嘉善凯盛滑动轴承有限公司

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JSKSOB®

致力于自润滑工业 devoted to self-lubricating industry

Self-Lubricating 自润滑
Maintenance-Free 免维护
Sliding Bearings 滑动轴承

嘉善凯盛滑动轴承有限公司
Jiashan Kaisheng Sliding Bearing

公司简介
Introduction

嘉善凯盛滑动轴承有限公司是自润滑轴承的专业生产厂家，位于全球最大的滑动轴承生产基地——中国浙江嘉善。产品型号有KSOB-10系列金属塑料复合轴承、KSOB-20系列边界润滑轴承、KSOB-800系列双金属轴承、KSOB-090青铜轴承、KSOB650系列铜基固体润滑轴承等十多种系列产品。

公司已具备生产各种规格滑动轴承的能力，比如直轴套，翻边轴套，直推垫片或者其他特殊规格的滑动轴承，同时我们也能根据客户的具体需求设计生产，给客户提供最佳的方案和最优质的服务。

嘉善凯盛滑动轴承有限公司拥有完整、科学的质量管理体系，一流的技术，先进的生产设备和检测设施。我们的诚信、实力和产品质量获得业界的认可。欢迎各界朋友莅临嘉善凯盛滑动轴承有限公司参观指导、洽谈业务。

Kaisheng Sliding Bearing Co.,Ltd as a specialist manufacturer of self-lubricating bearings company, we developed various kinds of bearings, including KSOB-10 metal-polymer self-lubricating composite bearings, KSOB-20 Metal-polymer marginal lubricating bearings, KSOB-800 Bi-metallic composite bearings, KSOB-090 Bronze wrapped bearings, KSOB650 Metallic self-lubricating bearings.

Application covered automotive industry, construction machinery, plastic manufacturing machinery, OA machinery, material handing equipment, dock side machinery and hydraulic transmission parts. The bearings can be used wherever there is rotation or linear motion between mechanical parts where lubricating is not allowed or external lubricating accessibility is limited.

KSOB Research and Development services are available to assist with unusual design problems. We are always ready to provide the optimal solutions and the best service.

JIASHAN KAISHENG SLIDING BEARING

K Keeping high quality 始终如一，保持卓越品质

S Soon of delivery time 精益管理，保证快速交付

O Outstanding of self-lubricating industry 在自润滑行业表现出众

B Best service 为客户提供最优质的服务

Self-lubricating Bearings

KSOB650

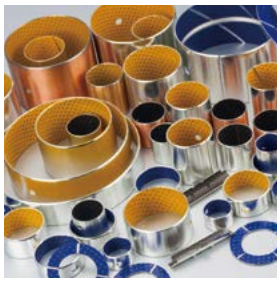
固体自润滑轴承
Metallic Self-Lubricating Bearings

KSOB650\KSOB650S1\ KSOB550\KSOB250\KSOB600

KSOB-10

金属塑料复合自润滑轴承
Metal-Polymer Self-Lubricating Composite Bearings

KSOB-10\KSOB-11\KSOB-40\ KSOB-41\KSOB-1SS



KSOB-20

金属塑料边界润滑轴承
Metal-Polymer Marginal Lubricating Bearings

KSOB-20(黄)\KSOB-22(橙)\KSOB-26(蓝)\ KSOB-28(黑)\KSOB-800(PEEK)

KSOB-800

双金属复合轴承
Bi-Metallic Composite Bearings

KSOB-820\KSOB-800\KSOB-720\KSOB-700\KSOB-200\ KSOB-08G

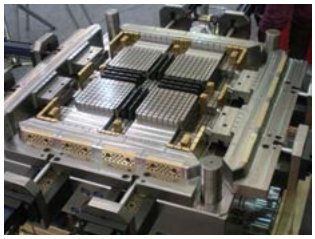
KSOB-090

青铜卷制轴承
Bronze Wrapped Bearings

KSOB-090\KSOB-092\KSOB-09G

设计资料
Design Data

KSOB650 固体自润滑轴承
Metallic self-lubricating bearings



KSOB650 固体自润滑轴承
Metallic self-lubricating bearings

结构特性 Structure Characteristics

KSOB650 系列固体自润滑轴承以高强度铜合金为基体并按工况需要有规律的排布一定比列的固体润滑剂，这种铜基镶嵌式固体润滑轴承结合了铜合金的高承载高耐磨及固体润滑剂的自润滑性能，使其在使用过程中大大降低了轴承和设备的维护成本。在此基础上开发了适合于经济型和耐冲击型运用的 KSOB550 钢基铜合金镶嵌型固体润滑轴承、KSOB250 铸铁镶嵌型固体润滑轴承和 KSOB850 弥散型固体润滑轴承。

KSOB solid self-lubricating bearing materials consist of high strength metal with solid lubricants embedded, the metal has high load capacity and solid lubricants provided low friction during the operation, this construction reduces maintenance cost for both bearing and machinery. Based on the above technique theory, we developed KSOB550 steel shell cast bronze with graphite plug bearings for economic and impact load application,KSOB250 steel with graphite plug bearings and KSOB850 dispersed solid lubrication bearings for lower friction applications.

材料特点 Material Properties

●可以长期使用而无需维护；
●设计用于很高的静承载和动承载；
●具有很低的且平稳的摩擦系数，无“粘着”现象；
●具有耐粉尘、耐腐蚀、耐冲击和耐边缘负载能力；
●金属基材具有很好的吸震能力；
●能够在很宽的温度范围内使用；
●适合于往复、旋转和摆动等启动频繁又难以形成油膜的场合；
●具有极低的磨损率，使用寿命长。

- Allows maintenance-free and long-life operation;
- Suitable for high static and dynamic loads;
- With low and smoothly coefficient of friction and without stick-slip effects;
- Suitable for dirty, corrosion, impact load and edge loading;
- The base material provided a good shock-absorbing capacity;
- Can be used over a large temperature range;
- Suitable for reciprocating, rotating and oscillating movement with start frequency and difficulty to form oil film occasions;
- With low wear rate and long life service.

产品应用 Application

注塑机模架、汽车模具、工程机械、液压油缸、大型齿轮箱、冶金连铸机、列车支架、轧钢设备、矿山机械、船舶、气轮机、吊车支撑、食品机械、水轮机轴承等

Injection molding machine, automotive moulds, hydrocylinder, gear case, gas turbine, water turbine, Crane support...

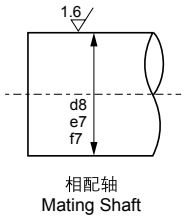
实际运用中根据使用工况的不同，基体可以采用不同牌号的合金，产品范围包括：KSOB650、KSOB650S1、KSOB550、KSOB250、KSOB600各系列产品。
According to the different working conditions, different type of alloy can be chosen, product range includes KSOB650、KSOB650S1、KSOB550、KSOB250、KSOB600.

代号 Grade		KSOB650	KSOB650S1	KSOB550	KSOB250	KSOB600
除了目录中显示的标准产品外，还可以提供非标产品或根据客户要求订购。 We can also develop according to customers special request while out of this table.						
材料 Material		CuZn25Al5Mn4Fe3	CuSn5Pb5Zn5	钢/steel+CuZn25Al5Mn4Fe3	250铸铁/250castiron	CuZn25Al5Mn4Fe3
密度 g/cm^3 Density		8.0	8.7	-	6.8	8.0
硬度 HB Hardness		>210	>70	>210	>160	>210
抗拉强度N/mm^2 Tensile strength		>750	>200	-	>150	>750
屈服强度N/mm^2 Yeild strength		>450	>90	-	-	>450
延伸率% Elongation		>8	>15	-	-	>12
线胀系数 10^{-5}/℃ Coefficient of linear expansion		1.9	1.8	1.2	-	-
导热系数W(/m.k) Heat-conducting Coefficient		38~55	46~63	-	-	-
弹性系数KN/mm^2 Flexibility Coefficient		100~140	85~115	-	-	-
使用温度 ℃ Temp. Limits		-40~+300	-40~+250	1.0	1	1.2
最大动载N/mm^2 Max. Dynamic Load		120	60	1.5	0.8	-
最大线速度 m/s Max.speed	干摩擦 Dry Lubrication	0.4	0.3	3.25	1.55	-
	油润滑 Oil Lubrication	1.0	0.85	0.12~0.16	0.13~0.2	<0.16
最大PV值 Max.PV N/mm^2*m/s	干摩擦 Dry Lubrication	1.5	1.0	0.03~0.08	0.04~0.08	-
	油润滑 Oil Lubrication	3.25	1.65	-	-	-
摩擦系数 Friction	干摩擦 Dry Lubrication	0.12~0.16	0.12~0.16	-	-	-
	油润滑 Oil Lubrication	0.03~0.08	0.03~0.08	-	-	-

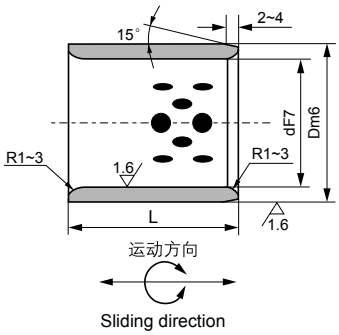
固体润滑剂 Solid Lubricants

固体润滑剂 Lubricant		特性 Features	典型用途 Typical application
高纯石墨+添加剂 Graphite+add		很好的耐磨性和化学稳定性，使用温度＜400℃ Good wear performance and chemical stability, temperature limit 400℃	应用于一般机械，在大气中使用 Suit for general machines and under atmosphere
PTFE+添加剂 PTFE+add		极低的摩擦系数和很好的水润滑性，使用温度＜300℃ Lowest friction coefficient and good water lubrication, temperature limit 300℃	应用于水、海水润滑，如船舶 Suit for water and seawater lubricant, such as ship

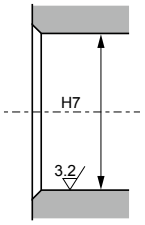
KSOB650 自润滑直套轴承标准公制尺寸
KSOB650 Self-lubricating Sleeve Bearings Standard Metric Size



相配轴
Mating Shaft



Sliding direction



相配座孔
Mating Housing

单位Unit: mm

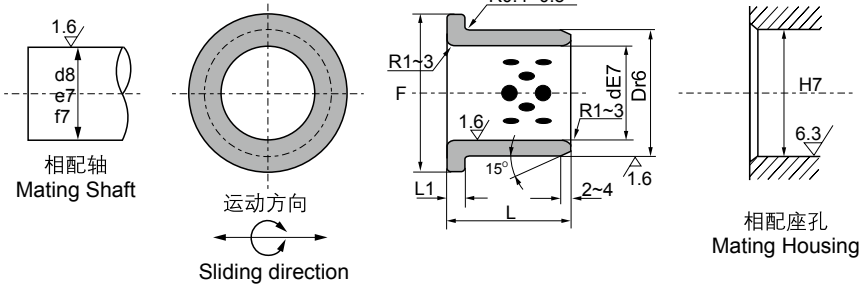
d	D	d F7		D m6		L -0.10 -0.30													
						8	10	12	15	16	20	25	30	35	40	50	60	70	80
8	12	8	+0.028 +0.013	12	+0.018 +0.007	081208	081210	081212	081215										
10	14	10		14		101408	101410	101412	101415	101416	101420								
12	18	12	+0.034 +0.016	18			121810	121812	121815	121816	121820	121825	121830						
13	19	13		19	+0.021 +0.008		131910	131912	131915	131916	131920	131925	131930						
14	20	14		20			142010	142012	142015	142016	142020	142025	142030						
15	21	15		21			152110	152112	152115	152116	152120	152125	152130	152135					
16	22	16		22			162210	162212	162215	162216	162220	162225	162230	162235	162240				
18	24	18		24			182410	182412	182415	182416	182420	182425	182430	182435	182440				
20	28	20	+0.041 +0.020	28			202810	202812	202815	202816	202820	202825	202830	202835	202840	202850			
22	32	22		32				223212	223215	223216	223220	223225	223230	223235	223240	223250			
25	33	25		33	+0.025 +0.009			253312	253315	253316	253320	253325	253330	253335	253340	253350	253360		
30	38	30		38				303812	303815	303816	303820	303825	303830	303835	303840	303850	303860		
35	45	35	+0.050 +0.025	45							354520	354525	354530	354535	354540	354550	354560	354570	
40	50	40		50							405020	405025	405030	405035	405040	405050	405060	405070	405080
45	55	45		55									455530	455535	455540	455550	455560	455570	455580
50	60	50		60									506030	506035	506040	506050	506060	506070	506080

KSOB650 自润滑直套轴承标准公制尺寸
KSOB650 Self-lubricating Sleeve Bearings Standard Metric Size

单位Unit: mm

d	D	dF7		Dm6		L -0.10 -0.30											
						30	35	40	50	60	70	80	100	120	130	140	150
50	62	50	+0.050 +0.025	62	+0.030 +0.011	506230	506235	506240	506250	506260	506270						
50	65	50		65		506530	506535	506540	506550	506560	506570	506580	5065100				
55	70	55	+0.060 +0.030	70		557030	557035	557040	557050	557060	557070	557080	5570100				
60	74	60		75		607430	607435	607440	607450	607460	607470	607480	6074100				
60	75	60		75		607530	607535	607540	607550	607560	607570	607580	6075100				
63	75	63		75			637535	637540	637550	637560	637570	637580	6375100				
65	80	65		80			658035	658040	658050	658060	658070	658080	6580100				
70	85	70		85	+0.035 +0.013		708535	708540	708550	708560	708570	708580	7085100				
70	90	70		90			709035	709040	709050	709060	709070	709080	7090100				
75	90	75		90				759040	759050	759060	759070	759080	7590100				
75	95	75		95				759540	759550	759560	759570	759580	7595100	7595120			
80	96	80		96				809640	809650	809660	809670	809680	8096100	8096120	8096130		
80	100	80		100				8010040	8010050	8010060	8010070	8010080	80100100	80100120	80100130	80100140	
90	110	90	+0.071 +0.036	110					9011050	9011060	9011070	9011080	90110100	90110120	90110130	90110140	
100	120	100		120						10012060	10012070	10012080	100120100	100120120	100120130	100120140	
110	130	110		130	+0.040 +0.015							11013080	110130100	110130120	110130130	110130140	
120	140	120		140								12014080	120140100	120140120	120140130	120140140	
125	145	125	+0.083 +0.043	145									125145100	125145120	125145130	125145140	
130	150	130		150									130150100	130150120	130150130	130150140	130150150
140	160	140		160									140160100	140160120	140160130	140160140	140160150
150	170	150		170									150170100	150170120	150170130	150170140	150170150
160	180	160		180									160180100	160180120	160180130	160180140	160180150

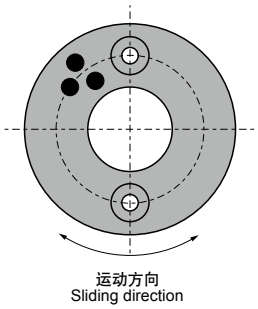
KSOB-JFB 自润滑翻边轴承标准公制尺寸
KSOB-JFB Self-lubricating Flange Bearings Standard Metric Size

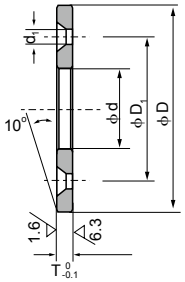


单位Unit: mm

d	D	d E7		D r6		F	L_1	L -0.10 -0.30									
								15	20	25	30	35	40	50	60	80	100
10	14	10	+0.040 +0.025	14	+0.034 +0.023	22	2	1015	1020								
12	18	12		18		25		1215	1220								
13	19	13		19		26		1315	1320								
14	20	14	+0.050 +0.032	20		27	3	1415	1420	1425							
15	21	15		21	+0.041 +0.028	28		1515	1520	1525	1530						
16	22	16		22		29		1615	1620	1625	1630						
20	30	20		30		40			2020	2025	2030	2035					
25	35	25	+0.061 +0.040	35		45			2520	2525	2530	2535	2540				
30	40	30		40	+0.050 +0.034	50			3020	3025	3030	3035	3040	3050			
35	45	35		45		60				3525	3530	3535	3540	3550			
40	50	40	+0.075 +0.050	50		65	5				4030	4035	4040	4050			
45	55	45		55		70					4530	4535	4540	4550	4560		
50	60	50		60	+0.060 +0.041	75						5035	5040	5050	5060		
55	65	55		65		80							5540	5550	5560		
60	75	60		75	+0.062 +0.043	90							6040	6050	6060	6080	
70	85	70	+0.090 +0.060	85		105	7.5							7050	7060	7080	
75	90	75		90	+0.073 +0.051	110								7550	7560	7580	75100
80	100	80		100		120									8060	8080	80100
90	110	90		110	+0.076 +0.054	130	10								9060	9080	90100
100	120	100	+0.107 +0.072	120		150									10060	10080	100100
120	140	120		140	+0.088 +0.063	170									12060	12080	120100

