

Bolt Torque Chart

jandesupply.com/calc-torque.php



A **starting-point tightening torque** for inch bolts by size, grade and lubrication — the numbers our online Torque Estimator gives, all on one sheet. Read across from the size to the grade and the condition of the threads.

TIGHTENING TORQUE, FT-LB coarse thread · target clamp = 75% of proof load

SIZE	GRADE 2 no head marks				GRADE 5 3 lines				GRADE 8 6 lines			
	PLAIN / DRY	ZINC PLATED	WAXED / LIGHT OIL	MOLY / ANTI-SEIZE	PLAIN / DRY	ZINC PLATED	WAXED / LIGHT OIL	MOLY / ANTI-SEIZE	PLAIN / DRY	ZINC PLATED	WAXED / LIGHT OIL	MOLY / ANTI-SEIZE
1/4"-20	5.5	4.9	4.1	2.7	8.4	7.6	6.3	4.2	12	11	8.9	6.0
5/16"-18	11	10	8.4	5.6	17	16	13	8.7	25	22	18	12
3/8"-16	20	18	15	10.0	31	28	23	15	44	39	33	22
7/16"-14	32	29	24	16	49	44	37	25	70	63	52	35
1/2"-13	49	44	37	24	75	68	57	38	106	96	80	53
9/16"-12	70	63	53	35	109	98	82	54	154	138	115	77
5/8"-11	97	87	73	49	150	135	113	75	212	191	159	106
3/4"-10	172	155	129	86	266	240	200	133	376	338	282	188
7/8"-9	167	150	125	83	430	387	322	215	606	546	455	303
1"-8	250	225	187	125	644	579	483	322	909	818	682	455

Pick the column for the threads as they go in. Lubricant changes torque more than anything else: the same bolt needs about **half the torque with anti-seize** as dry. Over-torquing a lubricated bolt is how bolts stretch and snap.

A starting point, not a spec. Where an engineer, a manufacturer or a standard gives a torque, that number governs. Figures are worked out as $T = K \times D \times F$, the method the torque estimator on our site uses. Grade 2 drops above 3/4" because SAE J429 sets a lower proof load for those sizes.



Scan for this chart online — plus free guides, charts & calculators at jandesupply.com
J & E Supply & Fastener Co. · Oklahoma City 405-670-1234 · Duncan 580-255-2582