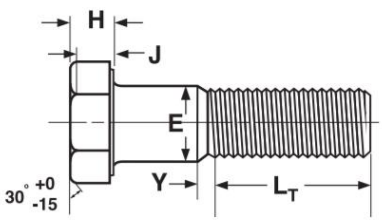
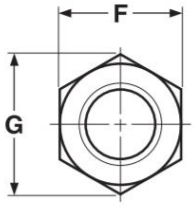
Metallics

An AMERICAN Source For Premier and Innovative Fasteners and Anchors

HEX BOLT – DOMESTIC, 18-8 STAINLESS STEEL, AND 316 STAINLESS STEEL

The following Specification Sheet applies to all **Hex Bolt – Domestic, 18-8 Stainless Steel, and 316 Stainless Steel** in our **SBHC and JSBHC series**.





UNDERSIDE OF HEAD

HEX BOLTS

Nominal or Basic Product Diameter		E		F			G		H			J	L_T		Y
		Body Diameter		Width Across Flats			Width Across Corners		Head Height			Wrenching Height	Thread Length		Transition Thread Length
													For Screw Lengths ≤ 6 in.	For Screw Lengths > 6 in.	
		Max	Min	Basic	Max	Min	Max	Min	Basic	Max	Min	Min	Ref	Ref	Max
1/4	0.2500	0.2500	0.2450	7/16	0.438	0.428	0.505	0.488	5/32	0.163	0.150	0.106	0.750	1.000	0.250
5/16	0.3125	0.3125	0.3065	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195	0.140	0.875	1.125	0.278
3/8	0.3750	0.3750	0.3690	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226	0.160	1.000	1.250	0.312
7/16	0.4375	0.4375	0.4305	5/8	0.625	0.612	0.722	0.698	9/32	0.291	0.272	0.195	1.125	1.375	0.357
1/2	0.5000	0.5000	0.4930	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302	0.215	1.250	1.500	0.385
5/8	0.6250	0.6250	0.6170	15/16	0.938	0.922	1.083	1.051	25/64	0.403	0.378	0.269	1.500	1.750	0.455
3/4	0.7500	0.7500	0.7410	1-1/8	1.125	1.100	1.299	1.254	15/32	0.483	0.455	0.324	1.750	2.000	0.500
1	1.0000	1.0000	0.9900	1-1/2	1.500	1.469	1.732	1.675	39/64	0.627	0.591	0.416	2.250	2.500	0.625

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Description	18-8 and 316 stainless steel cap screws are both made from austenitic alloys as described below.
Applications/ Advantages	**18-8:** Used in products that requre general atmospheric corrosion resistance, such as chemical and food-processing equipment. Some chemical environments may require special corrosion resistant materials and precautions. **316:** The molybdenum content gives this type of stainless even greater corrosion resistance than 18-8 as well as superior strength at high temperatures.
Material	***18-8:*** A cap screw made from one of the following austenitic alloys: 303, 303Se, 304, XM7, all of which are characterized as having a chromium content of 17-19% and nickel content of 8-10%. ***316:*** A cap screw made from 316 stainless steel, an austenitic alloy, which differs from 18-8 by its molybdenum content (2-3%) and a higher nickel content (10-14%).
Heat Treatment	The austenitic alloys develop their strength through work hardening during the fastener manufacturing process, as seen from the hardness properties below. The only heat treatment normally available on austenitic stainless alloys is annealing, which is done at approximately 1900° F to a dead soft condition and is not normally thermally revsersible.
Hardness	***1/4 through 5/8 in. diameter:*** Rockwell B95 - C32 *3/4 through 1 in. diameter:* Rockwell B80 - C32
Yield Strength*	***1/4 through 5/8 in. diameter, 2.25D and longer:*** 65,000 psi minimum *3/4" (2.25D & longer) & 7/8 through 1 in. diameter (3D & longer):* 45,000 psi. minimum
Tensile Strength	***1/4 through 5/8 in. diameter, 2.25D and longer:*** 100,000 - 150,000 psi *3/4" (2.25D & longer) & 7/8 through 1 in. diameter (3D & longer):* 85,000 - 140,000 psi.
Elongation in 4D*	***1/4 through 5/8 in. diameter:*** 20% minimum; ***3/4 through 1 in. diameter:*** 25% minimum.

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