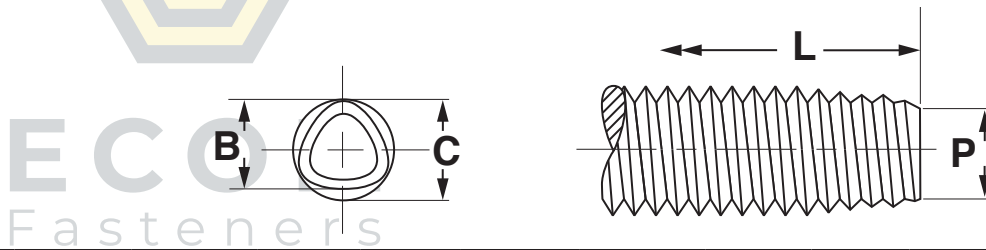


THREAD FORMING SCREWS

DIN 7500 Trilobular Thread Rolling Screws



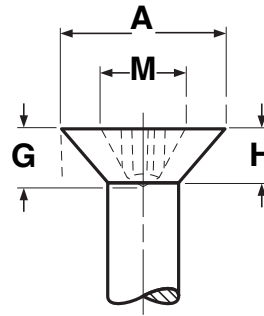
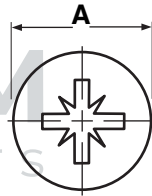
| METRIC - TRILOBULAR THREAD ROLLING SCREWS | | | | | | | | | | | DIN 7500-1 |
|---|-----------------------------------|---------------------|-----------------------|------|-----------------------|----------------------|---------------|---------------------|-------------------------|------------------------|-------------------------|
| Nominal Size & Thread Pitch | C | | B | | P | Test Plate Thickness | Hole Diameter | | Minimum Breaking Torque | Minimum Breaking Force | Maximum Screw-in Torque |
| | Diameter of Circumscribing Circle | | Major Thread Diameter | | Point Diameter | | Max | Min | Nm | N | Nm |
| | Max | Min | Max | Min | Max | | | | | | |
| M2-0.40 | 2.06 | 1.98 | 1.98 | 1.90 | 1.67 | 2.0 | 1.825 | 1.8 | 0.4 | 1650 | 0.3 |
| M2.5-0.45 | 2.55 | 2.47 | 2.48 | 2.38 | 2.11 | 2.5 | 2.325 | 2.3 | 1 | 2700 | 0.6 |
| M3-0.5 | 3.05 | 2.97 | 2.95 | 2.87 | 2.57 | 3.0 | 2.775 | 2.75 | 1.8 | 4000 | 1 |
| M3.5-0.6 | 3.58 | 3.48 | 3.46 | 3.36 | 3.00 | 3.5 | 3.230 | 3.2 | 2.8 | 5400 | 1.6 |
| M4-0.7 | 4.07 | 3.99 | 3.93 | 3.85 | 3.39 | 4.0 | 3.680 | 3.65 | 4.1 | 7000 | 2.4 |
| M5-0.8 | 5.08 | 5.00 | 4.92 | 4.84 | 4.30 | 5.0 | 4.630 | 4.6 | 8.7 | 11,400 | 4.7 |
| M6-1.0 | 6.10 | 5.97 | 5.90 | 5.77 | 5.13 | 6.0 | 5.530 | 5.5 | 15 | 16,000 | 8 |
| M8-1.25 | 8.13 | 7.97 | 7.88 | 7.72 | 6.91 | 8.0 | 7.436 | 7.4 | 37 | 29,000 | 20 |
| Tolerance on Length | | 3-6mm: ±0.375 | | | over 6-10mm: ±0.45 | | | over 10-18mm: ±0.55 | | | |
| | | over 18-30mm: ±0.65 | | | over 30 - 50mm: ±0.80 | | | over 50-80: ±0.95 | | | |

