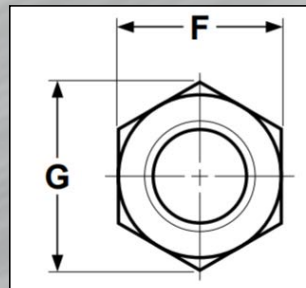
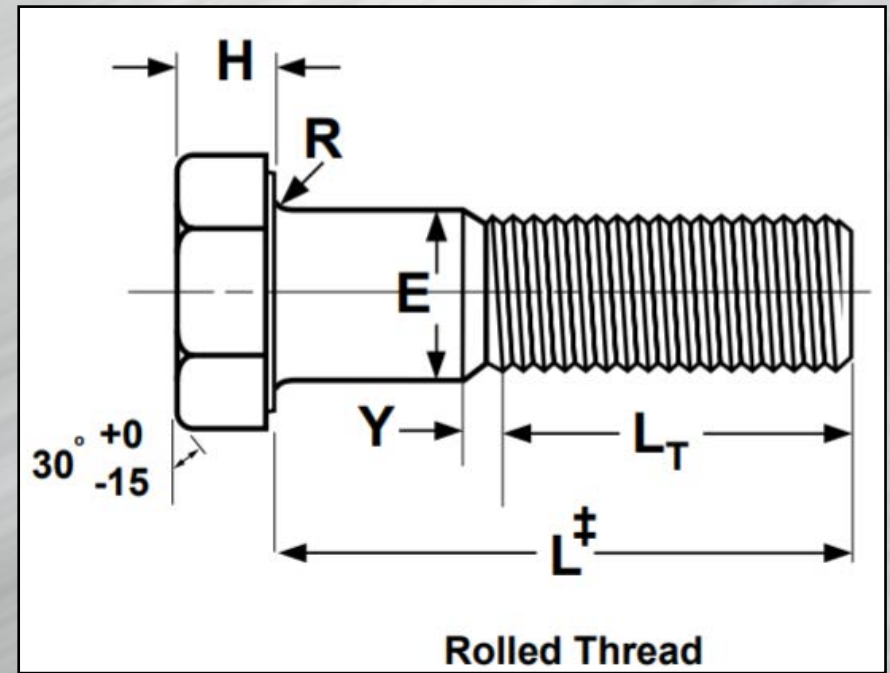
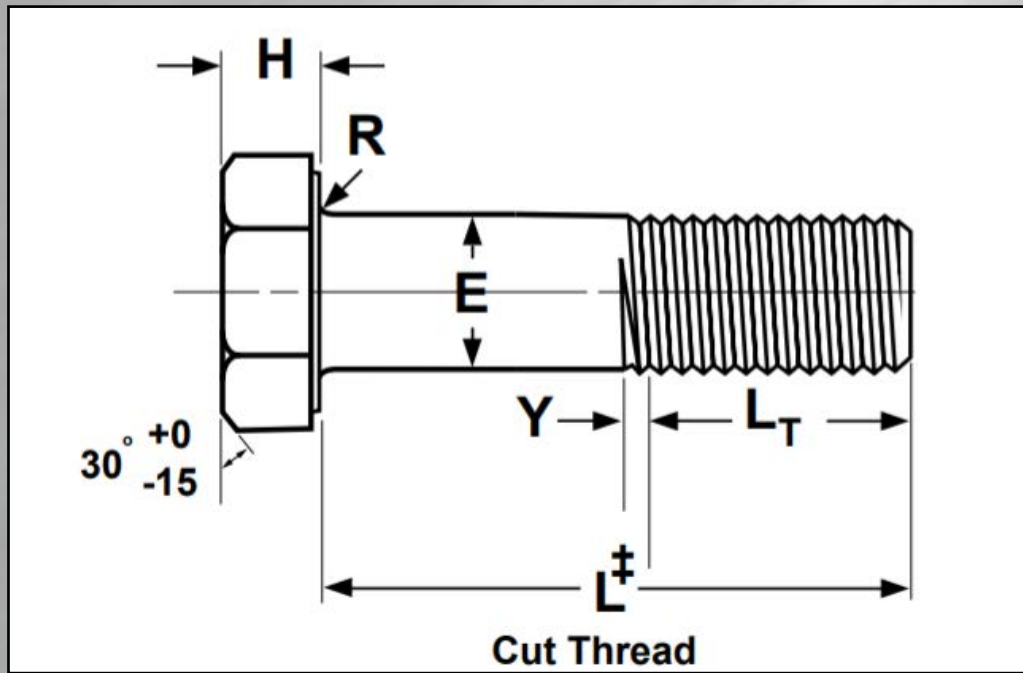


