



Suggested Torque Values

SAE J429 Grade 5 – ASTM A449

| Bolt Size | TPI | Proof Load (lbs) | Clamp Load (lbs) | Tightening Torque (ft lbs) | | |
|-----------|-------|------------------|------------------|----------------------------|---------|---------|
| | | | | Lubricated | Zinc | Plain |
| 1/4 | 20 | 2,700 | 2,025 | 6.3 | 7.2 | 8.4 |
| 5/16 | 18 | 4,450 | 3,338 | 13 | 14.8 | 17.4 |
| 3/8 | 16 | 6,600 | 4,950 | 23.2 | 26.3 | 30.9 |
| 7/16 | 14 | 9,050 | 6,788 | 37.1 | 42.1 | 49.5 |
| 1/2 | 13 | 12,050 | 9,038 | 56.5 | 64.0 | 75.3 |
| 9/16 | 12 | 15,450 | 11,588 | 81.5 | 92.3 | 108.6 |
| 5/8 | 11 | 19,200 | 14,400 | 113 | 127.5 | 150 |
| 3/4 | 10 | 28,400 | 21,300 | 200 | 226.3 | 266.3 |
| 7/8 | 9 | 39,250 | 29,438 | 322 | 364.9 | 429.3 |
| 1 | 8 | 51,500 | 38,625 | 482.8 | 547.2 | 643.8 |
| 1 1/8 | 7 | 56,450 | 42,338 | 595.4 | 674.8 | 793.8 |
| 1 1/4 | 7 | 71,700 | 53,775 | 840.2 | 952.3 | 1120.3 |
| 1 3/8 | 6 | 85,450 | 64,088 | 1101.5 | 1248.4 | 1468.7 |
| 1 1/2 | 6 | 104,000 | 78,000 | 1463 | 1657.5 | 1950 |
| 1 3/4 | 5 | 104,500 | 78,375 | 1714.5 | 1943 | 2285.9 |
| 2 | 4 1/2 | 137,500 | 103,125 | 2578.1 | 2921.9 | 3437.5 |
| 2 1/4 | 4 1/2 | 178,750 | 134,063 | 3770.5 | 4273.2 | 5027.3 |
| 2 1/2 | 4 | 220,000 | 165,000 | 5156 | 5843.8 | 6875 |
| 2 3/4 | 4 | 271,150 | 203,363 | 6990.6 | 7922.7 | 9320.8 |
| 3 | 4 | 328,350 | 246,263 | 9234.8 | 10466.2 | 12313.1 |