

Dowel Pins Extractable Dowels

Hardened and Ground Steel
m6 Diameter Tolerance



Introduction

Dowels are solid pins, usually precision ground to narrow limits to permit accurate fitting. Precision dowels are traditionally used to hold parts together in a fixed alignment, relying on the tightness of fit to stay in place. However, some applications for solid pins require clearance or transition fits on at least one of the components to be fastened. There are three factors that determine the size of the hole needed; the tolerance on the dowel itself, the tightness of fit required (interference, transition or clearance) and the hardness of the components into which the dowel is fitted.

Tolerances And Fits

Dowels are normally precision ground to produce a close tolerance diameter. Our range standardises on m6 tolerance, which corresponds to the ISO and DIN standards. The m6 tolerance is a 'plus tolerance' range and is normally used for interference fits. Also available are h7 or h8, which are minus tolerance ranges.

The tolerance to which a dowel is ground however is not directly related to the fit. As mentioned above, the fit (interference, transition or clearance) relates to the difference between the dowel diameter and the hole diameter.

The following table gives general guidance on hole tolerances but there are graduations within each category.

| HOLE MATERIAL | Hardened Steel | Mild Steel | Aluminium/Zinc/Brass |
|------------------|--------------------------|--------------------------|--------------------------|
| INTERFERENCE FIT | Pin Ø Less 5 microns | Pin Ø Less 25 microns | Pin Ø Less 35 microns |
| TRANSITION FIT | Pin Ø Less 2 microns | Pin Ø Less 5 microns | Pin Ø Less 5 microns |
| CLEARANCE FIT | Pin Ø plus 25-60 microns | Pin Ø plus 25-60 microns | Pin Ø plus 25-60 microns |

Fitting Dowels Into Blind Holes

When a dowel is interference-fitted into a blind hole, it increases the pressure of the air trapped in the hole. It is strongly advised to specify that the dowel should have an air release flat ground along its full length to prevent the dowel being ejected under the pressure of compressed air, or bursting the component into which it is driven.

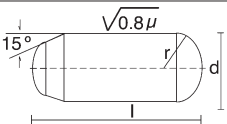
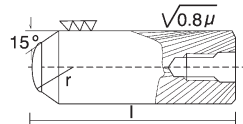
Materials

The material specifications of our standard range is as follows.

THROUGH HARDENED STEEL 100Cr6, WS 1.3505 Hardened & Tempered to HV 550-650

Standards

Dowel pins are made to several national or international standards, each with slight differences in chamfer forms, length tolerances and available materials. The following table gives details of the standards that we offer.

| STANDARD | STOCKED |
|--|--|
| DIN 6325  | Diameters 1-20 mm in steel, through-hardened and ground to m6. |
| DIN 7979D  | Diameters 4-20 mm in steel, through-hardened and ground to m6. |

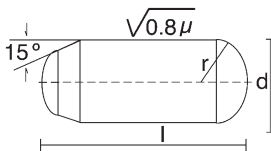
DIN 7979D is effectively the same as ISO 8735A (though hardened) with minor differences in length tolerances.

Fasteners

Dowel Pins

Materials

Hardened and Ground Steel
m6 Diameter Tolerance
DIN 6325



DISCOUNTS

| Quantity | List Price |
|----------|------------|
| 1 - 5 | -12% |
| 6-19 | -19% |
| 20-39 | -25% |
| 40-59 | -33% |
| 60-99 | -37% |
| 100-199 | -42% |
| 200-499 | -50% |
| 500-999 | -55% |
| 1000+ | -65% |

