



A 242, A 243,
A 244, A 245 : June: 1974

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British Standard : Aerospace Series
Specification for

Hexagonal castle nuts (of Class 3B UNJ thread)

Index form of title: Nut, castle, hexagonal, Class 3B UNJ thread.

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The following BSI references relate to the work on this standard:
Committee reference ACE/12. Draft for approval 73/35603

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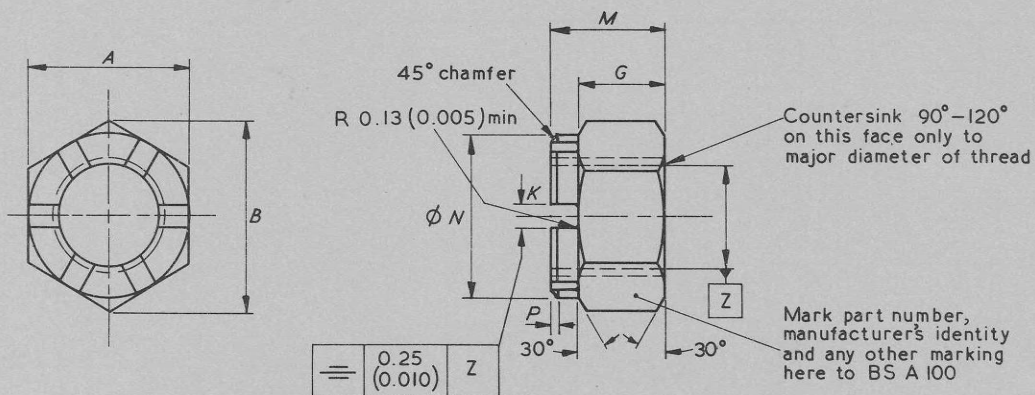


Fig. 1. Details of nut

NOTES

1. **Material.** Heat treatment, finish and part number, refer to Table 2.
2. **Dimensions.** Except for threads, dimensions are in millimetres: inch equivalents are shown in Table 1. When plated parts are called for, all dimensions shall be met after plating.
3. **Procurement.** BS A 100 for manufacture and inspection of nuts.
4. **Threads.** All threads shall have unified screw threads of 'UNJ' basic profile – Class 3B fit and shall conform to the requirements of BS 4084*.
5. **Call-up for nuts.** Example of complete part numbers as shown on Page 4.
6. **Limits.** ± 0.25 (± 0.010), angles $\pm 5^\circ$, unless otherwise specified.
7. **Corrosion resistant.** Steel nuts A243, A244 and A245 shall have letter 'C' applied to one of the hexagonal surfaces.
8. **Axial tensile strengths.** Axial tensile strengths quoted are as shown in *American Air Force–Navy Aeronautical Standard AN 310, Revision 7, dated 17 September 1969.*
Until confirmatory test data become available these loads are to be used as reference loads only.

*BS 4084 'Unified screw threads of UNJ basic profile'

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Table 1. Dimensions

| Dash no. | <i>T</i> Thread | <i>A</i> | | <i>B</i> max. | | <i>M</i> | | <i>G</i> | |
|----------|--------------------|----------|-------|---------------|-------|----------|-------|----------|-------|
| | | mm | in | mm | in | mm | in | mm | in |
| -03 | 10-32 UNJF | 9.55 | 0.376 | 11.02 | 0.434 | 6.60 | 0.260 | 2.79 | 0.110 |
| | | 9.32 | 0.367 | | | 6.35 | 0.250 | 2.54 | 0.100 |
| -04 | 1/4-28 UNJF | 11.15 | 0.439 | 12.88 | 0.507 | 7.37 | 0.290 | 3.30 | 0.130 |
| | | 10.90 | 0.429 | | | 7.11 | 0.280 | 3.05 | 0.120 |
| -05 | 5/16-24 UNJF | 12.75 | 0.502 | 14.73 | 0.580 | 8.64 | 0.340 | 4.32 | 0.170 |
| | | 12.50 | 0.492 | | | 8.38 | 0.330 | 4.06 | 0.160 |
| -06 | 3/8-24 UNJF | 14.33 | 0.564 | 16.54 | 0.651 | 10.67 | 0.420 | 5.59 | 0.220 |
| | | 14.07 | 0.554 | | | 10.41 | 0.410 | 5.33 | 0.210 |
| -07 | 7/16-20 UNJF | 17.53 | 0.690 | 20.24 | 0.797 | 11.68 | 0.460 | 6.60 | 0.260 |
| | | 17.27 | 0.680 | | | 11.43 | 0.450 | 6.35 | 0.250 |
| -08 | 1/2-20 UNJF | 19.10 | 0.752 | 22.05 | 0.868 | 14.48 | 0.570 | 9.14 | 0.360 |
| | | 18.80 | 0.740 | | | 14.22 | 0.560 | 8.89 | 0.350 |
| -09 | 9/16-18 UNJF | 22.28 | 0.877 | 25.73 | 1.013 | 15.75 | 0.620 | 10.41 | 0.410 |
| | | 21.97 | 0.865 | | | 15.49 | 0.610 | 10.16 | 0.400 |
| -10 | 5/8-18 UNJF | 23.88 | 0.940 | 27.56 | 1.085 | 18.54 | 0.730 | 11.81 | 0.465 |
| | | 23.57 | 0.928 | | | 18.29 | 0.720 | 11.56 | 0.455 |
| -12 | 3/4-16 UNJF | 27.03 | 1.064 | 31.22 | 1.229 | 20.96 | 0.825 | 14.22 | 0.560 |
| | | 26.72 | 1.052 | | | 20.70 | 0.815 | 13.97 | 0.550 |
| -14 | 7/8-14 UNJF | 31.80 | 1.252 | 36.73 | 1.446 | 23.37 | 0.920 | 16.76 | 0.660 |
| | | 31.39 | 1.236 | | | 23.11 | 0.910 | 16.51 | 0.650 |
| -16 | 1-12 UNJF | 36.58 | 1.440 | 42.24 | 1.663 | 25.65 | 1.010 | 19.05 | 0.750 |
| | | 36.17 | 1.424 | | | 25.40 | 1.000 | 18.80 | 0.740 |
| -18 | 1 1/8-12 UNJF | 41.33 | 1.627 | 47.73 | 1.879 | 29.72 | 1.170 | 20.57 | 0.810 |
| | | 40.92 | 1.611 | | | 29.46 | 1.160 | 20.32 | 0.800 |
| -20 | 1 1/4-12 UNJF | 46.08 | 1.814 | 53.21 | 2.095 | 32.00 | 1.260 | 22.35 | 0.880 |
| | | 45.67 | 1.798 | | | 31.75 | 1.250 | 22.10 | 0.870 |

