

GROOVED PINS



Grooved pins are solid pins with three swaged grooves at 120° pitch along all or part of their length. When the pin is driven into a drilled hole of suitable diameter, the material displaced by the grooving process is forced back, to partially close up the grooves and lock the pin into place.

Advantages of grooved pins:

- They do not need a precision reamed hole.
- They can have parallel grooves or tapered grooves. Parallel grooves give the pin high resistance to vibration, but need more force to insert.
- They can be grooved on only part of the length, so that where the pin has to be firmly fixed in one part of an assembly, but be a clearance fit on the other, both parts can be drilled to the same diameter.

MATERIALS

MILD STEEL

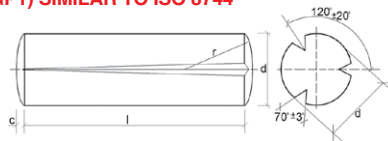
STAINLESS A2 (WS 1.4305)



STANDARDS

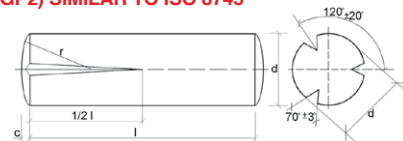
ISO standards were introduced in 1992 but in practise have not yet replaced the DIN standards. Technifast stocks DIN standards but ISO can be supplied to special order. Grooved pins are also referred to by GP numbers (see below).

DIN 1471 (GP1) SIMILAR TO ISO 8744



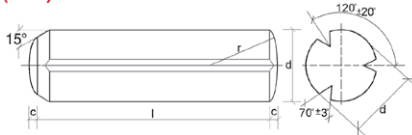
Full length taper grooves used to fix two or more components together, but with less insertion force than DIN 1473

DIN 1472 (GP2) SIMILAR TO ISO 8745



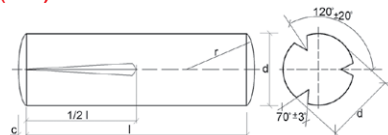
Half length taper grooves used where part of the assembly must be a free fit

DIN 1473 (GP3) SIMILAR TO ISO 8740



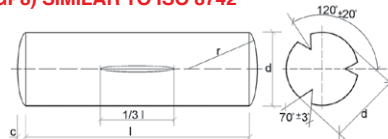
Full length parallel grooves used to fix two or more components together with maximum rigidity

DIN 1474 (GP4) SIMILAR TO ISO 8741



Half length reverse taper grooves used where the ungrooved portion acts as a stop or handle

DIN 1475 (GP8) SIMILAR TO ISO 8742



Third length centre grooves used on hinges or clevises where the two ends must act as pivots

GROOVED PINS

OTHER STANDARDS

| | |
|-----------------|---|
| BS 7047 | Equivalent to DIN 1474 |
| BS 7049 | Equivalent to DIN 1475 but with half length centre grooves |
| BS 7050 | Equivalent to DIN 1471 |
| BS 7053 | Headed groove pin |
| DIN 1469 | Similar to DIN 1474 but with parallel grooves and a slot for Circlip at the non-grooved end |
| DIN 1470 | Similar to DIN 1473 but with reduced diameter at one end to aid insertion |
| DIN 1476 | Headed grooved pin (round head) |
| DIN 1477 | Headed grooved pin (countersunk head) |
| GP5 | Equivalent to DIN 1475 but with half length centre grooves |
| ISO 8739 | Similar to DIN 1473 but with reduced diameter at one end to aid insertion |
| ISO 8743 | Similar to DIN 1475 but with half length centre grooves |
| ISO 8746 | Headed grooved pin (round head) |
| ISO 8747 | Headed grooved pin (countersunk head) |

SIZE RANGE – GROOVED PINS

| Nominal Diameter, Grooved Pins | 1* | 1.2* | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | |
|---|------------------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|
| Dimension 'C' (see note below) | 0.14 | 0.16 | 0.2 | 0.25 | 0.3 | 0.4 | 0.5 | 0.6 | 0.8 | 1 | 1.2 | 1.6 | |
| Diameter over Grooves | 1.05 | 1.25 | 1.6 | 2.15 | 2.65 | 3.20 | 4.25 | 5.25 | 6.30 | 8.30 | 10.35 | 12.35 | |
| Tolerance on Groove Diameter | + 0.05, - 0 | | | | ± 0.05 | | | | ± 0.1 | | | | |
| Recommended Hole Size | Max | 1.025 | 1.225 | 1.525 | 2.025 | 2.525 | 3.025 | 4.075 | 5.075 | 6.075 | 8.090 | 10.090 | 12.110 |
| | Min | 1.000 | 1.200 | 1.500 | 2.000 | 2.500 | 3.000 | 4.000 | 5.000 | 6.000 | 8.000 | 10.000 | 12.000 |
| Double Shear Strengths— tested to ISO 8749, kN (see also Page 37) | | | | | | | | | | | | | |
| | 0.7 | 1.0 | 1.6 | 2.85 | 4.25 | 6.15 | 10.6 | 16.5 | 22.8 | 40.5 | 63.2 | 91 | |
| Lengths in mm | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | |
| | Length Tolerances to js 15 | | | | | | | | | | | | |
| | * Only available in DIN 1473 | | | | | | | | | | | | |

NB The groove diameter must be measured using ring gauges. The groove diameter figures are valid for steel only. Stainless grooved pins have a slightly smaller diameter over the grooves.

AVAILABLE TO SPECIAL ORDER

- Diameters 14, 16, 20mm
- Stainless steel A4 (WS 1.4571)
- Brass
- Hardened steel