

ANCHI

SLIDING BEARING

嘉善安驰轴承制造有限公司

JIASHAN ANCHI BEARING MANUFACTURING CO.,LTD

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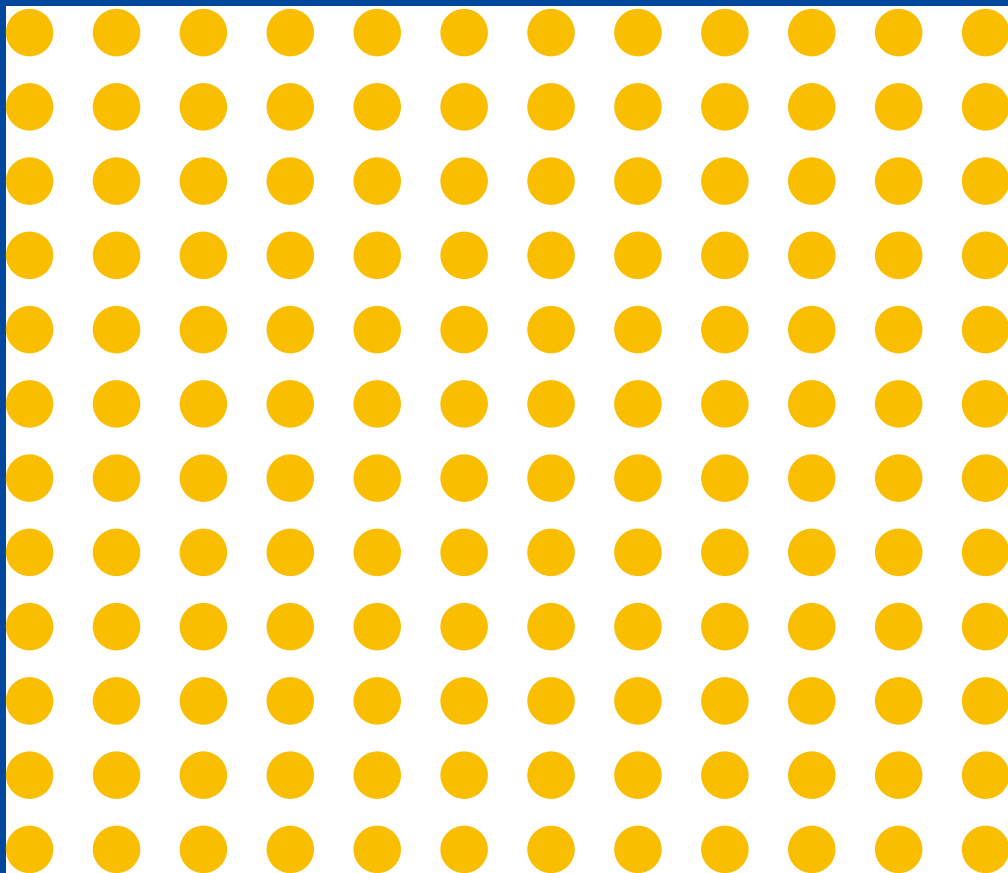
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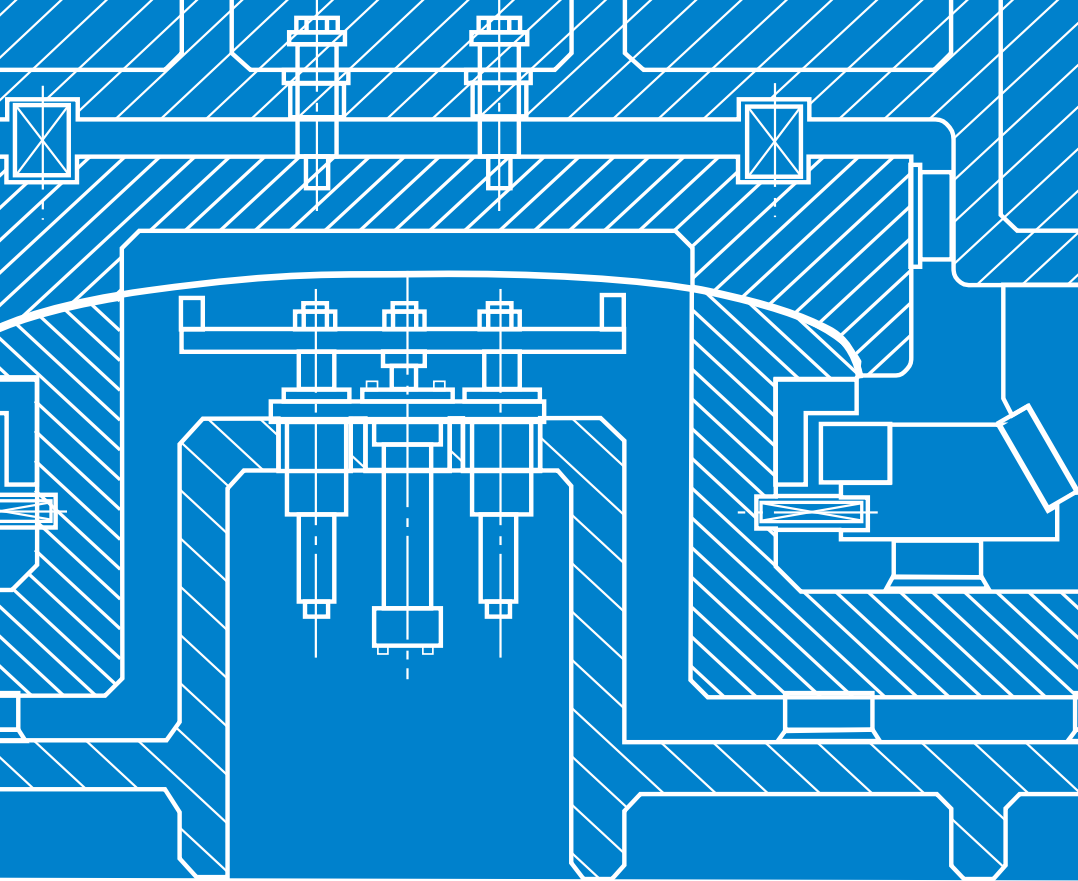


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公司简介

INTRODUCTION

嘉善安驰轴承制造有限公司是一家专业生产滑动类轴承的加工企业，工厂坐落于中国最大的无油轴承生产基地浙江省嘉善县，地理位置位于浙江省北部，与江苏省及上海市交汇处。产品主要出口德国、意大利、西班牙及北美和中东地区，拥有自营进出口权。国内主要销往上海、江苏、浙江、广东、山东、北京、天津、河北、河南、安徽、陕西、四川、重庆、陕西、内蒙古、新疆、青海、江西等各省市自治区，产品广泛应用于冶金、汽车、摩托车、拖拉机、石油、电机、电子、机床、轧机、液压、建筑机械、工程机械、水利、水电工程、药用机械、轻工机械、食品机械、航天航空、铁路机车等领域。

现主要产品有SF-1 (DU) 系列三层复合无油轴承、SF-2(DX)系列边界润滑轴承、JDB(SPB)系列铜基固体镶嵌式自润滑轴承、JF800系列双金属轴承、FB090系列青铜卷制轴承、FU系列含油粉末冶金轴承、FZ系列钢球保持架直线轴承等，我公司现主要按照德国DIN1494标准加工，并可按客户要求定做加工各种标准类或非标准类产品。

随着国内需求量的不断攀升，我公司将提供更加优质的产品及一如既往的真诚服务，欢迎广大新老客户光临指导。

Jiashan Anchi Bearing manufacturing is a professional production of sliding bearing processing enterprise. The factory is located in China's largest oilless bearing production base Jiashan city, Zhejiang province, which is stated in the north of Zhejiang province, in the interchange of Jiangsu and Shanghai. Our products are mainly exported to Germany, Italy, Spain, and North America and Middle East. We have the self-management import and export right. Our main domestic market is in Shanghai, Jiangsu, Zhejiang, Guangdong, Shandong, Beijing, Tianjin, Hebei, Henan, Anhui, Shaanxi, Sichuan, Chongqing and Shaanxi, Inner Mongolia, Xinjiang, Qinghai, Jiangxi and so on. The products are widely used in metallurgy, automobile, motorcycle, tractor, petroleum, motors, electrics, machine tool, rolling mill, hydraulic, construction machinery, engineering machinery, water conservancy, water and electricity engineering, medicinal machinery, light industry machinery, food machinery, aerospace, railway locomotive, etc.

Our main products are SF - 1 (DU) series three layer compound oilless bearings, SF - 2 (DX) series boundary lubrication bearings, JDB (SPB) series, copper matrix solid inlaying lubricated bearings, JF800 series double metal bearing, FB090 series bronze rolling bearings, FU series oil powder metallurgy bearing, FZ series steel ball maintaining linear bearings. Our products are mainly processed under the German DIN1494 standard and they can also be customized according to customers' special requirements.

With the rising domestic demand, our company will provide more high-quality product and our continuously sincere service as before. Welcome new and old customers to come and guide.

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 Oilless L Guide Plate



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 Oilless Bushing



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JDB 铜基固体镶嵌式自润滑轴承

Bronze Solid Enchase Self-lubricating Bearing

材料组织 MATERIAL STRUCTURE



JDB-650 固体镶嵌润滑轴承 (标准公差尺寸见第07页) Solid Lubricant Embedded Bushing

JDB-650固体镶嵌润滑轴承,是在高力黄铜(ZCuZn25Al6Fe3Mn4)的基体上,镶嵌石墨或MoS₂固体润滑剂的高性能固体润滑产品。它突破了一般轴承依靠油膜润滑的局限性。在使用过程中,通过摩擦热使固体润滑剂与轴摩擦,形成油、粉末并存润滑的优异条件,既保护轴不磨损,又使固体润滑特性永恒。它的硬度比一般铜套高一倍,耐磨性能也高一倍。目前已广泛运用于冶金连铸机,注塑机、列车支架、轧钢设备、矿山机械、船舶、气轮机等高温、高载、低速重载等场合使用。

JDB-650 solid lubricant embedded bushing is a new type made from strong brass and homogeneously embedded with solid lubricant in its body. It breaks through the limit of general bearing whose lubrication depends on oil film. So it is suitable for high temperature, heavy duty, anti-Corrosion, or where oil is hard to be introduced. Its performance doubles both on hardness and wear-friction. It is now widely applied in successive casting machines, steel rollers in metallography, mineral machine, ships, steam turbine, hydraulic turbines and injection molding machines for plastics.

※技术参数: Technical Data

性能指标 Performance index		数据 Data	
基体硬度 Bass Hardness	HB210~270	使用极限PV值 PV limit	干(Dry)1.65N/mm ² ·m/s 油(Oil)3.25N/mm ² ·m/s
摩擦系数 Friction coef (μ)	<0.16	极限载荷 Dynamic load limit	100N/mm ²
最高使用温度 Temperature limit	-40°C ~ +300°C	最高滑动速度 Speed limit	干(Dry)0.5m/s 油(Oil)2m/s

可供参考的材料及技术指标

JDB650 系列	650	650S1	650S2	650S3	650S5 特硬高力黄铜
Cu	65	85	80	88	80
Sn		5		12	10
Pb		5			10
Zn	25	5			
Ni					
Al	6		10		
Fe			5		
Mn	4				
密度	8.0	8.8	7.6	8.8	8.9
硬度 HB	>210	>70	>150	>80	>250
可拉力 N/mm ²	>750	>200	>500	>260	>800
延伸率 %	>12	>15	>10	>8	>8
膨胀系数	1.9×10 ⁻⁵ /°C	1.8×10 ⁻⁵ /°C	1.6×10 ⁻⁵ /°C	1.8×10 ⁻⁵ /°C	1.9×10 ⁻⁵ /°C
摩擦系数	0.03~0.20	0.03~0.18	0.03~0.20	0.03~0.18	0.03~0.20
导热性	60W/(m·k) ⁻¹	60W/(m·k) ⁻¹	60W/(m·k) ⁻¹	60W/(m·k) ⁻¹	60W/(m·k) ⁻¹
最高温度	-40°C ~ +300°C	-40°C ~ +400°C	-40°C ~ +400°C	-40°C ~ +400°C	-40°C ~ +300°C
最大承受力 N/mm ²	100	60	50	70	150
最大线速度 m/min	15	10	20	10	10
最大 PV 值 N/mm ² ·m/min	200	60	60	80	200

固体润滑剂	特性	典型用途
高纯石墨 + 添加剂	很好的耐磨性和化学稳定性,使用温度 <400°C	适用于一般机械,在大气中使用
SL4+MOS2 PTFE+MOS2+CF	极低的摩擦系数和很好的水润滑性,使用温度 <300°C	适用于水,海水润滑,如船舶,水工弧门,制药饮料机械等

JDB 铜基固体镶嵌式自润滑轴承

Bronze Solid Enchase Self-lubricating Bearing

材料组织 MATERIAL STRUCTURE



JDB-600 油沟铜衬套 Oil Groove Bronze Bushing

JDB-600铜套，是一种以油沟涌油作为润滑的高力黄铜轴承。该产品具有传统的锡青铜轴承功能，由于采用高力黄铜(ZCuZn25Al6Fe3Mn4)后，它的HB硬度提高了一倍，所以在低速的场合使用该产品，比一般青铜套寿命可以延长一倍，而且其承载压力大，能适应重载的场合使用。并可按客户要求提供如下材质。

JDB-600 copper sleeve, is a kind of groove Bay oil as lubrication oil of high strength brass bearings. The product has a function of the traditional bronze bearings, the use of high strength brass (ZCuZn25Al6Fe3Mn4), its hardness HB doubling the occasion so low to use the product, than the average life span can be extended twice bronze sets, and its bearing pressure, can adapt to overloaded occasions.

※技术参数: Technical Data

材料型号 Material type	高力黄铜 ZCuZn25Al6Fe3Mn4	锡青铜 ZCuSn5Pb5Zn5 5-5-5	锡青铜 ZCuSn6Zn6Pb3 6-6-3	锡青铜 ZCuSn10Pb1 10-1	特硬高力黄铜 ZCuZn25Al6Fe3Mn4	铅青铜 ZCuPb10Sn10 10-10
化学元素 Chemical elements	Cu	65	85	89	65	80
	Sn		5	10		10
	Pb		5	3		10
	Zn	25	5	6	25	
	Ni					
	Al	6				6
	Fe					
Mn	4				4	
屈服强度 Yield point	>350	>90	>150	>170	>450	>140
抗拉强度 Tensile Strength	>750	>250	>270	>310	>800	>220
延伸率 Extension Rate	>12	>15	>15	>16	>4	>16
硬度 Hardness	210	70	95	88	250	68



JDB-450 钢铜镶嵌轴套 Steel and Bronze Embedded Bushing

JDB-450钢铜浇铸轴套，是在钢套的基体内，离心浇铸铜层后嵌入固体润滑剂的固体润滑产品，除具有JDB-650的功能外，还能节省成本，提高抗压强度。它的端面可以与基体焊接安装使用，因此适用于冶金机械、建筑机械和输油机械中等不可以加油的领域。

JDB-450 has almost the same constructure as JDB-650. Suitable for low load position, wear performance worsens when under middle or high load. The mating layer is same as JDB-650 so that more cost-saving than JDB-650 whereas compression strength increases and weldable. Most suitable for dry position in construction, metallurgical machines, conveyor machines etc.