Fasteners Dowel Pins

| PART NUMBER | Ød m6 | Length l | Double Shear Strength (KN) | Price Each 1-5 |
|-------------|-------|----------|----------------------------|----------------|
| HPCHD1-4 | 1 | 4 | 1.5 | £0.17 |
| HPCHD1-5 | 1 | 5 | 1.5 | £0.17 |
| HPCHD1-6 | 1 | 6 | 1.5 | £0.17 |
| HPCHD1-8 | 1 | 8 | 1.5 | £0.18 |
| HPCHD1-10 | 1 | 10 | 1.5 | £0.18 |
| HPCHD1-12 | 1 | 12 | 1.5 | £0.18 |
| HPCHD1.5-4 | 1.5 | 4 | 3.4 | £0.15 |
| HPCHD1.5-5 | 1.5 | 5 | 3.4 | £0.15 |
| HPCHD1.5-6 | 1.5 | 6 | 3.4 | £0.15 |
| HPCHD1.5-8 | 1.5 | 8 | 3.4 | £0.16 |
| HPCHD1.5-10 | 1.5 | 10 | 3.4 | £0.16 |
| HPCHD1.5-12 | 1.5 | 12 | 3.4 | £0.16 |
| HPCHD1.5-14 | 1.5 | 14 | 3.4 | £0.17 |
| HPCHD1.5-16 | 1.5 | 16 | 3.4 | £0.17 |
| HPCHD2-4 | 2 | 4 | 5.5 | £0.15 |
| HPCHD2-5 | 2 | 5 | 5.5 | £0.15 |
| HPCHD2-6 | 2 | 6 | 5.5 | £0.15 |
| HPCHD2-8 | 2 | 8 | 5.5 | £0.15 |
| HPCHD2-10 | 2 | 10 | 5.5 | £0.16 |
| HPCHD2-12 | 2 | 12 | 5.5 | £0.16 |
| HPCHD2-14 | 2 | 14 | 5.5 | £0.16 |
| HPCHD2-16 | 2 | 16 | 5.5 | £0.17 |
| HPCHD2-18 | 2 | 18 | 5.5 | £0.17 |
| HPCHD2-20 | 2 | 20 | 5.5 | £0.17 |

| PART NUMBER | Ød m6 | Length l | Double Shear Strength (KN) | Price Each 1-5 |
|-------------|-------|----------|----------------------------|----------------|
| HPCHD2-24 | 2 | 24 | 5.5 | £0.31 |
| HPCHD2.5-5 | 2.5 | 5 | 8.0 | £0.12 |
| HPCHD2.5-6 | 2.5 | 6 | 8.0 | £0.12 |
| HPCHD2.5-8 | 2.5 | 8 | 8.0 | £0.15 |
| HPCHD2.5-10 | 2.5 | 10 | 8.0 | £0.15 |
| HPCHD2.5-12 | 2.5 | 12 | 8.0 | £0.16 |
| HPCHD2.5-14 | 2.5 | 14 | 8.0 | £0.16 |
| HPCHD2.5-16 | 2.5 | 16 | 8.0 | £0.17 |
| HPCHD2.5-18 | 2.5 | 18 | 8.0 | £0.17 |
| HPCHD2.5-20 | 2.5 | 20 | 8.0 | £0.19 |
| HPCHD2.5-24 | 2.5 | 24 | 8.0 | £0.19 |
| HPCHD3-5 | 3 | 5 | 13 | £0.12 |
| HPCHD3-6 | 3 | 6 | 13 | £0.12 |
| HPCHD3-8 | 3 | 8 | 13 | £0.12 |
| HPCHD3-10 | 3 | 10 | 13 | £0.12 |
| HPCHD3-12 | 3 | 12 | 13 | £0.13 |
| HPCHD3-14 | 3 | 14 | 13 | £0.15 |
| HPCHD3-16 | 3 | 16 | 13 | £0.15 |
| HPCHD3-18 | 3 | 18 | 13 | £0.15 |
| HPCHD3-20 | 3 | 20 | 13 | £0.16 |
| HPCHD3-24 | 3 | 24 | 13 | £0.18 |
| HPCHD3-28 | 3 | 28 | 13 | £0.18 |
| HPCHD3-30 | 3 | 30 | 13 | £0.19 |
| HPCHD4-6 | 4 | 6 | 22 | £0.13 |

