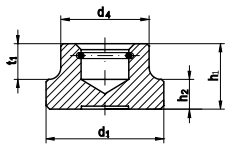
thrust pads ➔ DIN 6311

Dimensions	M 10	M 12	M 16	M 20
l_1	40/50	50/60	55/70/90	55/70/90
d_2	18	20	24	30
d_3	8	8	12	15.5
d_4	7.2	7.2	11	14.4
d_5	8	10	13	16
l_3	80	100	120	140
l_5	72/82	85/95	95/110/130	100/115/135
l_6	7	9	10	14
l_7	9	10	12	14
l_8	4.5	4.5	5	5.5
t	23	26	28	34

Dimensions in stock:
Steel/Steel coated: 289

DIN 6311

Thrust pads
type S = with snap ring



Dimensions	12	16	20
b	0.7	1	1
d_4	10	12	15
h_1	7	9	11
h_2	2.5	4	5
t_1	4	5	6
snap ring[1]	5.1x0.6x2.5	7.0x0.8x2.5	8[1]
grub screw[2]	M 6	M 8	M 10

Dimensions	25	32	40
b	1	1.2	1.8
d_4	18	22	28
h_1	13	15	16
h_2	6	7	9
t_1	7	7.5	8
snap ring[1]	8[1]	12[1]	16[1]
grub screw[2]	M 12	M 16	M 20

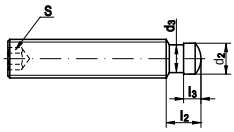
[1] Snap rings – acc. to DIN 7993
[2] for grub screws acc. to DIN 6332

Dimensions in stock:
Steel/Steel coated: 289

Tommy screws/Tommy nuts

DIN 6332

Grub screws with thrust point
type IS = with hexagon socket



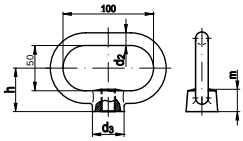
thrust pads ➔ DIN 6311

Dimensions	M 6	M 8	M 10	M 12	M 16	M 20
s	3	4	5	6	8	10
d_2	4.5	6	8	8	12	15.5
d_3	4	5.4	7.2	7.2	11	14.4
l_2	6	7.5	9	10	12	14
l_3	2.5	3	4.5	4.5	5	5.5

Dimensions in stock:
Steel/Steel coated: 292

DIN 28129

Clamp nuts (lifting nuts)



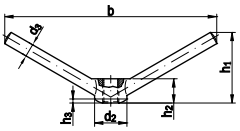
for container const. acc. to AD Regulation, TÜV accepted

Dimensions	M 16	M 20	M 24	M 27
d_2	14	16	18	20
d_3	35	40	45	50
h	48	50	55	58
m	25	28	32	35

Dimensions in stock:
Steel/Steel coated: 384

DIN 80701

Butterfly nuts

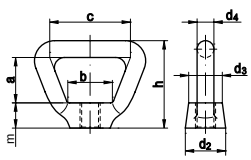


Dimensions	M 16	M 20	M 24
b	200	240	280
d_2	30	40	50
d_3	12	16	20
h_1	65	75	90
h_2	20	25	32
h_3	4	5	5

Dimensions in stock:
Non-ferrous materials: 595

DIN 80704

Bow nuts



* not standardized, reference values

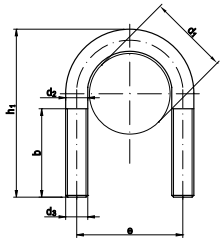
Dimensions	M 6*	M 8*	M 10*	M 12	M 16	M 20	M 22*	M 24
a	15	20	25	27	29	32	32	36
b	14	18	23	27	32	36	36	45
c	25	32	42	48	56	64	64	75
d_2	14	18	23	24	30	36	36	45
d_3	11.5	15	18	20	24	28	28	36
d_4	5	6.5	8	10	12	13	13	14
h	28	36	50	52	59	66	66	75
m	8	10	12	15	18	21	21	25

Dimensions in stock:
Stainless steel: 551 | Non-ferrous materials: 595

Stirup bolts

DIN 3570

Steel strap
type A = double-sided fixing thread



Dimensions	23*	30	38	46	52
for pipe nominal width	15	20	25	32	40
d_1	20 to 21	25 to 26.9	30 to 33.7	38 to 42.4	44.5 to 48.3
b^1	30	40	40	50	50
d_2	10	10	10	10	10
d_3	M 10	M 10	M 10	M 10	M 10
e	33	40	48	56	62
h_1^1	60	70	76	86	92

Dimensions	64	82	94	120	148
for pipe nominal width	50	65	80	100	125
d_1	57 to 60.3	76.1	88.9	108 to 114.3	133 to 139.7
b^1	50	50	50	60	60
d_2	12	12	12	16	16
d_3	M 12	M 12	M 12	M 16	M 16
e	76	94	106	136	164
h_1^1	109	125	138	171	191

Dimensions	176	228	282	332	530
for pipe nominal width	150	200	250	300	500
d_1	159 to 168.3	216 to 219.1	267 to 273	318 to 323.9	508 to 521
b^1	60	70	70	70	70
d_2	16	20	20	20	24
d_3	M 16	M 20	M 20	M 20	M 24
e	192	248	302	352	554
h_1^1	217	283	334	385	589

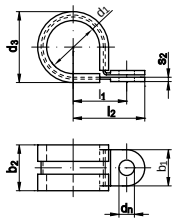
* not standardized, reference values
[1] are minimum dimensions and apply for a sheet thickness of 10mm

Dimensions in stock:
Steel/Steel coated: 224 | Stainless steel: 496

Hose clamps/pipe clamps

DIN 3016

Fastening clamps
type D1 = with rubber profile



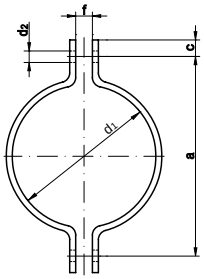
Dimensions (d_1)	4 to 20	4 to 25	5 to 14	15 to 45	10 to 25
b_1	9	12	15	15	20
b_2	13	15	19	19	25
d_n	4.3	5.3	6.4	6.4	8.4
d_3	d1 + 5.2	d1 + 5.8	d1 + 7.4	d1 + 7.4	d1 + 9
l_1	d1/2 + 4.7	d1/2 + 6.8	d1/2 + 9.7	d1/2 + 9.7	d1/2 + 12.5
l_2	d1/2 + 9.2	d1/2 + 13	d1/2 + 17.2	d1/2 + 17.2	d1/2 + 22.5

Dimensions in stock:
Steel/Steel coated: 221

Hose clamps/pipe clamps

DIN 3567

Pipe clamps
type A = equal sided



Dimensions	22	27	34	43	45	49
nominal diameter	15	20/¾"	25/1"	32/1¼"	40	40/1½"
a	59	66	72	82	84	88
c	15	15	15	15	15	15
d_2	11.5	11.5	11.5	11.5	11.5	11.5
f	7	7	7	7	7	7
flat steel	30x5	30x5	30x5	30x5	30x5	30x5
screw	M 10x30	M 10x30	M 10x30	M 10x30	M 10x30	M 10x30

Dimensions	57	61	77	89	108	115
nominal diameter	50	50/2"	65/2½"	80/3"	100	100/4"
a	104	108	122	136	172	178
c	18	18	18	18	24	24
d_2	14	14	14	14	18	18
f	9	9	9	9	11	11
flat steel	40x6	40x6	40x6	40x6	50x8	50x8
screw	M 12x35	M 12x35	M 12x35	M 12x35	M 16x45	M 16x45

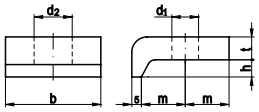
Dimensions	140	169	220	273	305	
nominal diameter	125	150	200	250	300	
a	204	232	284	348	379	
c	24	24	24	30	30	
d_2	18	18	18	23	23	
f	11	11	11	14	14	
flat steel	50x8	50x8	50x8	60x8	60x8	
screw	M 16x45	M 16x45	M 16x45	M 20x50	M 20x50	

d^1 = nominal size

Dimensions in stock:
Steel/Steel coated: 222 | Stainless steel: 496

DIN 3568

Clamping plates for pipe fixings for double-T carriers



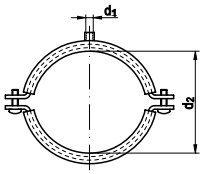
Dimensions	10	12	14	16	18	20
b	60	60	60	60	60	60
d_1	18	18	18	18	18	18
d_2	24	24	24	24	24	24
m	35	35	35	35	35	35
t	18	18	18	18	18	18
for screw	M 16	M 16	M 16	M 16	M 16	M 16

h = nominal size

Dimensions in stock:
Steel/Steel coated: 224

DIN 4109

screwed tubular clamps with noise protection inlay ~DIN 4109



temperature resistance: -50 °C to +110 °C
* connection to stepped thread

Dimensions	1/2"	3/4"	1"	1 1/4"
clamping range	20 - 23	25 - 28	32 - 35	40 - 43
d_1*	M 8/M 10	M 8/M 10	M 8/M 10	M 8/M 10
d_2	1.25 x 20	1.25 x 20	1.25 x 20	1.25 x 20
payload	1.2 kN	1.2 kN	1.2 kN	1.2 kN

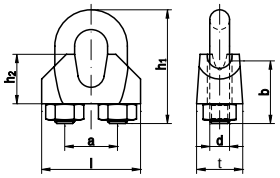
Dimensions	1 1/2"	1 1/2"	2"	
clamping range	48 - 53	57 - 61	60 - 64	
d_1*	M 8/M 10	M 8/M 10	M 8/M 10	
d_2	1.25 x 20	1.25 x 20	1.25 x 20	
payload	1.2 KN	1.2 kN	1.5 kN	

Dimensions in stock:
Steel/Steel coated: 269

Rope clips/thimble ropes/shackles

~DIN 741

U-bolt wire-rope grips
with two hexagon nuts

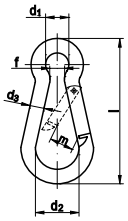


Dimensions	1/8"	3/16"	1/4"	5/16"	7/16"	1/2"	5/8"
for rope ∅	3	5	6.5	8	11	13	16
d_1*	M 4	M 5	M 5	M 6	M 8	M 10	M 12
h_1	20	24	28	34	44	55	63
b	12	13	15	19	22	30	33
a	9	11	13	16	20	24	29
h_2	10	10	11	15	18	21	26
l	21	23	26	30	36	42	50
t	10	11	12	14	19	23	26

Dimensions in stock:
Steel/Steel coated: 107

DIN 5299

Snap hooks
type C = pear-shaped

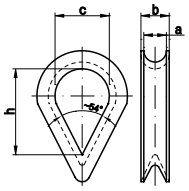


Dimensions	40x4	50x5	60x6	70x7	80x8	100x10
d_1	6	8	9	10	12	15
$d_{2\ min.}$	14	15	17	19	23	29
d_3	4	5	6	7	8	10
f	4	4	6	8	8	10
m	8	7	8	8	10	11
loadability	100 kg	120 kg	120 kg	180 kg	230 kg	350 kg

Dimensions in stock:
Steel/Steel coated: 288

DIN 6899

thimbles for fibre ropes
type BF = medium heavy, with deep groove



Dimensions	BF 3.5	BF 4	BF 5	BF 6
a	4	5	6	7
h	21	23	25	26
c	13	14	16	18

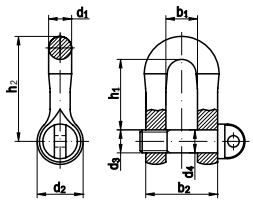
Dimensions	BF 7	BF 9	BF 11	
a	8	10	12	
h	32	38	45	
c	20	24	26	

Dimensions in stock:
Steel/Steel coated: 298

Rope clips/thimble ropes/shackles

DIN 82101

D-shackles
type A = forged



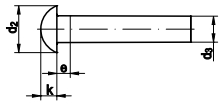
Dimensions	0.16	0.25	0.4	0.6	1
b_1	8	11	14	17	21
b_2	18	25	30	37	47
d_1	5	7	8	10	13
d_2	12	16	20	24	32
d_3	M 6	M 8	M 10	M 12	M 16
d_4	6	8	10	12	16
h_1	18	24	30	36	49
h_2	27	36	45	54	72
wrench size	–	–	–	–	24

Dimensions in stock:
Steel/Steel coated: 385

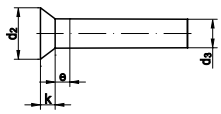
Rivets

DIN 660, 661

Rivets



DIN 660 = round head rivets



DIN 661 = countersunk head rivets

* dimensions acc. to DIN 124

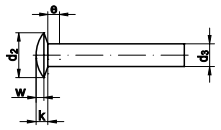
Dimensions	1	2	2.5	3	4
d_2	1.8	3.5	4.4	5.2	7
$d_{3\ min.}$	0.93	1.87	2.37	2.87	3.87
$e_{max.}$	0.5	1	1.25	1.5	2
$k_{DIN\ 660}$	0.6	1.2	1.5	1.8	2.4
$k_{DIN\ 661}$	0.5	1	1.2	1.4	2

Dimensions	5	6	7	8	10 *
d_2	8.8	10.5	12.2	14	16
$d_{3\ min.}$	4.82	5.82	6.82	7.76	9.4
$e_{max.}$	2.5	3	3.5	4	5
$k_{DIN\ 660}$	3	3.6	4.2	4.8	6.5
$k_{DIN\ 661}$	2.5	3	3.5	4	–

Dimensions in stock:
Steel/Steel coated: 105, 105 | Stainless steel: 448, 448 | Non-ferrous materials: 574, 575

DIN 662

Mushroom head rivets



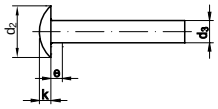
Dimensions	2	2.5	3	3.5	4	5	6
d_2	4	5	6	7	8	10	12
d_3	1.87	2.37	2.87	3.37	3.87	4.82	5.82
$e_{max.}$	1	1.25	1.5	1.75	2	2.5	3
k	1	1.2	1.5	1.8	2.1	2.5	3
w	0.7	0.8	1	1.2	1.4	1.7	2

Dimensions in stock:
Steel/Steel coated: 106 | Non-ferrous materials: 576

Rivets

DIN 674

Flat round head rivets

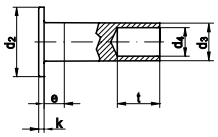


Dimensions	3	4	5
d_2	6.8	9	11.2
$d_{3\ min.}$	2.87	3.87	4.82
$e_{max.}$	1.5	2	2.5
k	1.5	2	2.5

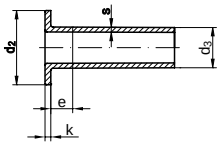
Dimensions in stock:
Steel/Steel coated: 106

DIN 7338

Rivets for brake linings and clutch linings



type B = semi-tubular rivet



type C = tubular rivet

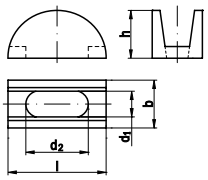
Dimensions	3	4	5	6	8
d_2	5.5	7.5	9.5	11.5	15.5
$d_{3\ min.}$	2.85	3.8	4.8	5.8	7.75
d_4	1.7	2.7	3.5	4.2	6
$e_{max.}$	1.5	2	2.5	3	4
k	0.8	1	1	1.2	1.2
$r_{max.}$	0.2	0.3	0.3	0.4	0.4
s	0.5	0.5	0.6	0.75	1.2

Dimensions in stock:
Steel/Steel coated: 593, 593

Cam segments and washers for diagonal-pull tensions

Article 88060

Cam segments
for tension anchors for diagonal-pull tension



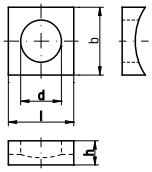
usage only with adjusting washers article 88061

Dimensions	M 12	M 20	M 24
l	59	64	77
b	30	41	53
d_1	17	22	31
d_2	30	45	47
h	30	32	31

Dimensions in stock:
Fixing systems: 636

Article 88061

Adjusting washer for cam segments
for tension anchors for diagonal-pull tension



usage only with cam segments article 88060

Dimensions	M 12	M 16	M 20	M 24	M 27	M 30
l	30	30	41	51	51	51
b	30	30	41	51	51	51
d	13	17	22	25	28	31
h	10	10	11	18	18	18

Dimensions in stock:
Fixing systems: 636

Hooks

Article 88135

Hooks
s-hooks typ 45

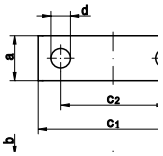
Dimensions	2.3	2.8	3.8	4.7	5.8	6.8	7.6
w	8	9	11	16	18	20	22
L	25	30	40	50	60	70	80
F max.	5 kg	7.5 kg	10 kg	15 kg	30 kg	50 kg	70 kg

Dimensions in stock:
Steel/Steel coated: 413

Axle holders

DIN 15058

Axle holder (for lifting appliances)



a x b = nominal size

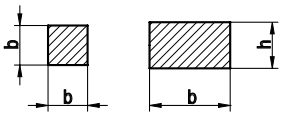
Dimensions	20x5	25x6	30x8	40x10	50x12
c_1	60	80	100	140	190
c_2	36	50	70	100	140
d	9	11	13	17	21
for axis ∅	16 - 25	25 - 40	40 - 63	63 - 100	100 - 160

Dimensions in stock:
Steel/Steel coated: 383

Parallel keys

DIN 6880

Key steel
length 1000 mm



Dimensions	3x3	4x4	5x5	6x6	8x7	10x8	12x8	14x9
for DIN 6884								
for DIN 6885/6886	3x3	4x4	5x5	6x6	8x7	10x8	12x8	14x4
for DIN 6887							8x7	
for DIN 6889						10x4	12x4	14x4.5

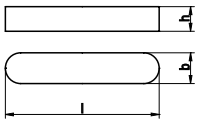
Dimensions	16x10	18x11	20x12	22x14	25x14	28x16	32x18	36x20
for DIN 6884		18x7	20x8	22x9	25x9	28x10	32x11	36x12
for DIN 6885/6886	16x10	18x11	20x12	22x14	25x14	28x16	32x18	36x20
for DIN 6887								
for DIN 6889		18x5						

Dimensions in stock:
Steel/Steel coated: 296

Parallel keys

DIN 6885

Parallel keys, deep pattern
type A = round-ended without holes



b = nominal size

Dimensions	2	3	4	5	6	8	10
h	2	3	4	5	6	8	10
for shafts ∅ d/d_1	6 – 8	8 –10	10 – 12	12 – 17	17 – 22	22 – 30	30 – 38

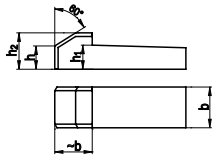
Dimensions	12	14	16	18	20	22	25
h	12	14	16	18	20	22	25
for shafts ∅ d/d_1	38 – 44	44 – 50	50 – 58	58 – 65	65 – 75	75 – 85	85 – 95

Dimensions	28	32	36	40	45		
h	28	32	36	40	45		
for shafts ∅ d/d_1	95 – 110	110 – 130	130 – 150	150 – 170	170 – 200		

Dimensions in stock:
Steel/Steel coated: 296 | Stainless steel: 520

DIN 6887

Taper keys with gib head



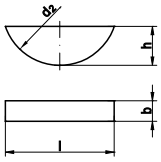
b = nominal size

Dimensions	6	8	10	12	14	16
h	6	7	8	8	9	10
h_1	6.1	7.2	8.2	8.2	9.2	10.2
h_2	10	11	12	12	14	16
for shafts ∅ d/d_1	17 – 22	22 – 30	30 – 38	38 – 44	44 – 50	50 – 58

Dimensions in stock:
Steel/Steel coated: 297

DIN 6888

Woodruff keys



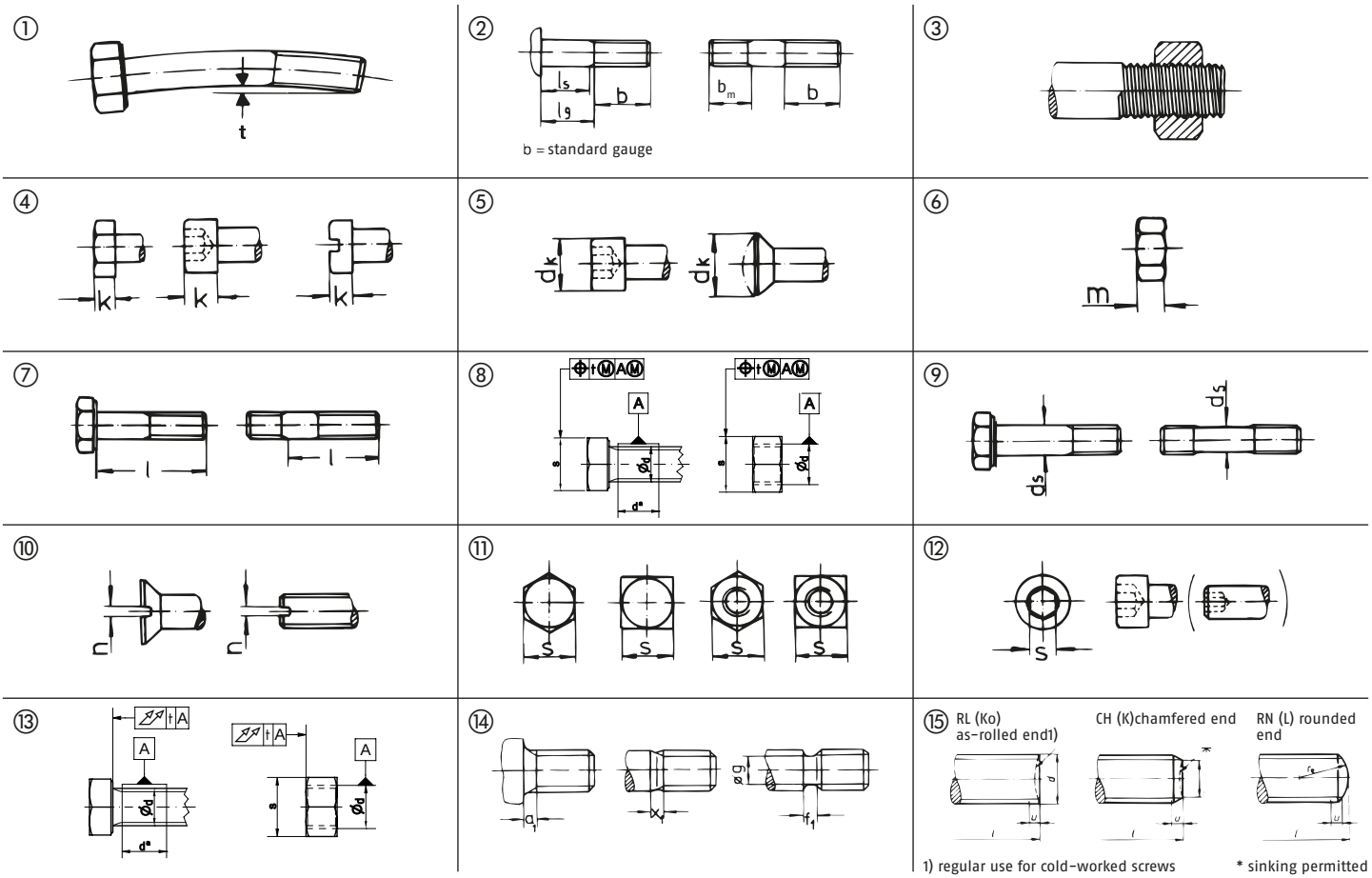
b = nominal size
[1] for use as a parallel key DIN 6887
[2] for use when determining the position

Dimensions	2	2	2.5	3	3	3	4
h	2.6	3.7	3.7	3.7	5	6.5	5
d_2	7	10	10	10	13	16	13
l	6.76	9.66	9.66	9.66	12.65	15.72	12.65
for shafts ∅ d/d_1[1)]	6 – 8	6 – 8	8 – 10	8 – 10	8 – 10	–	10 – 12
for shafts ∅ d/d_1	10 – 12	10 – 12	12 – 17	12 – 17	12 – 17	12 – 17	17 – 22

Dimensions	4	4	5	5	5	6	6
h	6.5	7.5	6.5	7.5	9	7.5	9
d_2	16	19	16	19	22	19	22
l							
for shafts ∅ d/d_1[1)]	10 – 12	–	12 – 17	12 – 17	–	17 – 22	17 – 22
for shafts ∅ d/d_1[2)]	17 – 12	17 – 22	22 – 30	22 – 30	22 – 30	30 – 38	30 – 38

Dimensions	6	8	8	8	10	10	10
h	11	9	11	13	11	13	16
d_2	28	22	28	32	28	32	45
l	27.35	21.63	27.35	31.43	27.35	31.43	43.08
for shafts ∅ d/d_1[1)]	–	22 – 30	22 – 30	–	30 – 38	30 – 38	–
for shafts ∅ d/d_1[2)]	30 – 38	>38	>38	>38	>38	>38	>38

Dimensions in stock:
Steel/Steel coated: 298



Characteristic				Dimension range	Product class A	Product class B	Product class C
① Straightness		t	l = nominal length	d ≤ 8	0.0020 l + 0.05		2x(0.0020 l + 0.05)
			b = thread length	d > 8	0.0025 l + 0.05		2x(0.0025 l + 0.05)
② Thread length		b			0 bis + 2 P	0 bis + 2 P	0 bis + 2 P
Length of metal end	Stud	b_m			js 16	js 17	js 17
③ Thread dimension	Nut				6 H	6 H	7H
	Screw				6 g	6 g	8 g
④ Head height	External drive	k		k < 10	js 14	js 15	js 16
				k ≥ 10			js 17
	Internal drive	k		≤ M 5	h 13	–	–
				≤ M 5	h 14	–	–
⑤ Diameter of head		d_k			h 13 (slotted screw h 14)	–	–
⑥ Nut height		m		≤ M 12	h 14	h 14	h 17
				> M 12 ≤ M 18	h 15	h 15	h 17
				> M 18	h 16	h 16	h 17
⑦ Nominal length		l		l ≤ 150	js 15 (slotted screws l > 50 js 16)	js 17	js 17
				l > 150		js 17	2 js 17
⑧ Tolerances of position (screws)	s:d		(Reference dimension for „t“)	(s)	2 IT 13	2 IT 14	2 IT 15
	d_k:d			(dk)	2 IT 13	2 IT 14	2 IT 15
	n:d			(d)	2 IT 12	2 IT 13	2 IT 14
Tolerances of position (nuts)	s:d (core)			(s)	2 IT 13	2 IT 14	2 IT 15
	n:d (core)			(d)	2 IT 13	2 IT 14	2 IT 15

Excerpts from ISO 3508, 4755 (DIN 76) – ISO 4753 (DIN 78) – ISO 7378, 8991 (DIN 962/34803) und ISO 4759-1

Tolerances for screws and nuts

Characteristic			Dimension range	Product class A	Product class B	Product class C
⑨ **Shank diameter**		ds		h 13	h 14	± IT 15
				Reduced shank: shank diameter ~ pitch diameter		
⑩ **Slot width**		n	n ≤ 1	+0.20 to +0.06	–	–
			n > 1 ≤ 3	+0.31 to +0.06		
			n > 3 ≤ 6	+0.37 to +0.07		
⑪ **Wrench size**	**External drive**	s		s ≤ 32 = h 13 s > 32 = h 14	s ≤ 19 = h 14/s > 19 ≤ 60 = h 15 s > 60 ≤ 180 = h 16/s > 180 = h 17	
⑫ **Wrench size**	**Internal drive**	s		s *Tol.* *0.7 EF8* *0.9 FS9* *1.3 K9* *1.5–3 D11* *4 E11* *5–14 E12* *> 14 D12*	–	–
⑬ **Tolerance of total run-out t**[b] (= angularity) acc. to ISO 4759-1 article 3.2.2.3 (for screws) 4.2.2.2 (for nuts)		∢	≤ M 39	(± 1°)[a]	(± 1°)[a]	(± 2°)[a]
			> M 39	(± 1/2°)[a]	(± 1/2°)[a]	(± 1°)[a]

a) Tolerances of total run-out is conform to angular deviation of...
b) Values for t see ISO 4759-1

⑭						⑮		
External thread		a_1	x_1	g_1 (f_1)	g_2 (f_2)	u	z_1 +	z_2 +
Nominal ∅ M	Pitch P	max.	max.	min.	max.	2 p max.	IT 14	IT 14
3	0.5	1.5	1.25	1.1	1.75	1	0.75	1.5
4	0.7	2.1	1.75	1.5	2.45	1.4	1	2
5	0.8	2.4	2	1.7	2.8	1.6	1.25	2.5
6	1	3	2.5	2.1	3.5	2	1.5	3
8	1.25	3.75	3.2	2.7	4.4	2.5	2	4
10	1.5	4.5	3.8	3.2	5.2	3	2.5	5
12	1.75	5.25	4.3	3.9	6.1	3.5	3	6
14	2	6	5	4.5	7	4	3.5	7
16	2	6	5	4.5	7	4	4	8
18	2.5	7.5	6.3	5.6	8.7	5	4.5	9

⑭						⑮		
External thread		a_1	x_1	g_1 (f_1)	g_2 (f_2)	u	z_1 +	z_2 +
Nominal ∅ M	Pitch P	max.	max.	min.	max.	2 p max.	IT 14	IT 14
20	2.5	7.5	6.3	5.6	8.7	5	5	10
22	2.5	7.5	6.3	5.6	8.7	5	5.5	11
24	3	9	7.5	6.7	10.5	6	6.7	12
27	3	9	7.5	6.7	10.5	6	6.7	13.5
30	3.5	10.5	9	7.7	12	7	7.5	15
33	3.5	10.5	9	7.7	12	7	8.2	16.5
36	4	12	10	9	14	8	9	18
39	4	12	10	9	14	8	9.7	19.5
42	4.5	13.5	11	10.5	16	9	10.5	21
45	4.5	13.5	11	10.5	16	9		22.5

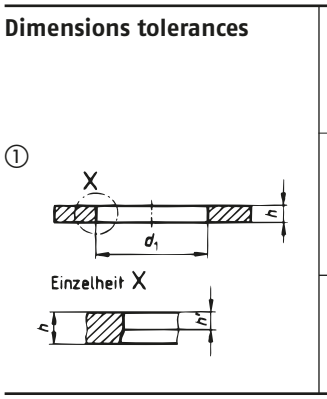
⑭ = Excerpt from ISO 3508/4755 (DIN 76)
a_1 = Distance of the last full threadturn from the contact surface (for parts with threads to the head)
x_1 = Thread run-out general use
g (f) = Thread undercut general use (Type A)

⑮ = Excerpt from ISO 4753 (DIN 78)
u = Incomplete thread at screw ends (general use for screws with rolled threading)
z_1 = Length of dog point in ISD (Ka) finish
z_2 = Length of dog point in LD (Za) finish

Surface roughness (acc. to DIN 267-2, not regulated by ISO-standard)			R_z P < 2,5 l_m = 0,4 λ_c = 0,08	R_z P ≥ 2,5 l_m = 1,25 λ_c = 0,25	nach DIN 4768 Teil 1
Thread flank	Screws	rolled	6,3	10	–
		cut	16	25	–
	Nuts		25	40	–
Connecting surface	Cold forging		16	25	–
	Warm forging		25	40	–
Shank (screws)	Cold forging		–	–	50
	Warm forging		–	–	100
Visible surface			10	–	–

Excerpts from ISO 3508, 4755 (DIN 76) – ISO 4753 (DIN 78) – ISO 7378, 8991 (DIN 962/34803), ISO 4759-1 and DIN 267-2.

Dimensions tolerances



The washers shown are just examples. The specifications are also valid correspondingly for other standardised and non-standardised washer types.

In the following tables, only the specifications for commercially available product classes A and C are listed.

The reference value is the individual value specified in the corresponding product standards.
For dimensions without a tolerance specification ISO 2768 (DIN 7168) m for product class A is valid, ISO 2768 (DIN 7168) g for product class C.

Dimensions tolerances

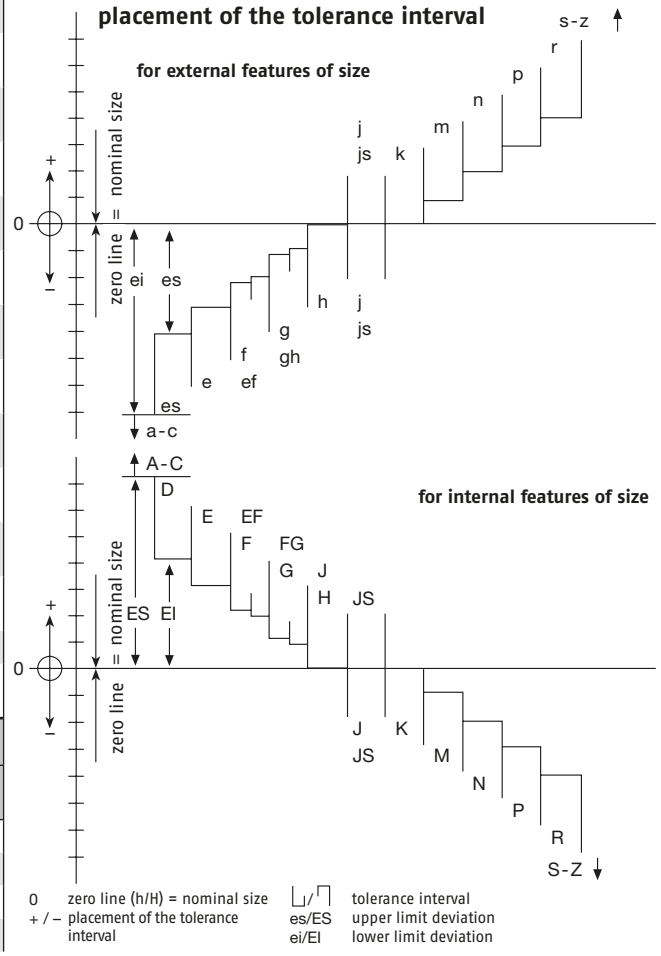
Characteristic	Nominal size >	Nominal size ≤	Product class A (m)	Product class C (g)
① **Clearance hole d_1**	**h**		**d_1***	
* h' is the part of the hole within the tolerance specified for d_1.	–	4	H 13	H 14
	4	–	H 14	H 15
	h		**(h') min**	
	–	4	≥ 0.5 h	
	4	–	≥ 0.3 h	
② **Outside diameter d_2**	**h**		**d_2**	
	–	4	h 14	h 16
	4	–	h 15	h 16
③ **Washer thickness h**	**h**		**Tol. mm**	
	–	0.5	± 0.05	± 0.10
	0.5	1.0	± 0.10	± 0.20
	1.0	2.5	± 0.20	± 0.30
	2.5	4.0	± 0.30	± 0.60
	4.0	6.0	± 0.60	± 1.00
	6.0	10	± 1.00	± 1.20
	10	20	± 1.20	± 1.60
④ **Chamfer**	α		30–45°	
	e_{min}		0.25 h	–
	e_{max}		0.50 h	

Excerpt from ISO 4759-3 (DIN 522)

Form and position tolerances

Characteristic	Nominal size >	Nominal size ≤	Product class A (m)	Product class C (g)
⑤ **Thickness variation on the same part**	**h**		**Δ h***	
* Requirements for Δ *h* apply at a distance of x = 0,1 (d_2 – d_1) from the edge of the hole and the outer edge: i.e. only 60% of the ring width	–	0.5	0.025	–
	0.5	1.0	0.05	
	1.0	2.5	0.10	
	2.5	4.0	0.15	
	4.0	6.0	0.20	
	6.0	10	0.30	
	10	20	0.40	
⑥ **Flatness**	**h**		**t_2 (c)***	
	stainless steel excepted			
* Tolerance c t_2 is always independent of the thickness tolerance for h.	–	0.5	0.10	–
	0.5	1.0	0.15	
For washers from stainless steel	1.0	2.5	0.20	
	2.5	4.0	0.30	
	4.0	6.0	0.40	
	6.0	10	0.60	
	stainless steel			
	–	0.5	0.15	–
	0.5	1	0.22	
	1	2.5	0.30	
	2.5	4	0.45	
	4	6	0.60	
	6	10	0.90	
	10	20	1.5	
⑦ **Coaxiality b** (dependent on d_2)	d_2		b (t_1)	
		–	50	2 IT 12
	50	–	2 IT 13	2 IT 16

Tolerances		Nominal dimensions												
		≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50 (40)	> 50 ≤ 80	> 80 ≤ 120	> 120 ≤ 180	> 180 ≤ 250	> 250 ≤ 315	> 315 ≤ 400	> 400 ≤ 500
IT values in mm standard tolerances	IT 12	0,10	0,12	0,15	0,18	0,21	0,25	0,30	0,35	0,40	0,46	0,52	0,57	0,63
	IT 13	0,14	0,18	0,22	0,27	0,33	0,39	0,46	0,54	0,63	0,72	0,81	0,89	0,97
	IT 14	0,25	0,30	0,36	0,43	0,52	0,62	0,74	0,87	1,00	1,15	1,30	1,40	1,55
	IT 15	0,40	0,48	0,58	0,70	0,84	1,00	1,20	1,40	1,60	1,85	2,10	2,30	2,50
	IT 16	0,60	0,75	0,90	1,10	1,30	1,60	1,90	2,20	2,60	2,90	3,20	3,60	4,00
	IT 17	1,00	1,20	1,50	1,80	2,10	2,50	3,00	3,50	4,00	4,60	5,20	5,70	6,30
for external features of size in mm	a 11	− 0,270 − 0,330	− 0,270 − 0,345	− 0,280 − 0,370	− 0,290 − 0,400	− 0,300 − 0,430	− 0,310 − 0,470							
	c 11	− 0,060 − 0,120	− 0,070 − 0,145	− 0,080 − 0,170	− 0,095 − 0,205	− 0,110 − 0,240	− 0,120 − 0,280							
	f 8	− 0,006 − 0,020	− 0,010 − 0,028	− 0,013 − 0,035	− 0,016 − 0,043	− 0,020 − 0,053	− 0,025 − 0,064	− 0,030 − 0,076	− 0,036 − 0,090	− 0,043 − 0,106	− 0,050 − 0,122	− 0,056 − 0,137	− 0,062 − 0,151	− 0,068 − 0,165
	h 8 h 9	0/− 0,014 0/− 0,025	0/− 0,018 0/− 0,030	0/− 0,022 0/− 0,036	0/− 0,027 0/− 0,043	0/− 0,033 0/− 0,052	0/− 0,039 0/− 0,062	0/− 0,046 0/− 0,074	0/− 0,054 0/− 0,087	0/− 0,063 0/− 0,100	0/− 0,072 0/− 0,115	0/− 0,081 0/− 0,130	0/− 0,089 0/− 0,140	0/− 0,097 0/− 0,155
	h 10 h 11	0/− 0,040 0/− 0,060	0/− 0,048 0/− 0,075	0/− 0,058 0/− 0,090	0/− 0,070 0/− 0,110	0/− 0,084 0/− 0,130	0/− 0,100 0/− 0,160	0/− 0,120 0/− 0,190	0/− 0,140 0/− 0,220	0/− 0,160 0/− 0,250	0/− 0,185 0/− 0,290	0/− 0,210 0/− 0,320	0/− 0,230 0/− 0,360	0/− 0,250 0/− 0,400
	h 13 h 14	0/− 0,14 0/− 0,25	0/− 0,18 0/− 0,30	0/− 0,22 0/− 0,36	0/− 0,27 0/− 0,43	0/− 0,33 0/− 0,52	0/− 0,39 0/− 0,62	0/− 0,46 0/− 0,74	0/− 0,54 0/− 0,87	0/− 0,63 0/− 1,00	0/− 0,72 0/− 1,15	0/− 0,81 0/− 1,30	0/− 0,89 0/− 1,40	0/− 0,97 0/− 1,55
	h 15 h 16	0/− 0,40 0/− 0,60	0/− 0,48 0/− 0,75	0/− 0,58 0/− 0,90	0/− 0,70 0/− 1,10	0/− 0,84 0/− 1,30	0/− 1,00 0/− 1,60	0/− 1,20 0/− 1,90	0/− 1,40 0/− 2,20	0/− 1,60 0/− 2,50	0/− 1,85 0/− 2,90	0/− 2,10 0/− 3,20	0/− 2,30 0/− 3,60	0/− 2,50 0/− 4,00
	h 17 js 14	0/− 1,00 ± 0,125	0/− 1,20 ± 0,150	0/− 1,50 ± 0,180	0/− 1,80 ± 0,215	0/− 2,10 ± 0,260	0/− 2,50 ± 0,310	0/− 3,00 ± 0,370	0/− 3,50 ± 0,435	0/− 4,00 ± 0,500	0/− 4,60 ± 0,575	0/− 5,20 ± 0,650	0/− 5,70 ± 0,700	0/− 6,30 ± 0,775
	js 15 js 16 js 17	± 0,200 ± 0,300 ± 0,500	± 0,240 ± 0,375 ± 0,600	± 0,290 ± 0,450 ± 0,750	± 0,350 ± 0,550 ± 0,900	± 0,420 ± 0,650 ± 1,050	± 0,500 ± 0,800 ± 1,250	± 0,600 ± 0,950 ± 1,500	± 0,700 ± 1,100 ± 1,750	± 0,800 ± 1,250 ± 2,000	± 0,925 ± 1,450 ± 2,300	± 1,050 ± 1,600 ± 2,600	± 1,150 ± 1,800 ± 2,850	± 1,250 ± 2,000 ± 3,150
	k 6	+ 0,006 0	+ 0,009 + 0,001	+ 0,010 + 0,001	+ 0,012 + 0,001	+ 0,015 + 0,002	+ 0,018 + 0,002							
	m 6	+ 0,008 + 0,002	+ 0,012 + 0,004	+ 0,015 + 0,006	+ 0,018 + 0,007	+ 0,021 + 0,008	+ 0,025 + 0,009							
inside dimension in mm	D 9	+ 0,045 + 0,020	+ 0,060 + 0,030	+ 0,076 + 0,040	+ 0,093 + 0,050	+ 0,117 + 0,065	+ 0,142 + 0,080							
	D 10	+ 0,060 + 0,020	+ 0,078 + 0,030	+ 0,098 + 0,040	+ 0,120 + 0,050	+ 0,149 + 0,065	+ 0,180 + 0,080							
	D 11	+ 0,080 + 0,020	+ 0,105 + 0,030	+ 0,130 + 0,040	+ 0,160 + 0,050	+ 0,195 + 0,065	+ 0,240 + 0,080							
	D 12	+ 0,120 + 0,020	+ 0,150 + 0,030	+ 0,190 + 0,040	+ 0,230 + 0,050	+ 0,275 + 0,065	+ 0,330 + 0,080							
	E 11	+ 0,074 + 0,014	+ 0,095 + 0,020	+ 0,115 + 0,025	+ 0,142 + 0,032	– –	– –							
	E 12	+ 0,100 + 0,014	+ 0,140 + 0,020	+ 0,175 + 0,025	+ 0,212 + 0,032	– –	– –							
	EF 8	+ 0,024 + 0,010	+ 0,032 + 0,014	+ 0,040 + 0,018	– –	– –	– –							
	H 9	+ 0,025 0	+ 0,030 0	+ 0,036 0	+ 0,043 0	+ 0,052 0	+ 0,062 0							
	H 11	+ 0,060 0	+ 0,075 0	+ 0,090 0	+ 0,110 0	+ 0,130 0	+ 0,160 0							
	H 13	+ 0,140 0	+ 0,180 0	+ 0,220 0	+ 0,270 0	+ 0,330 0	+ 0,390 0							
	H 14	+ 0,250 0	+ 0,300 0	+ 0,360 0	+ 0,430 0	+ 0,520 0	+ 0,620 0							
	H 15	+ 0,400 0	+ 0,480 0	+ 0,580 0	+ 0,700 0	+ 0,840 0	+ 1,000 0							
	JS 9	± 0,0125	± 0,015	± 0,018	± 0,0215	± 0,026	± 0,031							
	K 9	0 − 0,025	0 − 0,030	0 − 0,036	–	–	–							



0 zero line (h/H) = nominal size
+ / − placement of the tolerance interval
⌊/⌈ tolerance interval
es/ES upper limit deviation
ei/EI lower limit deviation

General tolerance for linear dimensions

Tolerance class		≥ 0,5 ≤ 3	> 3 ≤ 6	> 6 ≤ 30	> 30 ≤ 120	> 120 ≤ 400	> 400 ≤ 1000
f	(fine)	± 0,050	± 0,050	± 0,100	± 0,150	± 0,200	± 0,300
m	(medium)	± 0,100	± 0,100	± 0,200	± 0,300	±0,500	± 0,800
g	(coarse)	± 0,150	± 0,200	± 0,500	± 0,800	±1,200	± 2,000
sg	(very coarse)	–	± 0,500	± 1,000	± 1,500	± 2,000	± 3,000

Excerpts from ISO 286, 965, 4759 (DIN 267-2, 7160, 7161, 7168)

Standard and special parts according to drawings can be delivered for different applications in all necessary special materials – in any amount required.
The table shows some examples of frequently requested special materials, roughly ordered according to application area:

Material group Particular properties/areas of application		Material no.	(AISI)	Material designation (previous)	Standard/ Material data sheet
Stainless steels – [1]	F 1	1.4016		X6Cr17 (X8Cr17)	EN 10088 (DIN 17440)
a) ferritic (F) and martensitic (C) Greater mechanical properties with less corrosion-resistance	C 1 C 1 C 3 C 4	1.4006 1.4021 1.4057 1.4104 1.4034	(410) (420) (431) (430 F) (420)	X10Cr13 X20Cr13 X20CrNi172 (X20CrNi17) X12CrMoS17 X46Cr13 (X40Cr13)	ISO 3506 (DIN 267-11)
b) austenitic (A) Increased corrosion resistance, rust and acid-resistant, tough at sub-zero temperatures	A 3	1.4541*	(321)	X6CrNiTi1810	EN 10088 (DIN 17440)
	A 4 A 5 A 4	1.4436 1.4571* 1.4580	(319) (316 Ti) (316 Cb)	X5CrNiMo17133 (X5CrNiMo1812) X6CrNiMoTi1722 X6CrNiMoNb17122 (X10CrNiMoNb1810)	ISO 3506 (DIN 267-11) * DIN 267-13
		1.4310**	(301)	X12CrNi177	** SEW 400
Rust and acid-resistant steel For particular corrosion media e.g. for use in indoor swimming pools	Uranus B 6 Austenitic Austenitic Austen./ferritic	1.4539 1.4439 1.4529 1.4462		X1NiCrMoCu 25 20 5 X2CrNiMoN 17 13 5 X1NiCrMoCuN 25 20 7 X2CrNiMoN 22 5 3	ISO 3506-1, E1 (especially resistant against chloride-induced stress corrosion)
Steels tough at sub-zero temperatures Increasing strength and stretch limit behaviour and high toughness at temperatures as low as – 195 °C (SEW) or – 253 °C (AD)	Marking KA Marking KB Marking KC Marking KD	1.7219 1.5680 1.6900 1.6903		26CrMo4 12Ni19 X12CrNi189 X10CrNiTi1810	DIN 267-13 SEW 680/70
	A 2 A 2 A 3 A 4 A 5	1.4301 1.4303 1.4541 1.4401 1.4571	(304) (305) (321) (316) (316 Ti)	X5CrNi1810 X5CrNi1812 X6CrNiTi1810 X5CrNiMo17122 X6CrNiMoTi17122	ISO 3506 (DIN 267-11) DIN 267-13 EN 10088 (DIN 17440) ADW 2/ADW 10
Highly heat-resisting and heat-resistant steels Good temperature-resistance with medium to lower mechanical properties		1.1181 1.7218 1.7709		C35E 25CrMo4 21CrMoV5-7	DIN 267-13 EN 10269
	Nimonic 80 A Nimonic 90 Nimonic 105	2.4631/2.4952 2.4632/2.4969 2.4634		NiCr20TiAl NiCr20Co18Ti NiCo20Cr15MoAlTi	EN 10269 (DIN 17240, DIN 17480 DIN 17225)
	(Sicromal 8) (Sicromal 10) (Sicromal 12)	1.4713 1.4724 1.4742 1.4762 1.4821 1.4828 1.4841 1.4845 1.4864	 (309) (310) (310 S) (330)	X10CrAl7 X10CrAl13 X10CrAl18 X10CrAl24 X20CrNiSi254 X15CrNiSi2012 X15CrNiSi2520 X12CrNi2521 X12NiCrSi3616	SEW 470/76
Non-magnetisable steels – [1] Mechanical properties (tensile strength, stretch limit, toughness) are dependent on the processing state - e.g. quenched, hot/cold-shaped, fully hardened	Amanox 182M 9	1.3805 1.3813 1.3817 1.3819 1.3952 1.3960 1.3965 1.3967	 (202) 	X35Mn18 X40MnCrN19 X40MnCr18 X50MnCrV2014 X4CrNiMoN1814 X45MnNiCrV1376 X8CrMnNi188 X50CrMnNi229	SEW 390/61
Nickel, nickel alloys High corrosion resistance, saltwater-proof, very high to highest resistance against aggressive chemical agents, higher oxidation resistance, high to optimum mechanical properties and fatigue strength - also at higher temperatures	Nickel 99.6 Nickel 99.2 Nickel 99	2.4060 2.4066 2.4068		Ni 99.6 Ni 99.2 LC-Ni 99	EN 10088 (DIN 17740)
	Hastelloy B Hastelloy C	2.4617 2.4610		NiMo28 NiMo16Cr16Ti	DIN 17744
	Monel 400/Silverin K-Monel/Silverin Al	2.4360* 2.4375		NiCu30Fe NiCu30Al	DIN 17743 * ASTM B 164 Class A
	Inconel 600/625 Nicrofer 7216 Inconel X 750/ Nimonic 80 A Incolloy 825/ Nicrofer 4221	 2.4816/2.4856 2.4952* 2.4858		 NiCr15Fe NiCr15Ti7Al/NiCr20TiAl NiCr21Mo	 DIN 17742 DIN 17744 * EN 10269 (DIN 17240) * DIN 267-13
Titanium, titanium alloys Low specific weight, high corrosion resistance, salt-water proof, anti-magnetic	Titan 992 (Grade 4) Titan 993 (Grade 3) Titan 994 (Grade 2) Titan 995 (Grade 1) Ti 1	3.7065 3.7055 3.7035 3.7025*		Ti 99.2 Ti 99.3 Ti 99.4 Ti 99.5	DIN 17850 DIN 17860 DIN 17862 DIN 17863 DIN 17864 * ISO 8839 (DIN 267-18)
	Titan Al 6V4 Titan Grade 5/Ti 2	3.7164 3.7165*		TiAl6V4 TiAl6V4	DIN 17851 WL-sheets * ISO 8839 (DIN 267-18)

1) further austenitic materials, see "Parts made from stainless steels" ➔ TI-224

Product information: Head shapes, drive features and ends of externally threaded fasteners

Table 1: Drive features

Slot	Hexalobular socket	Triangle
Phillips cross recess H	Triple square socket	Hexalobular
Pozidriv cross recess Z	12 point socket	Triple square
Supradriv cross recess	Torque set	Hexagon with slot
Cross recess combi H+	Tri – Wing	Theft resistant drives
Cross recess combi Z+	Hi torque	
Square socket	Hexagon	
Hexagon socket	Square	

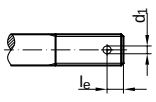
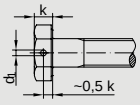
Table 2: Ends of externaly threaded fasteners

Description	New name	Old name	Picture (example)	Description example
Short dog point with rounded end (DIN 962)	Ak	Ak		ISO* – M 12 x 50 – Ak – 8.8
Chamfered end (ISO 4753)	CH	K		ISO* – M 12 x 50 – CH – 8.8
Cone point (ISO 4753)	CN	–		ISO* – M 12 x 50 – CN – 8.8
Cup point (ISO 4753)	CP	Rs		ISO* – M 12 x 50 – CP – 8.8
Flat point (ISO 4753)	FL	Ks		ISO* – M 12 x 50 – FL – 8.8
Long dog point (ISO 4753)	LD	Za		ISO* – M 12 x 50 – LD – 8.8
Pilot point with truncated cone (ISO 4753)	PC	PC		ISO* – M 12 x 50 – PC – 8.8
Short dog point with truncoated cone (DIN 962)	Asp	Asp		ISO* – M 12 x 50 – Asp – 8.8

Description	New name	Old name	Picture (example)	Description example
Pilot point, flat (ISO 4753)	PF	PF		ISO* – M 12 x 50 – PF – 8.8
Thread undercut (DIN 76-1)	Ri	Ri		ISO* – M 12 x 50 – Ri – 8.8
as-rolled end (ISO 4753)	RL	Ko		ISO* – M 12 x 50 – RL – 8.8
rounded end (ISO 4753)	RN	L		ISO* – M 12 x 50 – RN – 8.8
Split pin hole (DIN 962/34803)	S	S		ISO* – M 12 x 50 – S – 8.8
Scrape point (ISO 4753)	SC	Sb		ISO* – M 12 x 50 – SC – 8.8
Short dog point (ISO 4753)	SD	Ka		ISO* – M 12 x 50 – SD –8.8
Wire hole (DIN 962/34803)	SK	SK		ISO* – M 12 x 50 – SK – 8.8
Truncated cone point (ISO 4753)	TC	Sp		ISO* – M 12 x 50 – TC – 8.8

* product standard

Table 3: Dimensions for split pin holes (S) and wire holes (SK)

Gewinde-Ø M		3	4	5	6	7	8	10	12	14	16	18	20	22	24	27	30	33	36
Pin holes S* (DIN 962/34803)	d_1	0.8	1	1.2	1.6	1.6	2	2.5	3.2	3.2	4	4	4	5	5	5	6.3	6.3	6.3
	l_e	2	2.2	2.6	3.3	3.3	4	5	6	6.5	7	7.7	7.7	8.7	10	10	11.3	11.3	12.5
Wire holes SK* (DIN 962/34803)	d_1	–	1.2	1.2	1.6	1.6	2	2	2	2	3	3	3	3	3	3	3	4	4
	* Position tolerance t = 2 IT13 (PK A), 2 IT14 (PK B), 2 IT15 (PK C)																		
Dimensions for slots**	~	0.8	1	1.2	1.6	1.6	2	2.5	3	3	4	** The position of the slot at the corners of the hexagon or square is optional							

According to DIN 2092 and DIN 2093, disc springs are cone-shaped discs which can be stressed along the axis. Compared to other spring-types, these fully concentric bending springs with symmetric-rotation cross section have low spring deflection with high spring power. The characteristic line of the disc springs depends to a large extent on the relationship of the free spring height [h0] to the flatness and disc thickness [t]. This is why the characteristic line is split into three series.