KSOB-JTW 自润滑止推垫片标准公制尺寸
KSOB-JTW Self-lubricating Thrust Washer Standard Metric Size

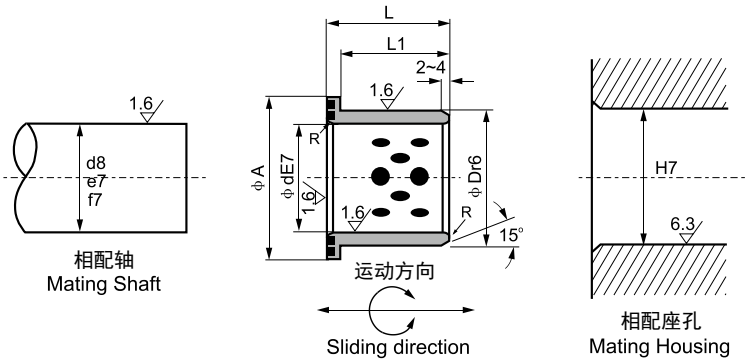




单位Unit: mm

型号规格 Standard No.	φd	φD	T 0 -0.10	螺孔 Bolt Hole			
				φD_1	平头螺钉 Crop Bolt	φd_1	孔数 Bore Number
KSOB-JTW-10	10.2	30	3	20	M3	3.5	2
KSOB-JTW-12	12.2	40		28			
KSOB-JTW-13	13.2						
KSOB-JTW-14	14.2						
KSOB-JTW-15	15.2	50		35			
KSOB-JTW-16	16.2						
KSOB-JTW-18	18.2						
KSOB-JTW-20	20.2		5		M5	6	
KSOB-JTW-25	25.2	55		40			
KSOB-JTW-30	30.2	60		45			
KSOB-JTW-35	35.2	70		50	M6	7	
KSOB-JTW-40	40.2	80	7	60			
KSOB-JTW-45	45.3	90		70			
KSOB-JTW-50	50.3	100	8	75			4
KSOB-JTW-55	55.3	110		85			
KSOB-JTW-60	60.3	120		90	M8	9	
KSOB-JTW-65	65.3	125		95			
KSOB-JTW-70	70.3	130	10	100			
KSOB-JTW-75	75.3	140		110			
KSOB-JTW-80	80.3	150		120			
KSOB-JTW-90	90.5	170		140	M10	11	
KSOB-JTW-100	100.5	190		160			
KSOB-JTW-120	120.5	200		175			

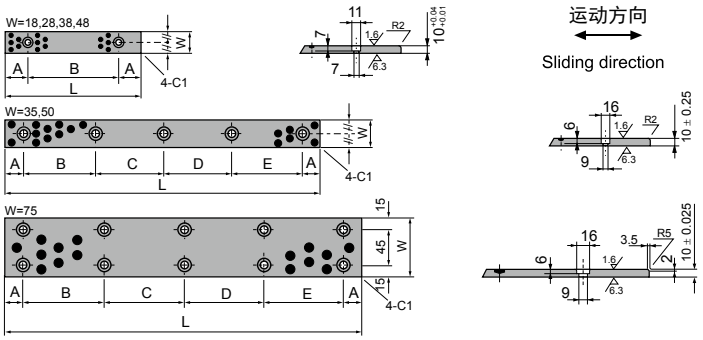
KSOB-JDBB 自润滑翻边轴套标准公制尺寸
KSOB-JDBB Self-lubricant Flange Bushings Standard Metric Size



单位unit:mm

型号规格 Standard No.	φd E7		φD r6		φA	L1	L
KSOB-JDBB-12×15	12	+0.050 +0.032	18	+0.034 +0.023	25	11	15
KSOB-JDBB-16×20	16		22	+0.041 +0.028	30	15	20
KSOB-JDBB-20×25	20	+0.061 +0.040	28		36	20	25
KSOB-JDBB-25×30	25		33	+0.050 +0.034	43	25	30
KSOB-JDBB-30×35	30	+0.075 +0.050	38		48	30	35
KSOB-JDBB-40×45	40		50		60	40	45
KSOB-JDBB-50×55	50		62	+0.060 +0.041	75	49	55
KSOB-JDBB-60×65	60	+0.090 +0.060	74	+0.062 +0.043	90	58	65

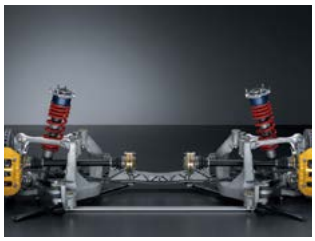
KSOB-JSP 滑板标准公制尺寸
KSOB-JSP Wear Plates Standard Metric Size



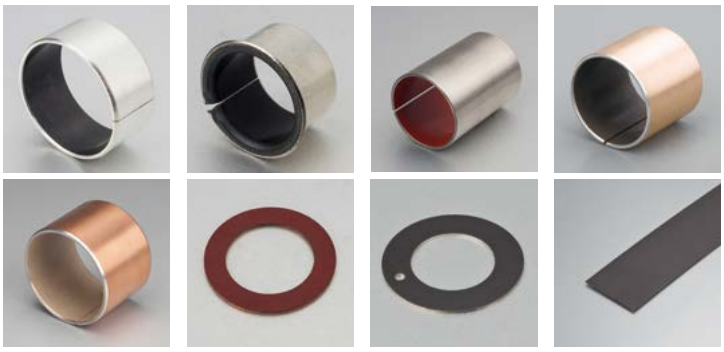
单位Unit: mm

型号规格 Standard No.	W	L	A	B	C	D	E	平头螺钉尺寸 Flat Head Screw Size	孔数 Q'ty of holes
KSOB-JSP-1875	18	75	15	45				M6	2
KSOB-JSP-18100		100	25	50					
KSOB-JSP-18125		125		75					
KSOB-JSP-18150		150		100					
KSOB-JSP-2875	28	75	15	45					
KSOB-JSP-28100		100	25	50					
KSOB-JSP-28125		125		75					
KSOB-JSP-28150		150		100					
KSOB-JSP-35100	35	100	20	60				M8	3
KSOB-JSP-35150		150		55	55				4
KSOB-JSP-35200		200		55	50	55			4
KSOB-JSP-35250		250		70	70	70			5
KSOB-JSP-35300		300		65	65	65	65		5
KSOB-JSP-35350		350		80	75	75	80		
KSOB-JSP-3875	38	75	15	45				M6	2
KSOB-JSP-38100		100	25	50					
KSOB-JSP-38125		125		75					
KSOB-JSP-38150		150		100					
KSOB-JSP-4875	48	75	15	45					
KSOB-JSP-48100		100	25	50					
KSOB-JSP-48125		125		75					
KSOB-JSP-48150		150		100					
KSOB-JSP-50100	50	100	20	60				M8	3
KSOB-JSP-50150		150		55	55				4
KSOB-JSP-50200		200		55	50	55			4
KSOB-JSP-50250		250		70	70	70			5
KSOB-JSP-50300		300		65	65	65	65		5
KSOB-JSP-50400		400		90	90	90	90		4
KSOB-JSP-75150	75	150		110					6
KSOB-JSP-75200		200		80	80				6
KSOB-JSP-75250		250		105	105				8
KSOB-JSP-75300		300		85	90	85			8
KSOB-JSP-75400		400		120	120	120			10
KSOB-JSP-75500		500		115	115	115	115		

KSOB-10 金属塑料自润滑复合轴承
Metal-polymer self-lubricating composite bearings



金属塑料自润滑复合轴承
Metal-polymer self-lubricating composite bearings



结构特性 Structure Characteristics

KSOB 金属复合自润滑材料以优质低碳钢为基板，中间烧结球形多孔铜粉层，表面扎制以 PTFE 为主的耐磨润滑材料作为轴承工作层，这种材料具有优异的机械承载能力，中间铜粉层不但可以及时传递轴承运行过程中产生的热量，同时也提高了塑料层与基板的结合强度。PTFE 设计适用于完全干摩擦状态，并根据润滑情况、摩擦系数和耐久性要求开发了多种材料。KSOB 的 PTFE 金属复合材料在外部润滑或者不润滑的情况下，都能在最广泛的载荷、速度以及温度范围内提供最好的表现。

KSOB Metal-polymer self-lubricating composite materials consist of metal backing sintered porous bronze with PTFE polymer as working layer. The metal backing provides mechanical strength, while the bronze sinter layer provides a strong mechanical bonding between the backing and the bearing lining, the PTFE polymer offers exceptional low friction even under dry condition and the thermoplastic polymer is generally designed to operate with marginal lubrication. The construction promotes dimensional stability and improves the thermal conductivity. This material meets the demanding criteria for long life and trouble-free performance with or without lubrication.

产品应用 Application

农业机械：拖拉机、联合收割机、农作物喷雾器、推土机、平地机等；
汽车行业：动力转向泵、转向器推力垫片、盘式制动器、减震器、门铰链、雨刮器、椅子调角器、空气阀以及电磁阀等；
办公商务机械：复印机、传真机、打印机、邮件处理机等；
液压元件和阀门：齿轮泵、柱塞泵、叶片泵，球阀、蝶阀，气缸、油缸以及其他液压元件等；
家用电器：冰箱、空调、吸尘器、缝纫机、清洗机、微波炉和健身器材等；
以及其它物流机械、包装机械、纺织机械、港口机械、矿产机械和森林机械等等。

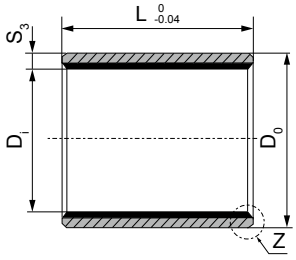
Automotive: tractors, crop sprayers, earthmovers, auto machines, specific uses in power steering cylinders, steering gear thrust washers, disc brakes, shock absorbers, windshield wiper motor...
Business machines: duplicator, fax machine, automatic printing devices, mail processing machinery...
Hydraulics and valves: pumps including gear, rotary, water, axial piston, and other types, ball, butterfly, poppet steam, and other valves and valve trunnions...
Home appliances: tape recorders, refrigerators, air conditioners, cleaners, polishers, sewing machines, ovens, dishwashers, clothes washing machines...And materials handling, marine engine, packaging, textile equipment, tools...etc.

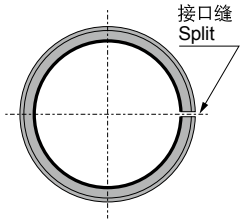
实际运用中根据使用环境、工况和环保要求的不同，低碳钢板可以改为铜板或不锈钢板，内表面塑料层可以选择 PTFE 含铅或者不含铅材料以及其他高分子填充物，外表可以镀锡或者镀铜。产品范围包括：KSOB-10、KSOB-11、KSOB-40、KSOB-41、KSOB-1SS。

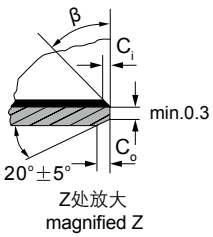
According to the different working conditions and environmental protection, there are steel backing, bronze backing, stainless steel backing can be chosen, different type of alloy can be chosen, the PTFE layer with polymer filler and it is lead free, the Surface tin or copper plating. product range includes KSOB-10、KSOB-11、KSOB-40、KSOB-41、KSOB-1SS.

有关数据 Date	代号 Grade	**KSOB-10**	**KSOB-11**	**KSOB-40**	**KSOB-41**	**KSOB-1SS**
	材料 Materiai	碳钢/Steel+铜粉/Bronze+(PTFE+Pb+填料/Filler)	铜板/Bronze+铜粉/Bronze+(PTFE+Pb+填料/Filler)	碳钢/Steel+铜粉/Bronze+(PTFE+Pb+填料/Filler)	铜板/Bronze+铜粉/Bronze+(PTFE+Pb+填料/Filler)	不锈钢Stainless+铜粉/Bronze+(PTFE+Pb+填料/Filler)
除了目录中显示的标准产品外，还可以提供非标产品或根据客户要求订购。We can also develop according to customers special request while out of this table.						
最大承载压力P Load capacity P (干摩擦) (Dry friction)	静载 N/mm² Static load	250	250	250	250	250
	动载 N/mm² Dynamic load	140	140	140	140	140
	摇摆 N/mm² Oscoillation Load	60	60	60	60	60
最大线速度V Max line speed V	干摩擦 m/s Dry friction	2.5	2.5	2.5	2.5	2
	油润滑 m/s Oil lubrication	> 5	> 5	> 5	> 5	> 5
最高PV值 PV value limit (干摩擦) (Dry friction)	干摩擦 N/mm²·m/s Dry friction	1.8	1.8	1.8	1.8	1.8
	油润滑 N/mm²·m/s Oil lubrication	3.6	3.6	3.6	3.6	3.6
摩擦系数u Friction coef u	干摩擦 Dry friction	0.08~0.20	0.08~0.20	0.08~0.20	0.08~0.20	0.08~0.20
	油润滑 Oil lubrication	0.02~0.12	0.02~0.12	0.02~0.12	0.02~0.12	0.02~0.08
相配轴径 Mating Axis	硬度 HB Hardness	> 220	> 220	> 220	> 220	> 220
	粗糙度 Ra Roughness	0.4~1.25	0.4~1.25	0.4~1.25	0.4~1.25	0.4~1.25
工作温度 ℃ Working temperature		-200~+280	-200~+280	-200~+280	-200~+280	-200~+280
导热系数 W/mk Thermal conductivity		40	60	40	40	40
线膨胀系数（轴向） Coefficient of linear expansion		11×10^{-6}/K	18×10^{-6}/K	11×10^{-6}/K	11×10^{-6}/K	11×10^{-6}/K
表面镀层 Surface Plating		铜或锡 copper/tin	无 /No	铜或锡 copper/tin	无 /No	无 /No
针对性运用领域 Pertinence applicaton		产品应用于印刷机械、纺织机械、烟草机械、健身器等。Application: the printing, woven, tobacco and gymnastic machinery, etc.	产品应用于冶金机械、连铸机械、水泥机械等。Application: metallurgical industry, continuous casting and rolling mill, concrete machinery and spiral conveyers, etc.	该产品主要于汽车减震器、摩托车减震器、液压油缸等。Application: shock absorber of automobiles, motorcycles and pneumatic cylinder, etc.	该产品主要于汽车减震器、摩托车减震器、液压油缸等，防锈性能更好。Application: shock absorber of automobiles, motorcycles and pneumatic cylinder, etc.	产品适用于印染机械、海洋工业耐腐蚀部位等。Application: the corrosion resistant part in dyeing machinery and ocean industry, etc.