※技术参数: Technical Data

性能指标 Performance index		数据 Data	
基体硬度 Bass Hardness	HB60-90	使用极限PV值 PV limit	1.6N/mm ² ·m/s
摩擦系数 Friction coef (μ)	<0.16	极限动载荷 Dynamic load limit	70N/mm ²
最高使用温度 Temperature limit	300°C	最高滑动速度 Speed limit	0.5m/s

JDB 铜基固体镶嵌式自润滑轴承

Bronze Solid Enchase Self-lubricating Bearing

材料组织 MATERIAL STRUCTURE



JDB-250 球墨铸铁镶嵌轴承 Nodular Cast Iron

JDB-250球墨铸铁镶嵌轴承，是以HT250为基材嵌入固体润滑剂的新产品，是一种典型的省材产品。若在压力 $<14.5\text{N/mm}^2$ 。时或机械性能要求不是很高的场合，可作JDB-650材料的取代品。能大大地降低成本，满足使用要求。例如：模具导柱、注塑机模架等领域完全可以使用。

JDB-250 is based on cast iron HT250 and embedded with solid lubricant. Very good performance when under low load. Not suitable for middle and high load. A typical cost saving material, can substitute JDB-650 to be applied in the position without high requirements such as die guider, plastic injection machines etc.

※技术参数：Technical Data

性能指标 Performance index		数据 Data	
基体硬度 Bass Hardness	HB80-230	使用极限PV值 PV limit	$0.8\text{N/mm}^2\cdot\text{m/s}$
摩擦系数 Friction coef (μ)	<0.18	极限动载荷 Dynamic load limit	60N/mm^2
最高使用温度 Temperature limit	400°C	最高滑动速度 Speed limit	0.5m/s



JDB-250G 轴承钢钢套 Steel Embedded Bushing

JDB-250G钢基镶嵌轴承，是加强型产品，具有极高的抗压性能，在镶嵌石墨工作时排出润滑颗粒的情况下，使轴与套之间产生一层隔膜，起到了比单体油润滑抗咬合的优点。在起重机械的支撑部位特别适应。例：卷土机支撑、吊车支撑等，但不宜在水中或酸碱场合使用。

JDB-250G is reinforced product of JDB series. It is based steel GCr15 and embedded with solid lubricant. It is of high compress strength and particularly suitable of supporting position in hositing machines,e.g. Thesupport or stand of windlass and of crane. But it should not be appliedin water or in acid/alkali circumstance. Can be used under low, middle and highload. Due to its superb high hardness, when under high load, it overperforms than other JDB type. Not suitable for water, acid, alkali circumstances. Most suitable for the supporting position of hoisting machine,e.g. bulldozer supporter, hoister supporter, reeling machine supporter etc.

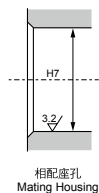
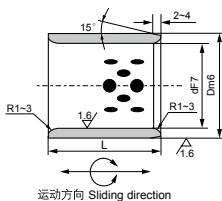
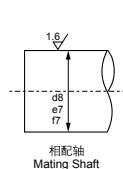
※技术参数：Technical Data

性能指标 Performance index		数据 Data	
基体硬度 Bass Hardness	HRC58-60	使用极限PV值 PV limit	$2.5\text{N/mm}^2\cdot\text{m/s}$
摩擦系数 Friction coef (μ)	<0.17	极限动载荷 Dynamic load limit	250N/mm^2
最高使用温度 Temperature limit	350°C	最高滑动速度 Speed limit	0.1m/s

JDB-650 固体镶嵌自润滑轴承

Bronze Solid Enchase Self-lubricating Bearing

材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite



单位:unit:mm

IDF7 (内径)	ODm6 (外径)	L $\begin{matrix} -0.10 \\ -0.30 \end{matrix}$														
		8	10	12	15	16	20	25	30	35	40	50	60	70	80	
8	12	081208	081210	081212	081215											
	$\begin{matrix} +0.028 \\ +0.013 \end{matrix}$															
10	14	101408	101410	101412	101415		101420									
	$\begin{matrix} +0.018 \\ +0.007 \end{matrix}$															
12	18		121810	121812	121815	121816	121820	121825	121830							
13	19		131910		131915	131916										
14	20		142010	142012	142015		142020	142025	142030							
	$\begin{matrix} +0.034 \\ +0.016 \end{matrix}$															
15	21		152110	152112	152115	152116	152120	152125	152130							
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16	22		162210	162212	162215	162216	162220	162225	162230	162235	162240					
18	24			182412	182415	182416	182420	182425	182430	182435	182440					
20	28		202810	202812	202815	202816	202820	202825	202830	202835	202840	202850				
22	32			223212	223215		223220	223225								
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25	33			253312	253315	253316	253320	253325	253330	253335	253340	253350	253360			
30	38			303812	303815		303820	303825	303830	303835	303840	303850	303860			
	$\begin{matrix} +0.025 \\ +0.009 \end{matrix}$															
35	45						354520	354525	354530	354535	354540	354550	354560			
40	50						405020	405025	405030	405035	405040	405050	405060	405070	405080	
	$\begin{matrix} +0.050 \\ +0.025 \end{matrix}$															
45	55								455530	455535	455540	455550	455560			
	$\begin{matrix} +0.030 \\ +0.011 \end{matrix}$															
50	60								506030	506035	506040	506050	506060	506070	506080	

注: 除以上规格尺寸外, 可按客户图纸制造。

JDB-650 固体镶嵌自润滑轴承

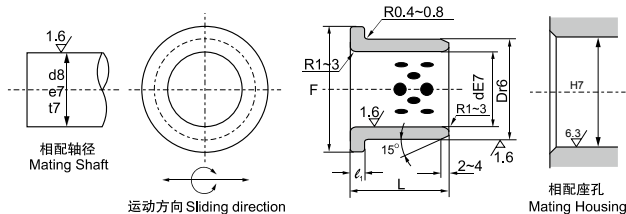
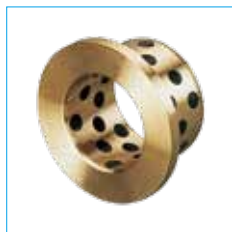
Bronze Solid Enchase Self-Lubricating Bearing

单位unit:mm

IDF7 (内径)	ODm6 (外径)	L $\begin{matrix} -0.10 \\ -0.30 \end{matrix}$											
		30	35	40	50	60	70	80	100	120	130	140	150
50	62	506230	506235	506240	506250	506260	506270						
$\begin{matrix} +0.050 \\ +0.025 \end{matrix}$	65	506530		506540	506550	506560	506570	506580	5065100				
	70			557040	557050	557060	557070						
	74	$\begin{matrix} +0.030 \\ +0.011 \end{matrix}$	607430	607435	607440	607450	607460	607470	607480				
	75		607530	607535	607540	607550	607560	607570	607580	6075100			
	75					637560	637570	637580					
	80				658050	658060	658070	658080					
$\begin{matrix} +0.060 \\ +0.030 \end{matrix}$	85		708535	708540	708550	708560	708570	708580	7085100				
	90				709050	709060	709070	709080					
	90					759060	759070	759080	7590100				
	95					759560	759570	759580	7595100				
	96	$\begin{matrix} +0.035 \\ +0.013 \end{matrix}$		809640	809650	809660	809670	809680	8096100	8096120			
	100			8010040	8010050	8010060	8010070	8010080	80100100	80100120		80100140	
	110		9011030		9011050	9011060	9011070	9011080	90110100	90110120			
	120					10012060	10012070	10012080	100120100	100120120		100120140	
$\begin{matrix} +0.071 \\ +0.036 \end{matrix}$	130							11013080	110130100	110130120			
	140							12014080	120140100	120140120		120140140	
	145								125145100	125145120			
	150	$\begin{matrix} +0.040 \\ +0.015 \end{matrix}$							130150100		130150130		
$\begin{matrix} +0.083 \\ +0.043 \end{matrix}$	160								140160100			140160140	
	170								150170100				150170150
	180								160180100				160180150

JFB 自润滑翻边轴承 Self Lubricating Flanging Bushing

材质	高力黄铜+石墨
Material	CuZn25Al6Mn4+ Graphite

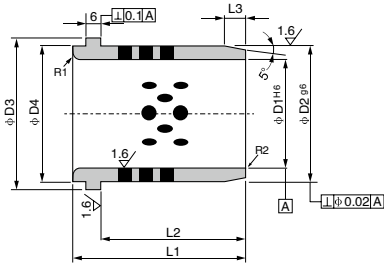


单位unit:mm

IDE7 (内径)	ODr6 (外径)	F	l_1 -0.10	L -0.10 -0.30														
				15	20	25	30	35	40	50	60	80	100					
10	+0.040 +0.025	14	+0.034 +0.023	22	2	1015F	1020F											
12		18		25		1215F	1220F											
13		19		26		1315F	1320F											
14	+0.050 +0.032	20		27	3	1415F	1420F											
15		21	+0.041 +0.028	28		1515F	1520F	1525F	1530F									
16		22		29		1615F	1620F	1625F	1630F									
20		30		40		2015F	2020F	2025F	2030F		2040F							
25	+0.061 +0.040	35		45		2515F	2520F	2525F	2530F		2540F							
30		40		50			3020F	3025F	3030F	3035F	3040F	3050F						
31.5		40	+0.050 +0.034	50			3120F			3135F								
35		45		60	5		3520F		3530F		3540F	3550F						
40	+0.075 +0.050	50		65			4020F		4030F		4040F	4050F						
45		55		70					4530F		4540F	4550F	4560F					
50		60	+0.060 +0.041	75					5030F		5040F	5050F	5060F					
55		65		80							5540F		5560F					
60		75	+0.062 +0.043	90							6040F	6050F		6080F				
63	+0.090 +0.060	75		85	7.5									6367F				
70		85		105								7050F		7080F				
75		90	+0.073 +0.051	110									7560F					
80		100		120										8060F	8080F	80100F		
90		110	+0.076 +0.054	130										9060F	9080F			
100	+0.107 +0.072	120		150	10										10080F	100100F		
120		140	+0.088 +0.063	170											12080F	120100F		

JNA 自润滑模具套套

Oiless Guide Bushing



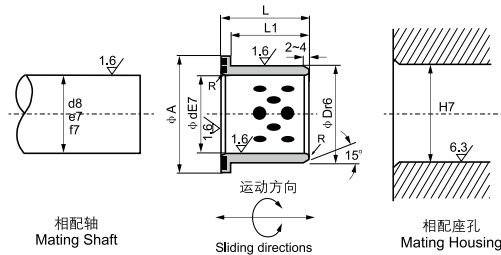
材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

单位unit:mm

规格 Standard No.	D1	H6	D2	g6	D3	D4	L1	L2	L3	R1
JNA32×50	32	+0.016 0	40	-0.009 -0.025	50	40	50	40	4	3
JNA40×63	40		50		63	50	63	50	5	3
JNA50×71	50	+0.019 0	63	-0.010 -0.029	71	63	71	56	6	5
JNA63×80	63		80		90	80	80	63	8	6
JNA80×100	80	+0.022 0	100	-0.012 -0.034	112	100	100	80	10	8
JNA100×125	100		125		140	125	125	106	12	10
JNA115×140	115	140	155	140	140	140	120	12	10	

JDBB 自润滑翻边轴套

Oiless Flange Bushing



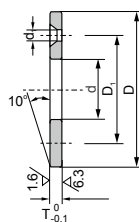
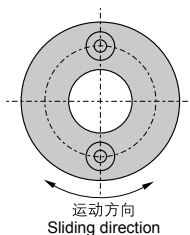
材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

单位unit:mm

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

JTW 自润滑止推垫片

Oilless Thrust Washer



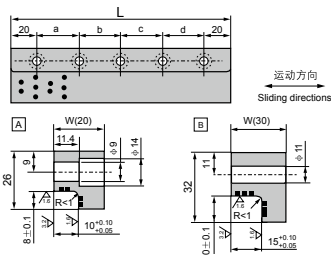
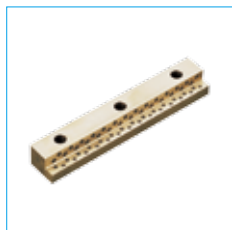
材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4 + Graphite

单位:unit:mm

规格 Standard No.	d	D	T _{-0.1} ⁰	螺栓 Bolt			
				D ₁	数量 Q'ty	尺寸 size	d ₁
JTW-10	10.2	30		---	---	---	---
JTW-12	12.2	40	3	28	2	M3	3.5
JTW-13	13.2						
JTW-14	14.2						
JTW-15	15.2	50	5	35			
JTW-16	16.2			---	---	---	---
JTW-16N	16.2			---	---	---	---
JTW-18	18.2	60	7	35	2	M3	3.5
JTW-20	20.2			---	---	M5	6
JTW-20N	20.2	70	8	40	2	M5	6
JTW-25	25.2			---	---	---	---
JTW-25N	25.2	80	9	---	---	---	---
JTW-30	30.2			---	---	M5	6
JTW-35	35.2	90	10	50	2	M6	7
JTW-40	40.2			60			
JTW-45	45.3	100	11	67.5			
JTW-50	50.3			75			
JTW-55	55.3	110	12	85			
JTW-60	60.3			90			
JTW-65	65.3	120	13	95			
JTW-70	70.3			100			
JTW-75	75.3	130	14	110	4	M8	9
JTW-80	80.3			120			
JTW-90	90.5	140	15	140			
JTW-100	100.5			160		M10	11
JTW-120	120.5	200		175			

JSL L型自润滑块

Oilless L Guide Plate



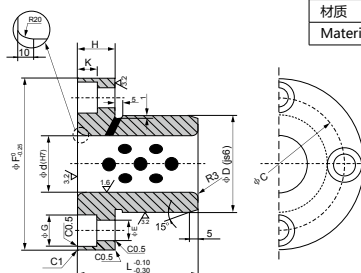
材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4 + Graphite

单位unit:mm

规格 Standard No.	W	L	螺孔位置 Bole Hole				螺栓 Bolt		Type
			a	b	c	d	螺栓 Size	数量 Number	
JSL-20×100	20	100	60	—	—	—	M8	2	A
JSL-20×150		150	55	55	—	—		3	
JSL-20×200		200	55	50	55	—		4	
JSL-30×100	30	100	60	—	—	—	M10	2	B
JSL-30×150		150	55	55	—	—		3	
JSL-30×200		200	55	50	55	—		4	
JSL-30×250	45	250	70	70	70	—	M10	4	C
JSL-45×200		200	55	50	55	—		4	
JSL-45×250		250	70	70	70	—		4	
JSL-45×300	45	300	65	65	65	65	M10	5	C
JSL-45×350		350	80	75	75	80		5	