Each series is split into three groups according to their thickness. These groups differentiate themselves from each other with various production processes.

Table 1: Names

D_e	Outside diameter
D_i	Inside diameter
t	Thickness of the individual disc
l_0	Construction height of the unstressed individual disc
s	Spring deflection of the individual disc
h_0	Information parameter (spring deflection up to the height for disc springs without bearing surface); $h_0 = l_0 - t$

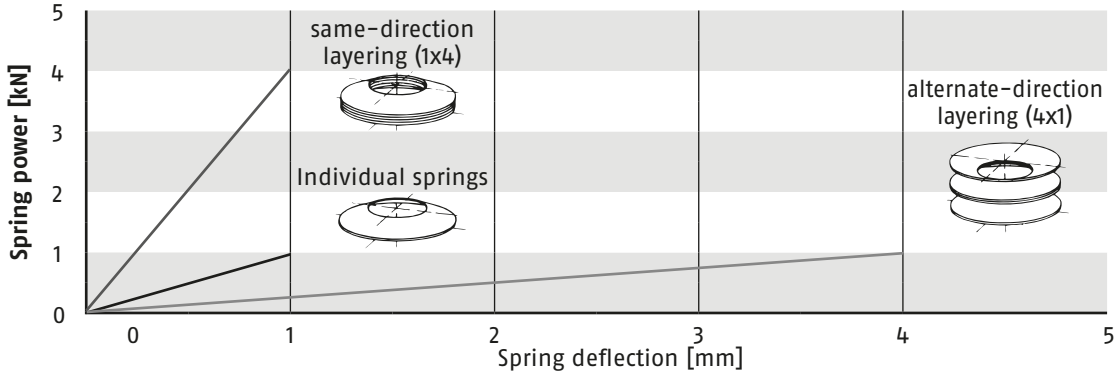
Table 2: Difference according to series

Series	Factor from $\frac{D_e}{t}$	Factor from $\frac{h_0}{t}$
A	~ 18	~ 0.4
B	~ 28	~0.75
C	~ 40	~ 1.3

Table 3: Difference according to groups

Group	Thickness t	Manufacture/Processing
1	< 1.25 mm	cold-formed (punched), edges rounded, without bearing surface,
2	1.25 – 6 mm	cold-formed finely cut, D_e and D_i turned, without bearing surface
3	> 6 mm	cold or hot-formed, turned on all sides, with bearing surface,

Same-direction layering, alternate-direction layering or a combination of the two let disc springs be formed into columns with freely configurable characteristics. If, for example, a spring column is made up of four alternate-direction individual disc springs with the same geometry, the spring deflection increases fourfold in comparison with individual springs. With a spring packet of four same-direction layering springs, the spring power increases fourfold in relation to individual springs.



The materials named in EN 10083, EN 10089 and EN 10132-4 are permitted for disc springs (standard is the material 1.8159 – 51 CrV 4), C steels, however, only for Group 1 disc springs.
The disc springs are delivered hardened and tempered with a hardness of 42-52 HRC (Group 1 disc springs: 425 HV10 to 510 HV10). The standard surface is coated in phosphate and oiled. Many additional surfaces for increasing corrosion-resistance, like for example, mechanical galvanization or zinc-flake coating, are possible.

Stainless steels are also used as disc spring material. Compared with the standard, these special springs can have different, but always lower spring power.

Disc springs DIN 2093 – in stock

- from Cr/CrV alloy stainless steels (REYHER catalogue ➔ green pages 215)
- from stainless steels 1.4310/ 1.4568 (REYHER catalogue ➔ blue pages 492)

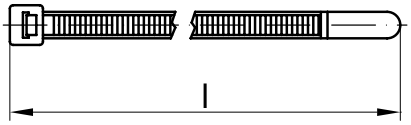
Disc springs – available on request

- Disc springs in special dimensions
- Disc springs in special materials
- Disc springs with special coatings

Cable ties

R 82500 – 82515

Cable ties, inside serration
T-series



Dimensions	2.3	2.5			2.8		3.5		
l	83	100	140	205	240	330	150	190	290
Bundle ∅ max	16	22	35	55	65	95	35	50	80
min. tensile strength (N)	80	80	80	80	80	110	110	135	135
Type	T18S	T18R	T18I	T18L	T25L	T25LL	T30R	T30L	T30LL

Dimensions	4.0		4.6		4.7			7.6	
l	175	365	150	300	210	300	390	225	
Bundle ∅ max	40	105	35	85	55	85	110	55	
min. tensile strength (N)	135	180	225	225	355	355	355	535	
Type	T40R	T40L	T50S	T50I	T80R	T80I	T80L	T120S	

Dimensions	7.5				8.9		
l	387	460	760	365	530	820	1095
Bundle ∅ max	105	130	225	100	150	245	330
min. tensile strength (N)	535	535	535	670	780	780	780
Type	T120R	T120M	T120 L	T150R(H)	T150M	T150L	T150XL

Version	T (R 82500)
Material	Polyamide 6.6 (PA66), HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)[4)]

Version	T- HS (R 82505)
Material	Polyamide 6.6 heat stabilised (PA66HS), HF = halogen free, RoHS conform
Colour	NA = natural/BK = black
Properties	Operating temperature: -40 °C to 105 °C, short-term 145 °C (500 h)[4)]

Version	T- W (R 82510)
Material	Polyamide 6.6 UV-stabilised (PA66W), HF = halogen free, RoHS conform
Colour	BK = black
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)[4)]

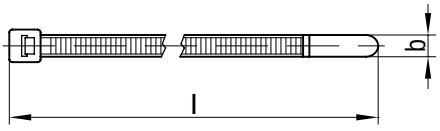
Version	T- HR (R 82515)
Material	Polyamide 4.6 for high temperature (PA46), HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C to +150 °C, short-term up to +195 °C (500 h)[4)]

fire protection UL94 V2

cable tie width = nominal size

R 82520

Cable ties, inside serration
LK-series



Dimensions	2.3	13.2
l	120	535
Bundle ∅ max	28	150
Tensile strength (N)	135	1.115
Type	LK2	LK5

Version	PA66
Material	Polyamide 6.6, HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C bis 85 °C, short-term 105 °C (500 h)

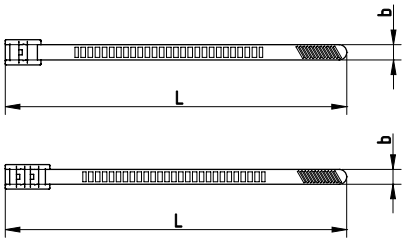
fire protection UL94 V2

cable tie width = nominal size

Cable ties

R 82516

Cable ties, outside serrated, with flat head Robusto series



fire protection UL94 HB

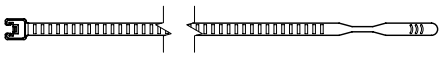
cable tie width = nominal size

Dimension	9.0		
l	180	260	355
Bundle ∅ max	42	62	92
Tensile strength (N)	360	530	530
Type	LPH942	LPH962	LPH992

Version	PA11
Material	Polyamide 11, HF = halogen free; RoHS conform
Colour	BK = black
Properties	Operating temperature: –40 °C bis 85 °C, short-term 105 °C (500 h)

R 82517

Cable ties Q-tie, inside serrated, with open head and pre-locking functionality



fire protection UL94 V2

cable tie width = nominal size

Dimension	2.6	3.6	4.7	7.7
l	105	160	210	420
Bundle ∅ max	24	38	50	110
Tensile strength (N)	80	130	220	530
Type	Q18R	Q30R	Q50R	Q120R

Version	PA11
Material	Polyamide 6.6, UV-stabilised, HF = halogen free, RoHS conform
Colour	BK = black
Properties	Operating temperature: –40 °C bis 85 °C, short-term 105 °C (500 h)

Cable ties with fixing elements

R 82518

2-piece fixing ties for parallel separation

fire protection UL94 HB

cable tie width = nominal size

Cable tie width	4.6	7.6
l	200	380
Bundle ∅ max	50	100
Tensile strength (N)	225	535
Type	T50RCOUPLER	T120RCOUPLER

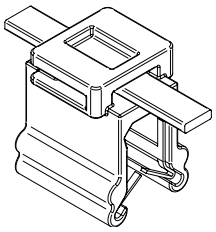
Version	Cable tie PA66HIR(S)	Food part PA66HIRHS
Material	Polyamide 6.6, impact resistant, RoHS conform	Polyamide 6.6, impact resistant, RoHS conform
Colour	BK = black	BK = black
Properties	Operating temperature: –40 °C to 85 °C, short-term 105 °C (500 h)	Operating temperature: –40 °C to 105 °C (500 h)

(R = REYHER article numbers)

Cable ties with fixing elements

R 82521

**fixing ties for edges, 2 pieces,
edge width 1–3 mm,
tie channel top-axial**



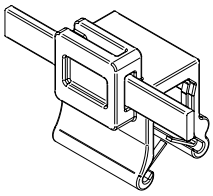
fire protection
UL94 V2

Cable tie width	4.6
l	200
Bundle ∅ max	45
Tensile strength (N)	225
Type	T50ROSEC4A-W

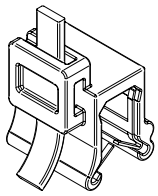
Version	PA66W
Material	Polyamide 6.6, UV-stabilised, HF = halogen free, RoHS conform
Colour	BK = black
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)

R 82522

**fixing ties for edges, 2 pieces,
edge width 1–3 mm**



S-A = tie channel lateral-axial



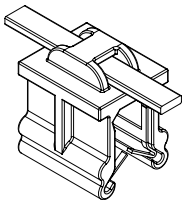
S-Q = tie channel lateral-cross

Cable tie width	3.6 S-Q	4.6 S-Q	4.6 S-A	
l	150	150	150	200
Bundle ∅ max	33	45	31	45
Tensile strength (N)	135	225	225	225
Type	T30REC5A	T50ROSEC5A	T50SOSEC5B	T50ROSEC5B

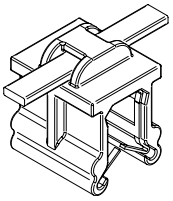
Version	Cable tie PA66HS	Food part PA66HIRHS
Material	Polyamide 6.6, heat stabilised, RoHS conform	Polyamide 6.6, impact resistant, RoHS conform
Colour	BK = black	BK = black
Properties	Operating temperature: -40 °C to 105 °C fire protection UL94 V2	Operating temperature: -40 °C to 105 °C (500 h) fire protection UL94 HB

R 82523

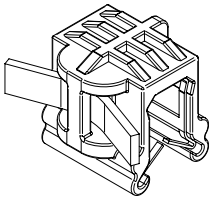
**fixing ties for edges, 2 pieces,
edge width 3–6 mm**



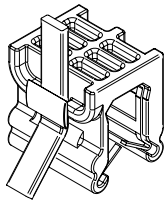
O-A = tie channel top-axis



O-Q = tie channel top-cross



S-A = tie channel lateral-axial



S-Q = tie channel lateral-cross

Cable tie width	4.6 O-A	4.6 S-Q		4.6 S-A	4.6 S-Q
l	200	150	200	200	200
Bundle ∅ max	45	35	45	45	45
Tensile strength (N)	225	225	225	225	225
Type	T50ROSEC19	T50SOSEC20	T50ROSEC20	T50ROSEC23	T50ROSEC24

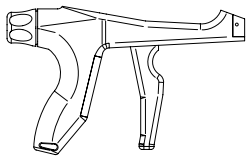
Version	Kabelbinder PA66HS	Fußteil PA66HIRHS
Material	Polyamide 6.6, heat stabilised, RoHS conform	Polyamide 6.6, impact resistant, RoHS conform
Colour	BK = black	BK = black
Properties	Operating temperature: -40 °C to 105 °C fire protection UL94 V2	Operating temperature: -40 °C to 105 °C (500 h) fire protection UL94 HB

(R = REYHER article numbers)

Application tools for cable ties

R 82535

Man. application tool EOV7

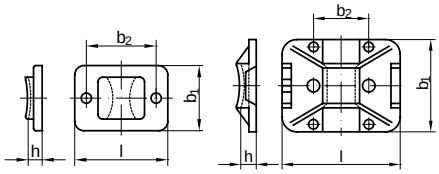


Tie width max.	Tie thickness max.	Weight	Comment
4.8	1.5	275 g	– Ergonomic, slip-proof handle for a comfortable and secure grip – Extremely low maintenance – Fast and precise application with minimum effort (TLC mechanism) – Convenient and simple tension adjustment – Extended, slim nose for use in narrow spaces – Housing made of resilient and lightweight glass fibre-reinforced polyester – Standard grip span (90 mm) and short grip span (80 mm) available

Fixings for cable ties

R 82540

Cable tie mounts, type TY-G1, self adhesive



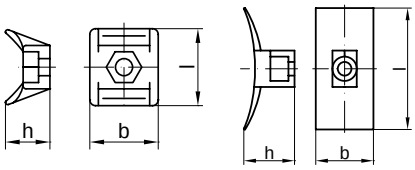
fire protection UL94 V2

Cable tie width	4.0	8.0
l	20	32
b_1	14	25
h	3.7	5.2
b_2	15	15
Fastening-∅	2.2	3.2
Type	TY3G1S	TY8G1S

Version	TY-G1
Material	Polyamide 6.6 (PA66), HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)
Fastening	self-adhesive and screw mounting

R 82543/82546

cable tie mounts, type NY/LKC, screw mounting



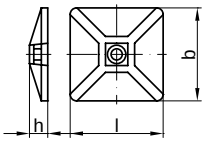
fire protection UL94 V2

Cable tie width	8.0	8.0
l	13.5	40
b	12.0	19.0
h	7.8	16.8
Fastening -∅	3.0	5.5
Type	NY3256	LKC

Version	NY und LKC
Material	Polyamide 6.6 (PA66), HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)
Fastening	screw mounting

R 82550

Cable tie mounts, type MB-CA, self adhesive



fire protection UL94 V2

Cable tie width	5.4
l	29
b	29
h	5.7
Fastening -∅	4.2
Type	MB4CAS [2)]

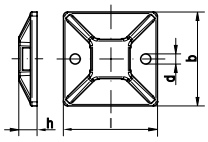
Version	PA66
Material	Polyamide 6.6 (PA66), HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)
Fastening	Self adhesive

(R = REYHER article numbers)

Fixings for cable ties

R 82553

Cable tie mounts, type MB-A, screw mounting and adhesive



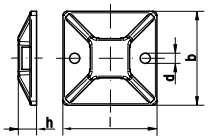
fire protection UL94 V2

Cable tie width	5.4
l	28
b_1	28
h	4.7
b_2	20.2
Fastening-∅	4.0
Type	MB4A

Version	PA66
Material	Polyamide 6.6 (PA66), HF = halogen free, RoHS conform
Colour	NA = natural
Properties	Operating temperature: -40 °C to 85 °C, short-term 105 °C (500 h)
Fastening	Self-adhesive and screw mounting

R 82554

Cable tie mounts with special glue, SolidTack series



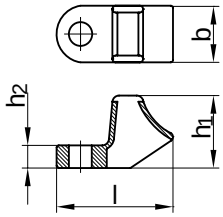
fire protection UL94 V2

Cable tie width	8.0	8.0
l	13.5	40
b	12.0	19.0
h	7.8	16.8
Fastening-∅	3.0	5.5
Type	NY3256	LKC

Version	NY und LKC
Material	Polyamide 6.6 (PA66), HF = halogen free, RoHS conform
Colour	NA = natural/BK = black
Properties	Operating temperature: -40 °C bis 85 °C, short-term 105 °C (500 h)
Fastening	Self-adhesive with special glue (acrylat) and screw mounting

R 82560

Cable tie mounts, Typ CL8, screw mounting



fire protection UL94 V2

Cable tie width	8.0
l	27.3
b	12.5
h_1	16.0
h_2	5.0
Fastening-∅	6.5
Type	CL8

Version	CL8
Material	Polyamide 6.6 (PA66), HF = halogen free
Colour	NA = natural
Properties	Operating temperature: -40 °C bis 85 °C, short-term 105 °C (500 h)
Fastening	screw mounting

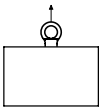
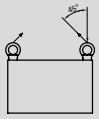
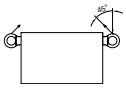
(R = REYHER article numbers)

Taking into account a high safety factor in relation to the minimum breaking strength, the ring bolts according to DIN 580 and the ring nuts according to DIN 582 have the load-bearing capacities as indicated in table 1. The load-bearing values apply for steel C15 E and stainless steel A2/A4 without restriction in a temperature range of –20 °C to +200 °C.

Ring bolts and ring nuts are valid according to the 2006/42/EC Machinery Directive as load-carrying equipment and are subject to CE labelling. Furthermore, they must show a specification of the minimum carrying force (WLL) as well as the specification of the material if required for safe usage. The version of DIN 580-2010 and DIN 582-2010 not yet published at the time of printing of this catalogue also prescribes that a marking of an arrow be present in the direction of the axis (picture 1) so that the user can tell that the WWL specified on the product only applies in the direction of the axis.

Subsequent colour-coded marking of ring bolts and nuts (especially in red) is to be avoided so that they are not mistaken for high-strength suspension points.

Table 1

Thread (d1)		M 8	M 10	M 12	M 16	M 20	M 24	M 30	M 36	M 42	M 48	M 56	M 64	M 72x6	M 80x6	M 100x6
capacity axial (WLL) for each eye bolt/ nut kg		140	230	340	700	1200	1800	3200	4600	6300	8600	11500	16000	20000	28000	40000
capacity up to max. 45° for each eye bolt/ nut kg		100	170	240	500	860	1290	2300	3300	4500	6100	8200	11000	14000	20000	29000
capacity under max. 90° for each eye bolt/ nut kg		70	115	170	350	600	900	1600	2300	3150	4300	5750	8000	10000	14000	20000

User information for lifting eye bolts DIN 580

Eye bolts conforming to this standard are primarily intended as permanent attachments on equipment such as motors, control cabinets, gear boxes, etc. When used as temporary attachments on larger objects such as large tools for transportation only, the next largest thread size should be used.

The safe working load values given in table 1 are based on the following assumptions:

- the eye bolt is firmly screwed down
- the collar sits evenly on the contact surface,
- the material of the equipment is capable of accommodating the stresses induced without any deformation liable to impair safety,
- tapped holes have a threaded length sufficient to ensure that the eye bolt shank is fully engaged and the collar fully seated.

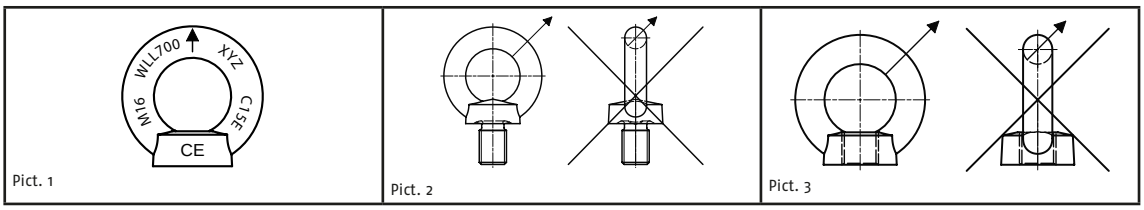
The capacity specified in the second line of table 1 applies up to an inclination angle of 45°. The capacity specified in the third line applies for laterally inserted eye bolts up to an inclination angle of 45° in all directions in regard to the ring level. Lateral pull should not be applied (see picture 2). Before being used, eye bolts should be checked for correct seating and apparent damage (e.g. corrosion, deformation). Deformed eye bolts should be discarded. In eye bolt assemblies with clearance hole, a washer and nut (not thin nut) should be used.

Product information: Lifting eye bolts and lifting eye nuts

User information for lifting eye nuts DIN 582
Eye nuts conforming to this standard are primarily intended as permanent attachments on equipment such as motors, control cabinets, gear boxes, etc. When used as temporary attachments on larger objects such as large tools for transportation only, the next largest thread size should be used.

The safe working load values given in table 1 are based on the following assumptions:
- the eye nut is firmly screwed down and the collar sits evenly on the contact surface
- the length of the bolt thread is sufficient to ensure that the eye nut is fully engaged
- the material of the bolt on which the eye nut is to be screwed is of adequate strength

In eye nut assemblies with clearance hole, a washer should be used.
The capacity specified in the second line of table 1 applies up to an inclination angle of 45°. The capacity specified in the third line applies for laterally inserted eye nuts up to an inclination angle of 45° in all directions in regard to the ring level. Lateral pull should not be applied (see picture 3). Before being used, eye nuts should be checked for correct seating and apparent damage (e.g. corrosion, deformation). Deformed eye nuts should be discarded.



Pict. 1

Pict. 2

Pict. 3

1. Standards

The following standards apply for "wire thread inserts for the metric ISO thread"

- DIN 8140-1 dimensions, technical specifications
- DIN 8140-2 helical coil threads for inserts, thread tolerances
- DIN 8140-3 gauges and gauge sizes

These standards apply for ISO metric coarse pitch threads and fine pitch threads.

Details for additional deliverable thread types (BSW/BSF, UNC/UNJC/UNF/UNJF, GAZ, BSP) are available upon request.

2. Field of application/materials/properties

- Initial use: for heavy-duty and long-lasting inside threads partly from metallic and non-metallic materials
- Use during repairs/follow-up work: as a replacement for unusable threads (= damaged/worn).

The particular properties of wire thread inserts are

- reduced inclination for cold welding with screwed fastenings
- mostly constant friction coefficient
- good temperature and corrosion resistance
- with profile B "locking" (➜ 4) additional resistance against independent loosening of the screwed fastenings thanks to increased frictional locking in the thread.

Beyond the standard material in stock "Stainless steel 18.8 (A 2)", wire thread inserts from special materials are deliverable for particular usage requirements➜ Table 1.

Tabelle 1: Materials for various fields of application

Material	Max. temperature	Options for coatings	Applications
Standard material Stainless steel 18.8 (A 2)	425 °C (short-term) 315 °C (longer periods)	Dry lubrication Cadmium plating Silver plating Zinc plating Tin plating	All standard applications for all materials
AISI 304 (1.4301) AISI 302 (1.4310)			Special use – resistant to acid, rust, high temperatures, non-magnetic
Special stainless steel AISI 304L, 316, 316L, 316Ti, 321	Up to 400 °C over longer periods		
Phosphorous bronze	300 °C (short-term) 250 °C (longer period)	Cadmium plating	Copper parts - resistant to certain electrolytic processes
Inconel x 750 Nc 15 Fe Nba	750 °C (short-term)	Silver plating	Thermal power stations Astronautics Aviation Turbo compressor
Nimonic 90 Nc 20 C 18 Ti	538 °C (longer periods)		

3. Manufacture

The thread inserts are manufactured from a wire with rhombus-shaped cross-section. After the winding process, they have two threaded profiles, one outside for the insertion into the tool's receiving thread according to DIN 8140-2 and one inside (after insertion) for receiving a screw thread.

4. Types

According to DIN 8140-1, the profiles are differentiated according to:

- Type A = cylindrical shape* for coarse and fine threads.
- Type B = "locking" (like type A, but with centrally positioned, polygon, elastic windings (➜ 2)
  (type B thread inserts are identifiable by their red colour).

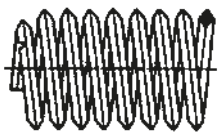
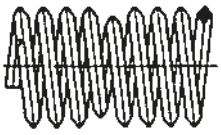
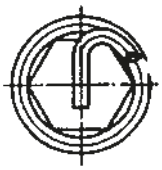
* The new generation of the "Type SR" AMECOIL thread inserts is designed in such a way that insertion is now easier and safer, thus increasing productivity.

5. Drive systems for insertion

DIN 8140-1 shows an engaging tang as the drive system, which is to be removed at the groove using a tang breaker after insertion.
AMECOIL thread inserts, for example, have this drive system.

6. Determining the nominal length

The nominal lengths of the threaded inserts to be chosen are,
a) dependent on the tool material and,
b) dependent on the strength class of the screw
(recommended nominal lengths ➜ DIN 8140-1, Table 1).

Type A	Type B
	
	

with engaging tang and groove according to DIN 8140-1 (z.B. AMECOIL)

7. Dimensions/Measuring techniques during acceptance inspection

In the order text, the following dimensions are to be specified (example M 10x15):

- the use/inside thread required after insertion – e.g. M 10
- the chosen nominal length according to DIN 8140-1, Table 1, l_1 – e.g. 15 (= 1.5 d).

In as-delivered condition, only the outside diameter and the number of windings are measurable during acceptance inspection (➔ Table 2) – the nominal length l_1 is first determinable in inserted condition.

Tabelle 2: Dimensions – outside Ø and winding count in as delivered condition

Characteristics		for coarse pitch threads with nominal size use/inside thread														
		M 2	M 2.5	M 3	M 4	M 5	M 6	M 7	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24
Outside-Ø	min.	2.6	3.3	3.8	5.15	6.35	7.6	8.65	9.85	12.1	14.4	16.8	19.0	21.5	23.7	26.3	28.6
	max.	2.8	3.5	4.0	5.35	6.6	7.85	8.9	10.1	12.5	14.8	17.2	19.4	22.0	24.2	26.8	29.1
Drill-Ø	mm	2.1	2.6	3.2	4.2	5.2	6.3	7.3	8.4	10.5	12.5	14.5	16.5	18.75	20.75	22.75	24.75
Winding count AW* at nominal length d/mm	1d = mm	2	2.5	3	4	5	6	7	8	10	12	14	16	18	20	22	24
	AW	2.9	3.5	3.9	3.7	4.3	4.2	5.3	4.7	5.0	5.2	5.6	6.5	5.6	6.3	6.9	6.2
	1.5d = mm	3	3.75	4.5	6	7.5	9	10.5	12	15	18	21	24	27	30	33	36
	AW	4.9	5.9	6.3	6.1	6.9	6.9	8.2	7.4	8.1	8.4	8.8	10.1	9.0	10.0	10.9	10.0
	2d = mm	4	5	6	8	10	12	14	16	20	24	28	32	36	40	44	48
	AW	6.9	8.1	8.7	8.4	9.7	9.6	11.1	10.6	11.2	11.7	12.0	13.8	12.3	13.7	15.1	14.0
(*Tol. –0.25)	2.5d = mm	5	6.25	7.5	10	12.5	15	17.5	20	25	30	35	40	45	–	–	–
	AW	8.9	10.5	11.1	10.9	12.3	12.3	14.3	13.5	14.2	14.7	15.2	17.5	15.5	–	–	–

Characteristics		for fine pitch threads with nominal size use/inside thread										
		M 8x1	M 10x1	M 10x1.25	M 12x1	M 12x1.25	M 14x1.5	M 14x1.25	M 16x1.5	M 20x1.5	M 20x2	M 24x1.5	M 24x2
Outside-Ø	min.	9.85	12.1	12.1	14.4	14.4	16.8	16.8	19.0	23.7	23.7	28.6	28.6
	max.	10.1	12.5	12.5	14.8	14.8	17.2	17.2	19.4	24.2	24.2	29.1	29.1
Drill-Ø	mm	8.3	10.25	10.4	12.3	12.4	14.5	14.4	16.5	20.5	20.5	24.5	24.5
Winding count AW* at nominal length d/mm	1d = mm	8	10	10	12	12	14	8.4 ①	16	20	20	24	24
	AW	6.1	7.6	6.0	9.3	7.4	7.4	(15.2)	8.7	10.7	8.0	12.9	9.6
	1.5d = mm	12	15	15	18	18	21	12.4 ①	24	30	30	36	36
	AW	9.5	12.1	9.7	14.5	11.6	11.6	(18.2)	13.4	16.7	12.5	19.8	15.0
	2d = mm	16	20	20	24	24	28	14.4 ①	32	40	40	48	48
	AW	12.9	16.3	13.1	19.5	15.9	15.7	(19.4)	18.1	22.4	16.8	26.6	20.2
(*Tol. –0.25)	2.5d = mm	20	25	–	–	–	35	16.4 ①	40	① ignition plug threads with special d-dimensions			
	AW	16.5	20.7	–	–	–	19.9	(10.6)	22.9				

Tabelle 3: Overview: Tools, accessories and REYHER article number

Tool/Accessory	REYHER art. no.	
	Coarse pitch thread SR	Fine pitch thread
Thread insert article number	R 88330	R 88331
Drill for tapping hole-Ø	R 88988, R 88989	
Roughing tap	R 88339 from M 18	–
Finish tap	R 88338	R 88338
Assembly tools		
• Multidim. hand fitting tool	–	R 88333 fine
• Mandrel and threaded nose	–	R 88334 fine
• Specific hand fitting tool	R 88333 SR	–
• Threaded mandrel	R 88334 SR	–
• Unidim. hand fitting tool	R 88335 SR from M 18	R 88335 fine ab M 20
Tang breaker	R 88336	
Extractor	R 88337	
Assortment boxes with tools	R 88342, R 88344	

Dimensions/tools in stock: ➔ steel pq.: 561-563

Fitting principle

Drilling

Tapping

Fitting with classic range tool

Fitting with SR range tools

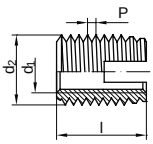
Breaking the engaging tang

Thread insert fitted

Dimensions for self tapping Ensat® thread inserts

Article 88302

Ensat® 302



d_1 = nominal size

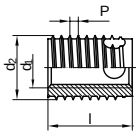
Dimensions	M 2.5	M 3	M 4	M 5	M 6	M 8
d_2	4.5	5	6.5	8	10	12
P	0.5	0.5	0.75	1	1.5	1.5
l	6	6	8	10	14	15
blind hole depth $_{min.}$	8	8	10	13	17	18

Dimensions	M 10	M 12	M 14	M 16	M 18	M 20
d_2	14	16	18	20	22	26
P	1.5	1.5	1.5	1.5	1.5	1.5
l	18	22	24	22	24	27
blind hole depth $_{min.}$	22	26	28	27	29	32

Dimensions	M 22	M 24	M 27	M 30		
d_2	26	30	34	36		
P	1.5	1.5	1.5	1.5		
l	30	30	30	40		
blind hole depth $_{min.}$	36	36	36	46		

Article 88307

Ensat® 307

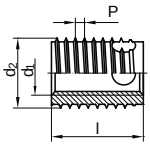


d_1 = nominal size

Dimensions	M 4	M 5	M 6	M 8	M 10	M 12
d_2	6.5	8	10	12	14	16
P	0.8	1	1.25	1.5	1.5	1.75
l	6	7	8	9	10	12
blind hole depth $_{min.}$	8	9	10	11	13	15

Article 88308

Ensat® 308



d_1 = nominal size

Dimensions	M 4	M 5	M 6	M 8	M 10	M 12
d_2	6.5	8	10	12	14	16
P	0.8	1	1.25	1.5	1.5	1.75
l	8	10	12	14	18	22
blind hole depth $_{min.}$	10	13	15	17	22	26

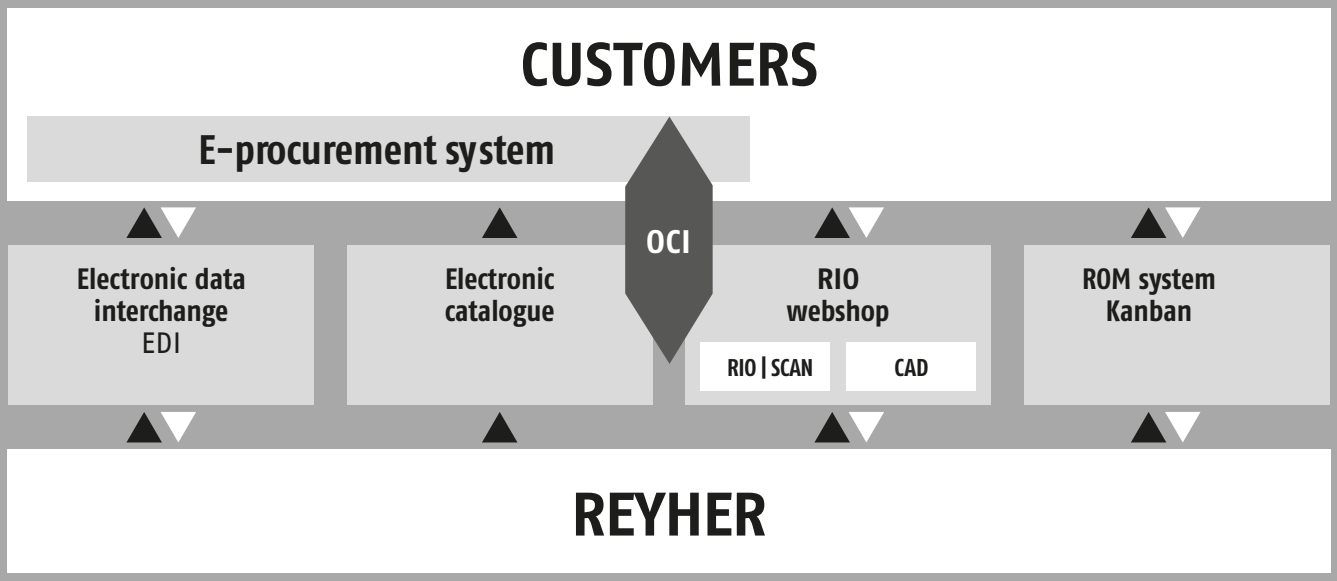
Table 4: Standard values for borehole diameter

Borehole-∅ [mm]		R 88302 (Ensat® 302)				R 88307/R 88308 (Ensat® 307/308)			
Workpieces material	Aluminium alloys Rm= tensile strength [N/mm²]	R_m < 250							
		R_m < 300				R_m < 300			
			R_m < 350				R_m < 350		
				R_m > 350				R_m > 350	
	Brass, bronze, non-ferrous metal			R_m > 350				R_m > 350	
	Cast iron HB = brinell hardness	< 150 HB				< 150 HB			
			< 200 HB				< 200 HB		
				> 200 HB				> 200 HB	
Thread flank overlap approx.		**60%**	**50%**	**40%**	**30%**	**80%**	**70%**	**60%**	**50%**
Ensat® internal thread	M 2/M 2.5	–	4.1	4.2	4.3	–	–	–	–
	M 3	–	4.6	4.7	4.8	4.6	4.7	4.7	4.8
	M 3.5	5.4	5.5	5.6	5.7	5.5	5.6	5.7	–
	M 4	5.9	6.0	6.1	6.2	6.0	6.1	6.2	–
	M 5	7.2	7.3	7.5	7.6	7.4	7.5	7.6	7.7
	M 6	8.8	9.0	9.2	9.4	9.3	9.4	9.5	9.6
	M 8	10.8	11.0	11.2	11.4	11.1	11.2	11.3	11.5
	M 10	12.8	13.0	13.2	13.4	13.1	13.2	13.3	13.5
	M 12	14.8	15.0	15.2	15.4	15.0	15.1	15.2	15.4
	M 14	16.8	17.0	17.2	17.4	17.0	17.1	17.2	17.4
	M 16	18.8	19.0	19.2	19.4	19.0	19.1	19.2	19.4
	M 18	21.0	21.0	21.2	21.4	–	–	–	–
	M 20/M 22	25.0	25.0	25.2	25.4	–	–	–	–
	M 24	29.0	29.2	29.2	29.4	–	–	–	–
	M 27	33.0	33.2	33.2	33.4	–	–	–	–
	M 30	35.0	35.0	35.2	35.4	–	–	–	–

Dimensions in stock ➔ steel pq.: 417, stainless pq.: 561

REYHER

COMPREHENSIVE E-BUSINESS SOLUTIONS



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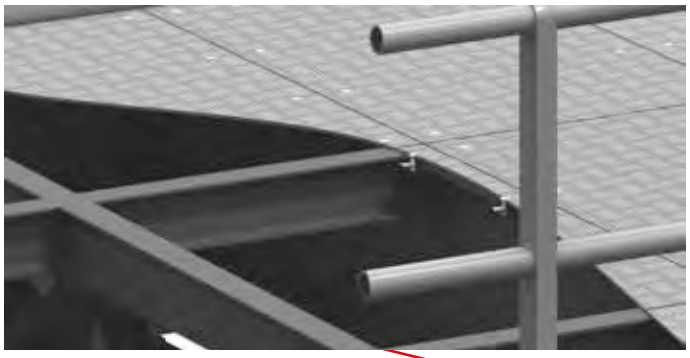
Areas of application

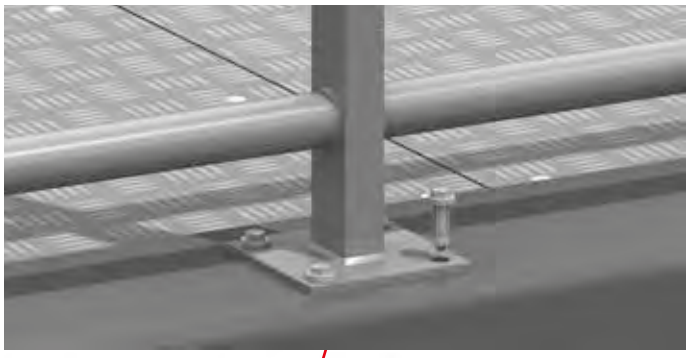
Floor Fixings

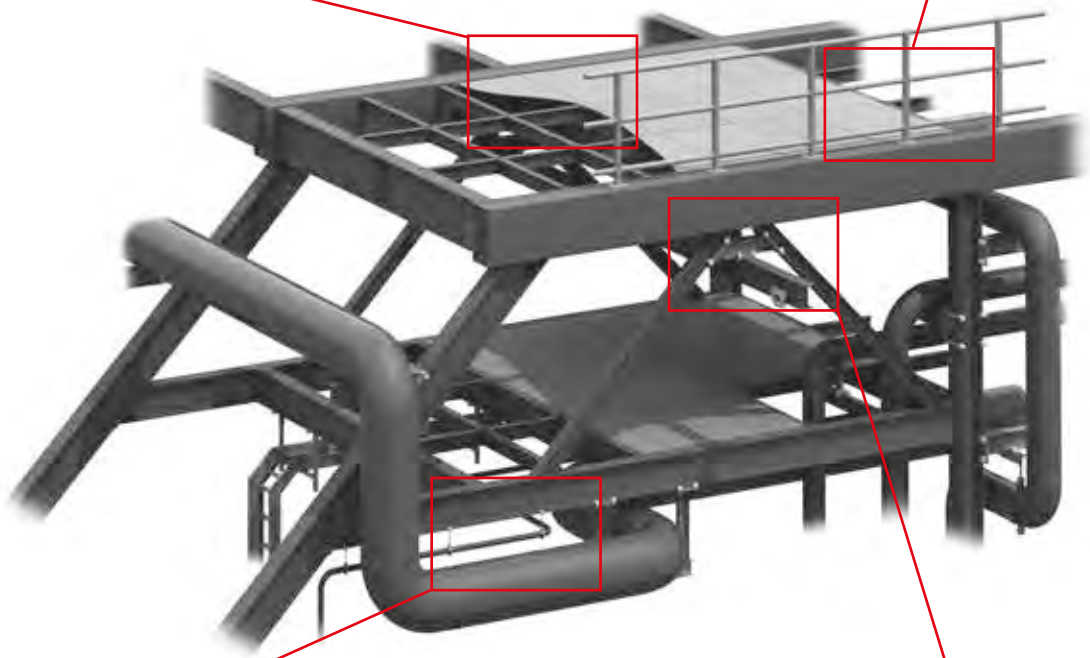
It is now possible to connect steel flooring to supporting steelwork without on-site drilling or welding for a fast, low cost operation. Lindapter fixings allow installation to be carried out safely from above, often by one person, without elevated floors thus significantly reducing costs.

Cavity Fixings

The legendary Hollo-Bolt® and Lindibolt® allow fast, cost-effective connections to SHS and other hollow sections, or conventional steelwork where access is available from one side only. The Hollo-Bolt can be used as a primary structural connection as detailed in the SCI/BCSA publication 'Joints in Steel Construction – Simple Connections'. Plug-like fixing element for hollow profiles, pipes and other constructions which are difficult to access from the rear.







Support Fixings

Lindapter provides easy-to-install solutions for supporting building services from structural or secondary beams, including: the suspension of HVAC equipment, pipe work, fire protection/sprinkler systems, suspended ceilings and electrical equipment.

Steelwork Fixings

Lindapter has pioneered the development of steelwork clamping systems for over 75 years, and continues to innovate with their unique and proven concept: eliminate the need to drill or weld, to reduce installation time and labour costs. Lindapter steelwork fixings and girder clamps transform this concept into reality and are ideal for new construction and the refurbishment of existing structures.

Components of a girder clamp

1. **Standard grade 8 hexagon nuts**

2. **Standard hardened washers**

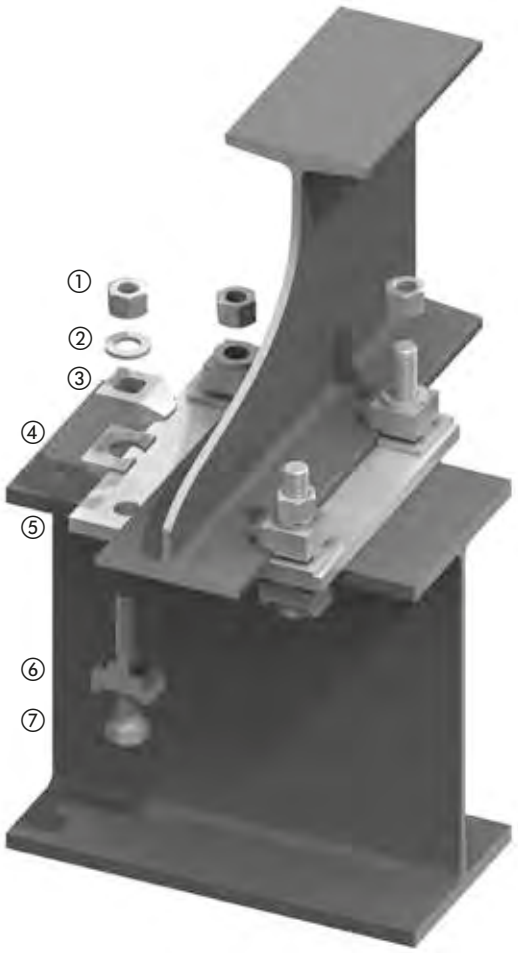
3. **Lindapter clamp**
   Dependent on the application different clamps could be used i.e. Types A, B, BR, AF, LR, LS, D2 or D3.

4. **Packing piece**
   In combination with the clamps mentioned above these parts increase the tail length to enable the product to sit correctly on the beam.

5. **Location plate (can be supplied if required)**
   This is an essential part of the girder clamp assembly that enables all the components to be located in the correct position. The hole centres and plate thickness are calculated to suit the individual application.

6. **Lindapter clamp**
   This can be of a similar type as 3 (above), although certain products are designed to specifically work together i.e. A + B.

7. **Standard grade 8.8 hexagon head bolts**



Loads

The table beneath shows tensile and frictional load capabilities for a standard four bolt girder clamp using 4 bolts and 8 clamps at a 90° crossover angle. Lindapter is only too pleased to carry out all design work for individual connections free of charge based on the following details:

- Load per connection
- Size and type of both beams
- Angle of crossover
- Distance between beams
- Inclination of beams

Clamps		Typen A, B, LR				Typ AF	
Screws Ø		M 12	M 16	M 20	M 24	M 24	
Property class		8.8	8.8	8.8	8.8	8.8	10.9
Permitted pulling force for four screws	kN	18.2	33.9	52.9	76.2	160.0	250.0 [a]
Permitted shearing force for four screws	kN	1.8	3.4	5.3	7.6	60.0 [a]	70.0 [b]
Tightening torque	Nm	69	147	285	491	800	1000

① safety factor 3,2:1/② safety factor 2:1

Note:
All loads are based on actual test data having a safety factor for friction against slip and for tensile against ultimate failure (typically 5:1). Use of lower safety factor is not recommended.

Approvals

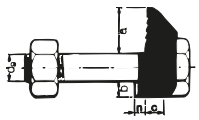
All approvals apply to girder clamps using types A and B only, in sizes from M 12 to M 24, further information is available upon request.

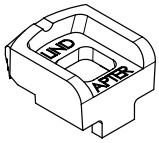
You can find more detailed information in the Lindapter catalogue. This can be requested directly from REYHER or downloaded from www.lindapter.de

Girder clamps

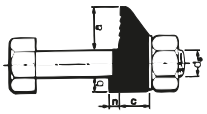
Typ A und B

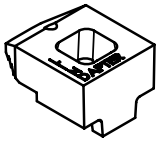
Typ A
(R 82001)





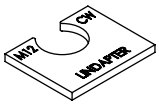
Typ B
(R 82002)



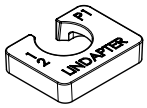


Accessories for type A and B

Typ CW
(R 82011)

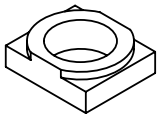


Typ P1k/P2k
(R 82012/82013)



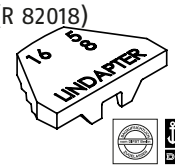
clipped washers for adjustment of different flange thicknesses

Typ W
(R 82021)



recess filling plates for type A

Typ T
(R 82018)



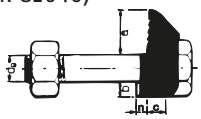
to cancel the slope of the clamping nose of type A and B

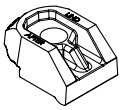
Application examples

Clamps for static and dynamic loads with adjustment of flange inclinations of up to 8°

Girder clamp type AF

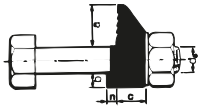
Typ AF
(R 82040)

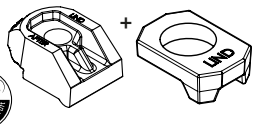




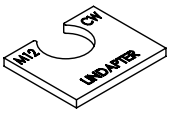
Accessories for type AF

Typ AF + AFW
(R 82040 + R 82041)

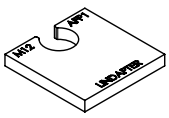




Typ AFCW
(R 82042)



Typ AFP1/AFP2
(R 82043/82044)



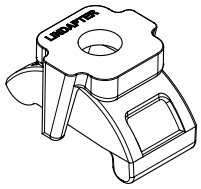
clipped washers for adjustment of different flange thicknesses

Examples of use

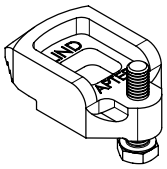
Clamps for high friction loads with adjustment of flange inclinations of up to 10°.
Type AF can be used in combination with type CF.

Girder clamp of type LR and D2

Typ LR
(R 82010)

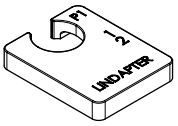


Typ D2
(R 82007)



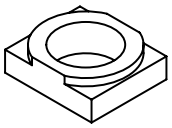
Accessories for type LR and D2

Typ P1L/P2L
(R 82015/82016)



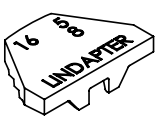
clipped washers for adjustment of different flange thicknesses

Typ W
(R 82021)



recess filling plates for type D2

Typ T
(R 82018)



to cancel the slope of clamping nose of type D2

Examples of use

Typ LR
Adjustable two-part clamp with large clamping range. Adjustment of flange inclinations by up to 15°.

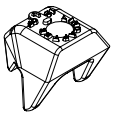
Typ D2
Clamp with adjustable screw for large clamping range. Adjustment of flange inclinations by up to 5°.

(R = REYHER-article number)

Information on the dimensioning and loads can be found in the Lindapter catalogue.
This can be requested directly from REYHER or downloaded **www.lindapter.de**

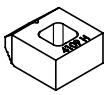
Girder clamps – special clamps

Typ CF
(R 82045)



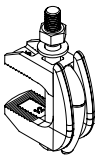
Clamps for frictional loads.Can be used in connection with type AF. This type hooks around the flange edge of the profiles.

Typ BSNT
(R 82003)



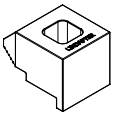
Special clamps for the assembly of girders – flange on flange. The inner plate is replaced by a flat steel frame which is welded onto the clamp.

Typ F9
(R 82009)



Flange clamp for parallel girders with identical widths. Not suitable for tapered flanges.

Typ BR
(R 82048)



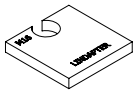
Zubehörteile
Typ CW/P1K/P2K

A versatile clamp for steel beams or rails. The skirt prevents the clamp from rotating during installation. The BR tail spans slotted holes. Suitable for flanges up to 8°.

Typ LS
(R 82046)

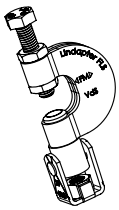
A self adjusting clamp for various flange thicknesses and slopes of up to 10°. The special serrations on the tail prevent the clamp rotating during installation. The LS tail spans over slotted holes.

Accessories
Typ LSP2
(R 82047)



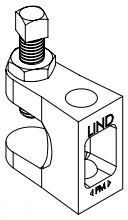
Support fixings

Typ FLS
(R 82068)



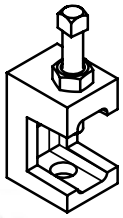
Girder clamp with swivel for use with parallel and inclined flanges

Typ FL
(R 82008/ 82058)



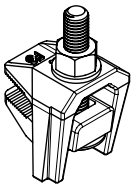
Girder clamp for parallel and inclined flanges with clearance hole or threaded hole

Typ LC
(R 82025)



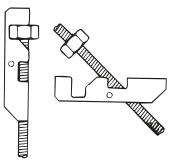
Girder clamp for parallel and inclined flanges with threaded hole parallel and perpendicular to the adjusting screw

Typ F3
(R 82022)



Two-part flange clamp with large clamping area for use on parallel flanges.

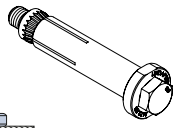
Typ TC
(R 82024)

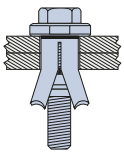


Toggle fixings for mounting to hollow ceilings or steel profiles

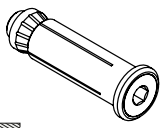
Cavity fixings

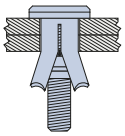
Typ HB – Hexagon head
(R 82031)



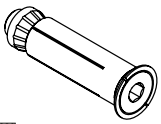


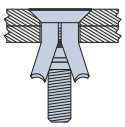
Typ HBCSK – Countersunk head
(R 82031)





Typ HBFF – Flush Fit
(R 82031)



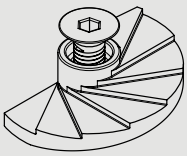


Examples of use

Suitable for hollow sections, tubes and where access is available from one side only.

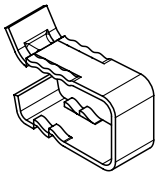
Floor fixings

Typ FF – Floorfast
(R 82019)



The eccentric stepped web of the casting allows it to lock under the steelwork, providing full face contact when torque is applied. Lloyds' Register Type Approval covers clamping force and vibration.

Typ GF3030
(R 83030)



Grating clamp for fast installation on parallel flanged girders.

(R = article numbers)

When selecting the right plug or anchor for all purposes of use the following important factors need to be taken into consideration – here is some advice to help you make your choice:

1. The building material (anchoring base):
Plugs and anchors can only ever support as much of a load as the anchoring base can handle.
REYHER fixing technology provides the proper technical and commercially economic solution from the catalogues of tried-and-tested proprietary brands FISCHER and UPAT for all intended uses.

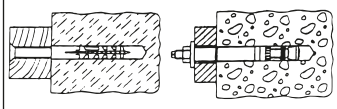
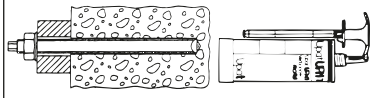
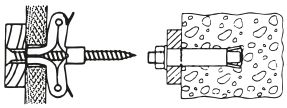
The building material needs to be able to take the expansion force of the plug or anchor during frictional contact (➔ Section. 2) without suffering damage. (Approved plugs/anchors for the corresponding building material ➔ Table 6)

Table 1: Anchoring base acc. to building group

Concrete		Brickwork				Sheets/Panels
Normal concrete B 15 – B 55 C 15/20 – C 50/55	Light-weight concrete LB 10 – LB 55 e.g. Pumice/ expanded/porous (gas) concrete	**Solid brick dense structure** e.g. Solid brick (MZ)/ Sand lime solid bricks (KS)	**Perforated brick dense structure** e.g. Honeycomb brick Sand lime Perforated bricks (KSL)	**Solid brick porous structure** e.g. Porous concrete (G) Light-weight concrete (V)	**Perforated brick porous structure** e.g. Honeycomb brick Light-weight concrete Hbl	Plasterboard/ Chipboard/ Fibreboard/ Fibre cement panels
BN	**BL**	**VD**	**LD**	**VP**	**LP**	**HP**

2. Mode of operation (load anchoring in the building material)
Plugs and anchors are classified into three groups according to their force transmission in the anchoring base.
This type of carrier mechanism is also a decisive factor for the anchoring base, resilience, edge distances and centre distances.

Table 2: Types of force transmission from plugs and anchors in the building ground

Force transmission:	**Frictional contact** (Traction from expansion)	**Adhesive bond** (expansion free)	**Formschluss** (expansion free)
Support mechanism:	Contact pressure of the expansion parts on the wall of the drilling hole = Friction > Tensile loads 	Adhesive mortar joins with the anchor and anchoring base 	Plug shape/Anchor part shape adapts to the drill hole shape 
Plug/ Anchor types:	Plastic expansion plug Metal expansion anchor	Compound/Reaction anchor Injection anchor	Cavity plug Zykon anchor

3. The area of use (pressure zone or tension zone?)
When using heavy-duty plugs/anchors in concrete it is decisive to know if the anchoring is to be carried out in the area of a proven pressure zone (consistently non-cracked concrete) or in a tension zone by itself (cracking concrete/concrete inclined to crack).

