SANKYO OILLESS Industry GmbH

POF
Maintenance free flanged bushes

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

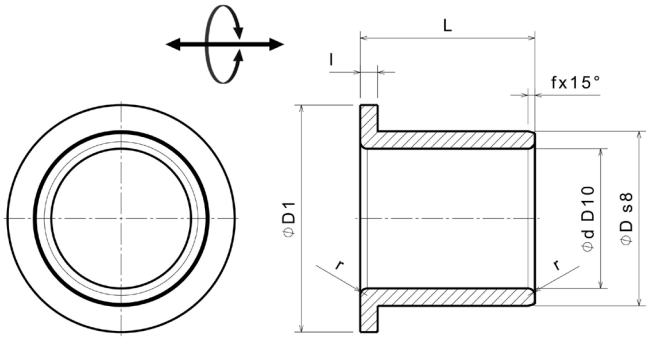
- pressing tools
- injection molds
- general engineering

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!

POF - Maintenance free flanged bushes

Article informationen



Properties:

Base material	Polyacetal
Self-lubricating	No
Max. surface pressure P	25 N/mm²
	35 N/mm² (with oil)
Max. sliding speed v	50 m/min
	200 m/min (with oil)
Max. P*v-Wert	100 N/mm² x m/min
	200 N/mm² x m/min (with oil)
Operating temperature	-50°C / +80°C

Article no.:	Article name:	Inner Ø d:	Outer Ø D:	Length L:	D1 :	l:	f:	r:
11704030	POF 4-6-3	4	6	3	9	1	0,1	0,1
11704040	POF 4-6-4			4				
11704050	POF 4-6-5			5				
11704060	POF 4-6-6			6				
11705030	POF 5-7-3	5	7	3	10			
11705040	POF 5-7-4			4				
11705050	POF 5-7-5			5				
11705060	POF 5-7-6			6				
11705070	POF 5-7-7			7				
11706030	POF 6-8-3	6	8	3	12			
11706050	POF 6-8-5			5				
11706060	POF 6-8-6			6				
11706080	POF 6-8-8			8				
11706100	POF 6-8-10			10				
11708030	POF 8-10-3	8	10	3	15		0,2	0,2
11708050	POF 8-10-5			5				
11708060	POF 8-10-6			6				
11708080	POF 8-10-8			8				
11708100	POF 8-10-10			10				
11708120	POF 8-10-12			12				
11708150	POF 8-10-15			15				
11710030	POF 10-12-3	10	12	3	18			
11710050	POF 10-12-5			5				
11710060	POF 10-12-6			6				
11710080	POF 10-12-8			8				
11710100	POF 10-12-10			10				
11710120	POF 10-12-12			12				
11710150	POF 10-12-15			15				
11710200	POF 10-12-20			20				
11712060	POF 12-14-6	12	14	6	20			
11712080	POF 12-14-8			8				
11712100	POF 12-14-10			10				
11712120	POF 12-14-12			12				
11712150	POF 12-14-15			15				
11712200	POF 12-14-20			20				
11716100	POF 16-18-10	16	18	10	24		0,3	0,3
11716120	POF 16-18-12			12				
11716150	POF 16-18-15			15				

POF - Maintenance free flanged bushes

Article informationen

Article no.:	Article name:	Inner Ø d:	Outer Ø D:	Length L:	D1 :	l:	f:	r:
11716200	POF 16-18-20	16	18	20	24	1	0,3	0,3
11716250	POF 16-18-25			25				
11716300	POF 16-18-30			30				
11718100	POF 18-20-10	18	20	10	26			
11718120	POF 18-20-12			12				
11718150	POF 18-20-15			15				
11718200	POF 18-20-20			20				
11718250	POF 18-20-25			25				
11718300	POF 18-20-30			30				
11720100	POF 20-23-10	20	23	10	31	1,5		
11720120	POF 20-23-12			12				
11720150	POF 20-23-15			15				
11720200	POF 20-23-20			20				
11720250	POF 20-23-25			25				
11720300	POF 20-23-30			30				
11725100	POF 25-28-10	25	28	10	36			
11725120	POF 25-28-12			12				
11725150	POF 25-28-15			15				
11725200	POF 25-28-20			20				
11725250	POF 25-28-25			25				
11725300	POF 25-28-30			30				
11730100	POF 30-34-10	30	34	10	42	2		
11730120	POF 30-34-12			12				
11730200	POF 30-34-20			20				
11730250	POF 30-34-25			25				
11730300	POF 30-34-30			30				
11730400	POF 30-34-40			40				
11732200	POF 32-36-20	32	36	20	46			
11732250	POF 32-36-25			25				
11732300	POF 32-36-30			30				
11732400	POF 32-36-40			40				