HGB250 自润滑导向套

Oilless Guide Bushing



材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4 + Graphite

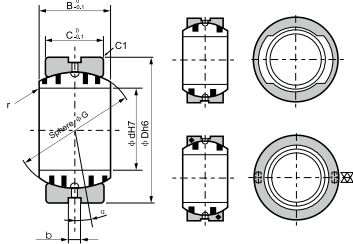
材质	FC铸铁 + 石墨
Material	HT250# + Graphite

单位unit:mm

项目	代号	尺寸	ΦF	ΦD	Φd	H	L	ΦC	ΦE	ΦG	ΦK
1	HGB250-30	90/50×30×50	90	50	30	20	50	70	11	17.5	10.8
2	HGB250-40	100/60×40×65	100	60	40	20	65	80	11	17.5	10.8
3	HGB250-50	125/75×50×80	125	75	50	20	80	100	11	17.5	10.8
4	HGB250-60	135/85×60×100	135	85	60	20	100	110	11	17.5	10.8
5	HGB250-80	170/110×80×130	170	110	80	25	130	140	14	20	13
6	HGB250-100	190/130×100×160	190	130	100	25	160	160	14	20	13

JQB 球形关节轴承

Sphere Oscillating Bearing



Inner ring	Material	CuZn25Al6Mn4+Gr
Outering	material	S45C
	Hardness	HRC25~30

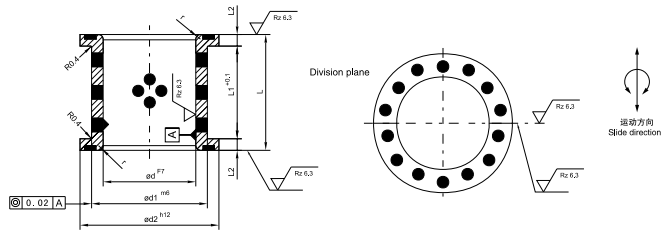
Method of installing Inner ring:
 Type A: JQB -015~090
 Insertion with horizontal direction
 Type B: JQB -100
 Insertion by splitting
 Recommend shaft & housing:
 Housing: H7
 Shaft: g6
 For common use

单位unit:mm

规格 Standard No.	Dimension							Aligning angle 调整角度 σ°	Type
	ϕd	ϕD	B	C	ϕG	r	b		
JQB-015	15	26	12	9	22	R0.5		8	
JQB-020	20	32	16	14	28		4		
JQB-025	25	42	21	18	36		5		
JQB-030	30	50	27	23	44		6		
JQB-035	35	55	30	26	49	R1		5	
JQB-040	40	62	33	28	55		6	A	
JQB-050	50	80	42	36	70		5		
JQB-060	60	100	53	45	90		6		
JQB-070	70	110	58	50	99		5		
JQB-080	80	130	70	60	115		6		
JQB-090	90	140	76	65	125		6		
JQB-100	100	160	88	75	145		6	B	

JZW 自润滑轴瓦

Oilless Bearing Bush



单位unit:mm

d	L	d1	d2	L1	L2	r
20	28	28	35	20	4	1
25	33	33	40	25		
30	40	38	48	30	5	2
40	50	50	60	40		
50	60	62	68	50		

SF-1 无油润滑轴承 Oilless Bushing

材料组织 MATERIAL STRUCTURE



1. 聚四氟乙烯与铅的混合物
 2. 球形青铜粉
 3. 钢背
 4. 电镀层（铜或锡）
1. PTFE with lead
 2. Porous bronze
 3. Steel backing
 4. Tin-plating

SF-1 无油润滑轴承 （标准公差尺寸见第19、20页） Oilless Bushing

该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制改性聚四氟乙烯（PTFE）和铅的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、走合性能好、低噪音等性能，产品广泛应用于各种机械的滑动部位，如纺织机、印刷机、液压搬运车、烟草机、健身器、农业机械等。

SF-1 Carbon Steel self-lubricating bearings used high quality low-carbon steel plate as base, sintered porous bronze as its interlayer and the Compound of PTFE and Lead as its surface. It offers the property of good self-lubrication, low wear, low friction good sliding characteristics, low noise. It has been widely applied to various mechanical sliding positions, such as textile machinery, printing machinery, hydraulic pressure transit vehicle, tobacco machinery, gymnastic instrument and agricultural machinery etc.

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3.6N/mm ² ·m/s
	油润滑 Oil lubrication	50N/mm ² ·m/s
摩擦系数μ Friction coefficient	干摩擦 Dry friction	0.04 ~ 0.20
	油润滑 Oil lubrication	0.02 ~ 0.07
使用温度 Working temperature	-195°C ~ +280°C	
导热系数 Thermal conductivity	42W/m·K	
热膨胀系数 Coefficient of thermal expansion	11×10 ⁻⁶ /K	



1. 聚四氟乙烯与铅及其他填充混合物
 2. 球形青铜粉
 3. 钢背
 4. 电镀层（铜或锡）
1. PTFE with lead
 2. Porous bronze
 3. Steel backing
 4. Tin-plating

SF-1T 齿轮泵专用轴承 Gear Pump Bushing

该产品与SF-1具有相同结构，是齿轮油泵专用轴承。根据齿轮油泵的高PV值条件而设计的特殊配方产品。它具有摩擦系数小而稳定，耐磨性能好，抗冲击的特点，产品广泛应用于齿轮油泵、柱塞泵、叶片泵等。

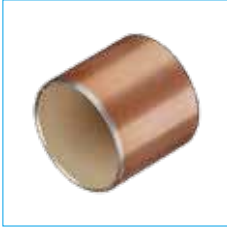
SF-1 Carbon Steel self-lubricating bearing (Gear pump) has the same structure as SF-1, it is special for gear pump. It is a special formula product devised by high PV value operational mode conditions of gear oil pump. Characterized by low friction factor, stability, well wearing performance and impact resistance, it has been widely applied to gear pumps, radial piston pumps and vane pumps etc.

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	10m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	4.2N/mm ² ·m/s
	油润滑 Oil lubrication	60N/mm ² ·m/s
摩擦系数μ Friction coefficient	0.03 ~ 0.18	
使用温度 Working temperature	-195°C ~ +280°C	
导热系数 Thermal conductivity	42W/m·K	

SF-1 无油润滑轴承 Oilless Bushing

材料组织 MATERIAL STRUCTURE



1. 聚四氟乙烯与铜的混合物
 2. 球形青铜粉
 3. 钢背
 4. 电镀层（铜或锡）
1. PTFE with Cu
 2. Porous bronze
 3. Steel backing
 4. Tin-plating

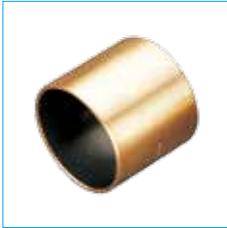
SF-1P 往复运动轴承 Reciprocating Motion Bushing

该产品与SF-1具有相同结构，是根据往复运动的特殊工况条件而设计的特殊配方产品，具有断油条件下润滑能力强，耐磨性能好，保持油膜的特点。产品广泛应用于汽车减震器、摩托车减震器、液压马达、气动元件等，其性能与国外DD2相似。

SF-1P Carbon Steel Pb-free self-lubricating bearing has the same structure as SF-1, particularly suitable for intermittent operation, reciprocating or oscillating movements. Characterized by good lubrication and wear performance in the conditions of dry operation of oil. It is applied to shock absorber of automobile, motorcycles and various hydraulic motors and pneumatic elements etc.

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3.6N/mm ² ·m/s
	油润滑 Oil lubrication	50N/mm ² ·m/s
摩擦系数μ Friction coefficient		0.04 ~ 0.20
使用温度 Working temperature		-195°C ~ +280°C
导热系数 Thermal conductivity		42W/m·K



1. 聚四氟乙烯与铅的混合物
 2. 球形青铜粉
 3. 铜背
1. PTFE with lead
 2. Porous bronze
 3. Copper Back

SF-1B 铜基无给油轴承 Bronze Based Bushing

该产品以特殊配方铜合金为基体，中间烧结球形青铜层，表面轧制聚四氟乙烯和亲油性纤维的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、耐腐蚀等性能，产品广泛应用于冶金机械、连铸轧机、水泥灌浆机械、螺旋式输送机。

SF-1B Bronze Pb-free self-lubricating bearing used bronze alloy as base with special formulation, sintered porous bronze as its interlayer and the Compound of PTFE and lipophilicity fiber as its surface. It offers the property of good self-lubricating, low wear, low friction, corrosion resistance. It has been widely applied to metallurgy steel machinery, joined casting machinery, cement grout pump and spiral conveyor machinery etc.

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3.6N/mm ² ·m/s
	油润滑 Oil lubrication	50N/mm ² ·m/s
摩擦系数μ Friction coefficient	干摩擦 Dry friction	0.03 ~ 0.08
	油润滑 Oil lubrication	0.02 ~ 0.07
使用温度 Working temperature		-195°C ~ +300°C
导热系数 Thermal conductivity		70W/m·K
热膨胀系数 Coefficient of thermal expansion		17×10 ⁻⁶ /K

SF-1 无油润滑轴承 Oilless Bushing

材料组织 MATERIAL STRUCTURE



SF-1D 液压专用轴承 Hydraulic Bushing

该产品与SF-1具有相同结构，是液压专用轴承，是结合油缸及减震器的工作原理而设计的特殊配方产品。它具有SF-1P优点外，特别适用于往复频繁的大侧向力场合，产品适用于汽车减震器、摩托车减震器以及各种液压油缸等。

SF-1D has the same structure with SF-1, particularly suitable for hydraulic pump. It is a special formula designed by combining oil cylinder with the working principle of bumpers. Besides the advantages of SF-1P, it is particularly applicable for the situation of great cross range force of frequent to-and-fro. It is applicable for automobile shock absorbers, motorcycle bumper and various hydraulic pressure cylinders etc.



1. 聚四氟乙烯与亲油性纤维混合物
 2. 球形青铜粉
 3. 钢背
 4. 电镀层（铜或锡）
1. PTFE with lead
 2. Porous bronze
 3. Steel backing
 4. Tin-plating

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3.8N/mm ² ·m/s
	油润滑 Oil lubrication	50N/mm ² ·m/s
摩擦系数μ Friction coefficient		0.04 ~ 0.20
使用温度 Working temperature		-195°C ~ +280°C
导热系数 Thermal conductivity		42W/m·K



SF-1S 不锈钢耐腐蚀轴承 Stainless Steel Bushing

该产品以不锈钢为基体，中间烧结球形青铜层，表面轧制聚四氟乙烯和铅的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、耐腐蚀等性能。产品广泛应用于印染机械、化工机械、海洋工业耐腐蚀部位等。

SF-1SS Stainless steel self-lubricating bearing uses stainless steel as base, sintered porous bronze as its interlayer and the Compound of PTFE and Lead as its surface. It offer the property of good self-lubrication, low wear, low friction, corrosion resistance. It has been widely applied to dyeing machinery, chemical engineering machinery and marine industry etc.



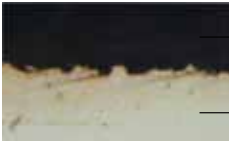
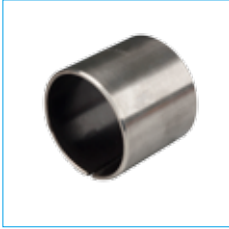
1. 聚四氟乙烯与亲油性纤维混合物
 2. 球形青铜粉
 3. 不锈钢背
1. PTFE with Fiber
 2. Porous bronze
 3. Stainless Steel Back

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3.8N/mm ² ·m/s
	油润滑 Oil lubrication	50N/mm ² ·m/s
摩擦系数μ Friction coefficient		0.04 ~ 0.20
使用温度 Working temperature		-195°C ~ +280°C
导热系数 Thermal conductivity		50W/m·K

SF-1 无油润滑轴承 Oilless Bushing

材料组织 MATERIAL STRUCTURE



1. 聚四氟乙烯与亲油性纤维混合物
2. 不锈钢背
1. PTFE with Fiber
2. Stainless Steel Back

SF-1SS 不锈钢喷塑轴承 Lining-Sprayed Stainless Steel Bushing

该产品以不锈钢为基体，表面喷涂聚四氟乙烯。它具有较好的耐酸、耐碱、耐海水、环保等特点。产品广泛应用于化工中酸碱流量计、泵、阀以及海洋工业耐腐蚀部位等。

SF-1S Stainless steel Pb-free self-lubricating bearing used stainless steel material as base, spray painting PTFE on the surface. It is characterized by acid-resistant, alkaline-resistant, ocean water resistant and environmental protection. It is used widely as fluid valve of measuring acid and alkalinizing flow in chemical industry, and corrosion resisting sliding position in marine industry.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity		100N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.0m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3N/mm ² ·m/s
	油润滑 Oil lubrication	40N/mm ² ·m/s
摩擦系数μ Friction coefficient	干摩擦 Dry friction	0.08 ~ 0.20
	油润滑 Oil lubrication	0.02 ~ 0.07
使用温度 Working temperature		-195°C ~ +280°C
导热系数 Thermal conductivity		42W/m·K
热膨胀系数 Coefficient of thermal expansion		15×10 ⁻⁶ /K



1. 聚四氟乙烯与纤维混合物
2. 球形青铜粉
3. 钢背
4. 电镀层 (铜或锡)
1. PTFE with fibre
2. Porous bronze
3. Steel backing
4. Tin-plating

SF-1W 无铅环保轴承 Lead-Free Bushing

SF-1W无铅轴承，是在SF-1材料基础上根据国际环保要求而开发的一种新产品。该产品除广泛适用于一般通用机械外，对食品机械、制药机械、烟草机械尤其适用，无铅效果符合欧洲卫生标准，是无油润滑轴承发展的方向。

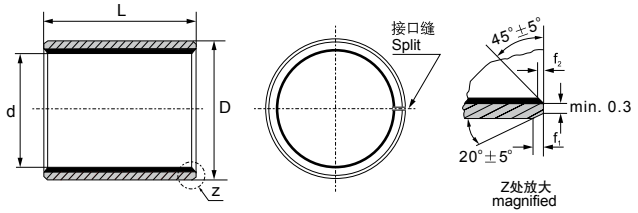
SF-1W is a new type bushing without lead composition which is developed aiming at increasing demands on environmental protection. Besides its wide application on general machines, SF-1 is particularly suitable for food machine, Pharmaceutical machine, tobacco, machine etc.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	2.5m/s
	油润滑 Oil lubrication	5.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	3.6N/mm ² ·m/s
	油润滑 Oil lubrication	50N/mm ² ·m/s
摩擦系数μ Friction coefficient	干摩擦 Dry friction	0.08 ~ 0.20
	油润滑 Oil lubrication	0.02 ~ 0.07
使用温度 Working temperature		-195°C ~ +280°C
导热系数 Thermal conductivity		42W/m·K
热膨胀系数 Coefficient of thermal expansion		11×10 ⁻⁶ /K