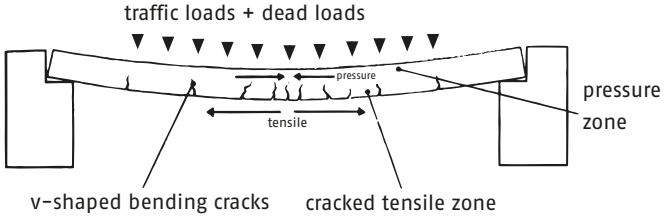
Tension zones with V-shaped bending cracks form in concrete due to its own weight, superficial loads, e.g. below ceilings. In this area of use, only plugs and anchors suited for crack/tension zones are permitted. Other plugs and anchors are only permitted for proved pressure zones.

(Tension-zone approved plugs and anchors ➔ Table 5)

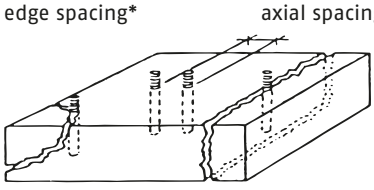
4. The anchoring position
Plugs and anchors with high expansion pressure and heavy loads can lead to cracks or concrete edge failure of the component in any anchoring base, especially with narrow/flat components.

According to their mode of operation, dimensions and load magnitudes, the plugs and anchors have been assigned the following to prevent
undesirable damage from happening:

- Minimum component thicknesses
- Edge spacing
- Axial spacing (with plug pairs/groups)
- Minimum anchoring depths/installation lengths (➔ Section 7) in the relevant technical approvals (➔ Section. 9)



If in doubt, it is recommended to use tension zone approved plugs and anchors.



Non-binding typical values:
Edge spacing ≥ 2 x minimum anchoring depth
Axial spacing ≤ 4 x minimum anchoring depth
(the approval details are to be observed on a case-by-case basis)

5. Loading

Alongside the criteria treated in 1–4, the permitted load (F) per plug or anchor is influenced by:

a) Plug/Anchor dimensioning, installation depth, distances
b) Material/Property class of the plug/anchor and the building component into which the loads were inserted
c) Building component thickness, load working point, load type (pull, diagonal pull, pressure, transverse force, bending)
d) Safety factors, details in the approvals

For a) The basis used for the calculation is the size of the actually supporting threaded part (nominal size partially relate to the outer/sheath/drill diameters)

For b) The basis used for the values in approvals/from manufacturers apply to the corresponding form of delivery – e.g. steel, 8.8 or stainless steel A2/A4

6. Corrosion protection

The following guideline applies when specifying the proper protection of fixings against various types of corrosion:
The "Plug/Anchor fixing corrosion system" needs to be at least as fixed, durable and corrosion-resistant in the conditions of use as the parts to be fitted

The task of constructive planning is to determine the necessary corrosion protection measures:
Here the wear-and-tear contingency of the corrosion protection in known operating conditions is to be taken into account until maintenance is due or until the limitation of damages has been reached. Surface or material specifications are to be set accordingly in the article order text.

Table 3: Overview of the surface and material corrosion protection options

Delivery condition/ Corrosion protection	Extent of load/ Protective effect	Area of use	Notes
Zinc plated steel Coating thickness ~ 5–8 mm	I – II = mild – moderate	closed, dry interior rooms	
Hot dip galvanized steel (tZn) Coating thickness ≥ 40 mm	≧ IV = very strong	outdoor area e.g. pole/ crash barrier fixing	only with thicker dimensions due to the necessary play of the thread not a component of the tech. approval
Plastic (Nylon)	> IV = very durable	all atmospheric conditions	only special models on offer
Stainless steel A 4 (Werkst.1.4401/ 1.4571)	> IV = very durable	general atmospheric conditions rear-ventilated facades/roofs seawater/sea air	not for atmospheres containing chlorine (danger of pitting/stress corrosion)
Stainless steel Material 1.4529	> IV = very durable	specifically, indoor swimming pools, tunnels, parking garages, seawater areas	specifically for areas with high chlorine/chloride exposure

7. The clamp length – the installation length

The entire length of ready-to-install complete plugs/anchors for push-through installations is subdivided into:

- **Clamp length** ("use length", "grip strength", "grip thickness") $d_a/t_{fix}/d_p + t_{fix}$
  These need to be chosen as at least as large as the entire thickness of the assembly components to be fastened + non-structural construction material layers (plaster)
  – for stand-off fixing + distance
- **Installation length/Anchoring length h_{ef}**
  This needs to be integrated as a minimum anchoring depth in the fully load-bearing building material section. Load values only apply with the correct installation depth. See assembly instructions.

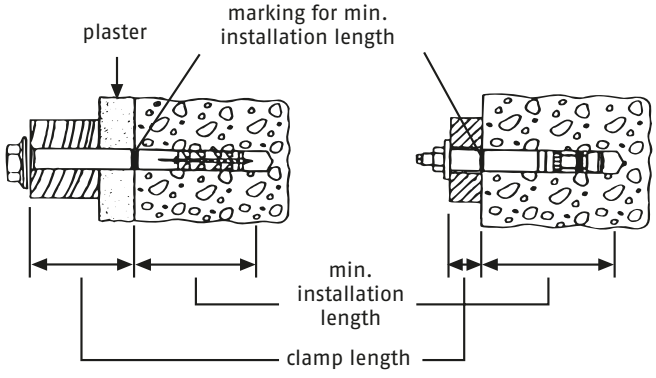
8. The assembly

Plugs and anchors can only achieve their intended task when they are properly installed.

The planner is to instruct the following for installation:
– Type, execution and dimension of the plug/anchor
– Edge and axial spacing on the component
– Special specifications of the technical approval

The grip/use lengths and the installation lengths/depths for the corresponding plugs and anchors are listed in the REYHER catalogue.

The following needs to be taken into consideration for correct assembly:
– The specifications of the planner according to sections 1 – 7
– Drills and drill techniques (➔ 8.1 Table 4)
– Drillhole ∅/depth (➔ Assembly instructions of the manufacturer)
– Borehole cleaning (➔ 8.2)
– Assembly type (➔ 8.3)
– Minimum anchoring depth/clamp length (➔ 7)



8.1 Drilling

Table 4:

Anchoring base		Drill	Drilling technique	Machine	Notes
Concrete	≧ B 25/C20/25	Hammer drills	Rotary/Hammer drilling low hammer count and high hammer power	Drilling hammer	for very large drillhole ∅ or very strong concrete reinforcement or diamond/ core drilling method.
	B 15/C12/15	Stone drills	Impact drilling	Impact drilling machine	–
Solid building materials with dense/fixed structure		Stone drills Hammer drills	Impact drilling Rotary/Hammer drilling	Impact drilling machine Drilling hammer	depending on the component thickness and component stability
Light-weight building material with low strength (Porous/Light-weight concrete)		Stone drills	Rotary drilling without impact	Drilling machine	
			Impact drilling	Impact drilling machine	make sure that the drill-hole does not get too large and that the bars of the hole/hollow brick stones don't break off
Perforated bricks		Stone drills	Rotary drilling without impact	Drilling machine	
Panels:	Plasterboard/ Fibre cement	Stone drills			
	Chipboard/ Wood/Wood-fibre boards	Spiral drill for wood			

8.2 Borehole cleaning

Since drill dust can not provide grip or can block the space of an undercut, all loose elements need to be removed from the drillhole before the plugs or anchors are inserted, e.g. by air-cleaning.

8.3 Assembly types (→ Bild 1)

8.3.1 The **push-through installation** is usually easiest for series assemblies and plug pairs as the insert holes of the building component can be used as drill gauges.

8.3.2 With **pre-positioned installation** the drillhole is to be accurately marked out. Internal thread anchors must end flush with the building material surface.

8.3.3 With **stand-off installation** pre-positioned inside thread/compound anchors with sufficiently long projecting lengths are to be used or fastening should be done with a suitably long screw.

8.4 Tightening torques/preloads

The values applicable for the various manufacturers and types are to be specified according to the technical approval by the construction engineer. Typical values can be found on the package or in the package insert.

8.5 Wrench sizes

For ready-to-install plugs and anchors, the wrench sizes are indicated on the package/in the package insert. The wrench sizes standardised for DIN/ISO screws apply to standard screws used for fastening, for example, inside thread anchors.

9. The approvals

For fasteners and anchors whose failure presents a danger to public safety, only plugs and anchors may be used which have been given approval for the use intended. General technical approvals are granted after type testing by the Deutsche Institut für Bautechnik (German Institute for Civil Engineering), Berlin (DIBT). Special approvals for particular uses are granted by the institutes declared responsible for them or the inspection centres of the relevant professional associations. Plugs and anchors with CE logos require "European Technical Approval" (ETA).

Picture 1

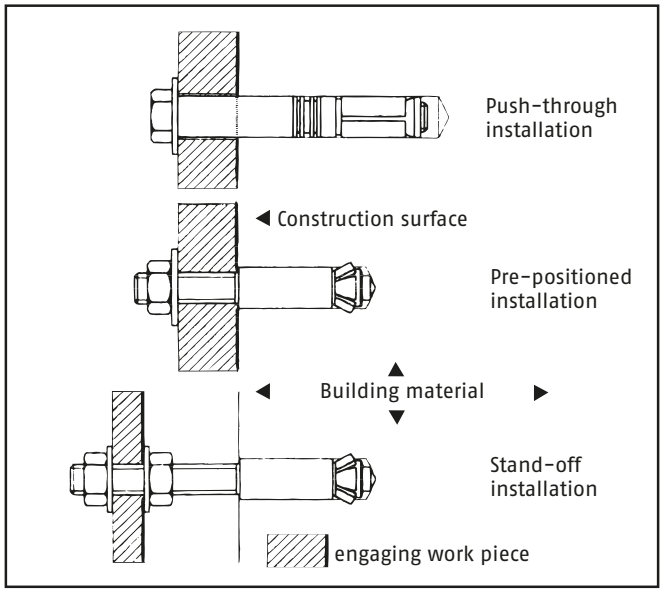


Table 5: Overview of the currently valid types of approval

German approvals CC Zulassung	– for metal plugs, compound anchors, plastic plugs for facade coverings and curtain wallings, plugs for light-weight suspended ceilings only, plugs for special building materials, injection anchoring for holes and hollow building materials, plugs for special requirements – for plugs with proof of suitability for use in cracks = thus usable in the tension and pressure zones of the concrete (It is fundamentally recommended that planners and operators use crack plugs/plugs suited for tension zones because attaining this means that pressure zone proof, which is difficult to attain, is not required.)
European approvals ETA CE	Building materials with the CE symbol may be traded freely in the EU economic zone. One of the requirements for the CE logo on plugs is the prior granting of "European Technical Approval" (ETA). ETA approvals are classified according to the use of the plug into Options 1-6 for cracked concrete and 7-12 for non-cracked concrete.

Overview of alternative plug/anchor systems of various manufacturers

General fixings

REYHER articles	Fischer	Upat	Sormat	TOX	Hilti	Würth	MKT	Mungo	Mea
88554	SX			AS-K/TRI/TRIKA	HUD-1	W-ZX		MQ	FX
88500	S			AS-K/TRI/TRIKA		master		MN	F
88520, 88381-383	UX		L4 KA/L4 A	AS-K/TRI/TRIKA	HUD-1	W-ZX	UD	MU	MZ/MZK
88507	GB			YTOX	HPD	W-GB/W-PA			GB
88545	FMD		4 M	MKD		W-MG		MEF	MSD
88510	M								
88506	M-S								
88521	PA 4								
88623	MS		Weco	MSD		Brass plugs		MMD	ME

High performance steel anchors

88583-589	FZA		BLS, SLS, SLKS, ILS		HDA /HSC				
88597	FZEA II				HSC-I				
88561/88741	FAZ II	MAX	BoA-X	S-FIX	HST	W-FAZ	BZ plus	m3	BAZ/BZ
88590-594	FH II		B/S/SK/AB/AS	SZ	HSL	W-HAZ	SZ	HL	SWA
88582/88764	FBN II	IMC	BoA	S-FN	HSA	W-FA	B	m2	BA/BAN
88715	EXA		BoA	S-KA	HSA	W-FA	B	m2	BA/BAN
88513	FHY				HKH/HTW	W-HD	Easy	MHDA	
88530	SLM-N/TAM						B-IG		
88567	EA II			E	HKD	W-ED	E	ESA	SA/SA-N
88546-549	FNA II		T-DN	TDN	DBZ/HA 8/HK	W-DS/W-SD		MAN	MDA L
-	FDN								
88531	MR								
88688	FPX-I								
-	FBS								

Chemical fixings

88579	FHB II				HVZ/HIT-TZ/HIT-RE	W-VIZ	VMZ		
88686	FIS SB								
88579	FIS PF								
88533-534/88720-722	R	UKA 3, ASTA	KLS/KLP	TVA	HVA	W-VD	V	MVA	VA
88522/88733	FIS V360S	UPM 44		TVM-STV/STP	HIT-HY	W-VI/ WIT-VM	VMU	MIT-SE	MIS-V-V
88774, 88775	Assembly mortar	UPM 33, UPM 11							
88522/88772	FIS EM	UPM 55							
88579	FHB dynamic	UMV dyn			HDA/HVZ				

Cavity fixings

88512	HM			MHD	HHD	W-MH		MHD-S	HR/HRM
88509, 88518/519	K/KD/KDH/KM			Kippdübel	EFD/KD	W-FK /W-KD		MF/MK	FKS/FK-KS
88598	GK		LGK	GDK		W-GS Typ K		MFJ	GKD
88598	GKM			GD 37	HSP	W-GS Typ Z	GKD	MJP	GKDZ

Long-shaft anchors/frame fixings/adjustment fixings

88542	SXR				HRD-S/HRD-U	W-UR		MBR-X	R
88551	SXRL								
88504	SXS			SDF	HRD-S	WE/R/W-UR		MBR	R
88563-564	FUR			SDF	HRD-U	W-RU/WD, HBR/W-UR			
88540	S-H-R				HRD-U	W-RU WD HBR/W-UR		MB	HBR
88503	N		LNS/LNZ	LSN /MSB-LSN	HPS-1	Zebra ND	ND	MNA	NP
88515	JUSS			JS-S	Set screw			MJB	JS
88516	F-S								FR
88680	F-M			MRD	HT	WUS		MMS	MR
-	Thermax								

Scaffold fixings

88536	S14R0E + GS 12			GRD + GRS	GD + GRS			MGD + MGV	GR + ÖS

Insulation fixings

88514	DHK			DH	IDP	W-IN		MDS,MDP,MIS MIP	DSH

Selection aids, dimensioning programmes and product information

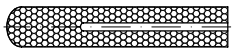
fischer Einfach. Sicher. upat REYHER

www.fischer.de **www.reyher.de**

Chemical fixings

Article 88579 FHB II-P

FISCHER resin capsules FHB II-P
building materials: BN



ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For use with anchors FHB-A.
Observe the period of hardening according to the package's specifications.

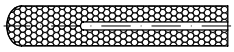
Dimensions	8x60	10x60	10x95	12x75	12x100	12x120	16x95
d_0	10	10	12	12	14	14	16
$h_0 = t$	75	75	110	90	115	135	110
h_{ef}	60	60	95	75	100	120	95
matching for	FHB II-A L	FHB II-A S	FHB II-A L	FHB II-A S	FHB II-A L	FHB II-A L	FHB II-A S

Dimensions	16x125	16x145	16x160	20x170	20x210	24x170	24x210
d_0	18	18	18	25	25	25	25
$h_0 = t$	145	165	175	190	235	190	235
h_{ef}	125	145	160	170	210	170	210
matching for	FHB II-A L	FHB II-A L	FHB II-A L	FHB II-A S	FHB II-A L	FHB II-A S	FHB-A L

Dimensions in stock:
Fixing systems: 611

Article 88533 RM

FISCHER resin capsules RM
building materials: BN, VD



ETA CE | R120 Feuerwiderstandsklasse

For use with threaded rod RGM.
Observe the period of hardening according to the package's specifications.

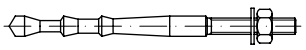
Dimensions	8	10	12	16
d_0	10	12	14	18
$t = h_{ef}$	80	90	110	125
matching for RG	M 8	M 10	M 12	M 16

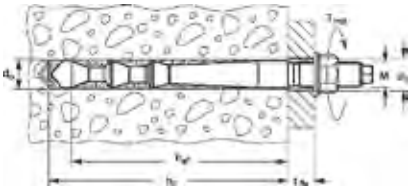
Dimensions	20	24	27	30
d_0	25	28	32	35
$t = h_{ef}$	170	210	250	280
matching for RG	M 20	M 24	M 27	M 30

Dimensions in stock:
Fixing systems: 612

Article 88579 FHB II-A L

FISCHER highbond-anchors FHB II-A L
building materials: BN





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For use with FHB II-P resin capsules

Dimensions	M 8x60/10	M 8x60/30	M 8x60/50	M 10x95/10
d_0	10	10	10	12
$h_0 = t$	75	75	75	110
h_{ef}	60	60	60	95
t_{fix}	10	30	50	10
thread	M 8	M 8	M 8	M 10
SW	13	13	13	17

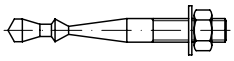
Dimensions	M 10x95/20	M 10x95/40	M 10x95/60	M 10x95/100
d_0	12	12	12	12
$h_0 = t$	110	110	110	110
h_{ef}	95	95	95	95
t_{fix}	20	40	60	100
thread	M 10	M 10	M 10	M 10
SW	17	17	17	17

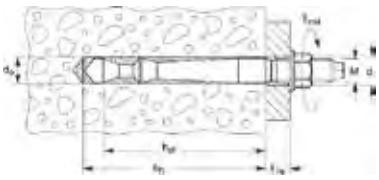
Dimensions in stock:
Fixing systems: 613-614

Chemical fixings

Article 88579 FHB II-A S

FISCHER highbond-anchors FHB II-A S
building materials: BN





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

For use with resin capsules FHB II-P and FHB II-PF

Dimensions	M 10x60/10	M 10x60/20	M 10x60/40	M 10x60/60	M 10x60/100	M 10x75/10	M 10x75/20
d_0	10	10	10	10	10	10	10
$h_0 = t$	75	75	75	75	75	90	90
h_{ef}	60	60	60	60	60	75	75
t_{fix}	10	20	40	60	100	10	20
M	M 10	M 10	M 10	M 10	M 10	M 10	M 10
SW	17	17	17	17	17	17	17

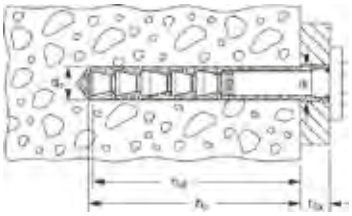
Dimensions	M 10x75/60	M 10x75/100	M 12x75/10	M 12x75/25	M 12x75/40	M 12x75/60	M 12x75/100
d_0	10	10	12	12	12	12	12
$h_0 = t$	90	90	90	90	90	90	90
h_{ef}	75	75	75	75	75	75	75
t_{fix}	60	100	10	25	40	60	100
M	M 10	M 10	M 12	M 12	M 12	M 12	M 12
SW	17	17	19	19	19	19	19

Dimensions	M 12x75/165	M 16x95/30	M 16x95/60	M 16x95/100	M 16x95/165	M 20x170/50	M 24x170/50
d_0	12	16	16	16	16	25	25
$h_0 = t$	90	110	110	110	110	190	190
h_{ef}	75	95	95	95	95	170	170
t_{fix}	165	30	60	110	165	50	50
M	M 12	M 16	M 16	M 16	M 16	M 20	M 24
SW	19	24	24	24	24	30	36

Dimensions in stock:
Fixing systems: 613

Article 88579 FHB-A dyn

FISCHER highbond-anchors FHB-A dyn
building materials: BN



dynamic | Z Zugzonentauglich

For use with injection mortar FIS HB (REYHER article 88522 and 88578)

Dimensions	12x100/25	12x100/50	16x125/25
d_0	14	14	18
t_d	130	155	155
$t = h_{ef}$	100	100	125
t_{fix}	8 - 25	8 - 50	10 - 25
d_1	15	15	19
SW	19	19	24

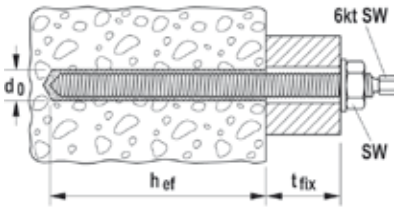
Dimensions	16x125/50	20x170/50	24x220/50
d_0	18	24	28
t_d	180	225	275
$t = h_{ef}$	125	170	220
t_{fix}	10 - 50	12 - 50	14 - 50
d_1	19	25	29
SW	24	30	36

Dimensions in stock:
Fixing systems: 614

Chemical fixings

Article 88534 RG M

FISCHER anchor rods RG M
building materials: BN, VD



ETA CE F120 Feuerwiderstandsklasse

For use with cartridge RM and RSB
(REYHER article 88533 and 88687)

Dimensions	M 8x110	M 8x150	M 8x250	M 10x130	M 10x165	M 10x190	M 10x220	M 10x250
d_0	10	10	10	12	12	12	12	12
t_{fix}	13	54	160	20	55	80	110	140
h_{ef}	80	80	80	90	90	90	90	90
wrench size hexagon	5	5	5	7	7	7	7	7

Dimensions	M 10x350	M 12x160	M 12x220	M 12x250	M 12x300	M 12x380	M 16x165	M 16x190
d_0	12	14	14	14	14	14	18	18
t_{fix}	240	25	86	116	166	246	8	35
h_{ef}	90	110	110	110	110	110	125	125
wrench size hexagon	7	8	8	8	8	8	12	12

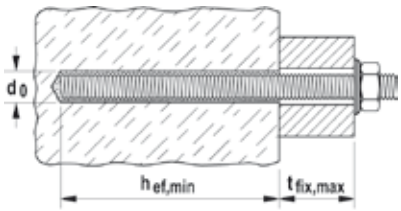
Dimensions	M 16x250	M 16x270	M 16x300	M 16x380	M 16x500	M 20x260	M 20x290	M 20x350
d_0	18	18	18	18	18	25	25	25
t_{fix}	93	113	143	223	343	65	84	124
h_{ef}	125	125	125	125	125	170	170	170
wrench size hexagon	12	12	12	–	–	12	12	12

Dimensions	M 20x500	M 24x295	M 24x300	M 24x400	M 24x600	M 30x380	M 30x500	
d_0	25	28	28	28	28	35	35	
t_{fix}	294	56	65	161	361	65	185	
h_{ef}	170	210	210	210	210	280	280	
wrench size hexagon	–	–	–	–	–	–	–	

Dimensions in stock:
Fixing systems: 614

Article 88523 FIS A

FISCHER threaded rods FIS A
building materials with
anchor sleeve: LD, VD
building materials without
anchor sleeve: BL, VD, VP



ETA CE F120 Feuerwiderstandsklasse Z Zugzonentauglich

Dimensions	6x75	6x85	6x110	8x90	8x110	8x130	10x110
d_0	8	8	8	10	10	10	12
$t_{min.}$	–	80	80	80	80	80	80
$h_{ef\ min.}$	–	75	75	75	75	75	75
$t_{fix\ max.}$	–	2	25	–	25	45	25
anchors per 360ml capsule*	56	56	56	56	56	56	42

Dimensions	10x130	10x150	10x200	12x140	12x160	12x180	12x210
d_0	12	12	12	14	14	14	14
$t_{min.}$	80	80	80	80	80	80	80
$h_{ef\ min.}$	75	75	75	75	75	75	75
$t_{fix\ max.}$	45	65	115	50	70	90	120
anchors per 360ml capsule*	42	42	42	34	34	34	34

Dimensions	12x260	16x175	16x200	16x250	16x300	20x245	20x290
d_0	14	18	18	18	18	24	24
$t_{min.}$	80	80	80	80	80	80	80
$h_{ef\ min.}$	75	75	75	75	75	75	75
$t_{fix\ max.}$	170	85	110	160	210	–	–
anchors per 360ml capsule*	34	24	24	24	24	–	–

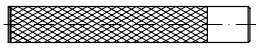
Dimensions	24x290	24x380	30x340	30x430			
d_0	28	28	35	35			
$t_{min.}$	80	80	80	80			
$h_{ef\ min.}$	75	75	75	75			
$t_{fix\ max.}$	–	–	–	–			
anchors per 360ml capsule*	–	–	–	–			

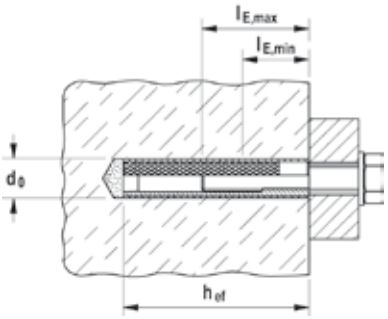
Dimensions in stock:
Fixing systems: 615

Chemical fixings

Article 88529 FIS-E

FISCHER internal threaded sockets FIS-E





ETA CE F120

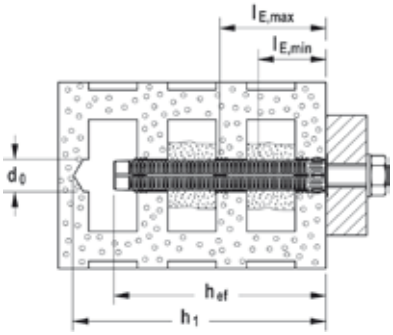
For use with injection mortar
FIS-V, FIS-VS and FIS-VW (REYHER article 88522)
l_E = length of thread engagement

Dimensions	11x85	11x85	15x85	15x85
t = h_{ef}	85	85	85	85
$l_{E,\ min.}$	6	8	10	12
$l_{E,\ max.}$	60	60	60	60
d_s	M 6	M 8	M 10	M 12
matching for	FIS H 16x85 K FIS H 20x85 K	FIS H 16x85 K FIS H 20x85 K	FIS H 20x85 K	FIS H 20x85 K

Dimensions in stock:
Fixing systems: 615

Article 88562 FIS H K

FISCHER injection anchor sleeves FIS H K
building materials: LP, (VD)



For use with injection mortar
FIS-V, FIS-VS and FIS-VW
(REYHER article 88522)
* max. number when processing with 1 static mixer

Dimensions	12x50	12x85	16x85
d_0	12	12	16
t_d	60	95	95
h_{ef}	50	85	85
matching for	FIS-A (M 6/M 8) FIS-EK Ø5	FIS-A (M 6/M 8) FIS-EK (Ø5/Ø6)	FIS-A (M 8/M 10) FIS-E (M 6/M 8) FIS-EK (Ø8/Ø10)
anchors per 360ml capsule*	34	17	14

Dimensions	16x130	20x85	20x130
d_0	16	20	20
t_d	140	95	140
h_{ef}	130	85	130
matching for	FIS-A (M 8/M 10) FIS-E (M 6/M 8), FIS-EK (Ø8/Ø10)	FIS-A (M 12/M 16) FIS-E (M 6 - M 12)	FIS A (M 12 - M 16)
anchors per 360ml capsule*	11	11	

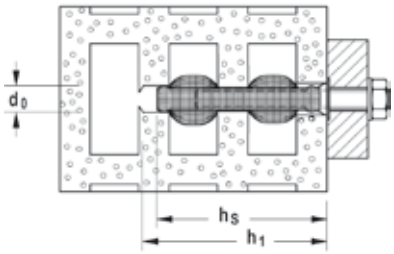
Dimensions	20x200		
d_0	20		
t_d	210		
h_{ef}	200		
matching for	FIS A (M 12 - M 16)		
anchors per 360ml capsule*			

Dimensions in stock:
Fixing systems: 615

Chemical fixings

Article 88526 FIS H N

FISCHER injection anchor sleeves FIS H N
building materials: LP, VD



ETA CE F120

For use with injection mortar
FIS-V, FIS-VS and FIS-VW (REYHER article 88522)
hs = anchor depth sleeve min.
hv = anchor depth anchor part min.
* max. number when processing with 1 static mixer

Dimensions	16x85	18x85
d_0	16	18
h_1	95	95
h_s	90	90
matching for FIS-A	M 8	M 10
anchors per 360ml capsule*	11	10

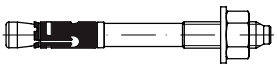
Dimensions	20x85	
d_0	20	
h_1	95	
h_s	90	
matching for FIS-A	M 12	
anchors per 360ml capsule*	9	

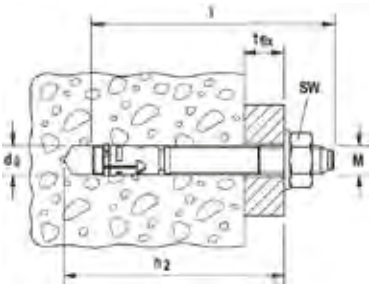
Dimensions in stock:
Fixing systems: 615

High performance steel anchors

Article 88561 FAZ II

FISCHER Anchor bolts FAZ II
building materials: BN, VD





ETA CE | FM Zulassung | BZS Schock-zulassung | R120 Feuer-widerstands-klasse | VdS approval | Z Zugzonen-tauglich

Dimensions	8/10	8/30	8/50	10/10	10/20	10/30	10/50
d_0	8	8	8	10	10	10	10
h_2	65	85	105	85	95	105	125
l	75	95	115	95	105	115	135
t_{fix}	10	30	50	10	20	30	50
SW	13	13	13	17	17	17	17
Washer ∅ für GS	22x2.5	22x2.5		25x3		25x3	

Dimensions	10/80	10/100	10/160	12/10	12/20	12/30	12/50
d_0	10	10	10	12	12	12	12
h_2	155	175	235	100	110	120	140
l	165	185	245	110	120	130	150
t_{fix}	80	100	160	10	20	30	50
SW	17	17	17	19	19	19	19
Washer ∅ für GS				30x3	30x3	30x3	30x3

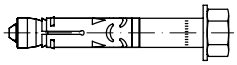
Dimensions	12/80	12/100	12/160	12/200	16/5	16/25	16/50
d_0	12	12	12	12	16	16	16
h_2	170	190	250	290		135	160
l	180	200	260	300	128	148	173
t_{fix}	80	100	160	200	5	25	50
SW	19	19	19	19	24	24	24
Washer ∅ für GS		30x3	44x4				

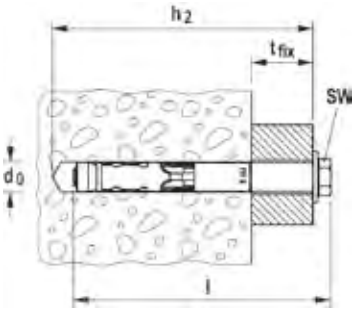
Dimensions	16/100	16/160	20/30	20/60	20/160	24/30	24/60
d_0	16	16	20	20	20	24	24
h_2	210	270	155	185	285	185	215
l	223	283	172	202	302	205	235
t_{fix}	100	160	30	60	160	30	60
SW	24	24	30	30	30	36	36
Washer ∅ für GS		56x5					

Dimensions in stock:
Fixing systems: 616

Article 88593 FH II-S

FISCHER high performance anchors FH II-S
building materials: BN, VD





ETA CE | BZS Schock-zulassung | R120 Feuer-widerstands-klasse | VdS approval | Z Zugzonen-tauglich | FM Zulassung

l = total anchor length
VdS approval M 8 – M 20
FM approval starting form M 10

Dimensions	10/10	10/25	10/50	12/10	12/25	12/50	15/10	15/25	15/50
d_0	10	10	10	12	12	12	15	15	15
t_d	65	80	105	90	105	130	100	115	140
h_{ef}	40	40	40	60	60	60	70	70	70
l	70	85	110	90	105	130	106	121	146
t_{fix}	10	25	50	10	25	50	10	25	50
thread	M 6	M 6	M 6	M 8	M 8	M 8	M 10	M 10	M 10
SW	10	10	10	13	13	13	17	17	17
washer	18x2	18x2	18x2	22x2.5	22x2.5	22x2.5	25x3	25x3	25x3

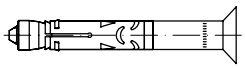
Dimensions	18/25	18/50	24/25	24/50	28/30	28/60	32/30	32/60	
d_0	18	18	24	24	28	28	32	32	
t_d	130	155	150	175	185	215	210	210	
h_{ef}	80	80	100	100	125	125	150	150	
l	132	157	160	185	192	222	215	245	
t_{fix}	25	50	25	50	30	60	30	60	
thread	M 12	M 12	M 16	M 16	M 20	M 20	M 24	M 24	
SW	19	19	24	24	30	30	36	36	
washer	30x3	30x3	40x5	40x5	44x4.5	44x4.5	50x5	50x5	

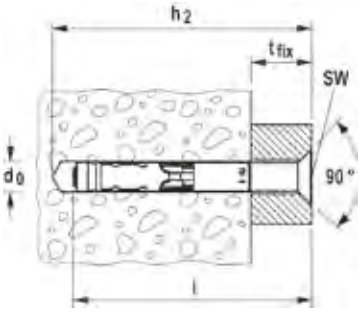
Dimensions in stock:
Fixing systems: 617

High performance steel anchors

Article 88594 FH II-SK

FISCHER high performance anchors FH II-SK
building materials: BN, VD





ETA CE | BZS Schock-zulassung | R120 Feuer-widerstands-klasse | VdS approval | Z Zugzonen-tauglich | FM Zulassung

VdS approval M 8 – M 20
FM approval starting form M 10

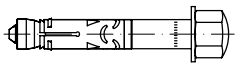
Dimensions	10/15	10/25	10/50	12/15	12/25	12/30	12/50
d_0	10	10	10	12	12	12	12
t_d	70	80	105	95	105	110	130
h_{ef}	40	40	40	60	60		60
l	65	75	100	90	100	105	125
t_{fix}	10	25	50	15	25	30	50
thread	M 6	M 6	M 6	M 8	M 8		M 8
SW	4	4	4	5	5	6	5
x	5	5	5	5.8	5.8		5.8
D	18	18	18	22	22		22

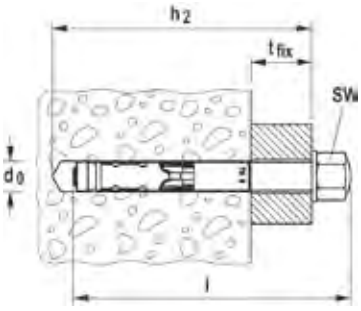
Dimensions	15/15	15/25	15/50	18/15	18/25	18/30	18/50
d_0	15	15	15	18	18	18	18
t_d	105	115	140	120	130	135	155
h_{ef}	70	70	70	80	80		80
l	100	110	135	115	125	130	150
t_{fix}	15	25	50	15	25	30	50
thread	M 10	M 10	M 10	M 12	M 12		M 12
SW	6	6	6	8	8	8	8
x	5.8	5.8	5.8	8	8		8
D	25	25	25	32	32		32

Dimensions in stock:
Fixing systems: 617

Article 88590 FH II-H

FISCHER high performance anchors FH II-H
building materials: BN, VD





ETA CE | BZS Schock-zulassung | R120 Feuer-widerstands-klasse | VdS approval | Z Zugzonen-tauglich | FM Zulassung

l = total anchor length
VdS approval M 8 – M 20
FM approval starting form M 10

Dimensions	10/10	10/25	10/50	12/10	12/25	12/50
d_0	10	10	10	12	12	12
t_d	65	80	105	90	105	130
h_{ef}	40	40	40	60	60	60
l	75	90	115	92	107	132
t_{fix}	10	25	50	10	25	50
thread	M 6	M 6	M 6	M 8	M 8	M 8
SW	13	13	13	17	17	17
washer	18x2	18x2	18x2	22x2.5	22x2.5	22x2.5

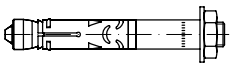
Dimensions	15/10	15/25	15/50	18/25	18/50	
d_0	15	15	15	18	18	
t_d	100	115	140	130	155	
h_{ef}	70	70	70	80	80	
l	113	128	153	138	163	
t_{fix}	10	25	50	25	50	
thread	M 10	M 10	M 10	M 12	M 12	
SW	17	17	17	19	19	
washer	25x3	25x3	25x3	30x3	30x3	

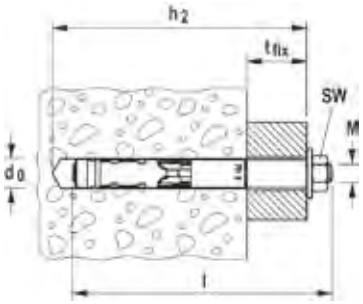
Dimensions in stock:
Fixing systems: 618

High performance steel anchors

Article 88592 FH II-B

FISCHER high performance anchors FH II-B
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich | FM Zulassung | BZS Schockzulassung

l = total anchor length
VdS approval M 8 – M 20
FM approval starting from M 10

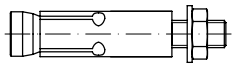
Dimensions	10/10	10/25	10/50	12/10	12/25	12/50	12/100	15/10	15/25
d_0	10	10	10	12	12	12	12	15	15
t_d	65	80	105	90	105	130	190	100	115
h_{ef}	40	40	40	60	60	60	60	70	70
l	70	85	110	90	105	130	184	110	125
t_{fix}	10	25	50	10	25	50	100	10	25
thread	M 6	M 6	M 6	M 8	M 8	M 8	M 8	M 10	M 10
SW	10	10	10	13	13	13	13	17	17
washer	18x2	18x2	18x2	22x2.5	22x2.5	22x2.5	22x2.5	25x3	25x3

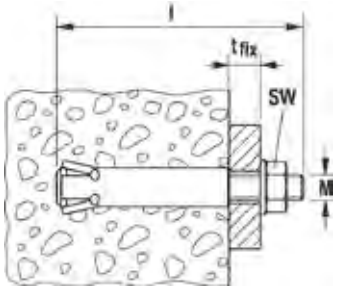
Dimensions	15/50	15/100	18/25	18/50	18/100	24/25	24/50	24/100
d_0	15	15	18	18	18	24	24	24
t_d	140	190	130	155	205	150	175	225
h_{ef}	70	70	80	80	80	100	100	100
l	150	200	135	160	214	167	192	242
t_{fix}	50	100	25	50	100	25	50	100
thread	M 10	M 10	M 12	M 12	M 12	M 16	M 16	M 16
SW	17	17	19	19	19	24	24	24
washer	25x3	25x3	30x3	30x3	30x3	40x5	40x5	40x5

Dimensions in stock:
Fixing systems: 618

Article 88583 FZA

FISCHER ZYKON bolt anchors FZA
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

VdS approval starting form M 8

Dimensions	10x40 M 6/10	10x40 M 6/35	12x40 M 8/15	12x50 M 8/15
d_0	10	10	12	12
h_{ef}	40		40	50
t_{fix}	10	35	15	15
thread	M 6	M 6	M 8	M 8
SW	10	10	13	13
washer	12x1.6		16x1.6	16x1.6

Dimensions	12x50 M 8/50	14x40 M 10/25	14x60 M 10/25	14x60 M 10/50
d_0	12	14	14	14
h_{ef}	50	40	60	60
t_{fix}	50	25	25	50
thread	M 8	M 10	M 10	M 10
SW	13	17	17	17
washer	16x1.6	20x2	20x2	20x2

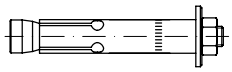
Dimensions	18x80 M 12/25	18x80 M 12/55	22x100 M 16/60	22x125 M 16/60
d_0	18	18	22	22
h_{ef}	80	80	100	125
t_{fix}	25	55	60	60
thread	M 12	M 12	M 16	M 16
SW	19	19	24	24
washer	24x2.5	24x2.5	30x3	30x3

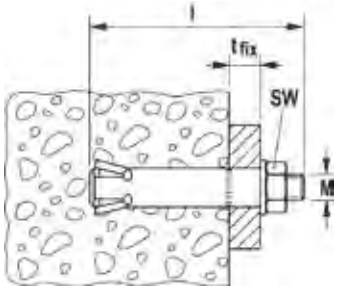
Dimensions in stock:
Fixing systems: 617

High performance steel anchors

Article 88584 FZA-D

FISCHER ZYKON through anchors FZA-D
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Dimensions	12x50 M 8/10	12x60 M 8/10	12x80 M 8/30
d_0	12	12	12
h_{ef}	40	50	50
t_{fix}	10	10	30
thread	M 8	M 8	M 8
SW	13	13	13
washer	22x2.5	22x2.5	22x2.5

Dimensions	14x80 M 10/20	14x100 M 10/40	18x100 M 12/20
d_0	14	14	18
h_{ef}	60	60	80
t_{fix}	20	40	20
thread	M 10	M 10	M 12
SW	17	17	19
washer	25x3	25x3	30x3

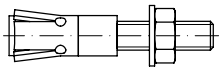
Dimensions	18x130 M 12/50	22x125 M 16/25	
d_0	18	22	
h_{ef}	80	100	
t_{fix}	50	25	
thread	M 12	M 16	
SW	19	24	
washer	30x3	40x4	

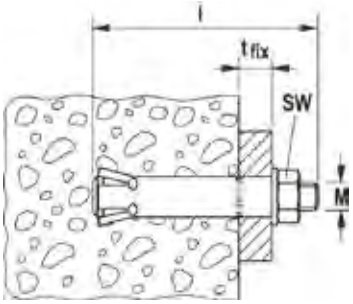
VdS approval starting form M 8

Dimensions in stock:
Fixing systems: 618

Article 88589 FZA ST

FISCHER ZYKON anchors for fixing step irons FZA ST
building materials: BN, VD





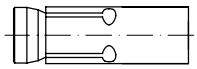
Dimensions	14/40	14/60
d_0	14	14
h_{ef}	40	60
t_{fix}	30	30
thread	M 10	M 10
SW	16	16
washer	20x2	20x2

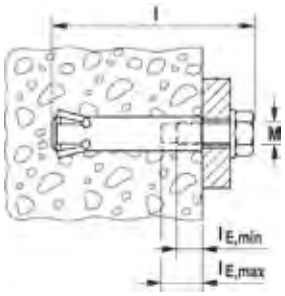
Dimensions in stock:
Fixing systems: 619

High performance steel anchors

Article 88585 FZA-I

FISCHER ZYKON internally threaded anchors FZA-I
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

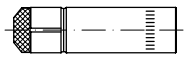
VdS approval starting from M 8

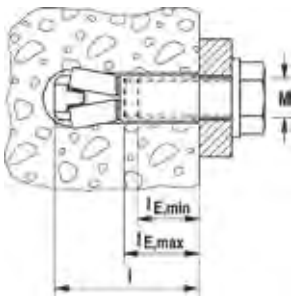
Dimensions	12x40 M 6	12x50 M 6	14x60 M 8
d_0	12	12	14
h_{ef}	40	50	60
d_s	M 6	M 6	M 8
e_2	8	8	11
e_1	13	13	17

Dimensions in stock:
Fixing systems: 619

Article 88597 FZEA II

FISCHER ZYKON hammerset anchors FZEA II
building materials: BN, VD





ETA CE | FM Zulassung | R120 Feuerwiderstandsklasse | VdS approval | Z Zugzonentauglich

* internal thread
FM approval starting from M 10
VdS approval M 8 – M 20

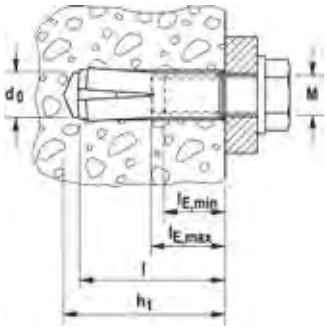
Dimensions	10x40 M 8	12x40 M 10	14x40 M 12
d_0	10	12	14
h_{ef}	40	40	40
d_s*	8	10	12
e_2	11	13	15
e_1	17	19	21

Dimensions in stock:
Fixing systems: 619

High performance steel anchors

Article 88567 EA II

FISCHER hammerset anchors EA II
building materials: BN, VD



ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich | FM Zulassung

FM approval starting from M 10

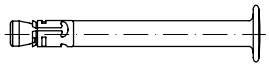
Dimensions	M 6	M 8	M 8x40	M 10
d_0	8	10	10	12
$l = h_{ef}$	30	30	40	40
$l_{E,\,min.}$	6	8	8	10
$l_{E,\,max.}$	13	13	13	17
h_1	32	33	43	43

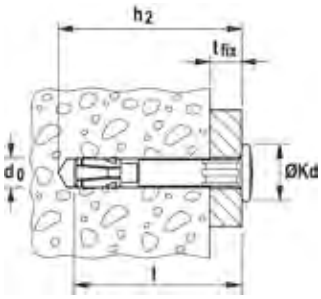
Dimensions	M 12	M 16	M 20	
d_0	15	20	25	
$l = h_{ef}$	50	65	80	
$l_{E,\,min.}$	12	16	20	
$l_{E,\,max.}$	22	28	34	
h_1	54	70	85	

Dimensions in stock:
Fixing systems: 620

Article 88546 FNA II

FISCHER nail anchors FNA II
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Dimensions	6x30/5	6x30/30	6x30/50
d_0	6	6	6
t_d	45	70	90
h_{ef}	30	30	30
l	40	65	85
t_{fix}	5	30	50
K_d	13	13	13

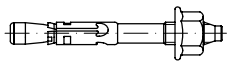
Dimensions	6x30/75	6x30/100	6x30/120
d_0	6	6	6
t_d	115	140	160
h_{ef}	30	30	30
l	110	135	155
t_{fix}	75	100	120
K_d	13	13	13

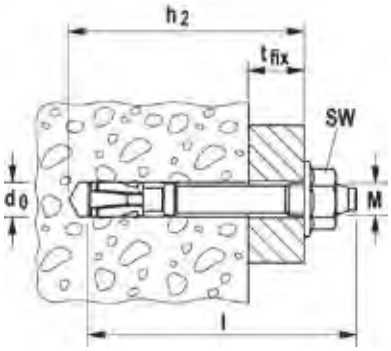
Dimensions in stock:
Fixing systems: 620

High performance steel anchors

Article 88547 FNA II M

FISCHER nail anchors FNA II M
building materials: BN, VD





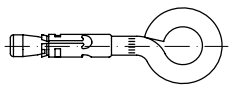
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

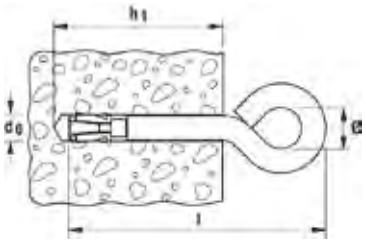
Dimensions	6x30 M 6/5
d_0	6
t_d	45
h_{ef}	30
l	50
t_{fix}	5
thread	M 6
SW	10

Dimensions in stock:
Fixing systems: 620

Article 88548 FNA II-OE

FISCHER nail anchors FNA II-OE
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

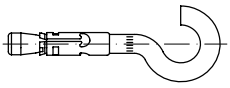
Dimensions	6x25 0e
d_0	6
t_d	35
h_{ef}	25
l	54
inner ∅ eye	10

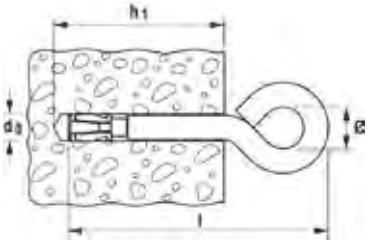
Dimensions in stock:
Fixing systems: 620

High performance steel anchors

Article 88549 FNA II-H

FISCHER nail anchors FNA II-H
building materials: BN, VD





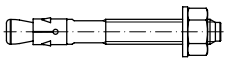
ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

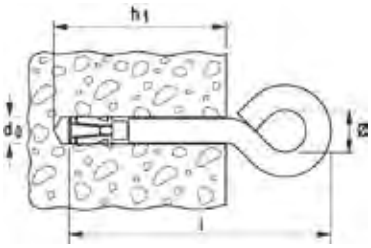
Dimensions	6x25 h
d_0	6
t_d	35
h_{ef}	25
l	54
inner ∅ hook	10
opening dimension of the fastening	6.5

Dimensions in stock:
Fixing systems: 620

Article 88582 FBN II/FBN II K

FISCHER bolt anchors FBN II/FBN II K
building materials: BN, VD





ETA CE | R120 Feuerwiderstandsklasse

Dimensions	6/5	6/10	6/30	8/5	8/10	8/20	8/30	8/50
d_0	6	6	6	8	8	8	8	8
h_2								
l	50	55	75	66	71	81	91	111
t_{fix}	5/-	10/-	30/-	5/15	10/20	20/30	30/40	50/60
SW	10	10	10	13	13	13	13	13

Dimensions	8/70	8/100	10/10	10/20	10/30	10/50	10/70	10/100
d_0	8	8	10	10	10	10	10	10
h_2								
l	131	161	86	96	106	126	146	176
t_{fix}	70/80	100/110	10/20	20/30	30/40	50/60	70/80	100/110
SW	13	13	17	17	17	17	17	17

Dimensions	10/140	10/160	12/10	12/20	12/30	12/50	12/80	12/100
d_0	10	10	12	12	12	12	12	12
h_2								
l	216	236	106	116	126	146	176	196
t_{fix}	140/150	160/170	10/25	20/35	30/45	50/65	80/95	100/115
SW	17	17	19	19	19	19	19	19

Dimensions	12/120	12/140	12/160	16/25	16/50	16/80	16/100	16/140
d_0	12	12	12	16	16	16	16	16
h_2								
l	216	236	256	145	170	200	220	260
t_{fix}	120/135	140/155	160/175	25/40	50/65	80/95	100/115	140/155
SW	19	19	19	24	24	24	24	24

Dimensions	16/160	16/200	20/30	20/60	20/80	20/120		
d_0	16	16	20	20	20	20		
h_2								
l	280	320	187	217	237	277		
t_{fix}	160/175	200/215	30/55	60/85	80/105	120/145		
SW	24	24	30	30	30	30		

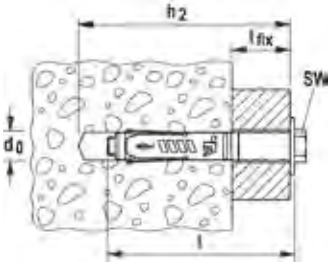
K = short version
with reduced anchor depth

Dimensions in stock:
Fixing systems: 620

High performance steel anchors

Article 88683 TA M

FISCHER heavy duty anchors TA M
building materials: BN, VD



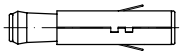
ETA CE | R120 Feuerwiderstandsklasse

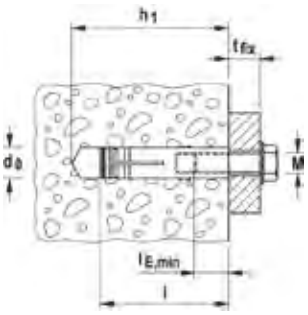
Dimensions	M 6	M 8	M 10	M 12
d_0	10	12	15	18
t	65	70	90	105
h_{ef}	40	45	55	70
l	49	56	69	86

Dimensions in stock:
Fixing systems: 622

Article 88530 SL M/SL M-N

FISCHER heavy duty anchors SL M/SL M-N
building materials: VD





R120 Feuerwiderstandsklasse

ls = hef + ds + tfix
* = internal thread

Dimensions	8	10	16
d_0	12	16	24
t	60	70	110
h_{ef}	45	50	62
l	52	60	90
d_s*	M 8	M 10	M 16

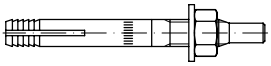
Dimensions	20	24	
d_0	30	35	
t	130	150	
h_{ef}	77	90	
l	110	125	
d_s*	M 20	M 24	

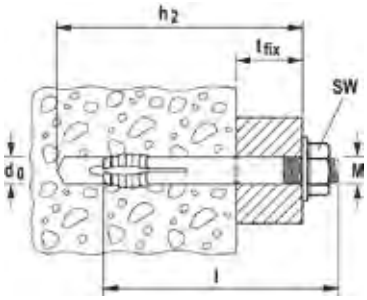
Dimensions in stock:
Fixing systems: 622

High performance steel anchors

Article 88531 MR

FISCHER wall screws MR
building materials: BN



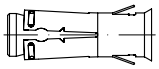


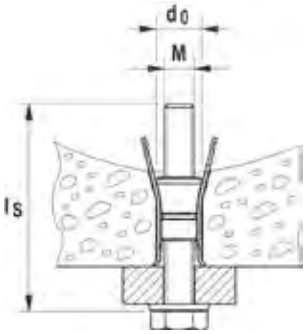
Dimensions	8	10	12
d_0	8	10	12
t_d	70	85	100
h_{ef}	40	50	60
l	70	85	100
t_{fix}	22	24	27
SW	13	15	18
thread	M 8	M 10	M 12

Dimensions in stock:
Fixing systems: 622

Article 88513 FHY

FISCHER hollow ceiling anchors FHY
building materials: BN





R120 Feuerwiderstandsklasse
VdS approval

Approval only valid for zinc plated steel,
VdS approval starting from M 8

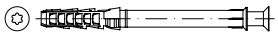
Dimensions	M 6	M 8	M 10
d_0	10	12	16
t_d	50	60	65
h_{ef}	30	35	40
l	37	43	52
e_1	37	43	52
e_1	45	55	60

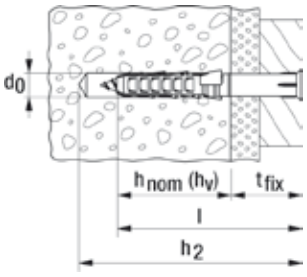
Dimensions in stock:
Fixing systems: 622

Long-shaft anchors/frame fixings/adjustment fixings

Article 88542 SXR-T

FISCHER frame fixings SXR-T
building materials: BN, VD, LD, LP, BL, VP





ETA CE | R90 | HF

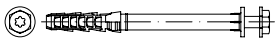
Dimensions	10x80	10x100	10x120	10x140	10x160
d_0	10	10	10	10	10
t_d	90	110	130	150	170
h_{ef}	50	50	50	50	50
l	80	100	120	140	160
t_{fix}	30	50	70	90	110
d_sxl_s	7x87	7x107	7x127	7x147	7x167
drive	T40	T40	T40	T40	T40