| PART NUMBER | Ød m6 | Length l | Double Shear Strength (KN) | Price Each 1-5 | PART NUMBER | Ød m6 | Length l | Double Shear Strength (KN) | Price Each 1-5 |
|-------------|-------|----------|----------------------------|----------------|-------------|-------|----------|----------------------------|----------------|
| HPCHD4-8 | 4 | 8 | 22 | £0.13 | HPCHD6-24 | 6 | 24 | 53 | £0.34 |
| HPCHD4-10 | 4 | 10 | 22 | £0.15 | HPCHD6-28 | 6 | 28 | 53 | £0.35 |
| HPCHD4-12 | 4 | 12 | 22 | £0.16 | HPCHD6-30 | 6 | 30 | 53 | £0.39 |
| HPCHD4-14 | 4 | 14 | 22 | £0.17 | HPCHD6-32 | 6 | 32 | 53 | £0.40 |
| HPCHD4-16 | 4 | 16 | 22 | £0.18 | HPCHD6-36 | 6 | 36 | 53 | £0.46 |
| HPCHD4-18 | 4 | 18 | 22 | £0.19 | HPCHD6-40 | 6 | 40 | 53 | £0.49 |
| HPCHD4-20 | 4 | 20 | 22 | £0.20 | HPCHD6-45 | 6 | 45 | 53 | £0.54 |
| HPCHD4-24 | 4 | 24 | 22 | £0.22 | HPCHD6-50 | 6 | 50 | 53 | £0.60 |
| HPCHD4-28 | 4 | 28 | 22 | £0.25 | HPCHD6-55 | 6 | 55 | 53 | £0.64 |
| HPCHD4-30 | 4 | 30 | 22 | £0.26 | HPCHD6-60 | 6 | 60 | 53 | £0.70 |
| HPCHD4-32 | 4 | 32 | 22 | £0.27 | HPCHD8-10 | 8 | 10 | 88 | £0.47 |
| HPCHD4-36 | 4 | 36 | 22 | £0.30 | HPCHD8-12 | 8 | 12 | 88 | £0.47 |
| HPCHD4-40 | 4 | 40 | 22 | £0.33 | HPCHD8-14 | 8 | 14 | 88 | £0.47 |
| HPCHD4-45 | 4 | 45 | 22 | £0.44 | HPCHD8-16 | 8 | 16 | 88 | £0.47 |
| HPCHD4-50 | 4 | 50 | 22 | £0.48 | HPCHD8-18 | 8 | 18 | 88 | £0.47 |
| HPCHD5-6 | 5 | 6 | 31 | £0.18 | HPCHD8-20 | 8 | 20 | 88 | £0.49 |
| HPCHD5-8 | 5 | 8 | 31 | £0.18 | HPCHD8-24 | 8 | 24 | 88 | £0.56 |
| HPCHD5-10 | 5 | 10 | 31 | £0.19 | HPCHD8-28 | 8 | 28 | 88 | £0.61 |
