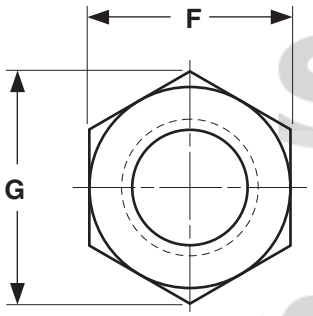
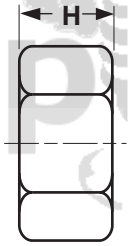
HEAVY HEX

For Use With Structural Bolts

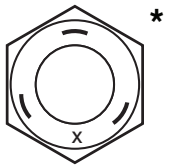




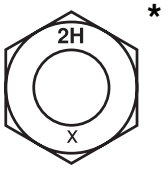
HEAVY HEX NUTS FOR USE WITH STRUCTURAL BOLTS

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

Description	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.
Applications/ Advantages	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). ***Grade-C*** nuts are to be used with A-325 structural bolts. ***Grade-2H*** nuts are to be used with bolts in high-pressure and high-temperature service. ***Grade-DH*** nuts are recommended for use with A-490, Type-1 structural bolts and Grade-DH3 nuts for use with A-490, Type-3 structural bolts.
Material	Nuts shall be made from a steel which conforms to the following chemical composition requirements (heat analysis)-- ***Grade C*** *-- **Carbon:*** 0.55% maximum; ***Phosphorus***: 0.12% maximum; ***Sulfur***: 0.023% maximum. ***A 194 Grade-2H*** *-- **Carbon***: 0.40% min; ***Manganese***: 1.00% max; ***Phosphorus***: 0.04% max; ***Sulfur***: 0.05% max; ***Silicon***: 0.40% max. ***A 563 Grade-DH*** *-- **Carbon***: 0.20-0.55%; ***Manganese***: 0.60% minimum; ***Phosphorus***: 0.04% maximum; ***Sulfur***: 0.05% maximum. ***Grade-DH3*** *-- **Carbon***: 0.20-0.53%; ***Manganese***: 0.40% minimum; ***Phosphorus***: 0.046% maximum; ***Sulfur***: 0.050% maximum; ***Copper***: 0.20% minimum; ***Chromium***: 0.45% minimum; (Either *Nickel*: 0.20% minimum or *Molybdenum*: 0.15% minimum, may be used).
Heat Treatment	***Grade-2H:*** 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. ***Grades-C, DH & DH3:*** 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.
Core Hardness	***Grade-C***: Rockwell B78 - C38 ***A 194 Grade-2H***; ***A 563 Grades DH & DH3***: Rockwell C24 - C38
Proof Load	***Grade-C:*** 144,000 psi. ***Grade-2H:*** 150,000 psi. ***Grades-DH & DH3:*** 175,000 psi.
Plating	See Appendix-A for plating information.