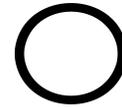
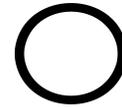


ASTM A1085 Round HSS
Dimensions and Properties



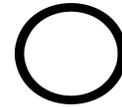
| Shape | Design Wall Thickness, <i>t</i> | Nominal Wt. | Area, <i>A</i> | <i>D/t</i> | <i>I</i> | <i>S</i> | <i>r</i> | <i>Z</i> | Torsion | |
|------------------|---------------------------------|-------------|------------------|------------------|------------------|----------|------------------|------------------|------------------|----------|
| | | | | | | | | | <i>J</i> | <i>C</i> |
| | in. | lb/ft | in. ² | in. ⁴ | in. ³ | in. | in. ³ | in. ⁴ | in. ³ | |
| HSS20.000×0.500 | 0.500 | 104.23 | 30.6 | 40.0 | 1460 | 146 | 6.90 | 190 | 2910 | 291 |
| | ×0.375 | 78.67 | 23.1 | 53.3 | 1110 | 111 | 6.94 | 144 | 2230 | 223 |
| HSS18.000×0.500 | 0.500 | 93.54 | 27.5 | 36.0 | 1050 | 117 | 6.19 | 153 | 2110 | 234 |
| | ×0.375 | 70.66 | 20.8 | 48.0 | 807 | 89.6 | 6.23 | 117 | 1610 | 179 |
| HSS16.000×0.625 | 0.625 | 102.73 | 30.2 | 25.6 | 894 | 112 | 5.44 | 148 | 1790 | 223 |
| | ×0.500 | 82.85 | 24.3 | 32.0 | 732 | 91.5 | 5.48 | 120 | 1460 | 183 |
| | ×0.438 | 72.87 | 21.4 | 36.5 | 649 | 81.1 | 5.50 | 106 | 1300 | 162 |
| | ×0.375 | 62.64 | 18.4 | 42.7 | 562 | 70.3 | 5.53 | 91.6 | 1120 | 140 |
| | ×0.312 | 52.32 | 15.4 | 51.3 | 473 | 59.2 | 5.55 | 76.8 | 946 | 118 |
| | ×0.250 | 42.09 | 12.4 | 64.0 | 384 | 48.0 | 5.57 | 62.0 | 767 | 95.9 |
| HSS14.000X×0.625 | 0.625 | 89.36 | 26.3 | 22.4 | 589 | 84.1 | 4.73 | 112 | 1180 | 168 |
| | ×0.500 | 72.16 | 21.2 | 28.0 | 484 | 69.1 | 4.78 | 91.2 | 968 | 138 |
| | ×0.375 | 54.62 | 16.1 | 37.3 | 373 | 53.3 | 4.82 | 69.6 | 746 | 106 |
| | ×0.312 | 45.65 | 13.4 | 44.9 | 314 | 44.9 | 4.84 | 58.5 | 629 | 89.7 |
| | ×0.250 | 36.75 | 10.8 | 56.0 | 255 | 36.5 | 4.86 | 47.3 | 511 | 72.9 |
| HSS12.750×0.500 | 0.500 | 65.48 | 19.2 | 25.5 | 362 | 56.7 | 4.33 | 75.1 | 723 | 113 |
| | ×0.375 | 49.61 | 14.6 | 34.0 | 279 | 43.8 | 4.38 | 57.4 | 559 | 87.5 |
| | ×0.250 | 33.41 | 9.82 | 51.0 | 192 | 30.1 | 4.42 | 39.1 | 384 | 60.1 |
| HSS10.750×0.500 | 0.500 | 54.79 | 16.1 | 21.5 | 212 | 39.4 | 3.63 | 52.6 | 424 | 78.5 |