KSOB-10 轴套规格及公差
KSOB-10 Sleeve Bushing Specification & Tolerance







内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	30°±5°
1.00	0.6±0.3	0.30±0.2	30°±5°
1.50	0.7±0.3	0.50±0.3	30°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	30°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

单位Unit: mm

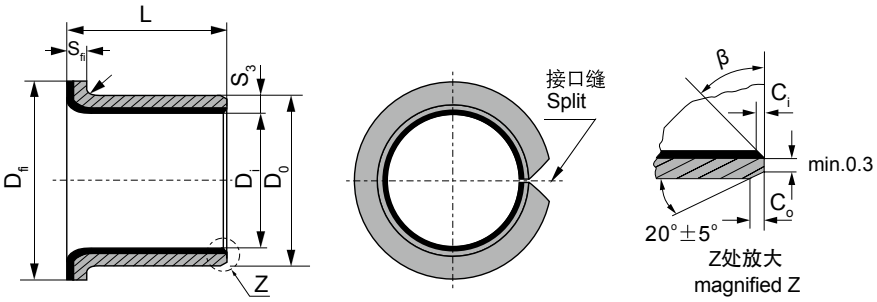
轴径(f7) Shaft D_s	座孔(H7) Housing D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After fixed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	长度 L 0 -0.40 (d≤Φ28 L-0.30; d>Φ30 L-0.40)									
						6	8	10	12	15	20	25	30	40	50
6 -0.010 -0.022	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	1.005 0.980	0606	0608	0610							
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003		0806	0808	0810	0812	0815					
10 -0.013 -0.028	12 +0.018	12 +0.065 +0.030	10.058 9.990	0.086 0.003		1006	1008	1010	1012	1015	1020				
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006		1206	1208	1210	1212	1215	1220	1225			
13 -0.016 -0.034	15 +0.018	15 +0.065 +0.030	13.058 12.990					1310	1312	1315	1320	1325			
14 -0.016 -0.034	16 +0.018	16 +0.065 +0.030	14.058 13.990					1410	1412	1415	1420	1425			
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990					1510	1512	1515	1520	1525			
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990					1610	1612	1615	1620	1625			
17 -0.016 -0.034	19 +0.021	19 +0.075 +0.035	17.061 16.990	0.095 0.006				1710	1712	1715	1720	1725			
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990					1810	1812	1815	1820	1825			
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	1.505 1.475			2010	2012	2015	2020	2025	2030		
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990					2210	2212	2215	2220	2225	2230		
24 -0.020 -0.041	27 +0.021	27 +0.075 +0.035	24.071 23.990					2410	2412	2415	2420	2425	2430		
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990					2510	2512	2515	2520	2525	2530	2540	2550
28 -0.020 -0.041	32 +0.025	32 +0.085 +0.045	28.085 27.990	0.126 0.010	2.005 1.970				2812	2815	2820	2825	2830	2840	2850
30 -0.020 -0.041	34 +0.025	34 +0.085 +0.045	30.085 29.990						3012	3015	3020	3025	3030	3040	3050
32 -0.025 -0.050	36 +0.025	36 +0.085 +0.045	32.085 31.990	0.135 0.015					3212	3215	3220	3225	3230	3240	3250
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990						3512	3515	3520	3525	3530	3540	3550
38 -0.025 -0.050	42 +0.025	42 +0.085 +0.045	38.085 37.990						3812	3815	3820	3825	3830	3840	3850
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990						4012	4015	4020	4025	4030	4040	4050

KSOB-10 轴套规格及公差
KSOB-10 Sleeve Bushing Specification & Tolerance

单位Unit: mm

轴径(f7) Shaft D_s	座孔(H7) Housing D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After fixed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	长度 L 0 -0.40									
						20	25	30	40	50	60	70	80	100	115
45 -0.050 -0.025	50 +0.025	50 +0.085 +0.045	45.105 44.990	0.155 0.015	2.505 2.460	4520	4525	4530	4540	4550					
50 -0.050 -0.025	55 +0.030	55 +0.100 +0.055	50.110 49.990	0.160 0.015		5020	5025	5030	5040	5050	5060				
55 -0.060 -0.030	60 +0.030	60 +0.100 +0.055	55.110 54.990	0.170 0.020				5530	5540	5550	5560				
60 -0.060 -0.030	65 +0.030	65 +0.100 +0.055	60.110 59.990					6030	6040	6050	6060	6070			
65 -0.060 -0.030	70 +0.030	70 +0.100 +0.055	65.110 64.990					6530	6540	6550	6560	6570			
70 -0.060 -0.030	75 +0.030	75 +0.100 +0.055	70.110 69.990					7030	7040	7050	7060	7070	7080		
75 -0.060 -0.030	80 +0.030	80 +0.100 +0.055	75.110 74.990					7530	7540	7550	7560	7570	7580		
80 -0.045	85 +0.035	85 +0.120 +0.070	80.155 80.020	0.201 0.020	2.490 2.440				8040	8050	8060	8070	8080	80100	
85 -0.054	90 +0.035	90 +0.120 +0.070	85.155 85.020	0.209 0.020					8540	8550	8560	8570	8580	85100	
90 -0.054	95 +0.035	95 +0.120 +0.070	90.155 90.020						9040	9050	9060	9070	9080	90100	
95 -0.054	100 +0.035	100 +0.120 +0.070	95.155 95.020							9550	9560	9570	9580	95100	
100 -0.054	105 +0.035	105 +0.120 +0.070	100.155 100.020							10050	10060	10070	10080	100100	100115
105 -0.054	110 +0.035	110 +0.120 +0.070	105.155 105.020								10560	10570	10580	105100	105115
110 -0.054	115 +0.035	115 +0.120 +0.070	110.115 110.020								11060	11070	11080	110100	110115
120 -0.054	125 +0.040	125 +0.170 +0.100	120.210 120.070	0.264 0.070	2.465 2.415						12060	12070	12080	120100	120115
125 -0.063	130 +0.040	130 +0.170 +0.100	125.210 125.070	0.273 0.070							12560	12570	12580	125100	125115
130 -0.063	135 +0.040	135 +0.170 +0.100	130.210 130.070								13060	13070	13080	130100	130115
140 -0.063	145 +0.040	145 +0.170 +0.100	140.210 140.070								14060	14070	14080	140100	140115
150 -0.063	155 +0.040	155 +0.170 +0.100	150.210 150.070								15060	15070	15080	150100	150115
160 -0.063	165 +0.040	165 +0.170 +0.100	160.210 160.070								16060	16070	16080	160100	160115
180 -0.063	185 +0.046	185 +0.210 +0.130	180.216 180.070	0.279 0.070	2.465 2.415						18060	18070	18080	180100	
190 -0.072	195 +0.046	195 +0.210 +0.130	190.216 190.070	0.288 0.070							19060	19070	19080	190100	
200 -0.072	205 +0.046	205 +0.210 +0.130	200.016 200.070								20060	20070	20080	200100	
220 -0.072	225 +0.046	225 +0.210 +0.130	220.216 220.070								22060	22070	22080	220100	
250 -0.072	255 +0.052	255 +0.260 +0.170	250.222 250.070	0.294 0.070	2.465 2.415								25080	250100	
260 -0.081	265 +0.052	265 +0.260 +0.170	260.222 260.070	0.303 0.070									26080	260100	
280 -0.081	285 +0.052	285 +0.260 +0.170	280.222 280.070										28080	280100	
300 -0.081	305 +0.052	305 +0.260 +0.170	300.222 300.070										30080	300100	

KSOB-10F 翻边轴套规格及公差
KSOB-10F Flange Bushing Specifiction & Tolerance

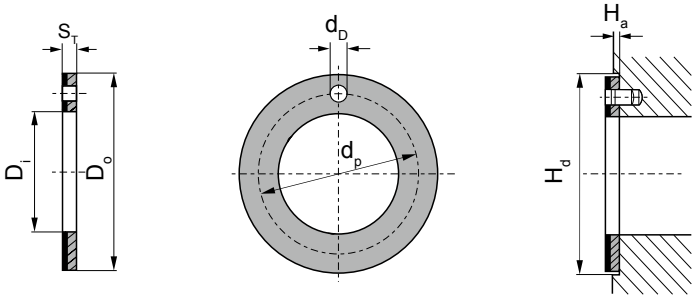


S_3	1.0	1.5	2.0	2.5
r	$1^{-0.5}$	1±0.5	1.5±0.5	2±0.5

单位Unit: mm

轴径(f7) Shaft D_s	座孔(H7) Housing D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After fixed $D_{i,a}$	配合间隙 Clearance C_O	Designation 型号规格	Wall thickness 壁厚 S_3	尺寸 Dimension				
							D_i	D_o	D_{fi}±0.5	L±0.25	S_{fi}-0.2
6 -0.013 -0.028	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	HLDB-10F06040	1.005 0.980	6	8	12	4	1
					HLDB-10F06070					7	
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003	HLDB-10F08055		8	10	15	5.5	
					HLDB-10F08075					7.5	
10 -0.016 -0.034	12 +0.018	12 +0.055 +0.025	10.058 9.990	0.086 0.003	HLDB-10F10070		10	12	18	7	
					HLDB-10F10090					9	
					HLDB-10F10120					12	
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006	HLDB-10F12070		12	14	20	7	
					HLDB-10F12090					9	
					HLDB-10F12120					12	
14 -0.016 -0.034	16 +0.018	16 +0.065 +0.030	14.058 13.990		HLDB-10F14120		14	16	22	12	
					HLDB-10F14170					17	
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990		HLDB-10F15090		15	17	23	9	
					HLDB-10F15120					12	
					HLDB-10F15170					17	
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990		HLDB-10F16120		16	18	24	12	
					HLDB-10F16170					17	
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990	0.095 0.006	HLDB-10F18120		18	20	26	12	
					HLDB-10F18170					17	
					HLDB-10F18200					20	
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	HLDB-10F20115	1.505 1.475	20	23	30	11.5	1.5
					HLDB-10F20165					16.5	
					HLDB-10F20215					21.5	
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990		HLDB-10F22150		22	25	32	15	
					HLDB-10F22200					20	
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990		HLDB-10F25115		25	28	35	11.5	
					HLDB-10F25165					16.5	
					HLDB-10F25215					21.5	
30 -0.025 -0.050	34 +0.025	34 +0.075 +0.035	30.085 29.990	0.126 0.010	HLDB-10F30160	2.005 1.970	30	34	42	16	2
					HLDB-10F30260					26	
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990	0.135 0.015	HLDB-10F35160		35	39	47	16	
					HLDB-10F35260					26	
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990		HLDB-10F40260		40	44	53	26	
					HLDB-10F40400					40	

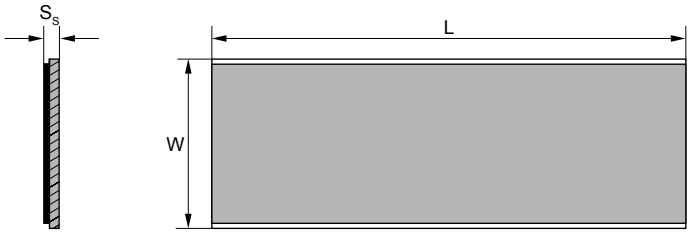
KSOB-1WC 垫片规格及公差
KSOB-1WC Thrust Washer Specification & Tolerance



单位Unit: mm

轴径 Shaft D_s	型号规格 Standard No.	垫片尺寸 Washer size				安装尺寸 Assemble size		H_d+0.12
		D_i+0.25	D_o-0.25	S_T -0.05	d_p±0.125	d_D +0.4 +0.1	H_a±0.2	
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			24
12	W14	14	26		20	2		26
14	W16	16	30		23			30
16	W18	18	32		25			32
18	W20	20	36		28	3		36
20	W22	22	38		30			38
22	W24	24	42		33			42
24	W26	26	44		35			44
26	W28	28	48		38	4		48
30	W32	32	54		43			54
36	W38	38	62		50			62
40	W42	42	66		54			66
46	W48	48	74	2	61		1.5	74
50	W52	52	78		65			78
60	W62	62	90		76			90

KSOB-1SP 板材规格及公差
KSOB-1SP Strip Specification & Tolerance



单位Unit: mm

型号规格 Standard No.	长度 L±1	宽度 W±1	厚壁 Wall thickness S_s-0.05
SP	500	150	1.0
SP	500	150	1.5
SP	500	150	2.0
SP	500	150	2.5

KSOB-20 金属塑料边界润滑轴承
Metal-polymer marginal lubricating bearings

金属塑料边界润滑轴承
Metal-polymer marginal lubricating bearings

结构特性 Structure Characteristics

KSOB 金属复合边界润滑材料以优质低碳钢为基板，中间烧结球形多孔铜粉层，表面扎制以改性聚甲醛（POM）或聚醚醚酮（PEEK）为主的耐磨润滑材料作为轴承工作层，表面规则的油穴不但可以储存油脂，而且可以有效埋没外部入侵的粉尘，提高了轴承的使用寿命。这种材料具有优异的机械承载能力，中间铜粉层不但可以及时传递轴承运行过程中产生的热量，同时也提高了塑料层与基板的结合强度。以 POM 或 PEEK 为主的表面耐磨材料设计适用于油脂润滑工况，轴承表面有规律地排列着用于储存油脂的油穴以保证润滑剂在整个轴承表面的最佳分布。

Metal-polymer marginal lubricating composite materials consist of metal backing sintered porous bronze with POM or PEEK polymer as working layer. Steel backing provides exceptionally high load carrying capacity, excellent heat dissipation. Sintered bronze powder provides thermal conductivity away from the bearing surface, also serves as a reservoir for the resin mixture. And the POM or PEEK polymer layer provides high wear resistance and low friction even with only minute volume of lubricant are supplied, this bearing surface carries a pattern of circular indents which should be filled with grease on assembly of the bearing.

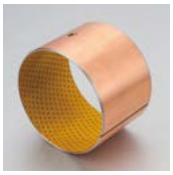
产品应用 Application

产品广泛应用于
汽车工业：踏板总成、平衡轴套、制动钳、转向主销轴套和卡车尾板轴套等；
物流机械：搬运车、起重机、车载吊车、森林机械、包装机械等；
以及液压马达、液压油缸、气动元件、农用机械等。

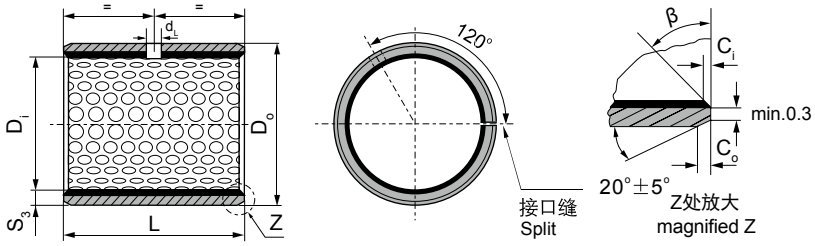
Recommended for applications involving intermittent operation or boundary lubrication...
Automotive: Pedal assembly, Balance shaft sleeve, Steering king pin shaft sleeve...
Logistics machine: carrier, chain block, Car crane, packaging machine....And hydraulic motor,Hydraulic cylinders, pneumatic element, agricultural machine...

实际运用中根据使用环境、工况和环保要求的不同，表面塑料层 POM/PEEK 里可以添加不同的填充材料。产品范围包括：KSOB-20（黄）、KSOB-22（橙）、KSOB-26（蓝）、KSOB-28（黑）、KSOB-800（PEEK）。

According to the different working conditions and environmental protection, the POM or PEEK layer with different polymer filler, Surface tin or copper plating. product range includes KSOB-20（yellow）、KSOB-22（orange）、KSOB-26（blue）、KSOB-28（black）、KSOB-800（PEEK）.

有关数据 Data	代号 Grade	**KSOB-20（黄）** （lead free）	**KSOB-22（橙）** （lead free）	**KSOB-26（蓝）** （lead free）	**KSOB-28（黑）**	**KSOB-800 （PEEK）**
	材料 Materiai	碳钢/Steel+铜粉/ Bronze+(POM+Pb)	碳钢/Steel+铜粉/ Bronze+POM	碳钢/Steel+铜粉/ Bronze+POM	碳钢/Steel+铜粉/ Bronze+POM	碳钢/Steel+铜粉/ Bronze +(PTFE+PEEK)
除了目录中显示的标准产品外，还可以提供非标产品或根据客户要求订购。 We can also develop according to customers special request while out of this table.						
最大承载压力P Max load capacity P	静载 N/mm² Static load	140	140	110	140	140
	动载 N/mm² Dynamic load	70	70	45	70	100
最大线速度 V m/s Max line speed V	脂润滑 Greaes lubrication	2.5	2.5	2.5	2.5	2.5
最高PV值 N/mm²·m/s PV value limit		2.8	2.8	2.8	2.8	2.5
摩擦系数u Friction coef u		0.06~0.12	0.06~0.12	0.05~0.1	0.06~0.12	0.08~0.12
相配轴径 Mating Axis	硬度 HB Hardness	>270	>270	>270	>270	>270
	粗糙度 Ra Roughness	0.4~1.25	0.4~1.25	0.4~1.25	0.4~1.25	0.4~1.25
工作温度 ℃ Working temperature		-40~+120	-40~+120	-60~+120	-60~+120	-150~+250
导热系数 W/mk Thermal conductivity		52	52	52	52	52
线膨胀系数（轴向） Coefficient of linear xpansion		11×10^{-6}/K	11×10^{-6}/K	11×10^{-6}/K	11×10^{-6}/K	11×10^{-6}/K
针对性运用领域 Pertinence applicaton		产品应用于汽车底盘、锻压机床、冶金机械、矿山机械、水利行业、轧钢行业等。 It's used in vehicle chassis, forming machine tools, steel metallurgical machinery, mineral mountain machinery, hydraulic industry and rolling steel industry, etc.				产品应用于锻压机床、冶金机械、矿山机械、液压马达等高端应用。 The product is applied in forging press, metallurgy machine, mine machine, irrigation industry, hydraulic moto high-end application, etc.