# STRUCTURAL BOLTS - GALVANIZED HEX HEAD BOLT ASTM325 & ASTM 490





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# STRUCTURAL BOLTS - GALVANIZED HEX HEAD BOLT

## ASTM325 & ASTM 490

Nominal Size or Basic Product Diameter	E Body Diameter		F Width Across Flats			G Width Across Corners		H Head Height			R Radius of Fillet		L Thread Length	Y Transition Thread Length	
	Max	Min	Basic	Max	Min	Max	Min	Basic	Max	Min	Max	Min	Ref	Max, Ref	
	1/2	0.5000	0.515	0.482	7/8	0.875	0.850	1.010	0.969	5/16	0.323	0.302	0.031	0.009	1.00
5/8	0.6250	0.642	0.605	1-1/16	1.062	1.031	1.227	1.175	25/64	0.403	0.378	0.062	0.021	1.25	0.22
3/4	0.8750	0.895	0.852	1-7/16	1.438	1.394	1.660	1.589	15/32	0.563	0.531	0.062	0.031	1.38	0.25
7/8	0.8750	0.895	0.852	1-7/16	1.438	1.394	1.660	1.589	35/64	0.563	0.531	0.062	0.031	1.50	0.28
1	1.000	1.022	0.976	1-5/8	1.625	1.575	1.876	1.796	39/64	0.627	0.591	0.093	0.062	1.75	0.31
1-1/8	1.1250	1.149	1.098	1-13/16	1.812	1.756	2.093	2.002	11/16	0.718	0.658	0.093	0.062	2.00	0.34
1-1/4	1.2500	1.277	1.223	2	2.000	1.938	2.309	2.209	25/32	0.878	0.810	0.093	0.062	2.25	0.44
1-3/8	1.3750	1.404	1.345	2-3/16	2.188	2.119	2.526	2.416	27/32	0.878	0.810	0.093	0.062	2.25	0.44
1-1/2	1.5000	1.531	1.470	2-3/8	2.375	2.300	2.742	2.622	15/16	0.974	0.902	0.093	0.062	2.25	0.44



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# STRUCTURAL BOLTS - GALVANIZED HEX HEAD BOLT

## ASTM325 & ASTM 490

Tolerance on Length	Nominal Screw Size	Nominal Screw Length	
		Through 6 in.	Over 6 in.
	1/2	-0.12	-0.19
	5/8	-0.12	-0.25
	3/4 through 1	-0.19	-0.25
	1-1/8 through 1-1/2	-0.25	-0.25



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# STRUCTURAL BOLTS - GALVANIZED HEX HEAD BOLT ASTM325 & ASTM 490

## ASTM A325 BOLTS, TYPE 1

<b>Description</b>	A heavy hex bolt made of medium carbon steel. The bearing surface shall be flat and washer faced, and the point is chamfered.
<b>Applications / Advantages</b>	Commonly used in structural steel joins in heavy construction.
<b>Material</b>	Type 1 bolts shall be made from a carbon steel which conforms to the following chemical composition requirements: • <b>Carbon:</b> 0.25-0.58% • <b>Manganese:</b> 0.57% minimum • <b>Phosphorus:</b> 0.048% maximum • <b>Sulfur:</b> 0.058% maximum
<b>Heat Treatment</b>	Type 1 bolts shall be heat treated by quenching in a liquid medium from above the austenitizing temperature and then tempering by reheating to a temperature of a least 800* F
<b>Harness</b>	<b>1/2" through 1" diameter, inclusive:</b> Rockwell C24 - 35 <b>1-1/8" through 1-1/2" diameter, inclusive:</b> Rockwell C19 - 31
<b>Proof Load</b>	<b>1/2" through 1" diameter, inclusive:</b> 85,000 psi <b>1-1/8" through 1-1/2" diameter, inclusive:</b> 74,000 psi
<b>Yield Strength</b>	<b>1/2" through 1" diameter, inclusive:</b> 92,000 psi minimum <b>1-1/8" through 1-1/2" diameter, inclusive:</b> 81,000 psi minimum
<b>Tensile Strength</b>	<b>1/2" through 1" diameter, inclusive:</b> 120,000 psi minimum <b>1-1/8" through 1-1/2" diameter, inclusive:</b> 105,000 psi minimum



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# STRUCTURAL BOLTS - GALVANIZED HEX HEAD BOLT ASTM325 & ASTM 490

## ASTM A490 BOLTS, TYPE 1 & 3

<b>Description</b>	A heavy hex bolt made of alloy steel. The bearing surface shall be flat and washer faced, and the point is chamfered.
<b>Applications / Advantages</b>	Used in structural steel joints in heavy construction when greater yield and tensile strengths than those of an A325 bolt are required. A Type 3 bolt is approximately twice as resistant to corrosion as a Type 1 bolt.
<b>Material</b>	Type 1 bolts shall be made from a carbon steel which conforms to the following chemical composition requirements: • <b>Carbon:</b> 0.25-0.58% • <b>Manganese:</b> 0.57% minimum • <b>Phosphorus:</b> 0.048% maximum • <b>Sulfur:</b> 0.058% maximum  Type 3 bolts shall be made from a corrosion resistant steel which conforms to the following chemical composition requirements: • <b>Carbon:</b> 0.19-0.55% • <b>Manganese:</b> 0.37% minimum • <b>Phosphorus:</b> 0.045% maximum • <b>Sulfur:</b> 0.055% maximum • <b>Copper:</b> 0.63% maximum • <b>Chromium:</b> 0.42% minimum • <b>Nickel:</b> 0.17% minimum • <b>Molybdenum:</b> 0.14% minimum
<b>Heat Treatment</b>	Type 1 bolts shall be heat treated by quenching in oil from above the transformation temperature. Type 3 bolts shall be quenched in a suitable liquid from above the transformation temperature. Type 1 and Type 3 bolts shall be tempered by reheating to a temperature of at least 800°F
<b>Harness</b>	Rockwell C33 - 38
<b>Proof Load</b>	120,000 psi.
<b>Yield Strength</b>	130,000 psi minimum
<b>Tensile Strength</b>	150,000 - 170,000 psi.