



## Tightening Torque

# Hex Bolts

Tensile / Yield / Shear Strength / Tightening Torque

### HEX BOLTS - RECOMMENDED TIGHTENING TORQUE CLASS 4.6

Size	Pitch (mm)	Stress Area (mm <sup>2</sup> )	Core Area (mm <sup>2</sup> )	Tensile Load (kN)	Proof Load (kN)	Shear Load (kN)	Recommended Tightening Torque		
							Plain (Nm)	Zinc (Nm)	HDG (Nm)
M3	0.50	5.0	4.5	2.0	1.1	1.1	0.4	0.3	0.9
M4	0.70	8.8	7.8	3.5	2.0	1.9	1.0	0.7	2.2
M5	0.80	14.2	12.7	5.7	3.2	3.0	2.1	1.5	4.4
M6	1.00	20.1	17.9	8.0	4.5	4.3	3.5	2.5	7.4
M8	1.25	36.6	32.8	14.6	8.2	7.9	8.6	6.0	18.0
M10	1.50	58.0	52.3	23.2	13.1	12.6	17.0	11.9	35.6
M12	1.75	84.3	76.2	33.7	19.0	18.3	29.6	20.7	62.1
M14	2.00	115.0	104.7	46.0	25.9	25.1	47.1	33.0	98.9
M16	2.00	157.0	144.0	62.8	35.3	34.6	73.5	51.4	154.3
M18	2.50	192.0	175.0	76.8	43.2	42.0	101.1	70.8	212.3
M20	2.50	245.0	225.0	98.0	55.1	54.0	143.3	100.3	301.0
M22	2.50	303.0	281.0	121.2	68.2	67.4	195.0	136.5	409.5
M24	3.00	353.0	324.0	141.2	79.4	77.8	247.8	173.5	520.4
M27	3.00	459.0	427.0	183.6	103.3	102.5	362.5	253.7	761.2
M30	3.50	561.0	519.0	224.4	126.2	124.6	492.3	344.6	1033.8
M33	3.50	694.0	647.0	277.6	156.2	155.3	669.9	468.9	1406.8
M36	4.00	817.0	759.0	326.8	183.8	182.2	860.3	602.2	1806.6
M39	4.00	976.0	912.0	390.4	219.6	218.9	1113.4	779.4	2338.1
M42	4.50	1120.0	1050.0	448.0	252.0	252.0	1375.9	963.1	2889.4
M48	5.00	1470.0	1380.0	588.0	330.8	331.2	2063.9	1444.7	4334.1
M56	5.50	2030.0	1910.0	812.0	456.8	458.4	3325.1	2327.6	6982.8
M64	6.00	2680.0	2520.0	1072.0	603.0	604.8	5017.0	3511.9	10535.6



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 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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