KSOB-20 轴承规格及公差
KSOB-20 Sleeve Bushing Specification & Tolerance



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
1.0	0.6±0.3	0.30±0.2	30°±5°
1.5	0.7±0.3	0.50±0.2	30°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	30°±5°
2.50	1.8±0.6	0.80±0.3	45°±5°

单位Unit: mm

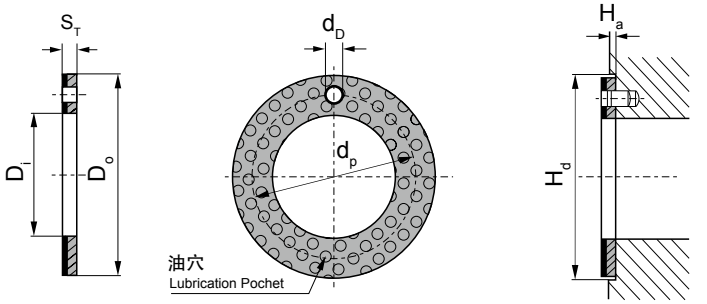
轴径 Shaft D_s h8	座孔 Housing H7 D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After fixed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	油孔 Oil hole d_L	长度 L 0 -0.40									
							10	15	20	25	30	35	40	45	50	60
10 -0.022	12 +0.018	12 +0.065 +0.030	10.108 10.040	0.130 0.040	0.980 0.955	4	1010	1015	1020							
12 -0.027	14 +0.018	14 +0.065 +0.030	12.108 12.040	0.135 0.040			1210	1215	1220							
14 -0.027	16 +0.018	16 +0.065 +0.030	14.108 14.040					1415	1420							
15 -0.027	17 +0.018	17 +0.065 +0.030	15.108 15.040					1515	1520	1525						
16 -0.027	18 +0.018	18 +0.065 +0.030	16.108 16.040					1615	1620	1625						
18 -0.027	20 +0.021	20 +0.075 +0.035	18.111 18.040	0.138 0.040				1815	1820	1825						
20 -0.033	23 +0.021	23 +0.075 +0.035	20.131 20.050	0.164 0.050	1.475 1.445			2015	2020	2025	2030					
22 -0.033	25 +0.021	25 +0.075 +0.035	22.131 22.050					2215	2220	2225	2230					
25 -0.033	28 +0.021	28 +0.075 +0.035	25.131 25.050			6		2515	2520	2525	2530					
28 -0.033	32 +0.025	32 +0.085 +0.045	28.155 28.060	0.188 0.060	1.970 1.935				2820	2825	2830					
30 -0.033	34 +0.025	34 +0.085 +0.045	30.155 30.060						3020	3025	3030	3035	3040			
35 -0.039	39 +0.025	39 +0.085 +0.045	35.155 35.060	0.194 0.060					3520	3525	3530	3535	3540			
40 -0.039	44 +0.025	44 +0.085 +0.045	40.155 40.060			8			4020	4025	4030	4035	4040	4045	4050	
45 -0.039	50 +0.025	50 +0.085 +0.045	45.195 45.080	0.234 0.080	2.460 2.415				4520	4525	4530	4535	4540	4545	4550	
50 -0.039	55 +0.030	55 +0.100 +0.055	50.200 50.080	0.239 0.080							5030	5035	5040	5045	5050	5060
55 -0.046	60 +0.030	60 +0.100 +0.055	55.200 55.080	0.246 0.080							5530	5535	5540	5545	5550	5560
60 -0.046	65 +0.030	65 +0.100 +0.055	60.200 60.080								6030	6035	6040	6045	6050	6060

KSOB-20 轴承规格及公差
KSOB-20 Sleeve Bushing Specification & Tolerance

单位Unit: mm

轴径 Shaft D_s h8	座孔 Housing H7 D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After fixed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	油孔 Oil hole d_L	长度 L 0 -0.40							
							40	50	60	80	90	95	100	110	120
65 -0.046	70 +0.030	70 +0.100 +0.055	65.200 65.080	0.246 0.080	2.460 2.415	8	6540	6550	6560						
70 -0.046	75 +0.030	75 +0.100 +0.055	70.200 70.080				7040	7050	7060	7080					
75 -0.046	80 +0.030	80 +0.100 +0.055	75.200 75.080				7540	7550	7560	7580					
80 -0.046	85 +0.035	85 +0.120 +0.070	80.265 80.100	0.313 0.100	2.450 2.385	9.5	8040	8050	8060	8080					
85 -0.054	90 +0.035	90 +0.120 +0.070	85.265 85.100	0.321 0.100			8540	8550	8560	8580					
90 -0.054	95 +0.035	95 +0.120 +0.070	90.265 90.100				9040	9050	9060	9080	9090				
100 -0.054	105 +0.035	105 +0.120 +0.070	100.265 100.100					10050	10060	10080	10090	10095			
105 -0.054	110 +0.035	110 +0.120 +0.070	105.265 105.100					10550	10560	10580	10590	10595	105100	105110	
110 -0.054	115 +0.035	115 +0.120 +0.070	110.265 110.110					11050	11060	11080	11090	11095	110100	110110	
120 -0.054	125 +0.040	125 +0.170 +0.100	120.270 120.110	0.324 0.100				12050	12060	12080	12090	12095	120100	120110	
125 -0.063	130 +0.040	130 +0.170 +0.100	125.270 125.110					12550	12560	12580	12590	12595	125100	125110	
130 -0.063	135 +0.040	135 +0.170 +0.100	130.270 130.110					13050	13060	13080	13090	13095	130100	130110	
140 -0.063	145 +0.040	145 +0.170 +0.100	140.270 140.110					14050	14060	14080	14090	14095	140100	140110	
150 -0.063	155 +0.040	155 +0.170 +0.100	150.270 150.110					15050	15060	15080	15090	15095	150100	150110	
160 -0.063	165 +0.040	165 +0.170 +0.100	160.270 160.110			9.5		16050	16060	16080	16090	16095	160100	160110	
170 -0.063	175 +0.040	175 +0.170 +0.100	170.270 170.110					17050	17060	17080	17090	17095	170100	170110	
180 -0.063	185 +0.046	185 +0.210 +0.130	180.276 180.110	0.339 0.110				18050	18060	18080	18090	18095	180100	180110	
190 -0.072	195 +0.046	195 +0.210 +0.130	190.276 190.110					19050	19060	19080	19090	19095	190100	190110	190120
200 -0.072	205 +0.046	205 +0.210 +0.130	200.276 200.110					20050	20060	20080	20090	20095	200100	200110	200120
220 -0.072	225 +0.046	225 +0.210 +0.130	220.276 220.110			9.5		22050	22060	22080	22090	22095	220100	220110	220120
240 -0.072	245 +0.046	245 +0.210 +0.130	240.276 240.110					24050	24060	24080	24090	24095	240100	240110	240120
250 -0.072	255 +0.052	255 +0.260 +0.170	250.282 250.110	0.354 0.110				25050	25060	25080	25090	25095	250100	250110	250120
260 -0.081	265 +0.052	265 +0.260 +0.170	260.282 260.110					26050	26060	26080	26090	26095	260100	260110	260120
280 -0.081	285 +0.052	285 +0.260 +0.170	280.282 280.110					28050	28060	28080	28090	28095	280100	280110	280120
300 -0.081	305 +0.052	305 +0.260 +0.170	300.282 300.110					30050	30060	30080	30090	30095	300100	300110	300120

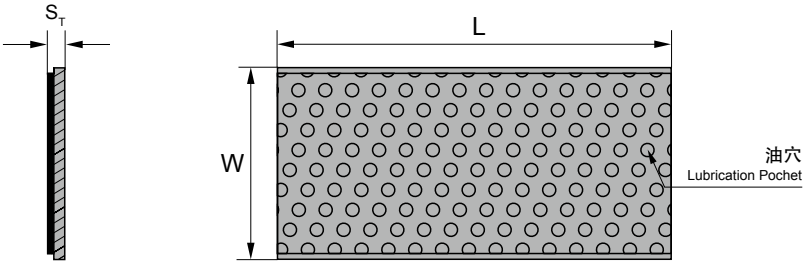
KSOB-2WC 垫片规格及公差
KSOB-2WC Thrust Washer Specification & Tolerance



单位Unit: mm

轴径 Shaft D_S	型号规格 Standard No.	垫片尺寸 Washer size				安装尺寸 Assemble size		
		D_i+0.25	D_o-0.25	S_T -0.05	d_p±0.125	d_D +0.4 +0.1	H_a±0.2	H_d+0.12
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			24
12	W14	14	26		20	2		26
14	W16	16	30		23			30
16	W18	18	32		25			32
18	W20	20	36		28	3		36
20	W22	22	38		30			38
22	W24	24	42		33			42
24	W26	26	44		35			44
26	W28	28	48		38	4		48
30	W32	32	54		43			54
36	W38	38	62		50			62
40	W42	42	66		54			66
46	W48	48	74	2	61		1.5	74
50	W52	52	78		65			78
60	W62	62	90		76			90

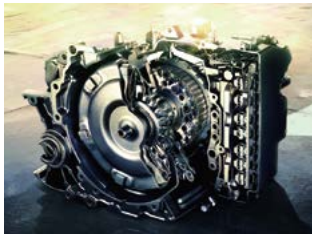
KSOB-2SP 板材标准公制尺寸
KSOB-2SP Strip Standard Metric Size

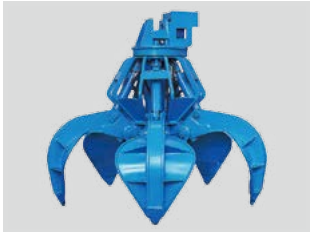


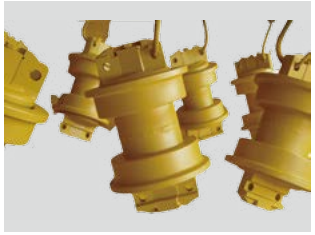
单位Unit: mm

型号规格 Standard No.	长度 L ±1	宽度 W ±1	厚壁 Wall thickness S_s -0.05
P	500	150	1.0
P	500	150	1.5
P	500	150	2.0
P	500	150	2.5

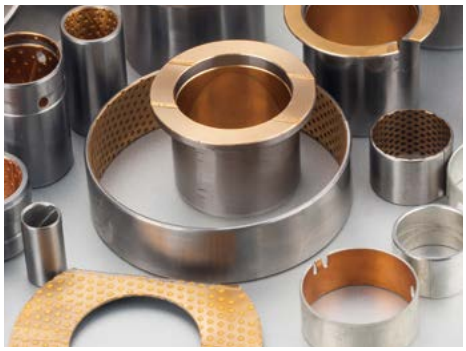
KSOB-800 双金属复合轴承
Bi-metallic composite bearings







KSOB-800 双金属复合轴承
Bi-metallic composite bearings



结构特性 Structure Characteristics

双金属复合轴承以优质低碳钢为基体，表面烧结具有低摩擦特性的铜合金（CuPb10Sn10、CuPb6Sn6Zn3、CuPb24Sn4、CuPb30、AlSn20Cu、CuSn8Ni）作为轴承的耐磨层，铜合金表面可以根据使用工况需要加工出各种类型的油槽、油孔、油穴等，以适合于无法持续加油或者难以加油的场合。材料通过二次烧结二次挤压可以得到很好的接合强度和最佳的承载能力。

KSOB Bi-metallic composite bearing material consists of steel backing with lead bronze or lead-free copper alloy（CuPb10Sn10、CuPb6Sn6Zn3、CuPb24Sn4、CuPb30、AlSn20Cu）lining, bearing material for oil/grease lubricated applications. The copper alloy forms a continuously frame for thermal conductivity. These bearing structures are with high load capacity and good fatigue property. Higher tolerance can be achieved after re-machined from the customers. Lead-free bronze lining bearing material conforms to the European RoHS directive.

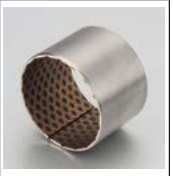
产品应用 Application

工程机械：底盘行走机构支重轮轴套、拖带轮轴套、张紧轮轴套；
汽车行业：平衡轴衬套、钢板销衬套、转向节主肖轴套、连杆轴套、气门摇臂轴套、凸轮轴轴套、差速器轴套、变速箱轴套、内燃机主轴瓦、止推垫片；
以及柱塞泵侧片，齿轮泵侧片等。

Angineering machine: underpan, thrust wheel, Towing wheel, Steering knuckle,tension pulley...
Automotive:trunnion shaft, connecting rod, valve rocker, camshaft, gear box, internal-combustion engine,
And Plunger pump friction plate, gear pump friction plate...

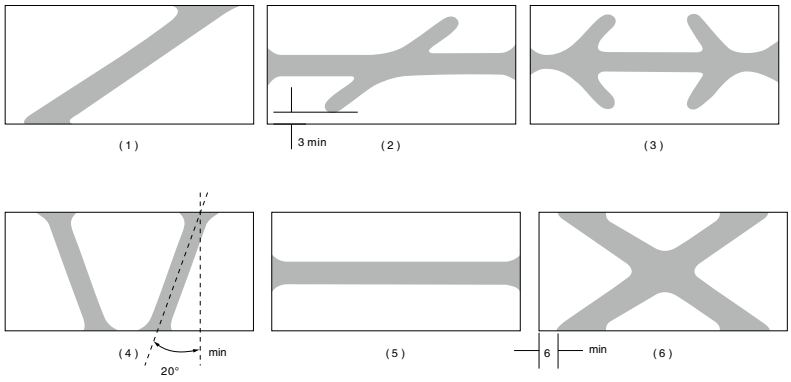
实际运用中根据使用工况的不同，表面可以烧结不同牌号的合金，产品范围包括：KSOB-820、KSOB-800、KSOB-720、KSOB-700、KSOB-200、KSOB-08G。

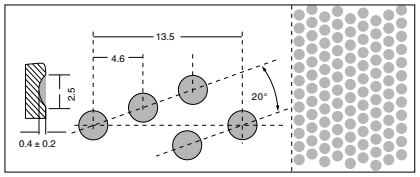
According to the different working conditions, different alloy material （CuPb10Sn10、CuPb6Sn6Zn3、CuPb24Sn4、CuPb30、AlSn20Cu、CuSn8Ni) can be sintered on steel backing. product range includes KSOB-820、KSOB-800、KSOB-720、KSOB-700、KSOB-200、KSOB-08G.

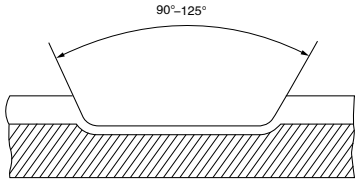
有关数据 Data	代号 Grade	**KSOB-820** (lead free)	**KSOB-800**	**KSOB-720**	**KSOB-700**	**KSOB-200**	**KSOB-08G**
	材料 Materiai	碳钢/Steel + CuSn8Ni	碳钢/Steel + $CuPb_{10}Sn_{10}$	碳钢/Steel + $CuPb_{24}Sn_{4}$	碳钢/Steel + $CuPb_{30}$	碳钢/Steel + $AlSn_{20}Cu$	碳钢/Steel + $CuPb_{10}Sn_{10}$ +石墨/Graphite
除了目录中显示的标准产品外，还可以提供非标产品或根据客户要求订购。 We can also develop according to customers special request while out of this table.							
最大动载 P N/mm^2 Max dynamic Load P		140	140	140	120	120	90
最大线速度 V m/s Max line speed V	脂润滑 Greaes lubrication	2.5	2.5	2.5	2.5	——	——
最高PV值 $N/mm^2 \cdot m/s$ Max PV value		2.8	2.8	2.8	2.8	——	——
摩擦系数u Friction coef u		0.05~0.12	0.05~0.15	0.05~0.15	0.05~0.15	——	——
最大线速度 V m/sMax line speed V		2.5	10	10	15	20	——
最高PV值 $N/mm^2 \cdot m/s$ Max PV value	油脂润滑 Greaes lubrication	2.8	10	10	8	15	——
摩擦系数u Friction coef u	油润滑 Oil lub.	0.04~0.12	0.04~0.12	0.04~0.12	0.04~0.12	0.04~0.12	——
最高温度 ℃ Max Working temperature	油脂润滑 Greaes lubrication	150	150	150	150	150	150
	油润滑 Oil lub.	250	250	250	250	250	——
相配轴径 Mating Axis	硬度 HRC Hardness	≥53	≥53	≥45	≥48	≥270	≥53
	粗糙度 Ra Roughness	0.32~0.63	0.32~0.63	0.32~0.63	0.16~0.63	0.16~0.63	0.16~0.63
合金层硬度 HB Alloy layer hardness		69~90	70~100	45~70	35~45	30~40	60~90
导热系数 W/mk Thermal conductivity		47	47	60	60	47	47
线膨胀系数（轴向） Coefficient of linear expansion		18×10^{-6}/K	18×10^{-6}/K	18×10^{-6}/K	19×10^{-6}/K	19×10^{-6}/K	18×10^{-6}/K
针对性运用领域 Pertinence applicaton		适用于中等负载，以及有大的冲击载荷的轴承，如发动机连杆轴套、转向销轴套等。 Lead free, For use in medium load conditions, such as the engine connecting rod bushings, steering pin covers.	产品适用于汽车发动机连轩，工程机械、农业机械等。 Application: con-rod of automobile engines, engineering and agriculture machinery, heavy duty construction machinery etc.	产品适用于高速、重载的内燃机主轴和变速齿轮。 Application: High speed, heavy load engine main shaft and ransmission gearbox, etc.	用作高速、中低载荷的内燃机主轴瓦、连杆衬套、摇臂衬套,油汞侧摩擦片。 high speed and middle load working situation, as engine main bearing, connect-rod bushing, rocket arm bushing and oil pump side plate.	产品适用于内燃机主轴和连杆轴承、空压机机、制冷机用轴承。 Application: High speed, heavy load engine main shaft and air compressor, cooling machine.etc.	产品适用于启动马达机械。 Application: starting motor.

