

Engineering Design Reference Sheet

Metric Capscrews Standard Torque Chart, Bold Values (Dry) are the Standard



Torque Spec. Chart
Standard Torque
Values Unless Noted

COARSE THREAD METRIC BOLTS

NOM SIZE M PROFILE	THREAD PITCH	D CPSCR. DIA (IN.)	A TENSILE STRESS (IN2)	K (DRY) = 0.20					K (LUBED) = 0.15									
				METRIC GRADE 8.8 CAPSCREWS					METRIC GRADE 10.9 CAPSCREWS					METRIC GRADE 12.9 CAPSCREWS				
				MIN. TENSILE STRENGTH (PSI)	PROOF LOAD (PSI)	CLAMP LOAD (LBS)	TORQUE (FT. LBS.)		MIN. TENSILE STRENGTH (PSI)	PROOF LOAD (PSI)	CLAMP LOAD (LBS)	TORQUE (FT. LBS.)		MIN. TENSILE STRENGTH (PSI)	PROOF LOAD (PSI)	CLAMP LOAD (LBS)	TORQUE (FT. LBS.)	
							DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15
6	1.00	0.2362	0.0312	120,350	87,000	2,036	8	6	150,800	120,350	2,816	11	8	177,000	140,650	3,291	13	10
8	1.25	0.3150	0.0567	120,350	87,000	3,700	19	15	150,800	120,350	5,118	27	20	177,000	140,650	5,981	31	24
10	1.50	0.3937	0.0899	120,350	87,000	5,866	38	29	150,800	120,350	8,115	53	40	177,000	140,650	9,483	62	47
12	1.75	0.4724	0.1307	120,350	87,000	8,528	67	50	150,800	120,350	11,797	93	70	177,000	140,650	13,787	109	81
16	2.00	0.6299	0.2434	120,350	87,000	15,882	167	125	150,800	120,350	21,970	231	173	177,000	140,650	25,676	270	202
20	2.50	0.7874	0.3798	120,350	87,000	24,782	325	244	150,800	120,350	34,282	450	337	177,000	140,650	40,064	526	394
24	3.00	0.9449	0.5473	120,350	87,000	35,711	562	422	150,800	120,350	49,401	778	583	177,000	140,650	57,733	909	682
30	3.50	1.1811	0.8698	120,350	87,000	56,754	1,117	838	150,800	120,350	78,510	1,545	1,159	177,000	140,650	91,753	1,806	1,355
				SAE GRADE 5 EQUIVALENT					SAE GRADE 8 EQUIVALENT					SAE GRADE 10 EQUIVALENT				

COARSE THREAD METRIC BOLTS

NOM SIZE M PROFILE	THREAD PITCH	D CPSCR. DIA (mm)	A TENSILE STRESS (mm ²)	K (DRY) = 0.20					K (LUBED) = 0.15									
				METRIC GRADE 8.8 CAPSCREWS					METRIC GRADE 10.9 CAPSCREWS					METRIC GRADE 12.9 CAPSCREWS				
				MIN. TENSILE STRENGTH (MPa)	PROOF LOAD (MPa)	CLAMP LOAD (N)	TORQUE (Nm)		MIN. TENSILE STRENGTH (MPa)	PROOF LOAD (MPa)	CLAMP LOAD (N)	TORQUE (Nm)		MIN. TENSILE STRENGTH (MPa)	PROOF LOAD (MPa)	CLAMP LOAD (N)	TORQUE (Nm)	
							DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15
6	1.00	6.000	20.129	830	600	9,056	11	8	1,040	830	12,527	15	11	1,221	970	14,640	18	13
8	1.25	8.000	36.581	830	600	16,457	26	20	1,040	830	22,765	36	27	1,221	970	26,605	43	32
10	1.50	10.000	58.000	830	600	26,093	52	39	1,040	830	36,095	72	54	1,221	970	42,184	84	63
12	1.75	12.000	84.322	830	600	37,935	91	68	1,040	830	52,477	126	94	1,221	970	61,328	147	110
16	2.00	16.000	157.032	830	600	70,646	226	170	1,040	830	97,726	313	235	1,221	970	114,210	365	274
20	2.50	20.000	245.032	830	600	110,235	441	331	1,040	830	152,492	610	457	1,221	970	178,213	713	535
24	3.00	24.000	353.096	830	600	158,851	762	572	1,040	830	219,744	1,055	791	1,221	970	256,809	1,233	925
30	3.50	30.000	561.160	830	600	252,455	1,515	1,136	1,040	830	349,230	2,095	1,572	1,221	970	408,136	2,449	1,837
				SAE GRADE 5 EQUIVALENT					SAE GRADE 8 EQUIVALENT					SAE GRADE 10 EQUIVALENT				

