

Typical Torque Performance of TAPTITE II® Screws in Cold Rolled Steel

Metric

Screw Size	Plate Thickness	Hole Size	Nearest Drill Size	Thread Forming Torque	Prevailing First Removal Torque	Recommended Assembly Torque	Failure Torque
M3 x 0.5	1.0	2.71	#36	.30-.45	.15-.30	1.0	1.5-2.0*
	2.0	2.75	2.75mm	.35-.55	.15-.30	1.0	1.6-2.5*
	3.0	2.75	2.75mm	.50-.80	.25-.40	1.6	2.5-3.5*†
M4 x 0.7	2.0	3.60	3.6mm	.60-.85	.30-.40	1.8	2.8-3.8*
	3.0	3.66	#27	.90-1.3	.50-.70	3.3	5.5-7.5*
	4.0	3.66	#27	1.2-1.6	.60-.85	4.3	7.0-10.0*†
M5 x 0.8	2.5	4.57	#15	1.3-2.0	.60-.80	2.8	5.3-8.0*
	3.5	4.57	#15	1.5-2.7	.90-1.5	6.0	10-12*
	5.0	4.60	4.6mm	2.0-3.0	.90-1.5	7.0	11-14*†
M6 x 1.0	3.0	5.41	#3	2.0-2.8	.60-1.2	5.0	9-13*
	4.5	5.50	5.5mm	3.2-4.5	.90-1.5	10.0	16-21*
	6.0	5.50	5.5mm	3.5-4.8	1.0-1.7	10.0	18-25*†
M8 x 1.25	4.0	7.30	7.3mm	4.8-7.0	1.5-2.8	20.0	33-42*
	6.0	7.37	L	5.5-9.5	2.2-3.6	28.0	43-53*
	8.0	7.37	L	7.0-12	4.0-6.0	30.0	55-65†
M10 x 1.5	5.0	9.20	9.2mm	11-15	5.0-7.0	30.0	53-63*
	8.0	9.20	9.2mm	14-19	6.0-9.0	45.0	80-92*
	10.0	9.25	9.25mm	15-22	7.0-12.0	55.0	92-102*†
M12 x 1.75	6.0	11.00	11.0mm	23-29	7.0-13.0	60.0	108-130*
	9.0	11.11	7/16	25-31	9.0-15.0	65.0	115-135*
	12.0	11.11	7/16	30-38	13.0-20.0	100.0	175-200*†

Inch

Screw Size	Plate Thickness	Hole Size	Nearest Drill Size	Thread Forming Torque	Prevailing First Removal Torque	Recommended Assembly Torque	Failure Torque
2-56	0.0469	0.075	1.9mm	1-2	.5-1	4	6-7*
	0.0625	0.076	#48	1-2	.5-1	4	8-10*
	0.0938	0.079	#47	1-2	.5-1	5	11-14†
3-48	0.0625	0.087	2.2mm	3-4	1-2	6	14-15*
	0.0938	0.089	#43	3-5	1-2	7	15-16*
	0.1250	0.090	#43	4-6	1-2	7	15-18†
4-40	0.0312	0.098	#40	2-3	1-2	6	8-11*
	0.0625	0.102	2.6mm	3-4	1-2	9	15-18*
	0.0938	0.102	2.6mm	3-4	1-2	11	22-27†
5-40	0.0625	0.111	#34	4-5	2-3	12	22-29*
	0.0938	0.113	#33	4-7	3-4	18	34-41*
	0.1250	0.116	#32	6-8	4-5	20	38-46†
6-32	0.0625	0.120	#31	4-7	3-4	14	25-30*
	0.0938	0.120	#31	6-9	3-5	20	35-45*†
	0.1250	0.125	1/8	6-9	4-6	22	39-45†
8-32	0.0938	0.147	#26	10-13	5-7	30	65-75*
	0.1250	0.150	3.8mm	11-14	4-7	45	75-85*†
	0.1875	0.150	3.8mm	16-20	8-11	45	75-95†
10-24	0.0938	0.172	11/64	14-18	5-8	35	65-80*
	0.1250	0.172	11/64	14-18	5-8	45	80-90*
	0.1875	0.172	11/64	17-22	9-13	55	110-115†
10-32	0.0938	0.173	#17	11-14	9-13	35	80-95*
	0.1250	0.177	#16	12-16	9-13	50	110-120*
	0.1875	0.177	#16	19-25	12-16	70	115-140*
12-24	0.1250	0.196	#9	19-24	9-12	65	95-115*
	0.1875	0.199	#8	21-26	9-13	75	135-155*
	0.2500	0.203	13/64	21-26	10-14	85	150-170†
1/4-20	0.1250	0.224	5.7mm	30-36	18-25	85	170-195*
	0.1875	0.224	5.7mm	45-55	25-35	125	205-235†
	0.2500	0.228	#1	55-65	25-35	125	205-235†
5/16-18	0.1875	0.281	K	75-85	40-50	160	380-410*
	0.2500	0.285	7.25mm	75-85	40-50	225	425-465*†
	0.3125	0.285	7.25mm	80-90	55-65	250	450-500†
3/8-16	0.2500	0.348	S	90-100	45-55	350	825-875*
	0.3125	0.348	S	110-125	50-60	400	950-1000*
	0.3750	0.354	9mm	95-110	30-45	450	950-1000*
7/16-14	0.3125	0.404	Y	145-165	75-95	500	1000-1150*
	0.3750	0.406	13/32	145-170	60-90	600	1200-1350*
	0.5000	0.406	13/32	195-220	75-105	700	1400-1600†
1/2-13	0.2500	0.465	29/64	150-180	60-80	500	975-1075*
	0.3750	0.469	15/32	185-215	60-90	850	1600-1800*
	0.5000	0.469	15/32	235-275	75-105	1000	1900-2200†

NOTES:

- Torque values for metric sizes in Newton-meters
- Torque values for inch sizes in pound-inches
- Plate dimensions for metric sizes in millimeters and for inch sizes in inches
- Torque values were developed using hex washer head screws, zinc plated plus lubricity wax, driven at low speed under laboratory-controlled conditions.
- Values shown represent the above conditions only and should not be used in lieu of proper application testing. The data is presented to provide the user with an estimate of what could be achieved in an actual application having a thicker or thinner nut member, harder or softer material, different hole or fastener all contribute to variations in torque performance.
- Recommended tightening torque is intended to induce approximately 30,000 to 50,000 psi clamping force.
- Prevailing first removal torque, the torque necessary to remove the screw after the head has been un-seated, is an indication of TAPTITE II® screws inherent resistance of free turning which is an indication of resistance to loosening under vibration, even without screw head being seated.

* Indicates probability that nut threads will strip.

† Indicates probability that screw will break.