



## Stainless Steel Hex Cap Screw (ASTM F593) & Socket Head Cap Screw (ASTM F837) Torque-Tension Guide

**Caution:** Stainless steel fasteners tend to gall, especially with long run downs, prevailing torque fasteners, impact drivers, and lack of lubrication. It is highly encouraged to use a lubricant such as graphite-based anti-seize or molybdenum disulfide based anti-seize or other commercially available anti-galling compounds and assemble with a slow and continuously applied torque to avoid galling.

Nominal Dia. (in.) or Nominal Size	Threads per inch	ASTM F593 Cold Worked				ASTM F837 CW			
		Lubricated Clamp Load (lbs)	Tightening Torque		Dry Clamp Load (lbs.)	Lubricated Clamp Load (lbs)	Tightening Torque		Dry Clamp Load (lbs.)
			Lubricated K = 0.16	Dry K = 0.35			Lubricated K = 0.16	Dry K = 0.35	
<b>Coarse Thread Series</b>									
2	56					111	1.5 in-lbs	1.8 in-lbs	59
4	40					181	3.2	3.8	97
6	32					273	6	7	145
8	32					420	11	13	224
10	24					526	16	19	281
1/4	20	1551	62 in-lbs	72 in-lbs	827	955	38	45	509
5/16	18	2556	128	149	1363	1573	79	92	839
3/8	16	3778	19 ft-lbs	22 ft-lbs	2015	2325	12 ft-lbs	14 ft-lbs	1240
7/16	14	5183	30	35	2764	3189	19	22	1701
1/2	13	6918	46	54	3689	4257	28	33	2270
9/16	12	8870	67	78	4731	5458	41	48	2911
5/8	11	11018	92	107	5876	6780	57	66	3616
3/4	10	11288	113	132	6020	10034	100	117	5351
7/8	9	15584	182	212	8311	12121	141	165	6464
1	8	20444	273	318	10903	15901	212	247	8480
1 1/8	7	25761	386	451	13739	20036	301	351	10686
1 1/4	7	32708	545	636	17444	25439	424	495	13568
1 3/8	6	38977	715	834	20788	30316	556	648	16168
1 1/2	6	47427	949	1107	25295	36888	738	861	19674
<b>Fine Thread Series</b>									
2	64					118	1.6 in-lbs	1.9 in-lbs	63
4	48					198	3.6	4.1	106
6	40					304	7	8	162
8	36					442	12	14	236
10	32					600	18	21	320
1/4	28	1773	71 in-lbs	83 in-lbs	946	1091	44	51	582
5/16	24	2831	142	165	1510	1742	87	102	929
3/8	24	4282	21 ft-lbs	25 ft-lbs	2284	2635	13 ft-lbs	15 ft-lbs	1405
7/16	20	5787	34	39	3087	3561	21	24	1899
1/2	20	7798	52	61	4159	4799	32	37	2559
9/16	18	9895	74	87	5277	6089	46	53	3248
5/8	18	12478	104	121	6655	7679	64	75	4095
3/4	16	12587	126	147	6713	11189	112	131	5967
7/8	14	17195	201	234	9171	133737	1560	182	7133
1	14	22946	306	357	12238	178470	2380	278	9518
1 1/8	12	28881	433	505	15403	224627	3369	393	11980
1 1/4	12	36212	604	704	19313	281648	4694	548	15021
1 3/8	12	44372	813	949	23665	345112	6327	738	18406
1 1/2	12	53360	1067	1245	28458	415019	8300	968	22134

Notes: Lubricated Clamp Load based on 75% of yield. Dry Clamp Load based on 40% of yield to avoid galling. The torque values can only be achieved if nut (or tapped hole) has a proof load greater than or equal to the bolt's minimum ultimate tensile strength. Torque values calculated from formula  $T=KDF$ , where

$K = 0.16$  for "lubricated" conditions and  $0.35$  for "dry"

NOTE: USE ASTM F837 CW for 18-8 and 316 stainless steel machine screw estimated torque values