| | | |
|---------------------------------|---|--|
| Description | A trilobular thread forming screw with a machine screw's thread pitch. As each lobe of the screw moves through the pilot hole in the nut material, it forms and work hardens the nut thread metal, producing an uninterrupted grain flow. | |
| Applications/ Advantages | For use in drilled, punched or cored holes in ductile metals and punch extruded metals. They provide superior prevailing torque than can be achieved with most locking screws. Eliminates chips that result from using thread cutting screws. Requires low drive torque and provides excellent resistance to vibrational loosening. Since these thread rolling screws are case hardened, it is not recommended they be used in die-cast or extruded aluminum or zinc. | Can be used to roll threads in aluminum or non-ferrous materials. |
| Material | <i>Carbon Steel</i> AISI 1022 Steel | <i>Stainless</i> A2 Stainless Steel |
| Surface Hardness | 450 HV 0.3 Min. | |
| Case Depth | M2 & M2.5: 0.05-0.15 mm M3 & M3.5: 0.07-0.18 mm M4 & M5: 0.10-0.25 mm M6 & M8: 0.15-0.28 mm | |
| Core Hardness | M2 - M3.5: 290 - 370 HV 5 M4 & larger: 290 - 370 HV 10 | |
| Torsional Strength | Torque required to cause failure shall be equal to or greater than breaking torque values shown in above table. | |
| Tensile Strength | Tensile force required to cause failure shall be equal to or greater than breaking force values shown in above table. | |
| Plating | Thread rolling screws shall have a zinc finish with a wax coating. For more details see Appendix-A. | Stainless thread-rolling screws are typically passivated with a wax coating. |

Thread Rolling Screws
Head Dimensions to DIN 965 & 7985

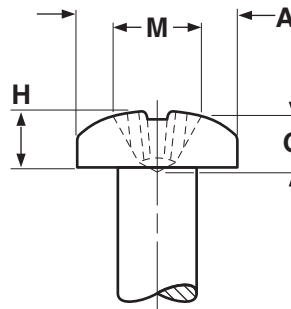
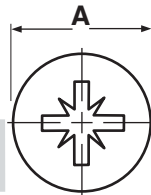
THREAD FORMING SCREWS

ECOM
Fasteners



| METRIC - TYPE Z (1A) FLAT HEADS FOR TAPPING SCREWS | | | | | | | DIN 965 | |
|--|---------------|-------|-------------|-----|-----------------|--------------------|---------|------------|
| Nominal Size | A | | H | | M | G | | Drive Size |
| | Head Diameter | | Head Height | | Recess Diameter | Recess Penetration | | |
| | Max | Min | Max | Min | Ref | Max | Min | |
| M2 | 3.80 | 3.50 | 1.20 | | 2.2 | 1.17 | 0.92 | 1 |
| M2.5 | 4.7 | 4.4 | 1.5 | | 2.5 | 1.47 | 1.22 | 1 |
| M3 | 5.6 | 5.3 | 1.65 | | 2.8 | 1.73 | 1.48 | 1 |
| M4 | 7.5 | 7.14 | 2.2 | | 4 | 2.06 | 1.60 | 2 |
| M5 | 9.2 | 8.84 | 2.5 | | 4.4 | 2.51 | 2.05 | 2 |
| M6 | 11 | 10.57 | 3 | | 6.1 | 2.92 | 2.46 | 3 |