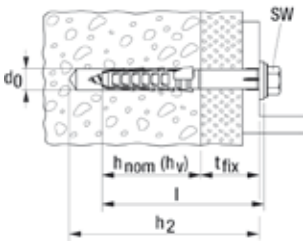
Dimensions	10x180	10x200	10x230	10x260	
d_0	10	10	10	10	
t_d	190	210	240	270	
h_{ef}	50	50	50	50	
l	180	200	230	260	
t_{fix}	130	150	180	210	
d_sxl_s	7x187	7x207	7x237	7x267	
drive	T40	T40	T40	T40	

Dimensions in stock:
Fixing systems: 624–625

Article 88542 SXR-FUS

FISCHER frame fixings SXR-FUS
building materials: BN, VD, LD, LP, BL, VP





ETA CE | R90 | HF

Dimensions	10x60	10x80	10x100	10x120	10x140
d_0	10	10	10	10	10
t_d	70	90	110	130	150
h_{ef}	50	50	50	50	50
l	60	80	100	120	140
t_{fix}	10	30	50	70	90
d_sxl_s	7x69	7x89	7x109	7x129	7x149
drive	T40/SW13	T40/SW13	T40/SW13	T40/SW13	T40/SW13

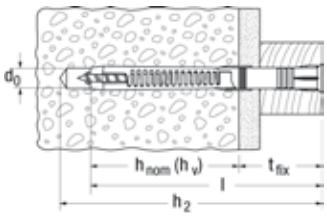
Dimensions	10x160	10x180	10x200	10x230	10x260
d_0	10	10	10	10	10
t_d	170	190	210	240	270
h_{ef}	50	50	50	50	50
l	160	180	200	230	260
t_{fix}	110	130	150	180	210
d_sxl_s	7x169	7x189	7x209	7x239	7x269
drive	T40/SW13	T40/SW13	T40/SW13	T40/SW13	T40/SW13

Dimensions in stock:
Fixing systems: 624

Long-shaft anchors/frame fixings/adjustment fixings

Article 88563 FUR-T

FISCHER frame fixings FUR-T
building materials: BN, VD, LD



ETA CE HF

Dimensions	8x80	8x100	8x120	10x80	10x100	10x115	10x135
d_0	8	8	8	10	10	10	10
t_d	90	110	130	90	110	125	145
h_{ef}	70	70	70	70	70	70	70
l	80	100	120	80	100	115	135
t_{fix}	10	30	50	10	30	45	65
d_sxl_s	6x85	6x105	6x125	7x85	7x105	7x120	7x140
drive	T30	T30	T30	T40	T40	T40	T40

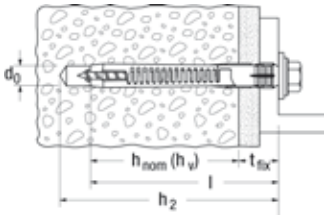
Dimensions	10x160	10x185	10x200	10x230	14x100	14x140	14x165
d_0	10	10	10	10	14	14	14
t_d	170	195	210	240	115	155	180
h_{ef}	70	70	70	70	70	70	70
l	160	185	200	230	100	140	165
t_{fix}	90	115	130	160	30	70	95
d_sxl_s	7x165	7x190	7x205	7x235			
drive	T40	T40	T40	T40	T50	T50	T50

Dimensions	14x180	14x210	14x240	14x270	14x300	14x330	14x360
d_0	14	14	14	14	14	14	14
t_d	195	225	255	285	315	345	375
h_{ef}	70	70	70	70	70	70	70
l	180	210	240	270	300	330	360
t_{fix}	110	140	170	200	230	260	290
d_sxl_s							
drive	T50	T50	T50	T50	T50	T50	T50

Dimensions in stock:
Fixing systems: 625

Article 88564 FUR-SS

FISCHER frame fixings FUR-SS
building materials: BN, VD, LD



ETA CE HF

Dimensions	8x80	8x100	8x120	10x80	10x100	10x115
d_0	8	8	8	10	10	10
t_d	90	110	130	90	110	125
h_{ef}	70	70	70	70	70	70
l	80	100	120	80	100	115
t_{fix}	10	30	50	10	30	45
d_sxl_s	6x85	6x105	6x125	7x85	7x105	7x120
SW	10	10	10	13	13	13

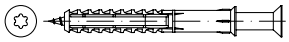
Dimensions	10x135	10x160	10x185	10x200	10x230	
d_0	10	10	10	10	10	
t_d	145	170	195	210	240	
h_{ef}	70	70	70	70	70	
l	135	160	185	200	230	
t_{fix}	65	90	115	130	160	
d_sxl_s	7x140	7x165	7x190	7x205	7x235	
SW	13	13	13	13	13	

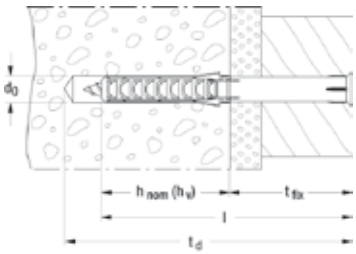
Dimensions in stock:
Fixing systems: 625

Long-shaft anchors/frame fixings/adjustment fixings

Article 88504 SXS-T

FISCHER long shaft anchors SXS-T
building materials: BN, VD, VP, HP





ETA CE | CC Zulassung | HF Halogen-frei

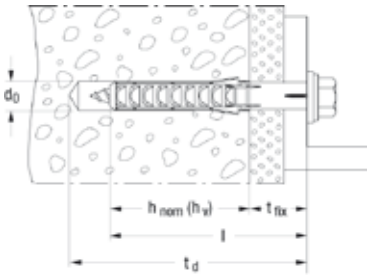
Dimensions	10x80	10x100	10x120
d_0	10	10	10
t_d	90	110	130
h_{ef}	50	50	50
l	80	100	120
t_{fix}	30	50	70
$d_s x l_s$	7.6x89	7.6x109	7.6x129
drive	T40	T40	T40

Dimensions	10x140	10x160	10x180
d_0	10	10	10
t_d	150	170	190
h_{ef}	50	50	50
l	140	160	180
t_{fix}	90	110	130
$d_s x l_s$	7.6x147	7.6x167	7.6x187
drive	T40	T40	T40

Dimensions in stock:
Fixing systems: 626

Article 88504 SXS-F US

FISCHER long shaft anchors SXS-F US
building materials: BN, VD, VP, HP



ETA CE | CC Zulassung | HF Halogen-frei

Dimensions	10x60	10x80	10x100	10x120
d_0	10	10	10	10
t_d	70	90	110	130
h_{ef}	50	50	50	50
l	60	80	100	120
t_{fix}	10	30	50	70
$d_s x l_s$	7.6x69	7.6x89	7.6x109	7.6x129
drive	T40	T40	T40	T40
SW	13	13	13	13

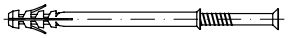
Dimensions	10x140	10x160	10x180	
d_0	10	10	10	
t_d	150	170	190	
h_{ef}	50	50	50	
l	140	160	180	
t_{fix}	90	110	130	
$d_s x l_s$	7.6x147	7.6x167	7.6x187	
drive	T40	T40	T40	
SW	13	13	13	

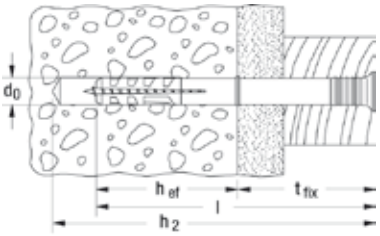
Dimensions in stock:
Fixing systems: 626

Long-shaft anchors/frame fixings/adjustment fixings

Article 88503 N-S

FISCHER nail plugs N-S
building materials: BN, VD, VP, HP, LD, LP





HF

delivery ∅ 5, 6, 8 mounted pre-finished

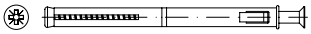
Dimensions	5x30	5x40	5x50	6x40	6x60	6x80	8x60
d_0	5	5	5	6	6	6	8
t_d	45	55	65	55	75	95	75
h_{ef}	25	25	25	30	30	30	40
l	30	40	50	40	60	80	60
t_{fix}	5	15	25	10	30	50	20
$d_s x l_s$	3.5x38	3.5x48	3.5x58	4x48	4x64	4x88	5x65

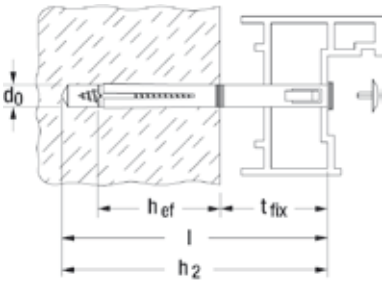
Dimensions	8x80	8x100	8x120	10x100	10x135	10x160	10x230
d_0	8	8	8	10	10	10	10
t_d	95	115	135	115	150	175	245
h_{ef}	40	40	40	50	50	50	50
l	80	100	120	100	135	160	230
t_{fix}	40	60	80	50	85	110	180
$d_s x l_s$	5x85	5x105	5x125	7x110	7x145	7x170	6x240

Dimensions in stock:
Fixing systems: 626

Article 88516 F-S

FISCHER frame fixings F-S
building materials: BN, VD, VP, BL, HP, LP





HF

screw head ∅ 10 mm/∅ 12 mm

Dimensions	F 8 S 100	F 8 S 120	F 8 S 140	F 10 S 75
d_0	8	8	8	10
t_d	115	135	155	90
h_{ef}	40	40	40	50
l	100	120	140	75
t_{fix}	50	70	90	15
plug collar ∅	10	10	10	12

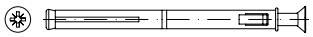
Dimensions	F 10 S 100	F 10 S 120	F 10 S 140	F 10 S 165
d_0	10	10	10	10
t_d	115	135	155	180
h_{ef}	50	50	50	50
l	100	120	140	165
t_{fix}	40	60	80	105
plug collar ∅	12	12	12	12

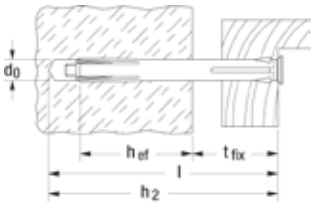
Dimensions in stock:
Fixing systems: 627

Long-shaft anchors/frame fixings/adjustment fixings

Article 88680 F-M

FISCHER metal frame fixings F-M
building materials: BN, VD, VP, BL, HP





R120
Feuer-widerstands-klasse

The approval is only valid for ∅ 10 mm
Screw head ∅ 9 mm/∅ 13 mm

Dimensions	F 8 M 72	F 8 M 92	F 8 M 112	F 8 M 132
d_0	8	8	8	8
t_d	90	110	130	150
h_{ef}	30	30	30	30
l	72	92	112	132
t_{fix}	42	62	82	102

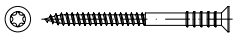
Dimensions	F 10 M 72	F 10 M 92	F 10 M 112	F 10 M 132
d_0	10	10	10	10
t_d	90	110	130	150
h_{ef}	30	30	30	30
l	72	92	112	132
t_{fix}	42	62	82	102

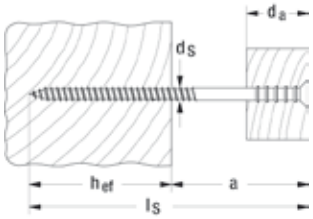
Dimensions	F 10 M 152	F 10 M 182	F 10 M 202	
d_0	10	10	10	
t_d	170	200	220	
h_{ef}	30	30	30	
l	152	182	202	
t_{fix}	122	152	172	

Dimensions in stock:
Fixing systems: 627

Article 88515 JUSS

FISCHER adjustment screws JUSS
building materials: Wood and wood materials





Dimensions	6x60	6x70	6x80	6x90
h_{ef}	30	30	30	30
a	30	40	50	60
$d_s x l_s$	6x60	6x70	6x80	6x90
d_a	20	25	25	25
drive	T25	T25	T25	T25

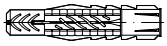
Dimensions	6x100	6x110	6x120	6x145
h_{ef}	30	30	30	30
a	70	80	90	115
$d_s x l_s$	6x100	6x110	6x120	6x145
d_a	25	25	25	25
drive	T25	T25	T25	T25

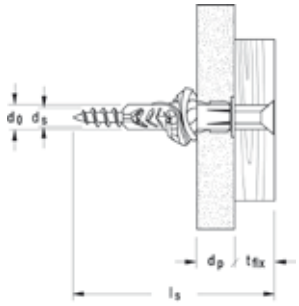
Dimensions in stock:
Fixing systems: 627

General fixings

Article 88520 UX

FISCHER universal plugs UX
building materials: BN, BL, VD, LD, VP, LP, HP





HF Halogen-frei

ls = l + dp + tfix + ds

* also with border

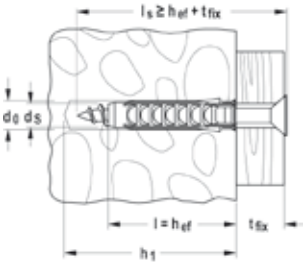
Dimensions	6x35*	8x50*	10x60*
d_0	6	8	10
t	45	60	75
d_p	9.5	9.5	12.5
l	35	50	60
d_s	4 – 5	4.5 – 6	6 – 8

Dimensions	12x70	14x75	
d_0	12	14	
t	85	95	
d_p	–	–	
l	70	75	
d_s	8 – 10	10 – 12	

Dimensions in stock:
Fixing systems: 627

Article 88554 SX

FISCHER expansion plugs SX
building materials: BN, VD, VP, BL, HP, LP, LD



HF Halogen-frei

* with screw

Dimensions	4x20	5x25	6x30	6x30 S/10*	8x40
d_0	4	5	6	6	8
t	25	35	40	40	50
$l = h_{ef}$	20	25	30	30	40
d_s	2 – 3	3 – 4	4 – 5	4.5x40	4.5 – 6

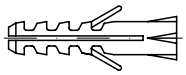
Dimensions	8x40 S/20*	10x50	12x60	14x70	16x80
d_0	8	10	12	14	16
t	50	70	80	90	100
$l = h_{ef}$	40	50	60	70	80
d_s	5x60	6 – 8	8 – 10	10 – 12	12 (1/2")

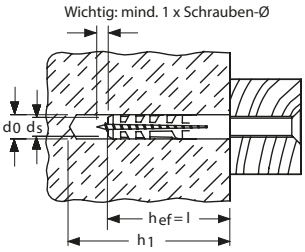
Dimensions in stock:
Fixing systems: 628

General fixings

Article 88500 S

FISCHER expansion plugs S
building materials: BN, VD, VP





HF

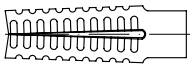
Dimensions	4	5	6	7	8
d_0	4	5	6	7	8
t	25	35	40	40	55
$l = h_{ef}$	20	25	30	30	40
d_s	2 – 3	3 – 4	4 – 5	4 – 5.5	4.5 – 6

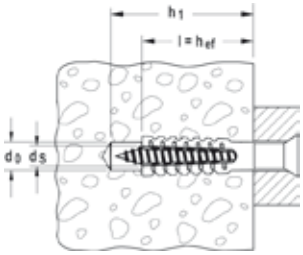
Dimensions	10	12	14	16	20
d_0	10	12	14	16	20
t	70	80	90	100	120
$l = h_{ef}$	50	60	75	80	90
d_s	6 – 8	8 – 10	10 – 12	12 (1/2")	16

Dimensions in stock:
Fixing systems: 628

Article 88545 FMD

FISCHER steel expansion plugs FMD
building materials: BN, VD, VP, BL, HP, LP, LD





Dimensions	6x32	8x38	8x60	10x60
d_0*	6 – 7	10	10 –12	12 – 14
$l = h_{ef}$	38	46	60	60
t	32	38	68	68
d_s	5 – 6	6 – 8	6 – 8	8 – 10

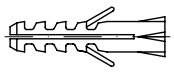
* the higher the building material pressure resistance the larger the drill diameter

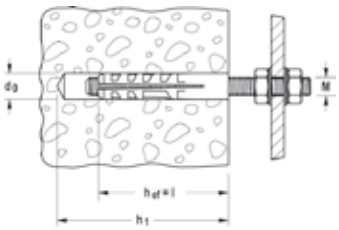
Dimensions in stock:
Fixing systems: 628

General fixings

Article 88506 M-S

FISCHER expansion plugs M-S
building materials: BN, VD, VP, HP, LP, LD, BL





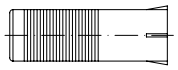
HF Halogen-frei

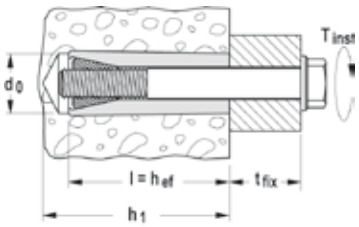
Dimensions	6	8	10	12
d_0	8	10	14	16
t	55	70	90	100
$l = h_{ef}$	40	50	70	80
thread	M 6	M 8	M 10	M 12

Dimensions in stock:
Fixing systems: 628

Article 88510 M

FISCHER anchors M
building materials: BN, VD, VP, BL, HP





HF Halogen-frei

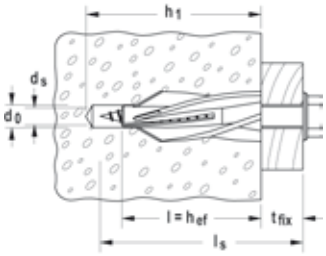
Dimensions	M 5	M 6	M 8	M 10	M 12
d_0	10	12	16	20	24
t	45	50	65	80	90
$l = h_{ef}$	35	40	50	60	65

Dimensions in stock:
Fixing systems: 628

General fixings

Article 88507 GB

FISCHER aircrete anchors GB
building materials: VP



HF Halogen-frei

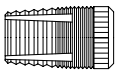
ls = hef + ds + tfix

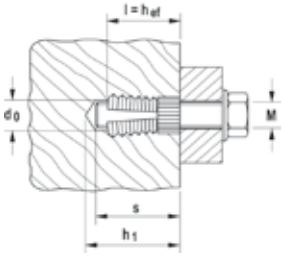
Dimensions	8	10	14
d_0	8	10	14
t	60	65	90
$l = h_{ef}$	50	55	75
d_s	5	7	10

Dimensions in stock:
Fixing systems: 628

Article 88521 PA 4

FISCHER brass fixings PA 4
building materials: BN, VD, HP





* with soft building material drill ∅ reduce by 0.5 mm

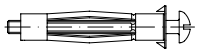
Dimensions	M 6/7.5	M 6/10.5	M 6/13.5	M 8/25	M 10/25
d_0*	8	8	8	10	12
t	7.5	10.5	13.5	25	25
$l = h_{ef}$	7.5	10.5	13.5	25	25
thread	M 6	M 6	M 6	M 8	M 10
s	7.5	10.5	13.5	25	25

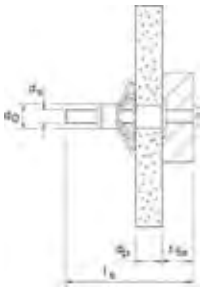
Dimensions in stock:
Fixing systems: 628

Cavity fixings

Article 88512 HM-S

FISCHER cavity metal fixings HM-S
building materials: HP





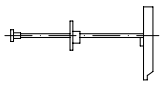
Dimensions	4x32	4x46	4x59	5x37	5x52
d_0	8	8	8	10	10
t	42	56	69	47	62
l	32	46	59	37	52
$d_s x l_s$	M 4x40	M 4x52	M 4x66	M 5x45	M 5x60
d_p	3 - 13	5 - 18	35 - 42	6 - 15	7 - 21
t_{fix}	16	23	16	19	24

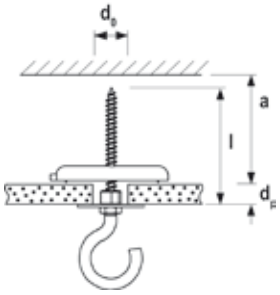
Dimensions	5x65	6x37	6x52	6x80	
d_0	10	12	12	12	
t	75	47	62	90	
l	65	37	52	80	
$d_s x l_s$	M 5x73	M 6x45	M 6x60	M 6x88	
d_p	20 - 34	6 - 15	10 - 21	38 - 50	
t_{fix}	24	14	24	24	

Dimensions in stock:
Fixing systems: 628

Article 88509 K 54

FISCHER toggle fixings K 54
building materials: HP, LP





HF

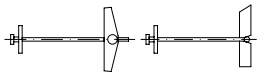
Dimensions	54
d_0	10
d_p	65
a	58
l	125
thread	Holzschraube 4 mm

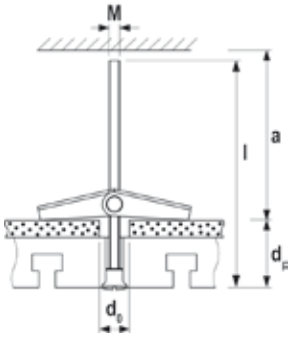
Dimensions in stock:
Fixing systems: 629

Cavity fixings

Article 88518 KD 3+4

FISCHER spring toggles KD 3+4
building materials: HP, LP



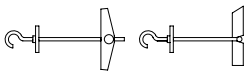


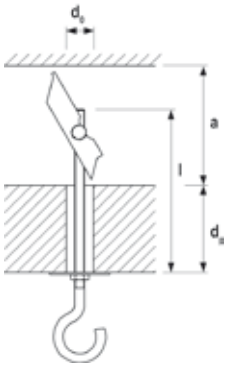
Dimensions	3	4	5	6	8
d_0	12	14	16	16	20
d_p	65	69	63	63	55
a	27	34	70	70	75
l	95	105	100	100	100
thread	M 3x90	M 4x100	M 5x100	M 6x100	M 8x100

Dimensions in stock:
Fixing systems: 629

Article 88519 KDH 3+4

FISCHER spring toggles KDH 3+4
building materials: HP, LP





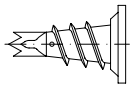
Dimensions	3	4	5	6	8
d_0	12	14	16	16	20
d_p	51	35	60	60	55
a	27	34	70	70	75
l	105	95	130	130	130
thread	M 3x80	M 4x70	M 5x90	M 6x100	M 8x100

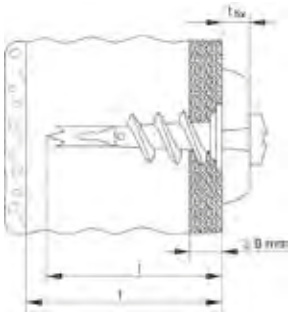
Dimensions in stock:
Fixing systems: 629

Cavity fixings

Article 88598 GKM

FISCHER plasterboard fixings GKM
self-tapping thread, Pozidriv cross recess Z2



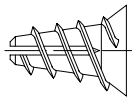


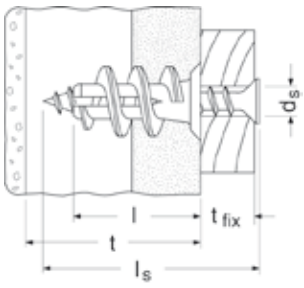
Dimensions	5
l	31
t	35
d_s	4 – 5
t_{fix}	-
building materials	HP

Dimensions in stock:
Fixing systems: 629

Article 88598 GK

FISCHER plasterboard fixings GK
with setting tool





HF
Halogen-free

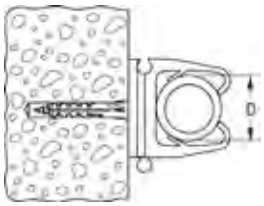
Dimensions	5
l	22
t	25
d_s	4 – 5
t_{fix}	-
building materials	HP

Dimensions in stock:
Fixing systems: 629

Electrical fixings

Article 88558 FC

FISCHER pipe clips FC
for conduits and pipes



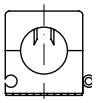
HF

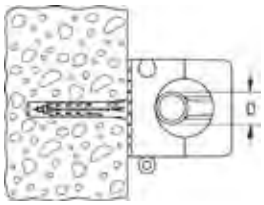
Dimensions	6 – 9	9 – 12	12 – 16	16 – 20
$d_{min.}$ – $d_{max.}$	6 – 9	9 – 12	12 – 16	16 – 20

Dimensions in stock:
Fixing systems: 629

Article 88559 SCH

FISCHER saddle clips SCH
for conduits and pipes





HF

* only available in white
** available in grey or white

Dimensions	812*	1216**	1619**
h	23.1	28.7	37.6
b	21.5	27.5	32.5
s	16.5	16.5	16.5
a	6.1	6.7	8
l	12	16	18
t	4.5	4.5	4.5
c	5.1	5.1	5.1
$d_{min.}$ – $d_{max.}$	8 – 12	12 – 16	16 – 19
for WICU pipes	22x1 – 22x1.5	10x1 – 12x1	–

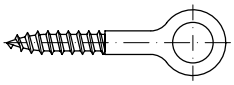
Dimensions	1623**	2332*	3242**
h	37.6	50	–
b	36	46.5	–
s	16.5	16.5	–
a	7.6	10	–
l	18	28	–
t	4.5	4.5	–
c	5.1	5.1	–
$d_{min.}$ – $d_{max.}$	16 – 23	23 –32	32 – 42
for WICU pipes	15x1 – 18x1	22x1 – 22x1.5	22x1 – 22x1.5

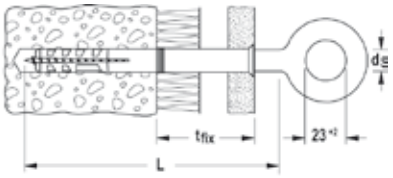
Dimensions in stock:
Fixing systems: 629

Scaffold fixings

Article 88536

FISCHER scaffold eyebolts
for use with plugs S 14 ROE
building materials: BN, VD



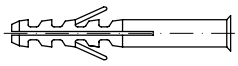


Dimensions	12x90	12x120	12x160	12x190	12x230	12x300	12x350
d_s	12	12	12	12	12	12	12
L	90	120	160	190	230	300	350
t_{fix}	15	45	85	115	155	225	275
eye ∅	23	23	23	23	23	23	23

Dimensions in stock:
Fixing systems: 630

Article 88536

FISCHER plugs S 14 ROE
building materials: BN, VD



HF
Halogen-frei

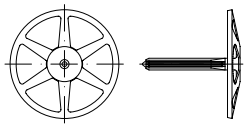
Dimensions	70	100	135	185
d_0	14	14	14	14
t_d	80	110	145	195
h_{ef}	70	70	70	70
l	70	100	135	185
t_{fix}	-	30	65	110
l + 5 mm	75	105	140	190

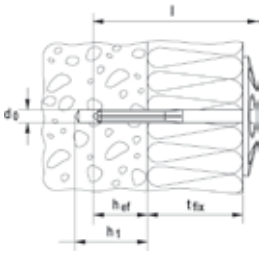
Dimensions in stock:
Fixing systems: 629

Insulation supports

Article 88514 DHK

FISCHER insulation supports DHK
building materials: BN, VD, VP, BL, LP, LD





disc ∅ 90 for soft insulation

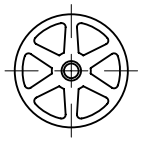
Dimensions	40	60	80	100	120
d_0	8	8	8	8	8
t_d	30	30	30	30	30
h_{ef}	20	20	20	20	20
l	65	85	105	125	145
t_{fix}	40	60	80	100	120

Dimensions	140	160	180	200	220
d_0	8	8	8	8	8
t_d	30	30	30	30	30
h_{ef}	20	20	20	20	20
l	165	185	205	225	245
t_{fix}	140	160	180	200	220

Dimensions in stock:
Fixing systems: 630

Article 88580 DT

FISCHER insulation discs DT
for use with nail plug N



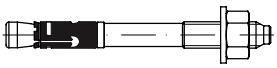
Dimensions	90/4	90/8
disc ∅	90	90
disc height	7	7
d_f	4	8

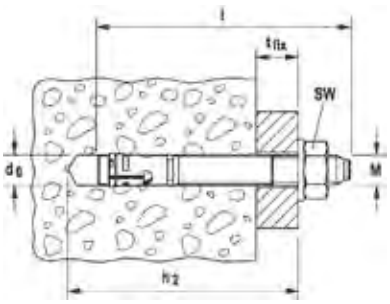
Dimensions in stock:
Fixing systems: 630

High performance steel anchors

Article 88741

UPAT express anchors MAX
with 1 expanding cone, nut and washer





ETA CE | R120 Feuerwiderstandsklasse | Z Zugzonentauglich

Dimensions	8/10/75	8/30/95	8/50/115	10/10/95	10/20/105	10/30/115	10/50/135
d_0	8	8	8	10	10	10	10
h_2	65	85	105	85	95	105	125
l	75	95	115	95	105	115	135
t_{fix}	10	30	50	10	20	30	50
SW	13	13	13	17	17	17	17

Dimensions	10/80/165	10/100/185	12/10/110	12/20/120	12/30/130	12/50/150	12/80/180
d_0	10	10	12	12	12	12	12
h_2	165	175	100	110	120	140	180
l	80	185	110	120	130	150	80
t_{fix}	100	100	10	20	30	50	100
SW	17	17	19	19	19	19	19

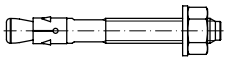
Dimensions	12/100/200	12/120/220	12/160/260	12/200/300	16/25/148	16/50/173	16/100/223
d_0	12	12	12	12	16	16	16
h_2	190	210	250	290	135	160	210
l	200	220	260	300	148	173	223
t_{fix}	100	120	160	200	25	50	100
SW	19	19	19	19	24	24	24

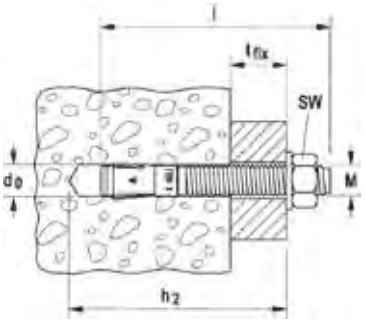
Dimensions	16/160/283	16/200/323	16/250/373	16/300/423	20/30/172	20/60/202	
d_0	16	16	16	16	20	20	
h_2	270	310	360	410	155	185	
l	283	323	373	423	172	202	
t_{fix}	160	200	250	300	30	60	
SW	24	24	24	24	30	30	

Dimensions in stock:
Fixing systems: 630–632

Article 88764

UPAT express anchors IMC
with 1 expanding cone, nut and washer





ETA CE | F120 Feuerwiderstandsklasse

Dimensions	6/10/55	8/5/56 K	8/5/66	8/10/71	8/20/81	8/30/91	8/50/111
d_0	6	8	8	8	8	8	8
h_2	50	51	61	66	76	86	106
l	55	56	66	71	81	91	111
t_{fix}	10/–	–/5	5/15	10/20	20/30	30/40	50/60
SW	13	13	13	13	13	13	13

Dimensions	8/100/161	10/5/71 K	10/10/86	10/20/96	10/30/106	10/50/126	10/100/176
d_0	8	10	10	10	10	10	10
h_2	156	63	78	88	98	118	168
l	161	71	86	96	106	126	176
t_{fix}	100/110	–/5	10/20	20/30	30/40	50/60	100/110
SW	13	17	17	17	17	17	17

Dimensions	12/5/86 K	12/10/106	12/20/116	12/30/126	12/50/146	12/100/196	16/15/120 K
d_0	12	12	12	12	12	12	16
h_2	75	95	105	115	135	185	105
l	86	106	116	126	146	196	120
t_{fix}	–/5	10/25	20/35	30/45	50/65	100/115	–/15
SW	19	19	19	19	19	19	24

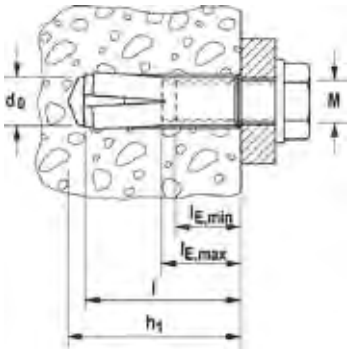
Dimensions	16/25/145	16/50/170	16/100/220	20/30/184	20/60/214		
d_0	16	16	16	20	20		
h_2	129	154	204	165	195		
l	145	170	220	184	214		
t_{fix}	25/40	50/65	100/115	30/55	60/85		
SW	24	24	24	30	30		

Dimensions in stock:
Fixing systems: 630

High performance steel anchors

Article 88716

UPAT impact anchors USA
with internal thread M



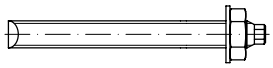
ETA CE R120 Feuerwiderstandsklasse

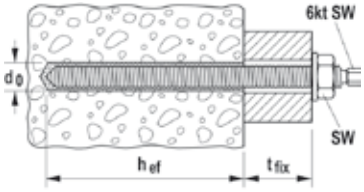
Dimensions	M 6	M 8	M 8x40	M 10	M 12	M 16	M 20
d_0	8	10	10	12	15	20	25
$l = h_{ef}$	30	30	40	40	50	65	80
$l_{E,\,min.} l_{E,\,min.}$	6	8	8	10	12	16	20
$l_{E,\,min.} l_{E,\,max.}$	13	13	13	17	22	28	34
h_1	32	33	43	43	54	70	85

Dimensions in stock:
Fixing systems: 631

Article 88722

UPAT threaded rods UKA 3-ASTA
with nut and washer





ETA CE F120 Feuerwiderstandsklasse

for use with UKA 3-cartridges and injection mortar UPM 55, UPM 44, UPM 33

Dimensions	M 8x110	M 8x150	M 8x190	M 10x130	M 10x165	M 10x190
d_0	10	10	10	12	12	12
t_{fix}	13	60	96	20	57	82
h_{ef}	80	80	80	90	90	90
wrench size hexagon	5	5	5	5	7	7

Dimensions	M 12x160	M 12x180	M 12x220	M 12x250	M 12x300	M 14x170
d_0	14	14	14	14	14	16
t_{fix}	25	50	90	120	170	38
h_{ef}	110	110	110	110	110	120
wrench size hexagon	8	8	8	8	8	10

Dimensions	M 16x165	M 16x190	M 16x250	M 16x300	M 20x220	M 20x260
d_0	18	18	18	188	25	25
t_{fix}	13	35	98	148	30	65
h_{ef}	125	125	125	125	170	170
wrench size hexagon	12	12	12	12	12	12

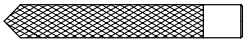
Dimensions	M 20x300	M 20x350	M 22x280	M 24x300	M 27x340	M 30x380
d_0	25	25	30	28	32	35
t_{fix}	105	155	65	65	60	65
h_{ef}	170	170	210	210	250	280
wrench size hexagon	12	12	12	-	-	-

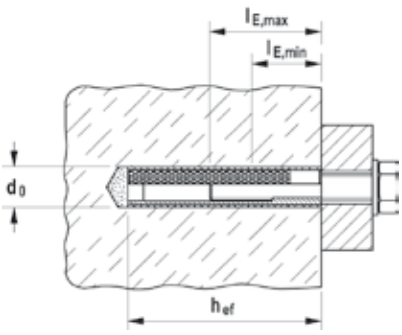
Dimensions in stock:
Fixing systems: 631

High performance steel anchors

Article 88714

UPAT internal thread bushes UKA 3-IST





ETA CE F120 Feuerwiderstandsklasse

Dimensions	M 5	M 6	M 8	M 10	M 12	M 16	M 20
d_0	10	12	14	18	20	24	32
$h_{ef\ min.}$*	75/-	75/-	90/80	90/80	125/115	160/160	200/-

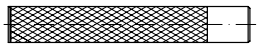
* steel zinc plated/A 4

Dimensions in stock:
Fixing systems: 632

Chemical fixings

Article 88770

UPAT internal thread anchors UPM-I



ETA CE F120

d_0 = drill hole ∅

Dimensions	M 6	M 8	M 10	M 12
d_0	14	14	18	18

Dimensions in stock:
Fixing systems: 633

Article 88735

UPAT mesh bushes UPM-SH-K

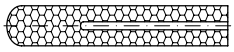
d_0 = drill hole ∅

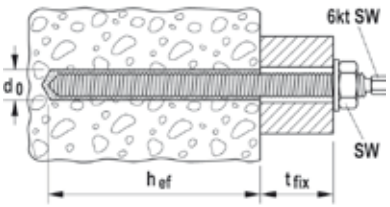
Dimensions	12	16	20
d_0	12	16	20
matching for UPM-A	M 6 - M 8	M 8 - M 10	M 12 - M 16
matching for UPM-I	-	M 6 - M 8	M 6 - M 12

Dimensions in stock:
Fixing systems: 633

Article 88720

UPAT resin capsules UKA 3-P





ETA CE F120

ETA approval not for M 14/M 22

Dimensions	M 8	M 10	M 12	M 14	M 16
$t = h_{ef}$	80	90	110	120	125
matching for ASTA	M 8	M 10	M 12	M 14	M 16
matching for IST	M 5	M 6	M 8	M 10	-

Dimensions	M 20	M 22	M 24	M 27	M 30
$t = h_{ef}$	170	210	210	250	280
matching for ASTA	M 20	M 22	M 24	M 27	M 30
matching for IST	M 20	-	-	-	-

Dimensions in stock:
Fixing systems: 633

The "MULTI-MONTI fastener system" is a fast, secure, time-saving and cost-cutting screw fastening method.

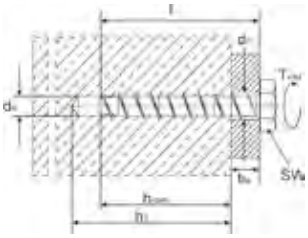
Without plugs and without expansion pressure, "MULTI-MONTI screw anchors" can be mounted into building materials like
• Concrete, natural stone • Lime sand brick
• Solid brick, clinker brick • Hollow-block concrete

"MULTI-MONTI screw anchors HMS and MMS" are well-suited to all regular standard fastenings.

REYHER ARTICLE/MULTI-MONTI TYPE

88902

Type S
Hexagon head
steel, ZP



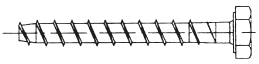
ETA 05/0010 Z-211-1503

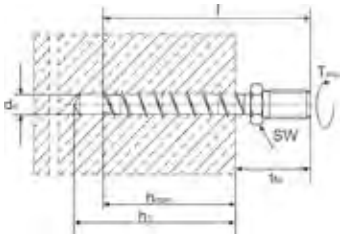
∅ x l [mm]	Wrench size hexagon	Drill ∅ [mm]	Drill depth h_1 [mm]	Anchor depth h_{nom} [mm]	Clamping length t_{fix} [mm]	Admissible tension load in cracked concrete C20/25 [kN]	Admissible tension load in non-cracked concrete C20/25 [kN]	Recommended tension load in non-cracked concrete C20/25[4] [kN]
6x40[1]	SW 10	5	45	35	5	–	–	2.4
6x50	SW 10	5	55	45	5	0.3[2]	1.5[2]	3.8
6x60	SW 10	5	55	45	15	0.3[2]	1.5[2]	3.8
6x80	SW 10	5	55	45	35	0.3[2]	1.5[2]	3.8
6x100	SW 10	5	55	45	55	0.3[2]	1.5[2]	3.8
7.5x35[1]	SW 13	6	40	35	1	–	–	2.2
7.5x40[1]	SW 13	6	45	35	5	–	–	2.2
7.5x45	SW 13	6	55	45	1	0.5[2]	2.0[2]	3.7
7.5x50	SW 13	6	55	45	5	0.5[2]	2.0[2]	3.7
7.5x60	SW 13	6	65	55	5	2.0[3]	3.1[3]	5.3
7.5x80	SW 13	6	65	55	25	2.0[3]	3.1[3]	5.3
7.5x100	SW 13	6	65	55	45	2.0[3]	3.1[3]	5.3
7.5x120	SW 13	6	65	55	65	2.0[3]	3.1[3]	5.3
7.5x140	SW 13	6	65	55	85	2.0[3]	3.1[3]	5.3
10x60	SW 16	8	65	55	5	0.8[2]	–	5.0
10x70	SW 16	8	75	65	5	3.7[3]	4.9[3]	6.8
10x80	SW 16	8	75	65	15	3.7[3]	4.9[3]	6.8
10x100	SW 16	8	75	65	35	3.7[3]	4.9[3]	6.8
10x120	SW 16	8	75	65	55	3.7[3]	4.9[3]	6.8
10x140	SW 16	8	75	65	75	3.7[3]	4.9[3]	6.8
10x160	SW 16	8	75	65	95	3.7[3]	4.9[3]	6.8
12x60[1]	SW 18	10	65	55	5	–	–	4.7
12x80	SW 18	10	85	75	5	4.9[3]	6.5[3]	8.3
12x90	SW 18	10	85	75	15	4.9[3]	6.5[3]	8.3
12x100	SW 18	10	85	75	25	4.9[3]	6.5[3]	8.3
12x120	SW 18	10	85	57	45	4.9[3]	6.5[3]	8.3
12x140	SW 18	10	85	75	65	4.9[3]	6.5[3]	8.3
12x160	SW 18	10	85	75	75	4.9[3]	6.5[3]	8.3
14x80	SW 21	12	80	70	10	–	–	7.3
14x110	SW 21	12	105	95	15	8.2[3]	12.3[3]	12.5
14x130	SW 21	12	105	95	35	8.2[3]	12.3[3]	12.5
14x150	SW 21	12	105	95	55	8.2[3]	12.3[3]	12.5
16x80[1]	SW 24	14	80	70	10	–	–	7.3
16x120[1]	SW 24	14	130	110	10	–	–	15.9
16x130	SW 24	14	130	115	15	12.1[3]	16.4[3]	17.0
16x150	SW 24	14	130	115	35	12.1[3]	16.4[3]	17.0
20x100[1]	SW 30	18	110	90	10	–	–	10.5
20x130[1]	SW 30	18	140	115	15	–	–	18.3

1) = not a component of the approvals 2) = in acc. with DIBt approval no. Z-21.1-1503 3) = in acc. with ETA 05/0010 4) = manufacturer specification for use without approval

REYHER ARTICLE/MULTI-MONTI TYPE

88903
Type St
Metric stud
steel, ZP





ETA 05/0010 Z-211-1503

∅ x l [mm]	Wrench size hexagon	Connection Thread	Drill-∅ d_0 [mm]	Drill depth h_1 [mm]	Anchor depth h_{nom} [mm]	Clamping length t_{fix} [mm]	Admissible tension load in cracked concrete C20/25 [kN]	Admissible tension load in non-cracked concrete C20/25 [kN]	Recommended tension load in non-cracked concrete C20/25[4] [kN]
6x60	SW10	M 6x5	5	55	45	15	0.3[2]	1.5[2]	3.8
7.5x70	SW10	M 8x14	6	55	45	25	0.5[2]	2.0[2]	3.7
7.5x80	SW10	M 8x14	6	65	55	25	2.0[3]	3.1[3]	5.3
7.5x100	SW10	M 8x14	6	65	55	45	2.0[3]	3.1[3]	5.3
7.5x120	SW10	M 8x14	6	65	55	65	2.0[3]	3.1[3]	5.3
7.5x140	SW10	M 8x14	6	65	55	85	2.0[3]	3.1[3]	5.3
7.5x160	SW10	M 8x14	6	65	55	105	2.0[3]	3.1[3]	5.3
10x80	SW13	M 10x11	8	65	55	25	0.8[2]	–	5.0
10x100	SW13	M 10x11	8	75	65	35	3.7[3]	4.9[3]	6.8
10x120	SW13	M 10x11	8	75	65	55	3.7[3]	4.9[3]	6.8
10x140	SW13	M 10x11	8	75	65	75	3.7[3]	4.9[3]	6.8
10x160	SW13	M 10x11	8	75	65	95	3.7[3]	4.9[3]	6.8

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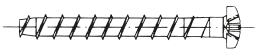
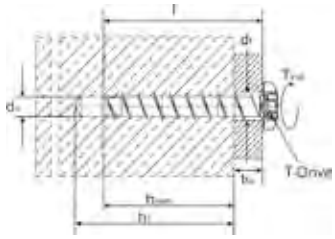
REYHER ARTICLE/MULTI-MONTI TYPE

88908
Type P
Pan head
steel, ZP





ETA 05/0010 Z-211-1503

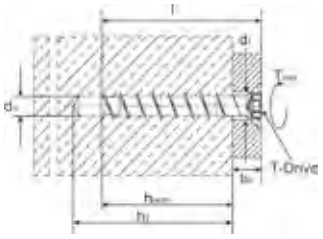
∅ x l	Hexalobular socket size	Head-∅ [mm]	Drill-∅ d_0 [mm]	Drill depth h_1 [mm]	Anchor depth h_{nom} [mm]	Clamping length t_{fix} [mm]	Admissible tension load in cracked concrete C20/25 [kN]	Admissible tension load in non-cracked concrete C20/25 [kN]	Recommended tension load in non-cracked concrete C20/25[4] [kN]
5x30[1]	T-20	7.9	4	35	30	1	–	–	1.9
5x50[1]	T-20	7.9	4	40	35	15	–	–	2.6
6x30[1]	T-30	11.6	5	35	30	1	–	–	1.9
6x40[1]	T-30	11.6	5	40	35	5	–	–	2.4
6x50	T-30	11.6	5	55	45	5	0.3[2]	1.5[2]	3.8
6x60	T-30	11.6	5	55	45	15	0.3[2]	1.5[2]	3.8
6x80	T-30	11.6	5	55	45	35	0.3[2]	1.5[2]	3.8
7.5x25[1]	T-40	13.6	6	30	25	1	–	–	1.2
7.5x45	T-40	13.6	6	55	45	1	0.5[2]	2.0[2]	3.7
7.5x50	T-40	13.6	6	55	45	5	0.5[2]	2.0[2]	3.7
7.5x70	T-40	13.6	6	65	55	15	2.0[3]	3.1[3]	5.3
10x70	T-40	17	8	75	65	5	3.7[3]	4.9[3]	6.8

1) = not a component of the approvals 2) = in acc. with DIBt approval no. Z-21.1-1503 3) = in acc. with ETA 05/0010 4) = manufacturer specification for use without approval

REYHER Article/MULTI-MONTI TYPE

88905

Type F
Countersunk head



ETA 05/0010 Z-211-1503

∅ x l	Hexalobular socket size	Head-∅ [mm]	Drill-∅ d_0 [mm]	Drill depth h_1 [mm]	Anchor depth h_{nom} [mm]	Clamping length t_{fix} [mm]	Admissible tension load in cracked concrete C20/25 [kN]	Admissible tension load in non-cracked concrete C20/25 [kN]	Recommended tension load in non-cracked concrete C20/25[4] [kN]
5x30[1]	T-25	8.7	4	35	30	1	–	–	1.9
5x40[1]	T-25	8.7	4	40	35	5	–	–	2.6
5x50[1]	T-25	8.7	4	40	35	15	–	–	2.6
5x60[1]	T-30	8.7	4	40	35	25	–	–	2.6
6x40[1]	T-30	11	5	35	30	10	–	–	1.9
6x50	T-30	11	5	55	45	5	0.3[2]	1.5[2]	3.8
6x60	T-30	11	5	55	45	15	0.3[2]	1.5[2]	3.8
6x80	T-30	11	5	55	45	35	0.3[2]	1.5[2]	3.8
6x100	T-30	11	5	55	45	55	0.3[2]	1.5[2]	3.8
6x120	T-30	11	5	55	45	75	0.3[2]	1.5[2]	3.8
6x140	T-30	11	5	55	45	95	0.3[2]	1.5[2]	3.8
7.5x50	T-40	13.6	6	55	45	5	0.5[2]	2.0[2]	3.7
7.5x60	T-40	13.6	6	65	55	5	2.0[3]	3.1[3]	5.3
7.5x80	T-40	13.6	6	65	55	25	2.0[3]	3.1[3]	5.3
7.5x100	T-40	13.6	6	65	55	45	2.0[3]	3.1[3]	5.3
7.5x120	T-40	13.6	6	65	55	65	2.0[3]	3.1[3]	5.3
7.5x140	T-40	13.6	6	65	55	85	2.0[3]	3.1[3]	5.3
7.5x160	T-40	13.6	6	65	55	105	2.0[3]	3.1[3]	5.3

1) = not a component of the approvals 2) = in acc. with DIBt approval no. Z-21.1-1503 3) = in acc. with ETA 05/0010 4) = manufacturer specification for use without approval

MULTI-MONTI anchors A4/A5

- on request
- acc. to ETA 05/0011

MULTI-MONTI assembly system = Innovative fixing elements from REYHER

Standards and standard conversion for blind rivets:

For the use of blind rivets as calculable construction elements, it was necessary to normatively and uniformly regulate dimensions, mechanical properties, such as tension and shearing loads, as well as general quality-related requirements.

This was done in the national standard DIN 7337 "Blind rivets with break pull mandrel" - first publication May 1985 - amended version July 1985 - follow-up version August 1991.

DIN 7337 – August 1991 included the version: Type A protruding head and type B countersunk head. In May 1997, the version "Open rivets with break pull mandrel" included published as the intended follow-up version for DIN 7337 – August 1991 with additional type C large protruding head.

In 1997, the international and European standards, ISO and EN, adopted the standardisation of the blind rivets.

Then, the basic standards, ISO 14588 and 14589, were published in August 2001.

In April 2003, the product standards, ISO 15973-16585 followed – a separate standard for each material combination/version/type. Here, DIN 7337 incl. design were withdrawn. ①

For the standardised versions and higher, special types are offered for particular uses.

Standards, versions, head types	DIN 7337		ISO - standards		Reyher-article-Nr.
	Material Rivet/Mandrel	in DIN 7337	Material 2 Rivet/Mandrel	ISO	
Basic standards:					
– "Blind rivets: Terms and definition"	–	included	–	14588	–
– "Blind rivets: Mechanical test"	–		–	14589	–
Product standards:	Al alloy/steel zinc	included as type A–	AlA/St.	15977	88402, 88417
– Open-end blind rivets with protruding head	plated		St./St.	15979	88401
	steel zinc plated/steel		AlA/AlA	15981	88410
	zinc plated		A 2/A 2	15983	88404
	Al alloy/Al alloy		Cu/St.	16582	88406
	A 2/A 2		Cu/Br	16582	88407
	copper/steel zinc plated		Cu/SSt	16582	–
	copper/bronze		NiCu/St.	16584	–
	–		NiCu/SSt	16584	88493
	NiCu/steel zinc plated		A 2/SSt	16585	–
	NiCu/A 4		–	–	88405
	–		–	–	88415
	A 2/steel zinc plated		–	–	88403
	A 4/A 4		–	–	88408
	Al alloy/A 2				
	plastic/plastic				
– Open-end blind rivets with countersunk head	Al alloy/steel zinc plated	included as type B	AlA/St.	15978	88412
	steel zinc plated/steel		St./St.	15980	88411
	zinc plated–		AlA/AlA	15982	–
	–		A 2/A 2	15984	–
	–		Cu/St.	16583	–
	–		Cu/Br	16583	–
	–		Cu/SSt	16583	–
– Open-end blind rivets with large protruding head	Al alloy/steel zinc plated	included as type C	–	–	88409
	steel zinc plated/steel zinc plated		–	–	88413
	Al alloy/Al alloy		–	–	88414
	Al alloy/A 2		–	–	88416
– Closed-end blind rivets with protruding head	Al alloy/steel	–	AlA/St.	15973	88420(CAP)
	phosphated		Al/AlA	15975	–
	–		St./St.	15976	–
	–		A 2/SSt	16585	–
	Al alloy/A 2		–	–	88420(CAP)
	copper/steel		–	–	88420(CAP)
	copper/A 2		–	–	88420(CAP)
– Closed-end blind rivets with countersunk head	–	–	AlA/St.	15974	–

① For the conversion to ISO standards, production needs a certain amount of customisation/transition time. Until otherwise regulated, the article descriptions and REYHER article numbers in the article heads of this catalogue apply to the blind rivets offered. The Technical Information in the TI section of this catalogue also applies here.
For versions and/or material combinations for which standards currently do not exist, subsequent ISO standardisation or a remaining standard, DIN 7337, may have to be reckoned with.

② AlA = aluminium alloy (Al alloy) – SSt = stainless steel
St. = steel (should be protected for storage – e.g. zinc plated version)

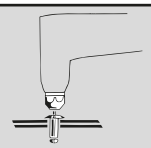
Blind rivets: Function and assembly process

Blind rivet technology was developed as a fastening procedure for hollow profiles and similar single-side access use fields.

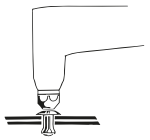
The simple, fast, and thus very economical, blind rivet principle has since replaced conventional fastening tasks in many assembly fields and is continually finding new fields of application.

REYHER has a comprehensive range of blind rivets so that a suitable design is available for every purpose.

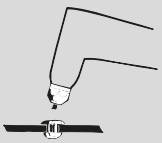
The placement devices provided are ergonomically formed and designed for long-term professional use.