SF-1/1W/1B/1S/1T/1P/1D/1SS

标准公差尺寸表 Standard Metric Size



单位unit:mm

轴径 D_s	座孔 H7 D_H	外径公差 D_o	压装后 内孔公差 D_{ia}	壁厚 S_3	f_1	f_2	$L \begin{matrix} 0 \\ -0.40 \end{matrix} \left(\begin{matrix} d \leq \Phi 28 & L-0.30 \\ d > \Phi 30 & L-0.40 \end{matrix} \right)$													
							6	8	10	12	15	20	25	30	40	50				
2 $\begin{matrix} 0 \\ -0.006 \end{matrix}$	3.5 +0.008	3.5 $\begin{matrix} +0.055 \\ +0.025 \end{matrix}$	2.055 1.990	0.750 0.730	0.4	0.3														
4 $\begin{matrix} 0 \\ -0.008 \end{matrix}$	5.5 +0.008	5.5 $\begin{matrix} +0.055 \\ +0.025 \end{matrix}$	4.055 3.990				0406	0408												
5 $\begin{matrix} -0.010 \\ -0.022 \end{matrix}$	7 +0.015	7 $\begin{matrix} +0.055 \\ +0.025 \end{matrix}$	5.055 4.990				0506	0508	0510											
6 $\begin{matrix} -0.010 \\ -0.022 \end{matrix}$	8 +0.015	8 $\begin{matrix} +0.055 \\ +0.025 \end{matrix}$	6.055 5.990				0606	0608	0610											
8 $\begin{matrix} -0.013 \\ -0.028 \end{matrix}$	10 +0.015	10 $\begin{matrix} +0.055 \\ +0.025 \end{matrix}$	8.055 7.990				0806	0808	0810	0812	0815									
10 $\begin{matrix} -0.013 \\ -0.028 \end{matrix}$	12 +0.018	12 $\begin{matrix} +0.065 \\ +0.030 \end{matrix}$	10.058 9.990				1006	1008	1010	1012	1015	1020								
12 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	14 +0.018	14 $\begin{matrix} +0.065 \\ +0.030 \end{matrix}$	12.058 11.990				1206	1208	1210	1212	1215	1220	1225							
13 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	15 +0.018	15 $\begin{matrix} +0.065 \\ +0.030 \end{matrix}$	13.058 12.990	1.005 0.980	0.6	0.3			1310			1320								
14 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	16 +0.018	16 $\begin{matrix} +0.065 \\ +0.030 \end{matrix}$	14.058 13.990						1410	1412	1415	1420	1425							
15 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	17 +0.018	17 $\begin{matrix} +0.065 \\ +0.030 \end{matrix}$	15.058 14.990						1510	1512	1515	1520	1525							
16 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	18 +0.018	18 $\begin{matrix} +0.065 \\ +0.030 \end{matrix}$	16.058 15.990						1610	1612	1615	1620	1625							
17 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	19 +0.021	19 $\begin{matrix} +0.075 \\ +0.035 \end{matrix}$	17.061 16.990						1710	1712		1720								
18 $\begin{matrix} -0.016 \\ -0.034 \end{matrix}$	20 +0.021	20 $\begin{matrix} +0.075 \\ +0.035 \end{matrix}$	18.061 17.990						1810	1812	1815	1820	1825							
20 $\begin{matrix} -0.020 \\ -0.041 \end{matrix}$	23 +0.021	23 $\begin{matrix} +0.075 \\ +0.035 \end{matrix}$	20.071 19.990							2010	2012	2015	2020	2025	2030					
22 $\begin{matrix} -0.020 \\ -0.041 \end{matrix}$	25 +0.021	25 $\begin{matrix} +0.075 \\ +0.035 \end{matrix}$	22.071 21.990	1.505 1.475	0.6	0.4				22010	2212	2215	2220	2225	2230					
24 $\begin{matrix} -0.020 \\ -0.041 \end{matrix}$	27 +0.021	27 $\begin{matrix} +0.075 \\ +0.035 \end{matrix}$	24.071 23.990									2415	2420	2425	2430					
25 $\begin{matrix} -0.020 \\ -0.041 \end{matrix}$	28 +0.021	28 $\begin{matrix} +0.075 \\ +0.035 \end{matrix}$	25.071 24.990							25010	2512	2515	2520	2525	2530	2540	2550			
28 $\begin{matrix} -0.020 \\ -0.041 \end{matrix}$	32 +0.025	32 $\begin{matrix} +0.085 \\ +0.045 \end{matrix}$	28.085 27.990									2815	2820	2825	2830	2840				
30 $\begin{matrix} -0.020 \\ -0.041 \end{matrix}$	34 +0.025	34 $\begin{matrix} +0.085 \\ +0.045 \end{matrix}$	30.085 29.990								3012	3015	3020	3025	3030	3040				
32 $\begin{matrix} -0.025 \\ -0.050 \end{matrix}$	36 +0.025	36 $\begin{matrix} +0.085 \\ +0.045 \end{matrix}$	32.085 31.990	2.005 1.970	1.2	0.4							3220		3230	3240				
35 $\begin{matrix} -0.025 \\ -0.050 \end{matrix}$	39 +0.025	39 $\begin{matrix} +0.085 \\ +0.045 \end{matrix}$	35.085 34.990								3512	3515	3520	3525	3530	3540	3550			
38 $\begin{matrix} -0.025 \\ -0.050 \end{matrix}$	42 +0.025	42 $\begin{matrix} +0.085 \\ +0.045 \end{matrix}$	38.085 37.990									3815			3830	3840				
40 $\begin{matrix} -0.025 \\ -0.050 \end{matrix}$	44 +0.025	44 $\begin{matrix} +0.085 \\ +0.045 \end{matrix}$	40.085 39.990								4012		4020	4025	4030	4040	4050			

SF-1/1W/1B/1S/1T/1P/1D/1SS

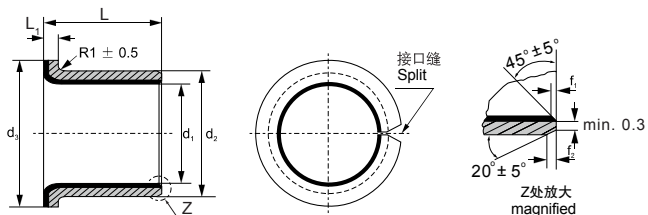
标准公差尺寸表 Standard Metric Size

单位unit:mm

轴径 D _s	座孔 H7 D _H	外径公差 D _O	压装后 内孔公差 D _{1a}	壁厚 S ₃	f ₁	f ₂	L $\begin{matrix} 0 \\ -0.40 \end{matrix}$ ($\begin{matrix} d \leq \Phi 28 & L-0.30 \\ d > \Phi 30 & L-0.40 \end{matrix}$)											
							20	25	30	40	50	60	70	80	100	115		
45	$\begin{matrix} -0.050 \\ -0.025 \end{matrix}$	50 ^{+0.025}	$\begin{matrix} 50 +0.085 \\ +0.045 \end{matrix}$	$\begin{matrix} 45.105 \\ 44.990 \end{matrix}$			4520	4525	4530	4540	4550							
50	$\begin{matrix} -0.050 \\ -0.025 \end{matrix}$	55 ^{+0.030}	$\begin{matrix} 55 +0.100 \\ +0.055 \end{matrix}$	$\begin{matrix} 50.110 \\ 49.990 \end{matrix}$			5020		5030	5040	5050	5060						
55	$\begin{matrix} -0.060 \\ -0.030 \end{matrix}$	60 ^{+0.030}	$\begin{matrix} 60 +0.100 \\ +0.055 \end{matrix}$	$\begin{matrix} 55.110 \\ 54.990 \end{matrix}$					5530	5540	5550	5560						
60	$\begin{matrix} -0.060 \\ -0.030 \end{matrix}$	65 ^{+0.030}	$\begin{matrix} 65 +0.100 \\ +0.055 \end{matrix}$	$\begin{matrix} 60.110 \\ 59.990 \end{matrix}$	2.505	1.80.6			6030	6040	6050	6060	6070					
65	$\begin{matrix} -0.060 \\ -0.030 \end{matrix}$	70 ^{+0.030}	$\begin{matrix} 70 +0.100 \\ +0.055 \end{matrix}$	$\begin{matrix} 65.110 \\ 64.990 \end{matrix}$	2.460				6530	6540	6550	6560	6570					
70	$\begin{matrix} -0.060 \\ -0.030 \end{matrix}$	75 ^{+0.030}	$\begin{matrix} 75 +0.100 \\ +0.055 \end{matrix}$	$\begin{matrix} 70.110 \\ 69.990 \end{matrix}$						7040	7050	7060	7070	7080				
75	$\begin{matrix} -0.060 \\ -0.030 \end{matrix}$	80 ^{+0.030}	$\begin{matrix} 80 +0.100 \\ +0.055 \end{matrix}$	$\begin{matrix} 75.110 \\ 74.990 \end{matrix}$					7530	7540	7550	7560	7570	7580				
80	-0.045	85 ^{+0.035}	$\begin{matrix} 85 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 80.155 \\ 80.020 \end{matrix}$						8040	8050	8060	8070	8080	80100			
85	-0.054	90 ^{+0.035}	$\begin{matrix} 90 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 85.155 \\ 85.020 \end{matrix}$						8540		8560		8580	85100			
90	-0.054	95 ^{+0.035}	$\begin{matrix} 95 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 90.155 \\ 90.020 \end{matrix}$						9040	9050	9060		9080	90100			
95	-0.054	100 ^{+0.035}	$\begin{matrix} 100 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 95.155 \\ 95.020 \end{matrix}$	2.490	1.80.6					9550	9560		9580	95100			
100	-0.054	105 ^{+0.035}	$\begin{matrix} 105 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 100.155 \\ 100.020 \end{matrix}$	2.440							10050	10060	10080		100115		
105	-0.054	110 ^{+0.035}	$\begin{matrix} 110 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 105.155 \\ 105.020 \end{matrix}$									10560	10580		105115		
110	-0.054	115 ^{+0.035}	$\begin{matrix} 115 +0.120 \\ +0.070 \end{matrix}$	$\begin{matrix} 110.115 \\ 110.020 \end{matrix}$										11060	11080		110115	
120	-0.054	125 ^{+0.040}	$\begin{matrix} 125 +0.170 \\ +0.100 \end{matrix}$	$\begin{matrix} 120.210 \\ 120.070 \end{matrix}$										12060	12080	120100		
125	-0.063	130 ^{+0.040}	$\begin{matrix} 130 +0.170 \\ +0.100 \end{matrix}$	$\begin{matrix} 125.210 \\ 125.070 \end{matrix}$											12560		125100	125115
130	-0.063	135 ^{+0.040}	$\begin{matrix} 135 +0.170 \\ +0.100 \end{matrix}$	$\begin{matrix} 130.210 \\ 130.070 \end{matrix}$	2.465	1.80.6								13060	13080	130100		
140	-0.063	145 ^{+0.040}	$\begin{matrix} 145 +0.170 \\ +0.100 \end{matrix}$	$\begin{matrix} 140.210 \\ 140.070 \end{matrix}$	2.415									14060	14080	140100		
150	-0.063	155 ^{+0.040}	$\begin{matrix} 155 +0.170 \\ +0.100 \end{matrix}$	$\begin{matrix} 150.210 \\ 150.070 \end{matrix}$											15060	15080	150100	
160	-0.063	165 ^{+0.040}	$\begin{matrix} 165 +0.170 \\ +0.100 \end{matrix}$	$\begin{matrix} 160.210 \\ 160.070 \end{matrix}$											16060	16080	160100	160115
180	-0.063	185 ^{+0.046}	$\begin{matrix} 185 +0.210 \\ +0.130 \end{matrix}$	$\begin{matrix} 180.216 \\ 180.070 \end{matrix}$												18080	180100	
190	-0.072	195 ^{+0.046}	$\begin{matrix} 195 +0.210 \\ +0.130 \end{matrix}$	$\begin{matrix} 190.216 \\ 190.070 \end{matrix}$	2.465	1.80.6										19080	190100	
200	-0.072	205 ^{+0.046}	$\begin{matrix} 205 +0.210 \\ +0.130 \end{matrix}$	$\begin{matrix} 200.016 \\ 200.070 \end{matrix}$	2.415											20080	200100	
220	-0.072	225 ^{+0.046}	$\begin{matrix} 225 +0.210 \\ +0.130 \end{matrix}$	$\begin{matrix} 220.216 \\ 220.070 \end{matrix}$											20060	22080	220100	
250	-0.072	255 ^{+0.052}	$\begin{matrix} 255 +0.260 \\ +0.170 \end{matrix}$	$\begin{matrix} 250.222 \\ 250.070 \end{matrix}$													25080	250100
260	-0.081	265 ^{+0.052}	$\begin{matrix} 265 +0.260 \\ +0.170 \end{matrix}$	$\begin{matrix} 260.222 \\ 260.070 \end{matrix}$	2.465	1.80.6											26080	260100
280	-0.081	285 ^{+0.052}	$\begin{matrix} 285 +0.260 \\ +0.170 \end{matrix}$	$\begin{matrix} 280.222 \\ 280.070 \end{matrix}$	2.415												28080	280100
300	-0.081	305 ^{+0.052}	$\begin{matrix} 305 +0.260 \\ +0.170 \end{matrix}$	$\begin{matrix} 300.222 \\ 300.070 \end{matrix}$														

SF-1F 无油翻边轴套标准尺寸表

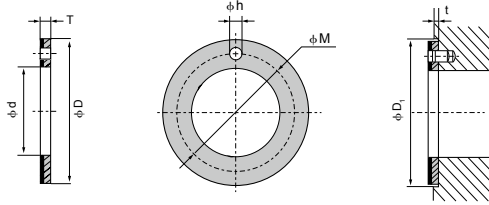
Oil-Flanged Bushes Standard Metric Size



单位:unit:mm

轴径 Shaft Dia.	座孔 Housing H7	规格标志 Desc.	尺寸 Size					f ₁	f ₂
			d ₁	d ₂	d ₃ ±0.5	L±0.25	L ₁ ±0.2		
6 ^{-0.013} -0.028	8 ^{+0.015}	SF-1F 06040	6	8	12	4			
		SF-1F 06070				7			
8 ^{-0.013} -0.028	10 ^{+0.015}	SF-1F 08055	8	10	15	5.5			
		SF-1F 08075				7.5			
10 ^{-0.016} -0.034	12 ^{+0.018}	SF-1F 10070	10	12	18	7			
		SF-1F 10090				9			
		SF-1F 10120				12			
12 ^{-0.016} -0.034	14 ^{+0.018}	SF-1F 12070	12	14	20	7			
		SF-1F12090				9			
		SF-1F12120				12			
14 ^{-0.016} -0.043	16 ^{+0.018}	SF-1F14120	14	16	22	12	1	0.5	
		SF-1F14170				17			
		SF-1F15090				9			
15 ^{-0.016} -0.034	17 ^{+0.018}	SF-1F15120	15	17	23	12			
		SF-1F15170				17			
		SF-1F16120				12			
16 ^{-0.016} -0.034	18 ^{+0.018}	SF-1F16170	16	18	24	17			
		SF-1F18120				12			
		SF-1F18170				17			
18 ^{-0.016} -0.034	20 ^{+0.021}	SF-1F18200	18	20	26	20			
		SF-1F20115				11.5			
		SF-1F20165				16.5			
20 ^{-0.020} -0.041	23 ^{+0.021}	SF-1F20215	20	23	30	21.5			
		SF-1F22150				15			
		SF-1F22200				20			
22 ^{-0.020} -0.041	25 ^{+0.021}	SF-1F25115	22	25	32	15	1.5	0.8	
		SF-1F25165				16.5			
		SF-1F25215				21.5			
25 ^{-0.020} -0.041	28 ^{+0.021}	SF-1F30160	25	28	35	16			
		SF-1F30260				26			
		SF-1F35160				16			
30 ^{-0.025} -0.050	34 ^{+0.025}	SF-1F35260	30	34	42	26			
		SF-1F35160				16			
		SF-1F35260				26			
35 ^{-0.025} -0.050	39 ^{+0.025}	SF-1F40260	35	39	47	26	2	1.0	
		SF-1F40400				40			
		SF-1F40400				40			

