SANKYO OILLESS Industry GmbH

LBMF
Flanged dry bushes

Stepping foreard together with our customers

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The technologies developed by ***SANKYO OILLESS*** have reduced or eliminated friction, wear and tear. In addition, ***SANKYO OILLESS*** provides services and quality products to offer you the best possible solutions for your requirements at all times.

The benefits of slide bearings versus roller bearings

In a variety of applications, designers are increasingly replacing roller bearings with slide bearings. In addition to ease of installation and cost effectiveness, slide bearings offer a number of distinct advantages. Slide bearings require less installation space, have a larger load bearing capacity, are maintenance-free or require little maintenance, are easier to assemble and are less susceptible to noise and vibration.

The following list gives an overview of the general advantages of bearings compared to bearings.

Slide bearing

- Higher load bearing capacity and reduced footperint
- Higher resistance to vibration and increased lifetime
- Easier installation
- Lower installation costs
- Increased shaft tolerances possible
- Compensates misalignment and reduces the edge load

Roller bearing

- sensitive to shock, vibration and edge load
- high costs for bearings, housings, counterfaces and - fixing materials
- large space required
- is prone to noise development

Technologies for top performance

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We offer high quality maintenance-free sliding elements acc. to international standards and standards for use in

- pressing tools
- injection molds
- general engineering

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Bushes with PTFE sliding layer

The lead-free composite material SO#936FR is used for maintenance-free plain bearings that preferably run dry, i.e. without lubricant. The rolled and calibrated bushings are made of thin-walled strip material. The butt joint runs parallel to the bushing axis.

Properties

- Good sliding properties of the maintenance-free bronze / PTFE sliding layer
- Suitable for dry running and clean operation
- Smooth movement, without stick-slip effect
- For oscillating and rotating movements, even at low speed
- Low friction, low wear and long service life
- High specific load, even shock-wise
- Temperature resistant between -200 and +280 °C
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An adaptation process takes place on the sliding surfaces of the shaft and bushing during the first hours of operation. The surface structure of the shaft smoothes out and absorbs part of the PTFE sliding layer.

Running-in characteristic

Dadurch werden die tragenden Kontaktflächen und die Tragfähigkeit zwischen den Elementen verbessert. Der Einlaufverschleiß nach Abb. 1 stabilisiert sich je nach Belastung schon in kurzer Zeit und führt zu einem günstigen Reibwert.

Sliding partners

Suitable sliding partners for Sankyo Oilless Bushes and Plates are **gas nitrated or hardened steel** alloys with **HRC > 35**.

In order to ensure an optimal sliding beahaviour, the difference in hardeness between the sliding material and sliding partner should at least be **100 HB**.

The surface roughness of the sliding partner should be **Rz = 3...6,3 µm (grinding)**.

If guides, like in large dies of punching tools, are continuously moved apart during operation, the counterpart partner should be provided with correspondingly generous centering chamfers.

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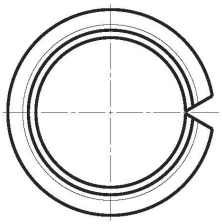
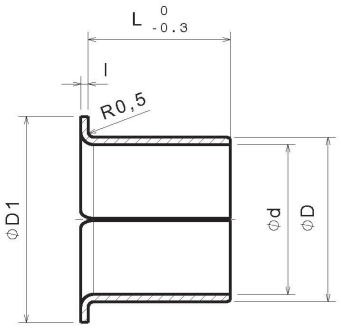
Article informationen





Toleranzen / Tolerances
Gehäuse / Housing: H7
Welle / Shaft: -0,025 / -IT7

Properties:

	Base material	Steel
	Self-lubricating	Yes
	Lubricant	PTFE
Max. surface pressure P	<100.000 load cases	29 N/mm²
	>10 Mio. load cases	15 N/mm²
	rotating, oscillating, gliding	59 N/mm²
	very slow movement	147 N/mm²
	Max. sliding speed v	120 m/min
	Operating temperature	-200°C / +280°C

Article no.:	Article name:	Inner Ø d:	Outer Ø D:	Length L:	D1 :	l:
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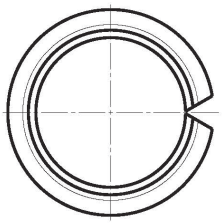
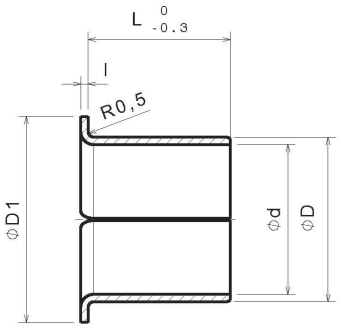
Article informationen





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11306030	LBMF 60-65-30	60	65	30	75	

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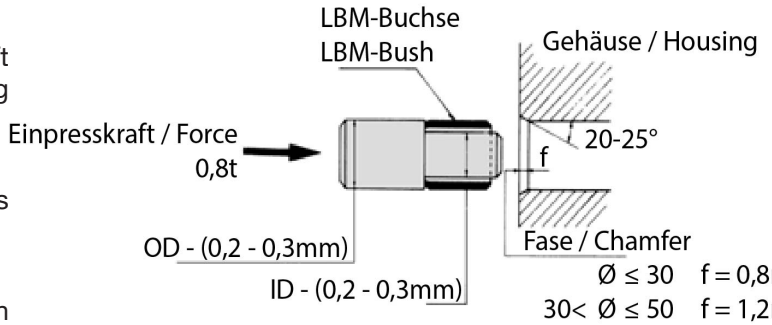
Installation note

Bush

Observe tolerances of the press-in mandrel (shaft and calibrating mandrel diameter) and the housing when pressing in the bushing.

