



## Mechanical Requirements

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

| 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 |
|---------|-----------------|------------------|----------------------------|----------------------------|--|---|-----------------------------------|
| 2H      | 1-1/2 and under | 248 to 352       | 24 to 38                   | ---                        | 179  | 89  | 850                               |
|         | over 1-1/2      | 212 to 352       | 38 max                     | 95 min                     | 147  | 79  | 850                               |
| 2HM     | All sizes       | 159 to 237       | 22 max                     | ---                        | 159  | 84  | 1150                              |
| 4 or 4L | All sizes       | 248 to 352       | 24 to 38                   | ---                        | 201  | 94  | 1100                              |
| 7 or 7L | All sizes       | 248 to 352       | 24 to 38                   | ---                        | 201  | 94  | 1100                              |
| 8       | All sizes       | 126 to 300       | ---                        | 60 to 105                  | ---  | ---   | ---                               |
| 8M      | All sizes       | 126 to 300       | ---                        | 60 to 105                  | ---  | ---   | ---                               |

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#### Proof Load Using Threaded Mandrel

| Diameter, in | Stress Area, sq in | Grade 2H, 4, 7<br>(Based on proof stress of 175 ksi)<br>Proof Load, lbf | Grade 2HM<br>(Based on proof stress of 150 ksi)<br>Proof Load, lbf | Grade 8, 8M<br>(Based on proof stress of 80 ksi)<br>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   | 6,200   |
| 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              | 39,550  | 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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