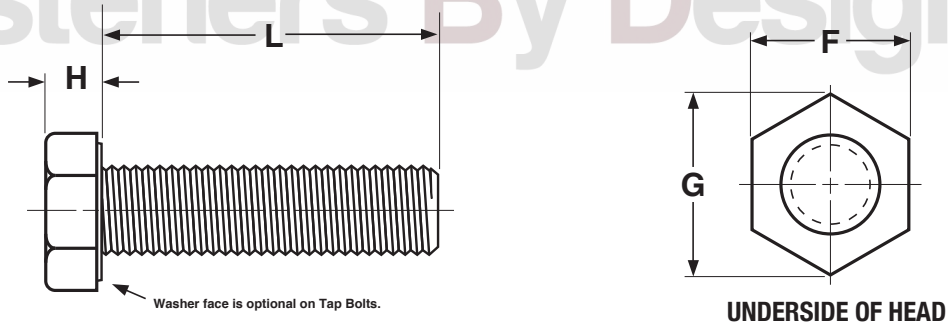


HEX TAP BOLTS

A307, Grades 5 & 8

Fasteners By Design Inc.



⊥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.

Fasteners By Design Inc.

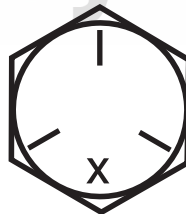
A307, Grades 5, 8 & 18-8 SS

HEX TAP BOLTS

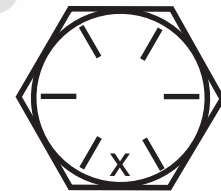
A307
Headmark



Grade-5
Headmark



Grade-8
Headmark



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

* 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 a marking may appear.