



NOTHING PERFORMS BETTER

PREVAILING TORQUE GUIDE

INCH SIZES		PREVAILING TORQUE		INSTALLATION VALUES ⁽¹⁾					
Nominal Diameter (inch)	Thread Pitch (TPI)	IFI-100/1-7 Removal <i>minimum</i> (Ft Lbs)	Security Locknut ⁽²⁾ (Ft Lbs)	Grade 5			Grade 8		
				Clamp Load (Lbs)	Dry Tightening Torque ⁽³⁾ (Ft Lbs)	Lubricated Tightening Torque ⁽⁴⁾ (Ft Lbs)	Clamp Load (Lbs)	Dry Tightening Torque ⁽³⁾ (Ft Lbs)	Lubricated Tightening Torque ⁽⁴⁾ (Ft Lbs)
3/8	16	0.3	2	6,013	38	28	7,517	47	35
1/2	13	0.6	4	10,998	92	69	13,747	115	86
1/2	20	0.6	4	12,334	103	77	15,418	128	96
5/8	11	1.0	6	17,501	182	137	21,877	228	171
5/8	18	1.0	6	19,719	205	154	24,648	257	193
3/4	10	1.7	10	25,870	323	243	32,338	404	303
3/4	16	1.7	10	28,719	359	269	35,898	449	337
7/8	9	2.5	15	35,693	521	390	44,617	651	488
7/8	14	2.5	15	39,225	572	429	49,031	715	536
1	8	3.3	20	46,817	780	585	58,521	975	732
1	14	3.3	20	52,300	872	654	65,375	1,090	817
1-1/8	7	4.2	24	59,003	1,106	830	73,754	1,383	1,037
1-1/8	12	4.2	24	65,841	1,235	926	82,301	1,543	1,157
1-1/4	7	5.0	26	74,827	1,559	1,169	93,534	1,949	1,461
1-1/4	12	5.0	26	82,503	1,719	1,289	103,129	2,149	1,611
1-3/8	6	5.8	30	89,227	2,045	1,534	111,534	2,556	1,917
1-3/8	12	5.8	30	101,044	2,316	1,737	126,305	2,894	2,171
1-1/2	6	7.5	33	108,471	2,712	2,034	135,589	3,390	2,542
1-1/2	12	7.5	33	121,462	3,037	2,277	151,827	3,796	2,847

The values presented in these tables are representative and have been compiled for the user's benefit. The estimated torque calculations are only offered as a guide. Use of its content by anyone is the sole responsibility of that person and they assume all risk. Due to many variables that affect the torque-tension relationship like, length of fastener joined with the nut, surface texture, lubrication, nicked threads, non-parallel mating surfaces, thread pitch diameter, etc, the best way to determine the correct torque is through experimentation under actual joint and assembly conditions.

- 1) Installation torque and clamp load are calculated using the proof load for the class bolt and nut specified multiplied by 0.75 for a factor of safety and multiplied by 0.85 to account for material removal for the locking mechanism. Proof load used for Grade 5 calculation is 120,000 Lbs/in². Proof load used for Grade 8 calculation is 150,000 Lbs/in².
- 2) The value shown is the approximate installation and removal prevailing torque for the Security Locknut. The prevailing torque will vary less than 75% from the value shown from the first to the fifth installation and beyond.
- 3) Calculated using formula: Nominal diameter x Clamp Load (from note 1) x Friction factor (dimensionless value of 0.20 for dry installation).
- 4) Calculated using formula: Nominal diameter x Clamp load (from note 1) x Friction factor (dimensionless value of 0.15 for lubricated installation).