KSOB-800 双金属复合轴承
Bi-metallic composite bearings

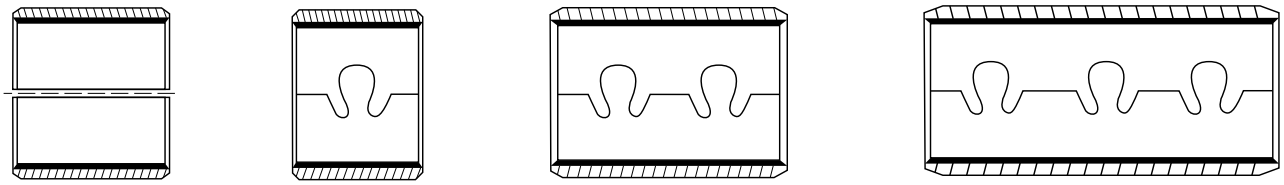
双金属自润滑轴承的油槽油穴形式 Type for Bi-Metaltic Bushing Grooves and Indents







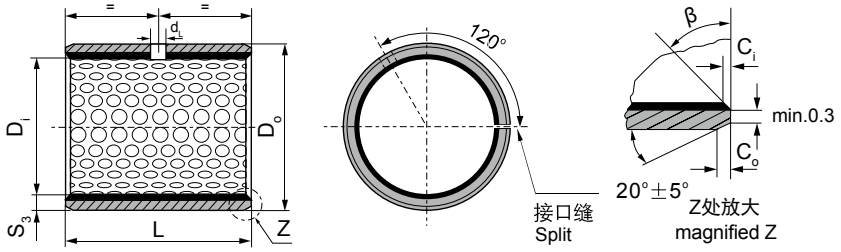
双金属轴承的搭扣形式 Lock Types for Bi-Metaltic Bushing



材料特性 Material Characterisitc

材料牌号 Material Trademark	合金成份 Alloy Composition	合金硬度 Alloy Hardness	国际标准 International Standard
KSOB-800	CuPb10Sn10	70～100HB	SAE-797. DIN CuPb10Sn. JIS-LBC3. UNS C93700. Clevite F100. Daido L10. D. A. B. D57. Federal Mogul HF2. Glacier SY. Glyco66. Miba2. 1010.Taiho HF2. Kar l Schmiat KS940SSAE-797. DIN CuPb10Sn. JIS-LBC3. UNS C93700. Clevite F100. Daido L10. D. A. B D57. Federal Mogul HF2 Glacier SY. Glyco66. Miba2. 1010. Taiho HF2. Karl Schmiat Ks940s
KSOB-720	CuPb24Sn4	45～70HB	SAE=799. GLYCO 68. JIS-LBC6. DAIDO L23. Claciersx. ACLF250
KSOB-700	CuPb30	30～45HB	SAE-783. GLYCO74. JIS-AJL
KSOB-200	AlSn20Cu	30～40HB	SAE-48. JIS-KJ3
KSOB-820	CuSn8Ni	69～90HB	

KSOB-800 双金属轴承规格及公差
KSOB-800 Bimetal Sleeve Bushing Specification & Tolerance



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	35°±5°
1.00	0.6±0.3	0.30±0.2	35°±5°
1.50	0.7±0.3	0.50±0.3	35°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

单位unit:mm

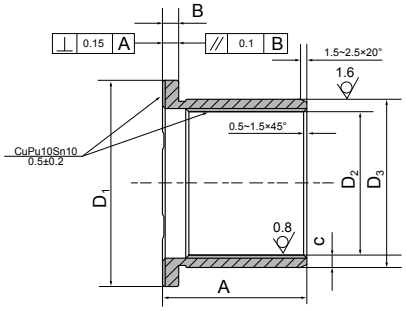
内径 D_i φd	外径 D_O φD	轴径(h8) Shaft D_s	座孔(H7) Housing D_H	压装后内孔公差 Arter fixed $D_{i,a}$	配合间隙 Clearance C_D	壁厚 Wall thickness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$						
								10	15	20	25	30	40	50
10	12	10 -0.022	12 +0.018	+0.148 +0.010	0.170 0.010	0.995 0.935	4	1010	1015	1020				
12	14	12 -0.027	14 +0.018		0.175 0.010			1210	1215	1220				
14	16	14 -0.027	16 +0.018					1410	1415	1420				
15	17	15 -0.027	17 +0.018					1510	1515	1520				
16	18	16 -0.027	18 +0.018					1610	1615	1620				
18	20	18 -0.027	20 +0.021	+0.151 +0.010	0.178 0.010			1810	1815	1820	1825			
20	23	20 -0.033	23 +0.021	+0.161 +0.020	0.194 0.020	1.490 1.430		2010	2015	2020	2025			
22	25	22 -0.033	25 +0.021				6	2210	2215	2220	2225			
24	27	24 -0.033	27 +0.021					2410	2415	2420	2425	2430		
25	28	25 -0.033	28 +0.021						2515	2520	2525	2530		
26	30	26 -0.033	30 +0.021	+0.181 +0.040	0.214 0.040	1.980 1.920			2615	2620	2625	2630		
28	32	28 -0.033	32 +0.025	+0.185 +0.040	0.218 0.040				2815	2820	2825	2830	2840	
30	34	30 -0.033	34 +0.025						3015	3020	3025	3030	3040	
32	36	32 -0.039	36 +0.025		0.224 0.040				3215	3220	3225	3230	3240	
35	39	35 -0.039	39 +0.025							3520	3525	3530	3540	3550
38	42	38 -0.039	42 +0.025				8			3820	3825	3830	3840	3850
40	44	40 -0.039	44 +0.025							4020	4025	4030	4040	4050

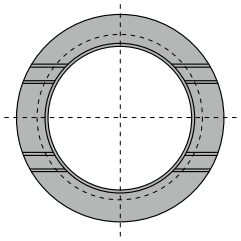
KSOB-800 双金属轴承规格及公差
KSOB-800 Bimetal Sleeve Bushing Specification & Tolerance

单位unit:mm

内径 D_i φd	外径 D_O φD	轴径(h8) Shaft D_s	座孔(H7) Housing D_H	压装后内孔公差 Arter fixed $D_{i,a}$	配合间隙 Clearance C_D	壁厚 Wall thickness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$							
								25	30	40	50	60	80	90	100
45	50	45 -0.039	50 +0.025	+0.225 +0.080	0.264 0.080	2.460 2.400	8	4525	4530	4540	4550				
50	55	50 -0.039	55 +0.030	+0.230 +0.080	0.269 0.080				5030	5040	5050	5060			
55	60	55 -0.046	60 +0.030		0.276 0.080				5530	5540	5550	5560			
60	65	60 -0.046	65 +0.030						6030	6040	6050	6060			
65	70	65 -0.046	70 +0.030						6530	6540	6550	6560			
70	75	70 -0.046	75 +0.030						7030	7040	7050	7060	7080		
75	80	75 -0.046	80 +0.030				9.5		7530	7540	7550	7560	7580		
80	85	80 -0.046	85 +0.035	+0.235 +0.080	0.281 0.080				8030	8040	8050	8060	8080	8090	
85	90	85 -0.054	90 +0.035		0.289 0.080				8530	8540	8550	8560	8580	8590	85100
90	95	90 -0.054	95 +0.035							9040	9050	9060	9080	9090	90100
95	100	95 -0.054	100 +0.035								9550	9560	9580	9590	95100
100	105	100 -0.054	105 +0.035								10050	10060	10080	10090	100100
105	110	105 -0.054	110 +0.035								10550	10560	10580	10590	105100
110	115	110 -0.054	115 +0.035								11050	11060	11080	11090	110100
115	120	115 -0.054	120 +0.035								11550	11560	11580	11590	115100
120	125	120 -0.054	125 +0.040	+0.240 +0.080	0.303 0.080						12050	12060	12080	12090	120100
125	130	125 -0.063	130 +0.040									12560	12580	12590	125100
130	135	130 -0.063	135 +0.040									13060	13080	13090	130100
135	140	135 -0.063	140 +0.040									13560	13580	13590	135100
140	145	140 -0.063	145 +0.040									14060	14080	14090	140100
150	155	150 -0.063	155 +0.040									15060	15080	15090	150100

KSOB-800F 双金属翻边轴承规格及公差
KSOB-800F Bimetal Flange Bushing Specification & Tolerance



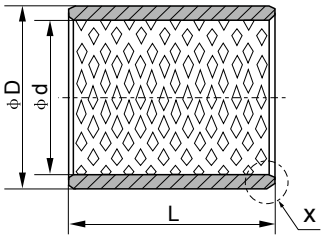


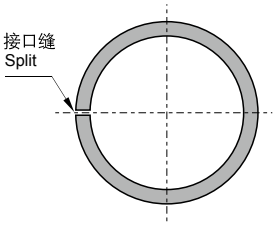
单位unit:mm

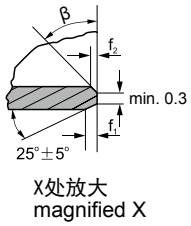
D_1	B	D_3	D_2	A	C
42	3.5	37	30	30	3.5
43	2	34	30	28	2
44	3.5	39	32	35	3.5
47	3.5	39	32	50	3.5
48	2	39	35	37	2
52	3	41	35	35	3
55	3.5	42	35	35	3.5
55	3.5	45	38	35	3.5
55	3.5	45	38	40	3.5
60	3	41	35	42	3
60	3	46	40	62	3
63	3.5	47	40	40	3.5
65	3.5	52	45	40	3.5
68	3.5	54	47	35	3.5
70	3.5	54	47	40	3.5
70	3.5	57	50	48	3.5
72	3.5	57	50	45	3.5
72	3.5	57	50	50	3.5
75	3.5	57	50	50	3.5
77	3	60	54	55	3
83	3.5	66	59	53	3.5
85	3.5	65	58	60	3.5
87	3.5	67	60	53	3.5
87	3.5	67	60	60	3.5

D_1	B	D_3	D_2	A	C
87	3.5	67	60	65	3.5
87	4	68	60	60	4
94	3.5	72	65	60	3.5
87	3.5	72	65	65	3.5
87.5	1.95	69.12	65.22	64.5	2
88	3.5	67	60	60	3.5
88	3.5	72	65	65	3.5
92	3.5	77	70	67	3.5
93	3.5	75	68	60	3.5
94	3.5	77	70	70	3.5
95	3.5	77	70	65	3.5
95	4	78	70	70	4
97	3.48	77.14	70.18	62	3.5
97	3.5	82	75	74	3.5
100	5	85	75	70	5
103	3.525	70.8	63.75	73	3.5
105	3.5	82	75	75	3.5
105	3.5	87	80	70	3.5
107	4	83	75	74	4
115	5	100	90	75	5
128	3.8	92.6	85	103	4
108	3.5	72	65	75	3.5
108	3.5	77	70	98	3.5
108	5	80	70	90	5

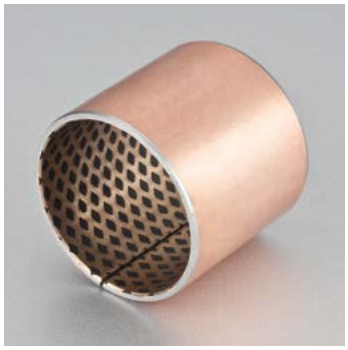
KSOB-08G 固体润滑轴承规格及公差
KSOB-08G Solid-lubricant Bushing Specification & Tolerance







X处放大
magnified X



单位Unit: mm

d	D	f_1	f_2	L $^{0}_{-0.40}$												
				10	15	20	25	30	35	40	50	60	70	80	90	100
10	12	0.3	0.5	1010	1015	1020										
12	14			1210	1215	1220										
14	16			1410	1415	1420	1425									
15	17			1510	1515	1520	1525									
16	18			1610	1615	1620	1625									
18	20			1810	1815	1820	1825									
20	23	0.8	0.4	2010	2015	2020	2025									
22	25			2210	2215	2220	2225	2230								
24	27				2415	2420	2425	2430								
25	28				2515	2520	2525	2530								
28	32	1.0	0.6		2815	2820	2825	2830								
30	34				3015	3020	3025	3030	3035	3040						
32	36				3215	3220	3225	3230	3235	3240						
35	39				3515	3520	3525	3530	3535	3540						
40	44					4020	4025	4030	4035	4040	4050					
45	50	1.2	0.8			4520	4525	4530	4535	4540	4550					
50	55					5020	5025	5030	5035	5040	5050	5060				
55	60					5520	5525	5530	5535	5540	5550	5560				
60	65						6025	6030	6035	6040	6050	6060	6070			
65	70							6530	6535	6540	6550	6560	6570			
70	75							7030	7035	7040	7050	7060	7070	7080		
75	80							7530	7535	7540	7550	7560	7570	7580		
80	85	1.4						8030	8035	8040	8050	8060	8070	8080		
85	90									8540	8550	8560	8570	8580	8590	
90	95									9040	9050	9060	9070	9080	9090	
95	100										9550	9560	9570	9580	9590	95100
100	105										10050	10060	10070	10080	10090	100100
105	110										10550	10560	10570	10580	10590	105100
110	115										11050	11060	11070	11080	11090	110100
115	120										11550	11560	11570	11580	11590	115100
120	125											12060	12070	12080	12090	120100
125	130											12560	12570	12580	12590	125100
130	135											13060	13070	13080	13090	130100
135	140											13560	13570	13580	13590	135100
140	145											14060	14070	14080	14090	140100
145	150											14560	14570	14580	14590	145100
150	155											15060	15070	15080	15090	150100
155	160											15560	15570	15580	15590	155100
160	165											16060	16070	16080	16090	160100

KSOB-090 青铜卷制轴承
Bronze – Wrapped Bearings

KSOB-090 青铜卷制轴承
Bronze-Wrapped Bearing

结构特性 Structure Characteristics

以 CuSn8 青铜作为基板卷制而成的一种具有高承载、高耐磨的经济型薄壁铜基卷制轴承。根据不同的润滑条件，我们可以提供菱形油穴和油孔两种形式，菱形油穴用于油脂的润滑，通孔用于流体润滑，这样的设计可以确保在轴承运行初期就能建立润滑油膜，因此可以降低起始摩擦系数。

The bearing is made with CuSn8 bronze alloy which is featured with high load capacity and good anti-wearing characteristics. The diamond shape indents on the surface of the bearing serve as oil reservoir to generate oil film for the lubricating during the initial running. The bearings are mainly suitable for agriculture machineries and construction machineries applications.

产品应用 Application

农用机械、建筑机械、起重机、卡车底盘部件、输送机、升降机、卷扬机、校平机等。

Agricultural machine, construction machine, crane, underpan parts, conveyor, elevator, winch, planing machine...

