Fastener Mart™

METRIC BOLTS, SCREWS & NUTS TIGHTENING TORQUES

FAILURE OF THREADED FASTENERS DUE TO OVER - TIGHTENING CAN OCCUR BY BOLT SHANK FRACTURE OR BY STRIPPING OF THE NUT AND / OR BOLT'S THREAD. A BOLT OR SCREW ASSEMBLED WITH A NUT OF THE APPROPRIATE CLASS IS INTENDED TO PROVIDE AN ASSEMBLY CAPABLE OF BEING TIGHTENED TO THE BOLT PROOF LOAD WITHOUT THREAD STRIPPING OCCURING.

THE TORQUE VALUE TO BE SET FOR A PATICULAR SIZE OF SCREW IS DEPENDENT UPON:

1) MATERIAL OF THE SCREW
2) PARENT MATERIAL (STEEL, NON - FERROUS METAL OR PLASTIC)
3) WHETHER THE SCREW IS UNTREATED OR PLATED
4) WHETHER THE SCREW IS DRY OR LUBRICATED
5) THE DEPTH OF THE THREAD

TABLES BELOW ARE GIVEN FOR INFORMATIONAL USE ONLY. THE EXACT TORQUE VALUES ARE FOUND BY TESTS BASED UPON WORK EXPERIENCE

TIGHTENING TORQUES - **UNTREATED SCREW (BLACK FINISH)** FRICTION COEFFICIENT 0.14

PROPERTY CLASS	TORQUE Ma	NOMINAL DIAMETER - COARSE THREAD																		
		M 3	M 4	M 5	M 6	M 7	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30	M 33	M 36	M 39
5.6	Nm	0.60	1.37	2.70	4.6	7.6	11	22	39	62	95	130	184	250	315	470	635	865	1111	1440
	ft lb.	0.44	1.01	1.99	3.3	5.6	8.1	16	28	45	70	95	135	184	232	346	468	637	819	1062
8.8	Nm	1.37	3.10	6.15	10.5	17.5	26	51	89	141	215	295	420	570	725	1070	1450	1970	2530	3290
	ft lb.	1.01	2.29	4.54	7.7	12.9	19	37	65	103	158	217	309	420	534	789	1069	1452	1865	2426
10.9	Nm	1.92	4.40	8.65	15	25	36	72	125	198	305	420	590	800	1020	1510	2050	2770	3560	4620
	ft lb.	1.42	3.25	6.38	11	18.4	26	53	92	146	224	309	435	590	752	1113	1511	2042	2625	3407
12.9	Nm	2.30	5.25	10.4	18	29	43	87	150	240	365	500	710	960	1220	1810	2450	3330	4280	5550
	ft lb.	1.70	3.87	7.6	13	21.3	31	64	110	177	269	368	523	708	899	1334	1806	2455	3156	4093

PROPERTY CLASS	TORQUE Ma	NOMINAL DIAMETER - FINE THREAD							
		M 8 x 1	M 10 x 1.25	M 12 x 1.25	M 14 x 1.5	M 16 x 1.5	M 18 x 1.5	M 20 x 1.5	M 22 x 1.5	M 24 x 2
8.8	Nm	27	52	95	150	225	325	460	610	780
	ft lb.	19	38	70	110	165	239	339	449	575
10.9	Nm	38	73	135	210	315	460	640	860	1100
	ft lb.	28	53	99	154	232	339	472	634	811
12.9	Nm	45	88	160	250	380	550	770	1050	1300
	ft lb.	33	64	118	184	280	405	567	774	958

TIGHTENING TORQUES - **ELECTRICALLY ZINC PLATED** FRICTION COEFFICIENT 0.125

PROPERTY CLASS	TORQUE Ma	NOMINAL DIAMETER - COARSE THREAD																		
		M 3	M 4	M 5	M 6	M 7	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30	M 33	M 36	M 39
5.6	Nm	0.56	1.28	2.50	4.3	7.1	10.5	21	36	58	88	121	171	230	295	435	590	800	1030	1340
	ft lb.	0.41	0.94	1.84	3.1	5.2	7.7	15	26	42	64	89	126	169	217	320	435	590	759	988
8.8	Nm	1.28	2.90	5.75	9.9	16.5	24	48	83	132	200	275	390	530	675	995	1350	1830	2360	3050
	ft lb.	0.94	2.14	4.24	7.3	12.1	17.7	35	61	97	147	202	287	390	497	733	995	1349	1740	2249
10.9	Nm	1.80	4.10	8.10	14	23	34	67	117	185	285	390	550	745	960	1400	1900	2580	3310	4290
	ft lb.	1.33	3.02	5.97	10.3	16.9	25	49	86.2	136	210	287	405	549	708	1032	1401	1902	2441	3163
12.9	Nm	2.15	4.95	9.70	16.5	27	40	81	140	220	340	470	660	890	1140	1680	2280	3090	3980	5150
	ft lb.	1.59	3.65	7.15	12.1	19.9	29	59	103	162	250	346	486	656	840	1239	1681	2278	2935	3798

PROPERTY CLASS	TORQUE Ma	NOMINAL DIAMETER - FINE THREAD							
		M 8 x 1	M 10 x 1.25	M 12 x 1.25	M 14 x 1.5	M 16 x 1.5	M 18 x 1.5	M 20 x 1.5	M 22 x 1.5	M 24 x 2
8.8	Nm	25	49	88	140	210	305	425	570	720
	ft lb.	18	36	64	103	154	224	313	420	531
10.9	Nm	35	68	125	195	295	425	600	800	1000
	ft lb.	25	50	92	143	217	313	442	590	737
12.9	Nm	42	82	150	235	350	510	720	960	1200
	ft lb.	30	60	110	173	258	376	531	708	885

PLEASE NOTE CONVERSION FACTOR: ONE NM = .7375 FOOT.POUND ONE FOOT.POUND = 1.355818 N.M