| | ×0.375 | 41.59 | 12.2 | 28.7 | 165 | 30.6 | 3.67 | 40.4 | 329 | 61.1 |
| | ×0.250 | 28.06 | 8.25 | 43.0 | 114 | 21.2 | 3.71 | 27.6 | 227 | 42.3 |
| HSS10.000×0.625 | 0.625 | 62.64 | 18.4 | 16.0 | 203 | 40.6 | 3.32 | 55.0 | 406 | 80.6 |
| | ×0.500 | 50.78 | 14.9 | 20.0 | 169 | 33.8 | 3.36 | 45.2 | 338 | 67.2 |
| | ×0.375 | 38.58 | 11.3 | 26.7 | 132 | 26.3 | 3.41 | 34.8 | 263 | 52.5 |
| | ×0.312 | 32.31 | 9.50 | 32.1 | 112 | 22.3 | 3.43 | 29.3 | 223 | 44.5 |
| | ×0.250 | 26.06 | 7.66 | 40.0 | 91.1 | 18.2 | 3.45 | 23.8 | 182 | 36.4 |
| | ×0.188 | 19.72 | 5.80 | 53.2 | 69.8 | 14.0 | 3.47 | 18.1 | 140 | 27.9 |
| HSS9.625×0.500 | 0.500 | 48.77 | 14.3 | 19.3 | 150 | 31.1 | 3.23 | 41.7 | 299 | 61.9 |
| | ×0.375 | 37.08 | 10.9 | 25.7 | 117 | 24.3 | 3.27 | 32.1 | 233 | 48.4 |
| | ×0.312 | 31.06 | 9.13 | 30.8 | 99.1 | 20.6 | 3.29 | 27.1 | 198 | 41.1 |
| | ×0.250 | 25.06 | 7.36 | 38.5 | 81.0 | 16.8 | 3.32 | 22.0 | 162 | 33.6 |
| | ×0.188 | 18.97 | 5.57 | 51.2 | 62.1 | 12.9 | 3.34 | 16.7 | 124 | 25.8 |
| HSS8.625×0.625 | 0.625 | 53.45 | 15.7 | 13.8 | 126 | 29.3 | 2.84 | 40.1 | 253 | 58.0 |
| | ×0.500 | 43.43 | 12.8 | 17.3 | 106 | 24.5 | 2.88 | 33.0 | 211 | 48.7 |
| | ×0.375 | 33.07 | 9.72 | 23.0 | 82.9 | 19.2 | 2.92 | 25.5 | 166 | 38.3 |
| | ×0.322 | 28.58 | 8.40 | 26.8 | 72.5 | 16.8 | 2.94 | 22.2 | 145 | 33.5 |
| | ×0.250 | 22.38 | 6.58 | 34.5 | 57.7 | 13.4 | 2.96 | 17.5 | 115 | 26.7 |
| | ×0.188 | 16.96 | 4.98 | 45.9 | 44.4 | 10.3 | 2.98 | 13.4 | 88.7 | 20.6 |
| HSS7.625×0.375 | 0.375 | 29.06 | 8.54 | 20.3 | 56.3 | 14.8 | 2.57 | 19.7 | 113 | 29.4 |
| | ×0.328 | 25.59 | 7.52 | 23.2 | 50.1 | 13.2 | 2.58 | 17.5 | 100 | 26.2 |

ASTM A1085 Round HSS
Dimensions and Properties



| Shape | Design Wall Thickness, <i>t</i> | Nominal Wt. | Area, <i>A</i> | <i>D/t</i> | <i>I</i> | <i>S</i> | <i>r</i> | <i>Z</i> | Torsion | |
|----------------|---------------------------------|-------------|------------------|------------------|------------------|----------|------------------|------------------|------------------|----------|
| | | | | | | | | | <i>J</i> | <i>C</i> |
| | in. | lb/ft | in. ² | in. ⁴ | in. ³ | in. | in. ³ | in. ⁴ | in. ³ | |
