



Suggested Torque Values

ASTM A193 Grade B7 – ASTM A354 Grade BC

Bolt Size	TPI	Proof Load (lbs)	Clamp Load (lbs)	Tightening Torque (ft lbs)			
				Waxed	Zinc	Plain	Teflon
1/4	20	3,350	2,513	7.9	8.9	10.5	3.9
5/16	18	5,500	4,125	16.1	18.3	21.5	8.1
3/8	16	8,150	6,113	28.7	32.5	38.2	14.3
7/16	14	11,150	8,363	45.7	51.8	61	22.9
1/2	13	14,900	11,175	69.8	79.2	93.1	34.9
9/16	12	19,100	14,325	100.7	114.2	134.3	50.4
5/8	11	23,750	17,813	139.2	157.7	185.5	69.6
3/4	10	35,050	26,288	246.4	279.3	328.6	123.2
7/8	9	48,500	36,375	397.9	450.9	530.5	198.9
1	8	63,650	47,738	596.7	676.3	795.6	298.4
1 1/8	7	80,100	60,075	844.8	957	1,126	422.4
1 1/4	7	101,750	76,313	1192.4	1,351	1,590	596.2
1 3/8	6	121,300	90,975	1,564	1,772	2,085	781.8
1 1/2	6	147,550	110,663	2,075	2,352	2,767	1037.5
1 3/4	5	199,500	149,625	3,273	3,709	4,364	1636.5
2	4 1/2	262,500	196,875	4,922	5,578	6,563	2460.9
2 1/4	4 1/2	341,250	255,938	7,198	8,158	9,598	3599.1
2 1/2	4	420,000	315,000	9,844	11,156	13,125	4921.9
2 3/4	4	468,500	351,375	12,079	13,689	16,105	6039.3
3	4	567,150	425,363	15,951	18,078	21,268	7975.5
3 1/4	4	674,500	505,875	20,551	23,291	27,402	10275.6
3 1/2	4	791,350	593,513	25,966	29,428	34,622	12983.1
3 3/4	4	917,700	688,275	32,263	36,565	43,017	16131.4
4	4	1,052,600	789,450	39,473	44,736	52,630	19736.3