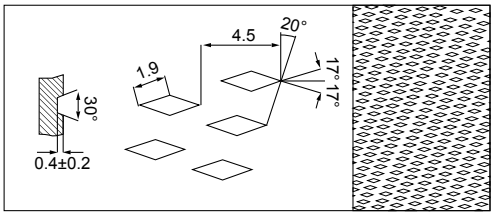
实际运用中根据使用工况的不同，基体可以采用不同牌号的合金，表面可以加工成其他形式的油孔和油槽。产品范围包括：KSOB-090、KSOB-092、KSOB-09G。

According to the different working conditions and environmental protection, different type of alloy can be chosen, product range includes

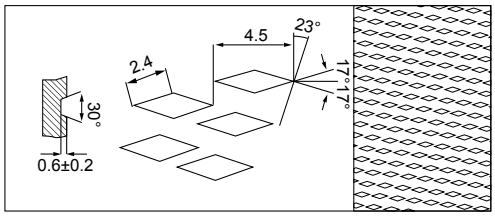
有关数据 Data	代号Grade	KSOB-090	KSOB-092	KSOB-09G
	材料名称 Material	CuSn8P (Qsn8-0.3)	CuSn8P (Qsn8-0.3)	CuSn8P+石墨 (Qsn8-0.3+graphite)
除了目录中显示的标准产品外，还可以提供非标产品或根据客户要求订购。 We can also develop according to customers special request while out of this table.				
密度 g/cm^3 Density		8.8	8.8	8.3
最大动载 N/mm^2 Max Dynamic Load		40	40	40
最高线速度(脂润滑) m/s Max Linear Velocity (Grease)		2.5	2.5	2.5
最高PV值(脂润滑) N/mm^2·m/s Max PV value (Grease)		2.8	2.8	2.8
抗拉强度 N/mm^2 Pressure strength		460	460	460
屈服强度 N/mm^2 Yield Strength		260	260	230
硬度 HB hardness		90~150	90~150	90~150
相配轴 Mating Axis	硬度 HRC Hardness	≥50	≥50	≥50
	粗糙度 Roughness	0.4~1.0	0.4~1.0	0.4~1.0
适用温度 ℃ Working Temperature		-40~150	-40~150	-40~150
摩擦系数 Friction Coefficient		0.06~0.15	0.06~0.15	0.03~0.1
导热系数 W/m·K coefficient of heat conduction		58	58	58
线膨胀系数 (轴向) Linear expansion coefficient		18.5×10^{-6}/K	18.5×10^{-6}/K	18.5×10^{-6}/K
针对性运用领域 Pertinence applicaton		产品适用于起重机械、建筑机械、采矿机械，农业机械，森林机械等。 Application: hoisting,mining machinery. Forest machinery, agricultural machinery etc.	产品广泛运用于农业机械、建筑机械、工程机械等。 Application: Agricultural Machinery Foresty machinery, Heavy duty construction machinery etc	它具有很低的摩擦系数，较好的耐磨性等优点，能在无油或少油的条件下工作。产品广泛应用于启动马达起升机，工程机械，汽车，卡车，拖拉机等。 Application: starting motor hoisting machines and other construction machines, automobiles, tractors, trucks, machines tools and some mineral engines

KSOB-090 系列青铜卷制轴套
KSOB-090 Bronze-Wrapped Bushes

油穴型式 Oil Sockets Format

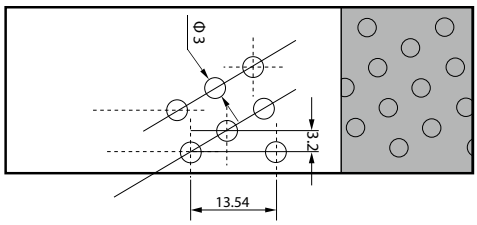


内径≤ 22

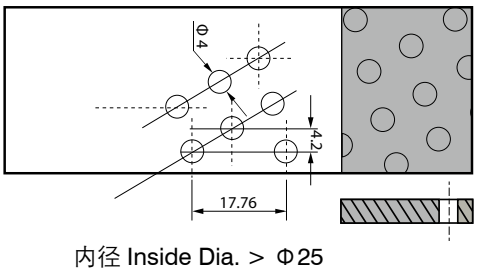


内径 >22

通孔型式 Oil Apertures Format



内径 Inside Dia. ≤ Φ25

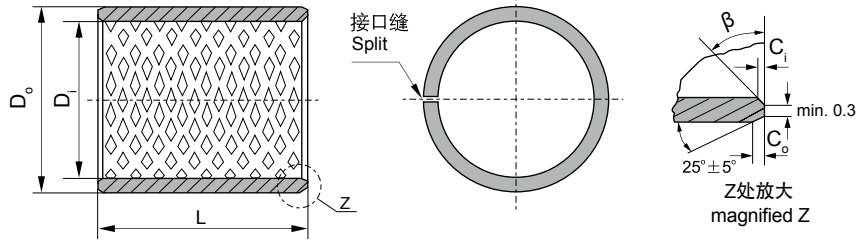


内径 Inside Dia. > Φ25

标准衬套公差 (依据 DIW W91/1503547)
Standard tolerance for bushes (As per to DIW W91/1503547)

标准直径 Standard Dia.	衬套外径尺寸 O.D.Size	相配座孔 Housing Bore	衬套内径尺寸 I.D.Size	相配轴径 Axle
10~18	+0.065 +0.030	+0.018 0	+0.046 0	- 0.016 - 0.043
18~30	+0.075 +0.035	+0.021 0	+0.052 0	- 0.020 - 0.020
30~50	+0.085 +0.045	+0.025 0	+0.062 0	- 0.025 - 0.064
50~80	+0.100 +0.055	+0.030 0	+0.074 0	- 0.030 - 0.076
80~120	+0.120 +0.070	+0.035 0	+0.087 0	- 0.036 - 0.090
120~180	+0.170 +0.100	+0.400 0	+0.100 0	- 0.043 - 0.106
180~250	+0.210 +0.130	+0.046 0	+0.115 0	- 0.050 - 0.122
250~315	+0.260 +0.170	+0.052 0	+0.130 0	- 0.056 - 0.137

KSOB-090 青铜轴套规格及公差
KSOB-090 Bronze Sleeve Bushing Specification & Tolerance



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	35°±5°
1.00	0.6±0.3	0.30±0.2	35°±5°
1.50	0.7±0.3	0.50±0.3	35°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

单位Unit: mm

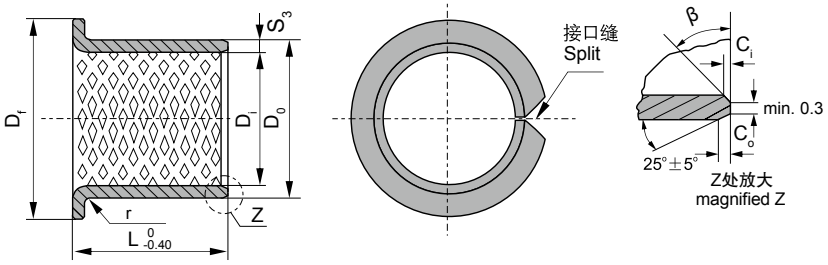
内径 D_i φd	外径 D_O φD	长度 L $^{0}_{-0.40}$												
		10	15	20	25	30	35	40	50	60	70	80	90	100
10	12	1010	1015	1020										
12	14	1210	1215	1220										
14	16	1410	1415	1420	1425									
15	17	1510	1515	1520	1525									
16	18	1610	1615	1620	1625									
18	20	1810	1815	1820	1825									
20	23	2010	2015	2020	2025									
22	25	2210	2215	2220	2225	2230								
24	27		2415	2420	2425	2430								
25	28		2515	2520	2525	2530								
28	31		2815	2820	2825	2830								
30	34		3015	3020	3025	3030	3035	3040						
32	36		3215	3220	3225	3230	3235	3240						
35	39		3515	3520	3525	3530	3535	3540						
40	44			4020	4025	4030	4035	4040	4050					
45	50			4520	4525	4530	4535	4540	4550					
50	55			5020	5025	5030	5035	5040	5050	5060				
55	60			5520	5525	5530	5535	5540	5550	5560				
60	65				6025	6030	6035	6040	6050	6060	6070			
65	70					6530	6535	6540	6550	6560	6570			
70	75					7030	7035	7040	7050	7060	7070	7080		
75	80					7530	7535	7540	7550	7560	7570	7580		
80	85					8030	8035	8040	8050	8060	8070	8080		
85	90					8530	8535	8540	8550	8560	8570	8580	8590	
90	95					9030	9035	9040	9050	9060	9070	9080	9090	
95	100							9540	9550	9560	9570	9580	9590	95100

KSOB-090 青铜轴套规格及公差
KSOB-090 Bronze Sleeve Bushing Specification & Tolerance

单位Unit: mm

内径 D_i φd	外径 D_O φD	长度 L $^{0}_{-0.40}$									
		25	30	35	40	50	60	70	80	90	100
100	105					10050	10060	10070	10080	10090	100100
105	110					10550	10560	10570	10580	10590	105100
110	115					11050	11060	11070	11080	11090	110100
115	120					11550	11560	11570	11580	11590	115100
120	125						12060	12070	12080	12090	120100
125	130						12560	12570	12580	12590	125100
130	135						13060	13070	13080	13090	130100
135	140						13560	13570	13580	13590	135100
140	145						14060	14070	14080	14090	140100
145	150						14560	14570	14580	14590	145100
150	155						15060	15070	15080	15090	150100
155	160						15560	15570	15580	15590	155100
160	165						16060	16070	16080	16090	160100
165	170						16560	16570	16580	16590	165100
170	175						17060	17070	17080	17090	170100
175	180						17560	17570	17580	17590	175100
180	185						18060	18070	18080	18090	180100
185	190						18560	18570	18580	18590	185100
190	195						19060	19070	19080	19090	190100
195	200						19560	19570	19580	19590	195100
200	205						20060	20070	20080	20090	200100
205	210						20560	20570	20580	20590	205100
215	220						21560	21570	21580	21590	215100
225	230						22560	22570	22580	22590	225100
230	235						23060	23070	23080	23090	230100
240	245						24060	24070	24080	24090	240100
250	255						25060	25070	25080	25090	250100
260	265						26060	26070	26080	26090	260100
270	275						27060	27070	27080	27090	270100
280	285						28060	28070	28080	28090	280100
290	295						29060	29070	29080	29090	290100
300	305						30060	30070	30080	30090	300100

KSOB-090F 青铜翻边轴套规格及公差
KSOB-090F Bronze Flange Bushing Specification & Tolerance

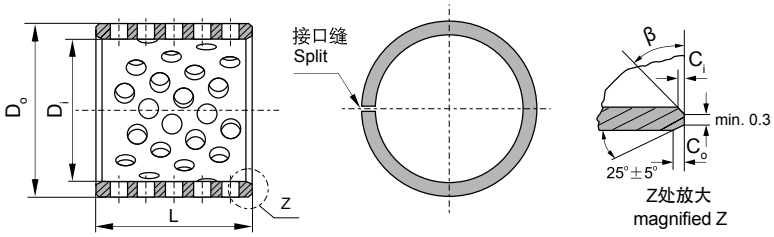


S_3	1.0	1.5	2.0	2.5
r	$1^{-0.5}$	1±0.5	1.5±0.5	2±0.5

单位Unit: mm

内径 D_i φd	外径 D_O φD	法兰外径 D_{fl}	长度 L $^{0}_{-0.40}$										
			15	20	25	30	35	40	50	60	70	80	90
25	28	35	25150	25200	25250								
30	34	45		30200	30250	30300							
35	39	50		35200	35250	35300	35350						
40	44	55			40250	40300	40350	40400					
45	50	60				45300	45350	45400	45500				
50	55	65				50300	50350	50400	50500				
55	60	70				55300	55350	55400	55500				
60	65	75				60300	60350	60400	60500	60600			
65	70	80				65300	65350	65400	65500	65600			
70	75	85					70350	70400	70500	70600	70700		
75	80	90					75350	75400	75500	75600	75700		
80	85	100					80350	80400	80500	80600	80700	80800	
90	95	110							90500	90600	90700	90800	90900
100	105	120							100500	100600	100700	100800	100900
110	115	130							110500	110600	110700	110800	110900
120	125	140							120500	120600	120700	120800	120900
130	135	155								130600	130700	130800	130900
140	145	165								140600	140700	140800	140900
150	155	180								150600	150700	150800	150900
160	165	190								160600	160700	160800	160900
170	175	200								170600	170700	170800	170900
180	185	215								180600	180700	180800	180900
190	195	225								190600	190700	190800	190900
200	205	235								200600	200700	200800	200900
225	230	260								225600	225700	225800	225900
250	255	290								250600	250700	250800	250900
265	270	305								265600	265700	265800	265900
285	290	325								285600	285700	285800	285900
300	305	340								300600	300700	300800	300900

KSOB-092 青铜轴套规格及公差
KSOB-092 Bronze Sleeve Bushing Specification & Tolerance



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	35°±5°
1.00	0.6±0.3	0.30±0.2	35°±5°
1.50	0.7±0.3	0.50±0.3	35°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

单位Unit: mm

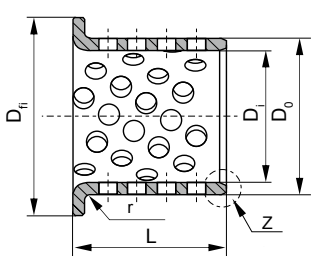
内径 D_i φd	外径 D_O φD	长度 L $^{0}_{-0.40}$												
		10	15	20	25	30	35	40	50	60	70	80	90	100
10	12	1010	1015	1020										
12	14	1210	1215	1220										
14	16	1410	1415	1420	1425									
15	17	1510	1515	1520	1525									
16	18	1610	1615	1620	1625									
18	20	1810	1815	1820	1825									
20	23	2010	2015	2020	2025									
22	25	2210	2215	2220	2225	2230								
24	27		2415	2420	2425	2430								
25	28		2515	2520	2525	2530								
28	31		2815	2820	2825	2830								
30	34		3015	3020	3025	3030	3035	3040						
32	36		3215	3220	3225	3230	3235	3240						
35	39		3515	3520	3525	3530	3535	3540						
40	44			4020	4025	4030	4035	4040	4050					
45	50			4520	4525	4530	4535	4540	4550					
50	55			5020	5025	5030	5035	5040	5050	5060				
55	60			5520	5525	5530	5535	5540	5550	5560				
60	65				6025	6030	6035	6040	6050	6060	6070			
65	70					6530	6535	6540	6550	6560	6570			
70	75					7030	7035	7040	7050	7060	7070	7080		
75	80					7530	7535	7540	7550	7560	7570	7580		
80	85					8030	8035	8040	8050	8060	8070	8080		
85	90					8530	8535	8540	8550	8560	8570	8580	8590	
90	95					9030	9035	9040	9050	9060	9070	9080	9090	
95	100							9540	9550	9560	9570	9580	9590	95100

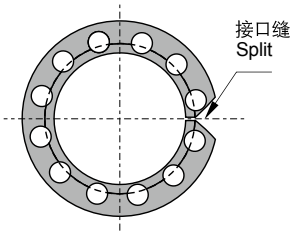
KSOB-092 青铜轴套规格及公差
KSOB-092 Bronze Sleeve Bushing Specification & Tolerance

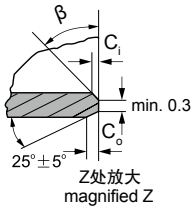
单位Unit: mm

内径 D_i φd	外径 D_O φD	长度 L $^{0}_{-0.40}$									
		25	30	35	40	50	60	70	80	90	100
100	105					10050	10060	10070	10080	10090	100100
105	110					10550	10560	10570	10580	10590	105100
110	115					11050	11060	11070	11080	11090	110100
115	120					11550	11560	11570	11580	11590	115100
120	125						12060	12070	12080	12090	120100
125	130						12560	12570	12580	12590	125100
130	135						13060	13070	13080	13090	130100
135	140						13560	13570	13580	13590	135100
140	145						14060	14070	14080	14090	140100
145	150						14560	14570	14580	14590	145100
150	155						15060	15070	15080	15090	150100
155	160						15560	15570	15580	15590	155100
160	165						16060	16070	16080	16090	160100
165	170						16560	16570	16580	16590	165100
170	175						17060	17070	17080	17090	170100
175	180						17560	17570	17580	17590	175100
180	185						18060	18070	18080	18090	180100
185	190						18560	18570	18580	18590	185100
190	195						19060	19070	19080	19090	190100
195	200						19560	19570	19580	19590	195100
200	205						20060	20070	20080	20090	200100
205	210						20560	20570	20580	20590	205100
215	220						21560	21570	21580	21590	215100
225	230						22560	22570	22580	22590	225100
230	235						23060	23070	23080	23090	230100
240	245						24060	24070	24080	24090	240100
250	255						25060	25070	25080	25090	250100
260	265						26060	26070	26080	26090	260100
270	275						27060	27070	27080	27090	270100
280	285						28060	28070	28080	28090	280100
290	295						29060	29070	29080	29090	290100
300	305						30060	30070	30080	30090	300100

KSOB-092F 青铜翻边轴套规格及公差
KSOB-092F Bronze Flange Bushing Specification & Tolerance







S_3	1.0	1.5	2.0	2.5
r	$1^{-0.5}$	1±0.5	1.5±0.5	2±0.5

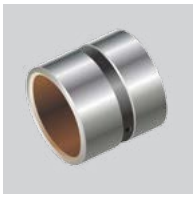
单位Unit: mm

内径 D_i φd	外径 D_O φD	法兰外径 D_{fl}	长度 L $^{0}_{-0.40}$										
			15	20	25	30	35	40	50	60	70	80	90
25	28	35	25150	25200	25250								
30	34	45		30200	30250	30300							
35	39	50		35200	35250	35300	35350						
40	44	55			40250	40300	40350	40400					
45	50	60				45300	45350	45400	45500				
50	55	65				50300	50350	50400	50500				
55	60	70				55300	55350	55400	55500				
60	65	75				60300	60350	60400	60500	60600			
65	70	80				65300	65350	65400	65500	65600			
70	75	85					70350	70400	70500	70600	70700		
75	80	90					75350	75400	75500	75600	75700		
80	85	95					80350	80400	80500	80600	80700	80800	
90	95	110							90500	90600	90700	90800	90900
100	105	120							100500	100600	100700	100800	100900
110	115	130							110500	110600	110700	110800	110900
120	125	140							120500	120600	120700	120800	120900
130	135	165								130600	130700	130800	130900
140	145	165								140600	140700	140800	140900
150	155	180								150600	150700	150800	150900
160	165	190								160600	160700	160800	160900
170	175	200								170600	170700	170800	170900
180	185	215								180600	180700	180800	180900
190	195	225								190600	190700	190800	190900
200	205	235								200600	200700	200800	200900
225	230	260								225600	225700	225800	225900
250	255	290								250600	250700	250800	250900
265	270	305								265600	265700	265800	265900
285	290	325								285600	285700	285800	285900
300	305	340								300600	300700	300800	300900

其它产品
Other products

				
KBSL滑块	KFFBD轴瓦	PTFE镶嵌轴承	KBSLA球碗	KDBS球铰

				
KCBSP V型导板	KCBS V型导板	JSL滑板	KPGPB导板	KCPGP导板

				
KSPS 凸轮行程滑板	钢基铜合金精密导套	钢基粉末烧结轴承	钢基铜合金轴承	K850S导板

				
K850S导板	K850BM轴承	钢套	092油槽轴承	车桥轴套

				
8字型侧摩擦片	FZ铝基直线轴承	FZ铜基直线轴承	FR铜网PTFE轴承	四氟软带

KSOB650 轴承的装配
KSOB650 Bearing Installation

机械压装 Pressure assembly

通常情况下，轴承可以采用压力装配的方式进行安装，装配时应采用芯轴慢慢压入，禁止直接击打轴承以免产生变形，装配前应确保座孔内表面光洁无异物。

In most applications, KSOB bearings can be fitted by press. For this procedure, a mandrel and a press machine are used, it is forbidden to hit the bearing in order to avoid deformation of bearings. The housing inner side should smooth without contamination.