| HSS7.500×0.500 | 0.500 | 37.42 | 11.0 | 15.0 | 67.7 | 18.1 | 2.48 | 24.5 | 135 | 35.8 |
| ×0.375 | 0.375 | 28.56 | 8.39 | 20.0 | 53.4 | 14.2 | 2.52 | 19.1 | 107 | 28.4 |
| ×0.312 | 0.312 | 23.97 | 7.05 | 24.0 | 45.6 | 12.2 | 2.54 | 16.1 | 91.2 | 24.2 |
| ×0.250 | 0.250 | 19.38 | 5.69 | 30.0 | 37.5 | 9.99 | 2.56 | 13.1 | 74.9 | 19.9 |
| ×0.188 | 0.188 | 14.70 | 4.32 | 39.9 | 28.9 | 7.70 | 2.59 | 10.1 | 57.8 | 15.4 |
| HSS7.000×0.500 | 0.500 | 34.74 | 10.2 | 14.0 | 54.2 | 15.5 | 2.30 | 21.2 | 108 | 30.7 |
| ×0.375 | 0.375 | 26.56 | 7.80 | 18.7 | 43.0 | 12.3 | 2.35 | 16.5 | 85.9 | 24.4 |
| ×0.312 | 0.312 | 22.31 | 6.56 | 22.4 | 36.7 | 10.5 | 2.37 | 14.0 | 73.5 | 20.9 |
| ×0.250 | 0.250 | 18.04 | 5.30 | 28.0 | 30.2 | 8.64 | 2.39 | 11.4 | 60.5 | 17.2 |
| ×0.188 | 0.188 | 13.69 | 4.02 | 37.2 | 23.4 | 6.67 | 2.41 | 8.73 | 46.7 | 13.3 |
| HSS6.875×0.500 | 0.500 | 34.07 | 10.0 | 13.8 | 51.2 | 14.9 | 2.26 | 20.4 | 102 | 29.5 |
| ×0.375 | 0.375 | 26.06 | 7.66 | 18.3 | 40.6 | 11.8 | 2.30 | 15.9 | 81.2 | 23.5 |
| ×0.312 | 0.312 | 21.89 | 6.43 | 22.0 | 34.7 | 10.1 | 2.32 | 13.4 | 69.4 | 20.1 |
| ×0.250 | 0.250 | 17.71 | 5.20 | 27.5 | 28.6 | 8.32 | 2.34 | 11.0 | 57.2 | 16.6 |
| ×0.188 | 0.188 | 13.44 | 3.95 | 36.6 | 22.1 | 6.43 | 2.37 | 8.41 | 44.2 | 12.8 |
| HSS6.625×0.500 | 0.500 | 32.74 | 9.62 | 13.3 | 45.4 | 13.7 | 2.17 | 18.8 | 90.8 | 27.1 |
| ×0.432 | 0.432 | 28.60 | 8.40 | 15.3 | 40.5 | 12.2 | 2.19 | 16.6 | 81.0 | 24.2 |
| ×0.375 | 0.375 | 25.06 | 7.36 | 17.7 | 36.1 | 10.9 | 2.21 | 14.7 | 72.2 | 21.6 |
| ×0.312 | 0.312 | 21.06 | 6.19 | 21.2 | 30.9 | 9.33 | 2.23 | 12.4 | 61.8 | 18.6 |
| ×0.280 | 0.280 | 18.99 | 5.58 | 23.7 | 28.1 | 8.50 | 2.25 | 11.3 | 56.3 | 16.9 |
| ×0.250 | 0.250 | 17.04 | 5.01 | 26.5 | 25.5 | 7.69 | 2.26 | 10.2 | 50.9 | 15.3 |
| ×0.188 | 0.188 | 12.94 | 3.80 | 35.2 | 19.7 | 5.95 | 2.28 | 7.79 | 39.4 | 11.9 |
| HSS6.000×0.500 | 0.500 | 29.40 | 8.64 | 12.0 | 32.9 | 11.0 | 1.95 | 15.2 | 65.9 | 21.6 |
| ×0.375 | 0.375 | 22.55 | 6.63 | 16.0 | 26.3 | 8.78 | 1.99 | 11.9 | 52.7 | 17.4 |
| ×0.312 | 0.312 | 18.97 | 5.58 | 19.2 | 22.6 | 7.54 | 2.01 | 10.1 | 45.2 | 15.0 |
| ×0.280 | 0.280 | 17.12 | 5.03 | 21.4 | 20.6 | 6.88 | 2.02 | 9.17 | 41.3 | 13.7 |
