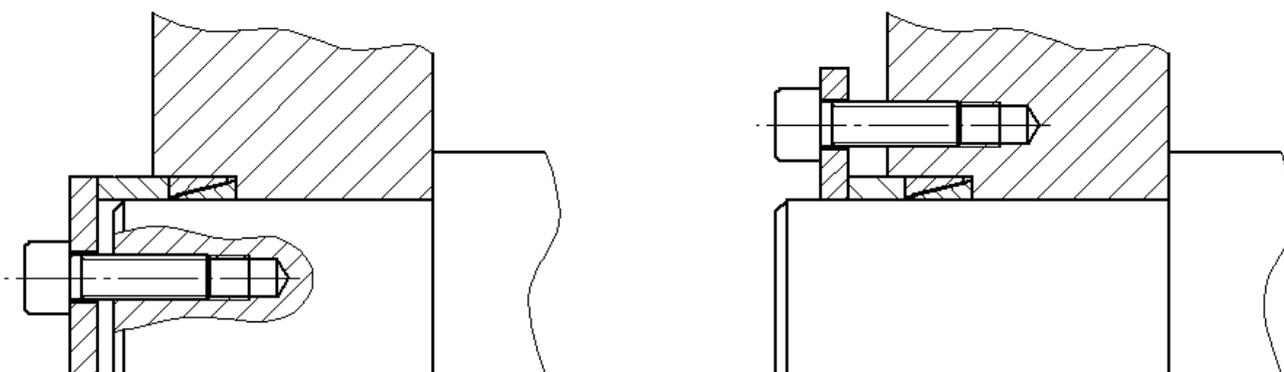
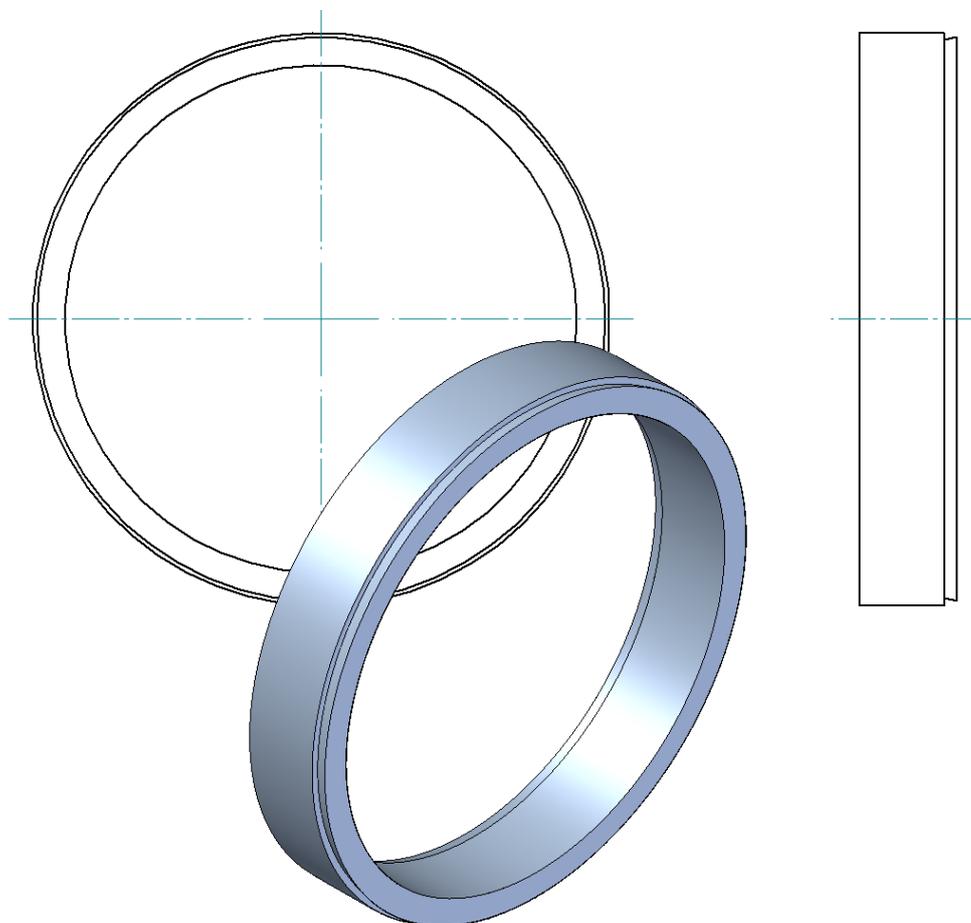




Locking Device KBS 50



KBS 50 Locking Device is a frictionally engaged detachable shaft-hub-connection for cylindrical shafts and bores without keyway.