In large diameter range, use calibrating mandrels if necessary!



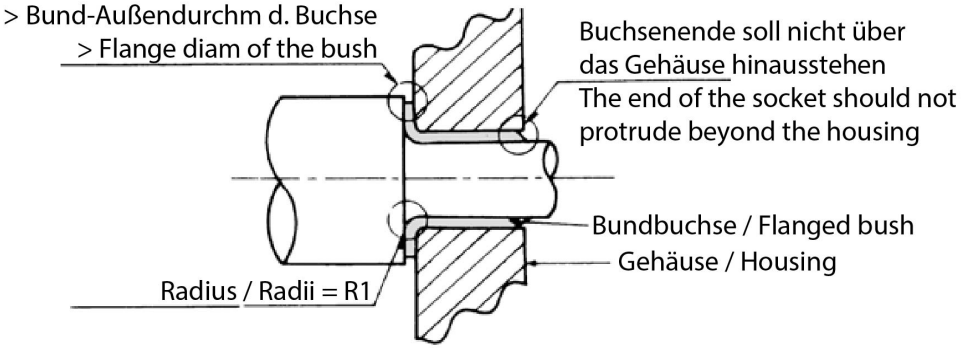
Avoid damage to the running surface when mounting the bearings.

Design of the shaft journal (mating surface): For dry running, surface roughness = Rz2 - Rz3 (ground), for secondary bearing points also drawn material is permissible.

Flanged bush

The mandrel shank diameter should be larger than the collar outside diameter of the bushing when pressing in.

The shaft outside diameter of the shaft should be larger than the collar outside diameter of the bushing.



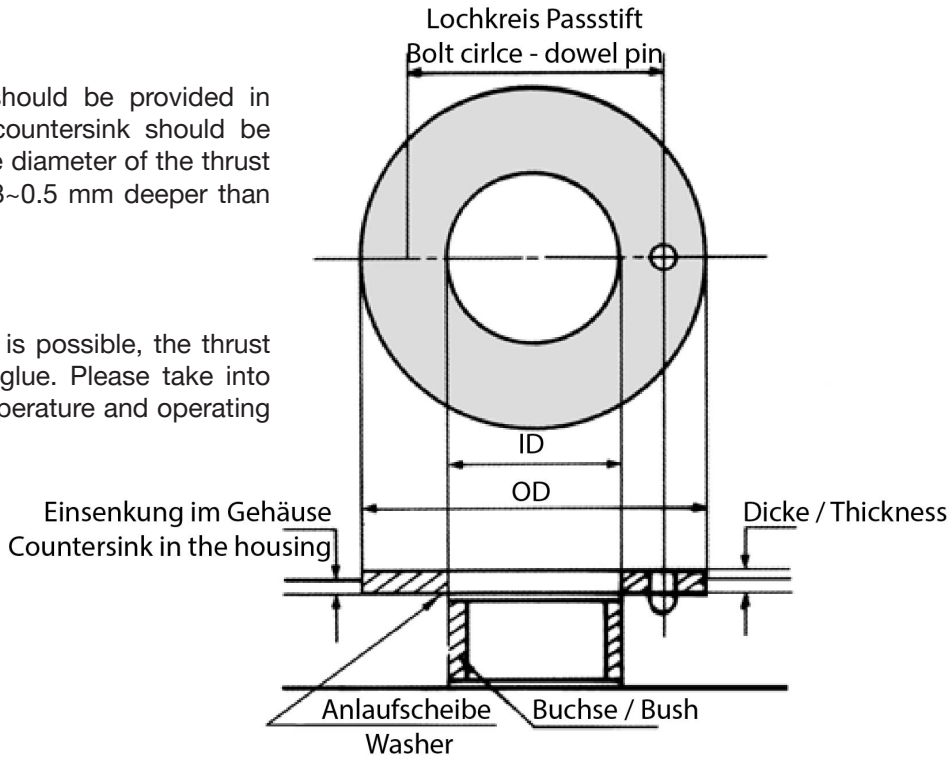
Thrust washer

In case of locking by dowel pin:

If possible, a countersink (cavity) should be provided in the housing. The diameter of the countersink should be 0.05~0.15 mm larger than the outside diameter of the thrust washer. The dowel pin should be 0.3~0.5 mm deeper than the top edge - thrust surface.

Glue in place:

If no dowel pin or screw connection is possible, the thrust washer can also be fixed by using glue. Please take into account the maximum operating temperature and operating conditions of the glue.



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