



BS

Wrapped bushes with grease pockets

Stepping forward 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 footprint
- 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!

General information

Rolled bushings with lubrication pockets are well suited for harsh environmental conditions.

They are corrosion-resistant, low-wear and low-maintenance, and have good emergency running properties due to the bronze.

Sliding partner

Nitrided or hardened steels or those with a hard **chrome-plated surface (HRC > 50)** are suitable as counter-rotating partners.

The surface roughness of the sliding partner should be **Rz = 1...4 µm (grinding)**.

We recommend shaft tolerance **f7** or **e7**. Shaft tolerance h7 is possible if the housing bore is F7.

Assembly

Bushing backs and bore holes can be lightly greased or oiled before pressing in.

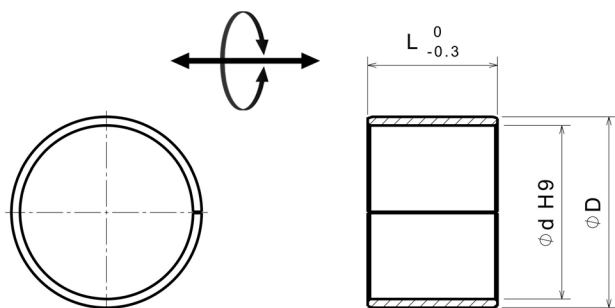
Finishing

Bushings can be reworked (grinding, turning) when installed (flawless tools required)

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Article informationen



Properties:

Base material	CuSn8 acc. to DIN 17662
Self-lubricating	No
Max. surface pressure P	40 N/mm ²
Max. sliding speed v	120 m/min
Operating temperature	-200°C / +200°C

Article no.:	Article name:	Inner Ø d:	Outer Ø D:	Length L:
99201010	BS 10-12-10	10	12	10
99201015	BS 10-12-15			15
99201210	BS 12-14-10	12	14	10
99201212	BS 12-14-12			12
99201215	BS 12-14-15			15
99201220	BS 12-14-20			20
99201410	BS 14-16-10	14	16	10
99201415	BS 14-16-15			15
99201420	BS 14-16-20			20
99201425	BS 14-16-25			25
99201510	BS 15-17-10	15	17	10
99201515	BS 15-17-15			15
99201525	BS 15-17-25			25
99201610	BS 16-18-10	16	18	10
99201615	BS 16-18-15			15
99201620	BS 16-18-20			20
99201625	BS 16-18-25			25
99201810	BS 18-20-10	18	20	10
99201815	BS 18-20-15			15
99201820	BS 18-20-20			20
99201825	BS 18-20-25			25
99202010	BS 20-23-10	20	23	10
99202012	BS 20-23-12			12
99202015	BS 20-23-15			15
99202022	BS 20-23-22			22
99202020	BS 20-23-20			20
99202025	BS 20-23-25			25
99202030	BS 20-23-30			30
99202215	BS 22-25-15	22	25	15
99202220	BS 22-25-20			20
99202225	BS 22-25-25			25
99202230	BS 22-25-30			30
99202240	BS 22-25-40	25	28	40
99202515	BS 25-28-15			15
99202520	BS 25-28-20			20
99202525	BS 25-28-25			25
99202530	BS 25-28-30			30
99202815	BS 28-31-15	28	31	15

Article no.:	Article name:	Inner Ø d:	Outer Ø D:	Length L:
99202820	BS 28-31-20	28	31	20
99202825	BS 28-31-25			25
99202830	BS 28-31-30			30
99203015	BS 30-34-15	30	34	15
99203020	BS 30-34-20			20
99203025	BS 30-34-25			25
99203030	BS 30-34-30			30
99203040	BS 30-34-40	32	36	40
99203215	BS 32-36-15			15
99203220	BS 32-36-20			20
99203225	BS 32-36-25			25
99203230	BS 32-36-30	35	39	30
99203240	BS 32-36-40			40
99203515	BS 35-39-15			15
99203520	BS 35-39-20			20
99203525	BS 35-39-25	40	44	25
99203530	BS 35-39-30			30
99203540	BS 35-39-40			40
99203550	BS 35-39-50			50
99204020	BS 40-44-20	45	50	20
99204025	BS 40-44-25			25
99204030	BS 40-44-30			30
99204040	BS 40-44-40			40
99204050	BS 40-44-50	50	55	50
99204060	BS 40-44-60			60
99204520	BS 45-50-20			20
99204525	BS 45-50-25	55	60	25
99204530	BS 45-50-30			30
99204540	BS 45-50-40			40
99204550	BS 45-50-50			50
99205025	BS 50-55-25	55	60	25
99205030	BS 50-55-30			30
99205040	BS 50-55-40			40
99205050	BS 50-55-50			50
99205060	BS 50-55-60	55	60	60
99205525	BS 55-60-25			25
99205530	BS 55-60-30			30
99205540	BS 55-60-40			40