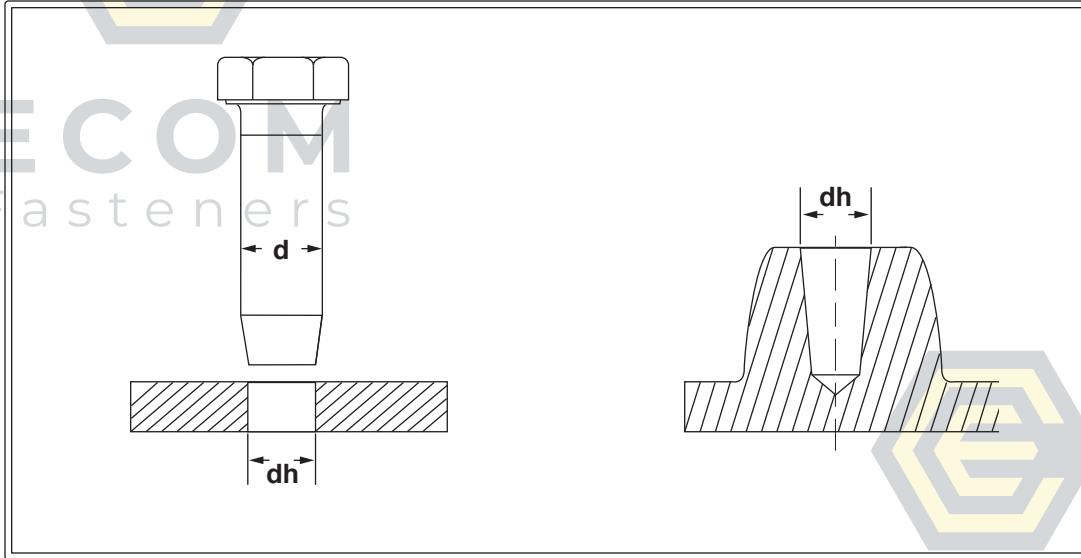
ECOM
Fasteners



| METRIC - TYPE Z (1A) PAN HEADS FOR TAPPING SCREWS | | | | | | | DIN 7985 | |
|---|---------------|-------|-------------|------|-----------------|--------------------|----------|------------|
| Nominal Size | A | | H | | M | G | | Drive Size |
| | Head Diameter | | Head Height | | Recess Diameter | Recess Penetration | | |
| | Max | Min | Max | Min | Ref | Max | Min | |
| M2 | 4.00 | 3.70 | 1.72 | 1.48 | 2.4 | 1.17 | 0.92 | 1 |
| M2.5 | 5.00 | 4.70 | 2.12 | 1.88 | 2.6 | 1.47 | 1.22 | 1 |
| M3 | 6.00 | 5.70 | 2.52 | 2.28 | 3.0 | 1.73 | 1.48 | 1 |
| M4 | 8.00 | 7.64 | 3.25 | 2.95 | 4.3 | 2.06 | 1.60 | 2 |
| M5 | 10.00 | 9.64 | 3.95 | 3.65 | 5.0 | 2.51 | 2.05 | 2 |
| M6 | 12.0 | 11.57 | 4.75 | 4.45 | 6.8 | 2.92 | 2.46 | 3 |

