

NUTS

HEAVY HEX

For Use With Structural Bolts



HEAVY HEX NUTS FOR USE WITH STRUCTURAL BOLTS

ASME B 18.2.2*-2022

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
1-1/2	1.5000	2-3/8	2.375	2.300	2.742	2.622	1-15/32	1.505	1.433



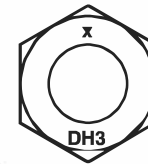
Grade-C



A 194 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-325 & A-490, Type-1 structural bolts and Grade-DH3 nuts for use with A-325, Type-3 and 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: 0.15% 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: 0.035% maximum; Sulfur: 0.040% 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.

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