Features

- delivered in mounted condition
- non self-centering
- concentricity **0,02 – 0,04 mm**

Tolerances, Surfaces

- a good turning process is sufficient: **Rz ≤ 6 μm**
- maximum tolerance: **up to Ø 38 = h8/H7 – shaft/hub**
Larger than Ø 38 = h8/H8 – shaft/hub

Components of the locking device KBS 50

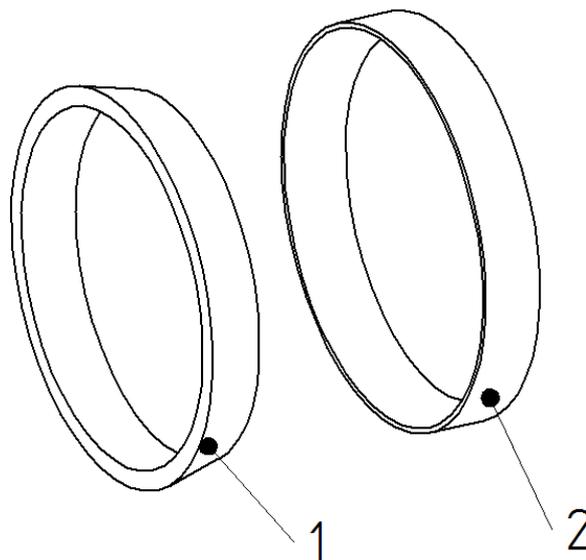


Image 1) KBS 50

Component	Quantity	Description
1	1	inner tapered ring
2	1	outer tapered ring



Information!

Contaminated or used locking devices have to be detached and cleaned prior to installation. Then apply a thin layer of low viscosity oil (e.g. Castrol 4 in 1 or Klüber Quietsch-Ex).



Assembly of the locking device

- Check shaft- and hub-position regarding the stipulated tolerance (up to $\varnothing 38$ h8/H7; larger than $\varnothing 38$ h8/H8).
- Clean hub-boring and shaft and then lubricate with low-viscosity oil. (e.g. Castrol 4 in 1 or Klüber Quietsch-Ex).



ATTENTION!

Do not use any oil or grease with molybdenum-disulphide or high pressure additives as well as sliding-grease paste.

- Push the hub onto the shaft.
- If there is an undercut please bridge by using a distance ring. This can be omitted if the undercut is missing. (see images 2 and 3).

Wrong:

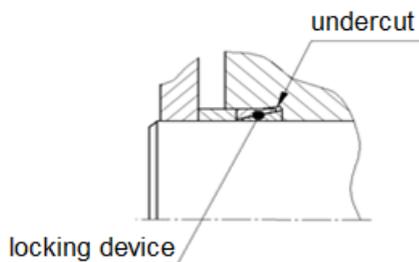


Image 2) Locking device in undercut

Right:

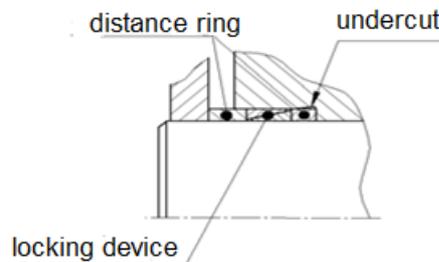


Image 3) Distance ring in undercut

Wrong:

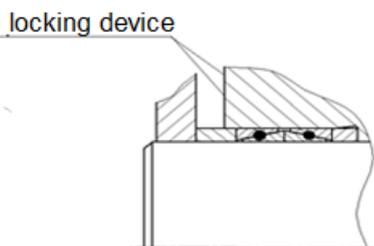


Image 4) Arrangement incorrect

Right:

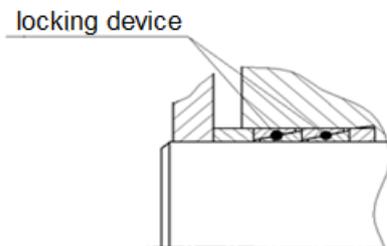


Image 5) Arrangement correct



- When installing several ring-pairs KBS 50 (max. 4 ring-pairs) please make sure that the KBS 50-Elements are arranged in the same direction. (see images 4 and 5).
- Please note clearance **A** (see images 6 and 7).
- Locking device must not be mounted while being jammed. Make sure it can be moved easily.
- Alternatively the clamping flange with a lap-joint or distance ring can be inserted. Make sure it can be moved easily as well.
- Slightly tighten the clamping screws and align the hub.
- Tighten screws crosswise and evenly by using a torque handle according to the determined tightening torque T_A in accordance with the size of the screw (see table 1). Repeat this procedure until the tightening torque T_A has been reached by all clamping screws. Check the remaining gap **A** for evenness (see image 6 and 7).
- If possible repeat the previous procedure after the test run.

