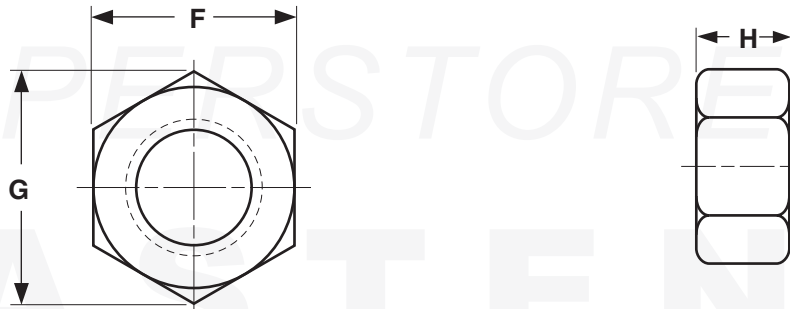


# NUTS

## HEAVY HEX

For Use With Structural Bolts



HEAVY HEX NUTS FOR USE WITH STRUCTURAL BOLTS										ASME B 18.2.2* & 18.2.6
Nominal Size or Basic Major Diameter of Thread		F			G		H			
		Width Across Flats			Width Across Corners		Thickness			
		Basic	Max	Min	Max	Min	Basic	Max	Min	
1/4 *	0.2500	1/2	0.500	0.488	0.577	0.556	15/64	0.250	0.218	
5/16 *	0.3125	9/16	0.562	0.546	0.650	0.622	19/64	0.314	0.280	
3/8 *	0.3750	11/16	0.688	0.669	0.794	0.763	23/64	0.377	0.341	
1/2	0.5000	7/8	0.875	0.850	1.010	0.969	31/64	0.504	0.464	
5/8	0.6250	1-1/16	1.062	1.031	1.227	1.175	39/64	0.631	0.587	
3/4	0.7500	1-1/4	1.250	1.212	1.443	1.382	47/64	0.758	0.710	
7/8	0.8750	1-7/16	1.438	1.394	1.660	1.589	55/64	0.885	0.833	
1	1.0000	1-5/8	1.625	1.575	1.876	1.796	63/64	1.012	0.956	



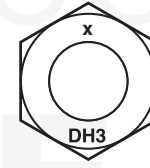
Grade-C



A194 Grade-2



A 563 Grade-DH



A 563 Grade-DH3

<b>Description</b>	A six-sided internally threaded fastener which is both thicker and wider across the flats than a same-sized finished hex nut. Nuts in sizes 7/16 & smaller shall be double chamfered. Larger sizes are either double chamfered or chamfered on top with a washer faced bearing surface.
<b>Applications/Advantages</b>	This is the strongest of all comparably-graded nuts due to its greater length of thread engagement and greater resistance to dilation (widening or stretching). <i>Grade-C</i> nuts are to be used with A-325 structural bolts. <i>Grade-2H</i> nuts are to be used with bolts in high-pressure and high-temperature service. <i>Grade-DH</i> nuts are recommended for use with A-490, Type-1 structural bolts and <i>Grade-DH3</i> nuts for use with A-490, Type-3 structural bolts.
<b>Material</b>	Nuts shall be made from a steel which conforms to the following chemical composition requirements (heat analysis)-- <i>Grade C-- Carbon:</i> 0.55% maximum; <i>Phosphorus:</i> 0.12% maximum; <i>Sulfur:</i> 0.023% maximum. <i>A 194 Grade-2H- Carbon:</i> 0.40% min; <i>Manganese:</i> 1.00% max; <i>Phosphorus:</i> 0.04% max; <i>Sulfur:</i> 0.05% max; <i>Silicon:</i> 0.40% max. <i>A 563 Grade-DH- Carbon:</i> 0.20-0.55%; <i>Manganese:</i> 0.60% minimum; <i>Phosphorus:</i> 0.04% maximum; <i>Sulfur:</i> 0.05% maximum. <i>Grade-DH3- Carbon:</i> 0.20-0.53%; <i>Manganese:</i> 0.40% minimum; <i>Phosphorus:</i> 0.046% maximum; <i>Sulfur:</i> 0.050% maximum; <i>Copper:</i> 0.20% minimum; <i>Chromium:</i> 0.45% minimum; (Either <i>Nickel:</i> 0.20% minimum or <i>Molybdenum:</i> 0.15% minimum, may be used).
<b>Heat Treatment</b>	<i>Grade-2H:</i> Nuts are heat treated by quenching in a liquid medium from a temp above the transformation temp and tempering at a temp of at least 850°F. <i>Grades-C, DH &amp; DH3:</i> Nuts are heat treated by quenching in a liquid medium from a temp above the transformation temp and tempering at a temp of at least 800°F.
<b>Core Hardness</b>	<i>Grade-C:</i> Rockwell B78 - C38 <i>A 194 Grade-2H, A 563 Grades DH &amp; DH3:</i> Rockwell C24 - C38
<b>Proof Load</b>	<i>Grade-C:</i> 144,000 psi. <i>Grade-2H:</i> 150,000 psi. <i>Grades-DH &amp; DH3:</i> 175,000 psi.
<b>Plating</b>	See Appendix-A for plating information.