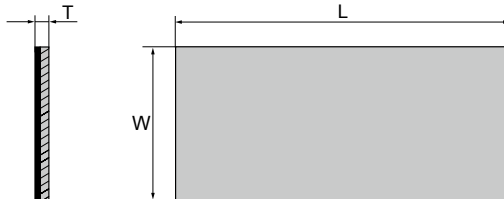
SF-1WC 复合止推垫片 标准公差尺寸表 Standard Metric Size



单位unit:mm

相配 轴径 Axle	型号规格 Designation	垫片尺寸 Washer Dimension				安装尺寸 Installation Size		
		$\phi D_{-0.25}^0$	$\phi d_{+0.25}^0$	$T_{-0.050}^0$	$\phi M \pm 0.125$	$\phi h_{+0.10}^{+0.40}$	$t \pm 0.20$	$\phi D_1_{+0.12}^0$
8	SF-1WC 10	20	10		15	1.5		20
10	SF-1WC 12	24	12		18			24
12	SF-1WC 14	26	14		20			26
14	SF-1WC 16	30	16		23	2.0		30
16	SF-1WC 18	32	18		25			32
18	SF-1WC 20	36	20		28			36
20	SF-1WC 22	38	22	1.5	30	3.0	1.0	38
22	SF-1WC 24	42	24		33			42
24	SF-1WC 26	44	26		35			44
26	SF-1WC 28	48	28		38			48
30	SF-1WC 32	54	32		43			54
36	SF-1WC 38	62	38		50			62
40	SF-1WC 42	66	42		54	4.0		66
46	SF-1WC 48	74	48		61			74
50	SF-1WC 52	78	52	2.0	65		1.5	78
60	SF-1WC 62	90	62		76			90

SF-1/W/1B/1S/1T/1P/1D/1SS 滑板 标准公差尺寸表 Standard Metric Size

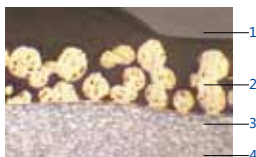


单位unit:mm

型号规格 Designation	长度 Length $L_{+5.0}^0$	宽度 Width $W_{+2.0}^0$	厚度 Thickness $T_{-0.050}^0$
SF-1SP 010130	500	130	1.0
SF-1SP 015130	500	130	1.5
SF-1SP 020130	500	130	2.0
SF-1SP 025130	500	130	2.5

SF-2 边界润滑轴承 Boundary Lubricating Bushing

材料组织 MATERIAL STRUCTURE



1. 聚甲醛与纤维混合物
2. 球形青铜粉
3. 钢背
4. 电镀层（铜或锡）
1. POM with fiber
2. Porous bronze
3. Steel backing
4. Tin-plating

SF-2 边界润滑轴承 （标准公差尺寸见第24页） Marginal Lubrication Bushing

该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制改性聚甲醛(POM)。在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于冶金机械、矿山机械、水利机械、汽车、建筑机械、农用机械、轧钢行业等。

SF-2 Marginal Pb-free self-lubricating bearing is used steel-backing as its structure, sintered porous bronze as its interlayer, surface inlaid the modified POM. Suitable for marginally lubricated and dry operation on the conditions of lubrication indents grease. It has been widely applied to metallurgical machinery, Mine machinery, water conservancy machinery, vapor locomotive, building machinery, agriculture machinery, steel rolling industry etc.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	150N/mm ²
最高线速度 V Max Sliding Speed	脂润滑 Grease lubrication	2.5m/s
	脂润滑 Grease lubrication	2.8N/mm ² ·m/s
最高PV值 Max PV Value Limit	脂润滑 Grease lubrication	2.8N/mm ² ·m/s
	摩擦系数μ Friction coefficient	0.05 ~ 0.25
使用温度 Working temperature	-40°C ~ +130°C	
导热系数 Thermal conductivity	4W/m·K	
热膨胀系数 Coefficient of thermal expansion	12×10 ⁻⁶ /K	



1. 聚甲醛与纤维混合物
2. 球形青铜粉
3. 钢背
4. 电镀层（铜或锡）
1. POM with fiber
2. Porous bronze
3. Steel backing
4. Tin-plating

SF-2Y 边界润滑无铅轴承 Marginal Lubricating Lead-Free Bushing

该产品与SF-2具有相同结构和使用性能，同时具有环保功能，在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于冶金机械、矿山机械、水利机械、汽机、建筑机械、农用机械、轧钢行业、食用机械、制药机械、烟草机械等。

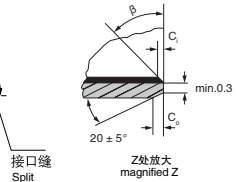
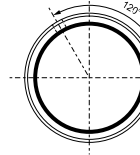
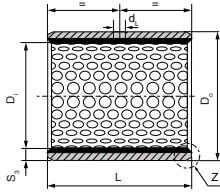
SF-2Y has the same structure and functional performance with SF-2. It can work long time without oil in the condition of prelubricated with lubrication indents. Widely applied to metallurgy machinery, Mining machinery, water conservancy machinery, automobile, building machinery, agriculture machinery, rolling steel industry etc.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	150N/mm ²
最高线速度 V Max Sliding Speed	脂润滑 Grease lubrication	2.5m/s
	脂润滑 Grease lubrication	3.6N/mm ² ·m/s
最高PV值 Max PV Value Limit	脂润滑 Grease lubrication	3.6N/mm ² ·m/s
	摩擦系数μ Friction coefficient	0.05 ~ 0.25
使用温度 Working temperature	-40°C ~ +130°C	
导热系数 Thermal conductivity	4W/m·K	
热膨胀系数 Coefficient of thermal expansion	12×10 ⁻⁶ /K	

SF-2 边界润滑轴承标准公制尺寸

Marginal-lubricating Bearing Standard Metric Size



单位unit:mm

轴径 D _s h8	座孔 H7 D _H	外径公差 D _O	压装后 内孔公差 D _{ia}	配合 间隙 C _D	壁厚 S ₃	油孔 d _l	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			1010	1015	1020											
12	-0.027	14 +0.018	14 +0.065 +0.030	12.108 12.040				1210	1215	1220											
14	-0.027	16 +0.018	16 +0.065 +0.030	14.108 14.040	0.135 0.040	0.980 0.955	4		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				2015	2020	2025	2030										
22	-0.033	25 +0.021	25 +0.075 +0.035	22.131 22.050	0.164 0.050	1.475 1.445		2215		2225											
25	-0.033	28 +0.021	28 +0.075 +0.035	25.131 25.050				2515	2520	2525	2530										
28	-0.033	32 +0.025	32 +0.085 +0.045	28.155 28.060	0.188 0.060		6			2820	2830										
30	-0.033	34 +0.025	34 +0.085 +0.045	30.155 30.060		1.970 1.935				3020	3025	3030		3040							
35	-0.039	39 +0.025	39 +0.085 +0.045	35.155 35.060	0.194 0.060					3520		3530	3535	3540							
40	-0.039	44 +0.025	44 +0.085 +0.045	40.155 40.060						4020		4030		4040		4050					
45	-0.039	50 +0.025	50 +0.085 +0.045	45.195 45.080	0.234 0.080					4520		4530		4540	4545	4550					
50	-0.039	55 +0.030	55 +0.100 +0.055	50.200 50.080	0.239 0.080	2.460 2.415	8					5030		5040		5050	5060				
55	-0.046	60 +0.030	60 +0.100 +0.055	55.200 55.080	0.246 0.080							5530		5540		5550	5560				
60	-0.046	65 +0.030	65 +0.100 +0.055	60.200 60.080								6030		6040		6050	6060				

SF-2 边界润滑轴承标准公制尺寸

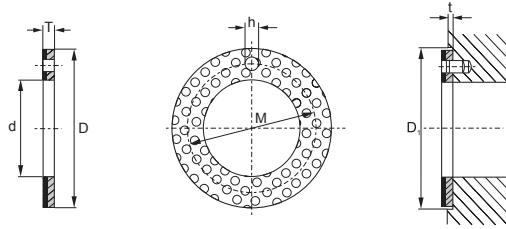
Marginal-lubricating Bearing Standard Metric Size

单位unit:mm

轴径 D _s h8	座孔 H7 D _H	外径公差 D _o	压装后 内孔公差 D _{ia}	配合 间隙 C _D	壁厚 S ₃	油孔 d _L	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				6540	6560								
70 ^{-0.046}	75 ^{+0.030}	75 ^{+0.100} ^{+0.055}	70.200 70.080	0.246 0.080	2.460 2.415	8	7040	7050	7080							
75 ^{-0.046}	80 ^{+0.030}	80 ^{+0.100} ^{+0.055}	75.200 75.080				7540	7560	7580							
80 ^{-0.046}	85 ^{+0.035}	85 ^{+0.120} ^{+0.070}	80.265 80.100	0.313 0.100			8040	8060	8080							
85 ^{-0.054}	90 ^{+0.035}	90 ^{+0.120} ^{+0.070}	85.265 85.100				8540	8560	8580							
90 ^{-0.054}	95 ^{+0.035}	95 ^{+0.120} ^{+0.070}	90.265 90.100				9040	9060	9080	9090						
100 ^{-0.054}	105 ^{+0.035}	105 ^{+0.120} ^{+0.070}	100.265 100.100	0.321 0.100				10050	10080	10095						
105 ^{-0.054}	110 ^{+0.035}	110 ^{+0.120} ^{+0.070}	105.265 105.100					10560	10580	10595	105110					
110 ^{-0.054}	115 ^{+0.035}	115 ^{+0.120} ^{+0.070}	110.265 110.110			9.5		11060	11080	11095	110110					
120 ^{-0.054}	125 ^{+0.040}	125 ^{+0.170} ^{+0.100}	120.270 120.110					12060	12080		120110					
125 ^{-0.063}	130 ^{+0.040}	130 ^{+0.170} ^{+0.100}	125.270 125.110					12560			125110					
130 ^{-0.063}	135 ^{+0.040}	135 ^{+0.170} ^{+0.100}	130.270 130.110				13050	13060	13080		130100					
140 ^{-0.063}	145 ^{+0.040}	145 ^{+0.170} ^{+0.100}	140.270 140.110	0.324 0.100			14050	14060	14080		140100					
150 ^{-0.063}	155 ^{+0.040}	155 ^{+0.170} ^{+0.100}	150.270 150.110		2.450 2.385		15050	15060	15080		150100					
160 ^{-0.063}	165 ^{+0.040}	165 ^{+0.170} ^{+0.100}	160.270 160.110				16050	16060	16080		160100					
170 ^{-0.063}	175 ^{+0.040}	175 ^{+0.170} ^{+0.100}	170.270 170.110				17050	17080		170100						
180 ^{-0.063}	185 ^{+0.046}	185 ^{+0.210} ^{+0.130}	180.270 180.110			9.5	18050	18060	18080		180100					
190 ^{-0.072}	195 ^{+0.046}	195 ^{+0.210} ^{+0.130}	190.276 190.110				19050	19060	19080		190100		190120			
200 ^{-0.072}	205 ^{+0.046}	205 ^{+0.210} ^{+0.130}	200.276 200.110	0.339 0.110			20050	20060	20080		200100		200120			
220 ^{-0.072}	225 ^{+0.046}	225 ^{+0.210} ^{+0.130}	220.276 220.110				22050	22060	22080		220100		220120			
240 ^{-0.072}	245 ^{+0.046}	245 ^{+0.210} ^{+0.130}	240.276 240.110				24050	24060	24080		240100		240120			
250 ^{-0.072}	255 ^{+0.052}	255 ^{+0.260} ^{+0.170}	250.282 250.110			9.5	25050	25060	25080		250100		250120			
260 ^{-0.081}	265 ^{+0.052}	265 ^{+0.260} ^{+0.170}	260.282 260.110	0.354 0.110			26050	26060	26080		260100		260120			
280 ^{-0.081}	285 ^{+0.052}	285 ^{+0.260} ^{+0.170}	280.282 280.110				28050	28060	28080		280100		280120			
300 ^{-0.081}	305 ^{+0.052}	305 ^{+0.260} ^{+0.170}	300.282 300.110				30050	30060	30080		300100		300120			

SF-2WC 边界润滑止推垫片

Marginal Lubricating Thrust Washer

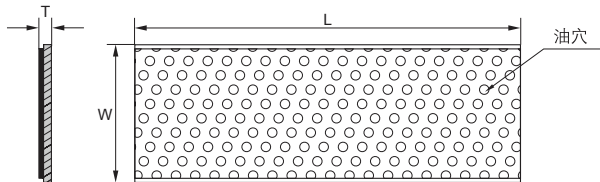
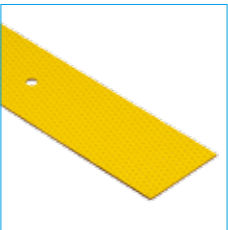


单位unit:mm

轴径 Axle	型号规格 Designation	垫片尺寸 Washer Dimension				安装尺寸 Installation Size		
		d +0.25	D -0.25	T -0.05	M ±0.125	h ^{+0.40} / _{+0.10}	t ±0.20	D ₁ +0.12
8	SF-2WC 10	10	20	1.5	15	1.5	1.0	20
10	SF-2WC 12	12	24		18			24
12	SF-2WC 14	14	26		20			26
14	SF-2WC 16	16	30		23	30		
16	SF-2WC 18	18	32	2.0	25	2.0	1.0	32
18	SF-2WC 20	20	36		28			36
20	SF-2WC 22	22	38		30			38
22	SF-2WC 24	24	42		33			42
24	SF-2WC 26	26	44		35			44
26	SF-2WC 28	28	48		38			48
30	SF-2WC 32	32	54	2.0	43	4.0	1.5	54
36	SF-2WC 38	38	62		50			62
40	SF-2WC 42	42	66		54			66
46	SF-2WC 48	48	74		61			74
50	SF-2WC 52	52	78	65	78			
60	SF-2WC 62	62	90	76	90			

SF-2PS 滑板

标准公差尺寸表 Standard Metric Size



单位unit:mm

代号 Code number	长度(L)±1	宽度(W)±1	壁厚(T)-0.05
SF-2 PS	500	150	1.0
SF-2 PS	500	150	1.5
SF-2 PS	500	150	2.0
SF-2 PS	500	150	2.5

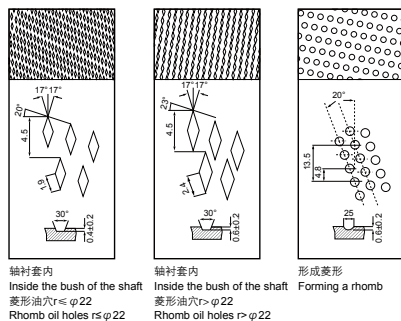
FB-090/092 轴承筒介

Bearing Introduction

材料组织 MATERIAL STRUCTURE

采用高密度青铜卷制成形，球形油袋或油穴特殊合成内部表面以减少磨损延长使用时间并且很好的做到防腐功能。

High-density bronze is rolled into shape or oil bags and oil holes are specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.