| ×0.250 | 0.250 | 15.37 | 4.52 | 24.0 | 18.7 | 6.23 | 2.03 | 8.27 | 37.4 | 12.4 |
| ×0.188 | 0.188 | 11.68 | 3.43 | 31.9 | 14.5 | 4.84 | 2.06 | 6.35 | 29.0 | 9.66 |
| HSS5.563×0.500 | 0.500 | 27.06 | 7.95 | 11.1 | 25.7 | 9.25 | 1.80 | 12.9 | 51.5 | 18.2 |
| ×0.375 | 0.375 | 20.80 | 6.11 | 14.8 | 20.7 | 7.43 | 1.84 | 10.1 | 41.3 | 14.7 |
| ×0.258 | 0.258 | 14.63 | 4.30 | 21.6 | 15.2 | 5.45 | 1.88 | 7.27 | 30.3 | 10.9 |
| ×0.188 | 0.188 | 10.80 | 3.17 | 29.6 | 11.5 | 4.13 | 1.90 | 5.43 | 23.0 | 8.24 |
| HSS5.500×0.500 | 0.500 | 26.73 | 7.85 | 11.0 | 24.8 | 9.01 | 1.78 | 12.5 | 49.6 | 17.7 |
| ×0.375 | 0.375 | 20.55 | 6.04 | 14.7 | 19.9 | 7.25 | 1.82 | 9.87 | 39.9 | 14.4 |
| ×0.258 | 0.258 | 14.46 | 4.25 | 21.3 | 14.6 | 5.32 | 1.86 | 7.10 | 29.3 | 10.6 |
| HSS5.000×0.500 | 0.500 | 24.05 | 7.07 | 10.0 | 18.1 | 7.25 | 1.60 | 10.2 | 36.2 | 14.2 |
| ×0.375 | 0.375 | 18.54 | 5.45 | 13.3 | 14.7 | 5.87 | 1.64 | 8.04 | 29.3 | 11.6 |
| ×0.312 | 0.312 | 15.64 | 4.60 | 16.0 | 12.7 | 5.07 | 1.66 | 6.87 | 25.4 | 10.1 |
| ×0.258 | 0.258 | 13.08 | 3.84 | 19.4 | 10.8 | 4.33 | 1.68 | 5.81 | 21.7 | 8.62 |
| ×0.250 | 0.250 | 12.69 | 3.73 | 20.0 | 10.6 | 4.22 | 1.68 | 5.65 | 21.1 | 8.40 |
| ×0.188 | 0.188 | 9.67 | 2.84 | 26.6 | 8.24 | 3.30 | 1.70 | 4.36 | 16.5 | 6.57 |

ASTM A1085 Round HSS
Dimensions and Properties



| Shape | Design Wall Thickness, <i>t</i> | Nominal Wt. | Area, <i>A</i> | <i>D/t</i> | <i>I</i> | <i>S</i> | <i>r</i> | <i>Z</i> | Torsion | |
|----------------|---------------------------------|-------------|------------------|------------------|------------------|----------|------------------|------------------|------------------|----------|
| | | | | | | | | | <i>J</i> | <i>C</i> |
| | in. | lb/ft | in. ² | in. ⁴ | in. ³ | in. | in. ³ | in. ⁴ | in. ³ | |
| HSS4.500×0.375 | 0.375 | 16.54 | 4.86 | 12.0 | 10.4 | 4.63 | 1.46 | 6.40 | 20.8 | 9.13 |
| | ×0.337 | 15.00 | 4.41 | 13.4 | 9.61 | 4.27 | 1.48 | 5.85 | 19.2 | 8.45 |
| | ×0.237 | 10.80 | 3.17 | 19.0 | 7.23 | 3.21 | 1.51 | 4.31 | 14.5 | 6.39 |
| | ×0.188 | 8.67 | 2.55 | 23.9 | 5.93 | 2.64 | 1.53 | 3.50 | 11.9 | 5.25 |