① The blind rivet is inserted into the drill hole from the front of the work piece. The drift pin is incorporated until the head fit from the die of the setting tool. The blind rivet size is based on load and material strength



② Through operation of the setting tool the protruding end of the rivet body is reformed through the drift pin head into a closing-head. At the same time the materials are compressed

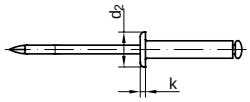


③ the rivet pin is pre-programmed to snap off at the predetermined breaking point – a secure rivet fastening is completed

Dimensions blind rivets

Open-end blind rivet with protruding head

R 88401
steel zinc plated/steel zinc plated
R 88402
Al alloy/steel zinc plated
R 88403
Al alloy/A2
R 88404
A2/A2
R 88405
A 2/steel zinc plated
R 88406
copper/steel zinc plated
R 88407
copper/bronze
R 88410
Al alloy/Al alloy
R 88415
A4/A4
R 88417
Al alloy/steel zinc plated
R 88493
NiCu/A4



1) A 4 ~ ISO 15983

Nominal ∅	2.4	3	3.2	4	4.8	5	6	6.4
d_2	5	6.5	6.5	8	9.5	9.5	12	13
k	0.65	1.0	1.0	1.2	1.3	1.3	1.5	1.8
drill ∅	2.5	3.1	3.3	4.1	4.9	5.1	6.1	6.5

Material rivet	Shear strength (Tensile strength)							
Al alloy (ISO 15977)	350 (550)	550 (850)	750 (1100)	1250 (1800)	1850 (2600)	2150 (3100)	3200 (4600)	3400 (4850)
Steel (ISO 15979)	650 (700)	950 (1100)	1100 (1200)	1700 (2200)	2900 (3100)	3100 (4000)	4300 (4800)	4900 (5700)
A 2, A 4[1] (ISO 15983)	–	1800 (2200)	1900 (2500)	2700 (3500)	4000 (5000)	4700 (5800)	–	–
Cu (ISO 16582)	–	760 (950)	800 (1000)	1500 (1800)	2000 (2500)	–	–	–
NiCu-Monel (ISO 16584)	–	–	1400 (1900)	2200 (3000)	3300 (3700)	–	–	5500 (6800)

Length	Clamping length range (min. – max.)							
4	0.5-1.5	0.5-1.5	0.5-1.5	–	–	–	–	–
5	–	1.5-2.5	–	0.5-1.5	–	–	–	–
6	1.5-3.5	2.5-3.5	1.5-3.5	1.5-3.0	2.0-2.5	2.0-2.5	–	–
8	3.5-5.0	4.5-5.0	3.5-5.0	4.0-5.0	2.5-4.5	2.5-4.5	2.0-3.0	–
10	–	5.0-7.0	5.0-7.0	5.0-6.5	4.5-6.0	4.5-6.0	3.0-5.0	–
12	–	7.0-9.0	7.0-9.0	6.5-8.5	6.0-8.0	6.0-8.0	5.0-7.0	2.0-6.0
14	–	9.0-11.0	9.0-11.0	8.5-10.5	8.0-10.0	8.0-10.0	–	–
16	–	11.0-13.0	11.0-13.0	10.5-12.5	10.0-12.0	10.0-12.0	7.0-11.0	6.0-10.0
18	–	13.0-15.0	13.0-15.0	10.5-12.5	12.0-14.0	12.0-14.0	11.0-13.0	10.0-12.0
20	–	15.0-17.0	15.0-17.0	14.5-16.5	14.0-15.0	14.0-15.0	13.0-15.0	12.0-14.0
25	–	17.0-22.0	17.0-22.0	16.5-21.5	15.0-20.0	15.0-20.0	15.0-20.0	14.0-18.0
30	–	22.0-26.0	–	21.5-26.0	20.0-25.0	20.0-25.0	20.0-24.0	18.0-23.0
35	–	–	–	26.0-30.0	–	25.0-30.0	24.0-29.0	–
40	–	–	–	30.0-35.0	–	30.0-35.0	29.0-34.0	–
45	–	–	–	–	–	35.0-40.0	–	–
50	–	–	–	–	–	40.0-45.0	34.0-44.0	–
60	–	–	–	–	–	48.0-52.0	–	–
65	–	–	–	–	–	52.0-57.0	–	–
70	–	–	–	–	–	57.0-62.0	–	–
80	–	–	–	–	–	62.0-72.0	–	–

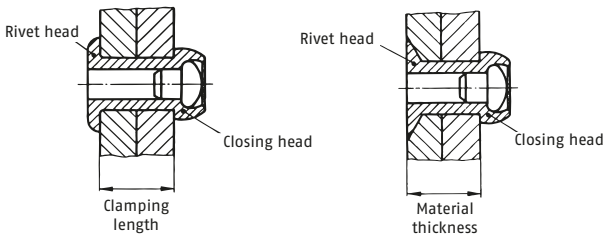
Rivet length specification:

For blind rivets with smooth rivet shafts and head types A, B, C or similar, the suitable nominal length can be set according to the rule of thumb:

Clamping length (material thickness) + 1 x rivet nom. Ø = rivet nominal length min.*

(* For interim results, the next-largest rivet length is to be chosen)

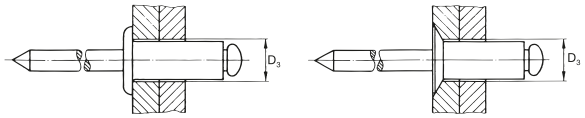
The allocation of the rivet nominal length according to clamping length/ material thickness differs minimally for standard blind rivets – between standard specifications (DIN 7337, attachment A and B) and factory specifications – according to various material combinations.



Rivet hole/Drill diameter:

For blind rivets of the types A, B or C corresponding or similar to DIN 7337 as well as for "CAP" and "PolyGrip" multi-section blind rivets, the rivet/drill hole diameter is specified according to the following rule of thumb:

Rivet nom. Ø: d1 + 0.1 mm (tol. +0.1mm) = Rivet hole/Drill hole Ø D3



The following applies for blind-rivet nuts:
Shaft Ø: d1/wrench size + 0.1 mm = Drill/Punch/Hole Ø D3

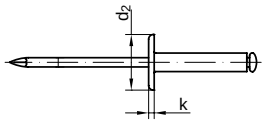
Dimensions blind rivets

Open-end blind rivets with protruding head

similar to DIN 7337-A

R 88408

plastic



Nominal Ø	4	5	6
d_2	9	11	13
k	1,2	1,5	1,5
drill Ø	4,1	5,1	6,1

Material rivet	Shear strength min. in N (Tensile strength min. in N)		
plastic	180 (-)	290 (-)	440 (-)

Length	Clamping length range (min. - max.)		
8	0.5 – 5.0	0.5 – 5.0	0.5 – 5.0
12	5.0 – 9.0	5.0 – 9.0	5.0 – 9.0

Open-end blind rivets with large protruding head

acc. to DIN 7337-C

R 88409

Al alloy/steel zinc plated

R 88413

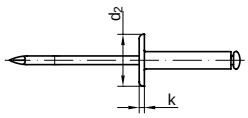
steel zinc plated

R 88414

Al alloy/Al alloy

R 88416

Al alloy/A2



Nominal Ø	3.2	4	4.8	5
d_2	9.5	12	16	11/14
k	1.3	1.6	1.8	1.8
drill Ø	3.3	4.1	4.9	5.1

Material rivet	Shear strength min. in N ① (Tensile strength min. in N) ①			
Al alloy/steel	720 (950)	1400 (2000)	1800 (2700)	2000 (2800)

Length	Clamping length range (min. – max.)			
6	1.5 - 3.5	1.5 - 3.0	-	-
8	3.5 - 5.0	3.0 - 5.0	2.5 - 4.5	2.5 - 4.5
10	5.0 - 7.0	5.0 - 6.5	4.5 - 6.0	4.5 - 6.0
12	7.0 - 9.0	6.5 - 8.5	6.0 - 8.0	6.0 - 8.0
14	-	-	-	8.0 -10.0
16	9.0 - 13.0	8.5 - 12.5	8.0 - 12.0	10.0 - 12.0
18	-	12.5 - 16.5	-	12.0 - 14.0
20	-	-	12.0 - 15.0	14.0 - 15.0
25	-	-	15.0 - 20.0	15.0 - 20.0
30	-	-	-	20.0 - 25.0

① acc. to DIN 7337

Dimensions blind rivets

Open-end blind rivets with countersunk head

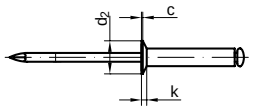
acc. to DIN 7337-B

R 88411

steel zinc plated

R 88412

Al alloy/steel zinc plated



Nominal ∅	3	4	5
d_2	6.0	7.5	9.0
k	0.9	1.0	1.2
c	0.3	0.3	0.4
drill ∅	3.1	4.1	5.1

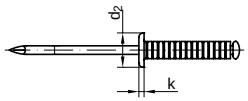
Shear strength (Tensile strenght)			
Force specifications are identical to the specifications for Article 88401 (see TI-200)			
Length	**Clamping length range (min. – max.)**		
4 St./Al.	-/1.0 – 1.5	–	–
6 St./Al.	1.0 – 3.0/1.5 – 3.5	1.0 – 2.5/1.0 – 3.0	1.0 – 2.0/–
8 St./Al.	3.0 – 5.0/3.5 – 5.0	2.5 – 4.5/3.0 – 5.0	2.0 – 4.0/2.0 – 4.5
10 St./Al.	5.0 – 6.5/5.0 – 7.0	4.5 – 6.5/5.0 – 6.5	4.0 – 6.0/4.5 – 6.0
12 St./Al.	6.5 – 8.5/7.0 – 9.0	6.5 – 8.5/6.5 – 8.5	6.0 – 8.0/6.0 – 8.0
14 St./Al.	–	–	8.0 – 9.5/–
16 St./Al.	-/9.0 – 13.0	8.5 – 12.0/8.5 – 12.5	
18 St./Al.	–	-/12.5 – 14.5	
20 St./Al.	–	12.0 – 16.0/14.5 – 16.5	
25 St./Al.	–	–	

Open-end blind rivets with grooved rivet body

for blind holes

R 88419 G

Al alloy/steel zinc plated



Nominal ∅	3.2	4	4.8
d_2	6.5	8	9.5
k	1	1.2	1.3
drill ∅	3.3	4.1	4.9

Material rivet	Shear strength min. in N (Tensile strenght min. in N)		
Al alloy	720 (950)	1400 (2000)	1800 (2700)
Length	**plate thickness (– max.)**		
8	–	4	–
10	6	–	6
12	–	8	–
14	–	–	10
16	12	12	–
18	–	–	13
20	–	–	15
25	–	–	20

Closed-end blind rivets with protruding head

for air- and water-tight riveting drill

R 88420 F

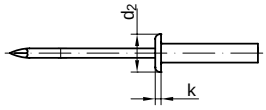
Al alloy/steel phos.

Al alloy/A2

Cu/steel oiled

Cu/steel oiled

Cu/A2



Dimensions	3.2	4	4.8
d_2	6	8	9.5
k	1.1	1.3	1.8
Drill ∅	3.3	4.1	4.9

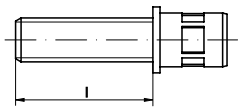
Material rivet	Shear strength min. in N (Tensile strenght min. in N) ①		
Al alloy (~ISO 15973)	1050 (1250)	1550 (2100)	2400 (3500)
Cu	1000 (1400)	1500 (2200)	2100 (3100)
Length	**Clamping length range (min. – max.)**		
6.5	0.5 – 2.0	–	–
7.5	1.0 – 3.0	–	–
8	1.5 – 3.0	0.5 – 3.0	1.0 – 3.0
9.5	3.0 – 5.0	3.0 – 5.0	3.0 – 5.0
10.5	5.0 – 6.5	–	–
11	4.5 – 6.5	4.5 – 6.5	4.5 – 6.5
12.5	6.0 – 8.0	6.0 – 8.0	6.0 – 8.0
14	–	–	7.5 – 9.5
16	–	–	9.0 – 11.0
18	–	–	10.5 – 13.0
21	–	–	13.0 – 16.0

① Manufacter specification

Dimensions blind rivets

Open-end blind rivets with connection thread

R 88421
steel zinc plated/steel zinc plated

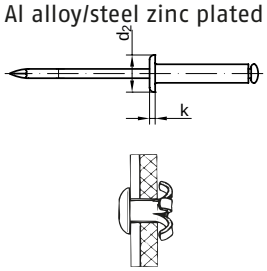


Nominal ∅	M 4	M 5	M 6	M 8
hole diam. ∅	6.1	7.1	9.1	11.1
l	10	11.5	13	15.5

Material rivet	Shear strength min. in N (Thread breaking strength min. in N)			
St.	5160 (6030)	7200 (10800)	10800 (17800)	18400 (27800)
	Clamping length range (min. – max.)			
	0.25 – 3.0	0.25 – 3.0	0.25 – 3.0	0.25 – 3.0

Open-end blind rivets with protruding head and peel rivet body

R 88422
Al alloy/steel zinc plated

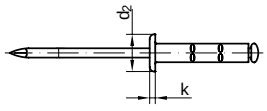


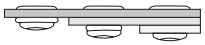
Nominal ∅	3.2	4	4.8
d_2	6.5	8	9.5
k	1	1.2	1.3
drill ∅	3.3	4.1	4.9

Material rivet	Shear strength min. in N (Tensile strength min. in N)		
Al alloy	800 (950)	1.400 (2.000)	2.000 (2.700)
Length	**Clamping length range (min. – max.)**		
8	1.0 – 3.5	1.0 – 3.0	–
10	2.5 – 5.0	2.5 – 5.0	2.5 – 5.0
12	4.5 – 7.0	4.5 – 6.5	4.5 – 7.0
14	–	6.0 – 8.0	6.5 – 9.0
16	6.5 – 11.0	7.5 – 10.0	8.5 – 10.0
18	–	9.0 – 12.0	9.5 – 12.0
20	–	11.5 – 14.0	11.5 – 14.0
25	–	–	13.5 – 19.0

Open-end blind rivets with protruding head and multigrip rivet body

R 88474
Al alloy/steel zinc plated
steel zinc plated/steel zinc plated
Al alloy/A2





DIBt approval no. Z14.1-4 for ∅ 4.8 Al-Leg./St. and Al-Leg./A2

Nominal ∅	3.2	4	4.8
d_2	6.5	8	9.5
k	0.8	1	1.3
drill ∅	3.3	4.1	4.9

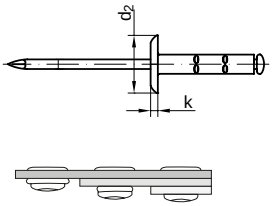
Material rivet	Shear strength min. in N (Tensile strength min. in N)		
Al alloy	720 (1.050)	1.060 (1.680)	1.600 (2.270)
Steel	1.200 (1.600)	1.650 (2.400)	2.400 (3.200)
A2/A4	1.450 (2.300)	2.650 (3.600)	4.000 (5.000)
Length	**Clamping length range (min. – max.)**		
8	0.5 – 5.0	–	–
9.5	1.5 – 6.5	–	–
10	–	0.5 – 6.5	0.5 – 6.5
11	3.0 – 8.0	–	–
13	–	3.5 – 9.5	–
15	–	–	4.5 – 11.0
17	–	7.0 – 13.0	6.5 – 13.0
25	–	–	11.0 – 19.5
30	–	–	16.0 – 24.0

Dimensions blind rivets

Open-end blind rivets with large protruding head and multigrip rivet body

R 88475

Al alloy/steel zinc plated
steel zinc plated/steel zinc plated
Al alloy/A2



Nominal ∅	3.2	4	4.8
d_2	9.5	12	16
k	1.3	1.5	1.8
drill ∅	3.3	4.1	4.9

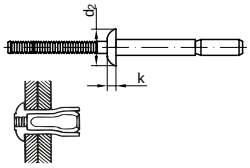
Material rivet	Shear strength min. in N (Tensile strength min. in N)		
Al-Leg.	720 (1.050)	1.060 (1.680)	1.600 (2.270)
Stahl	1.200 (1.600)	1.650 (2.400)	2.400 (3.200)

Length	Clamping length range (min. – max.)		
8	0.5 – 5.0	–	–
9.5	1.5 – 6.5	–	–
10	–	0.5 – 6.5	0.5 – 6.5
11	3.0 – 8.0	–	–
13	–	3.5 – 9.5	–
15	–	–	4.5 – 11.0
17	–	7.0 – 13.0	6.5 – 13.0
25	–	–	11.0 – 19.5
30	–	–	16.0 – 24.0

Open-end blind rivets with protruding head for high strength assembly

R 88476

steel zinc plated/steel zinc plated



Nominal ∅	4.8	6.4
d_2	9.2	12.4
k	2.2	2.6
drill ∅	4.9	6.5

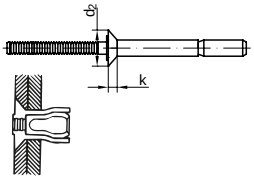
Material rivet	Shear strength min. in N (Tensile strength min. in N)	
St.	6.850 (4.500)	12.500 (8.200)

Length	Clamping length range (min. – max.)	
10.5	1.6 – 6.4	–
14.1	–	2.0 – 9.5
14.5	5.5 – 11.1	–
20.5	–	2.0 – 15.9

Open-end blind rivets with countersunk head for high strength assembly

R 88477

steel zinc plated/steel zinc plated



Nominal ∅	4.8	6.4
d_2	8.9	11
k	2.2	2.6
drill ∅	4.9	6.5

Material rivet	Shear strength min. in N (Tensile strength min. in N)	
St.	6.850 (4.500)	12.500 (8.200)

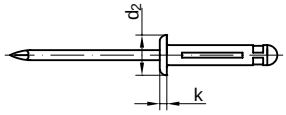
Length	Clamping length range (min. – max.)	
10.5	1.6 – 6.4	–
14.1	–	2.0 – 9.5
14.5	5.5 – 11.1	–

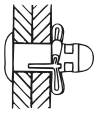
Dimensions blind rivets

Dimensions blind rivets

R 88488

Al alloy/Al alloy





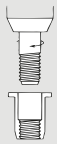
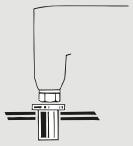
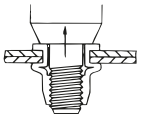
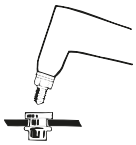
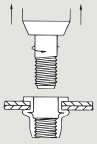
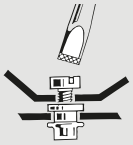
Nominal ∅	4.1	5.2
d_2	8	10
k	1.4	1.9
Bohrer ∅	4.2	5.3

Material rivet	Shear strength min. in N (Tensile strength min. in N)	
Al alloy	890 (1.000)	1.550 (2.000)

Length	Clamping length range (min. – max.)	
14.5	1.0 – 3.0	–
19	–	1.6 – 6.3
19.5	1.0 – 6.3	–
21.1	1.0 – 9.5	–
22.2	–	4.7 – 9.5
24.3	3.2 – 12.7	–
25.4	–	7.9 – 12.7
28.5	–	11.1 – 15.9
31.7	–	14.2 – 19.0

Blind rivet nuts: Function and assembly process

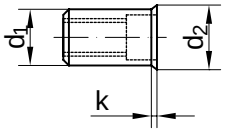
By combining two fastening options, blind rivet nuts provide cost and quality benefits. On the one hand, a rivet fastening is made by rivetting the nuts with sheet metal and, on the other hand, a screw fastening is created. This combination makes it possible to use thin-walled component parts for which the inclusion of a thread is sometimes problematic due to the low material strength. A further advantage is that a detachable screw fastening is created without any heat impact and thus, an unchecked thermal lag in the components can be prevented. Additionally, various materials can be connected with each other.

		①	The blind rivet nut is screwed onto the thread mandrel and inserted into the drill hole from the front side of the workpiece. The length of the blind rivet nut is based on the material strength.
		②	By using the setting tool the blind rivet nut is reshaped, which creates a firmly-sitting, immovable thread in seconds. At the same time, materials can be pressed together in this process.
		③	After unscrewing the thread mandrel, a metric screw can be used to fasten an additional part.

Blind rivet nuts dimensions

Open blind rivet nuts with small countersunk head

R 88418
Al alloy
Steel ZP
A2
A4

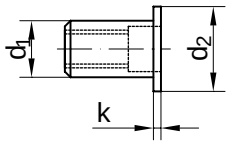


Dimensions	M 4	M 5	M 6	M 8
d_1	6	7	9	11
d_2	6.9	7.9	9.9	12
k	0.6	0.6	0.6	0.6
drill ∅	6.1	7.1	9.1	11.1

Available clamping lengths → price pages

Open blind rivet nuts with protruding head

R 88423
Al alloy
Steel ZP
A2
A4



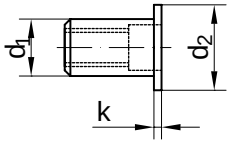
Dimensions	M 4	M 5	M 6	M 8	M 10
d_1	6	7	9	11	12
d_2	9	10	12	14	15
k	0.8	1	1.5	1.5	1.5
drill ∅	6.1	7.1	9.1	11.1	12.1

Available clamping lengths → price pages

Open blind rivet nuts with protruding head, with multigrip rivet body

for variable clamping length

R 88490
Al alloy
Steel ZP
A2



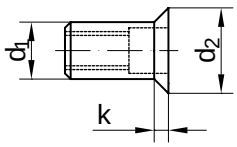
Dimensions	M 4	M 5	M 6	M 8
d_2	10	11	13	16
k	0.8	1.0	1.5	1.5
drill ∅	$6^{+0.1}$	$7^{+0.1}$	$9^{+0.1}$	$11^{+0.1}$
clamping length	0.5 – 6.0	0.5 – 6.0	0.5 – 6.0	0.5 – 7.5

Blind rivet nuts dimensions

Open blind rivet nuts with countersunk head, with multigrip rivet body

for variable clamping length

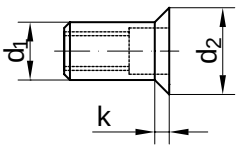
R 88491
Al alloy
Steel ZP



Dimensions	M 4	M 5	M 6	M 8
d_2	10	11	13	16
k	1.5	1.5	1.5	1.5
drill ∅	6 $^{+0.1}$	7 $^{+0.1}$	9 $^{+0.1}$	11 $^{+0.1}$
Clamping length	1.5 – 6.0	1.5 – 6.0	1.5 – 6.0	1.5 – 7.5

Open blind rivet nuts with countersunk head

R 88424
Al alloy
Steel ZP
A2
A4

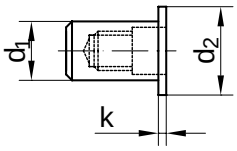


Dimensions	M 4	M 5	M 6	M 8	M 10
d_1	6	7	9	11	12
d_2	9	10	12	14	15
k	1.5	1.5	1.5	1.5	1.5
drill ∅	6.1	7.1	9.1	11.1	12.1

Available clamping lengths → price pages

Closed blind rivet nuts with flat head

R 88480
Al alloy
Steel ZP

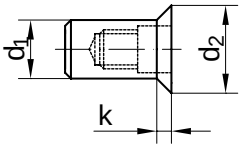


Dimensions	M 4	M 5	M 6	M 8	M 10
d_1	6	7	9	11	13
$d_{2\ (St./Al.)}$	9/10	11	12/13	14/16	19
k	0.8	1.0	1.2	1.3	2.0
drill ∅	6.1	7.1	9.1	11.1	13.1

Available clamping lengths → price pages

Closed blind rivet nuts with countersunk head

R 88481
Al alloy
Steel ZP

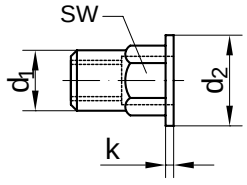


Dimensions	M 4	M 5	M 6	M 8
$d_{1\ (St./Al.)}$	6/–	7	9	11
$d_{2\ (St./Al.)}$	8.3/–	9.3	11.3	13.3
$k_{\ (St./Al.)}$	0.8/–	1.5	1.5	1.5
drill ∅	6.1	7.1	9.1	11.1

Available clamping lengths → price pages

Open blind rivet nuts with hexagonal protruding head

R 88483
Steel ZP
A2



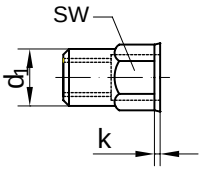
Dimensions	M 4	M 5	M 6	M 8	M 10
d_1	6	7	9	11	13
d_2	9	10	13	16	16.5
k	0.8	1	1.5	1.5	2.0
Hexagon size	6	7	9	11	13
Mounting hole	6 $^{+0.1}$	7 $^{+0.1}$	9 $^{+0.1}$	11 $^{+0.1}$	13 $^{+0.1}$

Available clamping lengths → price pages

Blind rivet nuts dimensions

Open blind rivet nuts with hexagonal small countersunk head

R 88484
Steel ZP
A2



Dimensions	M 4	M 5	M 6	M 8	M 10
d_1	6	7	9	11	13
k	0.6	0.6	0.6	0.6	0.7
Hexagon size	6	7	9	11	13
Mounting hole	6 $^{+0.1}$	7 $^{+0.1}$	9 $^{+0.1}$	11 $^{+0.1}$	13 $^{+0.1}$

Available clamping lengths → price pages

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Thread: Profile, types

Technically a thread is "a bevelled level equally wound around a cylinder".

This principle enables both a screw on/in as well as screw off function and thus forms the basic characteristic for "detachable" fastenings = screws and nuts.

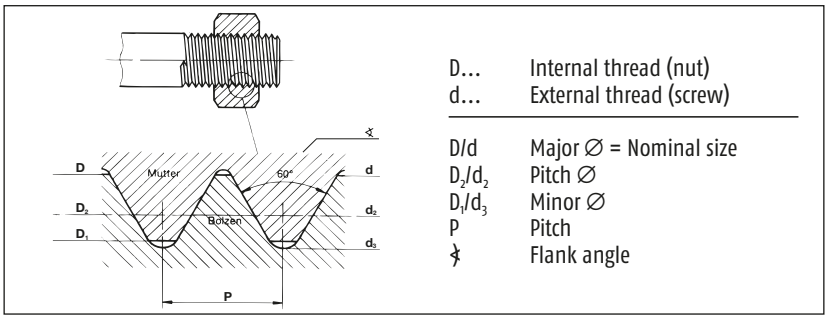
The geometric shape and the standardised dimension and tolerance system are the requirements for the coupling and exchangeability of the same kinds of thread profiles.

Thread profile, thread measuring points

The basic profile and the five measuring points of the thread are illustrated in figure A.

For external threads (screw) the dimension inspection is executed using ring gauges, flank micrometers and optical measuring devices, for internal threads (nuts), this is done using plug gauges.

Figure A:
Thread profile with 5 measuring points



Thread types

Table 1 shows an overview of the most common thread types for screws and nuts. The metric ISO thread has been valid since 1963 as a basis for global, uniform standardisation (ISO) for "Mechanical Fasteners".

Table 1: Overview of the most conventional thread types for mechanical fasteners (excerpt from DIN 202)

Code letter	Description	Version Usage		Designation Example	Flank ∢	acc. to Standard
M	Metric ISO thread	Coarse thread	right-hand	M 20x80	60°	ISO 724 (DIN 13-1)
M-LH		Coarse thread	left-hand	M 20x80 LH		
M		Fine thread	right-hand	M 20x2x80		ISO 724 (DIN 13-2...11)
M-LH		Fine thread	left-hand	M 20x2x80 LH		
M-SN 4	Metric ISO thread for transition fit	Interference fit thread	sealing	M 20 Sn 4x80		DIN 13-51
M-Sk 6		Interference fit thread	non-sealing	M 20 Sk 6x80		
MFS				MFS 20x80		DIN 8141-1
M	Metric thread with large clearance	Screw threads with larger thread limit deviation nut tolerance 6H		DIN 2510 M 20x80		DIN 2510-2
EG-M	Metric ISO thread: helical coil threads for inserts	External thread dimensions for thread inserts with coarse and fine threading		EG M 20 / EG M 20x2		DIN 8140-2
M-az/M-AZ	Metric ISO thread for HDG items	undersized and oversized thread for HDG external and internal threads		M 12-6az	60°	ISO 965-4 ISO 965-5
M-keg.	Metric external taper screw thread	for screw plugs and lubricating nipples		M 20x1.5 taper		DIN 158-1
G	Cylindrical Ww pipe threads where pressure-tight joints are not made on the threads	for pipes/pipe fastenings		G 3/4"	55°	ISO 228-1
R	Taper Ww piping thread where pressure-tight joints are not made on the threads	for external threads pipes/ fittings/pipe screwed fastenings		R 3/4"		DIN 2999-1 DIN 3858
Rp	Cylindrical Ww Pipe threads where pressure-tight joints are made on the thread	for internal thread pipes/ fittings/pipe screwed fastenings		Rp 3/4"		
Tr	Metric ISO trapezoidal thread (single-start and multi-start thread)	for general use		Tr 20x4	30°	ISO 2901-04
		Precision movement thread		nach Angabe		DIN 3975
Rd	Cylindrical round thread (single-start and multi-start thread)	for, e.g. flush pipe screwed fastenings		Rd 20x1/8		DIN 405-1,2
ST	Tapping screw thread			ST 4,2	60°	ISO 1478
–	Wooden screw thread			–		DIN 7998
UNC	USA: inch thread	Coarse thread		3/4-10 UNC	60°	ANSI B 1.1
UNF		Fine thread		3/4-16 UNF		B.S. 1580-1.2
BSW	UK: inch thread	Coarse thread		3/4-10 BSW	55°	B.S. 84
BSF		Fine thread		3/4-12 BSF		

Thread manufacture

- Non-cutting production
  (= normal for large series production of screws)
  – thread rolling using profile barrels (M 2–M 30)
  – thread rolling using profile rolls ≥ M 20
- Metal-cutting production
  – cutting using profile threading die
  – thread-chasing using profile clip
  – reeling using profile threading die
  – milling, grinding (for special movement threads)

Fit of thread/Threadability

For the screw-in function of internal and external threads (e.g. screw with nut), the standards are generally based on the functional quality upon assembly with the corresponding tool.

With additional thicker layers/coatings and/or required light-running clearance in the thread (manual assembly) additional measures and order information are necessary!

The basic parameters for threadability:

- **placement of tolerance**
  = Distance of the upper dimension of the external thread to the lower limit deviation of the internal thread
  ➔ Figure B
- **tolerance interval**
  („Tolerance quality")
  = Distance of lower to upper limit deviation
  (interval size es–ei/EI–ES)
- **length of thread engagement:**
  Minor form and position differences which can occur depending on the length as a kind of lead deviation are unavoidable in mass production.

  For this reason, length of thread engagement of the external thread into the internal thread for normal screw fastenings (= screw-in group N) according to ISO 965/DIN 13-14 is restricted due to pitch dependency.
  ➔ Table 3

  For higher lengths of thread engagements (L) correspondingly larger tolerance intervals are to be selected.

- **Surface discontinuities/damages to the thread**
  During thread production, small laps and/or profile deviations may occur – in the later manufacturing process (quenching and tempering, transport, drum-coating) minor damage like dents, nicks and gouges are unavoidable and make the threadability with thread gauges and mating threads more difficult.

  These manufacturing-related surface discontinuities/damages are permitted up to specific limits according to ISO 6157-1/-3 (DIN 267-19) for screws or according to ISO 6157-2 (DIN 267-20) for nuts.

  Should especially smooth-running threads be necessary for specific operating situations, either higher tolerance qualities or supplementary "smoothing rolls" with thread protection are needed.

Note: The standardised permitted stress loads for screw fastenings are valid for the tolerances assigned in the respective product standards. Understandably, increases in the tolerance placements/intervals lead to a reduction in the stress capacity in the thread.

Figure B: Placement of tolerance tolerance interval

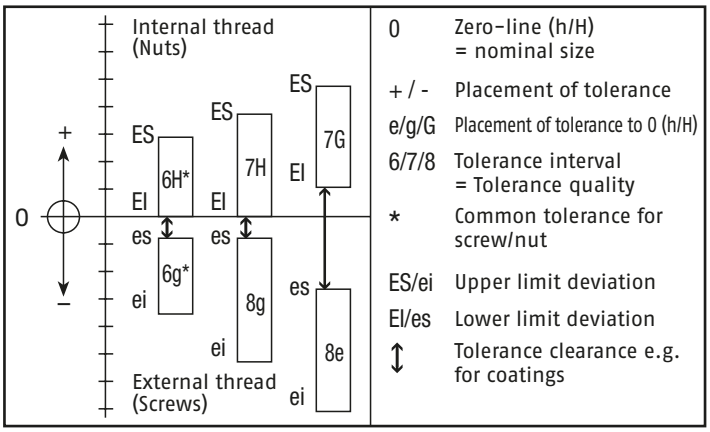


Table 2: Recommended tolerance intervals for length of thread engagement N
(before applying a corrosion protection coating*)

Tolerance class: / Thread		medium		coarse	
		Ext. thread. (screw)	Int. thread. (nut)	Ext. thread. (screw)	Int. thread (nut)
for surface condition	– without coating (plain)* – thin coatings** (electro plated)	6g*	6H*	8g*	7H*
	– with large clearance (plain) – thick coatings** (electro plated)	6e	6G	8e	7G
Article product class:		A, B (m, mg)		C (g)	
= e. g. DIN		931, 933	934	558, 601	555
ISO		4014, 4017	4032	4018, 4016	4034

* general tolerance without/before application of coatings
** ➔ TI-217, Table 8/TI-218, Table 9

Table 3: Length of thread engagement $N_{max.}$ for coarse and fine pitch thread

Nominal ∅ d/D	d/D	M 5	M 6	M 8	M 10	M 12	M 14 / M 16	M 18 / –M 22	M 24 / M 27	M 30 / M 33	M 36 / M 39	M 42 / M 45
Pitch P	RG	0.8	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5
	FG	0.5	0.75	1	1.25	1.5	1.5	2	2	2	3	3
Length of thread engagement $N_{max.}$	RG	7.5	9	12	15	18	24	30	36	45	53	63
	FG	4.5	7.1	9	12	13	16	16	25	25	36	36

Table 4: Limit deviations A0 – AU (min. – max.) for external and internal threads (bolts/nuts) with coarse and fine pitch thread (RG/FG)
(Extracts from ISO 965-2 /DIN 13 – 20, 21, 22, 27)

				External thread (Bolts/Screws)							Internal thread (Nuts)					
Thread Nom. ∅	Pitch P		Pitch ∅ Zero-line	Tolerance	Major ∅ d		Pitch ∅ d_2		Minor ∅ d_3		Tolerance	Major ∅ D	Pitch ∅ D_2		Minor ∅ D_3	
d/D	RG	FG	h/H		max.	min.	max.	min.	max.	min.		min.	max.	min.	max.	min.
M 3	0.5		2,675	6g	2,980	2,874	2,655	2,580	2,367	2,273	6H	3,000	2,775	2,675	2,599	2,459
				6e	2,950	2,844	2,625	2,550	2,337	2,243	6G	3,020	2,795	2,695	2,619	2,479
M 4	0.7		3,545	6g	3,978	3,838	3,523	3,433	3,119	3,002	6H	4,000	3,663	3,545	3,422	3,242
				6e	3,944	3,804	3,489	3,399	3,085	2,968	6G	4,022	3,685	3,567	3,444	3,264
M 5	0.8		4,480	6g	4,976	4,826	4,456	4,361	3,995	3,869	6H	5,000	4,605	4,480	4,334	4,134
				6e	4,940	4,790	4,420	4,325	3,959	3,833	6G	5,024	4,629	4,504	4,358	4,158
M 6	1		5,350	6g	5,974	5,794	5,324	5,212	4,747	4,596	6H	6,000	5,500	5,350	5,153	4,917
				6e	5,940	5,760	5,290	5,178	4,713	4,562	6G	6,026	5,526	5,376	5,179	4,943
M 8	1.25		7,188	6g	7,972	7,760	7,160	7,042	6,438	6,272	6H	8,000	7,348	7,188	6,912	6,647
				8e	7,937	7,602	7,125	6,935	6,403	6,165	6G	8,028	7,376	7,216	6,940	6,675
		1	7,350	6g	7,974	7,794	7,324	7,212	6,747	6,596	6H	8,000	7,500	7,350	7,153	6,917
M 10	1.5		9,026	6g	9,968	9,732	8,994	8,862	8,128	7,938	6H	10,000	9,206	9,026	8,676	8,376
				8e	9,933	9,558	8,959	8,747	8,093	7,823	6G	10,032	9,238	9,058	8,708	8,408
		1.25	9,188	6g	9,972	9,760	9,160	9,042	8,438	8,272	6H	10,000	9,348	9,188	8,912	8,647
M 12	1.75		10,863	6g	11,966	11,701	10,829	10,679	9,819	9,602	6H	12,000	11,063	10,863	10,441	10,106
				8e	11,929	11,504	10,792	10,556	9,782	9,479	6G	12,034	11,097	10,897	10,475	10,140
		1.5	11,026	6g	11,968	11,732	10,994	10,854	10,128	9,930	6H	12,000	11,216	11,026	10,676	10,376
M 14	2		12,701	6g	13,962	13,682	12,663	12,503	11,508	11,271	6H	14,000	12,913	12,701	12,210	11,835
				8e	13,929	13,479	12,630	12,380	11,475	11,148	6G	14,038	12,951	12,739	12,248	11,873
		1.5	13,026	6g	13,968	13,732	12,994	12,854	12,128	11,930	6H	14,000	13,216	13,026	12,676	12,376
M 16	2		14,701	6g	15,962	15,682	14,663	14,503	13,508	13,271	6H	16,000	14,913	14,701	14,210	13,835
				8e	15,929	15,479	14,630	14,380	13,475	13,148	6G	16,038	14,951	14,739	14,248	13,873
		1.5	15,026	6g	15,968	15,732	14,994	14,854	14,128	13,930	6H	16,000	15,216	15,026	14,676	14,376
M 18	2.5		16,376	6g	17,958	17,623	16,334	16,164	14,891	14,625	6H	18,000	16,600	16,376	15,744	15,294
				8e	17,920	17,390	16,296	16,031	14,853	14,492	6G	18,042	16,642	16,418	15,786	15,336
		2	16,701	6g	17,962	17,682	16,663	16,503	15,508	15,271	6H	18,000	16,913	16,701	16,210	15,835
M 20	2.5		18,376	6g	19,958	19,623	18,334	18,164	16,891	16,625	6H	20,000	18,600	18,376	17,744	17,294
				8e	19,920	19,390	18,296	18,031	16,853	16,492	6G	20,042	18,642	18,418	17,786	17,336
		2	18,701	6g	19,962	19,682	18,663	18,503	17,508	17,271	6H	20,000	18,913	18,701	18,210	17,835
M 22	2.5		20,376	6g	21,958	21,623	20,334	20,164	18,891	18,625	6H	22,000	20,600	20,376	19,744	19,294
				8e	21,920	21,390	20,296	20,031	18,853	18,492	6G	22,042	20,642	20,418	19,786	19,336
		2	20,701	6g	21,962	21,682	20,663	20,503	19,508	19,271	6H	22,000	20,913	20,701	20,210	19,835
M 24	3		22,051	6g	23,952	23,577	22,003	21,803	20,271	19,955	6H	24,000	22,316	22,051	21,252	20,752
				8e	23,915	23,315	21,966	21,651	20,234	19,803	6G	24,048	22,364	22,099	21,300	20,800
		2	22,701	6g	23,962	23,682	22,663	22,493	21,508	21,261	6H	24,000	22,925	22,701	22,210	21,835
M 27	3		25,051	6g	26,952	26,577	25,003	24,803	23,271	22,955	6H	27,000	25,316	25,051	24,252	23,752
				8e	26,915	26,315	24,966	24,651	23,234	22,803	6G	27,048	25,364	25,099	24,300	23,800
		2	25,701	6g	26,962	26,682	25,663	25,493	24,508	24,261	6H	27,000	25,925	25,701	25,210	24,835
M 30	3.5		27,727	6g	29,947	29,522	27,674	27,462	25,653	25,306	6H	30,000	28,007	27,727	26,771	26,211
				8e	29,910	29,240	27,637	27,302	25,616	25,146	6G	30,053	28,060	27,780	26,824	26,264
		2	28,701	6g	29,952	29,577	28,003	27,803	26,271	25,955	6H	30,000	28,316	28,051	27,252	26,752
M 33	3.5		30,727	6g	32,947	32,522	30,674	30,462	28,653	28,306	6H	33,000	31,007	30,727	29,771	29,211
				8e	32,910	32,240	30,637	30,302	28,616	28,146	6G	33,053	31,060	30,780	29,824	29,264
		2	31,701	6g	32,962	32,682	31,663	31,493	30,508	30,261	6H	33,000	31,925	31,701	31,210	30,835
M 36	4		33,402	6g	35,940	35,465	33,342	33,118	31,033	30,655	6H	36,000	33,702	33,402	32,270	31,670
				8e	35,905	35,155	33,307	32,952	30,998	30,489	6G	36,060	33,762	33,462	32,330	31,730
		3	34,051	6g	35,952	35,577	34,003	33,803	32,271	31,955	6H	36,000	34,316	34,051	33,252	32,752

Table 5: Dimensions in millimeters for Ww pipe threads

Thread Nom. ∅ in mm	Zoll	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Major ∅ in mm	d/D	7.72	9.73	13.16	16.66	20.96	26.44	33.25	41.91	47.80	59.61	75.18	87.88
Distance measuring level a		4.0	4.0	6.0	6.4	8.2	9.5	10.4	12.7	12.7	15.9	17.5	20.6

G = cylindrical external/internal thread
R = taper external thread
R_P = cylindrical internal thread
a = distance of the reference level/measuring level from the start of thread in mm

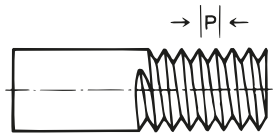
Table 6: Limit deviation for UNC and UNF threads acc. to ASME B 1.1

Thread Nom. ∅ UNC/UNF Nr.	UNC/ UNF	Pitches	Tolerances for external thread in inch Tolerance class 2A					Tolerances for internal thread in inch Tolerance class 2B				
			Major ∅	Pitch ∅		Minor ∅		Major ∅	Pitch ∅		Minor ∅	
			min.	max.	min.	max.	min.	min.	min.	max.	min.	max.
2	UNC	56	0,0813	0,0854	0,0717	0,0738	0,0641	0,0860	0,0744	0,0772	0,0667	0,0737
	UNF	64	0,0816	0,0854	0,0733	0,0753	0,0668	0,0860	0,0759	0,0786	0,0691	0,0752
3	UNC	48	0,0938	0,0983	0,0825	0,0848	0,0735	0,0990	0,0855	0,0885	0,0764	0,0845
	UNF	56	0,0942	0,0983	0,0845	0,0867	0,0770	0,0990	0,0874	0,0902	0,0797	0,0865
4	UNC	40	0,1061	0,1112	0,0925	0,0950	0,0814	0,1120	0,0958	0,0991	0,0849	0,0939
	UNF	48	0,1068	0,1113	0,0954	0,0978	0,0865	0,1120	0,0985	0,1016	0,0894	0,0968
5	UNC	40	0,1191	0,1242	0,1054	0,1080	0,0944	0,1250	0,1088	0,1121	0,0979	0,1062
	UNF	44	0,1195	0,1243	0,1070	0,1095	0,0972	0,1250	0,1102	0,1134	0,1004	0,1079
6	UNC	32	0,1312	0,1372	0,1141	0,1169	0,1000	0,1380	0,1177	0,1214	0,1040	0,1140
	UNF	40	0,1321	0,1372	0,1184	0,1210	0,1074	0,1380	0,1218	0,1252	0,1110	0,1190
8	UNC	32	0,1571	0,1631	0,1399	0,1428	0,1259	0,1640	0,1437	0,1475	0,1300	0,1390
	UNF	36	0,1577	0,1632	0,1424	0,1452	0,1301	0,1640	0,1460	0,1496	0,1340	0,1420
10	UNC	24	0,1818	0,1890	0,1586	0,1619	0,1394	0,1900	0,1629	0,1672	0,1450	0,1550
	UNF	32	0,1831	0,1891	0,1658	0,1688	0,1519	0,1900	0,1697	0,1736	0,1560	0,1640
12	UNC	24	0,2078	0,2150	0,1845	0,1879	0,1654	0,2160	0,1889	0,1933	0,1710	0,1810
	UNF	28	0,2085	0,2150	0,1886	0,1918	0,1725	0,2160	0,1928	0,1970	0,1770	0,1860
1/4	UNC	20	0,2408	0,2489	0,2127	0,2164	0,1894	0,2500	0,2175	0,2224	0,1960	0,2070
	UNF	28	0,2425	0,2490	0,2225	0,2258	0,2065	0,2500	0,2268	0,2311	0,2110	0,2200
5/16	UNC	18	0,3026	0,3113	0,2712	0,2752	0,2451	0,3125	0,2764	0,2817	0,2520	0,2650
	UNF	24	0,3042	0,3114	0,2806	0,2843	0,2618	0,3125	0,2854	0,2902	0,2670	0,2770
3/8	UNC	16	0,3643	0,3737	0,3287	0,3331	0,2993	0,3750	0,3344	0,3401	0,3070	0,3210
	UNF	24	0,3667	0,3739	0,3430	0,3468	0,3243	0,3750	0,3479	0,3528	0,3300	0,3400
7/16	UNC	14	0,4206	0,4361	0,3826	0,3897	0,3510	0,4375	0,3911	0,4003	0,3600	0,3760
	UNF	20	0,4281	0,4362	0,3995	0,4037	0,3767	0,4375	0,4050	0,4104	0,3830	0,3950
1/2	UNC	13	0,4876	0,4985	0,4435	0,4485	0,4069	0,5000	0,4500	0,4565	0,4170	0,4340
	UNF	20	0,4906	0,4987	0,4619	0,4662	0,4392	0,5000	0,4675	0,4731	0,4460	0,4570
9/16	UNC	12	0,5495	0,5609	0,5016	0,5068	0,4617	0,5625	0,5084	0,5152	0,4720	0,4900
	UNF	18	0,5524	0,5611	0,5205	0,5250	0,4949	0,5625	0,5264	0,5323	0,4050	0,5150
5/8	UNC	11	0,6112	0,6233	0,5588	0,5643	0,5150	0,6250	0,5660	0,5732	0,5270	0,5460
	UNF	18	0,6149	0,6236	0,5828	0,5875	0,5574	0,6250	0,5889	0,5949	0,5650	0,5780
3/4	UNC	10	0,7353	0,7482	0,6773	0,6832	0,6291	0,7500	0,6850	0,6927	0,6420	0,6630
	UNF	16	0,7391	0,7485	0,7029	0,7079	0,6741	0,7500	0,7094	0,7159	0,6820	0,6960
7/8	UNC	9	0,8592	0,8731	0,7946	0,8009	0,7408	0,8750	0,8028	0,8110	0,7550	0,7780
	UNF	14	0,8631	0,8734	0,8216	0,8270	0,7883	0,8750	0,8286	0,8356	0,7980	0,8130
1	UNC	8	0,9830	0,9980	0,9101	0,9168	0,8492	1,0000	0,9188	0,9276	0,8650	0,8900
	UNF	12	0,9868	0,9982	0,9382	0,9441	0,8990	1,0000	0,9459	0,9535	0,9100	0,9280
1 1/8	UNC	7	1,1064	1,1228	1,0228	1,0300	0,9527	1,1250	1,0322	1,0416	0,9700	0,9980
	UNF	12	1,1118	1,1232	1,0631	1,0691	1,0240	1,1250	1,0709	1,0787	1,0350	1,0530
1 1/4	UNC	7	1,2314	1,2478	1,1476	0,1550	1,0777	1,2500	1,1572	1,6680	1,0950	1,1230
	UNF	12	1,2368	1,2482	1,1879	1,1941	1,1490	1,2500	1,1959	1,2039	1,1600	1,1780
1 3/8	UNC	6	1,3544	1,3726	1,2563	1,2643	1,1741	1,3750	1,2667	1,2771	1,1950	1,2250
	UNF	12	1,3617	1,3731	1,3127	1,3190	1,2739	1,3750	1,3209	1,3291	1,2850	1,3030
1 1/2	UNC	6	1,4794	1,4976	1,3812	1,3893	1,2991	1,5000	1,3917	1,4022	1,3200	1,3500
	UNF	12	1,4867	1,4981	1,4376	1,4440	1,3989	1,5000	1,4459	1,4542	1,4100	1,4280
1 3/4	UNC	5	1,7268	1,7473	1,6085	1,6175	1,5091	1,7500	1,6201	1,6317	1,5330	1,5670
	UNF	12	1,7368	1,7482	1,6881	1,6941	1,6490	1,7500	1,6959	1,7037	1,6600	1,6780
2	UNC	4 1/2	1,9751	1,9971	1,8433	1,8528	1,7325	2,0000	1,8557	1,8681	1,7590	1,7950
	UNF	12	1,9868	1,9982	1,9380	1,9441	1,8990	2,0000	1,9459	1,9538	1,9100	1,9280
3	UNC	4	2,9730	2,9968	2,8237	2,8344	2,6991	3,0000	2,8376	2,8515	2,7290	2,7670
4	UNC	4	3,9728	3,9966	3,8229	3,8342	3,6989	4,0000	3,8376	3,8523	3,7290	3,7670

Thread: Pitch

Thread pitches P in mm for

- **ISO-metric coarse pitch thread M**
- **ISO-metric fine pitch thread M-F**
- **Trapezoidal thread Tr**



Threadturn count per inch for

- **UNC coarse pitch thread**
- **UNF fine pitch thread**
- **BSW coarse pitch thread (Ww)**
- **BSF fine pitch thread**
- **Whitworth pipe thread**

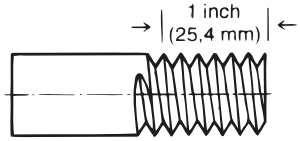


Table 6:

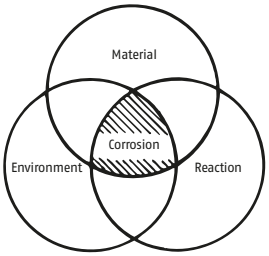
Thread Ø		Pitch P						
M	Tr	M	M-F	M-F2	M-F3	Tr		
1		0.25	(0.2)					
1.2		0.25	(0.2)					
1.4		0.3	(0.2)					
1.6		0.35	(0.2)					
1.8		0.35	(0.2)					
2		0.4	(0.25)					
2.2		0.45	(0.25)					
2.5		0.45	(0.35)					
3		0.5	(0.35)					
3.5		0.6	(0.35)					
4		0.7	0.5					
5		0.8	0.5					
6		1	0.75	0.5				
8	8	1.25	1	0.75	0.5		1,5	
10	10	1.5	1.25	1	0.75		2	1,5
12	12	1.75	1.5	1.25	1		3	2
14	14	2	1.5	1.25	1	4	3	2
16	16	2	1.5		1		4	2
18	18	2.5	2	1.5	1		4	2
20	20	2.5	2	1.5	1		4	2
22	22	2.5	2	1.5	1	8	5	3
24	24	3	2	1.5	1	8	5	3
27	26/28	3	2	1.5	(1)	8	5	3
30	30	3.5	2	1.5	(1)	10	6	3
33	32/34	3.5	2	1.5		10	6	3
36	36	4	3	2	1.5	10	6	3
39	38/40	4	3	2	1.5	10	7	3
42	42	4.5	(4) 3	2	1.5	10	7	3
45	44/46	4.5	(4) 3		1.5	12	7/8	3
48	48	5	(4) 3	2	1.5	12	8	3
52	50/52	5	(4) 3	2	1.5	12	8	3
56	55	5.5	4	3/2	1.5	14	9	3
60	60	5.5	4	3/2	1.5	14	9	3
64	65	6	4	3	2 (1.5)	16	10	4
68	70	6	4	3	2 (1.5)	16	10	4
Flank ∢		60°				30°		

With fine pitch thread, M-F insertion is preferred

Thread Ø			Number G (per 1 inch)				
UNC/UNF No.	Inch	= mm	UNC (NC)	UNF (NF)	BSW (Ww C)	BSF (Ww F)	R, G Rp
0		1,524	–	80	–	–	–
1		1,854	64	72	–	–	–
2		2,184	56	64	–	–	–
3		2,515	48	56	–	–	–
4		2,845	40	48	–	–	–
5		3,175	40	44	–	–	–
6		3,505	32	40	–	–	–
8		4,166	32	36	–	–	–
10		4,826	24	32	–	–	–
12		5,486	24	28	–	–	–
	1/8	3,175	–	–	40	–	28
	5/32	3,969	–	–	32	–	–
	3/16	4,763	–	–	24	32	–
	7/32	5,556	–	–	24	28	–
	1/4	6,350	20	28	20	26	19
	5/16	7,938	18	24	18	22	–
	3/8	9,525	16	24	16	20	19
	7/16	11,113	14	20	14	18	–
	1/2	12,700	13	20	12	16	14
	9/16	14,288	12	18	12	16	–
	5/8	15,875	11	18	11	14	14
	3/4	19,050	10	16	10	12	14
	7/8	22,225	9	14	9	11	14
	1	25,401	8	12	8	10	11
	1 1/8	28,575	7*	12	7	9	11
	1 1/4	31,750	7*	12	7	9	11
	1 3/8	34,925	6*	12	6	8	11
	1 1/2	38,100	6*	12	6	8	11
	1 3/4	44,450	5*	12	5	7	11
	2	50,802	4 1/2*	12	4 1/2	7	11
	2 1/4	57,150	4 1/2*	–	4	–	11
	2 1/2	63,500	4*	–	4	–	11
	2 3/4	69,850	4*	–	3 1/2	–	11
	3	76,200	4*	–	3 1/2	–	11
	4	101,60	4*	–	3	–	11
–			60°		55°		

* Studbolts ∅ ≥ 1" = constant 8 threads/inch
** Pipe threads have a larger major diameter (➜ Table 5)

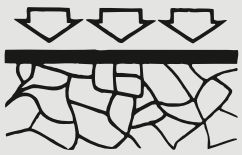
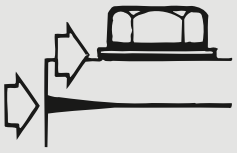
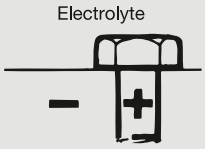
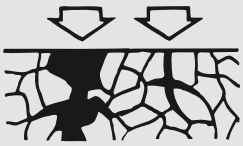
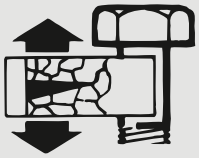
General information



Corrosion is the reaction of a metallic material with its environment which causes a measurable change in the material and can negatively influence the function of a metallic component or an entire system. In most cases, this reaction is of an electrochemical nature, but, in some cases, it can be of a chemical or a metal-physical nature. (Definition: Basic principle of "Corrosion" according to ISO 8044)

Table 1 shows the most important corrosion types from a selection of different corrosions which need to be considered with "mechanical fasteners".

Table 1: Corrosion types

				
Surface corrosion, e.g. rust Pitting corrosion	Crevice corrosion	Electrochemical corrosion (Contact corrosion) (see Table 2)	intergranular/ transgranular corrosion	Stress corrosion cracking

Corrosion is unavoidable, but damage due to corrosion is avoidable, provided the proper planning of suitable corrosion protection measures is in place. The corrosion protection of screw fastenings needs to be at least as corrosion-resistant as the components to be connected.