化学成分 Chemical Composition

材料 Material	铜 Cu	锡 Sn	磷 P	铅 Pb	锌 Zn
CuSn6.5P0.1	93.4	6.5	0.1	-	-

物理特性 Physical Property

型号 Type	密度 Density	散热热胀 Heat emission and expansion	热传导 Heat conducting	硬度 Hardness	抗压强度 Extensile	延伸率 Extensile
FB090/092	8.8g/cm ³	18.5×10 ⁻⁶ ×K ⁻¹	58W(m·k)	90~120HB	470N/mm ²	40%

应用范围 Application scope

此系列轴承广泛应用与农用、建设机械以及工程机械等。

This series of bearing is widely applied to agricultural, construction and engineering machineries, etc.

油穴类别 (依据 DIN1494/ISO3547)。

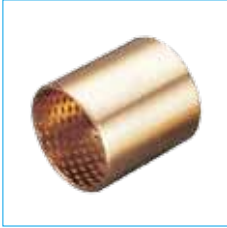
Categories of oil holes (As per to DIN1494/ISO3547)。

标准衬套公差 (依据 DIN 1494/3547) Standard tolerance for bushes (As per to DIN 1494/3547)

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 Matching shaft diameter
10~18	+0.065 +0.030	+0.018 0	+0.043 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

FB-090/092 系列青铜卷制轴承 Monometallic Self-lubricating Bearing

材料组织 MATERIAL STRUCTURE



FB-090 青铜卷制轴承 (标准公差尺寸见第29页) Wrapped Bronze Bushing

该产品以特殊配方的高密度铜合金带材为基体，表面轧制菱形油穴或半球形的油穴，具有密度高，承载压力大，耐磨性能好，使用寿命长。产品被广泛应用于起重机械、建筑机械、机床工业、采矿机械等领域。

FB-090 Bronze self-lubricating bearings used a kind of high density bronze alloy of special compositions as base, surface of alloy is rolled diamond type of the oil indents or half ball oil indents, this kind of bearing has higher density, load capacity, well wearing performance, longer lifetime. It has been widely used in many fields, such as hoist machines, building machinery, machine tool industry and mining machinery.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	120N/mm ²
	动载 Dynamic load	40N/mm ²
最高线速度 V Max Sliding Speed		2.5m/s
最高PV值 Max PV Value Limit		2.8N/mm ² ·m/s
摩擦系数μ Friction coefficient		0.08 ~ 0.25
使用温度 Working TEMP		-100°C ~ +200°C
导热系数 Thermal conductivity		60W/m·K
热膨胀系数 Coefficient of thermal expansion		15×10 ⁻⁶ /K

※材料特性 Material Characterisitc

材料 Material	化学成份 Chemical Composition			机械性能 Machine Performance		
	Cu%	Sn%	P%	抗拉强度 Tensile Strength	屈服强度 Yield Point	延伸率 Elongation
CuSn8	Rest	7.0 ~ 9.0	0.03 ~ 0.45	450N/mm ²	250N/mm ²	40%



FB-092 青铜布孔轴承 (标准公差尺寸见第29页) Wrapped Hole Bronze Bushing

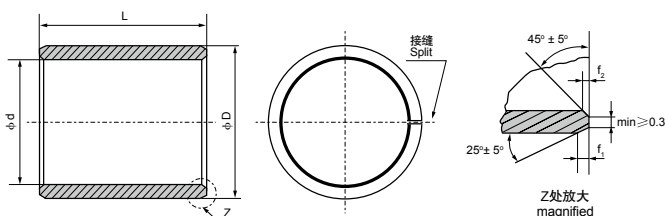
该产品CuSn6.5为基体，工作表面布满有规则油孔，具有承载高、耐磨性能好、摩擦系数低。产品被广泛应用于输送机、升降机、卷扬机、农用机械等。

FB-092 Bronze punch hole self-lubricating bearing used CuSn6.5 as base, designed regular oil holes bestwren working surface, it has high load capacity, well wearing resistance and low friction coefficient, it has been widely applied to transportation machinery, elevator, coiling machinery and agriculture equipment.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	110N/mm ²
	动载 Dynamic load	30N/mm ²
最高线速度 V Max Sliding Speed		2.5m/s
最高PV值 Max PV Value Limit		2.8N/mm ² ·m/s
摩擦系数μ Friction coefficient		0.08 ~ 0.25
使用温度 Working TEMP		-100°C ~ +200°C
导热系数 Thermal conductivity		60W/m·K
热膨胀系数 Coefficient of thermal expansion		15×10 ⁻⁶ /K

FB-090/092 标准公制轴承 Metric Standard Bushing



单位unit:mm

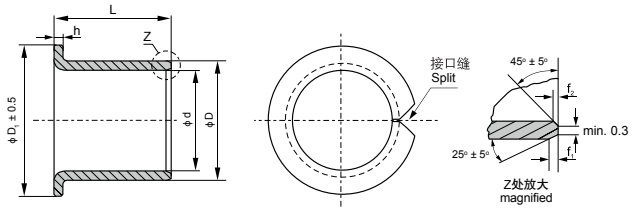
型号 Type	外径 φD	内径 φd	相配轴径 Axle	相配座孔 Housing	f ₁	f ₂	L±0.25						
							10	15	20	25	30	40	50
FB □	12	10	10 ^{-0.013 -0.028}	12 ^{+0.018 0}			1010	1015	1020				
FB □	14	12	12 ^{-0.016 -0.034}	14 ^{+0.018 0}			1210	1215	1220				
FB □	16	14	14 ^{-0.016 -0.034}	16 ^{+0.018 0}				1415	1420				
FB □	17	15	15 ^{-0.016 -0.034}	17 ^{+0.018 0}	0.6	0.3		1515	1520	1525			
FB □	18	16	16 ^{-0.016 -0.034}	18 ^{+0.018 0}				1615	1620	1625			
FB □	19	17	17 ^{-0.016 -0.034}	19 ^{+0.021 0}				1715	1720	1725			
FB □	20	18	18 ^{-0.016 -0.034}	20 ^{+0.021 0}				1815	1820	1825			
FB □	23	20	20 ^{-0.020 -0.041}	23 ^{+0.021 0}				2015	2020	2025	2030		
FB □	25	22	22 ^{-0.020 -0.041}	25 ^{+0.021 0}	0.8	0.4		2215	2220	2225	2230		
FB □	27	24	24 ^{-0.020 -0.041}	27 ^{+0.021 0}					2420	2425	2430		
FB □	28	25	25 ^{-0.020 -0.041}	28 ^{+0.021 0}					2520	2525	2530		
FB □	32	28	28 ^{-0.020 -0.041}	32 ^{+0.025 0}					2820	2825	2830		
FB □	34	30	30 ^{-0.020 -0.041}	34 ^{+0.025 0}					3020	3025	3030	3040	
FB □	36	32	35 ^{-0.025 -0.050}	36 ^{+0.025 0}	1.2	0.6			3220	3225	3230	3240	
FB □	39	35	35 ^{-0.030 -0.060}	39 ^{+0.025 0}					3520	3525	3530	3540	
FB □	44	40	40 ^{-0.025 -0.050}	44 ^{+0.025 0}					4020	4025	4030	4040	
FB □	50	45	45 ^{-0.025 -0.050}	50 ^{+0.025 0}					4520	4525	4530	4540	
FB □	55	50	50 ^{-0.025 -0.050}	55 ^{+0.030 0}							5030	5040	5050
FB □	60	55	55 ^{-0.030 -0.060}	60 ^{+0.030 0}	1.6	0.8					5530	5540	5550
FB □	65	60	60 ^{-0.030 -0.060}	65 ^{+0.030 0}							6030	6040	6050
FB □	70	65	65 ^{-0.030 -0.060}	70 ^{+0.030 0}							6530	6540	6550
FB □	75	70	70 ^{-0.030 -0.060}	75 ^{+0.030 0}							7030	7040	7050

FB-090/092 标准公制轴承 Metric Standard Bushing

单位unit:mm

型号 Type	外径 φD	内径 φd	相配轴径 Axle	相配座孔 Housing	f ₁	f ₂	L±0.25					
							40	50	60	80	100	120
FB □	80	75	75 ^{-0.030} _{-0.060}	80 ^{+0.030} ₀			7540	7550	7560			
FB □	85	80	80 ^{-0.030} _{-0.060}	85 ^{+0.035} ₀			8040	8050	8060			
FB □	90	85	85 ^{-0.036} _{-0.071}	90 ^{+0.035} ₀			8540	8550	8560			
FB □	95	90	90 ^{-0.036} _{-0.071}	95 ^{+0.035} ₀				9050	9560	9580		
FB □	100	95	95 ^{-0.036} _{-0.071}	100 ^{+0.035} ₀				9550	9560	9580		
FB □	105	100	100 ^{-0.036} _{-0.071}	105 ^{+0.035} ₀				10050	10060	10080	100100	
FB □	110	105	105 ^{-0.036} _{-0.071}	110 ^{+0.035} ₀				10550	10560	10580	105100	
FB □	115	110	110 ^{-0.036} _{-0.071}	115 ^{+0.035} ₀				11050	11060	11080	110100	
FB □	120	115	115 ^{-0.036} _{-0.071}	120 ^{+0.035} ₀				11550	11560	11580	115100	
FB □	125	120	120 ^{-0.036} _{-0.071}	125 ^{+0.040} ₀					12060	12080	12100	
FB □	130	125	125 ^{-0.043} _{-0.083}	130 ^{+0.040} ₀					12560	12580	125100	
FB □	135	130	130 ^{-0.043} _{-0.083}	135 ^{+0.040} ₀					13060	13080	130100	
FB □	140	135	135 ^{-0.043} _{-0.083}	140 ^{+0.040} ₀					13560	13580	135100	
FB □	145	140	140 ^{-0.043} _{-0.083}	145 ^{+0.040} ₀					14060	14080	140100	
FB □	150	145	145 ^{-0.043} _{-0.083}	150 ^{+0.040} ₀	1.6	0.8			14560	14580	145100	
FB □	160	155	155 ^{-0.043} _{-0.083}	160 ^{+0.040} ₀						15580	155100	155120
FB □	170	165	165 ^{-0.043} _{-0.083}	170 ^{+0.040} ₀						16580	165100	165120
FB □	180	175	175 ^{-0.043} _{-0.083}	180 ^{+0.040} ₀						17580	175100	175120
FB □	190	185	185 ^{-0.050} _{-0.096}	190 ^{+0.046} ₀						18580	185100	185120
FB □	200	195	195 ^{-0.050} _{-0.096}	200 ^{+0.046} ₀						19580	195100	195120
FB □	210	205	205 ^{-0.050} _{-0.096}	210 ^{+0.046} ₀						20580	205100	205120
FB □	220	215	215 ^{-0.050} _{-0.096}	220 ^{+0.046} ₀						21580	215100	215120
FB □	230	225	225 ^{-0.050} _{-0.096}	230 ^{+0.046} ₀						22580	225100	225120
FB □	240	235	235 ^{-0.050} _{-0.096}	240 ^{+0.046} ₀						23580	235100	235120
FB □	250	245	245 ^{-0.050} _{-0.096}	250 ^{+0.046} ₀						24580	245100	245120
FB □	265	260	260 ^{-0.056} _{-0.108}	265 ^{+0.052} ₀						26080	260100	260120
FB □	285	280	280 ^{-0.056} _{-0.108}	285 ^{+0.052} ₀						28080	280100	280120
FB □	305	300	300 ^{-0.056} _{-0.108}	305 ^{+0.052} ₀						30080	300100	300120

FB-090F/092F 青铜卷制翻边轴承 Wrapped Bronze Flanged Bushing



单位unit:mm

型号 Type	内径 φd	外径 φD	法兰外径 φD ₁ ±0.5	法兰壁厚 h 0 -0.20	高度 L±0.25	f ₁	f ₂	相配轴径 Axle	相配座孔 Housing
FB □F 2520	25	28	35	1.5	20	0.8	0.4	25 ^{-0.020} _{-0.041}	28 ^{+0.021} ₀
FB □F 2525					25				
FB □F 3020	30	34	45		20			30 ^{-0.020} _{-0.041}	34 ^{+0.025} ₀
FB □F 3025					25				
FB □F 3030					30				
FB □F 3530	35	39	50	2.0	30	1.2	0.6	35 ^{-0.025} _{-0.050}	39 ^{+0.025} ₀
FB □F 3540					40				
FB □F 3550					50				
FB □F 4030	40	44	55		30			40 ^{-0.025} _{-0.050}	44 ^{+0.025} ₀
FB □F 4040					40				
FB □F 4050					50				
FB □F 5030	50	55	65		30			50 ^{-0.025} _{-0.050}	55 ^{+0.030} ₀
FB □F 5040					40				
FB □F 5050					50				
FB □F 5530	55	60	70		30			55 ^{-0.030} _{-0.060}	60 ^{+0.030} ₀
FB □F 5540					40				
FB □F 5550					50				
FB □F 6040	60	65	75		40			60 ^{-0.030} _{-0.060}	65 ^{+0.030} ₀
FB □F 6050					50				
FB □F 6060					60				
FB □F 8050	80	85	100	2.5	50	1.6	0.8	80 ^{-0.030} _{-0.060}	85 ^{+0.035} ₀
FB □F 8060					60				
FB □F 8080					80				
FB □F 10050	100	105	120		50			100 ^{-0.036} _{-0.071}	105 ^{+0.035} ₀
FB □F 10060					60				
FB □F 10080					80				
FB □F 16060	160	165	190		60			160 ^{-0.043} _{-0.083}	165 ^{+0.040} ₀
FB □F 16080					80				
FB □F 20060	200	205	235		60			200 ^{-0.050} _{-0.096}	205 ^{+0.046} ₀
FB □F 20080					80				

JF-800 双金属轴承

Bimetallic Self-Lubricating Bearing

材料组织 MATERIAL STRUCTURE



JF-800双金属轴承，是以低碳钢板为基体材料，表面烧结CuSn6Zn6Pb3或CuPb10Sn10材料的钢铜合金产品。该产品是双合金轴承中承载能力最强的一种，重型车的平衡桥衬套，均使用该产品。它是一种用途很广的高载荷低速运动轴承。

JF-800 bimetal bearing, is a low-carbon steel as the base material, the surface of the material sintered CuSn6Zn6Pb3 or CuPb10Sn10 steel and copper alloy products. The product is a two-alloy bearings in the bearing capacity of the strongest one, the balance of the bridge sleeve heavy vehicles are using the product. It is a very versatile and any low speed high load bearings.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	120N/mm ²
	动载 Dynamic load	60N/mm ²
最高线速度 V Max Sliding Speed		2m/s
最高PV值 Max PV Value Limit		2.8N/mm ² ·m/s
抗剪切强度 Shear Strength		350N/mm ²
屈服强度 Yield Strength		240N/mm ²
摩擦系数μ Friction coefficient		0.08 ~ 0.20
使用温度 Working TEMP		-40°C ~ +250°C
导热系数 Thermal conductivity		60W/m·K
热膨胀系数 Coefficient of thermal expansion		14×10 ⁻⁶ /K ⁻¹