| HSS4.000×0.313 | 0.313 | 12.34 | 3.63 | 12.8 | 6.21 | 3.10 | 1.31 | 4.27 | 12.4 | 6.13 |
| | ×0.250 | 10.02 | 2.95 | 16.0 | 5.20 | 2.60 | 1.33 | 3.52 | 10.4 | 5.16 |
| | ×0.237 | 9.53 | 2.80 | 16.9 | 4.98 | 2.49 | 1.33 | 3.36 | 9.96 | 4.94 |
| | ×0.226 | 9.12 | 2.68 | 17.7 | 4.79 | 2.39 | 1.34 | 3.22 | 9.58 | 4.76 |
| | ×0.220 | 8.89 | 2.61 | 18.2 | 4.68 | 2.34 | 1.34 | 3.15 | 9.36 | 4.65 |
| | ×0.188 | 7.66 | 2.25 | 21.3 | 4.10 | 2.05 | 1.35 | 2.73 | 8.20 | 4.08 |
| HSS3.500×0.313 | 0.313 | 10.66 | 3.13 | 11.2 | 4.02 | 2.30 | 1.13 | 3.19 | 8.03 | 4.52 |
| | ×0.300 | 10.26 | 3.02 | 11.7 | 3.89 | 2.23 | 1.14 | 3.08 | 7.79 | 4.38 |
| | ×0.250 | 8.69 | 2.55 | 14.0 | 3.39 | 1.94 | 1.15 | 2.65 | 6.78 | 3.83 |
| | ×0.216 | 7.58 | 2.23 | 16.2 | 3.02 | 1.72 | 1.16 | 2.33 | 6.03 | 3.42 |
| | ×0.203 | 7.15 | 2.10 | 17.2 | 2.87 | 1.64 | 1.17 | 2.21 | 5.74 | 3.26 |
| | ×0.188 | 6.66 | 1.96 | 18.6 | 2.69 | 1.54 | 1.17 | 2.06 | 5.38 | 3.06 |
| HSS3.000×0.250 | 0.250 | 7.35 | 2.16 | 12.0 | 2.06 | 1.37 | 0.976 | 1.90 | 4.12 | 2.71 |
| | ×0.216 | 6.43 | 1.89 | 13.9 | 1.84 | 1.23 | 0.987 | 1.68 | 3.68 | 2.43 |
| | ×0.203 | 6.07 | 1.78 | 14.8 | 1.75 | 1.17 | 0.991 | 1.59 | 3.51 | 2.32 |
| | ×0.188 | 5.65 | 1.66 | 16.0 | 1.65 | 1.10 | 1.00 | 1.49 | 3.30 | 2.18 |
| | ×0.152 | 4.63 | 1.36 | 19.7 | 1.38 | 0.922 | 1.01 | 1.23 | 2.77 | 1.83 |
| HSS2.875×0.250 | 0.250 | 7.02 | 2.06 | 11.5 | 1.79 | 1.25 | 0.932 | 1.73 | 3.58 | 2.45 |
| | ×0.203 | 5.80 | 1.70 | 14.2 | 1.53 | 1.06 | 0.947 | 1.45 | 3.06 | 2.11 |
| | ×0.188 | 5.40 | 1.59 | 15.3 | 1.44 | 1.00 | 0.952 | 1.36 | 2.88 | 1.99 |
| HSS2.500×0.250 | 0.250 | 6.01 | 1.77 | 10.0 | 1.13 | 0.906 | 0.800 | 1.27 | 2.26 | 1.77 |
| | ×0.188 | 4.65 | 1.37 | 13.3 | 0.918 | 0.735 | 0.820 | 1.01 | 1.84 | 1.45 |
| HSS2.375×0.250 | 0.250 | 5.68 | 1.67 | 9.50 | 0.955 | 0.804 | 0.756 | 1.13 | 1.91 | 1.57 |
| | ×0.218 | 5.03 | 1.48 | 10.9 | 0.868 | 0.731 | 0.766 | 1.02 | 1.74 | 1.44 |
| | ×0.188 | 4.40 | 1.29 | 12.6 | 0.778 | 0.655 | 0.776 | 0.901 | 1.56 | 1.29 |
| | ×0.154 | 3.66 | 1.07 | 15.4 | 0.666 | 0.561 | 0.787 | 0.761 | 1.33 | 1.11 |
| HSS1.900×0.188 | 0.188 | 3.44 | 1.01 | 10.1 | 0.375 | 0.395 | 0.609 | 0.553 | 0.750 | 0.773 |