The task of constructive planning is to determine the necessary corrosion protection measures. Here the resilience of the corrosion protection in known operating conditions is to be taken into account until maintenance is due or until the limitation of damages has been reached. Surface or material specifications are to be listed in the article order text according to standards.

The next page provides a rough overview of the corrosion protection options for fasteners.

Inspection standards for corrosion protection procedures, compiled in DIN pocketbook 175, stipulate uniform conditions for the type and setup of equipment and methods for checking adherence to the specified coating type, layer thickness and optical appearance. The inspections according to these standards do not provide any information on the effect or fatigue strength of the corrosion protection under practical operating conditions.

An overview of the friction coefficients for various surface combinations ➔ TI assembly. The friction ratios in the screw fastenings are vital when determining the correct tightening torque (➔ VDI 2230)

Electrochemical corrosion

The combination of electrochemical noble and ignoble metals in humid conditions (= electrolyte) generates corrosion currents which spread from ignoble (anodic) metal to more noble metal (cathode). This means that less noble metal will be more eroded or corroded. The corrosion current thicknesses are also vital. If the ignoble, anodic part is small in comparison with the surrounding cathodic area (screw head on sheet surface), a very high anodic current thickness will generate which will carry off a lot of material.

Example 1:
Zinc plated screws for fastening a copper sheet:
Zinc is considerably less noble compared to copper. In humid conditions, a very high corrosion current thickness occurs on the small, ignoble, anodic screw head (left column zinc – small) in the direction of the noble, cathodic copper sheet (upper row – copper). The galvanized surface of the screw erodes in a short space of time and red rust appears on the steel.

Remedy:
In relation to the metallic building component, the fasteners should be as similar as possible if not more noble.

Screw	Component
zinc plated	zinc plated
nickel plated	steel, copper, brass
stainless	steel, zinc plated, aluminium, copper, brass

Example 2:
Copper or stainless steel screws which work in a similar way for fastening a zinc plated metal sheet:
This time, the ignoble, anodal, galvanized section is very large in relation to the small, noble, cathodic screw head. The corrosion current which stretches over the entire surface has very low tightness in the anode. The material degradation occurs across the entire surface and shows hardly any corrosion. This process actually additionally protects the nobler screw head against corrosion.

If unfavourable metal pairings cannot be avoided, they should be isolated from each other, e.g. using intermediate layers or coatings. Here, it must be made sure that the full strength of the connection remains intact.

Table 2: Electrochemical corrosion with metal pairings

In regard to contact corrosion of observed material ▼	Area ratio*	Magnesium alloy	Zinc	Hot-dip galvanized steel	Aluminium alloy	Cadmium coating	Construction steel	Low-alloy steel	Cast steel	Chrome steel	Lead	Tin	Copper	Stainless steel
Magnesium alloy	small		S	S	S	S	S	S	S	S	S	S	S	S
	large		M	M	M	M	S	S	S	S	S	S	S	S
Zinc	small	M		G	M	M	S	S	S	S	S	S	S	S
	large	G		G	G	G	G	G	G	G	G	G	G	G
Hot dip galvanized steel	small	M	G		M	M	S	S	S	S	S	S	S	S
	large	G	G		G	G	G	G	G	G	G	G	G	G
Aluminium alloy	small	M	G	G		G	M	G	S	M	S	S	S	S
	large	G	M	M		G	G		M	S	S	S	S	M
Cadmium coating	small	G	G	G	G		S	S	S	S	S	S	S	S
	large	M	G	M	G		G	G	G	G	G	G	G	G
Construction steel	small	G	G	G	G	G		M	S	S	S	S	S	S
	large	G	G	G	G	G		G	G	G	G	G	G	G
Low-alloy steel	small	G	G	G	G	G	G		G	S	S	S	S	S
	large	G	G	G	G	G	G		G	G	G	G	G	G
Cast steel	small	G	G	G	G	G	G	M		S	S	S	S	S
	large	G	G	G	G	G	G	G		G	G	G		
Chrome steel	small	G	G	G	G	G	G	G			M	M	S	S
	large	G	G	G	G	G	G	G			G	G		G
Lead	small	G	G	G	G	G	G	G	G	G		G	G	
	large	G	G	G	G	G	G	G	M	G		G		G
Tin	small	G	G	G	G	G	G	G		G	G			
	large	G	G	G	G	G	G	G	G	M	G			
Copper	small	G	G	G	G	G	G	G		M	M	S		
	large	G	G	G	G	G	G	G	G		G	M		G
Stainless steel	small	G	G	G	G	G		G	G		G	G	G	
	large	G	G	M	G	G	G	G	G	M	M	M		

S = strong corrosion of the observed material
M = moderate corrosion of the observed material (in very humid environments)
G = negligible or zero corrosion of the observed material

* ratio of the surface of the "observed" material to the surface of the "pairing material" (Source: "FEUERVERZINKEN" (HOT DIP GALVANIZATION) information centre)

Corrosion protection measures

Constructive measures e.g. isolation, avoidance of crevices...

Electrochemical measures e.g. cathodic protection, ventilation

Table 3: Surface measures

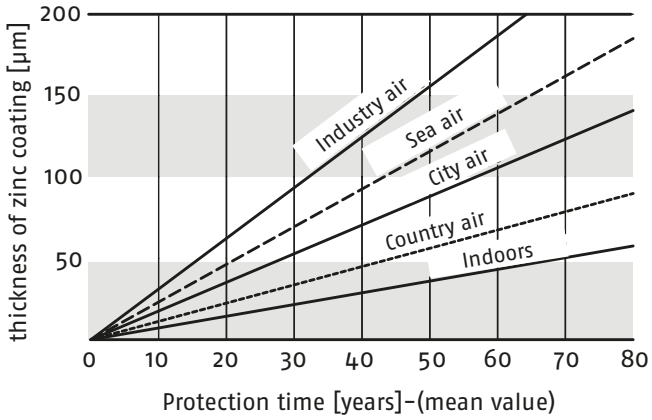
Measures	Procedures	Coatings	Coat-thicknesses µm	Standards Brand names
· **Non-metallic coatings** (inorganic/ *organic coatings)	Lubrication	Oil	–	
	Browning, oxidising	Iron oxide coat	0,5 – 2	DIN 50938
	Phosphate-coating	Phosphate coat	–	EN 12476 (DIN 50942)
	Thin-layer coats of lacquer*	Lacquer/Plastic / Resin (Fluoropolymer/TEFLON)	3 – 20	IRCO-SEAL, KLEVER-COL, XYLAN, PTFE, STAND-COTE
	Dip coating*	Epoxide resin/Polyester/ Phenolic resin	10 – 20	KTL-KATAPHORESE, ECO 2000
	Powder coatings*	Polyester powder	60 – 90	PULVER-COLOR, WEMA-KOR-EX
· **Metallic coatings** (inorganic coatings)	**Electroplated coatings:** (electrolytic/chemical/acidic/ alkaline/cyanidic)	Zinc Cadmium Copper Copper-zinc Nickel Nickel-chrome Copper-nickel Copper-nickel-chrome Tin Copper-tin Silver Copper-silver Zinc-nickel Zinc-cobalt Zinc-iron	3 – 25	ISO 4042
	+ Conversion layers (e.g. passivation/ chromating – ISO 4520)			
	Hot dip galvanization tZn	Zinc	min. 40	ISO 10684 (DIN 267-10) for fasteners ISO 1461
	Mechanical plating (plated coatings)	Zinc powder on sub-layer copper-plating (chromating possible)	6 – 107	ISO 12683
	Diffusion coatings	Zinc power burned in/on	15 – 45	EN 13811: SHERARD-galvanising ISO 14713-3
· **Zinc flake coating**	**Basecoat** (dispersions coatings = inorganic)	Zn-/Al lamellas (silver)	5 – 20	ISO 10683, DACROMET/GEOMET, DELTA-TONE, ZINCTECH
	Topcoat (thin-layer lacquering = organic)	Thin layer argentine or coloured, lubrication integration possible	8 – 15	DELTA-SEAL, DELTA-PROTEKT KL + VH, GEOMET PLUS VL

Table 4: Material measures

Measures	Procedure	Coatings	Standards	Brand names
· **Non-ferrous metals (NE)**	Copper (Cu) Brass (CuZn) Bronze (CuNiSi, CuSn)	– Ni plated, Cr plated, browned –	ISO 8839 (DIN 267-18) (galv. coatings ISO 4042 [DIN 267-9])	KURBUS Special brass 59 KUPRODUR
	Aluminium (Al)	anodised	–	–
	Titanium/Titanium alloys	–	ISO 8839 (DIN 267-18)	–
· **Non-metallic materials (K)***	Plastics PA, POM, PP, PVDF, Nylon	–	VDI 2544 DIN 34810 - 34816	ULTRAMID, DELRIN, HOSTALEN...
· **Stainless steels**	**Ferritic steels (F)** 1.4016, 1.4568	clean and metallic, bright-polished	ISO 3506 (DIN 267-11) EN 10088 (DIN 17224)	–
	Martensite steels (C) 1.4016, 1.4057, 1.4122...		ISO 3506 (DIN 267-11) EN 10088 (DIN 17442)	–
	Austenitic steels (A) A 1= 1. 4305 A 2 = 1.4301, 1.4303 A 4 = 1.4401 A 3 = 1.4541 A 5 = 1.4571 FSt = 1.4310		ISO 3506 (DIN 267-11) EN 10088 (DIN 17440, 17244) EN 10088 (DIN 17224)	NIRO, NIROSTA, INOX, CRONIFER, REMANIT, UNOX, SINOX ... Austenitic/austenitic-ferritic steels with particular resistance against chlorine-induced stress corrosion, e.g. indoor swimming pools ➔ TI-226
· **Special materials**	Nickel, nickel alloys	metallic, bright-polished	DIN 17740, 17742-44	INCONEL, HASTELLOY, MONEL...
	Special copper alloys Multi-component bronzes		DIN 17662-17665	Sn-/Al-Bronze, NEUSILBER, RESISTIN, CUNIFER...
	Special steels		EN 10269 (DIN 17240), SEW 390	URANUS, SICROMAL, MANOX...

* mechanical properties ➔ TI-227

Table 5: Yearly erosion values for zinc
(for flat surface corrosion)



Service condition	µm/year
Indoors	1,0 – 2,0
Country air*	1,3 – 2,5
City air*	1,9 – 5,6
Industry air*	6,4 – 19
Sea air*	2,2 – 7,2

* In practice, a mixed climate is to be reckoned with.

Table 6: Service conditions/Layer thicknesses for zinc plated steel

Service condition (areas of application)		Allocation of zinc layer thickness in µm	Description examples
0	"very mild" (Decorative use without strain)	3 – 5 ①	„zinc plated“ A 1 A/B/F A 2 A/B/F Fe/Zn 3/5
1	"mild" (Indoor conditions in warm, dry atmosphere)	5 – 8 ①	„zinc plated“ A 2 C/D A 3 A/B/F Fe/Zn 5/8
2	"moderate" (Indoor conditions in rooms in which condensation may occur)	8 – 12 ②	A 3 C/D Fe/Zn 12 A/F Fe/Zn 8/12
3	"strong" (Outdoor weathering under moderate conditions)	12 – 25 ②	A 4 C/D A 5–6/B–G A 7 A/F Fe/Zn 12–25
4	"very strong" (Outdoor weathering under difficult corrosive conditions – e.g. sea/industry environment)	25 ③	A 7 C/D Fe/Zn 25 c 2 C/D

① Corresponds to general standard stock type
② ③ Observe maximum layer thicknesses according to Table 8.
Thread size/oversize required, choose hot dip galvanization if necessary
– Extract from EN 1403, ISO 2081 (protective effects differ in practice)

Table 7: Reference values for corrosion and temperature resistance of galvanizing on steel

Coating	Cr(VI)- free	Coat thickness [µm]	Saltspray test according to ISO 9227		Temperature resistance
			White rust [h] ⑤	Red rust [h] ⑤	Coating up to approx. ... °C
zinc plated colourless/blue passivated ①	yes	3	2	12	60
		5	12	36	
		8	24	72	
zinc plated yellow chromated ①	no	5	48	72	60
		8	72	120	
zinc plated olive chromated ①	no	5	72	96	60
		8	96	144	
zinc plated black chromated ①	no	5	12	–	60
		8	24	72	
zinc plated colourless/blue passivated **with** sealing ②	yes	5	72	96	60
		8	72	120	
zinc plated thicklayer passivated (TLP) **without** sealing ②	yes	5	48	72	120
		8	72	120	
zinc plated thicklayer passivated **with** sealing ②	yes	5	96	168	120
		8	96	240	
zinc plated black passivated **with** sealing ②	yes	5	24	72	60
		8	24	96	
ZnFe black **without** sealing ②③	yes	5	24	48	100
		8	24	72	
ZnFe black **with** sealing ②	yes	5	120	196	
		8	120	240	
ZnNi black **without** sealing ②③	yes	5	24	360	180
		8	24	480	
ZnNi black **with** sealing ②	yes	5	120	600	
		8	120	720	
ZnNi transparent **without** sealing ②	yes	5	120	360	180
		8	120	600	
ZnNi transparent **with** sealing ②	yes	5	144	480	
		8	144	720	
Zinc flake coating **with** chromate (Cr-(VI))	no	5	–	480	150/180 ④
		8	–	720	
Zinc flake coating **without** chromate	yes	6	–	240	150/180 ④
		8	–	480	

① Resistance according to ISO 4042 attachment B (informative)
② Typical values for drum goods, before first assembly and without thermal processing. All surfaces with sealant are only electrically conductive to a limited extent. The friction coefficients vary and need to be inspected when undertaking actual installation work.
③ Limited abrasion resistance of the black surface
④ Temperature dependent on the product used
⑤ Reference values apply for homogeneous surfaces without mistakes

Corrosion protection: Electroplated coatings

The technical conditions of delivery ISO 4042 apply to electroplated coatings on standard and non-standard fasteners.

Example for a short description of the desired electroplated coatings:

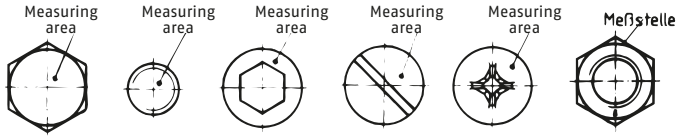
Description according to ISO 4042 – attachment B
(e.g. ISO 4014 – M 16 x 60 – 8.8 Fe/Zn5c Bk)

Fe/Zn	5	c	Bk
			Type of chromation Bk = Black
		Chromation	
	Minimum coat thickness of the coating metal 5 = 5 µm (eff. detail!)		
Type of application of the coating material, whereby Fe = iron/steel describes the basic material and Zn = Zinc, the coating material			

Description according to ISO 4042 – attachment E
(e.g. ISO 4014 – M 16 x 60 – 8.8 A2S)

A	2	S
		Degree of gloss and post-processing of the chromation S = black
	Code number for the minimum layer thickness and layer composition 2 = 5 µm (encrypted detail)	
Code letter for coating metal A = zinc		

When testing, the layer thickness at the measuring point applies.



Normal storage:

„galZn"	Layer thickness = Type (≥ M 5)
„galZnC" gelb chromat.	approx. 5 µm = A2A/A2B/A2E/A2F
„galZn 8 DiSP"	approx. 5 µm = A2C/A2G/A2L
	approx. 8 µm with thick layer passivation

a) Coating metal

A	= Zn	= Zinc
B	= Cd	= Cadmium
C	= Cu	= Copper
D	= CuZn	= Brass
E	= Ni	= Nickel
F	= NiCr	= Nickel-Chrome
G	= CuNi	= Copper-Nickel
H	= CuNiCr	= Copper-Nickel-Chrome
J	= Sn	= Tin
P	= ZnNi	= Zinc-Nickel Alloy
R	= ZnFe	= Zinc-Iron Alloy

b) Layer thickness/µm
(2 coating metals)

1	=	3	–
2	=	5	(2 + 3)
3	=	8	(3 + 5)
9	=	10	(4 + 6)
4	=	12	(4 + 8)
5	=	15	(5 + 10)
6	=	20	(8 + 12)
7	=	25	(10 + 15)
8	=	30	(12 + 18)

c) Postprocessing (passivation/chromation)

		Degree of gloss	Types of process	Colour
A	=		A	colourless
B	=	mt	B	bluish
C	=	(matt)	C	yellowish*
D	=		D	olive*
E	=		A	colourless
F	=	bk	B	bluish
G	=	(blank)	C	yellowish*
H	=		D	olive*
J	=		A	colourless
K	=	gl	B	bluish
L	=	(glossy)	C	yellowish*
M	=		D	olive*
P/U	=	any	wie B, C oder D	
R	=	mt (matt)	F/Bk	black*
S	=	bk (blank)	F/Bk	
T	=	gl (glossy)	F/Bk	

* Attention: Contains mostly chrome (VI)

The thread tolerances apply before the coatings are plated (when coating, the zero line may not be exceeded with screw threads or come up short with nut threads). Thus the screw thread with coating can be positioned between the upper size of the tolerance field and the zero line.

In the interest of threadability, the layer thickness for thread parts with a normal degree of tolerance of 6g/6H is logically limited. The empirically recommended limit values possible according to ISO 4042 can be found in Table 8. Thicker coatings require different tolerance zones with larger sizes according to DIN 13-14 (custom-made).

When inspecting the threadability, ISO 6157-1/-3 (DIN 267-19, Section 2.7) needs to be observed.

Table 8: Maximum layer thicknesses for outer threads with thread tolerance group g

Thread ∅ M	Pitch	Max. coat thickness [µm] according to ISO 4042 ① Screw length			Practice values ② Screw length	
		< 5d	5d – 10d	10d – 15d	< 5d	5d – 15d
1 – 2	0.2 – 0.4	3	3	3	–	–
2.5 – 7	0.45 – 1	5	3	3	3	(3)
8	1.25	5	5	3	5	3
10 – 16	1.5 – 2	8	5	5	5	3
18 – 22	2.5	10	8	5	(8)	5
24 – 27	3	12	8	8	8	5
30 – 33	3.5	12	10	8	8	8
36 – 52	4 – 5	15	12	10	10	8
56 – 60	5.5	15	15	12	12	10
64	6	20	15	12	12	10

① mathematical limiting value according to ISO 4042, Tab. 2
② recommended limiting value from practice in due consideration of manufacturing and procedural faults according to ISO 6157-1, -3

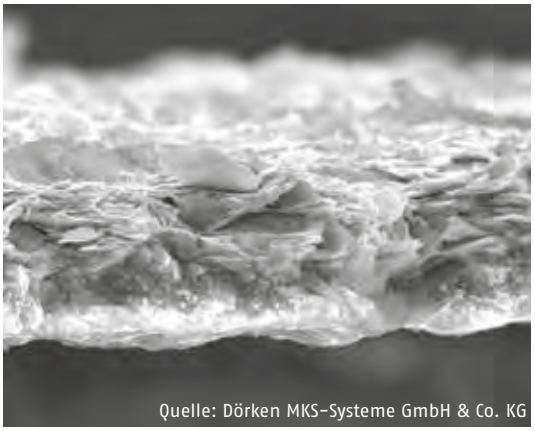
For electroplated coatings on high-strength fasteners with tensile strengths from approx. 1000 N/mm² (e.g. 10.9 ... 12.9) and hardened fasteners with hardnesses of approx. 320 HV or more, the danger of hydrogen embrittlement cannot be ruled out with any certainty, even with well-known methods. (ISO 4042 Abs.6/attachment A/ISO 15330).

(Alternative coatings ➔ Tab. 3)

Corrosion protection: Zinc flake coatings

A coating of zinc flakes is a "paint" made of many small flakes that primarily protects components of different types against corrosion. Zinc flake coatings mostly contain a combination of zinc and aluminium flakes that are linked by an inorganic matrix.

The zinc flake coatings typically consist of a base coat as per DIN EN ISO 10683 and a top coat which can be organic or inorganic in accordance with the requirements.



REM of a zinc lamella coat (20 µm)

Protective effects from 480 to more than 1,000 hours against base metal corrosion (red rust) as per DIN EN ISO 9227 can now be achieved with extremely thin layers of base and top coat of 5 – 12 µm. The key requirements on the fastening and corrosion are regulated by the standard in accordance with the designation system – this concerns:

- Corrosion resistance
- Friction coefficients

No hydrogen is generated in the coating process, hence there is no danger of hydrogen embrittlement. For this reason, the zinc flakes are also ideally suited for high strength steels in classes 10.9 and 12.9 or from 1,000 MPa.

Designation example as per DIN EN ISO 10683

Zinc flake	nc	480h	L
			Subsequently applied lubrication
		Corrosion resistance to red rust in the NSS salt spray test	
	Specification for CrVI sustainability nc ... without chromate yc... with chromate		
General designation "zinc flake" Non-electrolytically applied zinc flake coating			

(e.g. ISO 4014 – M 16 x 60 – 8.8 flZnnc-480h-L)

REYHER goods in stock

flZnnc - 480h - L with 0.09 – 0.14µm set friction coefficient as per VDA

Properties of zinc flake technology at a glance:

- No hydrogen embrittlement as a result of the application process
- Virtually all systems are now CrVI-free in accordance with RoHS and EU End-of-Life Vehicle Directives
- Extremely thin coatings of typically 5 – 12 µm
- Caution, however, with cropped parts with internal drive and small diameters ≥ M 6
- High cathodic corrosion protection in comparison to zinc plating

Attention

Please select the tightening parameter based on the set friction coefficients

see also TI-231

Further possible setting by special selection of the systems

If you have any questions in this field, please contact REYHER REM application technology

- Pleasing appearance and possibility of colouring scheme through top coats (silver and black as standard)
- Friction values for threaded parts can be set accordingly for the majority of customer requirements
- Low burn-in temperatures possible (from 90 °C standard to 320 °C)
- Generally electrically conductive, but also insulating through special top coats and for reducing contact corrosion
- Excellent chemical resistance of special systems
- Technical application possibilities also as rack or spray process

Table 9: Product overview

Manufacturer	Product examples	
MAGNI EUROP	Basecoat:	MAGNI FLAKE
	Topcoat:	MAGNI TOP
ATOTECH	Basecoat:	ZINKTEK
	Topcoat:	TECHSEAL
DÖRKEN	Basecoat:	DELTA-PROTEKT®
	Topcoat:	DELTA-SEAL®, DELTACOLL®
NOF	Basecoat:	GEOMET
	Topcoat:	PLUS L®, PLUS VL®

Corrosion protection: Hot dip galvanized fasteners

For hot dip galvanized fasteners, the technical conditions of delivery apply according to ISO 10684.

The minimum layer thickness of at least 40 µm at the point of measurement stipulated by this standard requires that the thread dimensions be adjusted (see Table 10).

The undersize is usually to be found in the screw thread with the tolerance group 6az so that the hot dip galvanized screw thread does not exceed the (ISO-compatible) zero line (h tolerance). These screws are also identified with a "U". Rethreading the screw is not permitted.

For high-strength structural bolting assemblies-system HV-according to EN 14399-4, a non-rethreaded screw (g tolerance) is coated which means that the screw thread with hot dip galvanization is above the zero line. In this case the necessary oversize is in the nut thread (= 6 az).

The nut thread is later cut into the hot dip galvanized castings. The corrosion protection of the bare nut thread comes from the zinc coating of the screw thread with remote cathodic protection.

Table 10: Basic measurements of the screw thread before hot dip galvanization – tolerance group 6az according to ISO 10684/ISO 965-4

Thread	M 6*	M 8	M 10	M 12	M 14 M 16	M 18 M 22	M 24 M 27	M 30 M 33	M 36 M 39	M 42 M 45	M 48 M 52	M 56 M 60	M 64
Upper limit dimension es [µm]	-290	-295	-330	-335	-340	-350	-360	-370	-380	-390	-400	-410	-420

* not regulated by standards

After hot dip galvanization, the requirements of ISO 898-1 and ISO 898-2 apply to hot dip galvanized screws and nuts ≥ M 12. For thread sizes M 8 and M 10, reduced resilience applies according to ISO 10684.

Table 11: Min. tensile strength [N] for screws of the 6az tolerance

Property class Marking	4.6 4.6 U	5.6 5.6 U	8.8 8.8 U	10.9 10.9 U
M 6*	7 075	8 844	14 150	17 687
M 8	13 300	16 600	26 600	34 500
M 10	21 400	26 800	42 900	55 700
M 12	33 700	42 200	67 400	87 700
M 16	62 800	78 500	125 000	163 000
M 20	98 000	122 000	203 000	255 000
M 24	141 000	176 000	293 000	367 000
M 30	224 000	280 000	466 000	583 000
M 36	327 000	408 000	678 000	850 000

* not regulated by standards, reference values

Table 12: Proof loads [N] for nuts of the tolerance class 6az

Property class Marking	5 5 Z	6 6 Z	8 8 Z	10 10 Z
M 6*	7 969	9 962	15 934	19 923
M 8	17 300	20 000	25 500	30 600
M 10	28 600	33 000	42 200	50 400
M 12	51 400	59 000	74 200	88 500
M 16	95 800	109 900	138 200	164 900
M 20	154 400	176 400	225 400	259 700
M 24	222 400	254 200	324 800	374 200
M 30	353 400	403 900	516 100	594 700
M 36	514 700	588 200	751 600	866 000

* not regulated by standards, reference values

When assembly hot dip galvanized screws and nuts, especially with additional lubrication of the threading, different friction coefficients and tightening torques need to be reckoned with. EN 1993-1-8 NA need to be considered for hot dip galvanized high-strength structural bolting assemblies! (➔ TI-attachment)

The zinc coating may give a small excess to the outer measurements (head, shaft).

Articles with hollow sections (e.g. keys for hexagon socket screws, cap nuts, etc.) are not suitable for hot dip galvanizing.

The grey appearance of the hot dip galvanizing is dependent on the material and not characteristic for the quality of the corrosion protection. White rust and/or whitish to dark corrosion points (zinc-oxide) which can occur after hot dip galvanization, e.g. through dampness, do not usually impair the corrosion protection and no reason for rejection (➔ ISO 1461, Section 6.1).

A certain surface rawness and small dents in the thread tips are dependent on the procedure. For this reason, an assembly tool may be required for initial screwing.

Properties: Steel screws, bolts and studs with metric thread

The mechanical properties of steel metric screws as well as their quality inspection and marking are set in ISO 898-1.

Designation system for the property classes
The most important mechanical properties for steel screws are given a two-number combination name – here's an example:

The first number gives 1/100 of the **minimum tensile strength** in N/mm² stress area.
Tensile strength 8 x 100 = 800 N/mm².

← **8.8** →

The second number specifies the 10-fold ratio of the lower yield strength limit (R_{el} or $Rp_{0.2}$) for nominal tensile strength R_m (yield strength ratio).

Multiplying the two numbers results in 1/10 **of the minimum yield strength** in N/mm².
Stress at 0.2% non-proportional elongation 8 x 8 x 10 = 640 N/mm².

Table 1: Mechanical properties of screws, bolts and studs

Properties	Property classes		3.6	4.6	4.8	5.6	5.8	6.8	8.8 ≤ M 16	8.8 >M 16*	10.9	12.9
Tensile strength** R_m in N/mm²	Nominal value		300	400		500		600	800		1000	1200
	min.		330	400	420	500	520	600	800	830	1040	1220
Yield stress** R_{el} in N/mm²	Nominal value		180	240	320	300	400	480	–	–	–	–
	min.		190	240	340	300	420	480	–	–	–	–
Stress at 0,2 % non-proportional elongation** $R_{p\,0,2}$ in N/mm²	Nominal value		–						640	640	900	1080
	min.		–						640	660	940	1100
Lower yield stress R_{el} / **Stress at 0.2% non-proportional elongation at higher temperatures** in N/mm² (ISO 898-1 Issue 11/99, Tab. A1)	Continuous use at increased temperatures can lead to significant tensile relaxation.	+ 100 °C	–	–	–	270	–	–	590		875	1020
		+ 200 °C	–	–	–	230	–	–	540		790	925
		+ 250 °C	–	–	–	215	–	–	510		745	875
		+ 300 °C	–	–	–	195	–	–	480		705	825
Elongation after fracture A in %**		min.	25	22	–	20	–	–	12		9	8
Vickers hardness (F ≤ 98 N)**		HV min.-max.	95-220	120-220	130-220	155-220	160-220	190-250	250-320	255-335	320-380	385-435
		***	250	250	250	250	250					
Brinell hardness (F = 30 D2)**		HB min.-max.	90-209	114-209	124-209	147-209	152-209	181-238	238-304	242-318	304-361	366-414
		***	238	238	238	238	238					
Rockwell hHardness**		HRB min.-max.	52-95	67-95	71-95	79-95	82-95	89-99,5				
		***	99.5	99.5	99.5	99.5	99.5	–	–	–	–	–
		HRC min.-max.	–	–	–	–	–	–	22-32	23-34	32-39	39-44

* construction steel bolts from M 12 ** values apply at room temperature approx. +20 °C *** max. value at the screw end

Marking screws, bolts and studs

According to the standard, fasteners from a thread diameter of M 5 onward are to be marked with the manufacturer's identification marks and the property class marking as follows*:

① ② **Hexagon and hexalobular head screws and bolts** in all property classes. The marking shall be made preferably on the top of the head by indenting or embossing, or on the side of the head by indenting.

③ ④ **Hexagon and hexalobular socket head cap screws** in all property classes. The marking shall be made preferably on the side of the head by indenting, or on the top of the head by indenting or embossing.

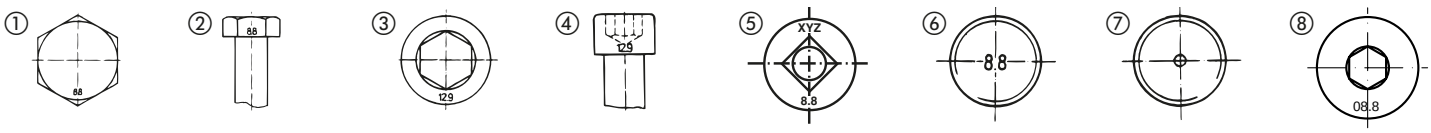
⑤ **Cup head square neck bolts** in all property classes. The marking shall be made on the head by indenting or embossing.

⑥ ⑦ **Studs** 5.6 of property classes 5.6, 8.8, 9.8, 10.9 and 12.9. The marking shall be on the unthreaded part of the stud. If this is not possible, marking of the property class shall be on the nut end, and the manufacturer's identification mark may be omitted. Alternative marking symbols are 5.6 = –, 8.8 = p, for 10.9 = l and for 12.9 = g

⑧ **Marking of fasteners which have reduced loadability**, ike, hexagon socket head cap screws with low head for example (DIN 7984): Fasteners shall be marked with the property class, except that the marking symbol for property class shall be preceded by the digit "0" (e.g. "08.8"). The requirement to add a marking is regulated in the product standards. Other screws with reduced loadability are, for example, hexagon socket countersunk head screws acc. to ISO 10642.

Threaded rods acc. to DIN 976 (DIN 975) are marked with the property class from 5.6. The manufacturer's identification is not required. Alternativly, the following colour marking is allowed:

Property class/ Material	Colour
steel/4.6/4.8/5.8/brass/plastic	none
5.6	brown
5.8	blue
8.8	yellow
10.9	white
12.9	black
A2-70	green
A4-70	red



* if there is a lack of space, a marking based on the clock system can be used (→ analogue Table 3)

Properties: Steel nuts with metric thread

The DIN product and function standards for nuts are being converted to ISO standards. Accordingly, during the transition period standards for previous DIN and new ISO nut designs shall be on the market together.

Information about standards conversion, "Standards conversion DIN ➔ ISO", see TI-7:

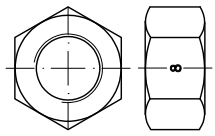
The properties of nuts with coarse threads is specified in ISO 898-2 (EN 20898-2/DIN 267-4) and for nuts with fine threads in ISO 898-6. The loadability of a nut is set by the hardness & nut height and defined by the proof load.
It is regulated that specific nut types must be marked with the property class.
The type of marking as well as the place where it needs to appear is prescribed in the standards ISO 898-2, DIN 267-24 and DIN 267-13, among others.
The key number specifies a direct assignment of property classes of the screws, bolts and studs (➔ Table 2).

Nuts with nominal height ≥ 0,8 D

The first number of the property class of the screw/bolt/stud is the assignment of the property class of the nut. For nuts with a nominal height of ~0.8 D, e.g. nuts according to DIN 555 and DIN 934, the marking is a number, for instance (8 = 1/100 of the proof stress in N/mm²). The marking of two vertical bars (| |) refers to the applicable proof loads according to DIN 267-4.

For nuts with a nominal height of ≥ 0.8 D, e.g. nuts according to ISO 4032, ISO 8673, the marking is a number, for instance (8 = 1/100 of the proof stress in N/mm²), without marking of two vertical bars (| |), here the proof loads apply according to ISO 898-2.

Marking: Hexagon head nuts of this group are to be marked from a thread diameter of ≥ M 5 with the manufacturer's identification mark and the property class in accordance with Table 2 or Table 3.



8
8

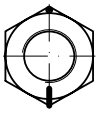
Table 2: Assignment of the nut property classes to the screw property classes

Property class of the nut	Associated screw/bolt/stud		Nut – Thread range	
	Property class	Thread range	Type 1[1]	Type 2[1]
4	4.6 4.8	> M 16	> M 16	
5	4.6 4.8 5.6 5.8	≤ M 16 ≤ M 39	≤ M 39	
6	6.8	≤ M 39	≤ M 39	
8	8.8	≤ M 39	≤ M 39	> M 16 ≤ M 39
10	10.9	≤ M 39	≤ M 39	
12	12.9	≤ M 39	≤ M 16	≤ M 39

1) The type determines the necessary proof loads in ISO 898-2.

Note in accordance with ISO 898-2: In general, nuts from the higher property class can be used instead of nuts from the lower property class. This is recommended for a screw-nut fastening with loads above the yield stress or above the proof stress.

Table 3: Alternative marking of the property class with symbols (clock system)

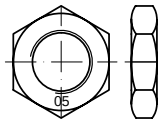
Property class	4	5	6	8	10	12 [2]
Marking						

2) The marking placement cannot be replaced by the manufacturer's identification mark

Nuts with nominal height ≥ 0,5 D < 0,8 D

For nuts with a nominal height of ≥ 0,5 D < 0,8 D, e.g. nuts according to ISO 4035, ISO 8675 and DIN 439-2 the marking is a number prefixed with "0", e.g. (05 = 1/100 of the proof stress in N/mm²).
The prefixed 0 shows that nuts from this group cannot or can only limitedly take on the loads of a screw due to the low nut height.

Marking: Hexagon head nuts of this group are to be marked from a thread diameter of ≥ M 5 with the manufacturer's identification mark and the property class.



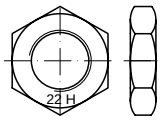
05

Nuts with nominal height < 0,5 D

For nuts with nominal height < 0,5 D, for example, nuts according to DIN 936, there is a marking of 1/10 of the minimum hardness according to Vickers, e.g. 22 H (= 220 HV).

Nuts for easy fastenings without specified proof load values are included in this group.
The hardness classes for these nuts are specified in DIN 267-24.

Marking: Nuts of the hardness class 22 H are to be marked with a hardness class if the thread diameter ≥ M 5.



22 H

Properties for fasteners made of steel with inch thread as per ASME standards

The properties of fasteners as per American ASME standards are regulated in the following standards among others:

- Hexagon head and square head screws: ASME B18.2.1-2010
- Hexagon socket head cap screws: ASME B18.3-2012
- Nuts: ASME B18.2.2-2010
- Plain washers: ASME B18.22.1-1965

The property classes/mechanical properties for these fasteners are regulated in different norms and standards that are partly included in the product standards. A clear and strict separation as in the field of DIN/EN/ISO standards in product and function standards is not present in the field of ASME standards.

Properties of hexagon head screws as per ASME B18.2.1-2010 Table 6

The ASME B18.2.1-2010 standard regulates the properties of hexagon head and square head screws with inch thread. The standard specifies 8 different product geometries here. An important difference is the difference between so-called "bolts" and "screws". Unfortunately there is no generally valid definition of "bolts" and "screws". In the area of hexagon head screws, "bolts" are always screws without a pronounced washer face; in contrast "screws" always have a washer face. The properties of hex cap screws (ASME B18.2.1-2010 Table 6) are dealt with in more detail in the following. There is no difference between partial and full thread in this standard; screws up to a specific length are supplied with full thread, longer products with partial thread.

Table 4: Overview of full thread/partial thread as per ASME B18.2.1-2010

Diameter in inches	Dimensions with full thread (R 83933)	Dimensions with partial thread (R 83931)	Minimum and maximum length of partial thread in inch	
	Length to in inch	Length from to in inch	min.	max,
1/2	1 1/8	1 1/4 to 6	3/4	1,000
5/16	1 1/4	1 5/16 to 6	7/8	1,153
3/8	1 3/8	1 1/2 to 6	1	1,312
7/16	1 5/8	1 3/4 to 6	1 1/8	1,482
1/2	1 3/4	1 7/8 to 6	1 1/4	1,635
9/16	2	2 1/8 to 6	1 3/8	1,792
5/8	2 1/8	2 1/4 to 6	1 1/2	1,955
3/4	2 1/2	2 5/8 to 6	1 3/4	2,250
7/8	2 3/4	2 7/8 to 6	2	2,556
1	3	3 1/8 to 6	2 1/4	2,875
1 1/8	3 1/2	3 5/8 to 6	2 1/2	3,214
1 1/4	3 3/4	3 7/8 to 6	2 3/4	3,464
1 3/8	4 1/4	4 5/16 to 6	3	3,833
1 1/2	4 1/2	4 5/8 to 6	3 1/4	4,083
1 3/4	5 1/8	5 1/4 to 6	3 3/4	4,75
2	5 3/4	5 7/8 to 6	4 1/4	5,361
2 1/4	6 1/2	6 5/8 to 12	5	5,861
2 1/2	7 1/8	7 1/4 to 12	5 1/2	6,500
2 3/4	7 5/8	7 3/4 to 12	5 3/4	7,000
3	8 1/8	8 1/4 to 12	6 1/2	7,500

REYHER nevertheless offers a separation here, item 83931 corresponds to the longer dimensions with partial thread and item 83933 corresponds to the shorter dimensions with full thread.

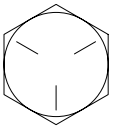
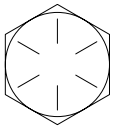
The thread tolerances for inch screws are regulated in the ASME B18.1.1 standard where the following tolerances apply:

- Tolerance limit 2A prior to galvanic coating,
- Tolerance limit 3A (go-master ring) and 2A (no-go gauge) after the coating

unless otherwise agreed.

The mechanical properties for screws as per ASME B18.2.1 are defined in accordance with the SAE J429 standard (see Table 5). Strengths are normally specified there in psi (pound-force per square inch), 1000 psi = 6,895 N/mm².

Table 5: Mechanical properties of hexagon head screws as per ASME B18.2.1/SAE J429

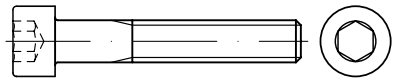
Property class	Grade 5 (~ 8.8)		Grade 8 (~ 10.9)
Properties	Ø > ¼ – 1	Ø > 1 – 1½	Ø > ¼ – 1
Tensile strength N/mm²	827	724	1034
psi	120.000	105.000	150.000
0.2 % yield strength N/mm²	634	558	896
psi	92.000	81.000	130.000
Elongation at fracture in %	Min. 14%		Min. 12%
Rockwell core hardness in HRC min.-max.	25 – 34	19 – 30	33 – 39
Marking of the property class			

Screws as per ASME B18.2.1 should be marked with the manufacturer's mark and the property class as per SAE J429.

Properties for fasteners made of steel with inch thread as per ASME standards

Properties of hexagon socket head cap screws as per ASME B18.3-2012 Table 1

The ASME B18.3-2012 standard regulates the properties of hexagon socket head cap screws with inch thread. The 1936 version of the standard was thoroughly revised in 1960. The head geometry had also changed. The goods supplied by REYHER comply fully with the "1960 series"; the "1936 series" can be obtained on request. The ASME B18.3 standard specifies 5 different product geometries here (including countersunk head and lower head height). The hexagon socket head cap screws (comparable to DIN 912/ISO 4762) are described in detail in the following.



The thread tolerances for inch screws are regulated in the ASME B18.1.1 standard where the following tolerances apply:

- Up to and including 1 inch: Class 3A,
- Above 1 inch: Class 2A.

The mechanical properties for screws as per ASME B18.3-2012 Table 1 are only defined in accordance with the ASTM A574 standard (see Table 6). Strengths are normally specified there in psi (pound-force per square inch), 1000 psi = 6.895 N/mm².

These screws should only be marked with the manufacturer's mark as only one property class is provided for this product. The head of the hexagon socket head cap screw can be knurled at the choice of the manufacturer. A galvanic coating should be avoided due to the high tensile strength and the associated danger of hydrogen embrittlement.

Table 6: Mechanical properties of hexagon socket head cap screws as per ASME B18.3/ASTM A574

Properties	Steel as per ASTM A574 (~ 12.9)	
	Ø ≤ ½	Ø > ½
Tensile strength N/mm² psi	 1241 180.000	 1172 170.000
0.2 % yield strength N/mm² psi	 1054 153.000	
Elongation at fracture in %	Min. 10%	
Rockwell core hardness in HRC min.-max.	39 - 45	37 - 45

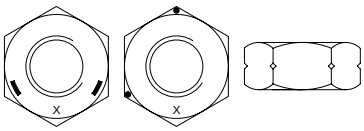
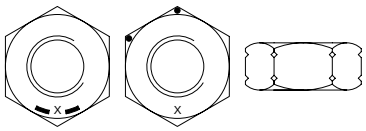
Properties of nuts as per ASME B18.2.2-2010 Table 7

The ASME B18.2.2 standard regulates the properties of nuts with inch thread. On the other hand, this standard specifies 14 different product types, thus "hex nuts" are the products that are listed as item 83934 in this catalogue.

The thread tolerances for nuts are also regulated in the ASME B18.1.1 standard; the nuts are supplied in tolerance class 2B unless agreed otherwise. These nuts can be screwed together with zinc plated and non zinc plated products.

The mechanical properties for nuts as per ASME B18.2.2 are defined in accordance with the SAE J995 standard (see Table 7). Strengths are normally specified there in psi (pound-force per square inch), 1000 psi = 6.895 N/mm².

Table 7: Mechanical properties of "hex nuts" as per ASME B18.2.2/SAE J 995

Property class Properties	Grade 5 (~ 8)		Grade 8 (~ 10)		
	Ø > ¼ – 1 UNC	Ø > 1 – 1½ UNC	Ø > ¼ – ⅝ UNC	Ø > ⅝ – 1" UNC	Ø > 1 – 1½ UNC
Tension under test force N/mm² psi	 827 120.000	 723 105.000	 1034 150.000		
Rockwell core hardness in HRC min.-max.	≤ 32		24 - 32	26 - 34	26 - 36
Marking of the property class					

Nuts as per ASME B18.2.2 should be marked with the manufacturer's mark and the property class.

Properties of washers as per ASME B18.22.1-1965 Type A

The ASME B18.22.1 standard regulates the properties of washers for screws with inch thread. The standard essentially differentiates 2 versions: "Narrow " and "Wide". The difference between the two versions is in the larger outside diameter for the washers of the "wide" version (see table of dimension pages).

There are no requirements on mechanical properties for the "plain" version washers; they should only be produced from steel materials. An overview of washer properties is given in Table 8.

Table 8: Mechanical properties of washers as per ASME B18.22.1/ASTM F436

Properties	Plain washers	Hardened washers as per ASTM F436		
	ASME B18.22.1	Hardened, bare or ZP	Hardened, HDG	Case hardened
Rockwell core hardness in HRC min.-max.	No specification	38 - 45	26 - 45	Min. 30 HRC
Case hardness depth/case hardness HR15N - Bare/ZP - HDG				 0.015"/79 – 83 0.015"/73 - 83

The mechanical properties of fasteners made from corrosin-resistant stainless steel as well as their quality inspection and marking are set in ISO 3506.

Table 9: Mechanical properties for fasteners of the steel groups A 1 – A 5 at approx. + 20 °C

Property class		Diameter range	Screws				Nuts	
			Tensile strength Rm N/mm² min.	stress at 0.2% non-proportional elongation N/mm² min.		Elongation after fracture A mm min.	Proof stress Sp/N/mm² min. m ≥ 0,8 d	Proof stress Sp/N/mm² min. 0,5 d ≤ m < 0,8 d
50	soft (turned)	≤ M 39	500	210	Lower yield strength R_{el} or stress at 0.2% elogation at 100 °C = 85% at 200 °C = 80% at 300 °C = 75% at 400 °C = 70%	0.6 d	500	250 (Prop. cl. – 025)
70	cold-worked	≤ M 24	700	450		0.4 d	700	350 (Prop. cl. – 035)
80	high strength	≤ M 24	800	600		0.3 d	800	400 (Prop. cl. – 040)

For hexagon head, hexagon/hexalobular socket head cap and slotted/cross recessed screws, property class 70 is the usual.
Fasteners made from stainless steels are tough and well suited for sub-zero temperatures (screws with head as low as –60 °C, screws without head as low as –200 °C according to DIN 267-13).

Austenitic materials cannot be hardened with heat treatment – Fasteners from austenitic materials (A 1 – A 5) have a different assembly behaviour than quenched and tempered steel fasteners. Improper assembly can lead to failure (cold shut/fretting/breakage).

Magnetic properties: The magnetic properties are described by their permeability μ_{π}. Fasteners made from stainless steels are generally not magnetisable – magnetisation can occur through the manufacturing process: when particular requirements of magnetisability are set, this needs to be arranged accordingly.

A 2: $\mu_{\pi} \approx 1{,}8$
A 4: $\mu_{\pi} \approx 1{,}015$
A 4L: $\mu_{\pi} \approx 1{,}005$

Extract from ISO 3506-1 attachment H

Finish of fasteners made from stainless steels shall be supplied clean and bright.
(passivation ➔ ISO 16048)

Marking: Hexagon head screws/bolts, hexagon/hexalobular socket head cap screws, studs and nuts from a nominal thread diameter of ≥ M 5 (studs from ≥ M 6) are to be marked with the manufacturer's identification mark, the steel group and the property class.

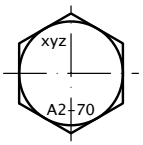


Table 10: Chemical composition in % acc. to ISO 3506/EN 10088-3.

Steel group	Usual materials for screws/bolts/studs/nuts		Cr	Ni	Mo	C	Si	Mn	P	S	Other additions
	Material No. (AISI-No.)	Material designation acc. EN 10088-3/ DIN 17006. 17440				max,	max.	max.	max,	max,	(ISO 3506, Tab. 1)
A 1	1.4305 (303)	X8CrNiS 18-9	16-19	5-10	0.7	0,12	1.0	6.5	0,20	0,15-0,35	Cu, – Sulphur may be replaced by selenium
A 2	1.4301 (304) 1.4303 (305)	X5CrNi 18-10 X4CrNi 18-12	15-20	8-19	*	0,10	1.0	2.0	0,05	0,03	* Mo permitted
A 3	1.4541 (321)	X6CrNiTi 18-10	17-19	9-12	*	0,08	1.0	2.0	0,045	0,03	* Mo permitted - must contain Ti, Nb or Ta for stabilisation
A 4	1.4401 (316)	X5CrNiMo 17-12-2	16-18.5	10-15	2.0-3.0	0,08	1.0	2.0	0,045	0,03	
A 5	1.4571 (316 Ti)	X6CrNiMoTi 17-12-2	16-18.5	10.5-14	2.0-3.0	0,08	1.0	2.0	0,0450	0,03	Must contain Ti, Nb or Ta for stabilisation
A –	1.4439	X2CrNiMoN 17-13-5	16.5-18.5	12.5-14.5	4.0-5.0	0,03	1.0	2.0	0,045	0,015	Austenitic/Austenitic-ferritic steels with particular resistance against chloride-induced stress corrosion cracking e.g. in indoor swimming pools
A –	1.4539	X1NiCrMoCu 25-20-5	19-21	24-26	4.0-5.0	0,02	0.7	2.0	0,03	0,01	
A –	1.4529	X1NiCrMoCuN 25-20-7	19 21	24-26	6.0-7.0	0,02	0.5	1.0	0,03	0,01	
A/F – FA	1.4462	X2CrNiMoN 22-5-3	21-23	4.5-6.5	2.5-3.5	0,03	1.0	2.0	0,035	0,015	
C –	1.4034 (420)	X46Cr 13	12.5-14.5			0,43-0,50	1.0	1.0	0,040	0,03	Materials for spring parts – e.g. acc. to DIN 127, 128, 471, 472, 2093, 6797, 6798, 6799, 7967, 7980 **(Caution: Reduced spring load as opposed to spring steel)**
C –	1.4122	X39CrMo 17-1	15.5-17.5	≤ 1.0	0.80-1.30	0,33-0,45	1.0	1.5	0,040	0,03	
A –	1.4310 (301)	X10CrNi 18-8	16-18	6-9.5	≤ 0.8	0,05-0,15	2.0	2.0	0,045	0,015	
C –	1.4568 (301)	X7GNiAl 17-7	16-18	6.5-7.8		0,09	0.7	1.0	0,040	0,015	Al 0.70-1.5

Properties of high-strength fasteners made of stainless steel BUMAX®

The combination of high strength and high corrosion resistance continually constitutes a challenge for fastenings. To date, self-sacrificing anti-corrosive coatings are used for this that last between 10 and 20 years depending on ambient conditions and continuously reach the limits in terms of usability.

With BUMAX 88 and BUMAX 109, screws and nuts are now available which combine both requirements with one another without the need to compromise. Even more is also offered.

Fasteners made of BUMAX 88 and BUMAX 109 are suitable for a temperature range from –196 °C to +600 °C. At low temperatures, a notched impact strength of 29.5 J is still achieved. At temperatures from +600 °C, the 0.2 % minimum yield strength is reduced by not more than 30 % relative to the value at room temperature. This results in a wide field of applications, especially for applications that are subject to large temperature fluctuations.

The low permeability means that use in research and high-end industries is also possible.

In contrast to commercially available fasteners from A 2 and A 4, lubricating the fasteners makes it possible to apply specific preload forces in the connection using the tightening torque method.

As a further add-on, screws and nuts made of BUMAX 88 are used in a diameter range of M 6 – M 36 and a minimum length of 3xd in the pressure vessel area as per the 97/23/EC Pressure Equipment Directive. The suitability is confirmed by test certificate 3.1. The requirements are specified in an individual appraisal by TÜV Nord (PMA no. 1326W101430_rev_01).

Advantages of fasteners made of BUMAX 88/BUMAX 109 at a glance

- Load-bearing capacity as for screws of property classes 8.8 and 10.9
- Corrosion resistance greater than A4
- Use in a wide temperature range of –196 °C to +600 °C
- Lower permeability (magnetism) than A2 and A4
- Use in pressure vessels as per Pressure Equipment Directive
- Defined tightening torques and preload forces due to adjusted friction coefficients

Table 11: Mechanical properties

Designation	Property class	Ø range	Tensile strength R_m [N/mm²]	0.2% yield strength $R_{p\,0,2}$ [N/mm²)	Breakage elongation
BUMAX 88	80	≤ M 36	800	640	0.3 x d
BUMAX 88, PED	80	M 6 – M 30	800	640	0.4 x d
BUMAX 109	100	≤ M 12	1000	900	0.2 x d
BUMAX 109	100	M 14 – M 20	1000	800	0.2 x d

Table 12: Mechanical properties

Designation	C max.	Cr	Ni	Mo
BUMAX 88	0.03	16.5 – 18.5	11.0 – 14.5	2.5 – 3.0
BUMAX 109	0.03	16.5 – 18.5	11.0 – 14.5	2.5 – 3.0

Table 13: Notched impact strength

Designation	Notched impact strength in Joule [J]				
	20 °C	–50 °C	–100 °C	–140 °C	–196 °C
BUMAX 88	79.5	74.5	69.0	60.0	47.4
BUMAX 109	36.0	34.0	32.9	31.0	29.5

Table 14: Mechanical properties at elevated temperatures

Designation	Remaining yield strength $Rp_{0.2}$ in % relative to $Rp_{0.2}$ at room temperature					
	100 °C	200 °C	300 °C	400 °C	500 °C	600 °C
BUMAX 88	90	90	85	80	75	70
BUMAX 109	95	95	95	90	90	85

Table 15: Permeability

Designation	$R_{p\,0,2}$ N/mm²	Maximum relative permeability k_m
BUMAX 88	640	1006
BUMAX 109	900	1007

Chemical resistance of stainless steel fasteners A 2 and A 4

In practice, the resistance specifications can change; the pure agents rarely have an effect, admixtures often strengthen or weaken the attack. Residue on the part can also change the conditions. The safest approach is always to check the operating conditions.

