



Mechanical Requirements  
Carbon Alloy & Stainless Steel Heavy Hex Nuts  
ASTM A194/ASME SA194

Grade	Diameter, in	Brinell Hardness	Hardness, Rockwell C Scale		Hardness, Rockwell B Scale		Hardness Test 24 Hr after Heat Treatment, Brinell, min		Hardness Test 24 Hr after Heat Treatment, Rockwell B Scale, Min		Minimum Tempering Temperature, °F
			24 to 35	35 max	84 to 99	95 min	179	147	89	79	
2H	1-1/2 and under over 1-1/2	248 to 327 212 to 327	24 to 35	35 max	---	95 min	179	147	89	79	850
2HM	All sizes	159 to 235	---	---	84 to 99	---	159	---	84	---	1150
3	All sizes	248 to 327	24 to 35	---	---	---	201	---	94	---	1050
7 or 7L	All sizes	248 to 327	24 to 35	---	---	---	201	---	94	---	1100
8	All sizes	126 to 300	32 max	---	---	---	---	---	---	---	---
8M	All sizes	126 to 300	32 max	---	---	---	---	---	---	---	---

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Proof Load Using Threaded Mandrel

Diameter, in	Stress Area sq. in	Grade 2H, 3, 4, 7 (Based on proof stress of 175 ksi)		Grade 2HM (Based on proof stress of 150 ksi)		Grade 8, 8M (Based on proof stress of 80 ksi)	
		Proof Load, lbf	Proof Load, lbf	Proof Load, lbf	Proof Load, lbf	Proof Load, lbf	Proof Load, lbf
1/4-20	0.0316	5,570	4,770	2,540			
5/16-18	0.0524	9,170	7,860	4,190			
3/8-16	0.0774	13,560	11,620	62,000			
7/16-14	0.1063	18,600	15,940	8,500			
1/2-13	0.1419	24,830	21,280	11,350			
9/16-12	0.182	31,850	27,300	14,560			
5/8-11	0.226	69,550	33,900	18,080			
3/4-10	0.334	58,450	50,100	26,720			
7/8-9	0.462	80,850	69,300	36,960			
1-8	0.606	106,000	90,900	48,480			
1 1/8-8	0.790	138,200	118,500	63,200			
1 1/4-8	1.000	175,000	150,000	80,000			
1 3/8-8	1.233	215,800	185,000	98,640			
1 1/2-8	1.492	261,100	223,800	119,360			

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