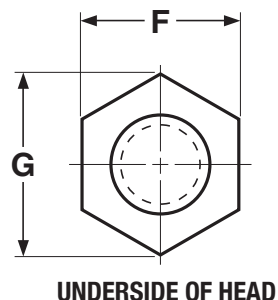
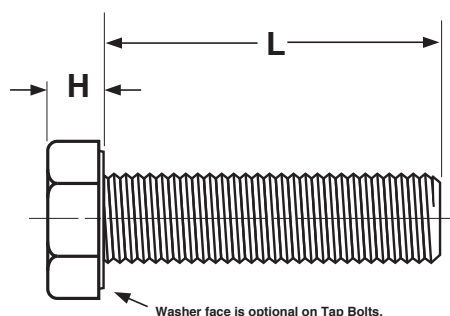


HEX TAP BOLTS

A307, Grades 5 & 8



±Length of a tap bolt is measured from the underhead bearing surface to the extreme end of the bolt.

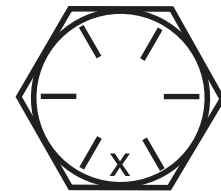
FULLY THREADED HEX TAP BOLTS								IFI-199 (2014)
Nominal or Basic Product Diameter	F			G		H		
	Width Across Flats			Width Across Corners		Head Height		
	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.
1/4	7/16	0.438	0.425	0.505	0.484	11/64	0.188	0.150
5/16	1/2	0.500	0.484	0.577	0.552	7/32	0.235	0.195
3/8	9/16	0.562	0.544	0.650	0.620	1/4	0.268	0.226
7/16	5/8	0.625	0.603	0.722	0.687	19/64	0.316	0.272
1/2	3/4	0.750	0.725	0.866	0.826	11/32	0.364	0.302
* 9/16	13/16	0.812	0.798	0.938	0.910	23/64	0.371	0.348
5/8	15/16	0.938	0.906	1.083	1.033	27/64	0.444	0.378
3/4	1 1/8	1.125	1.088	1.299	1.240	1/2	0.524	0.455
7/8	1 5/16	1.312	1.269	1.516	1.447	37/64	0.604	0.531
1	1 1/2	1.500	1.450	1.732	1.653	43/64	0.700	0.591
1 1/4	1 7/8	1.875	1.812	2.165	2.066	27/32	0.876	0.749

Tolerance on Length	Nominal Screw Size	Nominal Size				
		Up to 1 in., incl.	Over 1 in. to 2-1/2 in., incl.	Over 2-1/2 in. to 4 in., incl.	Over 4 in. to 6 in., incl.	Over 6 in.
	1/4 to 3/8	+0.02 -0.03	+0.02 -0.04	+0.04 -0.06	+0.06 -0.10	+0.10 -0.18
	7/16 and 1/2	+0.02 -0.03	+0.04 -0.06	+0.06 -0.08	+0.08 -0.10	+0.12 -0.18
	9/16 to 3/4	+0.02 -0.03	+0.06 -0.08	+0.08 -0.10	+0.10 -0.10	+0.14 -0.18
	7/8 and 1	...	+0.08 -0.10	+0.10 -0.14	+0.12 -0.16	+0.16 -0.20
	1 1/4	...	+0.12 -0.12	+0.16 -0.16	+0.18 -0.18	+0.22 -0.22

* Dimensions for 9/16" nominal diameter are independent of the IFI-199 standard.

A307, Grades 5, 8 & 18-8 SS

HEX TAP BOLTS

A307
HeadmarkGrade-5
HeadmarkGrade-8
Headmark

Description	ASTM A307 Tap Bolt: A low carbon, hex head bolt with a machined point which is threaded to the head. Grade-5 Tap Bolt: A tap bolt made from medium carbon steel. Grade-8 Tap Bolt: A tap bolt made from medium carbon alloy steel and heat-treated. Stainless Tap Bolt: A tap bolt made from 18-8 stainless steel.
Applications/ Advantages	ASTM A307 Tap Bolt: To be used in drilled and tapped holes which are threaded full length. Used instead of a stud and a nut. Grade-5 Tap Bolt: Used to mount motors to machinery; also popular in automotive and truck repair. Grade-8 Tap Bolt: Used in automotive and fleet industries where greater tensile strength is required than can be met by a grade-5. Stainless Tap Bolt: Used in environments corrosive to carbon steel, in tapped holes that are threaded full length.
Material	ASTM A307 Tap Bolt: Bolts shall be made from a carbon steel which conforms to the following chemical composition requirements-- Carbon: 0.33 maximum; Manganese: 0.93; Phosphorous: 0.041 Grade-5 Tap Bolt: AISI 1030 - 1541 or equivalent medium carbon steel. Use of an alloy such as 4037 modified steel is also acceptable. Grade-8 Tap Bolt: Medium carbon alloy steel. Note: For diameters 1/4 thru 7/16 inch, it is permissible to use AISI 1541 steel. Stainless Tap Bolt: 18-8 Stainless steel
Heat Treatment	Grade-5 Tap Bolt: Bolts shall be heat treated, oil or water quenched, at the option of the manufacturer, and tempered at a minimum tempering temperature of 800°F. Grade-8 Tap Bolt: Bolts shall be heat treated, oil quenched and tempered at a minimum tempering temperature of 800°F.
Core Hardness	ASTM A307 Tap Bolt: Rockwell B69 - B100 Grade-5 Tap Bolt: Rockwell C25 - C34 Grade-8 Tap Bolt: Rockwell C33 - C39 Stainless Tap Bolt: 1/4 thru 5/8" diam: Rockwell B95 - C32
Surface Hardness	Grade-5 Tap Bolt: Rockwell 30N54 maximum Grade-8 Tap Bolt: Rockwell 30N58.6 maximum
Proof Load	Grade-5 Tap Bolt: 85,000 psi. Grade-8 Tap Bolt: 120,000 psi.
Yield Strength*	Grade-5 Tap Bolt: 92,000 psi. minimum Grade-8 Tap Bolt: 130,000 psi. minimum Stainless Tap Bolt: 1/4 thru 5/8" diam: 60,000 psi. minimum
Tensile Strength	ASTM A307 Tap Bolt: 60,000 psi. minimum Grade-5 Tap Bolt: 120,000 psi. minimum Grade-8 Tap Bolt: 150,000 psi. minimum Stainless Tap Bolt: 1/4 thru 5/8" diam: 95,000 psi. minimum
Elongation*	ASTM A307 Tap Bolt: 18% minimum Grade-5 Tap Bolt: 14% minimum Grade-8 Tap Bolt: 12% minimum
Reduction of Area*	Grades 5 & 8 Tap Bolts: 35% minimum (all sizes)
Plating	See Appendix-A for plating information.

* These properties are tested only on machined specimens when the testing machine cannot provide for full testing of the parts.

**Product standards require the manufacturer's head marking to appear on the top of all bolts 1/4" diameter and larger. "X" represents one location such as marking may appear.