Table 16: Extract from the resistance list
(Further information on request and from www.Reyher.de)

Agents	Degree of resistance	
	A 2	A 4
Acetic acid, cold	1	1
Acetone, all conc.	1	1
Al (10%), cold	1	1
Alum saturated solution, boiling	3	1
Aluminium acetate	1	1
Aluminium saturated, cold	2	1
Aluminium sulphate (10%), cold	1	1
Ammonium carbonate	1	1
Ammonium nitrate	1	1
Ammonium sulphate, cold	1	1
Ammonium sulphite	1	1
Aniline	1	1
Azotic acid up to 60%, cold	1	1
Beer	1	1
Benzine	1	1
Benzoic acid	1	1
Benzol	1	1
Boric acid	1	1
Butyl acetate	1	1
Calcium bisulphite, boiling	3	1
Calcium bisulphite, cold	1	1
Calcium hydroxyde (10–50%), cold	1	1
Calcium nitrate	1	1
Camphor	1	1
Carbon dioxide	1	1
Carbon disulphide	1	1
Carbon tetrachloride, waterless	1	1
Chlorine, dry	1	1
Chloroform, waterless	1	1
Chromic acid (10%), cold	1	1
Chromic boiling	2	2
Citric acid 50%, boiling	3	2
Citric acid saturated, cold	1	1
Copper acetate	1	1
Copper arsenite	1	1
Copper nitrate	1	1
Copper sulphate	1	1

Agents	Degree of resistance	
	A 2	A 4
Creosote	1	1
Developer (photo)	1	1
Ethyl acetate	1	1
Ethyl alcohol, all conc.	1	1
Ethylether, boiling	1	1
Fatty acid, 150 °C	1	1
Formalin	1	1
Formic acid, cold	1	1
Fruit juices	1	1
Glue oil	1	1
Glycerine	1	1
Hydrogen cyanide	1	1
Hydrogen peroxide	1	1
Hydrogen sulphide	1	1
Iron nitrate	1	1
Iron sulphate	1	1
Lactic acid (80%), boiling	3	2
Lactic acid all conc., cold	1	1
Latex	1	1
Lime milk	1	1
Liquid ammonia	1	1
Liquid gases (propane, butane)	1	1
Magnesium sulphate	1	1
Maleic acid	1	1
Mercury	1	1
Mercury amalgam	1	1
Mercury nitrate	1	1
Methyl alcohol	1	1
Molasses	1	1
Nickel sulphate	1	1
Nitrous acid	2	1
Oils (lubricating and vegetable oils)	1	1
Oxalic acid, 5%, cold	1	1
Phenol, boiling	2	1
Phosphoric acid up to 70%, cold	1	1
Photograph. Developer/Fixer	1	1
Potash	1	1

Agents	Degree of resistance	
	A 2	A 4
Potassium bichromate (25%)	1	1
Potassium bitartrate, cold	1	1
Potassium chlorate	1	1
Potassium cyanide	1	1
Potassium hydroxyde (caustic potash)	1	1
Potassium nitrate	1	1
Potassium permanganate	1	1
Potassium sulphate	1	1
Salicylic acid	1	1
Salt water, 20 °C	1L	1L
Soap	1	1
Sodium aluminate	1	1
Sodium bisulphate, boiling	1	1
Sodium bisulphide, boiling	1	1
Sodium carbonate (soda)	1	1
Sodium hydroxide, cold	1	1
Sodium nitrate	1	1
Sodium perchlorate	1	1
Sodium phosphate	1	1
Sodium silicate	1	1
Sodium sulphide	1	1
Sodium sulphite	1	1
Sulphur (molten)	1	1
Sulphur chloride, waterless	1	1
Sulphur dioxide	1	1
Sulphuric acids, saturated, 20 °C	1	1
Tannic acid	1	1
Tar	1	1
Tartaric acid	1	1
Treacle	1	1
Trichloroethylene, waterless	1	1
Viscose	1	1
Waste waters without acid sulphur	1	1
Wine	1	1
Zinc sulphate	1	1

1 – resistant (substance loss less than 0.1 g/m² x h)
2 – conditionally resistant (substance loss of 0.1 to 1.0 g/m² x h)
3 – not very resistant (substance loss of 1.0 to 10.0 g/m² x h)
4 – not resistant (substance loss over 10.1 g/m² x h)
L – danger of hole, crack or stress corrosion

Fasteners in indoor swimming pool environments Field of application	Materials
Non-loaded fasteners with occasional refilling/areas which come into contact with pool water which have to be cleaned regularly (e.g. section at the side of the pool, decorative linings)	1.4401 1.4404 1.4571
Non-loaded fasteners with occasional refilling/areas which come into contact with pool water which do not have to be cleaned regularly (e.g. overflow basins, steel gratings and slides)	1.4439 1.4539 1.4462
Non-loaded fasteners with occasional refilling/areas which come into contact with pool water which do not have to be cleaned regularly (e.g. overflow basins, steel gratings and slides)	1.4539* 1.4529* 1.4565* 1.4547*

* general technical approval Z-30.3-6 (DIBT/Germany)

On the blue catalogue pages: The large REYHER article range of stainless steels.

Properties: Fasteners from non-ferrous materials

The mechanical properties of fasteners from non-ferrous materials as well as their quality inspection and marking are set in ISO 8839.

Table 17: Metallic non-ferrous materials (Cu, MS, Al, Ti) for fasteners and special parts
(Extract from ISO 8839/DIN 267-18)

Material Marking	Material code	Material no.	Tensile strength R_m N/mm² min.	Stress at 0.2% non-proportional elongation N/mm² min.	Elongation after fracture A % min.	Notes
CU 1	E-Cu57	2.0060	240	160	14	–
CU 2	CuZn37 (MS 63)	2.0321	370-440	250-340	19-11	Storage of compressed parts
CU 3	CuZn39Pb3 (MS 58)	2.0401	370-440	250-340	19-11	Storage of turned parts
CU 4	CuSn6	2.1020	400-470	200-340	33-32	–
CU 5	CuNi1, 5Si	2.0853	590	540	12	saltwater-proof
CU 6	CuZn40MnPb	2.0580	440	180	18	–
CU 7	CuAl10Ni	2.0966	640	270	15	–
AL 1	AlMg3	3.3535	250-270	180-230	4-3	conditionally saltwater-proof
AL 2	AlMg5	3.3555	280-310	200	6	saltwater-proof
AL 3	AlMgSi1	3.2315	310	250	10-7	–
AL 4	AlCuMg1	3.1325	380-420	260-290	10-6	–
AL 5	AlZnMgCu0,5	3.4345	460	380	7	–
AL 6	AlZnMgCu1,5	3.4365	510	440	7	–
Ti 1	Titanium (Titanium 99.5)	3.7025	290	180	30	Storage (➔ yellow catalogue pages)
Ti 2	TiAl6V4	3.7165	890	820	10	–

Table 18: Saltwater-proof copper alloys for fasteners and special parts
(Extract from DIN 17660, 17664, 17666)

Description	Material no.	Composition approx. %	Tensile strength Rm approx N/mm²	Stress at 0.2% nonproportional elongation $R_{p\,0,2}$ approx N/mm²	Elongation after fracture As approx %
SO-MS 59	2.0540	Cu 59/Zn 36/Ni 2/Mn 1,5	500	300	18
RESISTIN	–	Cu 85/Mn 14/Fe 1	520	400	17-12
CuNiSi	2.0853	Cu 98/Ni 1,5/Si 0,5	590	540	10
CUNIFER	2.0872	Cu 88/Ni 10/Fe 1/Mn 0,5	280-360	100-250	30-10
CUNIFER	2.0882	Cu 69/Ni 30/Fe 0,5/Mn 0,5	340-420	120-300	35-14

Table 19: Plastic materials (thermoplastics) fasteners and special parts
(General values – Further details – Spec. coarse tolerances ➔ VDI 2544 or on request)

Material code	Material group (trade name)	Density g/cm³	Yield stress dry-humid approx. N/mm²	Elongation after fracture approx. %	Modulus of elasticity dry-humid approx. N/mm²	Operating temperature –/+ approx. °C
PA 6	Polyamide 6 (Ultramide)	1.14	80-30	130-220	2700-1800	–40/+80-130
PA 66	Polyamide 6.6 (Ultramide A)	1.14	85-50	40-170	3000-1900	–20/+80-140
POM	Polyacetal (Delrin 150)	1.42	69	30	3000	–40/+100-130
PP	Polypropylene (Hostalen PPH)	0.91	30-35	15	1000-1300	–10/+100-120
PA 12	Polyamide 12	1.01	55-48	150-350	1800-1300	–0/+100
PC	Polycarbonate	1.2	60	80-100	2100	–0/+130
PA 66 (gfv)	with 35% glass fibre	1.39	190-140	5	9500-8500	–40/+100-140

Fasteners in stock = PA 6/PA 66 natural-colour/milky-white, if not specified otherwise.
From the other materials, fasteners can be supplied on short notice, other materials on request.

General information and tightening methods

General information

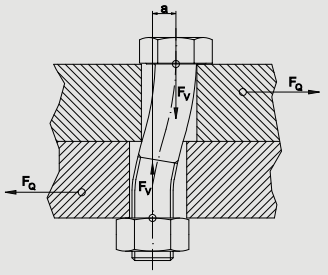
Functional quality and fatigue limit of fasteners are mainly determined with the following factors:

- Mechanical properties (tensile strength, yield strength, elongation)
- Operating conditions (static/dynamic...)
- Service conditions (temperature, corrosion)
- Dimensioning (diameter, length)
- Locking against loosening and unscrewing if necessary
- Assembly (tightening method, preload/clamp load, tightening torque...)

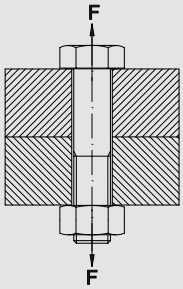
While taking into account all requirements, the task of constructive planning is to determine the suitable fasteners, to define them with the standardised descriptions and to provide the necessary assembly instructions.

The VDI guideline 2230 is available as the recognised standard reference for the "systematic evaluation of highly stressed fasteners".

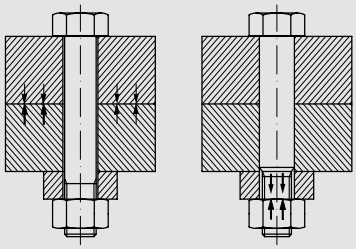
Fasteners should be evaluated and assembled in such a way that transverse loads (FQ) perpendicular to the centre of the screw do not have any effect because of the sufficiently intact clamp load under operating conditions. Here, loss of clamp load due to intrusions of parts into materials also needs to be taken into account. If the transverse loads are larger than the clamp load, this will lead to the screwed fastening loosening, and ultimately, to its failure.

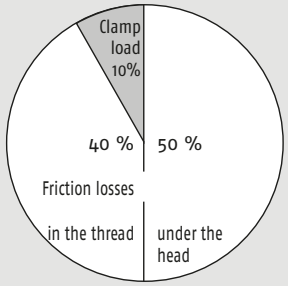


Transverse load F_Q



Preload F_V,
Clamp load F_S


Clamp load F_{KL}



Reaction ratio of tightening torque in clamp load

Tightening method

Essential for the quality and fatigue limit of a fastening is the precise setting/adherence to the assembly preload. Thus alongside the size of the screw, the property class and the friction ratios, the tightening/assembly method is of vital importance during assembly. Numerous tests and theory observations have shown that 80–90% of the tightening torque is required to overcome the friction under the head and in the thread. Only a small part is actually put into generating preload.

Differentiations are made between the following methods:

Manual tightening
In general, tightening by feel with manual tools should not be done. Even with experienced workers, the spread is very large. Empirical values show that screws/bolts up to M 12 are usually tightened beyond the yield strength, while screws over M 14 are usually not tightened enough.

Torque-controlled tightening
Tightening with a torque wrench still shows quite a large spread in the preload due to the friction coefficient differences.

Impact-controlled tightening
When assembling with impact screwdrivers, the motor power of the screwdriver in the impact mechanism is converted into tangential angular momentum. This preloaded the screw step-by-step. The advantage of using the impact screwdriver is that the worker absorbs hardly any reaction torque. The disadvantage is to be found in the numerous factors of influence on the screw preloading:

- Elasticity and friction coefficients of the screwed fastening
- Elasticity of the attached tool and the extensions
- Impact strengths and frequency duration or entire impact count

Elongation-controlled tightening
The preload can be calculated from the change in length of the screw, which, for example, can be determined using an ultrasound method during assembly. This method currently offers the highest level of accuracy. However, it is quite complex and expensive.

Angle controlled-tightening
With this method the screw is first preloaded by rotation torque then turned further by a mathematically calculated rotation angle until the ductile deformation starts. The method requires complex trials and is thus quite expensive. Furthermore, it can only be used for screwed fastenings with a long enough stretching length. The mostly ductile deformation of the screw makes it impossible to reuse.

Yield-controlled tightening
This method requires a screwing system consisting of a screwdriver, a control unit and a computer and uses the technical data for controlling, i.e. that upon reaching the yield strength of the screw, the tightening rotational torque no longer increases. The mostly ductile deformation of the screw makes it impossible to reuse.

Hydraulic tightening
Hydraulic preloading is done via the overlong end of the screw. The preloading device supports itself around the nut. The nut can be tightened in a form-fitting way or with a small amount of torque. The centre point of the hydraulic tightening is with large screws up to M 200 in system construction. For example, all screws of a flange can be tightened simultaneously which brings about a uniform distribution of load.

**Table 1: Accuracy classes of the tightening methods
Influence of the friction ratios, spread of the preloads**

Accuracy class	Spread of the preload %	Tightening factor	Influence of the friction coefficient?	Tightening method (tools)	Adjustment/Inspection method
–	± 2 to +10 ± 5 to ± 20	1.05 to 1.2 1.1 to 1.5	no	• elongation-controlled (ultrasound) • elongation measurement (mechanical)	Ultrasound sensor (➜ PMT system) Set up and length measurement
I	± 9 to ±17	1.2 to 1.4	no	• yield-controlled • angle-controlled (power-assisted or manually)	Empirical specification of pre-tightening torque/rotation angle
II	± 9 to ± 23	1.2 – 1.6	no	• hydraulic tightening	Length/pressure measurement
III	± 17 to ± 23	1.4 – 1.6	yes	• torque-controlled (torque wrench, extension measurement, precision screwdriver)	Empirical specification of the reference tightening torque/ dynamic torque measurement
IV	± 23 to ± 33	1.6 – 2.0	yes	• torque-controlled	Reference tightening torque according to estimated friction coefficient
V	± 26 to ± 43	1.7 – 2.5	yes	• torque-controlled (screwdriver) • impulse-controlled (impact wrench)	with post-tightening torque, taken from reference tightening torque (according to estimated friction coefficient) + extra
VI	± 43 to ± 60	2.5 – 4.0	yes	• impulse-controlled (impact wrench) • manually (wrench)	without (via post-tightening torque if necessary)

**Table 2: Friction coefficients $\mu_{ges.}$
for steel screws/nuts***

Surface condition		$\mu_{ges.}$ for condition		
Male thread (screw)	Internal thread (nut/component)	non-lubricated	oiled	MoS_2-lubricated
without coating (black)	without coating	0.12 – 0.18	0.10 – 0.17	0.06 – 0.12
Mn-phosphated		0.14 – 0.18	0.14 – 0.15	0.06 – 0.11
Zn-phosphated		0.14 – 0.21	0.14 – 0.17	0.06 – 0.12
zinc plated		0.12 – 0.20	0.10 – 0.18	Attention! The friction coefficient can considerably differ depending on the type/extent of the lubrication! Protection with screw connect test recommended!
cadmium plated		0.08 – 0.14	0.08 – 0.11	
zinc plated	zinc plated	0.12 – 0.20	0.10 – 0.18	
cadmium plated	cadmium plated	0.12 – 0.16	0.12 – 0.14	

**Table 3: Friction coefficients μ_G and µK
for screws/nuts* from stainless steel**

Screw/bolt and material of screwed part	nut material	lubricants		Resilience of the joint	Friction coefficients	
		in the thread	under the head		in the thread μ_G	under the head μ_K
A2 (~ A4)	A2 (~ A4)	without	without	very big	0.26 – 0.50	0.35 – 0.50
		Special lubricating agent (chlorine-paraffin basis)			0.12 – 0.23	0.08 – 0.12
		Corrosion protection grease			0.26 – 0.45	0.25 – 0.35
		without	without	small	0.23 – 0.35	0.08 – 0.12
		Special lubricating agent (chlorine-paraffin basis)			0.10 – 0.16	0.08 – 0.12
	AlMgSi	without		very big	0.32 – 0.43	0.08 – 0.11
		Special lubricating agent (chlorine-paraffin basis)			0.32 – 0.43	0.08 – 0.11
					0.28 – 0.35	0.08 – 0.11

* Typical values according to VDI 2230-1, issue 07.86, tab. 5-6 for screws/nuts with standard contact surfaces, e.g. according to DIN 912, 931, 933, 934/ISO 4762, 4014, 4017, 4032

Blind hole thread - minimum engagement depth

The minimum engagement depth is dependent on the strength of the nut thread and the thread pitch. Reference values see table 4

Table 4: Reference values for minimum engagement depth in blind hole threads

Property class screws/bolts		8.8	8.8 10.9	10.9 12.9
Proportion Ø thread pitch *d/P*		< 9	≥ 9 < 9	≥ 9 < 9
Nut material	hard Al-alloy	1.1 *d*	1.4 *d*	–
	grey iron	1.1 *d*	1.25 *d*	1.4 *d*
	steel $R_m \leq 400$ MPa	1.0 *d*	1.25 *d*	1.4 *d*
	steel $R_m \leq 500$ MPa	0.9 *d*	1.0 *d*	1.2 *d*
	steel $R_m \leq 800$ MPa	0.8 *d*	0.9 *d*	1.0 *d*

Source: Dabel book for the mechanical engineering

Preloads and tightening torque for fasteners of steel

Preloads and tightening torque for steel shank screws with full loadability with head contact area sizes like DIN 912, 931, 933, 934, ISO 4762, 4014, 4017, 4032 ...*

The following are taken into account in table values for M_A:

a) Friction coefficient μ_{total} = 0.14*
b) Utilisation of the minimum yield strength = 90%
c) Torsion torque when tightening
(* The friction coefficient of μ_{total} = 0.14 is generally assumed for screws and nuts in standard commercial deliveries)

Additional lubrication of the thread considerably changes the friction coefficient and brings about unspecified tightening ratios! Tightening methods and tools have different spreads (→ Tab. 1/VDI 2230-1, Tab. A8).

Table 5: Typical values for shank screws/bolts with coarse thread, friction coefficient μ_{total} =0.14

Dimensions		Stress area AS (mm²)	Preloads F_V (kN) for property class					Tightening torque M_A (Nm) for property class				
	P		4.6	5.6	8.8	10.9	12.9	4.6	5.6	8.8	10.9	12.9
M 4	0.7	8.78	1.28	1.71	4.30	6.30	7.40	1.02	1.37	3.3	4.8	5.6
M 5	0.8	14.2	2.10	2.79	7.00	10.3	12.0	2.0	2.7	6.5	9.5	11.2
M 6	1.0	20.1	2.96	3.94	9.90	14.5	17.0	3.5	4.6	11.3	16.5	19.3
M 8	1.25	36.6	5.42	7.23	18.1	26.6	31.1	8.4	11.0	27.3	40.1	46.9
M 10	1.5	58.0	8.64	11.5	28.8	42.2	49.4	17.0	22.0	54.0	79.0	93.0
M 12	1.75	84.3	12.6	16.8	41.9	61.5	72.0	29.0	39.0	93.0	137.0	160.0
M 14	2.0	115.0	17.3	23.1	57.5	84.4	98.8	46.0	62.0	148.0	218.0	255.0
M 16	2.0	157.0	23.8	31.7	78.8	115.7	135.4	71.0	95.0	230.0	338.0	395.0
M 18	2.5	193.0	28.9	38.6	99.0	141.0	165.0	97.0	130.0	329.0	469.0	549.0
M 20	2.5	245.0	37.2	49.6	127.0	181.0	212.0	138.0	184.0	464.0	661.0	773.0
M 22	2.5	303.0	46.5	62.0	158.0	225.0	264.0	186.0	250.0	634.0	904.0	1057.0
M 24	3.0	353.0	53.6	71.4	183.0	260.0	305.0	235.0	315.0	798.0	1136.0	1329.0
M 27	3.0	459.0	70.6	94.1	240.0	342.0	400.0	350.0	470.0	1176.0	1674.0	1959.0
M 30	3.5	561.0	85.7	114.0	292.0	416.0	487.0	475.0	635.0	1597.0	2274.0	2662.0
M 33	3.5	694.0	107.0	142.0	363.0	517.0	605.0	645.0	865.0	2161.0	3078.0	3601.0
M 36	4.0	817.0	125.0	167.0	427.0	608.0	711.0	1080.0	1440.0	2778.0	3957.0	4631.0
M 39	4.0	976.0	151.0	201.0	512.0	729.0	853.0	1330.0	1780.0	3597.0	5123.0	5994.0
M 42	4.5	1117.0	212.0	265.0	584.0	832.0	974.0	1605.0	2006.0	4413.0	6285.0	7354.0
M 45	4.5	1302.0	249.0	311.0	684.0	974.0	1140.0	2005.0	2506.0	5512.0	7851.0	9187.0
M 48	5.0	1468.0	280.0	350.0	770.0	1096.0	1283.0	2424.0	3030.0	6667.0	9495.0	11112.0
M 52	5.0	1753.0	335.0	419.0	922.0	1314.0	1537.0	3116.0	3896.0	8570.0	12206.0	14284.0
M 56	5.5	2024.0	387.0	484.0	1064.0	1516.0	1774.0	3883.0	4854.0	10678.0	15208.0	17797.0
M 60	5.5	2356.0	452.0	565.0	1242.0	1770.0	2071.0	4818.0	6022.0	13249.0	18870.0	22082.0
M 64	6.0	2669.0	511.0	639.0	1406.0	2003.0	2344.0	5802.0	7252.0	15955.0	22724.0	26592.0
M 68	6.0	3047.0	585.0	732.0	1610.0	2293.0	2683.0	7012.0	8765.0	19282.0	27462.0	32137.0
M 72	6.0	3451.0	665.0	831.0	1828.0	2603.0	3046.0	8379.0	10474.0	23043.0	32819.0	38405.0
M 76	6.0	3881.0	749.0	936.0	2059.0	2933.0	3432.0	9903.0	12378.0	27232.0	38785.0	45387.0
M 80	6.0	4335.0	838.0	1047.0	2304.0	3282.0	3840.0	11610.0	14514.0	31930.0	45476.0	53216.0
M 90	6.0	5580.0	1083.0	1353.0	2977.0	4240.0	4962.0	16796.0	20995.0	46188.0	65783.0	76980.0
M 100	6.0	6983.0	1359.0	1698.0	3736.0	5322.0	6227.0	23381.0	29226.0	64297.0	91574.0	107161.0

Table 6: Typical values for shank screws/bolts with fine pitch thread, friction coefficient μ_{total} = 0,14

Dimensions		Stress area AS (mm²)	Preloads F_V (kN) for property class			Tightening torque M_A (Nm) for property class		
	P		8.8	10.9	12.9	8.8	10.9	12.9
M 8	1.0	39.2	19.7	28.9	33.9	29.2	42.8	50.1
M 10	1.25	61.2	30.8	45.2	52.9	57.0	83.0	98.0
M 12	1.25	92.1	46.8	68.7	80.4	101.0	149.0	174.0
M 12	1.5	88.1	44.3	65.1	76.2	97.0	143.0	167.0
M 14	1.5	125.0	63.2	92.9	109.0	159.0	234.0	274.0
M 16	1.5	167.0	85.5	126.0	147.0	244.0	359.0	420.0
M 18	1.5	216.0	115.0	163.0	191.0	368.0	523.0	613.0
M 20	1.5	272.0	144.0	206.0	241.0	511.0	728.0	852.0
M 22	1.5	333.0	178.0	253.0	296.0	692.0	985.0	1153.0
M 24	2.0	384.0	204.0	290.0	339.0	865.0	1232.0	1442.0
M 27	2.0	496.0	264.0	375.0	439.0	1262.0	1797.0	2103.0
M 30	2.0	621.0	331.0	472.0	552.0	1756.0	2502.0	2927.0
M 33	2.0	761.0	407.0	580.0	678.0	2352.0	3350.0	3921.0
M 36	2.0	915.0	490.0	698.0	817.0	3082.0	4390.0	5137.0
M 39	2.0	1082.0	581.0	828.0	969.0	3953.0	5631.0	6589.0

Tables 5 and 6: up to M 39 extract from VDI 2230-1: 2003-02, above M 39 calculation based on VDI guideline 2230-1: 2003-02

Preloads and tightening torques for fasteners of steel

Preloads and tightening torques for steel screws full loadability with head contact sizes like DIN 912, 931, 933, 934, ISO 4762, 4014, 4017, 4032 and zinc flake coating*

* for zinc flake coated fasteners from REYHER Catalogue typically applies a coefficient of friction of μ_{ges} = 0.09, unless otherwise specified

Table 7: Typical values for shank screws/bolts
with coarse thread, friction coefficiet μ_{ges} = 0.09 and utilisation of the minimum yield strength of 90%

Dimensions		Stress area A (mm²)	Preloads F_V (kN) for property class			tightening torques M_A (Nm) for property class		
	P		8.8	10.9	12.9	8.8	10.9	12.9
M 5	0.8	14.2	7.47	10.97	12.7	4.82	7.08	8.0
M 6	1.0	20.1	10.56	15.51	17.9	8.37	12.3	14.0
M 8	1.25	36.6	19.31	28.36	32.9	20.17	29.63	34.0
M 10	1.5	58.0	30.7	45.1	52.3	39.7	58.3	67.0
M 12	1.75	84.3	44.7	65.1	76.3	68.3	100.0	115.6
M 14	2.0	115.0	61.3	90.0	104.6	109.0	160.0	183.8
M 16	2.0	157.0	83.8	123.0	143.2	167.0	245.0	282.1
M 18	2.5	193.0	106.0	150.0	174.9	241.0	343.0	394.7
M 20	2.5	245.0	135.0	192.0	223.9	337.0	480.0	553.0
M 22	2.5	303.0	168.0	239.0	278.9	458.0	652.0	753.3
M 24	3.0	353.0	194.0	277.0	322.5	580.0	825.0	952.9
M 27	3.0	459.0	255.0	363.0	422.9	847.0	1207.0	1398.7
M 30	3.5	561.0	310.0	442.0	514.9	1154.0	1644.0	1905.5
M 33	3.5	694.0	385.0	549.0	639.9	1552.0	2211.0	2565.8
M 36	4.0	817.0	453.0	645.0	752.0	2001.0	2850.0	3307.3
M 39	4.0	976.0	543.0	773.0	901.6	2578.0	3672.0	4263.2

Preloads and tightening torques for steel shank screws from material 25CrMo4 +QT (1.7218) with head dimensions like ISO 4762, 4014, 4017, 4032

Table 8: Typical values for shank screws/bolts with coarse thread from 25CrMo4 +QT ($R_m \geq 600$ MPa, $R_{p0.2} \geq 440$ MPa) and utilisation of the minimum yield strength of 90%

Dimensions		Stress area A (mm²)	Preloads F_V (kN) for μ_{ges}			Tightening torques M_A (Nm) for μ_{ges}		
	P		0.10	0.12	0.14	0.10	0.12	0.14
M 8	1.25	36.6	13.0	12.7	12.3	14.6	16.6	18.4
M 10	1.5	58.0	20.7	20.2	19.6	28.9	32.8	36.5
M 12	1.75	84.3	30.1	29.4	28.6	49.8	56.7	63.0
M 14	2.0	115.0	41.2	40.3	39.3	79.3	90.2	100.3
M 16	2.0	157.0	56.6	55.3	53.9	122.0	139.3	155.5
M 18	2.5	193.0	69.2	67.5	65.7	170.3	194.0	216.0
M 20	2.5	245.0	88.6	86.5	84.2	239.1	273.2	304.9
M 22	2.5	303.0	110.4	107.8	105.1	326.3	373.9	418.2
M 24	3.0	353.0	127.6	124.5	121.3	412.0	470.8	525.4
M 27	3.0	459.0	167.3	163.5	159.3	606.1	694.9	777.7
M 30	3.5	561.0	203.7	198.9	193.9	825.0	944.7	1056.2
M 33	3.5	694.0	253.3	247.5	241.3	1112.6	1277.0	1430.4
M 36	4.0	817.0	297.6	290.7	283.4	1433.1	1642.9	1838.5
M 39	4.0	976.0	356.9	348.8	340.1	1849.6	2124.8	2381.5

Preloads and tightening torques for bolts with waisted shank made from material 21CrMoV5-7 +QT (1.7709) acc. to DIN 2510

Table 9: Typical values for bolts with waisted shank with coarse thread from 21CrMoV5-7 +QT ($R_m \geq 700$ MPa, $R_{p0.2} \geq 550$ MPa) utilisation of the minimum yield strength of 70%

Dimensions		Shank Ø	Preloads F_V (kN) for μ_{ges}		Tightening torques M_A (Nm) for μ_{ges}	
	P		0.10	0.12	0.10	0.12
M 12	1.75	8.5	21.6	21.6	38.0	44.0
M 16	2.0	12.0	43.5	43.5	98.0	115.0
M 20	2.5	15.0	67.8	67.8	190.0	220.0
M 24	3.0	18.0	97.8	97.8	320.0	370.0
M 27	3.0	20.5	126.5	126.5	465.0	545.0
M 30	3.5	23.0	160.0	160.0	650.0	770.0
M 33	3.5	25.5	196.5	196.5	870.0	1000.0
M 36	4.0	27.5	228.5	228.5	1100.0	1300.0
M 39	4.0	30.5	281.0	281.0	1450.0	1750.0
M 42	4.5	32.5	319.0	319.0	1800.0	2100.0
M 45	4.5	35.5	381.0	381.0	2300.0	2700.0
M 48	5.0	37.5	425.0	425.0	2750.0	3250.0

Preloads and tightening torques for fasteners from steel

Preloads and tightening torques for fasteners with reduced loadability like e.g. DIN 6912, 7984, ISO 7380 -1/-2, 10642

Fasteners with reduced loadability are standardized or non-standardized fasteners with material and mechanical properties according ISO 898-1, due to its geometry, does not fulfil the test requirements for full loadability fasteners.

Fasteners with reduced loadability does not normally break in the free threaded length.

Basically, there are two geometrical reasons for reduced loadability of fasteners:

a) head design which applies to
- bolts and screws with low head with or
- without external driving feature, or
- with low round or cylindrical head with internal driving feature or
- countersunk head with internal driving feature.

b) shank design: e.g. screws with waisted shank.

The identification of screws and bolts with reduced loadability is a "0" before the property class, e.g. 08.8 or 010.9.
Fasteners according to above mentioned product standards can hold about 80% of the preloads of fasteners with full loadability.

Table 10: Typical values for fasteners according DIN 6912, 7984, ISO 7380 -1/-2, 10642, total friction coefficient μ_{ges} = 0.14

Dimensions	Preloads F_V (kN) for property class		Tightening torque M_A (Nm) for propery class	
	08.8	010.9	08.8	010.9
M 3	1.9	2.9	1.1	1.6
M 4	3.4	5.0	2.6	3.8
M 5	5.5	8.1	5.1	7.4
M 6	7.8	11.0	8.8	13.0
M 8	14.0	21.0	21.0	31.0
M 10	23.0	34.0	42.0	62.0
M 12	33.0	49.0	73.0	108.0
M 14	46.0	67.0	117.0	171.0
M 16	63.0	92.0	181.0	266.0
M 18	79.0	112.0	259.0	370.0
M 20	101.0	144.0	366.0	521.0
M 22	126.0	180.0	502.0	715.0
M 24	146.0	207.0	630.0	898.0
M 30	233.0	331.0	1 267.0	1 805.0
M 36	340.0	484.0	2 206.0	3 140.0

Preloads and tightening torques for fasteners with shank from steel, with UNC/UNF thread acc. to ASME B18.2.1, ASME B18.3 and ASME B18.2.2

Table 11: Typical values for fasteners with UNC thread and total friction coefficient μ_{ges} = 0,14

Dimensions		Preloads F_A for property class						Tightening torque M_A for property class					
		Grade 5*		Grade 8*		ASTM A 574		Grade 5*		Grade 8*		ASTM A 574	
Ø	G	[kN]	[lbf]	[kN]	[lbf]	[kN]	[lbf]	[Nm]	[ft-lbs]	[Nm]	[ft-lbs]	[Nm]	[ft-lbs]
#2	56	1.2	262	1.7	370	1.9	435	0.5	0.4	0.7	0.5	0.8	6.0
#4	40	1.9	423	2.7	598	3.1	704	1.1	0.8	1.5	1.1	1.8	1.3
#5	40	2.5	565	3.6	798	4.2	940	1.6	1.2	2.2	1.6	2.6	1.9
#6	32	2.8	636	4.0	899	4.7	1058	2.0	1.5	2.8	2.1	3.3	2.4
#8	32	4.5	1000	6.3	1413	7.4	1663	3.6	2.7	5.1	3.8	6.1	4.5
#10	24	5.5	1232	7.8	1741	9.1	2050	5.3	3.9	7.4	5.5	8.7	6.4
1/4	20	10.1	2260	14.2	3194	16.7	3759	12.1	8.95	17.1	12.6	20.2	14.9
5/16	18	16.7	3764	23.7	5319	27.8	6260	25.7	18.9	36.3	26.7	42.7	31.5
3/8	16	24.9	5594	35.2	7904	41.4	9303	44.6	32.9	63.0	46.4	74.1	54.7
7/16	14	34.2	7684	48.3	10858	56.8	12780	70.9	52.3	100.0	73.9	117.9	87.0
1/2	13	45.8	10300	64.7	14554	76.2	17131	109.0	80.3	154.0	114.0	181.1	133.6
5/8	11	73.2	16464	103.0	23265	121.8	27384	213.0	157.0	301.0	222.0	354.5	261.4
3/4	10	109.0	24485	154.0	34599	181.2	40725	383.0	283.0	541.0	399.0	637.2	470.0
7/8	9	151.0	33891	213.0	47889	250.7	56368	614.0	453.0	868.0	640.0	1021.5	753.4
1	8	198.0	44499	280.0	62879	329.2	74012	922.0	680.0	1303.0	961.0	1533.3	1130.9
1 1/8	7	219.0	49326	252.0	79166	414.5	93183	1153.0	850.0	1850.0	1364.0	2178.0	1606.4
1 1/4	7	280.0	62934	449.0	101005	528.8	118888	1618.0	1194.0	2597.0	1916.0	3057.2	2254.9
1 3/8	6	333.0	74796	534.0	120043	628.5	141297	2121.0	1565.0	3405.0	2511.0	4007.4	2955.7
1 1/2	6	406.0	91358	652.0	146624	767.7	172585	2806.0	2070.0	4504.0	3322.0	5301.5	3910.2

Table 12: Typical values for fasteners with UNF thread and total friction coefficient μ_{ges} = 0,14

Dimensions		Preloads F_A for property class						Tightening torque M_A for property class					
		Grade 5*		Grade 8*		ASTM A 574*		Grade 5*		Grade 8*		ASTM A 574*	
Ø	G	[kN]	[lbf]	[kN]	[lbf]	[kN]	[lbf]	[Nm]	[ft-lbs]	[Nm]	[ft-lbs]	[Nm]	[ft-lbs]
1/4	28	11.8	2653	16.7	3749	19.6	4413	13.8	10.2	19.5	14.4	22.9	16.9
5/16	24	18.9	4252	26.7	6008	31.5	7071	28.3	20.9	40.0	29.5	47.0	34.7
3/8	24	28.9	6486	40.8	9165	47.9	10788	50.0	36.9	70.7	52.2	83.2	61.4
7/16	20	39.0	8758	55.0	12375	64.8	14566	78.6	57.9	111.0	81.9	130.7	96.4
1/2	20	52.8	11861	74.6	16760	87.8	19727	122.0	89.7	172.0	127.0	202.2	149.1
5/8	18	84.7	19050	120.0	26918	140.9	31684	239.0	176.0	337.0	249.0	396.6	292.5
3/4	16	124.0	27814	175.0	39302	250.8	46261	423.0	312.0	597.0	441.0	703.0	518.5
7/8	14	170.5	38321	240.8	54150	283.5	63737	677.3	499.6	957.1	705.9	1126.6	830.9
1	12	221.5	49803	313.0	70373	368.5	82833	1008.6	743.9	1425.2	1051.1	1677.5	1237.2
1 1/4	12	360.7	81088	509.68	114581	599.9	134868	2030.6	1497.7	2869.4	2116.4	3377.4	2491.1
1 1/2	12	533.28	119886	753.5	169404	886.9	199398	3568.9	2632.3	5043.0	3719.6	5935.9	4378.1

* Grade 5 (~ 8.8) and Grade 8 (~ 10.9) acc. to SAE J 429, ASTM A 574 for hexagon head cap screws (~ 12.9)

Preloads and tightening torques of screwed fastenings from steel with locking elements

Table 13: Typical values for preloads F_V and tightening torques for screws and nuts with lock ribs under the flange
(REYHER articles 88913 and 88914)

Material of screwed part	Property class 100/10													
	M 5		M 6		M 8		M 10		M 12		M 14x1.5		M 16	
	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	MA[Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]
Steel R_m < 800 MPa	9000	11	12600	19	23200	42	37000	85	54000	130	74000	250	102000	330
Steel R_m ≥ 800 MPa		10		18		37		80		120		240		310
malleable cast iron		9		16		35		75		115		230		300

Table 14: Typical values for preloads F_V and tightening torques F_V for hexagon socket cap screws with lock ribs under the flange
(REYHER articles 88912)

Material of screwed part	Property class 100/10									
	M 5		M 6		M 8		M 10		M 12	
	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	MA[Nm]	F_V [N]	M_A [Nm]
Steel R_m < 800 MPa	9000	13	12600	24	23200	45	37000	90	54000	150
Steel R_m ≥ 800 MPa		11		20		42		85		140
malleable cast iron		10		19		39		80		120

Table 15: Typical values for preloads and tightening torques of locking screws and nuts
(REYHER articles 88933 und 88934)

Material of screwed part	Property class 100/10								Property class 100/10			
	M 5		M 6		M 8		M 10		M 12		M 16	
	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	MA[Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]
Steel	6350	9	9000	16	16500	34	26200	58	54000	120	102000	280
malleable cast iron		7		13		28		49		105		260

Table 16: Typical values for tightening torques and prestressing forces of screwed fastenings with NORD-LOCK washers
(REYHER article 88132)

NL washers for threads	Preloads F_V (kN) for property class					Tightening torque M_A (Nm) for property class				
	8.8 [1]	10.9 [2]	12.9 [3]	A 4 -70 [4]	A 4-80 [4]	8.8 [1]	10.9 [2]	12.9 [3]	A 4 -70 [4]	A 4-80 [4]
M 4	3.5	5.9	7.1	2.6	3.4	3.1	4.1	4.6	2.0	2.7
M 5	5.6	9.6	11.5	4.1	5.5	6.0	8.1	9.1	3.9	5.3
M 6	8.0	13.6	16.3	5.9	7.8	10.2	14.1	15.8	6.9	9.2
M 8	15.0	25.0	30.0	11.0	14.0	25.0	34.0	38.0	17.0	22.0
M 10	23.0	39.0	47.0	17.0	23.0	50.0	67.0	75.0	33.0	43.0
M 12	33.0	57.0	68.0	25.0	33.0	85.0	115.0	128.0	56.0	75.0
M 14	46.0	78.0	94.0	34.0	45.0	136.0	183.0	204.0	89.0	119.0
M 16	62.0	106.0	127.0	46.0	61.0	208.0	279.0	311.0	136.0	181.0
M 18	76.0	130.0	156.0	56.0	75.0	291.0	391.0	437.0	191.0	254.0
M 20	97.0	165.0	198.0	72.0	95.0	408.0	547.0	610.0	267.0	356.0
M 22	120.0	205.0	246.0	89.0	118.0	557.0	745.0	831.0	364.0	485.0
M 24	140.0	238.0	286.0	103.0	137.0	703.0	942.0	1052.0	460.0	613.0
M 27	182.0	310.0	372.0	134.0	179.0	1028.0	1375.0	1533.0	671.0	895.0
M 30	222.0	378.0	454.0	164.0	219.0	1401.0	1875.0	2091.0	915.0	1220.0
M 33	275.0	468.0	562.0	–	–	1889.0	2526.0	2815.0	–	–
M 36	324.0	551.0	662.0	239.0	319.0	2436.0	3259.0	3633.0	1591.0	2121.0
M 39	387.0	659.0	790.0	–	–	3145.0	4203.0	4683.0	–	–
M 42	445.0	757.0	908.0	–	–	3890.0	5202.0	5799.0	–	–

Source: www.nordlock.com

1) Screw zinc plated, dry, thread friction μ_G = 0,15, friction coefficient of the lock washer μ_W = 0,18, utilisation of the minimum yield strength = 62%
2) Screw uncoated, oiled, thread friction μ_G = 0,13, friction coefficient of the lock washer μ_W = 0,14, utilisation of the minimum yield strength = 71%
3) Screw uncoated, oiled, thread friction μ_G = 0,13, friction coefficient of the lock washer μ_W = 0,12, utilisation of the minimum yield strength = 71%
4) Screw lubricated with graphite paste, thread friction μ_G = 0,14, friction coefficient of the lock washer μ_W = 0,15, utilisation of the minimum yield strength = 65%

Table 17: Typical values for tightening torques of screwed fastenings with lock washers

REYHER-articles	Property class Screws	Tightening torque M_A in Nm													
		M 4	M 5	M 6	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30
88123 type S	5.8	2.0	4.0	7.0	16.5	32	57	–	–	–	–	–	–	–	–
88124 type M	8.8	3.3	6.7	11.5	27	54	92	145	225	320	460	620	790	1160	1550
	10.9	4.9	9.8	16.5	40	79	135	215	330	460	650	890	1120	1650	2250
88125 type B	10.9	–	–	16.5	40	79	135	–	–	–	–	–	–	–	–
	12.9	–	–	19.5	47	92	158	–	–	–	–	–	–	–	–

Source: www.teckentrup.de

Typical values for tightening torques of screwed fastenings with SCHNORR washers
REYHER article 88120 and REYHER article 88121:
As a typical value, 10% should be added to the normal tightening torque M_A according to TI-230, Tabels 4 and 5.

Assembly of fastenings in steel constructions

Systematic preloaded connections with HV sets

The following two assembly methods for achieving the preload force are permitted in Germany for the assembly of HV sets.

Standard	Preload	Assembly method	*k* class
EN 1090-2	$F_{p,C}$ (full preload force)	Combined method	K1
DIN EN 1993-1-8 NA	$F_{p,C}$* (modified preload force)	Modified torque method	K1

Preload forces and tightening torques for the respective methods for *k*-class K1 and property class 10.9 are listed in the following table. Refer to EN 1090-2 for the corresponding assembly steps required.

Table 18: Preloads and tightening torques for HV fastenings of property class 10.9 as per EN 14399-4 or DAST Directive 012 with *k*-class K1

Ø	EN 1090-2			DIN EN 1993-1-8 NA		
	Reference preloads $F_{p,C}$ in kN	Reference torques $M_{r,1}$ in Nm	Pre-tightening torques for combined method 0,75 $M_{r,1}$ in Nm	Modified preloads $F_{p,C}$* in kN	Modified torques M_A in Nm	Pre-tightening torques for modified combined method MA,MKV in Nm
M 12	59	92	69	50	100	75
M 16	110	229	172	100	250	190
M 20	172	447	335	160	450	340
M 22	212	606	455	190	650	490
M 24	247	771	578	220	800	600
M 27	321	1127	845	290	1250	940
M 30	393	1533	1150	350	1650	1240
M 36	572	2677	2008	510	2800	2100
M 39*				610	3500	
M 42*				710	4500	
M 45*				820	5500	
M 48*				930	6500	
M 56*				1280	10000	
M 64*				1680	15000	

*as per DASt Directive 021; these values only apply to hot dip galvanized HV sets

Table 19: Prevailing angle for combined assembly method

Standard	Prevailing angle in ° t = grip length with washers, d = screw diameter		
	t < 2d	2d ≤ t < 6d	6d ≤ t ≤ 10d
EN 1090-2	60	90	120
DIN EN 1993-1-8/NA	45	60	90

Securing of HV connection against loosening

By means of the Nord-Lock NL SC self-locking washer, an HV fastening can be secured against loosening in accordance with National Technical Approval Z-14.4-629.

Table 20: Preload forces and tightening torques for HV fastenings with NL SC self-locking washers

Ø	Modified preloads $F_{p,C}$,NL* in kN	Modified torques $M_{A,NL}$ in Nm	Pre-tightening torques for modified combined method $M_{A,MKV,NL}$ in Nm
M 12	45	130	100
M 16	90	330	250
M 20	145	660	490
M 22	170	850	640
M 24	200	1100	825
M 27	260	1600	1220
M 30	315	2150	1650
M 36	460	3750	2800

Non-preloaded structural bolting assemblies (SB)

For the area of non-preloaded fastenings, SB sets such as ISO 4014/4017/4032/7090 but also for DIN 7990 and more in future are used that – contrary to the HV system – are only hand-tightened. Screws and nuts must also be marked with "SB" for "structural bolting".

Table 21: Recommended "hand tight" tightening torques for non-preloaded fastenings independent of the property class of the screws

Ø	M 12	M 16	M 20	M 22	M 24	M 27	M 30	M 36
$M_{A,\ hand\ tight}$ in Nm	15	35	60	90	110	165	220	350

Preloads and tightening torques for fasteners from stainless steel

Preloads and tightening torques for fasteners with full loadability from stainless steel

For fasteners from stainless steel, the friction coefficients in the thread and on the contact surfaces are much higher than with quenched and tempered steel screws. Even the spread of the friction coefficients is much higher here (up to and over 100%). To finally determine the correct torque it is recommended that testing should be carried out under operating conditions.

While it is possible to reduce friction coefficients by using lubricating agents, the very high spread will remain.

The table lists non-binding typical values for various friction coefficients, valid for screws and nuts according to DIN 912, 931, 933 and 934/ISO 4762, 4014, 4017, 4032 made from stainless steels A 1–A 5, in property classes –50, –70 and –80 at room temperature (approx. +20 °C) and utilisation of the minimum yield stress of 90%.

Table 22: Typical values for fasteners from A2/A4

⌀	Prop. Class	Assembly preload in kN for μ_{ges} =								Tightening torque in Nm for μ_{ges} =							
		0.10	0.12	0.14	0.16	0.18	0.20	0.30	0.40	0.10	0.12	0.14	0.16	0.18	0.20	0.30	0.40
	50	1.47	1.48	1.39	1.35	1.31	1.26	1.07	0.91	0.8	0.9	1.0	1.1	1.2	1.3	1.6	1.8
M 4	70	3.14	2.71	2.97	2.89	2.80	2.71	2.30	1.95	1.8	2.0	2.2	2.4	2.6	2.8	3.4	3.8
	80	4.19	4.08	3.96	3.85	3.73	3.61	3.06	2.61	2.4	2.7	3.0	3.3	3.5	3.7	4.6	5.1
	50	2.39	2.33	2.27	2.20	2.14	2.07	1.76	1.50	1.7	1.9	2.1	2.3	2.4	2.6	3.2	3.6
M 5	70	5.13	5.00	4.86	4.72	4.58	4.44	3.77	3.21	3.5	4.0	4.5	4.9	5.2	5.6	6.8	7.6
	80	6.84	6.66	6.48	6.29	6.10	5.91	5.02	4.28	4.7	5.4	5.9	6.5	7.0	7.4	9.1	10.2
	50	3.39	3.30	3.21	3.11	3.02	2.93	2.48	2.11	2.9	3.3	3.6	3.9	4.2	4.5	5.5	6.2
M 6	70	7.26	7.07	6.87	6.67	6.47	6.27	5.32	4.53	6.2	7.0	7.7	8.4	9.1	9.7	11.9	13.2
	80	9.68	9.43	9.13	8.90	8.63	8.36	7.09	6.04	8.2	9.3	10.3	11.3	12.1	12.9	15.8	17.7
	50	6.21	6.05	5.88	5.72	5.54	5.37	4.57	3.89	7.0	7.9	8.8	9.6	10.3	11.0	13.6	15.2
M 8	70	13.30	12.96	12.61	12.25	11.88	11.51	9.79	8.34	15.0	17.0	18.8	20.6	22.2	23.6	29.1	32.5
	80	17.74	17.29	16.81	16.33	15.84	15.35	13.05	11.11	19.9	22.6	25.1	27.4	29.5	31.5	38.8	43.4
	50	9.87	9.62	9.37	9.10	8.83	8.56	7.28	6.20	13.8	15.7	17.4	19.0	20.5	21.8	27.0	30.2
M 10	70	21.16	20.63	18.40	19.50	18.92	18.34	15.60	13.29	29.5	33.5	37.3	40.7	41.9	46.8	57.8	67.7
	80	28.21	27.50	26.76	25.99	25.22	24.45	20.79	17.72	39.4	44.7	49.7	54.3	58.5	62.4	77.1	86.2
	50	14.38	14.03	13.65	13.27	12.87	12.48	10.62	9.05	23.8	27.1	30.1	32.9	35.4	37.8	46.8	52.3
M 12	70	30.83	30.06	29.26	28.43	28.59	26.75	22.76	19.40	51.0	58.0	64.5	70.5	76.0	81.0	100.2	112.1
	80	41.10	40.08	39.01	37.90	36.78	35.66	30.35	25.87	68.0	77.3	85.9	93.9	101.0	108.0	133.6	149.5
	50	19.74	19.25	18.74	18.21	17.68	17.14	14.59	12.44	37.8	43.0	47.9	52.4	56.5	60.2	74.6	83.5
M 14	70	42.31	41.26	40.16	39.03	37.88	36.73	31.27	26.65	81.1	92.2	103.0	112.0	121.0	129.0	160.0	179.0
	80	56.41	55.01	53.54	52.04	50.50	48.97	41.69	35.54	108.0	123.0	137.0	150.0	161.0	172.0	212.0	238.5
	50	27.04	26.39	25.71	25.01	24.29	23.56	20.10	17.16	58.2	66.5	74.2	81.4	87.9	94.0	117.0	131.0
M 16	70	57.94	56.55	55.09	53.58	52.04	50.49	43.08	36.77	125.0	143.0	159.0	174.0	188.0	201.0	251.0	282.0
	80	77.25	74.40	73.46	71.44	69.39	67.33	57.44	49.03	166.0	190.0	212.0	233.0	251.0	269.0	334.0	375.0
	50	33.01	32.20	31.35	30.47	29.58	28.68	24.43	20.83	81.3	92.6	103.0	113.0	122.0	130.0	161.0	180.0
M 18	70	70.73	69.00	67.17	65.29	63.38	61.46	52.34	44.64	174.0	198.0	221.0	242.0	261.0	278.0	345.0	387.0
	80	94.31	92.00	89.56	87.05	84.51	81.95	69.79	59.52	232.0	265.0	295.0	322.0	348.0	371.0	460.0	515.0
	50	42.27	41.26	40.20	39.10	37.79	36.84	31.34	26.83	114.0	130.0	146.0	160.0	173.0	184.0	230.0	258.0
M 20	70	90.58	88.40	86.14	83.78	81.37	78.95	67.35	57.49	245.0	280.0	312.0	342.0	370.0	395.0	492.0	552.0
	80	120.80	117.90	114.90	111.70	108.50	105.30	89.80	76.70	326.0	373.0	416.0	456.0	493.0	527.0	656.0	736.0
M 22	50	52.67	51.45	50.15	48.80	47.42	46.02	39.32	33.59	156.0	178.0	200.0	219.0	237.0	254.0	318.0	257.0
	70	112.87	110.24	107.46	104.56	101.61	98.61	84.25	~	334.0	382.0	428.0	470.0	508.0	544.0	680.0	~
M 24	50	60.88	59.43	57.90	56.30	54.69	53.01	45.27	38.64	197.0	225.0	251.0	275.0	297.0	318.0	396.0	444.0
	70	130.50	127.40	124.10	120.70	117.20	113.70	97.00	~	421.0	482.0	537.0	589.0	637.0	680.0	848.0	~
M 27	50	79.86	78.02	76.05	74.01	71.93	69.82	59.67	50.98	289.0	332.0	371.0	408.0	442.0	473.0	591.0	666.0
	70	171.00	167.00	163.00	159.00	154.00	150.00	128.00	~	620.0	711.0	795.0	873.0	946.0	1013.0	1267.0	~
M 30	50	97.23	94.96	92.54	90.04	87.48	84.90	72.50	61.90	394.0	451.0	504.0	553.0	599.0	640.0	800.0	900.0
	70	208.00	203.00	198.00	193.00	187.00	182.00	155.00	~	844.0	966.0	1080.0	1186.0	1283.0	1373.0	1715.0	~
M 33	50	121.00	118.00	115.00	112.00	109.00	106.00	90.00	77.00	531.0	610.0	683.0	751.0	813.0	871.0	1092.0	1230.0
M 36	50	142.00	139.00	135.00	132.00	128.00	124.00	106.00	91.00	684.0	784.0	876.0	964.0	1044.0	1117.0	1398.0	1573.0
M 39	50	170.00	166.00	162.00	158.00	154.00	149.00	128.00	109.00	883.0	1014.0	1137.0	1250.0	1355.0	1452.0	1822.0	2054.0

Preloads and tightening torques for fasteners with reduced loadability from stainless steel

Fasteners according DIN 6912, 7984, ISO 7380-1/-2 and 10642 have a reduced loadability due to their head geometry. As a guideline for preloads and tightening torques of 80% of the values of the upper table (table 22) can be accepted.

The prevailing torque type hexagon nuts from stainless steel sometimes tend to jam in the locking element due to the high thread flank pressure when inserting the screw thread. Here, treating the screw thread with an anti-friction agent usually helps. Accordingly, the changed friction coefficients are to be taken into account when assembling the screwed fastening.

Tightening torque for fasteners made from BUMAX 88/109 brass, polyamide

Tightening torques and preloads for fasteners made from stainless steel BUMAX 88/109

Fasteners made from BUMAX 88/109 have an adjusted coefficient of friction by a specific lubrication.

Table 23: Typical values for fasteners made from BUMAX88/109

Dimensions	P	Stress area A_s (mm²)	Preloads F_V (kN) for BUMAX 88	109	Tightening Torques M_A (Nm) for BUMAX 88	109
M 3	0.5	5.03	2.1	2.9	1.3	1.7
M 4	0.7	8.78	3.6	5.2	2.9	4.1
M 5	0.8	14.2	5.9	8.6	5.7	8.1
M 6	1.0	20.1	8.4	12.0	9.8	14.0
M 8	1.25	34.4	15.0	21.0	25.0	34.0
M 10	1.5	58.0	24.0	34.0	47.0	66.0
M 12	1.75	84.3	35.0	49.0	82.0	115.0
M 14	2.0	115.0	48.0	60.0	129.0	161.0
M 16	2.0	157.0	65.0	81.0	198.0	248.0
M 18	2.5	192.0	80.0	100.0	275.0	344.0
M 20	2.5	245.0	102.0	128.0	385.0	481.0
M 24	3.0	353.0	181.0	–	665.0	–
M 27	3.0	459.0	235.0	–	961.0	–
M 30	3.5	561.0	287.0	–	1310.0	–
M 36	4.0	817.0	418.0	–	2280.0	–

Preloads and tightening torque for fasteners made from brass

For fasteners made from brass, the friction coefficients in the thread and on the contact surfaces are much higher than with quenched and tempered steel screws. In order to determine the correct torque, it is recommended that experiments should be carried out under operating conditions. It is possible to reduce friction coefficients by using lubricating agents.