冷冻装配 Pressure assembly

通过液氮或干冰采用冷装配压装相比采用机械压装方式更为有效，此时标准的冷冻温度为 -40℃ ~-70℃，冷冻时间一般为 1 小时以上，具体需要根据零件的壁厚和配合公差。

The cooling fit uses liquid nitrogen or dry ice, compared to press fitting, cooling fit is efficient and achieves more accurate installarion. The standard cooling temperature is -40℃ ~-70℃ , cooling time should be more than one hour, details according to the bushing wall thickness and interference design.

轴承的收缩量可以根据以下公式计算：

Calculation of bearing shrinkage amount of outer diameter:

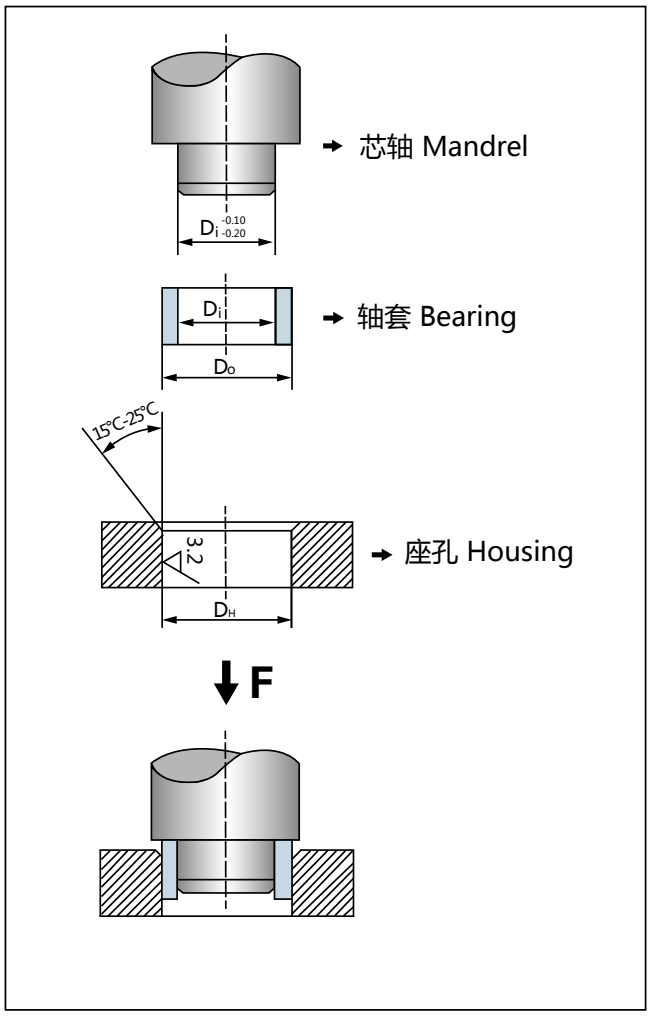
▵ D=D×α×▵ T

▵ D：外径收缩量 Shrinkage of bearing OD

D：轴承外径 Bearing OD

α: 线性膨胀系数（$1/10^5$K）

▵ T：温度差 Temperature difference



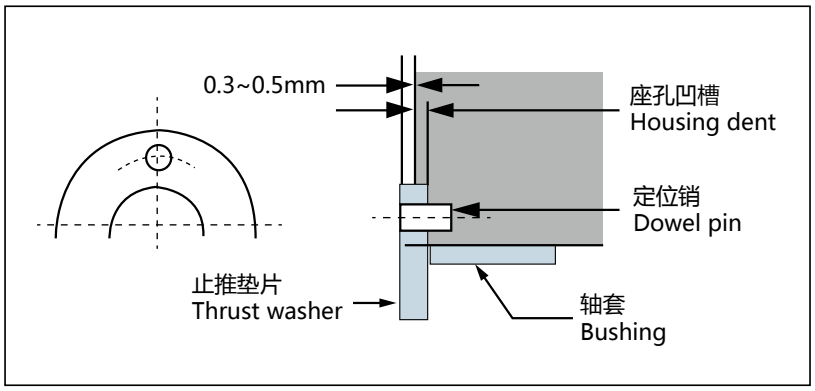
KSOB650 轴承的装配
KSOB650 Bearing Installation

止推垫片和滑板的安装 Thrust washers and plate fit

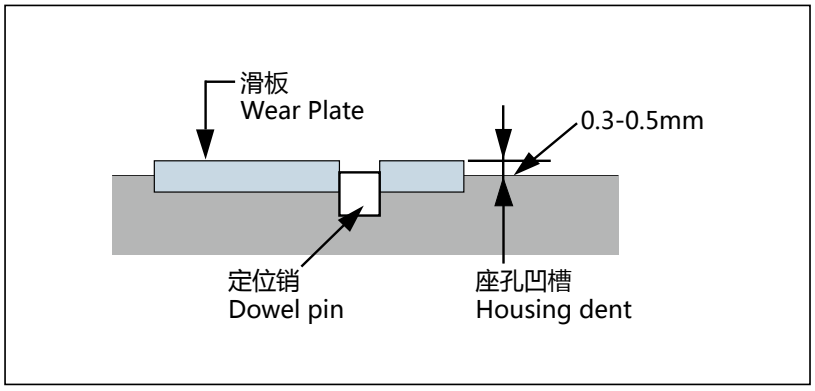
止推垫片和滑板应当安装在座孔的凹槽内，为了避免零件的移动建议使用定位销或沉头螺丝加以固定。

It is recommend to install the thrust washers and sliding plates with the hollow indented housings. To avoid the moving of such parts, a dowel pins is recommended to be installed.

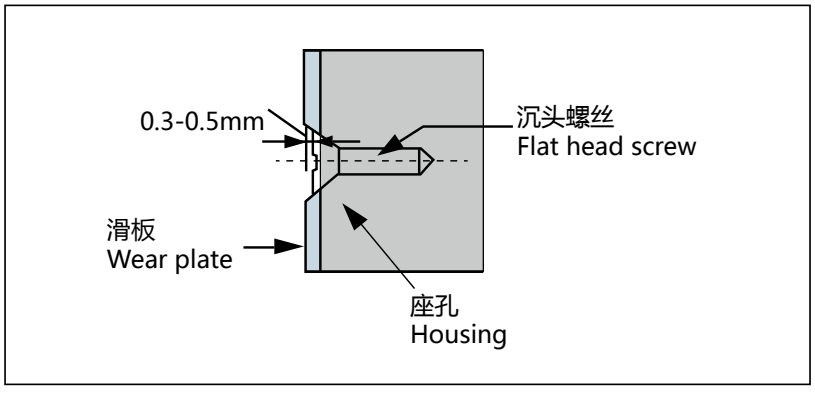
1.定位销安装 Dowel pin application(thrust washer)



2.镶嵌式安装 Inlaid installation(plate)



3.沉头螺丝安装 Flat head screw application



卷制类轴承尺寸公差检测方法
Wrapped Bushing Dimensional Inspection

卷制类产品的制造工艺决定了开口缝的存在，使得产品在自由状态下没有很好的圈整度，同时轴套外径和座孔之间为过盈配合，轴套要最大限度地适应座孔的形状，因此不能在自由状态下直接测量产品的内外径而必须使用特殊的测量仪和设备才能检测； ISO3547 标准第 2 部分中对卷制类产品的公差检验作了明确的规定， 包括：

检验方法 A： 哈夫规检验外径；
检验方法 B： 止通规检验外径；
检验方法 C： 止通规检验内径；
检验方法 D： 测量尺检验大规格产品外径
以及替代检验方法 C 的壁厚检验方法， 壁厚检验方法和检验方法 C 不能同时使用。

Rolled products in the manufacturing process determine the existence of open joints, making products in the free state not habe a good whole circle shape, while sleeve diameter and the seat for the interference fit between the holes, sleeve adapted to maximize Block hole shape can not be directly measured in the free state the inner/ outside diameter of the product only can be by a special measuring instrument; In ISO3547 standards measured Part 2 of the rolled products made clear tolerance test requirements, including :

Test Method A: Huff regulatory test outside diameter;
Test method B: use stop-pass gauge to test the outside diameter;
Test method C: use stop-pass gauge to test the inside diameter;
Test method D: Measure the outer diameter of large scale product and use wall-thickness test to replace test method C. (Wall-thickness test and test method C can not be used at the same time.)

外径检验方法 External diameter test methods

检验方法 A (ISO3547-2: Test A)

采用如右视图的上下两哈夫规对外径进行检验，检验时产品的开口缝朝上哈夫规相向施加检验载荷 Fch， 该载荷使卷制轴套能够按符合要求的方式就位于检验模。 检验中， 由于弹性变形卷制轴套外径会变小但不会产生永久变形。 产品的外径可以通过检验模之间的距离 Z 的变化量 ▵ Z 来计算。

Test A of ISO 3547 Part 2

Check the outside diameter of a wrapped bush using measuring equipment as shown to the right, with a checking block consisting of upper and lower halves and setting plugs, at a determined checking load of Fch, during the test the outside diameter of the bush is made smaller by the elastic reduction, however it is not a permanent deformation. The bushes outside diameter can be calculated from the difference in the value of z (⊿Z)

检验方法 B (ISO3547-2: Test B)

检验采用两个环规即通规和止规，用手以最大力 250N 可将轴套推入并通过通规；在相同情况下无法进入和通过止规。在某些情况下检验精度可能受到影响，比如轴套不圆或闭合开口缝的力本身已超过 250N，此时建议采用检验方法 A 或测压入力或壁厚相结合的检验方法。

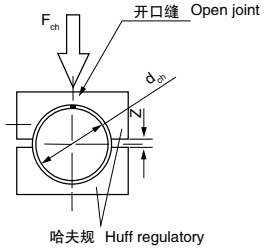
Test B of ISO 3547 Part 2

The test is carried out with two ring gauggs, a Go gauge and a No Go gauge whose diameter Shall be chosen empirically from with Table 6 of ISO3547-1:1999 and agreed upon. It shall be possible to press the bushes into the GO gauge and then push them through with hand pressure (maximum force 250N). On the other hand with the same force, it shall not be possible for them to go into and through the NO GO gauge (See ISO 12307-1)

检验方法 D (ISO3547-2: Test D)
采用精确的测量尺来测量外径， 一般针对大规格的轴套外径检测。

Test D (ISO 3547-2)
The test is carried out by means of a precision measuring tape.

检验方法 A Test A of ISO



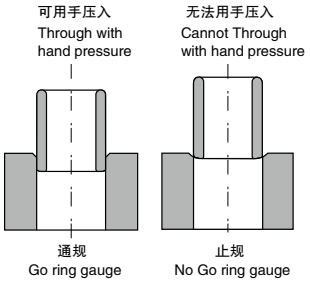
哈夫规和芯棒 Checking block and setting mandrel d_{ch}=_____mm

检验压力 Torce test F_{ch}=_____N

极限值 Limiting value △ $_Z$=____and____mm

外径公差 OD tolerance D_o=____to____mm

检验方法 B Test B of ISO



卷制类轴承尺寸公差检测方法
Wrapped Bushing Dimensional Inspection

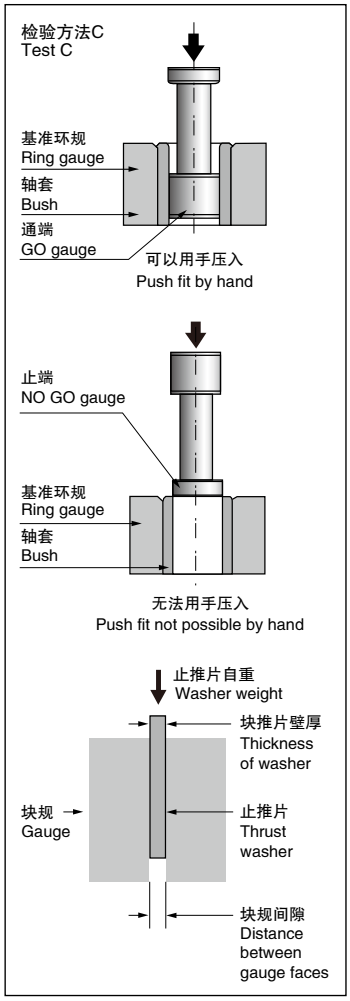
内径检验方法 Internal diameter test methods

检验方法 C (ISO3547-2: Test C)

将轴套压入基准环规后检查轴套的内径，内径的检测可以采用三点测量装置或通、止塞规检验。从实际使用考虑一般建议采用通、止塞规检验，此时在用手最大推力不超过 250N 时通端塞规可以通过轴套内孔，在相同情况下止端塞规应当无法通过轴套内孔。当轴套压入基准环规后，轴套外径可能会引起永久变形而无法正常使用。

Test C (ISO3547-2: Test C)

To check the inside diameter, the bush is to be pressed into a ring gauge, whose nominal diameter corresponds to the dimension specified in ISO3547-1:1999.The inside diameter shall be measured with a 3-point measuring instrument or checked with a GO and NO GO plug gauge. The GO plug gauge shall be inserted by a minimum effort; the NO GO plug gauge shall not be inserted by manual pressure(maximum force 250N). In order to enable the manufacturer and the customer to compare results of this test it should be agreed whether results should be obtained by measuring or by gauging.



止推片检验方法 Thrust washer test method

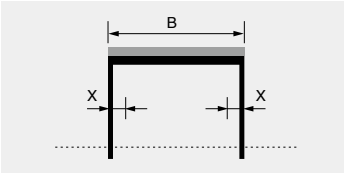
除了厚度公差以外，垫片的平行度对于垫片和对磨件的使用寿命同样重要。我们使用比较有效的检验方法来检测垫片的平行度，让垫片依靠自重来通过两个平行块；当然平行块必须大于垫片本身的规格。

Beside the thickness, the flatness of washer is also important for washer and grinding parts' usage age. We use very helpful test in which the washer falls through the gap between two plain parallel plates of a gauge under its dead weight. The plates must be big enough to cover the whole washer.

壁厚检测方法 Wall Thickness test method

作为检验方法 C 的替代方案两则不能同时使用，壁厚根据轴套尺寸在轴向进行测量。

The wall thickness is measured at once,two or three positions axially according to the bearing dimensions.The wall thickness and the inside diameter shall not be specified together on the same drawing.

