

EXTERNAL THREAD MACHINE SCREWS METRIC



| Nominal Size | Major Diameter | | Pitch Diameter | | Minor Diameter | | Stress Area, mm ² | Tensile Strength N, min. | | |
|---------------------|----------------|--------|----------------|--------|----------------|--------|------------------------------|--------------------------|-----------|------------|
| | Max | Min | Max | Min | Max | Min | | Class 4.8 | Class 8.8 | Class 10.9 |
| M1.6 | 1.581 | 1.496 | 1.354 | 1.291 | 1.151 | 1.075 | | | | |
| M2 | 1.981 | 1.886 | 1.721 | 1.654 | 1.490 | 1.407 | | | | - |
| M2.5 | 2.480 | 2.380 | 2.188 | 2.117 | 1.928 | 1.840 | | | | - |
| M3 | 2.980 | 2.874 | 2.655 | 2.580 | 2.367 | 2.273 | 5.03 | 2110 | 4020 | 5230 |
| M3.5 | 3.479 | 3.354 | 3.089 | 3.004 | 2.743 | 2.635 | 6.78 | 2850 | 5420 | 7050 |
| M4 | 3.978 | 3.838 | 3.523 | 3.433 | 3.119 | 3.002 | 8.78 | 3690 | 7020 | 9130 |
| M5 | 4.976 | 4.826 | 4.456 | 4.361 | 3.995 | 3.869 | 14.2 | 5960 | 11,350 | 14,800 |
| M6 | 5.974 | 5.794 | 5.324 | 5.212 | 4.747 | 4.596 | 20.1 | 8440 | 16,100 | 20,900 |
| M8 | 7.972 | 7.760 | 7.160 | 7.042 | 6.438 | 6.272 | 36.6 | 15,400 | 29,200 | 38,100 |
| M10 | 9.968 | 9.732 | 8.994 | 8.862 | 8.128 | 7.938 | 58 | 24,400 | 46,400 | 60,300 |
| M12 | 11.966 | 11.701 | 10.829 | 10.679 | 9.819 | 9.602 | 84.3 | 35,400 | 67,400 | 87,700 |
| M14 | 13.962 | 13.682 | 12.663 | 12.503 | 11.508 | 11.271 | 115 | 48,300 | 92,000 | 120,000 |
| M16 | 15.962 | 15.682 | 14.663 | 14.503 | 13.508 | 13.271 | 157 | 65,900 | 125,000 | 163,000 |
| M20 | 19.958 | 19.623 | 18.334 | 18.164 | 16.891 | 16.625 | 245 | 103,000 | 203,000 | 255,000 |
| M24 | 23.952 | 23.577 | 22.003 | 21.803 | 20.271 | 19.955 | 353 | 148,000 | 293,000 | 367,000 |
| M30 | 29.947 | 29.522 | 27.674 | 27.462 | 25.653 | 25.306 | 561 | 236,000 | 466,000 | 583,000 |
| M36 | 35.940 | 35.465 | 33.342 | 33.118 | 31.033 | 30.655 | 817 | 343,000 | 678,000 | 850,000 |
| Tolerance on Length | 3mm: ±0.2 | | 4-6mm ±0.24 | | 8-10mm: ±0.29 | | 12-16mm: ±0.35 | | | |
| | 20-30mm: ±0.42 | | 35-50mm: ±0.5 | | 55-60mm: ±0.95 | | | | | |

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|---------------------------------|--|
| Description | A metric machine screw is a straight shank fastener with a metric thread pitch designed to go through a hole or nut that is pre-tapped to form a mating thread for the screw. |
| Applications/ Advantages | Machine screws form a fastening superior in strength to spaced thread screws. Metric screws are the type almost exclusively used in items manufactured in Europe. |
| Material | Class 4.8 machine screws shall be made from a carbon steel, partially or fully annealed as required, which conforms to the following chemical composition-- <i>Carbon</i> : 0.55% maximum; <i>Phosphorus</i> : 0.05% maximum; <i>Sulfur</i> : 0.06% maximum. |
| Hardness | Rockwell B 71 - 99.5 (Vickers HV 130 - 250) |
| Tensile Strength | 420 N/mm ² minimum |
| Plating | See Appendix-A for plating information |