



## Tightening Torque

# Socket Head Cap Screw

Tensile / Yield / Shear Strength

### SOCKET HEAD CAP SCREW - RECOMMENDED TIGHTENING TORQUE CLASS 12.9

Size	Pitch (mm)	Stress Area (mm <sup>2</sup> )	Core Area (mm <sup>2</sup> )	Tensile Strength (kN)	Proof Strength (kN)	Shear Strength (kN)	Recommended Tightening Torque	
							Plain (Nm)	Zinc (Nm)
M3	0.50	5.03	4.47	6.14	4.88	3.27	2.0	1.4
M4	0.70	8.78	7.75	10.71	8.52	5.67	5.0	3.5
M5	0.80	14.20	12.70	17.32	13.77	9.30	10.0	7.0
M6	1.00	20.10	17.90	24.52	19.50	13.10	16.0	11.2
M8	1.25	36.60	32.80	44.65	35.50	24.01	39.0	27.3
M10	1.50	58.00	52.30	70.76	56.26	38.28	77.0	53.9
M12	1.75	84.30	76.20	102.85	81.77	55.78	135.0	94.5
M14	2.00	115.00	104.70	140.30	111.55	76.64	215.0	150.5
M16	2.00	157.00	144.00	191.54	152.29	105.41	330.0	231.0
M18	2.50	192.00	175.00	234.24	186.24	128.10	455.0	318.5
M20	2.50	245.00	225.00	298.90	237.65	164.70	650.0	455.0
M22	2.50	303.00	281.00	369.66	293.91	205.69	870.0	609.0
M24	3.00	353.00	324.00	430.66	342.41	237.17	1100.0	770.0
M27	3.00	459.00	427.00	559.98	445.23	312.56	1650.0	1155.0
M30	3.50	561.00	519.00	684.42	544.17	379.91	2250.0	1575.0
M33	3.50	694.00	647.00	846.68	673.18	473.60	3110.0	2177.0
M36	4.00	817.00	759.00	996.74	792.49	555.59	3850.0	2695.0
M39	4.00	976.00	912.00	1190.72	946.72	667.58	5169.0	3618.0
M42	4.50	1120.00	1050.00	1366.40	1086.40	768.60	6270.0	4389.0
M48	5.00	1470.00	1380.00	1793.40	1425.90	1010.16	9582.0	6707.0



#### Note:

The tightening torque values given in the above table serve only as a guide. A k factor of 0.2 has been used which assumes threads are plain finish, burr free with a light oil coating. It should be noted 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 take into account the many variables that effect friction in real world applications and hence tension in the fastener.

Bolt Tension | Anti-Vibration | Product Reliability | Traceability

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