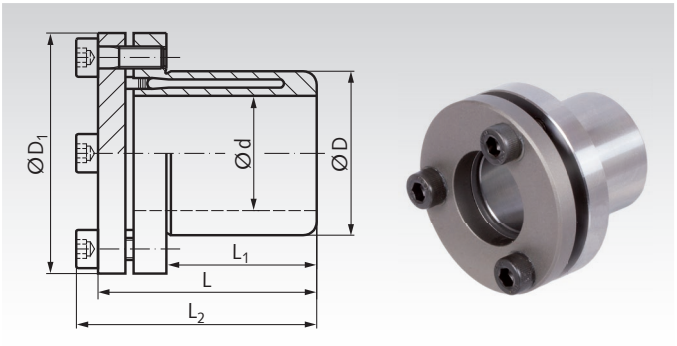
## Clamping Bushes MSD

**Material:** Steel.

The MSD clamping bush consists of a double-walled, hardened steel sleeve filled with a special pressure medium, a seal, a piston, a compression flange and fastening screws. When tightening the screws, the sleeves expand evenly against shaft and hub, creating a rigid connection. When the screws are loosened, the bush returns to its initial position and can be easily demounted.

**Temperature range:** -30 °C to 85 °C.
**Concentricity:** ≈ 0.03 - 0.06 mm.
**Tolerance:** Shaft h8 - k6 (for Prod. No. 615 215 00 only h7), Hub H7.

$P_W \approx 90 N/mm^2$ $P_N \approx 70 N/mm^2$



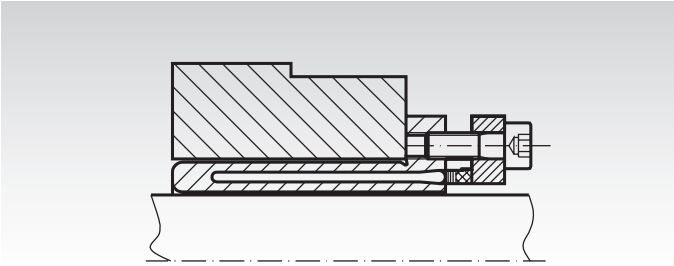

**Ordering Details: e.g.: Product No. 615 215 00, Clamping Bush MSD, 15 mm**

| Product No. | Dimensions d mm | D mm | $D_1$ mm | L mm | $L_1$ mm | $L_2$ | at $T_A$ transmittable Torque T Nm | Force $F_{ax}$ kN | Screws DIN 912, 12.9 Amount | Size | $T_A$ Nm | Moment of Inertia J $kgm^2 \cdot 10^{-3}$ | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **615 215 00** | 15 | 23 | 38 | 30 | 17 | 35 | 55 | 7,3 | 3 | M5 | 6 | 0,018 | 0,10 |
| **615 219 00** | 19 | 28 | 45 | 37 | 21 | 42 | 100 | 10,6 | 3 | M5 | 8 | 0,046 | 0,17 |
| **615 220 00** | 20 | 28 | 45 | 37 | 22 | 42 | 125 | 12,5 | 3 | M5 | 8 | 0,046 | 0,16 |
| **615 222 00** | 22 | 32 | 49 | 37 | 22 | 42 | 135 | 12,3 | 4 | M5 | 8 | 0,065 | 0,19 |
| **615 224 00** | 24 | 34 | 49 | 40 | 25 | 45 | 200 | 16,7 | 4 | M5 | 8 | 0,067 | 0,20 |
| **615 225 00** | 25 | 34 | 49 | 43 | 27 | 48 | 250 | 20,0 | 4 | M5 | 8 | 0,071 | 0,19 |
| **615 228 00** | 28 | 39 | 55 | 45 | 29 | 50 | 300 | 21,4 | 4 | M5 | 8 | 0,120 | 0,26 |
| **615 230 00** | 30 | 41 | 57 | 47 | 32 | 52 | 420 | 28,0 | 4 | M5 | 8 | 0,142 | 0,29 |
| **615 232 00** | 32 | 43 | 60 | 52 | 34 | 57 | 420 | 26,3 | 4 | M5 | 8 | 0,195 | 0,35 |
| **615 235 00** | 35 | 47 | 63 | 55 | 37 | 60 | 650 | 37,1 | 6 | M5 | 8 | 0,250 | 0,40 |
| **615 238 00** | 38 | 50 | 65 | 59 | 41 | 64 | 750 | 39,5 | 6 | M5 | 8 | 0,310 | 0,43 |
| **615 240 00** | 40 | 53 | 70 | 63 | 43 | 68 | 940 | 47,0 | 6 | M5 | 8 | 0,441 | 0,55 |
| **615 242 00** | 42 | 55 | 70 | 65 | 45 | 70 | 940 | 44,8 | 6 | M5 | 8 | 0,467 | 0,55 |
| **615 245 00** | 45 | 59 | 77 | 69 | 49 | 75 | 1290 | 57,3 | 6 | M6 | 13 | 0,686 | 0,71 |
| **615 248 00** | 48 | 62 | 80 | 73 | 52 | 79 | 1570 | 65,4 | 6 | M6 | 13 | 0,833 | 0,78 |
| **615 250 00** | 50 | 65 | 83 | 76 | 53 | 82 | 1900 | 76,0 | 6 | M6 | 13 | 1,045 | 0,86 |

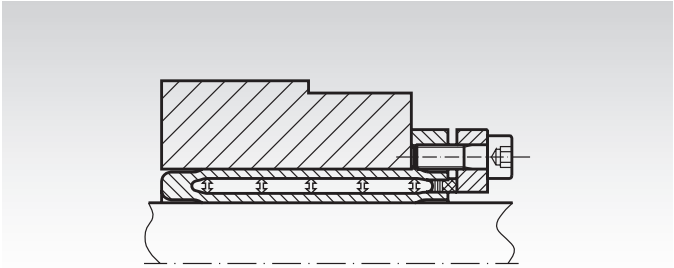
T = transmittable torque at axial force of 0, if the screws are fastened with $T_A$.
$F_{ax}$ = transmittable axial force at torque of 0, if the screws are fastened with $T_A$.
$T_A$ = required fastening torque for the screws.

The dimensions refer to bushes before assembly.

## Mounting



For mounting, the clamping bush MSD is placed between shaft and hub.



After the screws have been tightened, there is a contact between the surface of hub and shaft.

## Advantages

The hydraulic principle leads to many advantages:

- fast mounting/demounting.
- sensitive adjustment of the hub can be carried out during assembly.
- low fastening torque and few screws allow very simple assembly.
- good concentricity.
- small dimensions allow little outside diameter of the hub.
- The clamping bushes are as standard equipped with Allen screws, but hexagon-head screws can also be supplied.

## Dimensioning

For the maximum torque, the shaft must be strong enough (min. strength 350 $N/mm^2$, for example C45).
The hub diameter must be big enough.
Recommend minimum hub diameter:
Hub from Steel: ND = 1,4 x D.
Hub from grey cast iron: ND = 2,0 x D.
Hub from Aluminium: ND = 2,5 x D.