

Metric Bolt Torque Chart (Nm)

Maximum tightening torques, new uncoated fasteners. Carbon steel classes: VDI 2230 convention, u(total) = 0.14, 90% yield utilisation. Stainless A2/A4: u(total) = 0.20. Always follow the joint or equipment specification where one exists.

EKINSUN LTD - custom & non-standard bolts machined to drawing - www.ekinsun.com/custom-fasteners/metric-bolt-torque-chart/

Coarse thread - property classes 8.8 / 10.9 / 12.9

Size	8.8	10.9	12.9
M3	1.3	2	2.3
M4	2.9	4.3	5
M5	5.8	8.4	9.9
M6	9.9	14.5	17
M8	24	35	41
M10	47	69	81
M12	81	119	139
M14	129	190	222
M16	198	291	341
M18	283	402	471
M20	402	570	667
M22	552	783	917
M24	691	981	1148
M27	1022	1452	1700
M30	1387	1969	2305
M33	1884	2676	3132
M36	2418	3435	4020

Stainless steel A2 / A4 - property classes 70 / 80

Size	70 (A2/A4)	80 (A2/A4)
M3	1.1	1.5
M4	2.6	3.4
M5	5.1	6.8
M6	8.8	11.7
M8	21	29
M10	44	58
M12	74	99
M14	119	158
M16	183	244
M18	259	345
M20	364	485
M22	495	660
M24	630	840
M27	920	1225
M30	1246	1660

Fine pitch - property classes 8.8 / 10.9 / 12.9

Thread	8.8	10.9	12.9
M8 × 1	26	38	44
M10 × 1.25	49	72	84
M12 × 1.25	88	129	151
M12 × 1.5	86	126	148
M14 × 1.5	138	203	237
M16 × 1.5	210	308	360
M18 × 1.5	308	438	513
M20 × 1.5	431	615	719
M22 × 1.5	580	826	966
M24 × 2	731	1044	1221

Lubrication correction (approximate): MoS2 / assembly paste ($u = 0.10$) $\times 0.82$ - degreased dry ($u = 0.20$) $\times 1.25$ (carbon classes, relative to the $u = 0.14$ values above). Threads tapped into aluminium (6061/7075): reduce torque or use threaded inserts. Non-standard, oversize and fine-pitch specials: torque must be calculated per joint - EKINSUN can machine and advise.