Product information

RIPP flange screws/–nuts and locking screws/–nuts

With RIPP flange screws/–nuts and locking screws/–nuts REYHER is introducing high-value form-lock fixing elements into the range. They are available for delivery in a variety of sizes with property classes 90 (~8.8) and 100 (~10.9), as well as with surface coatings, zinc-laminated coating or zinc plating.

The surface coating with a clear advantage is the zinc-laminated coating, and not only because of its considerably higher corrosion resistance. More important is that hydrogen-induced stress corrosion cracking (hydrogen embrittlement) is not possible. RIPP flange screws/–nuts and locking screws/–nuts have a minimum tensile strength of 900 N/mm² or 1,000 N/mm², and are case-hardened so that they have a surface hardness of min. 550 HV, enabling the flanges or locking teeth to fulfil their function. This is a considerable difference from the screws and nuts similar to DIN 6921/6923 with flanges that are also on the market.

Even under dynamic load, the case-hardened RIPP flange screws/–nuts and locking screws/–nuts also prevent self-loosening and maintain the preload force in the screwed fastening above 80% of the assembly preload force. Contrary to, for example, adhesive screw locking devices, these screwed fastenings can be reused, and readjusted as required later.

Advantages

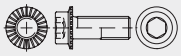
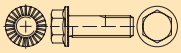
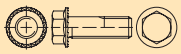
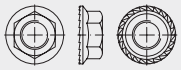
- **Available from stock in a variety of sizes and surface coatings**
- **The zinc-laminated coating as a surface covering excludes hydrogen-induced stress corrosion cracking (hydrogen embrittlement)**
- **Property classes 90 (~8.8) or 100 (~10.9)**
- **Form locking against self-loosening**
- **Reusable and readjustable screwed fastenings**
- **Case-hardened**

Application examples

- **Shipbuilding**
- **Cranes**
- **Mechanical engineering**
- **Vehicle bodies (truck, tracked vehicles)**

Article information

RIPP flange screws/–nuts and locking screws/–nuts

REYHER article	Article no.	Description	Dimensions
		RIPP flange screws/–nuts with ribs	
	88912	Hexagon socket head cap locking screws	M 6 x 12 – M 12 x 50
	88913	Hexagon head locking screws	M 14 x 1.5 x 30 – M 14 x 1.5 x 60 M 5 x 10 – M 16 x 70
	88914	Hexagon locking nuts	M 14 x 1.5 M 5 – M 16
		Locking screws/–nuts with serration	
	88933	Hexagon head locking screws	M 5 x 8 – M 10 x 30 M 12 x 20 – M 16 x 40
	88934	Hexagon locking nuts	M 12/M 16 M 5 – M 10

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Technical information

Tightening torques and preloads

In comparison to smooth support surfaces, the flange or ribs on these screws and nuts affect the tightening torque and consequently the preloads considerably. This means that especially with weak contact material such as aluminium alloys or mating material, where the teeth bite into the metal, considerably higher friction values are to be expected. The tightening torque should be suitably estimated. The optimal tightening torque is calculated by tightening tests, which reflect the actual conditions.
The following table shows the typical values for preloads and tightening torques.

Typical values for RIPP hexagon head locking screws and nuts / REYHER articles 88913 and 88914

Material of screwed part	Property class 100/10													
	M 5		M 6		M 8		M 10		M 12		M 14 x 1.5		M 16	
	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]
Steel R_m < 800 MPa	9,000	11	12,600	19	23,200	42	37,000	85	54,000	130	74,000	250	102,000	330
Steel R_m ≥ 800 MPa	9,000	10	12,600	18	23,200	37	37,000	80	54,000	120	74,000	240	102,000	310
Malleable cast iron	9,000	9	12,600	16	23,200	35	37,000	75	54,000	115	74,000	230	102,000	300

Typical values for hexagon socket head cap locking screws / REYHER articles 88912

Material of screwed part	Property class 100/10									
	M 5		M 6		M 8		M 10		M 12	
	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]
Steel R_m < 800 MPa	9,000	13	12,600	24	23,200	45	37,000	90	54,000	150
Steel R_m ≥ 800 MPa	9,000	11	12,600	20	23,200	42	37,000	85	54,000	140
Malleable cast iron	9,000	10	12,600	16	23,200	39	37,000	80	54,000	120

Typical values for hexagon head locking screws and nuts / REYHER articles 88933 and 88934

Material of screwed part	Property class 90/8								Property class 100/10			
	M 5		M 6		M 8		M 10		M 12		M 16	
	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]	F_V [N]	M_A [Nm]
Steel	6,350	9	9,000	16	16,500	34	26,200	58	54,000	120	102,000	280
Malleable cast iron	6,350	7	9,000	13	16,500	28	26,200	49	54,000	105	102,000	260

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