JF-800 标准制轴套

Metric Standard Bushing

轴套外径公差表

Bushing O.D.Tolerances Table

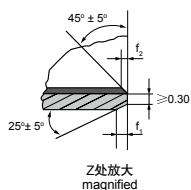
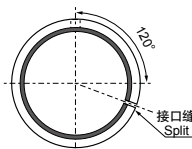
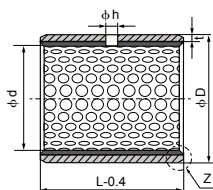
外径φD Outer DiameterφD	外径公差 Outer Diameter Tolerance
φD≤10	+0.055 +0.025
10 < φD≤18	+0.065 +0.030
18 < φD≤30	+0.075 +0.035
30 < φD≤50	+0.085 +0.045
50 < φD≤80	+0.100 +0.055
80 < φD≤120	+0.120 +0.070
120 < φD≤180	+0.170 +0.100

轴套壁厚公差

Bushing Wall Thickness Tolerances Table

内径φd Inner Diameter φd	壁厚公差t Wall Thickness Tolerance
8 < φd≤18	1.0 ⁰ / _{-0.030}
18 < φd≤25	1.5 ⁰ / _{-0.030}
25 < φd < 45	2.0 ⁰ / _{-0.035}
45≤φd≤150	2.5 ⁰ / _{-0.050}

JF-800 标准公制轴承 Metric Standard Bushing



单位unit:mm

型号 Type	外径 ϕD	内径 ϕd	相配轴径 Axle	相配座孔 Housing H7	Hole ϕh	f_1	f_2	L-0.4						
								15	20	25	30	40	50	
JF800	12	10	10 $\begin{smallmatrix} -0.013 \\ -0.028 \end{smallmatrix}$	12 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$				1015	1020					
JF800	14	12	12 $\begin{smallmatrix} -0.016 \\ -0.034 \end{smallmatrix}$	14 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$				1215	1220					
JF800	16	14	14 $\begin{smallmatrix} -0.016 \\ -0.034 \end{smallmatrix}$	16 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$				1415	1420					
JF800	17	15	15 $\begin{smallmatrix} -0.016 \\ -0.034 \end{smallmatrix}$	17 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	$\phi 4$	0.6	0.3	1515	1520	1525				
JF800	18	16	16 $\begin{smallmatrix} -0.016 \\ -0.034 \end{smallmatrix}$	18 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$				1615	1620	1625				
JF800	19	17	17 $\begin{smallmatrix} -0.016 \\ -0.034 \end{smallmatrix}$	19 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$				1715	1720	1725				
JF800	20	18	18 $\begin{smallmatrix} -0.016 \\ -0.034 \end{smallmatrix}$	20 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$				1815	1820	1825				
JF800	23	20	20 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	23 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$				2015	2020	2025				
JF800	25	22	22 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	25 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$							2220	2225	2230	
JF800	27	24	24 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	27 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	$\phi 6$	0.8	0.4		2420	2425	2430			
JF800	28	25	25 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	28 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$							2520	2525	2530	
JF800	30	26	26 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	30 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$							2620	2625	2630	
JF800	32	28	28 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	32 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$							2820	2825	2830	
JF800	34	30	30 $\begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$	34 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$							3020	3025	3030	
JF800	36	32	32 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	36 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				$\phi 8$	1.2	0.6		3220	3225	3230
JF800	39	35	35 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	39 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$							3520	3525	3530	3540
JF800	42	38	38 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	42 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$							3820	3825	3830	3840
JF800	44	40	40 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	44 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$								4025	4030	4040
JF800	50	45	45 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	50 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$								4525	4530	4540
JF800	55	50	50 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	55 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$									5030	5040
JF800	60	55	55 $\begin{smallmatrix} -0.030 \\ -0.060 \end{smallmatrix}$	60 $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$		1.6	0.8				5530	5540	5550	

JF-800 标准公制轴承

Metric Standard Bushing

单位unit:mm

型号 Type	外径 φD	内径 φd	相配轴径 Axle	相配座孔 Housing H7	Hole φh ₁	f ₁	f ₂	L -0.4					
								40	50	60	70	80	100
JF800	65	60	60 ^{-0.030} _{-0.060}	65 ^{+0.030} ₀	φ8			6040	6050	6060			
JF800	70	65	65 ^{-0.030} _{-0.060}	70 ^{+0.030} ₀				6540	6550	6560			
JF800	80	75	75 ^{-0.030} _{-0.060}	80 ^{+0.030} ₀				7540	7550	7560			
JF800	85	80	80 ^{-0.030} _{-0.060}	85 ^{+0.035} ₀			8040	8050	8060				
JF800	90	85	85 ^{-0.036} _{-0.071}	90 ^{+0.035} ₀				8550	8560	8570			
JF800	95	90	90 ^{-0.036} _{-0.071}	95 ^{+0.035} ₀				9050	9060	9070			
JF800	100	95	95 ^{-0.036} _{-0.071}	100 ^{+0.035} ₀				9550	9560	9570			
JF800	105	100	100 ^{-0.036} _{-0.071}	105 ^{+0.035} ₀				10050	10060	10070			
JF800	110	105	105 ^{-0.036} _{-0.071}	110 ^{+0.035} ₀		1.6	0.8	10550	10560	10570			
JF800	115	110	110 ^{-0.036} _{-0.071}	115 ^{+0.035} ₀	φ9.5			11050	11060	11070			
JF800	120	115	115 ^{-0.036} _{-0.071}	120 ^{+0.035} ₀					11560	11570	11580		
JF800	125	120	120 ^{-0.036} _{-0.071}	125 ^{+0.040} ₀					12060	12070	12080		
JF800	130	125	125 ^{-0.043} _{-0.083}	130 ^{+0.040} ₀					12560	12570	12580		
JF800	135	130	130 ^{-0.043} _{-0.083}	135 ^{+0.040} ₀					13060	13070	13080		
JF800	140	135	135 ^{-0.043} _{-0.083}	140 ^{+0.040} ₀							13580	135100	
JF800	150	145	145 ^{-0.043} _{-0.083}	150 ^{+0.040} ₀							14580	145100	
JF800	155	150	150 ^{-0.043} _{-0.083}	155 ^{+0.040} ₀							15080	150100	

FU-1 铜基含油粉末冶金轴承 Sintered Bronze Bushing



FU-1铜基含油轴承,是以锡青铜粉末为原料,经过模具压制,在高温下烧结后整形而成。它的基体有细微、均布的孔隙,经润滑油真空浸渍后形成含油状态。该产品具有短期不加油润滑,使用成本低,内外径尺寸可变化等特点,适用于中速、低载荷的场所使用。产品已广泛应用于家用电机、电动工具、纺织机械、化工机械、汽车工业和办公设备等场合。

FU-1 sintered bronze bushing powder is mold pressed under high pressure and then sintered under high temperature, and oil is soaked into the homogeneously spreaded tiny pores of the metal under vacuum. Fu bearing can withstand dry condition in medium speed and low load for sometime. Moreover it is cheap and stable in dimension. This is widely used in domestic electric and electronic machines, electric tools, textile machines, chemical engineering machines, automobiles and official business machines.

※技术参数: Technical Data

性能指标 Performance Index	有关数据 Data
最大承载压力 P Max Load Capacity P	45N/mm ²
工作温度 Working Temperature	-60°C~+160°C
最高滑动速度 Max.Sliding Speed V	2.5m/s
材质 Material	CuSn6-6-3
允许最高PV值 Maximum PV Value	2.45N/mm ² ·m/s

FU-2 铁基含油粉末冶金轴承 Sintered Iron Bushing



FU-2铁基含油轴承,是一种铁基粉末冶金产品,由于含油的作用,可以防止咬轴现象。在低载荷的情况下,可以有与铜粉末冶金相似的耐磨性能。该产品广泛应用于纺织机械、汽车、摩托车减震器和电动工具的滑动部位。在静态使用的环境下可用作导向定位轴套的基座。

FU-2 sintered iron power bearing, it can avoid seizing shaft due to the oil content in the bushing. Same as bronze power bushings, FU-2 bushing has good performance of anti-friction if it works under low load. It can be widely used in sliding part of textile machines, electric tools, shock absorbers of automobile and motorcycle. Under static condition, it can be used as base housing for guiding and fixing position.

※技术参数: Technical Data

性能指标 Performance Index	有关数据 Data
最大承载压力 P Max Load Capacity P	45N/mm ²
工作温度 Working Temperature	-60°C~+160°C
最高滑动速度 Max.Sliding Speed V	2.5m/s
材质 Material	Fe
允许最高PV值 Maximum PV Value	1.6N/mm ² ·m/s

FU-3 铜铁合基含油粉末冶金轴承
Sintered Bronze-Iron Bushing



FU-3铜铁含油轴承，是一种集FU-1和FU-2合而为一的粉末冶金产品，其Fe与Cu的配比完全可以按顾客的使用要求而确定，既考虑满足生产条件，又考虑降低成本，是机械零部件中，满足顾客个性化需求最理想的专用产品。

FU-3 sintered bronze & iron bearing has advantages of FU-1 and FU-2. The proportion of iron and bronze can be decided by customers' actual application. The bushing is of low cost but it can satisfy customers' variety requirement better.

※技术参数：Technical Data

性能指标 Performance Index	有关数据 Data
最大承载压力 P Max Load Capacity P	45N/mm ²
工作温度 Working Temperature	-60°C~+160°C
最高滑动速度 Max.Sliding Speed V	2.5m/s
材质 Material	Cu+Fe
允许最高PV值 Maximum PV Value	1.8N/mm ² ·m/s

FR 四氟软带轴承
PTFE Soft Strips



该产品以青铜丝网为基体，通过特殊工艺，表面轧制聚四氟乙烯和亲油性纤维。它具有较低的摩擦系数、较好的耐磨性以及柔软性好。产品广泛应用于纺织机械关节轴承、汽车门铰链、汽车操纵杆等场合。

FR Bronze Pb-free self-lubricating bearing uses bronze mesh as its structure, by means of special technology, rolled by PTFE at the surface and lipophilicity fiber. It performs well with lower friction and well anti-wear good pliability. It has been widely used in linkage of textile machinery, tailgate hinges, automotive steering and so on.

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	80N/mm ²
	动载 Dynamic load	40N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	0.5m/s
	油润滑 Oil lubrication	2.5m/s
最高PV值 Max PV Value Limit		1.6N/mm ² ·m/s
摩擦系数μ Friction coefficient		0.03~0.20
使用温度 Working temperature		-50°C ~ +250°C

FZ 保持架系列 FZ Keep Series

FZH 铜基钢球保持架 (标准公差尺寸见第38页) Bronze Ball Retainer



该产品以铜基，配以优质钢球，按一定的角度和密度有序地排列，采用特殊工艺加工而成。产品适用于冷冲模具，精密机床等。

The basement of this product is copper. With the high quality roller being arranged orderly in certain angle and density, it is produced by special workmanship. This kind of products is used in punching mold and high-precision machine tools.

※技术参数: Technical Data

最大承载压力	30N/mm ²	装配过盈	0.01mm~0.02mm
最高线速度	6m/s	钢球直径偏差	<0.002mm
摩擦系数	0.01~0.08		

FZL 铝基钢球保持架 Aluminium Ball Retainer



该产品以铝基为基体，配以优质钢球，按一定的角度和密度有序地排列，采用特殊工艺加工而成。产品适用于冷冲模具，精密机床等。

The basement of this product is aluminum. With the high quality roller being arranged orderly in certain angle and density, it is produced by special workmanship. This kind of products is used in punching mold and high-precision machine tools.

※技术参数: Technical Data

最大承载压力	25N/mm ²	装配过盈	0.01mm~0.02mm
最高线速度	6m/s	钢球直径偏差	<0.002mm
摩擦系数	0.01~0.08		

FZP 树脂基钢球保持架 Resin Ball Retainer



该产品以POM为基体，配以优质钢球，按一定的角度和密度有序地排列，采用特殊工艺加工而成。产品适用于冷冲模具，精密机床等。

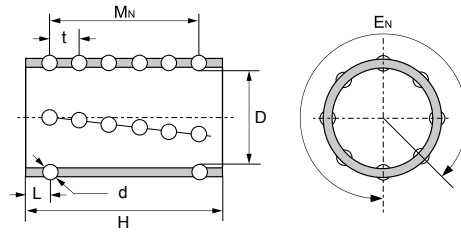
The basement of this product is POM. With the high quality roller being arranged orderly in certain angle and density, it is produced by special workmanship. This kind of products is used in punching mold and high-precision machine tools.

※技术参数: Technical Data

最大承载压力	20N/mm ²	装配过盈	0.01mm~0.02mm
最高线速度	6m/s	钢球直径偏差	<0.002mm
摩擦系数	0.01~0.08		

FZ 钢球保持架标准尺寸

Ball Retainer Standard Metric Sizes

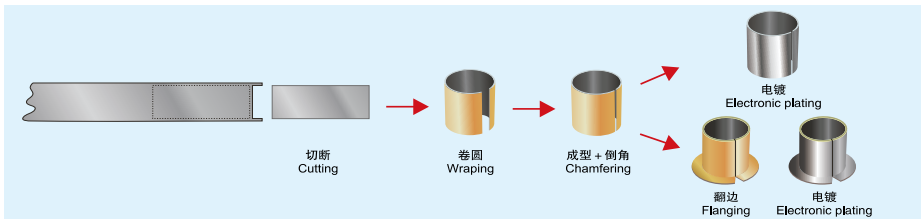


单位Unit: mm

型号规格 Designation	φD	H	φd	E_N	M_N	钢球数量 Balls	t	L
FZ □ 1950	19	50		12	8	96		5.75
FZ □ 1960		60			10	120		5.25
FZ □ 2050	20	50			8	96		5.75
FZ □ 2060		60			10	120		5.5
FZ □ 2250	22	50			8	112		5.75
FZ □ 2260		60			3	14		10
FZ □ 2360	23	60			10	140		5.25
FZ □ 2475	24	75			13	208	5.45	4.80
FZ □ 2550	25	50		16	8	128	5.5	5.75
FZ □ 2560		60			10	160		5.25
FZ □ 2775	27	75			13	208	5.45	4.80
FZ □ 2860	28	60		14	8	112		7.25
FZ □ 2875		75			11	154		5.0
FZ □ 3060	30	60			8	112		7.25
FZ □ 3075		75			11	154		6.5
FZ □ 3260	32	60	4		8	128		7.25
FZ □ 3275		75			11	176		5.0
FZ □ 3685	36	85		16	12	192		6.75
FZ □ 3690		90			13	208		6.0
FZ □ 3870	38	70			8	128	8.0	7.0
FZ □ 3890		90			11	176		5.5
FZ □ 4090	40	90			11	176	7.9	5.5
FZ □ 4590	45	90		18	11	195		5.5
FZ □ 45110		110			5	13		234
FZ □ 5090	50	90		20	11	220		7.9
FZ □ 50110		110			13	260		8.0
FZ □ 6090	60	90		22	11	242		7.9
FZ □ 60110		110			13	286		8.0
FZ □ 80130	80	130		28	15	420		9.0

