



Tightening Torque

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Hex Bolts

Tensile / Yield / Shear Strength / Tightening Torque

HEX BOLTS - RECOMMENDED TIGHTENING TORQUE CLASS 10.9									
Size	Pitch	Stress Area	Core Area	Tensile Load	Proof Load	Shear Load	Recommended Tightening Torque		
	(mm)	(mm ²)	(mm ²)	(kN)	(kN)	(kN)	Plain (Nm)	Zinc (Nm)	HDG (Nm)
M3	0.50	5.0	4.5	5.2	4.2	2.8	1.6	1.1	3.4
M4	0.70	8.8	7.8	9.1	7.3	4.8	3.8	2.7	8.0
M5	0.80	14.2	12.7	14.8	11.8	7.9	7.7	5.4	16.1
M6	1.00	20.1	17.9	20.9	16.7	11.2	13.0	9.1	27.3
M8	1.25	36.6	32.8	38.1	30.4	20.5	31.6	22.1	66.3
M10	1.50	58.0	52.3	60.3	48.1	32.6	62.6	43.8	131.4
M12	1.75	84.3	76.2	87.7	70.0	47.5	109.2	76.4	229.2
M14	2.00	115.0	104.7	119.6	95.5	65.3	173.7	121.6	364.8
M16	2.00	157.0	144.0	163.3	130.3	89.9	271.0	189.7	569.2
M18	2.50	192.0	175.0	199.7	159.4	109.2	372.9	261.0	783.1
M20	2.50	245.0	225.0	254.8	203.4	140.4	528.7	370.1	1110.3
M22	2.50	303.0	281.0	315.1	251.5	175.3	719.3	503.5	1510.4
M24	3.00	353.0	324.0	367.1	293.0	202.2	914.1	639.9	1919.7
M27	3.00	459.0	427.0	477.4	381.0	266.4	1337.2	936.0	2808.1
M30	3.50	561.0	519.0	583.4	465.6	323.9	1816.0	1271.2	3813.5
M33	3.50	694.0	647.0	721.8	576.0	403.7	2471.1	1729.8	5189.4
M36	4.00	817.0	759.0	849.7	678.1	473.6	3173.6	2221.5	6664.5
M39	4.00	976.0	912.0	1015.0	810.1	569.1	4107.1	2875.0	8624.9
M42*	4.50	1120.0	1050.0	1164.8	929.6	655.2	5075.6	3552.9	10658.8
M48*	5.00	1470.0	1380.0	1528.8	1220.1	861.1	7613.4	5329.4	15988.2
M56*	5.50	2030.0	1910.0	2111.2	1684.9	1191.8	12266.1	8586.3	25758.8
M64*	6.00	2680.0	2520.0	2787.2	2224.4	1572.5	18507.0	12954.9	38864.7

* Extrapolated

Not to be used for structural fasteners or structural applications.

Note:

The tightening torque values given in the above table serve only as a guide. A k factor of 0.2 has been used for plain threads which assumes burr-free with a light oil coating A k factor of 0.14 has been used for zinc plated and 0.42 for HDG coating. Note that these figures are based on the first tightening of single assemblies in isolation.

Bolt Tension | Anti-Vibration | Product Reliability | Traceability

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