Material data

Material		SO#50SP2*	SO#50SP5	SO#50SP7	SO#50SP8	SO#50SP13	SO#50B
		Hard brass with graphite	*Alu-bronze with graphite*	*Alu-bronze with graphite*	*Hard brass with graphite*	*Bronze with graphite*	*Red brass with graphite*
Self-lubricating		Yes	Yes	Yes	Yes	Yes	Yes
Lubricant		Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
Max. surface pressure *[N/mm²]*		100	100	120	130	120	50
Max. sliding speed *[m/min]*		30	10	10	15	10	50
Max. P*v-Wert *[N/mm² * m/min]*		200	150	200	200	200	100
Temperature *[°C]*	*Standard* *Max*	-50 / +200 +300	-50 / +200 +300	-50 / +200 +300	-50 / +200 +300	-50 / +200 +300	-50 / +200 +400
Friction coefficient**	*initial* *long term*	0,15 0,07	0,15 0,07	0,15 0,07	0,15 0,07	0,2 0,15	0,15 0,07
Brinell hardeness *[HB]*		>210	>210	>260	220 ~ 260	>280	>60
Further informatio							
Elongation *[%]*		>12	>18	>2	>3	>0,5	>15
Density *[kg/dm³]*		7,9	7,7	7,8	7,8	7,2	8,7
Tensile strength *[N/mm²]*		>755	>686	>833	>700	>550	>195
Yield strength *[N/mm²]*		>412	>372	>509	-	-	>105
E-Module *[N/mm²]*		97000	108000	123600	108000	145000	96000
Thermal expansion *[10-5 * grd.-1]*		1,9	1,6	1,6	1,9	1,71	1,8

: Material used according to **SANKYO OILLESS standards*

***: against steel, hardened and grinded*

Tin bronze	Sinter-bronze	SO#50PB	CuSn8	SO#50S45C	SO#50F	Polyacetal
		Ton bronze	*acc. to DIN 17662*	*Steel with graphite*	*Grey cast iron with graphite*	*Plastic*
No	Yes	No	No	Yes	Yes	No
-	Oil	-	-	Graphite	Graphite	Graphite
80	50	80	40	30	5	25 35 (with oil)
20	300	50	120	10	10	50 200 (with oil)
-	96	100	-	80	50	100 200 (with oil)
-50 / +200 +300	-12 / +90	-50 / +200 +300	-200 / +200	-50 / +150	-50 / +150	-50 / +80
0,16	0,09	0,15 0,07	-	0,01	-	-
>80	>25	>80	-	>375	160 ~ 220	115 (HRR)
n						
>6	-	>5	-	19	-	73
8,7	6,5 ~ 7,0	8,2	8,8	7,8	7,1 ~ 7,3	1,4
>295	-	>295	-	>690	>250	69
>161	-	>161	-	-	-	-
108000	-	108000	115000	-	-	-
1,8	-	1,8	-	1,1	1	7,7

Chemical resistance

Water

Material	SO#50SP2 SO#50SP8	SO#50B	SO#50SP5 SO#50SP7 SO#50SP13 SO#50AIB	SO#50F	SO#50S45C	Polyacetal
	High strength brass casting	*Red brass*	*Alu-bronze*	*Grey cast*	*Steel*	*Red brass mit FSS*
Fresh Water	O	◎	◎	X	◎	O
Sea Water	△	O	O	X	◎	O

