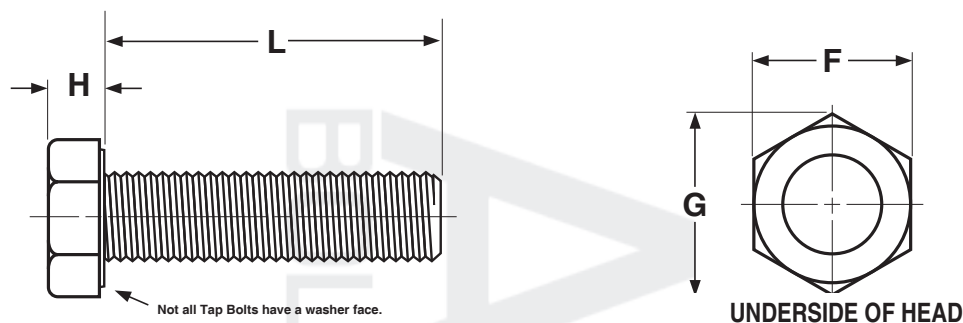


Hex Tap Bolts

Low Carbon,
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						ASME B18.2.1-1996		
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	0.428	0.505	0.488	5/32	0.163	0.150
5/16	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195
3/8	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226
7/16	5/8	0.625	0.612	0.722	0.698	9/32	0.291	0.272
1/2	3/4	0.750	0.736	0.866	0.840	5/16	0.323	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	0.922	1.083	1.051	25/64	0.403	0.378
3/4	1 1/8	1.125	1.100	1.299	1.254	15/32	0.483	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		-0.03	-0.04	-0.06	-0.10	-0.18		
7/16 and 1/2		-0.03	-0.06	-0.08	-0.10	-0.18		
9/16 to 3/4		-0.03	-0.08	-0.10	-0.10	-0.18		
7/8 and 1		...	-0.10	-0.14	-0.16	-0.20		
1 1/4		...	-0.12	-0.16	-0.18	-0.22		

Hex Tap Bolts

Low Carbon,
Grades 5 & 8



Low-Carbon
Headmark



Grade-5
Headmark



Grade-8
Headmark



Description	Low Carbon 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	Low Carbon 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	Low Carbon Tap Bolt: Shall be made from a steel conforming to the following chemical composition: Carbon- 0.33% max.; Manganese- 0.93% max.; Phosphorous: 0.041% max. 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 through 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	Low Carbon 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	Low Carbon 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*	Low Carbon Tap Bolt: 18% minimum Grade-5 Tap Bolt: 14% minimum Grade-8 Tap Bolt: 12% minimum
Reduction of Area*	Low Carbon, Grades 5 & 8 Tap Bolts: 35% minimum (all sizes)

* 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.