TSP
Guide plates

Stepping foreard together with our customers

For more than 50 years, ***SANKYO OILLESS*** has been one of the leading manufacturers of maintenance-free sliding elements. As a leading supplier and pioneer in the production of stamping and press tool components for the automotive industry, ***SANKYO OILLESS*** supplies an products for many other applications such as mold making, engineering, packaging, heavy industry, aerospace and many more.

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

SANKYO products are manufactured in our own plants and distributed worldwide.

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

- pressing tools
- injection molds
- general engineering

As an experienced specialist, we have the appropriate know-how in tribology to always offer the best solutions for your needs. We supply a large portfolio of lubrication-free sliding elements and also offer custom products acc. to customer drawing.

Quality and performance are our constant commitment!

Plates, angle strips and the like

According to the case of application and the desired accuracy, between 0.02 and 0.15 mm.

In general, guide slides are made to give a clearance of 0.05 mm and a vertical clearance of 0.1 mm.

Attention

The graphite cannot be deposited on the entire surface with very small movements. Please contact the technical department if you want to realise very small movements.

Sliding partners

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

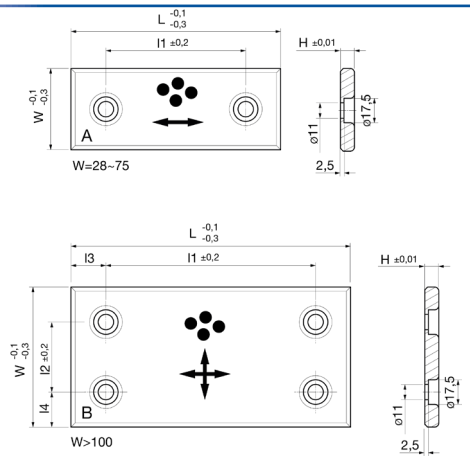
In order to ensure an optimal sliding beahaviour, the difference in hardeness between the sliding material and sliding partner should at least be **100 HB**.

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.

TSP - Guide plates

Article informationen



Properties:

Base material	Steel (SO#50SKS3)
Self-lubricating	Yes
Lubricant	Graphite
Max. surface pressure P	50 N/mm²
Max. sliding speed v	10 m/min
Max. P*v-Wert	80 N/mm² x m/min
Operating temperature	-50°C / +200°C
Friction coefficient	0,11

Article no.:	Article name:	Width W:	Length L:	Height H:	l1:	l2:	Form:
27700028075	TSP 28-75	28	75	10	45	-	A
27700028100	TSP 28-100		100		50		
27700028125	TSP 28-125		125		75		
27700028150	TSP 28-150		150		100		
27700038075	TSP 38-75	38	75		45		
27700038100	TSP 38-100		100		50		
27700038125	TSP 38-125		125		75		
27700038150	TSP 38-150		150		100		
27700048075	TSP 48-75	48	75		45		
27700048100	TSP 48-100		100		50		
27700048125	TSP 48-125		125		75		
27700048150	TSP 48-150		150		100		
27700075075	TSP 75-75	75	75		25		
27700075100	TSP 75-100		100		50		
27700075125	TSP 75-125		125		75		
27700075150	TSP 75-150		150		100		
27700100100	TSP 100-100	100	100		50	50	B
27700100125	TSP 100-125		125		75		
27700100150	TSP 100-150		150		100		
27700100200	TSP 100-200		200		150		
27700125125	TSP 125-125	125	125		75		
27700125150	TSP 125-150		150		100		

Finishing

SANKYO OILLESS - bronze is easy to machine. Basically, there is no great difference between the machining of our products and normal steel. No special tools are required but be sure to use sharp and preferably new tools.

Milling

The use of cooling lubricants is recommended by using HSS or carbide tools. First pre-roughing to approx. distance of 0,3mm to nominal. In general: Milling / rough machining with little effort, slow forward feed, at high rotation-speeds and small depths of cut.

Drilling

The use of cooling lubricants is recommended by using HSS or carbide tools. Drill as with normal steel and if it´s necessary increase the forward feed with same rotation-speed. Flat plates have to be drilled from backside and countersink on the sliding surface if it´s necessary to drill through a solid-lubricant depot.

Grinding

The use of cooling lubricants is recommended by working with grinding wheels.

Grain size	46 - 60
Material	Silicon carbid
Rotation speed	1500 U/min
Working speed	30 m/min

Reaming

The use of cooling lubricants is recommended by using HSS reamers. Proceed as with normal steel and if it´s necessary increase the forward feed with same rotation-speed.

Turning

Example (up to 100mm)	External turning	Internal turning
Rotation speed	approx. 1000 U/min	approx. 500 U/min
Feed rate	ca. 0,1 m/min	approx. 0,07 m/min
Tool	Carbide	Carbide

Maintenance and lubrication

Before inserting the sliding elements, clear the mounting surfaces of the housing. An oil film on the back surface will make it easier to mount the bearing. Before mounting the axle, lubricate the sliding surfaces with a light greasy film to avoid wear of the inlet and to activate the solid lubricant.

The following greases should be preferred:

ELKALUB GLS 364	ELKALUB	120°C	For the food industry
ELKALUB GLS 595/N2	ELKALUB	300°C	For the food industry
ELKALUB GLS 993 H1	ELKALUB	150°C	For the food industry
GLEITMO 805	FUCHS	110°C	
ALTEMP QNB 50	KLÜBER	150°C	
Klüberalfa DH 3-350	KLÜBER	230°C	
Klüberfood NH1 CH 2-150	KLÜBER	250°C	For the food & pharmaceutical industry
Klübertemp GR AR 555	KLÜBER	250°C	
PARALIQ P 68	KLÜBER	100°C	For the food & pharmaceutical industry
Gadus S2 V100 2	SHELL	130°C	
Gadus S3 V100 2	SHELL	160°C	
Multi-purpose grease Nr.12511	PRESSOL	80°C	

The greases have to be free of Additives like MoS2 (molybdenum disulfide) and EP.

The work to be carried out is usually limited to an inspection of the wear in the period from ½ to 2 years, depending on the duration of use and load. After each disassembly, a single re-greasing should be carried out, but the sintered sliding film of solid lubricant should not be removed. Continuous introduction of lubricant is not necessary, as the parts are maintenance-free under consideration of the application criteria for sliding elements made of bronze with solid lubricant.

Transport and storage

The parts are to be stored dust-free and dry, mechanical damages during transport and storage are to be avoidded. Contact with organic and inorganic solvents must also be prevented, as this may destroy the solid lubricant.