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Table 1 (continued)

| Dash no. | N | | K | | P | | Axial tensile strength min. (see Note 8) | | Mass approx. | |
|----------|-------|-------|------|-------|------|-------|---|---------|--------------|--------|
| | mm | in | mm | in | mm | in | N | lbf | kg/100 | lb/100 |
| -03 | 9.22 | 0.363 | 2.54 | 0.100 | 1.02 | 0.040 | 9 830 | 2 210 | 0.187 | 0.413 |
| | 9.09 | 0.358 | 2.03 | 0.080 | 0.76 | 0.030 | | | | |
| -04 | 10.79 | 0.425 | 2.54 | 0.100 | 1.02 | 0.040 | 18 150 | 4 080 | 0.306 | 0.674 |
| | 10.67 | 0.420 | 2.03 | 0.080 | 0.76 | 0.030 | | | | |
| -05 | 12.32 | 0.485 | 2.54 | 0.100 | 1.27 | 0.050 | 28 910 | 3 500 | 0.462 | 1.019 |
| | 12.06 | 0.475 | 2.03 | 0.080 | 1.02 | 0.040 | | | | |
| -06 | 13.84 | 0.545 | 3.68 | 0.145 | 1.27 | 0.050 | 44 930 | 10 100 | 0.633 | 1.395 |
| | 13.59 | 0.535 | 3.17 | 0.125 | 1.02 | 0.040 | | | | |
| -07 | 17.02 | 0.670 | 3.68 | 0.145 | 1.52 | 0.060 | 60 500 | 13 600 | 1.206 | 2.658 |
| | 16.76 | 0.660 | 3.17 | 0.125 | 1.27 | 0.050 | | | | |
| -08 | 18.67 | 0.735 | 3.68 | 0.145 | 1.52 | 0.060 | 82 290 | 18 500 | 1.811 | 3.992 |
| | 18.41 | 0.725 | 3.17 | 0.125 | 1.27 | 0.050 | | | | |
| -09 | 21.84 | 0.860 | 4.57 | 0.180 | 1.52 | 0.060 | 104 980 | 23 600 | 3.701 | 6.216 |
| | 21.59 | 0.850 | 4.06 | 0.160 | 1.27 | 0.050 | | | | |
| -10 | 23.37 | 0.920 | 4.57 | 0.180 | 1.78 | 0.070 | 133 890 | 30 100 | 3.627 | 7.996 |
| | 23.11 | 0.910 | 4.06 | 0.160 | 1.52 | 0.060 | | | | |
| -12 | 26.54 | 1.045 | 4.57 | 0.180 | 2.03 | 0.080 | 195 720 | 44 000 | 5.074 | 11.187 |
| | 26.03 | 1.025 | 4.06 | 0.160 | 2.78 | 0.070 | | | | |
| -14 | 31.24 | 1.330 | 4.57 | 0.180 | 2.03 | 0.080 | 268 890 | 60 000 | 8.214 | 18.101 |
| | 30.73 | 1.210 | 4.06 | 0.160 | 2.78 | 0.070 | | | | |
| -16 | 36.07 | 1.420 | 4.57 | 0.180 | 2.29 | 0.090 | 358 970 | 80 700 | 11.680 | 25.750 |
| | 35.56 | 1.400 | 4.06 | 0.160 | 2.03 | 0.080 | | | | |
| -18 | 40.79 | 1.606 | 4.57 | 0.180 | 2.54 | 0.100 | 452 830 | 101 800 | 17.235 | 37.997 |
| | 40.28 | 1.586 | 4.06 | 0.160 | 2.29 | 0.090 | | | | |
| -20 | 45.54 | 1.793 | 4.57 | 0.180 | 2.54 | 0.100 | 579 160 | 130 200 | 29.291 | 53.552 |
| | 45.03 | 1.773 | 4.06 | 0.160 | 2.29 | 0.090 | | | | |

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Table 2. Physical characteristics

| Part no. | Material | Strength min. | | Finish |
|----------|---------------------------------|---------------|---------------------|---------------------------|
| | | *MPa | lbf/in ² | |
| A242 | Alloy steel S139 condition 'D' | 1 080 | 157 000 | Cadmium plated to DTD 904 |
| A243 | Corrosion resist steel DTD 5076 | 970 | 140 000 | None |
| A244 | Corrosion resist steel DTD 5076 | 970 | 140 000 | Cadmium plated to DTD 904 |
| A245 | Corrosion resist steel DTD 5076 | 970 | 140 000 | Silver plated to DTD 939 |

*1 MPa = 1 MN/m² = 0.1 hbar

Example of complete part number