Acid

Material	SO#50SP2 SO#50SP8	SO#50B	SO#50SP5 SO#50SP7 SO#50SP13 SO#50AIB	SO#50F	SO#50S45C	Polyacetal
	High strength brass casting	*Red brass*	*Alu-bronze*	*Grey cast*	*Steel*	
Alcohol	◎	◎	◎	-	◎	-
Formic acid	-	-	-	-	-	X
Chlorine (dry)	◎	◎	◎	-	◎	-
Chlorine (wet)	X	△	△	-	-	-
Chromic acid	X	X	X	X	-	-
Acetic acid	X	X	◎ (20°C) △ (118°C)	X	◎	O
Hydrochloric acid	-	O	O	X	-	X
Concentrated hydrochloric acid	X	X	△	X	X	-
Lactic acid	X	X	X	X	O	X
Phenol	-	-	-	-	-	X
Phosporic acid	X	O	O	X	△	X
Nitric acid	X	X	X	X	O	-
Sulfuric acid (40-80%)	X	△	△	X	△	X* △**
Sulfuric acid (80-95%)	X	O	O	X	△	X* △**
Diluted hydrocloric acid	△	-	-	-	-	X
Hydrogen peroxide	△	O	O	X	O	-

**: High concentration*

***: Low concentration*

Explanation		
◎: Preferred	O: no problem in use	△: Affected
X: Not allowed for use	-: unknown	

Chemical resistance

Alkali

Material	SO#50SP2 SO#50SP8	SO#50B	SO#50SP5 SO#50SP7 SO#50SP13 SO#50AIB	SO#50F	SO#50S45C	Polyacetal
	High strength brass casting	*Red brass*	*Alu-bronze*	*Grey cast*	*Steel*	
Ammonia (dry)	◎	◎	◎	O	◎ (20°C) X (Gas)	X
Ammonia (wet)	X	X	X	O	◎ (20°C) X (Gas)	X
Ammonia (liquid)	X	X	X	-	◎	X
Iron chloride	X	O	O	X	△	-
Potassium hydroxide	O	O	O	-	-	-
Calcium chloride	X	O	O	△	O	-
Calcium hydroxide	O	◎	◎	O	-	O
Sodium hydroxide	O	O	O	-	◎	-
Sulfur (dry)	◎	O	O	△	-	O
Sulfur (wet)	X	X	X	△	-	O

Solvent

Material	SO#50SP2 SO#50SP8	SO#50B	SO#50SP5 SO#50SP7 SO#50SP13 SO#50AIB	SO#50F	SO#50S45C	Polyacetal
	High strength brass casting	*Red brass*	*Alu-bronze*	*Grey cast*	*Steel*	
Acetone	◎	◎	◎	O	◎	△
Benzene	-	-	-	-	-	△
Ethylene glycol	O	◎	◎	△	-	-
Carbon tetrachloride (dry)	◎	◎	◎	X	◎	-
Carbon tetrachloride (wet)	X	O	O	X	-	-
Methyl alcohol	◎	◎	◎	O	O	△
Toluene	◎	◎	◎	O	-	-

Explanation		
◎: Preferred	O: no problem in use	△: Affected
X: Not allowed for use	-: unknown	

Chemical resistance

Grease and others

Material	SO#50SP2 SO#50SP8	SO#50B	SO#50SP5 SO#50SP7 SO#50SP13 SO#50AlB	SO#50F	SO#50S45C	Polyacetal
	High strength brass casting	*Red brass*	*Alu-bronze*	*Grey cast*	*Steel*	
Gasoline	◎	◎	◎	O	◎	O
Diesel	-	-	-	-	-	O
Crude oil	△	O	O	O	O	-
Lacquer	◎	◎	◎	△	-	-
Kerosene	◎	◎	◎	O	◎	-
Vegetable oil	◎	◎	◎	△	-	-
Lubricants	◎	◎	◎	◎	◎	O
Heavy oil	O	◎	◎	O	O	-
Animal oil	◎	◎	◎	-	-	-

Explanation		
◎: Preferred	O: no problem in use	△: Affected
X: Not allowed for use	-: unknown	