Article no.:	Article name:	Inner Ø d:	Outer Ø D:	Length L:
99205550	BS 55-60-50	55	60	50
99205560	BS 55-60-60			60
99206025	BS 60-65-25	60	65	25
99206030	BS 60-65-30			30
99206040	BS 60-65-40			40
99206050	BS 60-65-50			50
99206060	BS 60-65-60			60
99206080	BS 60-65-80			80
99206530	BS 65-70-30	65	70	30
99206540	BS 65-70-40			40
99206550	BS 65-70-50			50
99206560	BS 65-70-60			60
99206580	BS 65-70-80			80
99207040	BS 70-75-40	70	75	40
99207050	BS 70-75-50			50
99207060	BS 70-75-60			60
99207080	BS 70-75-80			80
99207530	BS 75-80-30	75	80	30
99207540	BS 75-80-40			40
99207580	BS 75-80-80			80
99208030	BS 80-85-30	80	85	30
99208040	BS 80-85-40			40
99208060	BS 80-85-60			60
99208080	BS 80-85-80			80
99208530	BS 85-90-30	85	90	30
99208540	BS 85-90-40			40
99208560	BS 85-90-60			60
99208580	BS 85-90-80			80
99209040	BS 90-95-40	90	95	40
99209060	BS 90-95-60			60
99209090	BS 90-95-90			90
99209540	BS 95-100-40	95	100	40
99209550	BS 95-100-50			50
99209560	BS 95-100-60			60
99209590	BS 95-100-90			90
992100060	BS 100-105-60	100	105	60
992100100	BS 100-105-100	100	105	100
992105060	BS 105-110-60	105	110	60
992105100	BS 105-110-100			100
992110060	BS 110-115-60	110	115	60
992110100	BS 110-115-100			100
992115060	BS 115-120-60	115	120	60
992115100	BS 115-120-100			100
992120060	BS 120-125-60	120	125	60
992120100	BS 120-125-100			100

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General and technical information

Material data

Material		SO#50SP2*	SO#50SP5	SO#50SP7	SO#50SP8	SO#50SP13	SO#50B
		<i>Hard brass with graphite</i>	<i>Alu-bronze with graphite</i>	<i>Alu-bronze with graphite</i>	<i>Hard brass with graphite</i>	<i>Bronze with graphite</i>	<i>Red brass with graphite</i>
Self-lubricating		Yes	Yes	Yes	Yes	Yes	Yes
Lubricant		Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
Max. surface pressure [N/mm ²]		100	100	120	130	120	50
Max. sliding speed [m/min]		30	10	10	15	10	50
Max. P*v-Wert [N/mm ² * m/min]		200	150	200	200	200	100
Temperature [°C]	<i>Standard Max</i>	-50 / +200 +300	-50 / +200 +300	-50 / +200 +300	-50 / +200 +300	-50 / +200 +300	-50 / +200 +400
Friction coefficient**	<i>initial long term</i>	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 hardness [HB]		>210	>210	>260	220 ~ 260	>280	>60
Further information							
Elongation [%]		>12	>18	>2	>3	>0,5	>15
Density [kg/dm ³]		7,9	7,7	7,8	7,8	7,2	8,7
Tensile strength [N/mm ²]		>755	>686	>833	>700	>550	>195
Yield strength [N/mm ²]		>412	>372	>509	-	-	>105
E-Module [N/mm ²]		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
		<i>Ton bronze</i>	<i>acc. to DIN 17662</i>	<i>Steel with graphite</i>	<i>Grey cast iron with graphite</i>	<i>Plastic</i>
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