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Columbia

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FINE THREAD METRIC BOLTS

NOM SIZE M PROFILE	THREAD PITCH	D CPSCR. DIA (IN.)	A TENSILE STRESS (IN2)	K (DRY) = 0.20					K (LUBED) = 0.15										
				METRIC GRADE 8.8 CAPSCREWS			METRIC GRADE 10.9 CAPSCREWS					METRIC GRADE 12.9 CAPSCREWS							
				MIN. TENSILE STRENGTH (PSI)	PROOF LOAD (PSI)	CLAMP LOAD (LBS)	TORQUE (FT. LBS.)		MIN. TENSILE STRENGTH (PSI)	PROOF LOAD (PSI)	CLAMP LOAD (LBS)	TORQUE (FT. LBS.)		MIN. TENSILE STRENGTH (PSI)	PROOF LOAD (PSI)	CLAMP LOAD (LBS)	TORQUE (FT. LBS.)		
							DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15	
8	1.00	0.3150	0.0608	120,350	87,000	3,965	21	16	150,800	120,350	5,484	29	22	177,000	140,650	6,409	34	25	
10	1.25	0.3937	0.0949	120,350	87,000	6,190	41	30	150,800	120,350	8,562	56	42	177,000	140,650	10,007	66	49	
12	1.25	0.4724	0.1428	120,350	87,000	9,315	73	55	150,800	120,350	12,886	101	76	177,000	140,650	15,059	119	89	
16	1.50	0.6299	0.2589	120,350	87,000	16,890	177	133	150,800	120,350	23,364	245	184	177,000	140,650	27,305	287	215	
20	1.50	0.7874	0.4216	120,350	87,000	27,509	361	271	150,800	120,350	38,055	499	375	177,000	140,650	44,474	584	438	
24	2.00	0.9449	0.5952	120,350	87,000	38,837	612	459	150,800	120,350	53,724	846	635	177,000	140,650	62,786	989	742	
30	2.00	1.1811	0.9626	120,350	87,000	62,807	1,236	927	150,800	120,350	86,882	1,710	1,283	177,000	140,650	101,537	1,999	1,499	
					SAE GRADE 5 EQUIVALENT					SAE GRADE 8 EQUIVALENT					SAE GRADE 10 EQUIVALENT				

FINE THREAD METRIC BOLTS

NOM SIZE M PROFILE	THREAD PITCH	D CPSCR. DIA (mm)	A TENSILE STRESS (mm ²)	K (DRY) = 0.20					K (LUBED) = 0.15									
				METRIC GRADE 8.8 CAPSCREWS			METRIC GRADE 10.9 CAPSCREWS					METRIC GRADE 12.9 CAPSCREWS						
				MIN. TENSILE STRENGTH (MPa)	PROOF LOAD (MPa)	CLAMP LOAD (N)	TORQUE (Nm)		MIN. TENSILE STRENGTH (MPa)	PROOF LOAD (MPa)	CLAMP LOAD (N)	TORQUE (Nm)		MIN. TENSILE STRENGTH (MPa)	PROOF LOAD (MPa)	CLAMP LOAD (N)	TORQUE (Nm)	
							DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15				DRY 0.2	LUBED 0.15
8	1.00	8.000	39.200	830	600	17,635	28	21	1,040	830	24,395	39	29	1,221	970	28,510	46	34
10	1.25	10.000	61.200	830	600	27,533	55	41	1,040	830	38,087	76	57	1,221	970	44,511	89	67
12	1.25	12.000	92.103	830	600	41,435	99	75	1,040	830	57,319	138	103	1,221	970	66,987	161	121
16	1.50	16.000	167.000	830	600	75,130	240	180	1,040	830	103,930	333	249	1,221	970	121,460	389	292
20	1.50	20.000	272.000	830	600	122,368	489	367	1,040	830	169,275	677	508	1,221	970	197,828	791	593
24	2.00	24.000	384.000	830	600	172,754	829	622	1,040	830	238,977	1,147	860	1,221	970	279,286	1,341	1,005
30	2.00	30.000	621.000	830	600	279,376	1,676	1,257	1,040	830	386,470	2,319	1,739	1,221	970	451,658	2,710	2,032
				SAE GRADE 5 EQUIVALENT					SAE GRADE 8 EQUIVALENT					SAE GRADE 10 EQUIVALENT				