



Nickel Systems Torque Tables

K-Monel

Min Yield Strength (σ_y)	100.0	KSI	100,000	PSI	UNS N05500 Fastener Torque	
Bolt Nominal Diameter (D)	Threads	Stress Area (A)	Proof Load	Clamping Load	K value	
					Dry	Lubricated
					0.22	0.13
					Dry	Lubricated
in	#/in	in ²	lbf	lbf	ft-lbf	ft-lbf
1/4	20	0.0318	2,862.0	2,146.5	9.8	5.8
1/4	28	0.0364	3,276.0	2,457.0	11.3	6.7
5/16	18	0.0524	4,820.8	3,615.6	20.7	12.2
5/16	24	0.0580	5,336.0	4,002.0	22.9	13.5
3/8	16	0.0775	7,130.0	5,347.5	36.8	21.7
3/8	24	0.0878	8,077.6	6,058.2	41.7	24.6
7/16	14	0.1063	9,779.6	7,334.7	58.8	34.8
7/16	20	0.1187	10,920.4	8,190.3	65.7	38.8
1/2	13	0.1419	13,054.8	9,791.1	89.8	53.0
1/2	20	0.1599	14,710.8	11,033.1	101.1	59.8
9/16	12	0.1820	16,744.0	12,558.0	129.5	76.5
9/16	18	0.2030	18,676.0	14,007.0	144.4	85.4
5/8	11	0.2260	20,792.0	15,594.0	178.7	105.6
5/8	18	0.2560	23,552.0	17,664.0	202.4	119.6
3/4	10	0.3340	30,728.0	23,046.0	316.9	187.2
3/4	16	0.3730	34,316.0	25,737.0	353.9	209.1
7/8	9	0.4620	42,504.0	31,878.0	511.4	302.2
7/8	14	0.5090	46,828.0	35,121.0	563.4	332.9
1	8	0.6060	55,752.0	41,814.0	766.6	453.0
1	12	0.6630	60,996.0	45,747.0	838.7	495.6
1 1/4	7	0.9690	89,148.0	66,861.0	1,532.2	905.4
1 1/4	12	1.0730	98,716.0	74,037.0	1,696.7	1,002.6
1 1/2	6	1.4050	129,260.0	96,945.0	2,666.0	1,575.4
1 1/2	12	1.5800	145,360.0	109,020.0	2,998.1	1,771.6

Equations

$$= \pi / 4 * (D - 0.9743 / n)^2$$

$$= \sigma_y * A * 90\%$$

$$= \text{Proof Load} * 75\%$$

$$= k * D * \text{Clamp Load} * (1\text{ft}/12\text{in})$$

Assumptions: (1) Yield Strength is chosen based on ASTM B 865 minimum standard for N05500 0.2% offset at room temperature. (2) This is for standard bolt, washer and nut connection. (3) This is for uniform materials for the bolt, washer & the nut. (4) This is for full thread engagement. (5) This is for new bolts and nuts without corrosion. (6) Our k values are typical. Molybdenum disulfide-based and nickel-based anti-seize lubricants were considered for lubrication. These values can fluctuate depending upon the source, type of oil and a variety of other factors. (7) This is considered under static load. Other factors such as vibration or dynamic applications were not considered. (8) These values are only appropriate for bolts under 6 inches. *This table was reviewed by an engineer & is believed by Nickel Systems to be accurate. However, it is not to be used as a substitute for professional engineering bolt design. Please consult a professional engineer. Nickel Systems assumes no liability for any use of this table beyond its intended purpose.*