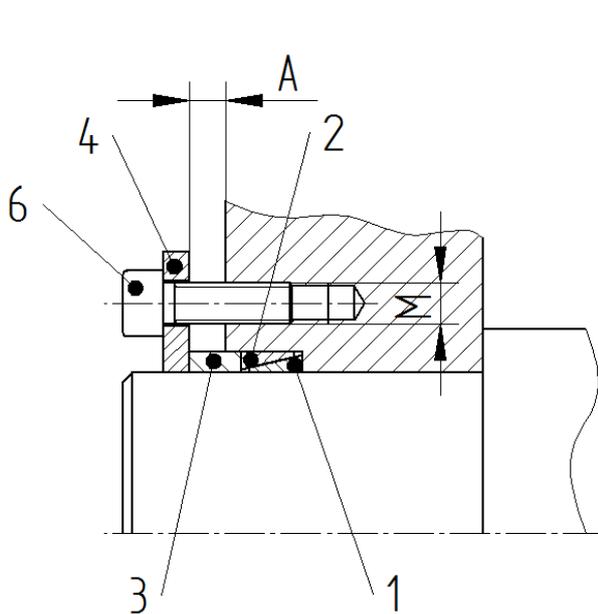


Image 6) Assembly 1
 Clamping on hub side

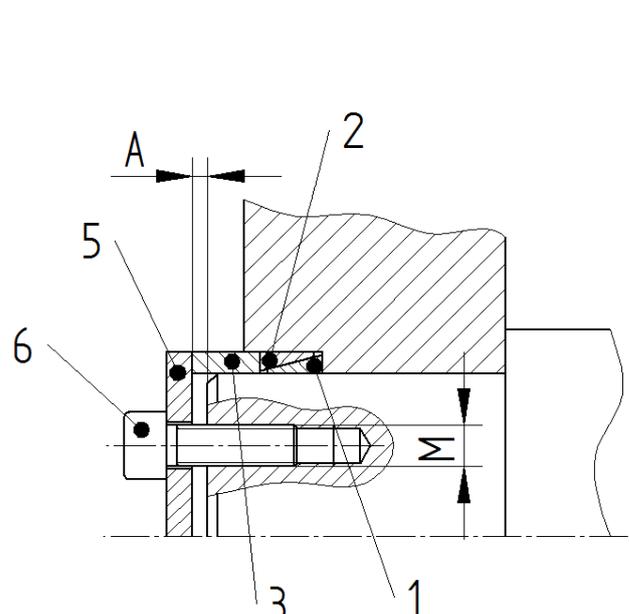


Image 7) Assembly 2
 Clamping on shaft side

Component	Quantity	Description
1	1	inner tapered ring
2	1	outer tapered ring
3	1	distance ring

Component	Quantity	Description
4	1	pressure flange DFN
5	1	pressure flange DFW
6	1	socket head screw ISO 4762



Table 1:

Thread Size M	Preload Force F_V and Tightening Torque T_A at $\mu_{ges.} = 0,14$					
	Preload Force F_V [N]			Tightening Torque T_A [Nm]		
	8.8	10.9	12.9	8.8	10.9	12.9
M3	2210	3110	3730	1,34	1,89	2,25
M4	3900	5450	6550	2,9	4,1	4,9
M5	6350	8950	10700	6	8,5	10
M6	9000	12600	15100	10	14	17
M8	16500	23200	27900	25	35	41
M10	26200	36900	44300	49	69	83
M12	38300	54000	64500	86	120	145
M14	52500	74000	88500	135	190	230
M16	73000	102000	123000	210	295	355
M18	88000	124000	148000	290	405	485
M20	114000	160000	192000	410	580	690
M22	141000	199000	239000	550	780	930
M24	164000	230000	276000	710	1000	1200
M27	215000	302000	363000	1050	1500	1800
M30	262000	368000	442000	1450	2000	2400

Disassembly of the locking device



DANGER!

Loosened or falling drive components may result in personal injuries or damage to machines. Please secure drive components prior to disassembly.

- Evenly loosen and unscrew all clamping screws in sequence.
- The locking devices are not self-locking. In case the inner and outer tapered ring do not come loose, start the detachment process by a slight pressure onto several parts of the circumference of the hub or the shaft.
- Remove the loosened locking device between shaft and hub.



ATTENTION!

Non-observance of these instructions or non-consideration of operating conditions selecting the locking device may impair the function.

Disposal: *Defective locking devices must be cleaned and scrapped.*