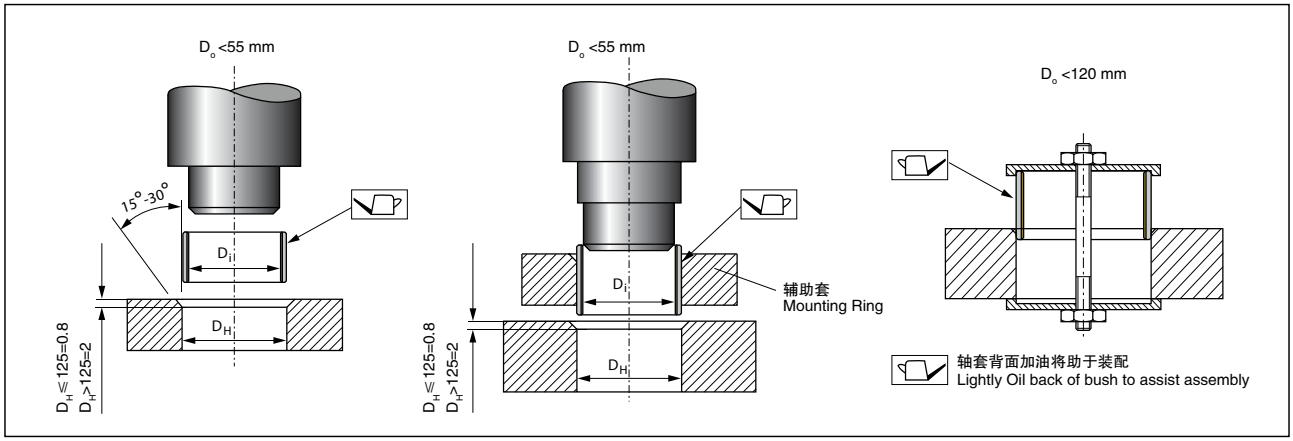


测量点
Measurement position

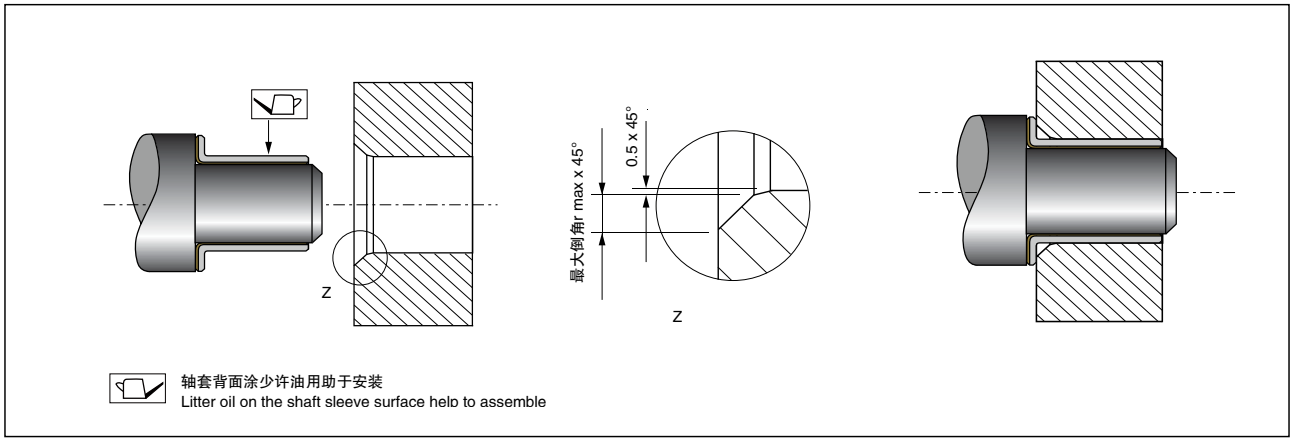
B[mm]	X[mm]	测量点 measurement position
B≤15	B/2	1
15 < B≤50	4	2
50 < B≤90	6 and B/2	3
B > 90	8 and B/2	3

卷制类轴承的安装
Wrapped Bushing Installation

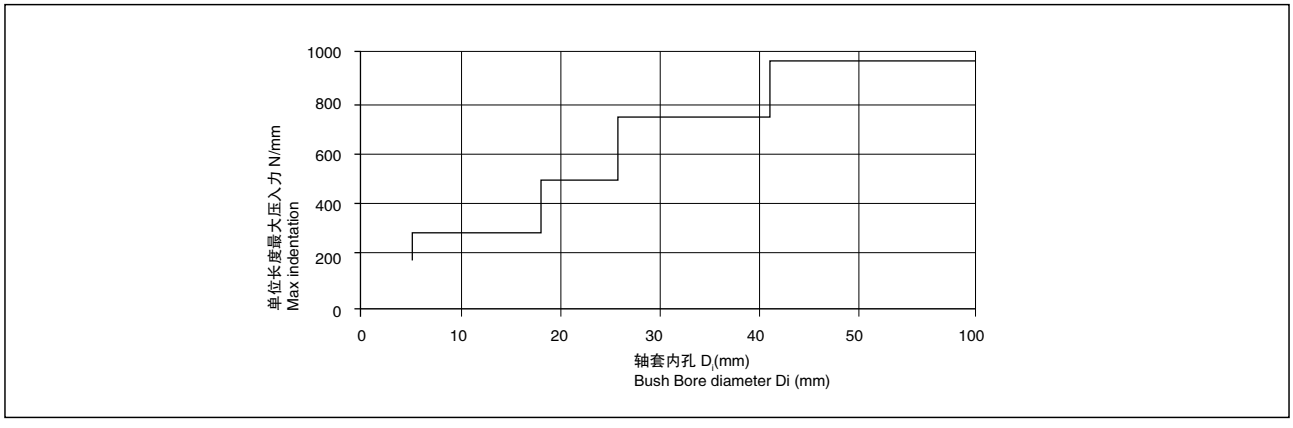
直套安装 Straight set of installation



翻边套安装 Flange set of installation



压入力计算 Indentation Calculation



卷制类轴承的安装
Wrapped Bushing Installation

同轴度 Concentricity

精确的同轴度对于轴承的正常使用非常重要， 要求轴套在一个或者两个长度内的不同轴度以及在翻边或止推片直径内的不同轴度控制在0.02mm 内。

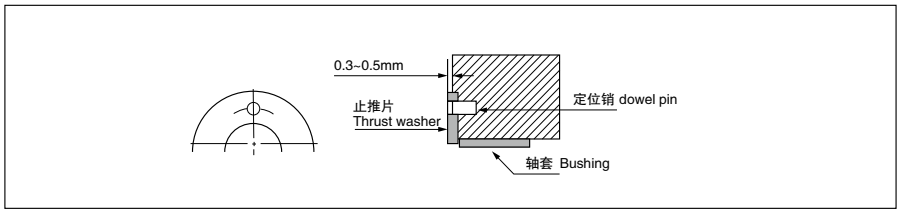
Degree of precision coaxial bearing the normal use for a very important requirement sleeve length in one or two degrees of the different axes and in the flange or thrust washer diameter of the different degree of control shaft within 0.02mm.

垫片和滑板的安装 Thrust washers and sliding plates installation

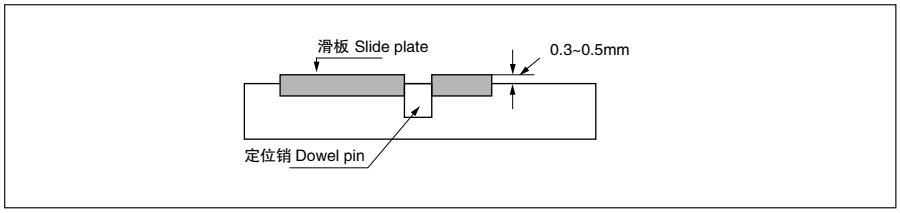
建议垫片和滑板安装在凹陷的座孔内， 为了避免移动，同时建议采用定位销加以固定。

It is reconmmended to install the thrust washers and sliding plates with the hollow indented housing.To avoid the moving of such parts,a Dowel pins is recommended to be installed.

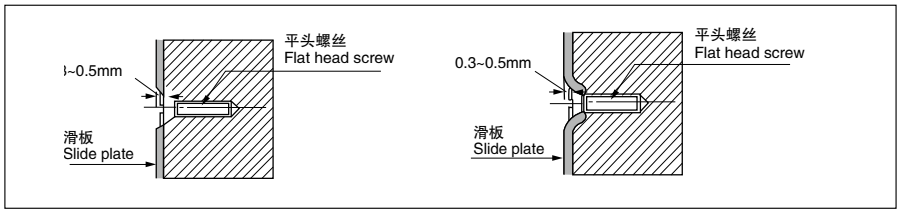
1. 定位销在垫片上的使用 Dowel pin application (thrust waher)



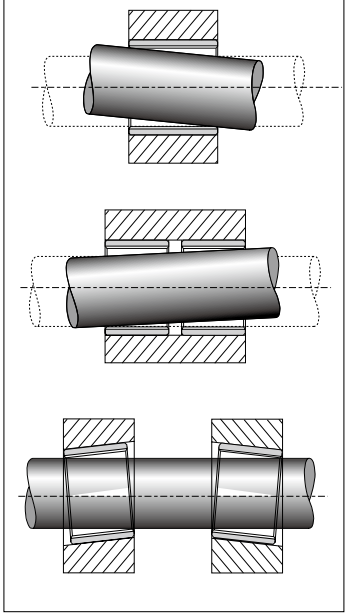
2. 定位销在滑板上的使用 Dowel pin used on slide plate

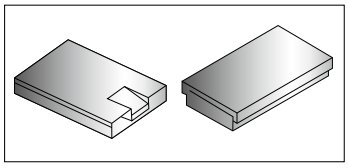


3. 平头螺丝的使用 Flat head screw application



同轴度要求
Concentricity requirements





其他固定方法 Other fixation methods

当无法使用定位销时， 可以采用激光焊接， 粘结剂和钎焊 （温度 <320℃ ） 的方法加以固定； 此时必须主意使用的温度不能超过轴承材料本身能够承受的范围， 轴套工作面防止与粘合剂等接触。

When the pin is not available, you can use laser welding, adhesives and brazing (temperature < 320 ℃) method to be fixed; while do in this way, temperature used must not higher then the bearing material itself can be standed, the cleeve face should be prevent from contacting with adhesives.

卷制类轴承的安装
Wrapped Bushing Installation

PTFE基轴承的加工和安装注意事项 Processing and installation considerations of PTFE-based bearing

PTFE 基轴承一般都是成品零件，组装后内孔不再进行铰、镗等加工，若座孔按推荐的尺寸加工时，卷制类轴承内径的真圆度完全能满足使用要求；

如果客户可以接受干摩擦性能大幅度降低，可以对 PTFE 基轴承在安装后进行内孔挤压以达到更高的精度，强烈建议对挤压芯棒表面进行热处理（深度 0.6mm，HRC ＞ 55）并抛光处理至 Rz1；

当轴承的比压力小或摆动小而要求运行平稳时，可以增大工作间隙，在高温下使用时，每升高 100℃时建议轴径减少 0.008mm；

若轴承座材质是青铜、铝或锌合金时，建议减少轴承座孔以增加轴承装配过盈量；为保证轴承座的刚性，轴承座外径通常为轴承外径的 1.5 倍，薄壁座孔使用时需要考虑压装和使用过程的产生的变形；

PTFE 轴承需要加工时，为了避免毛刺的产生建议从 PTFE 一侧进行加工或钻孔，在钻孔过程中轴套应当有足够的支撑已确保不会由于钻孔压力导致变形；带材的加工方法可以通过剪切、水切割、激光切割等方法。

PTFE-based bearings are generally finished parts, assembled in the hole without the hinge, and other processing, if the bore size of the recommended process, the rolling type bearings with bore roundness can meet the requirements;

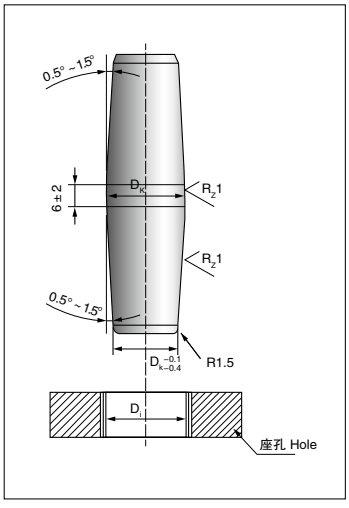
If the client can accept a significant reduction of dry friction, extruding the inner holes on the PTFE-based bearing after the compression to achieve higher accuracy, we strongly recommend the extrusion mandrel surface treatment (depth of 0.6mm, HRC ＞ 55) and polished to Rz1;

When the bearing's specific pressure is small and required to run a smooth swing, you can increase the working space, when used at high temperatures, it is increased by 100 ℃ , the proposed reduction of shaft diameter 0.008mm;

If the material of bearing is bronze, aluminum or zinc alloy, it is recommended to reduce the bearing hole to increase the amount of interference bearing assembly; to ensure the bearing rigidity, The base of bearing's diameter is usually 1.5 times to the bearing's diameter, thin-walled bore with pressure to consider when installed and used in the process of the deformation;

PTFE bearings need processing, in order to avoid the generation of burrs from the PTFE side of the proposed processing or drilling in the drilling process should have sufficient support sleeve has been to ensure that no pressure leads to deformation of the borehole; processing methods strip can cut, water jet cutting, laser cutting and other methods.

轴承内径 Dia of the axis d	要求内径 Required ID dE	整形工具直径 Diameter of the shaping tools dk
d	d	d+0.03
	d+0.02	d+0.06
	d+0.03	d+0.08
	d+0.04	d+0.10



卷制类轴承的安装
Wrapped Bushing Installation

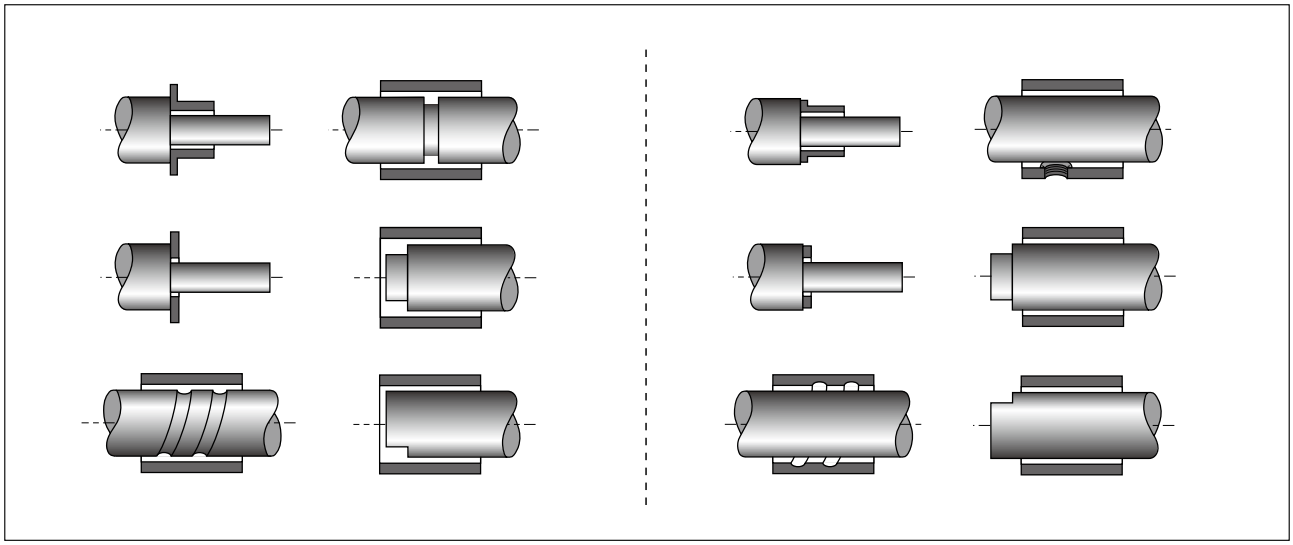
对磨轴 The shaft

对磨件的材料、表面硬度、表面粗糙度以及表面处理方式对于轴承的使用寿命的影响很大，一般情况下我们建议轴的硬度在 HRC ＞ 50，表面粗糙度 Ra0.4 以下；在潮湿或易腐蚀的场合建议使用不锈钢、硬质铬镀层。

Grinding pieces of material, surface hardness, surface roughness and surface treatments have a great impact on the life of bearing, in general, we recommend that the hardness of the shaft HRC ＞ 50, surface roughness below Ra0.4; We suggest using stainless steel, hard chrome plating in the wet or corrosive place.

不正确的设计
Incorrect design

正确的设计
Correct design



密封 Seal

金属塑料基自润滑轴承允许一些不会损害轴承表面材料的异物进入，但当异物的侵入增加或高踞磨型物质进入时应当安装核实的密封圈以提高轴承的使用寿命。

If increased levels of contamination occur or the bearing is used in an aggressive environment, the bearing section should be protected from dust and containment. The normal solution is to re-design the surrounding structure so that the contamination cannot reach the bearing section. If the contamination is critical, a collar of grease or a shaft seal is recommended.