| HPCHD5-12 | 5 | 12 | 31 | £0.19 | HPCHD8-30 | 8 | 30 | 88 | £0.64 |
| HPCHD5-14 | 5 | 14 | 31 | £0.20 | HPCHD8-32 | 8 | 32 | 88 | £0.67 |
| HPCHD5-16 | 5 | 16 | 31 | £0.22 | HPCHD8-36 | 8 | 36 | 88 | £0.75 |
| HPCHD5-18 | 5 | 18 | 31 | £0.24 | HPCHD8-40 | 8 | 40 | 88 | £0.81 |
| HPCHD5-20 | 5 | 20 | 31 | £0.25 | HPCHD8-45 | 8 | 45 | 88 | £0.88 |
| HPCHD5-24 | 5 | 24 | 31 | £0.29 | HPCHD8-50 | 8 | 50 | 88 | £0.96 |
| HPCHD5-28 | 5 | 28 | 31 | £0.31 | HPCHD8-55 | 8 | 55 | 88 | £1.03 |
| HPCHD5-30 | 5 | 30 | 31 | £0.33 | HPCHD8-60 | 8 | 60 | 88 | £1.10 |
| HPCHD5-32 | 5 | 32 | 31 | £0.34 | HPCHD8-70 | 8 | 70 | 88 | £1.26 |
| HPCHD5-36 | 5 | 36 | 31 | £0.34 | HPCHD8-80 | 8 | 80 | 88 | £1.90 |
| HPCHD5-40 | 5 | 40 | 31 | £0.39 | HPCHD10-16 | 10 | 16 | 132 | £0.76 |
| HPCHD5-45 | 5 | 45 | 31 | £0.42 | HPCHD10-18 | 10 | 18 | 132 | £0.76 |
| HPCHD5-50 | 5 | 50 | 31 | £0.47 | HPCHD10-20 | 10 | 20 | 132 | £0.76 |
| HPCHD5-55 | 5 | 55 | 31 | £0.61 | HPCHD10-24 | 10 | 24 | 132 | £0.84 |
| HPCHD5-60 | 5 | 60 | 31 | £0.84 | HPCHD10-28 | 10 | 28 | 132 | £0.92 |
| HPCHD6-8 | 6 | 8 | 53 | £0.24 | HPCHD10-30 | 10 | 30 | 132 | £0.97 |
| HPCHD6-10 | 6 | 10 | 53 | £0.24 | HPCHD10-32 | 10 | 32 | 132 | £1.06 |
| HPCHD6-12 | 6 | 12 | 53 | £0.24 | HPCHD10-36 | 10 | 36 | 132 | £1.10 |
| HPCHD6-14 | 6 | 14 | 53 | £0.25 | HPCHD10-40 | 10 | 40 | 132 | £1.17 |
| HPCHD6-16 | 6 | 16 | 53 | £0.26 | HPCHD10-45 | 10 | 45 | 132 | £1.31 |
| HPCHD6-18 | 6 | 18 | 53 | £0.29 | HPCHD10-50 | 10 | 50 | 132 | £1.40 |
| HPCHD6-20 | 6 | 20 | 53 | £0.31 | HPCHD10-55 | 10 | 55 | 132 | £1.51 |



