Tightening Torque

Socket Head Cap Screw

Tensile / Yield / Shear Strength

SOCKET HEAD CAP SCREW - RECOMMENDED TIGHTENING TORQUE
CLASS 12.9

Size	Pitch	Stress Area	Core Area	Tensile Load	Proof Load	Shear Load	Recommended Tightening Torque	
	(mm)	(mm²)	(mm²)	(kN)	(kN)	(kN)	Plain (Nm)	Zinc (Nm)
M3	0.50	5.0	4.5	6.1	4.9	3.3	2.0	1.4
M4	0.70	8.8	7.8	10.7	8.5	5.7	4.8	3.3
M5	0.80	14.2	12.7	17.3	13.8	9.3	9.6	6.7
M6	1.00	20.1	17.9	24.5	19.5	13.1	16.4	11.5
M8	1.25	36.6	32.8	44.7	35.5	24.0	39.8	27.8
M10	1.50	58.0	52.3	70.8	56.3	38.3	78.8	55.1
M12	1.75	84.3	76.2	102.8	81.8	55.8	137.4	96.2
M14	2.00	115.0	104.7	140.3	111.6	76.6	218.6	153.0
M16	2.00	157.0	144.0	191.5	152.3	105.4	341.1	238.8
M18	2.50	192.0	175.0	234.2	186.2	128.1	469.3	328.5
M20	2.50	245.0	225.0	298.9	237.7	164.7	665.4	465.8
M22	2.50	303.0	281.0	369.7	293.9	205.7	905.2	633.7
M24	3.00	353.0	324.0	430.7	342.4	237.2	1150.5	805.3
M27	3.00	459.0	427.0	560.0	445.2	312.6	1683.0	1178.1
M30	3.50	561.0	519.0	684.4	544.2	379.9	2285.5	1599.9
M33	3.50	694.0	647.0	846.7	673.2	473.6	3110.1	2177.1
M36	4.00	817.0	759.0	996.7	792.5	555.6	3994.1	2795.9
M39	4.00	976.0	912.0	1190.7	946.7	667.6	5169.1	3618.4
M42*	4.50	1120.0	1050.0	1366.4	1086.4	768.6	6388.0	4471.6
M48*	5.00	1470.0	1380.0	1793.4	1425.9	1010.2	9582.0	6707.4
M56*	5.50	2030.0	1910.0	2476.6	1969.1	1398.1	14335.0	10034.5
M64*	6.00	2680.0	2520.0	3269.6	2599.6	1844.6	18925.1	13247.6

* Extrapolated

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. Note that these figures are based on the first tightening of single assemblies in isolation.

Please refer to our engineering team for more detailed systems of determining the correct tension in fasteners rather than just using the above guide, which is very general in nature. It does not account for the many variables that affect friction in real-world applications and hence tension in the fastener.