Table 24 lists non-binding typical values for various friction coefficients, valid for screws and nuts according to DIN 912, 931, 933 and 934/ISO 4762, 4014, 4017, 4032 made from brass with a minimum stress at 0.2% non-proportional elongation of 250 N/mm² (e.g. MS 58 and MS 63) and utilisation of the yield stress of 90%.

The tightening torques listed in the table may **only be used as very rough and non-binding typical values.**

Tabelle 24: Typical values for fasteners made from brass

Ø	Assembly preloads in kN for μ_{ges}								Tightening torque in Nm for μ_{ges}							
	0.10	0.12	0.14	0.16	0.18	0.20	0.30	0.40	0.10	0.12	0.14	0.16	0.18	0.20	0.30	0.40
M 4	1.75	1.70	1.65	1.60	1.55	1.51	1.28	1.09	1.0	1.1	1.2	1.4	1.5	1.6	1.9	2.1
M 5	2.85	2.78	2.70	2.62	2.54	2.46	2.09	1.78	2.0	2.2	2.5	2.7	2.9	3.1	3.8	4.2
M 6	4.03	3.93	3.82	3.71	3.59	3.48	2.96	2.52	3.4	3.9	4.3	4.7	5.0	5.4	6.6	7.4
M 8	7.39	7.20	7.01	6.84	6.60	6.40	5.44	4.63	8.3	9.4	10.5	11.4	12.3	13.1	16.2	18.1
M 10	11.75	11.46	11.15	10.83	10.51	10.19	8.66	7.38	16.4	18.6	20.7	22.6	24.4	26.0	32.1	35.9
M 12	17.13	16.70	16.25	15.79	15.33	14.86	12.64	10.78	28.3	32.2	35.8	39.1	42.2	45.0	55.7	62.3
M 14	23.50	22.92	22.31	21.68	21.04	20.40	17.37	14.81	45.0	51.2	57.0	62.3	67.2	71.7	88.8	99.4
M 16	32.19	31.42	30.61	29.77	28.91	28.05	23.93	20.43	69.3	79.2	88.4	96.9	105.0	112.0	139.0	156.0
M 18	39.30	38.33	37.32	36.27	35.21	34.15	29.08	24.80	96.8	110.0	123.0	134.0	145.0	155.0	192.0	215.0
M 20	50.32	49.12	47.86	46.54	45.21	43.86	37.42	31.94	136.0	155.0	173.0	190.0	205.0	219.0	273.0	307.0
M 22	62.71	61.25	59.70	58.09	56.45	54.79	46.81	40.00	185.0	212.0	238.0	261.0	282.0	302.0	378.0	425.0
M 24	72.48	70.75	68.93	67.04	65.11	63.17	53.89	46.00	234.0	268.0	299.0	327.0	354.0	378.0	471.0	529.0
M 27	95.07	92.88	90.54	88.11	85.63	83.12	71.03	60.70	344.0	395.0	442.0	485.0	526.0	563.0	704.0	793.0
M 30	116.00	113.00	110.00	107.00	104.00	101.00	86.31	73.70	469.0	537.0	600.0	659.0	713.0	762.0	953.0	1071.0
M 33	144.00	141.00	137.00	133.00	130.00	126.00	108.00	92.00	632.0	726.0	813.0	894.0	968.0	1036.0	1300.0	1464.0
M 36	169.00	165.00	161.00	157.00	152.00	148.00	126.00	108.00	814.0	934.0	1045.0	1148.0	1243.0	1330.0	1664.0	1873.0
M 39	203.00	198.00	193.00	188.00	183.00	178.00	152.00	130.00	1051.0	1207.0	1353.0	1488.0	1613.0	1728.0	2169.0	2445.0

Tightening torques for polyamide screws and nuts

Table 19 includes non-binding typical values for appropriate tightening torques for screws and nuts made from polyamide 6.6 at 20 °C after storage in a normal climate.

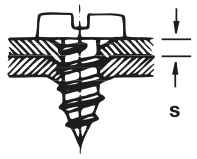
The preload can ease off somewhat as a result of relaxation processes.

Table 25

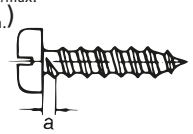
Ø	M 3	M 4	M 5	M 6	M 8	M 10	M 12	M 16
Tightening torque Nm	0.1	0.25	0.5	0.8	1.8	3.5	6.0	12

General assembly instructions

Screwing in of thinner sheet metal with continuous tapping holes or ones enlarged with a drift.



Sheet metal thickness lower/upper limit* $s_{min./max.}$ ($a_{max.} = s_{min.}$)



Screwing in of thicker sheet metal with drilled or punched tapping holes

Screwable plate thickness

Ø/ST	2.2	2.9	3.5	3.9	4.2
$s_{min.} = a_{max.}$	0.8	1.1	1.3	1.3	1.4
$s_{max.}$	1.8	2.2	2.8	3	3.5

Ø/ST	4.8	5.5	6.3	8	
$s_{min.} = a_{max.}$	1.6	1.8	1.8	2.1	
$s_{max.}$	4	4.5	5	6.5	

s = sheet thickness
a = distance from head to thread

* With very thin metal sheets (< a max.) the usage of special thin tapping screws or clamping nuts (spring nuts) is recommended.

Drilling hole diameters for tapping screws

The tapping hole diameters in the following tables are non-binding approximate values for round holes.

The values may differ depending on the material or assembly conditions – this applies in particular to screws made from non-hardenable, stainless steels of the austenitic material groups A 2/A 4 (→ ISO 3506-4).

When using synthetic-based screws, the following conditions apply.

Table 26: Drilling hole für tapping screws

Nominal thread diameter d_1	Drilling hole-Ø (Tol. H 12) for tapping screws from material							
	for sheet thickness s		Hardened steel (min. 450 HV)				Stainless steels A 2/A 4 (ca. 250 HV)**	
			Drift-enlarged/Continuous hole Sheet from material		Drilled/Punched hole Sheet from material		Sheet from material	
	>	≤	St, Ni, MS, Cu, Monel	Al	St, Ni, MS, Cu, Monel	Al	Baustahl St. 37	Al
2.2 mm	–	0.56	–	–	1.60	–		
	0.56	0.75	–	–	1.70	1.60		
	0.75	0.88	–	–	1.80	1.60		
	0.88	1.13	–	–	1.85	1.60		
	1.13	1.38	–	–	1.85	1.70		
	1.38	1.50	–	–	1.90	1.80		
2.9 mm		0.56	2.20	–	2.20	–		
	0.56	0.63	2.50	2.20	2.25	–	2.30	2.40
	0.63	0.75	2.50	2.20	2.25	2.20	2.30	2.40
	0.75	0.88	2.50	2.20	2.40	2.20	2.30	2.40
	0.88	1.25	–	2.20	2.40	2.20	2.30	2.40
	1.25	1.38	–	–	2.40	2.20	2.30	2.40
	1.38	1.75	–	–	2.50	2.25	2.30	2.40
	1.75	2.50	–	–	2.60	2.40	2.40	2.50
3.5 mm		0.56	2.80	–	2.60	–	2.70	2.80
	0.56	0.75	2.80	2.80	2.70	–	2.70	2.80
	0.75	0.88	2.80	2.80	2.70	2.65	2.70	2.80
	0.88	1.25	–	2.80	2.80	2.65	2.70	2.80
	1.25	1.38	–	–	2.80	2.65	2.70	2.80
	1.38	1.75	–	–	2.90	2.75	2.80	2.90
	1.75	2.50	–	–	3.00	2.85	2.80	2.90
	2.50	3.00	–	–	3.20	3.00	2.90	3.00
	3.00	6.00	–	–	–	3.00	2.90	3.00
3.9 mm		0.50	3.00	–	2.95	–	3.00	3.10
	0.50	0.63	3.00	3.00	2.95	–	3.00	3.10
	0.63	0.88	3.00	3.00	2.95	2.90	3.00	3.10
	0.88	1.13	3.00	3.00	2.95	2.95	3.00	3.10
	1.13	1.25	3.00	3.00	3.00	2.95	3.00	3.10
	1.25	1.38	–	–	3.00	2.95	3.00	3.10
	1.38	1.75	–	–	3.20	3.00	3.00	3.10
	1.75	2.00	–	–	3.20	3.50	3.00	3.10
	2.00	2.50	–	–	3.50	3.50	3.10	3.20
	2.50	3.50	–	–	3.60	3.50	3.20	3.30
4.2 mm	–	0.50	3.50	–	–	–	–	–
	0.50	0.63	3.50	3.50	3.20	–	–	–
	0.63	0.88	3.50	3.50	3.20	2.95	–	–
	0.88	1.13	3.50	3.50	3.20	3.00	3.20	3.30
	1.13	1.38	3.50	3.50	3.30	3.20	3.20	3.30
	1.38	2.50	–	–	3.50	3.50	3.30	3.40
	2.50	3.00	–	–	3.80	3.70	3.30	3.40
	3.00	3.50	–	–	3.90	3.80	3.40	3.50
	3.50	10.00	–	–	–	3.90	3.5–3.6	3.6–3.7
4.8 mm	–	0.50	4.00	–	–	–	–	–
	0.50	0.75	4.00	4.00	3.70	–	–	–
	0.75	1.13	4.00	4.00	3.70	3.70	–	–
	1.13	1.38	4.00	4.00	3.90	3.70	3.70	3.90
	1.38	1.75	–	–	3.90	3.70	3.70	3.90
	1.75	2.50	–	–	4.00	3.80	3.80	3.90
	2.50	3.00	–	–	4.10	3.80	3.80	3.90
	3.00	3.50	–	–	4.30	3.90	3.90	4.00
	3.50	4.00	–	–	4.40	3.90	3.90	4.00
	4.00	4.75	–	–	4.40	4.00	4.00	4.10
	4.75	10.00	–	–	–	4.20	4.1–4.2	4.2–4.3
5.5 mm	–	1.13	4.70	–	4.20	–	–	–
	1.13	1.38	4.70	–	4.30	4.10	–	–
	1.38	1.50	–	–	4.30	4.10	–	–
	1.50	1.75	–	–	4.50	4.20	–	–
	1.75	2.25	–	–	4.60	4.40	4.50	4.60
	2.25	3.00	–	–	4.70	4.60	4.50	4.60
	3.00	3.50	–	–	5.00	4.60	4.60	4.70
	3.50	4.00	–	–	5.00	4.80	4.60	4.70
	4.00	4.75	–	–	5.10	4.80	4.70	4.80
	4.75	10.00	–	–	–	4.90	4.7–4.9	4.8–5.0
6.3 mm	–	1.38	5.30	–	4.90	–	–	–
	1.38	1.75	–	–	5.00	5.00	–	–
	1.75	2.00	–	–	5.20	5.00	–	–
	2.00	3.00	–	–	5.30	5.20	5.30	5.40
	3.00	4.00	–	–	5.80	5.30	5.40	5.50
	4.00	4.75	–	–	5.90	5.40	5.50	5.60
	4.75	5.00	–	–	–	5.60	5.50	5.60
	5.00	10.00	–	–	–	5.80	5.6–5.7	5.7–5.8

For "Mechanical fasteners" (screws, nuts and accessory parts), all function-relevant external and internal characteristics are regulated in detail in DIN, ISO or EN standards, these include:

- **Product standards** (e.g. DIN 931/ISO 4014)
  Specifications on the figure of the product, assigned version and product class (tolerance group), usual strength classes and/or materials and nominal sizes. Furthermore, each product standard contains "normative references" to relevantly applicable basic function standards.

Basic/Function standards (e.g. DIN 13, 267/ISO 898, 4759, 3269...)
Regulations for joint characteristics of the various products like, for example, thread, tolerances, surface versions, corrosion protection, mechanical properties and corresponding factory test programme as well as acceptance testing conditions.

By naming an article with a product standard number, all referred basic standards are automatically included and applicable as "Technical Delivery Conditions". This also applies for non-standardised thread and form parts when no particular arrangements have been made between the orderer and the supplier.

Standards always can only regulate just one general standard for products "for general use", this also applies for "Mechanical fasteners" (➔ ISO 3269/8992). For higher requirements for specific cases exceeding these normative regulations, it is the job of the user to define these requirements and specify necessary additional inspection requirements.

1. Quality checks during manufacture:
For basic/functional standards, testing programmes and procedures are given within which the manufacturer has to ensure the compliance with the proper standards quality of its products by carrying out constant sample checks. Alongside the obligatory checks for dimensional accuracy and surface condition, the following checks are also listed, among others:

- for screws and similar thread parts (➔ ISO 898-1)
  - hardness testing, proof load testing
  - bolt head impact/diagonal pull testing
  - surface decarburisation testing
- for nuts (➔ ISO 898-2)
  - hardness test, proof load test
  - expansion test

The procedure to be used in arbitration is specified in the standards. All standardised mechanical properties are generally valid at room temperature (approx. +20 °C).

2. Additional tests – Certificates according to EN 10204
For particular requirements and/or safety-related use-cases, additional articles or use-specific tests can be carried out either in the factory or by a commissioned factory independent technical expert or testing institute. The results of these extra tests shall be documented in a Certificate (inspection document), which the orderer shall receive as either an original or an unmodified copy.

The type and scope of these additional tests and who is to carry out and document them is to be determined by the user due to his knowledge on the use and particular requirements, and specified accordingly on ordering.

Inspection contents - according to DIN 11204
If there are no specifications on the scope of the test contents agreed in the order, DIN 11204 shall apply.
This standard regulates the test contents of certificates according to EN 10204 for fasteners.

Tab. 1: Test contents for screws according to DIN 11204

Section designation	Details
Tensile test: shape of test pieces	Tensile test of the entire screw: For the screws M 6 to M 39 according to ISO 898-1, ISO 3506-1, ISO 8839 or DIN 267-13, as long as the geometry of the screws is suited for the tensile test on the entire screw. In case a tensile test should be carried out on the cylindrical sample, this needs to be arranged at the time of ordering.
Tensile test: tensile strength	–
Hardness testing: test method	Symbol denoting test method
Hardness testing: individual values	Does not apply for ISO 8839 and austenitic steels of the types A1 to A5 according to ISO 3506-1 or ISO 3506-2
Torsion test: breaking torque	For screws ≤ M 5. For all property classes according to ISO 898-1, for austenitic steels of the types A1 to A5 according to ISO 3506-1 and for non-ferrous metals according to ISO 8839 as long as the geometry of the screw is suited to the torsion test according to ISO 898-7
Chemical composition	Cast analysis/product analysis according to the product specifications

Tab. 2: Test contents for nuts according to DIN 11204

Section designation	Details
Proof load test	For nuts M 6 to M 39 according to ISO 898-2, ISO 898-6, ISO 3506-2, ISO 8839 and DIN 267-13, if specified.
Hardness test: test method	Code of the hardness testing procedure
Hardness testing: individual values	Does not apply for ISO 8839 and austenitic steels of the types A1 to A5 according to ISO 3506-1 or ISO 3506-2.
Chemical composition	Cast analysis/product analysis according to the product specifications

Costs for additional testing are not contained in the product price.

Table 3 provides information on types of test certificates which have proven themselves as requirements for screws, nuts and other form and accessory parts.

General information:

- The values determined by additional testing and documented in certificates are not "committed properties" or "guarantees of quality" according to Section 267 of the German Civil Code (BGB) and do not mean that the user does not have to perform the proper inspection of incoming goods (Section 377 of the German Commercial Code (HGB)).
- All tests named in 1 and 2 are carried out in general on samples. While their results are representative for the most part of the delivery batch of a load, a 100% guarantee for each part of the batch can be derived from this just as little as its suitability for a specific purpose can be.

Tabelle 3: Overview of the usual inspection documents for screws, bolts, studs, nuts and accessory parts
Extract from EN 10204 – Jan 2005 (previously DIN 50049)

Standard marking	2.1①	2.2①	3.1	3.2
Certification	Declaration of compliance with the order	Test report	Inspection certificate	
Type of inspection	Not specific, no testing/evaluation of testing results of the delivery batch/ parts of the delivery itself		Specific ② = Testing is done on the delivery batch/parts of the delivery itself	
Content of the certification	No test results (= informal manufacturer confirmation, that the delivered products correspond to the agreements made on ordering)	Test result on the basis of non-specific tests (= from current series manufacturing records and not from tests on parts of the delivery batch)	Test results on the basis of specific tests ② = Evaluation and documentation of actual values from testing of parts of the delivery batch itself ②	
Terms of delivery	According to the terms of the order		According to the delivery terms of the order ③ = specified testing requirements of the orderer (also according to the technical regulations AD/TRD)	
Confirmation/ Certification by	The manufacturer		The acceptance-testing officer independent of the processing department of the manufacturer	As 3.1 + the technical expert commissioned (prescribed) by the orderer ④
Order example: Addendum to article text: "... with test certification according to EN 10204-3.1"				

① not recommended since there is no specific statement on the delivered product
② the sample quantities required for destructive inspections are to be taken into account when deciding the order quantity
③ e.g. specification of the yield strength/impact testing with specified high and low temperatures, particular crack testing procedures, etc.
④ according to the specifications of the orderer, e.g. TÜV, GL, DB ...

3. Acceptance testing for "Mechanical fasteners"
Extract from ISO 3269 (previously DIN 267-5)

This standard is always included as applicable when "Mechanical fasteners" are ordered according to standard or similar form parts, if not expressly agreed otherwise beforehand.

It does not apply to fasteners which
- are intended for automatic screw-in,
- are supposed to fulfil particularly high requirements,
- require particular processing procedures/testing measures
- require specific traceability.

Here, special corresponding arrangements always need to be made on request, on ordering at the latest (.e.g. according to ISO 16426). In general, standard commercial stock is not suitable for these specific requirements.

Since the mass production of standard parts for general use cannot be assumed to be free of individual errors or defective parts for economic reasons, the expectation of zero-error deliveries is fundamentally not standard-compliant (→ ISO 3269, „Introduction").

For sample test instructions during incoming goods inspections, ISO 3269 prescribes values for an "Acceptable Quality Level (AQL)" to which an acceptance number (Ac) is assigned. Ac is the highest count of defective parts in a sample test for which the test batch can still be accepted.

The assignment of AQL values is determined according to the following:
- Product type, e.g. screws, nuts, washers, bolts, pins, rivets
- Product (tolerance) classes: A, B or C
- Function-relevant characteristics = AQL value 1.5-1.0
- Other characteristics = AQL value 4.0-2.5
- Mechanical properties = AQL value 1.5-0.65

Details important for the functional compliance of the parts include, for example drive, thread. Other characteristics include, for example, minor measurement/type deviations which do not negatively affect the usability.

Table 4 shows the ratio of AQL value to the acceptance number for the same sample test extent as an example as well as the mathematical limit value (%) for the number of defective parts in the delivery batch (deliverer's risk max. 5%).

Table 4: Ratio AQL values : Acceptance numbers

Sample test scope Item	AQL value	= Acceptance number Ac Item	Limit value non-conforming fasteners %
125	0.65	2	1.6
125	1.0	3	2.4
125	1.5	4	3.2
125	2.5	6	4.8
125	4.0	8	6.4

The hardness measurement serves to determine the resistance of a material against the penetration of a test specimen which acts upon it with a specific type, force and time. Depending on the applied procedure, the hardness value is determined from the measured depth or size of the impression the test specimen makes on the workpiece.

The most common standardised methods are shown in Table 1. If in doubt, the Vickers Hardness test shall be applied for the mechanical fasteners. The measurements are taken on prepared samples. Here it needs to be differentiated between:

- **"Routine testing"**
  The measurement is taken on an even cut on the surface of the sample. Common hardness test procedures are Rockwell (HRC) and Vickers (HV 10 – HV 30).
- **"Arbitration testing"**
  The measurement is taken on a lengthwise or diagonal polished section of the cut-up specimen. The testing procedure according to ISO 898 is Vickers (HV).

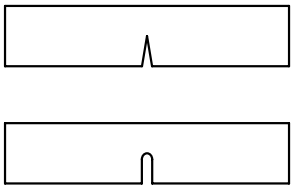
With the acceptance test of "Mechanical fasteners" hardness measurements are only part of routine and comparative checks. They are not themselves decisive for determining mechanical characteristics.

For screws, the tensile test determines the tensile strength, yield strength limit and elongation. For nuts, proof load tests and expansion tests are applicable. (ISO 898-1, DIN 267-21, ISO 898-2).

Table 2 shows a conversion of the hardnesses according to Vickers, Rockwell and Brinell into each other and for the tensile strength of non-alloy to low-alloy steels in hot-formed or heat-treated conditions. Beside these, the hardness ranges of screws, nuts and washers of the various strength classes are specified according to the standard.

Low load-hardness testing
The low load-hardness test with test loads between 2 and 30 N (HV 0.2 to HV 3) is the link between the conventional hardness testing (HV 5 to HV 100) and micro-hardness testing. It is suitable for determining the hardness in surface layers and for absorbing hardness gradient curves. For fasteners, especially quenched and tempered screws from property class 8.8 or higher, the low load-hardness testing according to ISO 898-1 is used to determine the carburisation state in the thread range.

Impact testing
Impact testing is used to measure the toughness. This shows the extent of the damage which needs to be done in order to shatter a sample. Tough steels can absorb a lot. Brittle steels require less effort. The result of impact testing is used in particular to estimate the usability of steel at low temperatures.
For testing, quadratic test specimens with a defined chamfer are made out of the screws. ISO-V and ISO-U samples are distinguished from each other. In practice, using the ISO-V sample was approved as this reacts more sensitively to the embrittlement of the screw due to the stronger notch effect compared to the ISO-U sample.



ISO-V- and ISO-U-sample

Table 1: Comparison of hardness measuring procedures

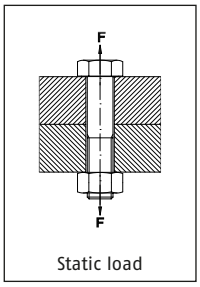
Procedure, Marking	Vickers HV	Brinell HB	Rockwell	
			HRC	HRB
Norm, Standard	ISO 6507-1.2 (DIN 50133)	ISO 6506 (DIN 50351)	ISO 6508/EN 10004 (DIN 50103-1)	
Suitable for materials	Metallic materials with very low to very high hardness level (specification of medium hardness)	Metallic materials with very low to high hardness level (specification of partial hardness)	Hardened steels, hardened and tempered alloys	Materials of medium hardness, steels with low to medium C-content of brass, bronze ...
Tensile strength range approx. (R_m in N/mm²)	< 250 – 2000	255 – 1520	770 – 2000	250 – 800 250 – 800
Penetrator	Diamond pyramids, quadratic base area, surface angle 136°	Ball from hardened steel, diameter: 10/15/2.5 or 1 mm	Diamond cone, cone angle 120° Tip: Radius of curvature 0.2 mm	Ball from hardened steel Diameter: 1/16" = 1.5875 mm
General dwell time (for arbitration tests, min.)	Material-dependent 10 – 30 (30) sec.	Material-dependent 10 – 30 (30) sec.	Material-dependent 2 – 25 (30) sec. (two-stage impression Test load F_0 + Test load F_1 = Total test load F)	
Code (examples)	640 HV 30 – applied test load F = 294 N/30 kp; Vickers Hardness; determined hardness value 180 HV 50/30 – Dwell time/sec	350 HB – Hardness Brinell; determined hardness value for ball diameter of 10mm Test load 29420 N/3000 kp Dwell time 10–15 sec. 120 HB 5/250/30 – Ball-Ø; Test load/kp; Dwell time/sec.	45 HRC – Hardness Rockwell procedure C; determined hardness value	45 HRB – Hardness Rockwell procedure B; determined hardness value

Table 2: Hardness re-evaluation*/comparison
Hardness ranges of screws, bolts, studs, nuts, washers and rings

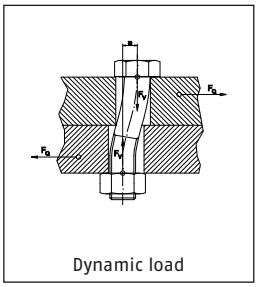
Vickers hardness	Brinell hardness	Rockwell hardness		~ Tensile strength	Rough hardness range (based on Vickers Hardness) for																	
					Screws					Nuts m ≥ 0.5 d**					Nuts m < 0.5 d Set screws				Washers/Rings		
HV 10	HB	HRB	HRC	MPa	4.6	5.6	8.8	10.9	12.9	5	6	8 04	10 05	12	14 H	17 H	22 H	45 H	St.	St. geh.	SSt.
80	76.0			255																	
85	80.7	41.0		270																	
90	85.5	48.0		285																	
95	90.2	52.0		305																	
100	95.0	56.2		320															100		
105	99.8			335																	
110	105	62.3		350																	
115	109			370	120																
120	114	66.7		385																	
125	119			400						130/142											
130	124	71.2		415																	
135	128			430																	
140	133	75.0		450							150/170										
145	138			465											140						
150	143	78.7		480		155													140		
155	147			495																	
160	152	81.7		510																	
165	156			530												170					
170	162	85.0		545																	
175	166			560																	
180	171	87.1		575								188/233									
185	176			595																	
190	181	89.5		610																	
195	185			625																	
200	190	91.5		640																	
205	195	92.5		660																	
210	199	93.5		675											Mu 215						
215	204	94.0		690													220				
220	209	95.0		705																	
225	214	96.0		720																	
230	219	96.7		740																	
235	223			755																	
240	228	98.1	20.3	770																	
245	233		21.3	785			≤ M 16 250														
250	238	99.5	22.2	800												245					
255	242		23.1	820	250	250													250		
260	247	(101)	24.0	835			> M 16 255						272								
265	252		24.8	850																	
270	257	(102)	25.6	865																295	
275	261		26.4	880																	
280	266	(104)	27.1	900											G. St./290						
285	271		27.8	915																	
290	276	(105)	28.5	930										295							
295	280		29.2	950																	
300	285		29.8	965																	
310	295		31.0	995			≤ M 16 320	320									300			300	
320	304		32.2	1030																	
330	314		33.3	1060																	
340	323		34.4	1095			> M 16 335														
350	333		35.5	1125																	
360	342		36.6	1155																	
370	352		37.7	1190								302/353	353	353							
380	361		38.8	1220					385												
390	371		39.8	1255				380													
400	380		40.8	1290																	
410	390		41.8	1320																400	
420	399		42.7	1350																	430
430	409		43.6	1385																	
440	418		44.5	1420					435									450			
450	428		45.3	1455																	
460	437		46.1	1485																	
470	447		46.9	1520																	
480	456		47.7	1555																	
490	466		48.4	1595																	
500	475		49.1	1630																	
520	494		50.5	1700																	
540	513		51.7	1775																	
560	532		53.0	1845																	
580	551		54.1	1920														560			530
600	570		55.2	1195																	
ISO 18265 Table A.1					ISO 898-1					ISO 898-2					DIN 267-24 ISO 898-5				e.g DIN 125-1	e.g DIN 125-2	e.g DIN 267-26

* Limitations according to ISO 18265 need to be taken into consideration.
** Hardness ranges differ according to the dimension ranges in min./max. values

Screwed fastenings should be designed in such a way that the preload applied under working stress remains as intact as possible. While in some cases a clear drop in preload can indeed be tolerated, the screwed fastenings coming undone completely must be prevented. If and how a screwed fastenings can come loose depends mainly on the stress.



Static load


Dynamic load

With static loads in axial direction, settling, which is dependent on the number and shape of the separation joints between the tensile building components, can lead to a complete loss of preload. With this kind of load, loss of preload may be counteracted with certain constructive measures or by using screw-settling locks.

With dynamic loads which run laterally to the centre of the screw and are large enough to shift the stressed building components against each other, a loosening torque is generated which can overcome the self-retention of the joint. If this is the case, the joints will systematically loosen until they come apart or break the joint. These loads become especially critical when they occur a lot. Fastener and unscrew locking devices may provide assistance here.

Measures against losing preload with static loads

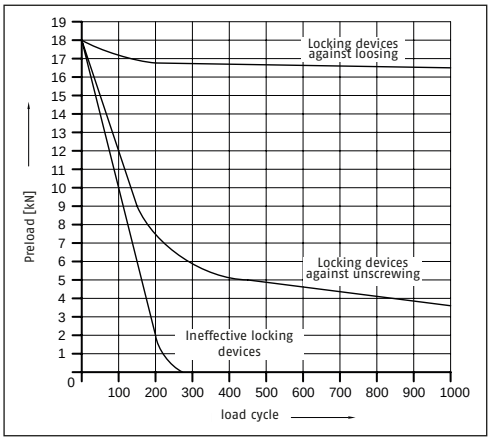
To keep settling losses in a screwed fastening as low as possible, the number of separation joints between the building components are to be kept to a minimum. Every unnecessary washer is an additional separation joint. Even the insertion of "soft" washers (e.g. DIN 125 with 140 HV) in a high-strength screwed fastening (≥ property class 8.8) is to be avoided. By selecting a longer screw grip length, e.g. by using extension sleeves, preload losses can be absorbed by greater elastic elongation. The same effects are achieved by using shank expansion screws or screws with full thread or by using higher preloads from higher-strength materials.

If these measures cannot be used, a curved washer can be used in accordance with DIN 6796 to partially balance out intrusions of parts into materials. Here, it should be made sure that the building component onto which the curved washer is placed is strong enough to not move under the strain and that the curved washer does not dig into the building component.

In contrast, DIN 127 and DIN 128 spring lock washers and DIN 137 spring washers are ineffective. Normally they are pressed flat, even at property class 5.6 and lower, as determined in the area of use of the product standards, and are not able to balance out any intrusions of parts into materials. For this reason, engineering standards organisations have made allowances for the latest technology and withdrawn these standards.

Additional invalid locking elements are
- DIN 6798 serrated lock washers,
- DIN 6797 toothed lock washers,
- DIN 93, DIN 432 and DIN 463 locking plates,
- DIN 526 safety cups,
- DIN 7967 self locking counter nuts.

In the past the products were assigned according to these standards to the category "Locking against unwinding under dynamic lateral load". However, they do not comply with the requirements. For this reason, the standards mentioned have also been withdrawn. Additionally, sufficient electrical contact, as described in the area of use of these standards, cannot be guaranteed for the serrated lock washers or toothed lock washers, which is why DIN 6797 and DIN 6798 have also been withdrawn.



Measures against losing preload with dynamic lateral loads

Locking devices against losing

While locking devices against losing do not prevent significant loss of preload, they do prevent the joint from coming apart completely. Usually, around 20% of the preload remains. The working principle is based on the gripping action in the thread.

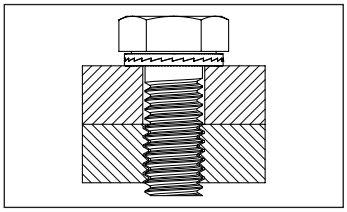
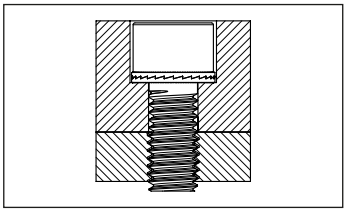
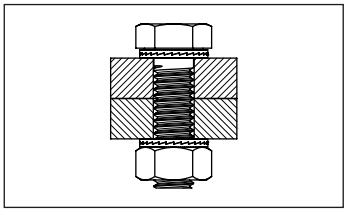
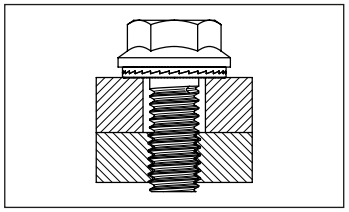
Products included in this category are:
- Prevailing torque type nuts
- Screws with locking element/coating
- Screws with adhesive coating
- Thread rolling screws

Locking coatings are described in DIN 267-28 and serve as locking devices against losing for locking screwed fastenings by generating frictional contact. They come in the form of plastic all-over coating, strip coating or spot coating, which have a locking effect when being screwed in (→ TI-243, Table 1).

Locking devices against unscrewing

Unscrew locking devices describe elements and methods which are made fundamentally for maintaining the preload in the screwed fastening despite strong dynamic loads. Normally, this prevents the preload from dropping below 80% of the assembly preload. There are two basic locking methods possible (form-fitting and adhering).

Installation example of washers with locking serrations

Locking of screwed fastenings

Form-fitting locking devices against unscrewing

Form-fitting is achieved by using locking serrations or ribs on the supporting surfaces of the screw head or nut. The use of washers with locking serrations or ribs is also possible. Of particular importance here is that the surface hardness of the locking serrations/ribs be considerably stronger than the building components to be connected so that they can dig themselves into the surface. Fundamentally, during assembly it needs to be made sure that locking occurs both under the screw head and under the nut as one of the two parts (screw or nut) may otherwise loosen from the building components to be connected.

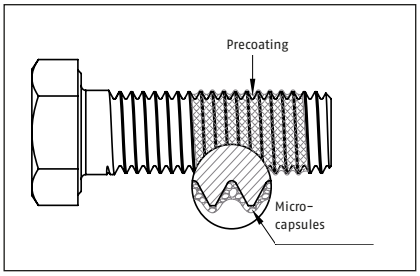
A product overview of form-fitting locking devices against unscrewing can be found in Table 3.

Furthermore, it should be noted that the friction coefficients are strongly affected by the locking serrations/ribs. As such, much higher friction coefficients (0.2 – 0.3) need to be reckoned with, when dealing with soft contact materials (aluminium alloys, construction steel), into which the serration dig. The tightening torques need to be determined accordingly. Ultimately, the optimum tightening torques are to be determined by testing in environments which reflect the actual conditions.

Typical values for tightening torques for form-fitting locking devices against unscrewing can be found in "Technical Information – Assembly TI-233".

Adhesive locking devices against unscrewing

A material bond can be created using an adhesive which is applied to the thread. Locking using an encapsulated adhesive is described in DIN 267-27.



The micro-capsules which are applied to the carrier material on the thread contain the adhesive and a hardening agent. The capsules break open during screwing and the adhesive begins to harden. The hardening process usually takes 24 hours to complete. A screwed fastening results which is locked against vibrations and loss of preload and which simultaneously acts as sealant.

Since the micro-capsules are applied to the thread in a special coating process, it is recommended that this be used especially with bulk amounts (➔ Table 1).

When applying micro-capsule adhesives to zinc flake coatings, seals on thick layer passivations and coatings with lubricant additives, a reduction in the breakaway torques vis-à-vis DIN 267-27 may come about. In this case, the application should be safeguarded by carrying out initial sample inspections and by testing in application conditions before using in bulk. An aerobic hardening liquid adhesives which are applied to the thread when assembling the screwed fastening are suitable for universal use. These harden when atmospheric oxygen and metal (iron and copper ions) come into contact with each other. Table 4 provides an overview of which adhesives are suitable for which surface coating. Thread friction coefficients which are set by the corresponding surface coating remain fundamentally unchanged.

Table 1: Product overview of adhesive and locking coatings

Selection of product and brand names for locking coatings		Selection of product and brand names for adhesive coatings	
TufLok®	Klemm-tight®	LOCTITE®	METAFLUX®
S-Lok	Thermo-tight®	INBUS-Plus	OKS®
Long-Lok	Bio-Tec®	DELO	SCOTCH GRIP®
Hot-Lok		WEICONLOCK®	Klemm-tight®
		PRECOTE®	Heat-tight®
			ALU-tight®

Table 2: Help for selecting the correct locking device

Design objectives	Locking variations
Reusability	• Form-fitting locking elements
Defined/Constant friction co-efficients	• Nord-Lock washers, adhesive locking devices
Low assembly costs	• Flange screws and nuts with locking serrations/ ribs • Adhesive locking device
Readjustability of the fastenings	• Form-fitting locking elements
Assembly conditions	• Makes it inevitable that the threads to be coupled are free from oil and grease, as such, adhesive locking devices are ineffective. ALU-tight® and Heat-tight® can be used under these conditions.
Temperatures	• Adhesive and locking coatings are subject to restricted temperature ranges

Table 3: Overview of form-fitting locking devices against unscrewing in the REYHER product range

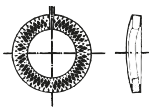
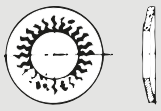
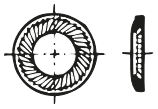
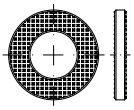
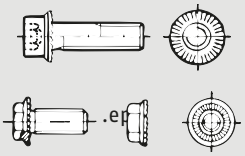
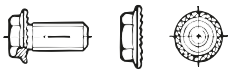
REYHER-article			Special features
88130 – 88131	Lock rings		Duplex structured surface and bulging ➔ this also balances out small intrusions of parts into materials
88123 – 88126	Lock washers		To a certain extent, bulging also balances out intrusions of parts into materials, similar to conical spring washers.
88120 – 88121	SCHNORR safety washers		Duplex serrated surface and bulging ➔ this also balances out small intrusions of parts into materials
88132	Nord-Lock washers – standard – SP (enlarged outer ∅) – SC for HV bolts – X-series		Each consisting of one washer pair, stuck as a pair for simple assembly. The external surfaces have ridges which are embossed into the surface of the components. The interior surfaces are wedge-shaped. During assembly, the interior surfaces only slide on top of each other ➔ this means that the friction coefficient remains constant, which makes it possible to determine a precise specification for the tightening torque. The x-series washers in additional are convex. ➔ this also balances out small instrusions of ports into materials
88119	LOCKTIX-washers		Both sides stamped surfaces and large bearing aera.
88912 88913 88914	Flange screws/Flange nuts with ribs		The assembly process is made easier thanks to the pressed flange with ribs as individual washers do not need to be used.
88933 88934	Locking screws/Locking nuts with serrations		The assembly process is easier thanks to the pressed flange with serrations as individual washers do not need to be used. The special design of the flange balances out intrusions of parts into materials to a limited degree.

Table 4: Product recommendation for anaerobic adhesives for locking screwed fastenings into place.

Material	Strength classification according to ISO 10964 – M 10		
	Low strength screw locking	Medium strength screw locking	High strength screw locking
Steel	Loctite 221, 222, 225	Loctite 241, 243, 245	Loctite 270, 272, 275
Brass	Loctite 222	Loctite 243	Loctite 270, 278
Stainless steel (A2 bis A5)	Loctite 222	Loctite 243	Loctite 2701, 278
Aluminium	Loctite 222	Loctite 243	Loctite 2701
Zinc plated and chromated	Loctite 221, 222, 225	Loctite 241, 243, 245	Loctite 270, 272, 275
Hot dip galvanized	Loctite 222	Loctite 243	Loctite 2701
Browned	Loctite 221, 222, 225	Loctite 241, 243, 245	Loctite 270, 272, 275
Nickel plated	Loctite 222	Loctite 243	Loctite 276
Geomet 321 Plus ML	Loctite 222	Loctite 243	Loctite 2701
Geomet 321 Plus VL	Loctite 222	Loctite 243	Loctite 2701
Geomet 500	Loctite 222	Loctite 243	Loctite 2701
Delta Protect KL 100-301 GZ	Loctite 222	Loctite 243	Loctite 2701
Delta Protect KL 105	Loctite 222	Loctite 243	Loctite 2701, 278
Delta Tone 9000 +DS GZ	Loctite 222	Loctite 243	Loctite 2701

Viscosities and further details can be found in the data sheets – www.loctite.de
Service temperature: –55 °C – 150 °C, exception: Loctite 278: –55 °C – 200 °C
Reducing the break-off strength of coatings and inactive materials is possible.
➔ Preliminary experiments are recommended.

Source: LOCTITE

EC Directive 2000/53/EC on end-of-life vehicles (ELV Directive)
(End-of-Live-Vehicles)

The aim of this European directive is to avoid having materials which are dangerous to health in vehicles or to prevent this from happening as much as possible.

All cars and utility vehicles up to 3.5 tonnes, which were put into operation from 1st July 2007 onwards are affected by this.

The following are banned from this date

1. Lead
2. Cadmium
3. Chromium (VI)
4. Mercury

Exceptional approval was granted until 1st July 2008 for hexavalent chromium in corrosion protection layers for screws and nuts to fasten parts of chassis frames.

The EU directive was adopted into German law through the end-of-life vehicles directive. The automotive industry implemented the requirements of the EU directive in the form of

1. VDA data sheet 232-101 (list of materials which must be declared)
2. International material data system (IMDS).

➔ **These products from the REYHER catalogue comply with this directive**
All products made from steel, stainless steel and non-ferrous metals, uncoated or zinc plated with blue/transparent thick layer passivation, with zinc flake coatings without hexavalent chromates (flZnnc) and hot dip galvanization

EC Directive 2002/95/EC on electrical and electronic equipment (ROHS directive)
(Restriction of Hazardous Substances)

Through EU Directive 2011/65/EU (colloquially referred to as RoHS II) on the restriction of use of certain hazardous substances in electrical and electronic equipment, from 8th June 2011 the previous RoHS Directive 2002/95/EC is repealed.

It is implemented by the Hazardous Substances in Electrical and Electronic Equipment Ordinance (ElektroStoffV) in Germany. Accordingly, waste electrical and electronic equipment, including cables and spare parts that contain more than 0.1 percent by weight of lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers or more than 0.01 percent by weight of cadmium per homogeneous material may not be placed on the market.

The directive provides for a gradual extension to all electrical and electronic equipment by 22nd July 2019. Thus, in addition to the products already affected previously, it covers, among other things, medical devices and monitoring and control instruments after 22nd July 2014 and industrial monitoring and control instruments after 22nd July 2017.

➔ **These products from the REYHER catalogue comply with this directive**
All products made from steel, stainless steel and non-ferrous metals, uncoated or zinc plated with blue/transparent thick layer passivation, with zinc flake coatings without hexavalent chromates (flZnnc) and hot dip galvanization

ZEK 01.2-08 PAK
(Polycyclical aromatic hydrocarbons)

This directive replaces directive ZEK 01-08. Products (technical work equipment and consumer products) must comply with legal requirements to avoid any risk to health, such as § 30, 31 LFGB, the Chemicals Prohibition Ordinance and § 4 the Equipment and Product Safety Act (GPSG), which is why the revised PAH test specifications as well as the new PAH maximum values were specified in this document. Materials that may contain PAHs are, for example, elastomers (plastics and rubber materials), black or dark-colored polymers, coatings and lacquers as well as materials treated with preservatives (naphthalene) such as natural bristles, leather products, bast and wood.

The main causes of PAH contamination in materials are the use of:

- PAH-contaminated softening oils in rubber and flexible plastics (soft plastics)
- PAH contaminated soot as a black pigment used in rubber, plastics and varnish

This shows that products we delivered which were made from steel, stainless steel and non-ferrous metals including all coatings are not affected by this regulation.

➔ **All products from the REYHER catalogue comply with this directive**

HR 4040 – CPSIA
(Consumer Product Safety Improvement Act)

The US Consumer Product Safety Improvement Act of 2008 (HR 4040/CPSIA), was passed in August 2008 and important provisions came into force in February 2009.

The phthalates DEHP, DBP and BBP are banned, the phthalate DINP, DIDP and DNOP are provisionally banned until an evaluation by the "Chronic Hazard Advisory Panel (CHAP)" has been carried out.

Lead in base material has also been banned in the form of a progressive stipulation of ≤ 600 ppm (10th February 2009) to ≤ 100 ppm (14th August 2011) and in colour coatings of ≤ 90 ppm.

From a technical point of view, this demand cannot be complied with due to nationally and internationally standardised fasteners. Thus, for example, all low strength classes up to class 6.8 can be manufactured from machining steel which can have a lead content of up to 350 ppm. With non-ferrous metals, the lead content can even be up to 4000 ppm.

EU-Directive EU 2006/122/EG (PFOS)
(Perfluoroctansulfonate)

The EU Directive 2006/122/EC relates to the use of perfluoroctane sulfonates (PFOS) in the aerospace, semiconductor and electronics industries, as well as in the photographic trade. If emissions into the environment and exposure in the workplace can be reduced to a minimum, there is no serious threat to the environment or to human health. According to the directive, special attention need to be given to galvanic processes and surface treatment of metals and plastics. There are indications and experience shows that legislative measures are to be expected in this regard. By using the best technology available, it is expected that emissions shall be reduced accordingly. Another proposal is for restricting semi-finished products and products containing PFOS to which PFOS were intentionally added. The directive would apply only to new products and not to products that are already on the market. Since perfluoro-octanoic acid (PFOA) and its salts pose a similar risk, possible additions to this directive in regard to this group are to be expected. A fully galvanized product does not contain any measurable quantities of PFOS.

➜ All products from the REYHER catalogue comply with this directive

EC Regulation 1907/2006 – Chemicals regulation (REACH)
(Registration, Evaluation, Authorisation of Chemicals)

This EC regulation centralises and simplifies Europe-wide chemical laws through registration, evaluation and authorisation and came into effect on 1st June 2007. It is the declared objective to increase the level of knowledge of the dangers and risks which arise from chemicals. Here, companies are given more responsibility for the safe handling of their products. Although fasteners are in principle included as articles by the REACH regulation, most fall under exemptions and are thus exempt from the registration requirement.

According to Article 3 of the REACH regulation fasteners are articles. Articles are objects whose function is defined not by its chemical composition (e.g. by the metal components in the alloy), but by their external shape.

However, according to Article 7, Section 1 of the REACH regulation articles are only subject to registration if they also contain substances that are intended to be released. This is however, not the case for fasteners.

Even fasteners with corrosion protection coatings, which thus have a sacrificial coating, i.e. a coating which is sacrificed to protect the component part, is not subject to having to be registered. This is because the protective layer is not released as such, but only certain reaction products. What is relevant is the exemption under Article 2, Paragraph 7 (b) REACH regulation in conjunction with Annex V, Section 3 of the REACH regulation. According to this, substances which result from a chemical reaction occurring upon end use of other substances, mixtures or articles and which are not themselves manufactured, imported or placed on the market, are exempted from the obligation to register.

However, this does not affect provisions regarding substances of very high concern (Article 57, Article 59, Annex 14 REACH regulation) in articles under Article 7, paragraph 2 REACH regulation. These substances are not subject to registration, but must be reported, provided

a) The substance is present in those articles in quantities totalling over one tonne per year per producer or importer
b) The substance in these articles contain a concentration of more than 0.1% (by mass)

Which substances are subject to such a reporting requirement still needs to be determined by the European authorities. Substances such as cadmium, mercury, lead, chromium VI, as contained in corrosion protection coverings and alloying elements, are expected to be included.

For fasteners, however, this reporting requirement is unlikely to come into play in the provision, since the share by mass of the dangerous substance is likely to be much smaller than 0.1%. This must be checked accordingly in each individual case.

The statements above do not apply to chemical/technical products (e.g. aerosols, adhesives and sealants). These are preparations, not articles. For preparations it is not the preparations themselves, but the ingredients that are subject to registration. For products manufactured in the EU this obligation to register affects the manufacturer and the importer for imports from non-EU countries.

➜ All products from the REYHER catalogue comply with this regulation

Construction Products Regulation 305/2011/EU
(Construction products directive)

On 1st July 2013 this regulation repealed Construction Products Directive 89/106/EEC.

This regulation lays down the conditions for the marketing and provision of construction as well as their CE marking.

For more detailed information, please refer to the REYHER special publication "Fasteners Metal and Steel Construction".

➜ These products from the REYHER catalogue comply with this directive*
- With CE marking: EN 14399-4, EN 14399-6, EN 14399-8, DIN 7968, DIN 7969, DIN 7989, DIN 7990, mountings from ISO 4014/4017 EN 15048, ISO 7042, DIN 6917, DIN 6918.

EC Directive 2006/42/EG
(Machinery Directive)

The directive regulates a unified protection level for accident prevention when bringing machinery into circulation inside the European Economic Area (EEA).

This Machinery Directive is supposed to reduce non-tariff barriers in the Union. Like all directives decreed on the basis of the EC Treaty, the Machinery Directive does not have any direct effect. It needs to be adopted into national law. In Germany, this has been done by the Equipment and Product Safety Act (Geräte- und Produktsicherheitsgesetz (GPSG)) and the Machinery Directive based there on (9th GPSGV).

From 29th December 2009 the new Machinery Directive is to be applied in a binding fashion.

Essentially, the following changes were made:

- Clearer restriction of the scope of application for the low-voltage directive and for the lift directive
- Incomplete machinery are included in the scope of application. Which directive requirements were satisfied can be found in the related documents. Included in the scope of delivery are a declaration of installation and assembly instructions written in the language of the country.
- The basic health and safety requirements were modified to meet technical advances made
- Selection options for conformity assessment procedures for machinery with inherently dangerous machines (see Annex 4 of the directive)
- Safety components receive the CE marking
- Inclusion of household appliances also commercially used, provided they fulfil the machine definition

➔ **These products from the REYHER catalogue can be used to implement this directive**
DIN 580, DIN 582, DIN 7964 and REYHER article numbers 88151, 88152 and 88153

Product Safety Act (ProdSG)

he German Product Safety Act, formerly the Equipment and Product Safety Act (GPSG), applies whenever products are made available on the market, exhibited on the market or used for the first time in the context of a commercial activity as well as to the erection and the operation of installations subject to mandatory inspection, which are used for commercial or economic purposes or which may put employees at risk, with the exception of installations subject to mandatory inspection.

The Product Safety Act (ProdSG) includes a number of regulations which have implemented a number of European directives into German law.

1. ProdSV – Regulation relating to making available on the market electrical equipment designed for use within certain voltage limits
2. ProdSV – Regulation relating to the safety of toys
6. ProdSV – Regulation relating to making available on the market simple pressure vessels
7. ProdSV – Appliances burning gaseous fuels regulation
8. ProdSV – Regulation relating to making available on the market personal protective equipment
9. ProdSV – Machinery regulation
10. ProdSV – Regulation relating to making available on the market recreation craft and transport using recreational craft
11. ProdSV – Explosion protection regulation
12. ProdSV – Lift regulation
13. ProdSV – Aerosol dispenser regulation
14. ProdSV – Pressure equipment regulation

EU Directive 97/23/EC
(Pressure equipment directive)

The EU Directed is implemented by the 6th ProdSV – Regulation relating to making available on the market simple pressure vessels

The regulation is reflected in the Technical Regulations (standards), which include instructions on computation and construction, on approved materials (including materials and strength classes for bolts and nuts), on acceptance test provisions (factory inspection documents) and on selected and correspondingly recognised manufacturers.

In addition or if not otherwise specified, the Technical Regulations apply to bolts and nuts among others:

AD 2000 data sheet W 0 = General principles for materials
AD 2000 data sheet W 2 = For austenitic steel parts
AD 2000 data sheet W 7 = For ferritic steel parts
AD 2000 data sheet W 10 = For ferrous material parts for low temperatures

The recognised manufacturer of bolts and nuts made from permitted materials must prove to the responsible authority that the requirements have been satisfied according to AD 2000 data sheet W0. Manufacturers who fulfil these requirements are listed in the VdTÜV data sheet for materials 1253/1. These manufacturers are subject to constant inspection.

➔ **These products from the REYHER catalogue comply with this directive***
DIN 938 (5.6), DIN 939 (5.6), DIN 28129 (C 35)
ISO 4014/4017 (5.6, 8.8, A 2-70, A 4-70, A 4-80, BUMAX 88), ISO 4032 (5, 8, A 2-70, A 4-70, A 4-80, BUMAX 88),
ISO 4762 (8.8, A 2-70, A 4-70, A 4-80, BUMAX 88)

* See the information on the corresponding products on the price pages

Fastener Quality Act (FQA)

This term stands for the legal initiative in the USA which requires that fasteners introduced to the US market be subject to extensive quality testing and certification carried out by inspection laboratories especially set up for this.

The reason this initiative was set up were a number of claims for damages as a result of fasteners failing in the 1980s. First of all, only vital fasteners were to be affected (= approx. 1% of all parts). However, during the first draft law, the affected article was expanded to such an extent that almost 70% of all fasteners became affected.

The first draft law was passed by the US Congress in November 1990 as PL (Public Law) 101-592. After some corrections and after amending the execution provisions "CFR part 280", "PL 104-113" emerged from this with a scheduled application date of 27th May 1997. The application date was postponed on numerous occasions due to objections from various organisations and because the required number of accredited inspection laboratories (min. 400) could not be set up on time: to 28th May 1998, 26th July 1998 and 25th October 1998. (PL105-234/PL 106-34).

The law (FQA – Amendments Act of 1999) was finally passed in simplified form, signed on 8th June 1999 by then President Clinton and came into force 180 days later on 6th December 1999.

Mechanical fasteners included in the FQA are bolts, nuts, screws and special load-showing clipped washers with a nominal diameter of 6 mm (0.25 inches) or larger, which have to be fully hardened and marked (property class) according to valid standards and correspond to valid standards.

Not included in this are, among others, mechanical fasteners which

- Are part of a composite whole
- Are parts which are to be used as spares, replacements or maintenance parts unless the part is in a package which contains more than 75 such parts at the point of sale
- The part is one from a construction set
- Parts which are manufactured according to the requirements of a quality assurance system for fasteners (certification according to ISO 9000ff, QS 9000 and VDA 6.1)
- Parts which are manufactured according to the requirements of the company's own standards

Additionally, digitally stored quality assurance documentation (declaration of conformity) is permitted in order to counteract the "mountains of paperwork".

➜ All products exported to the USA can be delivered according to this directive.

Notes

Note: This catalogue and the descriptions it contains as well as technical notes, drawings and explanations have been compiled by us with the greatest care. Nevertheless, we cannot accept any liability for type-setting and typographical errors, technical changes to the products or for any incidental or consequential damage in connection with our technical statements or our ability to deliver during the catalogue's duration of validity.

Illustrations and descriptions in this catalogue are in no way of an agreed quality. Understandably, the application of the products listed in this catalogue assumes expertise on their use and assembly as well as standards.

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Art.Nr. 49440.000.2014.001