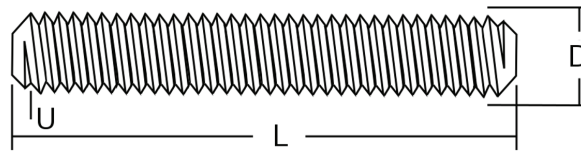


ASTM A193-B7 Continuous Thread Studs



ASME B18.31.2

Nominal Size	Diameter, D	Threads Per Inch			U _{max} = 2 Thread Pitches = 2P		
		UNC	UNF	8UN	UNC Threads	UNF Threads	8 UN Threads
1/2	0.5000	13	20	...	0.154	0.100	...
5/8	0.6250	11	18	...	0.182	0.111	...
3/4	0.7500	10	16	...	0.200	0.125	...
7/8	0.8750	9	14	...	0.222	0.143	...
1	1.0000	8	12	...	0.250	0.167	...
1-1/8	1.1250	7	12	8	0.286	0.167	0.250
1-1/4	1.2500	7	12	8	0.286	0.167	0.250
1-3/8	1.3750	6	12	8	0.333	0.167	0.250
1-1/2	1.5000	6	12	8	0.333	0.167	0.250
1-5/8	1.6250	...	...	8	...	...	0.250
1-3/4	1.7500	5	...	8	0.400	...	0.250
1-7/8	1.8750	...	...	8	...	...	0.250
2	2.0000	4-1/2	...	8	0.444	...	0.250
2-1/4	2.2500	4-1/2	...	8	0.444	...	0.250
2-1/2	2.5000	4	...	8	0.500	...	0.250
2-3/4	2.7500	4	...	8	0.500	...	0.250
3	3.0000	4	...	8	0.500	...	0.250
3-1/4	3.2500	4	...	8	0.500	...	0.250
3-1/2	3.5000	4	...	8	0.500	...	0.250
3-3/4	3.7500	4	...	8	0.500	...	0.250
4	4.0000	4	...	8	0.500	...	0.250

Grade	Diameter, In.	Minimum Tempering Temperature °F	Tensile Strength, Min, ksi	Yield Strength, min, 0.2% offset ksi	Elongation in 4D, min, %	Reduction of Area min, %	Hardness max
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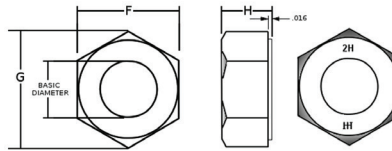
Ferritic Steels							
B7 Chromium-molybdenum	2-1/2 and under	1100	125	105	16	50	321 HB or 35 HRC
	Over 2-1/2 to 4	1100	115	95	16	50	321 HB or 35 HRC
	Over 4 to 7	1100	100	75	18	50	321 HB or 35 HRC

Tolerance on Length	Nominal Length			
	Over 1/2 thru 2.5: ±0.04	Over 1/2 thru 2.5: ±0.04	Over 1/2 thru 2.5: ±0.04	Over 1/2 thru 2.5: ±0.04

Description	Threaded Fasteners without a head, threaded it's entire length
Applications/Advantages	Pressure vessels, valves, flanges, and fittings for high temperature or high pressure service
Material	Grade B7 Alloy which conforms to the following chemical composition requirements – Carbon 0.37-0.49; Manganese 0.65-1.10; Phosphorus 0.035 maximum; Sulfur 0.040 maximum; Silicon 0.15-0.35; Chromium 0.75-1.20; Molybdenum 0.15-0.25
Yield Strength	105,000 psi. minimum
Tensile Strength	125,000 psi. minimum
Elongation in 4D	16% minimum
Plating	Studs are typically provided plain without a secondary finish
Nuts	A194-2H Heavy Hex Nuts
Washers	F436 Hardened Round Flat Washers
Markings	B7 (plus MFG Trademark) one end

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ASTM A194-2H Heavy Hex Nut

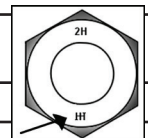


ASME B18.2.2

Normal 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
7/16	0.4375	3/4	0.750	0.728	0.866	0.830	27/64	0.441	0.403
1/2	0.5000	7/8	0.875	0.850	1.010	0.969	31/64	0.504	0.464
9/16	0.5625	15/16	0.938	0.909	1.083	1.037	35/64	0.568	0.526
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
1-1/8	1.1250	1-13/16	1.812	1.756	2.093	2.002	1-7/64	1.139	1.079
1-1/4	1.2500	2	2.000	1.938	2.309	2.209	1-7/32	1.251	1.187
1-3/8	1.3750	2-3/16	2.188	2.119	2.526	2.416	1-11/32	1.378	1.310
1-1/2	1.5000	2-3/8	2.375	2.300	2.742	2.622	1-15/32	1.505	1.433
1-5/8	1.6250	2-9/16	2.562	2.481	2.959	2.828	1-19/32	1.632	1.556
1-3/4	1.7500	2-3/4	2.750	2.662	3.175	3.035	1-23/32	1.759	1.679
2	2.0000	3-1/8	3.125	3.025	3.608	3.449	1-31/32	2.013	1.925
2-1/4	2.2500	3-1/2	3.500	3.388	4.041	3.862	2-13/64	2.251	2.155
2-1/2	2.5000	3-7/8	3.875	3.750	4.474	4.275	2-29/64	2.505	2.401
2-3/4	2.7500	4-1/4	4.250	4.112	4.907	4.688	2-45/64	2.759	2.647
3	3.0000	4-5/8	4.625	4.475	5.340	5.102	2-61/64	3.013	2.893
3-1/4	3.2500	5	5.000	4.838	5.774	5.515	3-3/16	3.252	3.124
3-1/2	3.5000	5-3/8	5.375	5.200	6.207	5.928	3-7/16	3.506	3.370
3-3/4	3.7500	5-3/4	5.750	5.562	6.640	6.341	3-11/16	3.760	3.616
4	4.0000	6-1/8	6.125	5.925	7.073	6.755	3-15/16	4.014	3.862

Grade and Type	Brinell Hardness	Rockwell Hardness	
		C Scale	B Scale
2H to 1-1/2 in. incl.	248 to 327	24 to 35	...
2H over 1-1/2 in.	212 to 327	35 max	95 min

Description	Heavy Hex Nuts	
Applications/Advantages	These nuts are intended for High-Pressure or High Temperature Service or Both	
Material	Nuts shall be made from a steel which conforms to the following chemical composition requirements (heat analysis) A194 Grade-2H Carbon 0.40% min; Manganese 1.00% max; Phosphorus 0.04% max; Sulfur 0.05% max; Silicon 0.40% max	
Heat Treatment	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	
Plating	Nuts are typically provided plain without a secondary finish	
Proof Load	150,000 psi	
Marking	2H (plus MFG Trademark)	



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