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METRIC SIZES		PREVAILING TORQUE		INSTALLATION VALUES ⁽¹⁾					
Nominal Diameter (mm)	Thread Pitch (mm)	ISO 2320 Removal <i>minimum</i> (Nm)	Security Locknut ⁽²⁾ (Nm)	Class 8			Class 10		
				Clamp Load (N)	Dry Tightening Torque ⁽³⁾ (Nm)	Lubricated Tightening Torque ⁽⁴⁾ (Nm)	Clamp Load (N)	Dry Tightening Torque ⁽³⁾ (Nm)	Lubricated Tightening Torque ⁽⁴⁾ (Nm)
10	1.50	1.4	3.0	22,181	44	33	30,662	61	46
10	1.25	1.4	3.0	23,408	47	35	32,359	65	49
12	1.75	2.1	4.0	32,232	77	58	44,556	107	80
12	1.25	2.1	4.0	35,218	85	63	48,683	117	88
16	2.00	4.2	6.0	59,926	192	144	82,838	265	199
16	1.50	4.2	6.0	63,973	205	154	88,433	283	212
20	2.50	7.0	15.0	93,634	375	281	129,435	518	388
20	1.50	7.0	15.0	103,850	415	312	143,558	574	431
24	3.00	10.5	20.0	134,833	647	485	186,387	895	671
24	2.00	10.5	20.0	147,039	706	529	203,260	976	732
27	3.00	12.0	22.0	175,723	949	712	243,084	1,313	984
27	2.00	12.0	22.0	189,621	1,024	768	262,309	1,416	1,062
30	3.50	14.0	26.0	214,425	1,287	965	296,411	1,778	1,334
30	2.00	14.0	26.0	237,610	1,426	1,069	328,460	1,971	1,478
33	3.50	15.5	29.0	265,284	1,751	1,313	366,717	2,420	1,815
33	2.00	15.5	29.0	291,006	1,921	1,440	402,273	2,655	1,991
36	4.00	17.5	30.0	312,397	2,249	1,687	431,842	3,109	2,332
36	3.00	17.5	30.0	330,839	2,382	1,787	457,336	3,293	2,470
39	4.00	19.5	33.0	373,226	2,911	2,183	515,930	4,024	3,018
39	3.00	19.5	33.0	393,359	3,068	2,301	543,761	4,241	3,181

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- 1) Installation torque and clamp load are calculated using the proof load for the class bolt and nut specified multiplied by 0.75 for a factor of safety and multiplied by 0.85 to account for material removal for the locking mechanism. Proof load used for Class 8 calculation is 600 N/mm². Proof load used for Class 10 calculation is 830 N/mm².
- 2) The value shown is the approximate installation and removal prevailing torque for the Security Locknut. The prevailing torque will vary less than 75% from the value shown from the first to the fifth installation and beyond.
- 3) Calculated using formula: Nominal diameter x Clamp Load (from note 1) x Friction factor (dimensionless value of 0.20 for dry installation).
- 4) Calculated using formula: Nominal diameter x Clamp load (from note 1) x Friction factor (dimensionless value of 0.15 for lubricated installation).





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PREVAILING TORQUE GUIDE

HEAVY HEX INCH SIZES		PREVAILING TORQUE		INSTALLATION VALUES ⁽¹⁾					
Nominal Diameter (inch)	Thread Pitch (TPI)	IFI-100/1-7 Removal <i>minimum</i> (Ft Lbs)	Security Locknut ⁽²⁾ (Ft Lbs)	Grade 5			Grade 8		
				Clamp Load (Lbs)	Dry Tightening Torque ⁽³⁾ (Ft Lbs)	Lubricated Tightening Torque ⁽⁴⁾ (Ft Lbs)	Clamp Load (Lbs)	Dry Tightening Torque ⁽³⁾ (Ft Lbs)	Lubricated Tightening Torque ⁽⁴⁾ (Ft Lbs)
3/8	16	0.3	2	6,700	42	31	8,300	52	39
1/2	13	0.6	4	12,200	102	76	15,100	126	95
5/8	11	1.0	6	19,400	202	152	24,100	251	188
3/4	10	1.7	10	28,700	358	269	35,600	445	333
7/8	9	2.5	15	39,600	577	433	49,100	716	537
1	8	3.3	20	51,900	865	649	64,400	1,073	805
1-1/8	7	4.2	24	57,000	1,069	802	81,100	1,521	1,141
1-1/4	7	5.0	26	72,300	1,507	1,130	102,900	2,143	1,608
1-3/8	6	5.8	30	86,300	1,977	1,482	122,700	2,812	2,109
1-1/2	6	7.5	33	104,900	2,621	1,966	149,100	3,729	2,797
2	4.5	n/a	50+	186,400	6,214	4,660	265,200	8,838	6,629
2-1/2	4	n/a	75+	298,100	12,420	9,315	424,000	17,667	13,250

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- 1) Installation torque and clamp load are calculated using the proof load for the class bolt and nut specified multiplied by 0.75 for a factor of safety and multiplied by 0.85 to account for material removal for the locking mechanism. Proof load used for Grade 5 calculation is 133,000 Lbs/in2 (3/8" to 1") and 116,000 Lbs/in2 (<1") . Proof load used for Grade 8 calculation is 165,000 Lbs/in2.
- 2) The value shown is the approximate installation and removal prevailing torque for the Security Locknut. The prevailing torque will vary less than 75% from the value shown from the first to the fifth installation and beyond.
- 3) Calculated using formula: Nominal diameter x Clamp Load (from note 1) x Friction factor (dimensionless value of 0.20 for dry installation).
- 4) Calculated using formula: Nominal diameter x Clamp load (from note 1) x Friction factor (dimensionless value of 0.15 for lubricated installation).