THREAD FORMING SCREWS

DIN 7500 Thread Rolling Screw Hole Size Data



| GUIDELINE VALUES FOR HOLE DIAMETERS USING DIN 7500 THREAD ROLLING SCREWS | | | | | | | | | | | | | | | | DIN 7500 | |
|--|--------------------|------|------|------|------|------|-------|------|-------|------|-------|------|-------|------|------|----------|--|
| Thread Size | M2 | | M2.5 | | M3 | | M3.5 | | M4 | | M5 | | M6 | | M8 | | |
| Material thickness or length of engagement | Hole Diameter (dh) | | | | | | | | | | | | | | | | |
| | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | |
| 0.8 | 1.86 | 1.8 | 2.31 | 2.25 | | | | | | | | | | | | | |
| 0.9 | 1.86 | 1.8 | 2.31 | 2.25 | | | | | | | | | | | | | |
| 1 | 1.86 | 1.8 | 2.31 | 2.25 | 2.76 | 2.7 | 3.205 | 3.13 | | | | | | | | | |
| 1.2 | 1.86 | 1.8 | 2.31 | 2.25 | 2.76 | 2.7 | 3.235 | 3.16 | | | | | | | | | |
| 1.5 | 1.86 | 1.8 | 2.31 | 2.25 | 2.76 | 2.7 | 3.235 | 3.16 | 3.675 | 3.6 | 4.575 | 4.5 | | | | | |
| 1.6 | 1.86 | 1.8 | 2.31 | 2.25 | 2.76 | 2.7 | 3.265 | 3.19 | 3.675 | 3.6 | 4.575 | 4.5 | | | | | |
| 1.7 | 1.86 | 1.8 | 2.31 | 2.25 | 2.76 | 2.7 | 3.265 | 3.19 | 3.675 | 3.6 | 4.575 | 4.5 | | | | | |
| 1.8 | 1.86 | 1.8 | 2.31 | 2.25 | 2.81 | 2.75 | 3.265 | 3.19 | 3.675 | 3.6 | 4.575 | 4.5 | | | | | |
| 2 | 1.86 | 1.8 | 2.31 | 2.25 | 2.81 | 2.75 | 3.265 | 3.19 | 3.675 | 3.6 | 4.575 | 4.5 | 5.475 | 5.4 | | | |
| 2.2 | 1.91 | 1.85 | 2.31 | 2.25 | 2.81 | 2.75 | 3.265 | 3.19 | 3.675 | 3.6 | 4.575 | 4.5 | 5.475 | 5.4 | 8.15 | 7.25 | |
| 2.5 | 1.91 | 1.85 | 2.31 | 2.25 | 2.81 | 2.75 | 3.315 | 3.24 | 3.725 | 3.65 | 4.575 | 4.5 | 5.475 | 5.4 | 8.15 | 7.25 | |
| 3 | 1.91 | 1.85 | 2.36 | 2.3 | 2.81 | 2.75 | 3.315 | 3.24 | 3.725 | 3.65 | 4.575 | 4.5 | 5.525 | 5.45 | 8.15 | 7.25 | |
| 3.2 | 1.91 | 1.85 | 2.36 | 2.3 | 2.81 | 2.75 | 3.315 | 3.24 | 3.725 | 3.65 | 4.625 | 4.55 | 5.525 | 5.45 | 8.15 | 7.25 | |
| 3.5 | 1.91 | 1.85 | 2.36 | 2.3 | 2.81 | 2.75 | 3.315 | 3.24 | 3.725 | 3.65 | 4.625 | 4.55 | 5.525 | 5.45 | 8.15 | 7.25 | |
| 4 | 1.91 | 1.85 | 2.36 | 2.3 | 2.81 | 2.75 | 3.345 | 3.27 | 3.725 | 3.65 | 4.625 | 4.55 | 5.525 | 5.45 | 8.2 | 7.3 | |
| 5 | | | 2.36 | 2.3 | 2.81 | 2.75 | 3.345 | 3.27 | 3.775 | 3.7 | 4.675 | 4.6 | 5.525 | 5.45 | 8.3 | 7.4 | |
| 5.5 | | | | | 2.81 | 2.75 | 3.345 | 3.27 | 3.775 | 3.7 | 4.675 | 4.6 | 5.575 | 5.5 | 8.3 | 7.4 | |
| 6 | | | | | 2.81 | 2.75 | 3.345 | 3.27 | 3.775 | 3.7 | 4.675 | 4.6 | 5.575 | 5.5 | 8.3 | 7.4 | |
| 6.3 | | | | | | | | | 3.775 | 3.7 | 4.725 | 4.65 | 5.575 | 5.5 | 8.3 | 7.4 | |
| 6.5 | | | | | | | | | 3.775 | 3.7 | 4.725 | 4.65 | 5.575 | 5.5 | 8.3 | 7.4 | |
| 7 | | | | | | | | | 3.775 | 3.7 | 4.725 | 4.65 | 5.575 | 5.5 | 8.4 | 7.5 | |
| 7.5 | | | | | | | | | 3.775 | 3.7 | 4.725 | 4.65 | 5.575 | 5.5 | 8.4 | 7.5 | |
| 8 thru 10 | | | | | | | | | | | 4.725 | 4.65 | 5.725 | 5.65 | 8.4 | 7.5 | |

NOTE:
The values listed above are assigned to various materials and lengths of engagement and should be used as guidelines.