

Fastener Torque

$$T = 0.8KS_yAD$$

Fastener Conditions	K
Black Oxide as Received	0.20
Black Oxide, Degreased *	0.30
Cadmium Plated	0.16
Copper Anti-Sieze	0.13
Hot-Dip Galvanized	0.23
Zinc Plated	0.20
Loctite	0.16
Stainless, As Received	0.2
Stainless, Degreased *	0.35

* Not recommended due to high risk of galling

Fastener Material	S _y
Grade 2 Bolt SAE J429	57,000
Grade 5 Bolt SAE J429	92,000
Grade 8 Bolt SAE J429	130,000
Alloy Steel Socket Head Screw ASTM A574	153,000
Alloy Steel Button/Flat Head Screw ASTM F835	145,000
18-8 Stainless Bolts and Screws ASTM F593C	65,000
316 Stainless Bolts and Screws ASTM F593G	60,000
A286 Stainless Bolts and Screws ASTM A638	110,000

Thread	A (in ²)	D (in)
2-56	0.00370	0.0860
4-40	0.00604	0.112
6-32	0.00909	0.138
8-32	0.0140	0.164
10-24	0.0175	0.190
10-32	0.0200	0.190
1/4-20	0.0318	0.250
1/4-28	0.0364	0.250
5/16-18	0.0524	0.313
5/16-24	0.0580	0.313
3/8-16	0.0775	0.375
3/8-24	0.0878	0.375
7/16-14	0.106	0.438
7/16-20	0.119	0.438
1/2-13	0.141	0.500
1/2-20	0.160	0.500