Fasteners

Dowel Pins

Materials

Hardened and Ground Steel
m6 Diameter Tolerance
DIN 6325

Fasteners Dowel Pins

| PART NUMBER | Ød m6 | Length l | Double Shear Strength (KN) | Price Each 1-5 |
|-------------|-------|----------|----------------------------|----------------|
| HPCHD10-60 | 10 | 60 | 132 | £1.60 |
| HPCHD10-70 | 10 | 70 | 132 | £1.83 |
| HPCHD10-80 | 10 | 80 | 132 | £2.23 |
| HPCHD10-90 | 10 | 90 | 132 | £3.03 |
| HPCHD10-100 | 10 | 100 | 132 | £3.32 |
| HPCHD10-110 | 10 | 110 | 132 | £3.93 |
| HPCHD10-120 | 10 | 120 | 132 | £4.29 |
| HPCHD12-18 | 12 | 18 | 210 | £1.24 |
| HPCHD12-20 | 12 | 20 | 210 | £1.24 |
| HPCHD12-24 | 12 | 24 | 210 | £1.24 |
| HPCHD12-28 | 12 | 28 | 210 | £1.32 |
| HPCHD12-30 | 12 | 30 | 210 | £1.36 |
| HPCHD12-32 | 12 | 32 | 210 | £1.43 |
| HPCHD12-36 | 12 | 36 | 210 | £1.56 |
| HPCHD12-40 | 12 | 40 | 210 | £1.68 |
| HPCHD12-45 | 12 | 45 | 210 | £1.82 |
| HPCHD12-50 | 12 | 50 | 210 | £1.97 |
| HPCHD12-55 | 12 | 55 | 210 | £2.12 |
| HPCHD12-60 | 12 | 60 | 210 | £2.26 |
| HPCHD12-70 | 12 | 70 | 210 | £2.57 |
| HPCHD12-80 | 12 | 80 | 210 | £2.85 |
| HPCHD12-90 | 12 | 90 | 210 | £3.19 |
| HPCHD12-100 | 12 | 100 | 210 | £3.45 |
| HPCHD12-110 | 12 | 110 | 210 | £4.88 |
| HPCHD12-120 | 12 | 120 | 210 | £5.28 |
| HPCHD14-24 | 14 | 24 | 260 | £2.07 |
| HPCHD14-32 | 14 | 32 | 260 | £2.38 |
| HPCHD14-36 | 14 | 36 | 260 | £2.52 |
| HPCHD14-40 | 14 | 40 | 260 | £2.59 |
| HPCHD14-45 | 14 | 45 | 260 | £2.92 |
| HPCHD14-50 | 14 | 50 | 260 | £3.00 |
| HPCHD14-55 | 14 | 55 | 260 | £3.31 |
| HPCHD14-60 | 14 | 60 | 260 | £3.41 |
| HPCHD14-70 | 14 | 70 | 260 | £4.38 |

| PART NUMBER | Ød m6 | Length l | Double Shear Strength (KN) | Price Each 1-5 |
|-------------|-------|----------|----------------------------|----------------|
| HPCHD14-80 | 14 | 80 | 260 | £4.93 |
| HPCHD14-90 | 14 | 90 | 260 | £5.67 |
| HPCHD14-100 | 14 | 100 | 260 | £6.10 |
| HPCHD16-24 | 16 | 24 | 350 | £2.76 |
| HPCHD16-28 | 16 | 28 | 350 | £2.98 |
| HPCHD16-30 | 16 | 30 | 350 | £3.09 |
| HPCHD16-32 | 16 | 32 | 350 | £3.27 |
| HPCHD16-36 | 16 | 36 | 350 | £3.41 |
| HPCHD16-40 | 16 | 40 | 350 | £3.59 |
| HPCHD16-45 | 16 | 45 | 350 | £3.88 |
| HPCHD16-50 | 16 | 50 | 350 | £4.19 |
| HPCHD16-55 | 16 | 55 | 350 | £4.50 |
| HPCHD16-60 | 16 | 60 | 350 | £4.93 |
| HPCHD16-70 | 16 | 70 | 350 | £5.67 |
| HPCHD16-80 | 16 | 80 | 350 | £6.25 |
| HPCHD16-90 | 16 | 90 | 350 | £7.15 |
| HPCHD16-100 | 16 | 100 | 350 | £7.67 |
| HPCHD16-110 | 16 | 110 | 350 | £8.10 |
| HPCHD16-120 | 16 | 120 | 350 | £9.41 |
| HPCHD20-32 | 20 | 32 | 485 | £6.77 |
| HPCHD20-36 | 20 | 36 | 485 | £6.77 |
| HPCHD20-40 | 20 | 40 | 485 | £6.77 |
| HPCHD20-45 | 20 | 45 | 485 | £7.11 |
| HPCHD20-50 | 20 | 50 | 485 | £7.36 |
| HPCHD20-55 | 20 | 55 | 485 | £7.84 |
| HPCHD20-60 | 20 | 60 | 485 | £8.25 |
| HPCHD20-70 | 20 | 70 | 485 | £8.67 |
| HPCHD20-80 | 20 | 80 | 485 | £9.40 |
| HPCHD20-90 | 20 | 90 | 485 | £10.69 |
| HPCHD20-100 | 20 | 100 | 485 | £11.37 |
| HPCHD20-120 | 20 | 120 | 485 | £13.76 |
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