工艺流程 Process

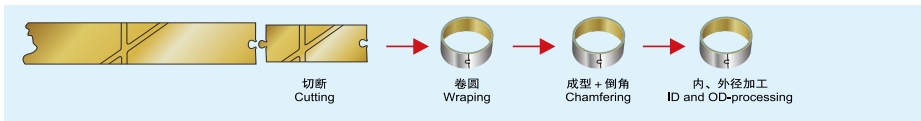
SF-1 系列直缝轴承加工工艺流程 SF-1 Series Straight Bushing Processing Flow



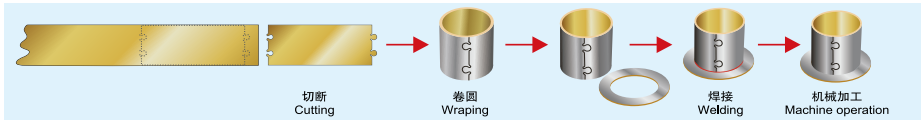
SF-2 系列轴承加工工艺流程 SF-2 Series Straight Bushing Processing Flow



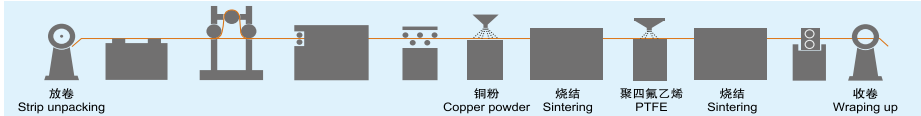
JF-800 系列轴承加工工艺流程 JF-800 Series Bushing Processing Flow



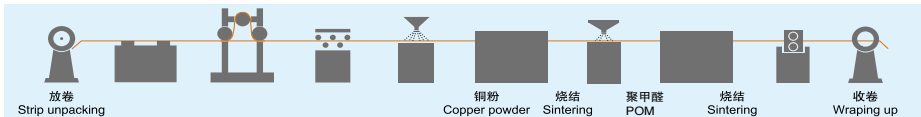
JF-800 系列法兰轴承加工工艺流程 JF-800 Series Flanged Bushing Processing Flow



SF-1 系列材料加工工艺流程 SF-1 Series Material Processing Flow



SF-2 系列材料加工工艺流程 SF-2 Series Material Processing Flow



轴承的选型与计算

Bearing Selection & Calculation

轴承选型 Bearing Selection

滑动轴承根据不同的工况条件设计了不同的轴承材料。用户在使用和设计时应当根据轴承的使用温度、轴承的承载面压、线速度、耐磨性能要求、运动类型、安装情况、轴承成本等各方面因素综合考虑。

Bush have developed kinds of bearing material according to difference work condition, the user can select the material base on bearing work environment, load, speed, wear, resistance request, moving method, installation, the cost of the material etc.

面压计算 Bearing Load

直套、翻边轴承 Cylindrical bushes, flange bushes

$$P = \frac{F}{dL} \quad (\text{N/mm}^2)$$

F = 轴承载值 Load (N)

d = 轴径 Shaft (mm)

L = 轴承长度 Bearing Length (mm)

止推垫片 Thrust Washer

$$P = \frac{4F}{(D^2 - d^2)\pi} \quad (\text{N/mm}^2)$$

F = 垫片承载值 Load (N)

D = 垫片外径 Washer OD (mm)

d = 垫片内径 Washer ID (mm)

由于受配合间隙、材料强度、轴承倒角、内部油槽等原因的影响，轴承的真正承载面压 (Pact) 会大于理论计算值 (Pmean)。

As the factor of clearance, bushes chamfer, oil groove etc. The actually load (Pact) is higher than theory of calculation (P_{mean}).

线速度计算 Velocity

旋转运动 Rotating motion

$$V = \frac{dn\pi}{1000 \times 60} \quad (\text{m/s})$$

d = 轴径 Shaft (mm)

n = 转数/分 Rpm

摇摆运动 Oscillating motion

$$V = \frac{dc\theta\pi}{1000 \times 360 \times 60} \quad (\text{m/s})$$

d = 轴径 Shaft (mm)

c = 摇摆频率 Frequency (次数/分)

θ = 摇摆角度 Oscillating angle

往复运动 Reciprocating motion

$$V = \frac{2sc}{60} \quad (\text{m/s})$$

s = 行程长度 (m)

c = 往复频率 Frequency (次数/分)

PV值计算 PV = P × V (N/mm² × m/s)

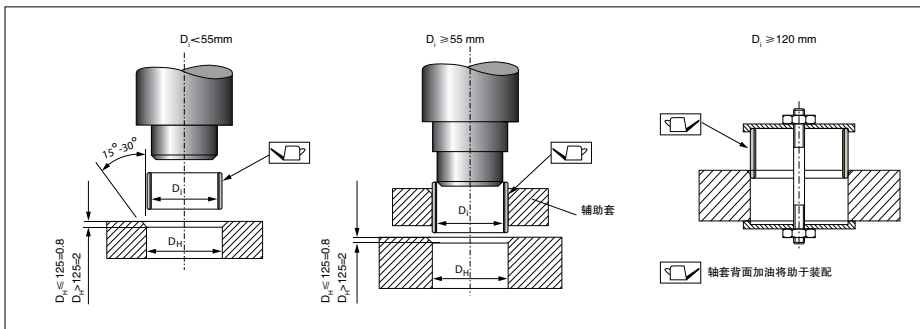
PV是指轴承在一定的承载和线速度条件下的乘积之和。设备的PV值与轴承的使用寿命成反比关系，因此建议设计时设备的PV取值尽量使用比较低的安全PV值，以确保轴承会有更长的使用寿命。同时也要考虑设备上轴承实际的承载、线速度、使用温度等不能超过所选择材料的极限值，并尽可能地小。

PV is the product of the specific bearing load P and the sliding speed V which is very important design data. We recommend design lower PV value will lead to longer service life. Also don't exceed the max. Of material load, speed, temp. And lower if possible.

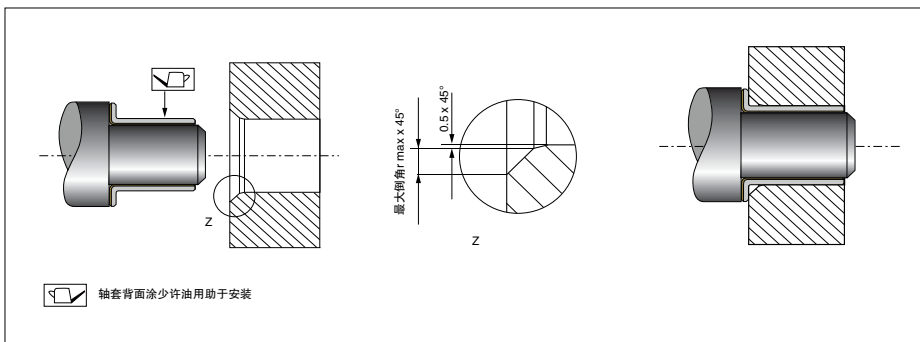
卷制轴承的安装

The installation of rolling bearings class

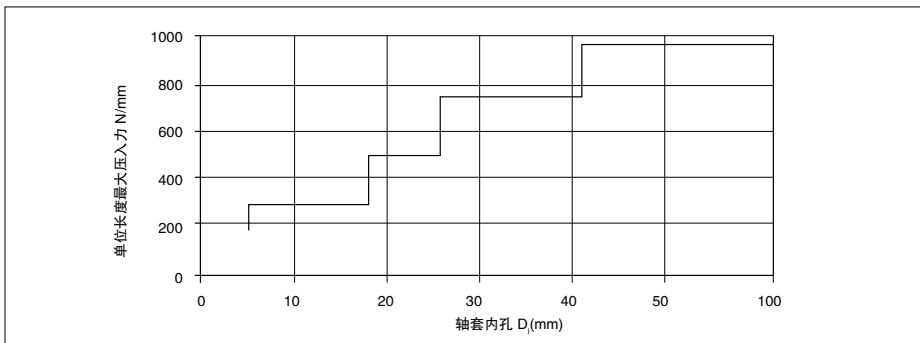
直套安装 Straight sets to install



翻边套安装 Installation flange set



压入力计算 Indentation Calculation



卷制轴承的安装

The installation of rolling bearings class

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.

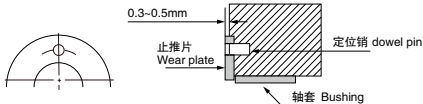
垫片和滑板的安装

Gasket and slide installation

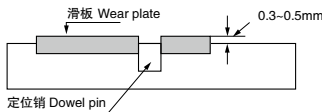
建议垫片和滑板安装在凹陷的座孔内，为了避免移动，同时建议采用定位销加以固定。

Recommended installation of gaskets and slide the bracket hole in the Depression, in order to avoid the move, also proposed to be fixed with pins.

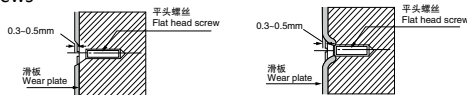
1. 定位销在垫片上的使用 Pins used on the gasket



2. 定位销在滑板上的使用 Pins in the slide with the use



3. 平头螺丝的使用 The use of flat head screws

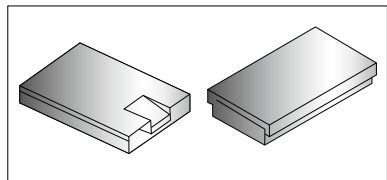
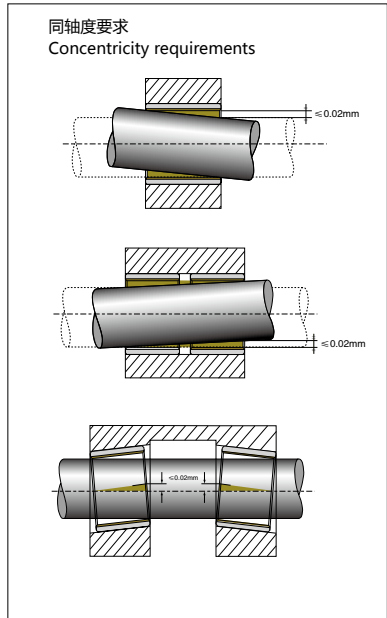


其他固定方法

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 <math>< 320^{\circ}\text{C}</math>）的方法加以固定；此时必须注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 <math>< 320^{\circ}\text{C}</math>) method to be fixed; idea use this time to the temperature of not more than bearing material itself can withstand the scope of sleeve face prevent contact with adhesives.



卷制轴承的安装

The installation of rolling bearings class

PTFE基轴承的加工和安装注意事项

PTFE-based bearing the processing and installation considerations

PTFE 基轴承一般都是成品零件，组装后内孔不再进行较、镗等加工，若座孔按推荐的尺寸加工时，卷制类轴承内径的整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°C 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；

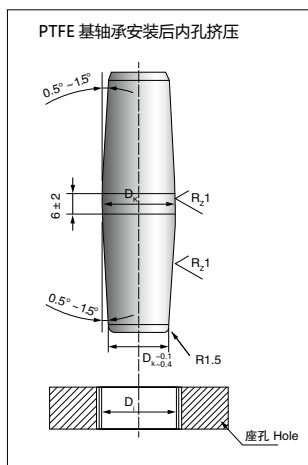
PTFE 轴承需要加工时，为了避免毛刺的产生建议从 PTFE 一侧进行加工或钻孔，在钻孔过程中轴套应当有足够的支撑已确保不会由于钻孔压力导致变形，带材的加工方法可以通过剪切、水切割、激光切割等方法。

PTFE-based bearing are generally finished parts, assembled in the hole is no longer the hinge, boring, 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 behavior can be installed on the PTFE-based bearing in the hole 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 pressure than small or small and required to run a smooth swing, you can increase the working space, when used at high temperatures, is increased by 100 °C, the proposed reduction of shaft diameter 0.008mm; if the bearing material 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, bearing bearing diameter is usually 1.5 times the 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 You can cut, water jet cutting, laser cutting and other methods.



内孔 D_i Bore D_i	挤压芯棒 D_k Extrusion Mandrel D_k	使用寿命 Life
D_i	D_k	100%
$< 55+0.02$	$< 55+0.06$	80%
$\geq 55+0.03$	$\geq 55+0.08$	60%
$\geq 120+0.04$	$\geq 120+0.10$	30%

热塑性聚合物边界润滑轴承的加工和安装注意事项

Boundary lubrication bearing thermoplastic polymer processing and installation notes

SF-2 轴承一般都是成品零件，组装后内孔不再进行较、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；如果装配需要，可以对此类轴承在安装后进行内孔加工以达到更高的精度，加工的方式可以采用较、镗和拉刀等方法，此时需要注意塑料层可加工的厚度不能大于 0.12mm 以确保油穴的存在，另外需要注意在加工时注意塑料层出现毛刺而影响轴承的使用，具体请咨询工程师。在高温下使用时，需要增加轴与内孔的配合间隙，建议每升高 20°C 时建议轴径减少 0.005mm；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；轴承需要加工时，为了避免毛刺的产生建议从塑料层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。

SF-2 bearing are generally finished parts, assembled in the hole is no longer the hinge, boring, and other processing, if the bore size of the recommended process, the rolling type bearings with bore roundness can meet the requirements; If you need the assembly can be of such bearings in the hole after installation in order to achieve higher precision machining and processing methods can be used hinge, boring and other methods broach, can be processed at this time to note the thickness of plastic layer can not be greater than 0.12mm hole to ensure the presence of oil, the other to note the attention in the processing of plastic bearing layer appears to affect the use of glitches, please contact the specific engineer. When used at high temperatures, need to increase the shaft and the hole with the gap, the proposed recommendations for every increase of 20°C, less shaft diameter 0.005mm; If the bearing material 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, bearing bearing diameter is usually 1.5 times the diameter, thin-walled bore need to consider when using press-fit and use of the deformation; bearings need processing, in order to avoid the generation of burrs from the plastic layer 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 You can cut, water jet cutting, laser cutting and other methods.

卷制轴承的安装

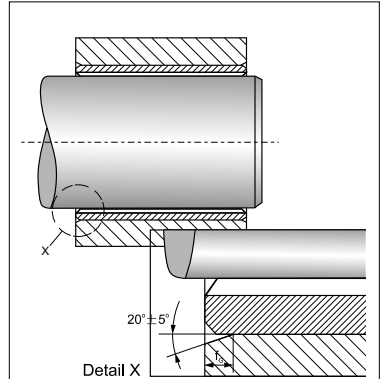
The installation of rolling bearings class

直套 Straight sets

压装前座孔必须在内径上进行有效的倒角，倒角的大小需要根据轴套尺寸进行调整。

There should be chamfers on the housing bore during the assembly. A chamfer $F_g \times 25^\circ \pm 5^\circ$ is important for the easier pressing of the bushing into the housing.

座孔内尺寸 d_c Housing bore diameter d_c	座孔内倒角 f_c Chamfer with f_c
$d_c \leq 30$	0.8 ± 0.3
$30 < d_c \leq 80$	1.2 ± 0.4
$80 < d_c \leq 180$	1.8 ± 0.8
$d_c > 180$	2.5 ± 1.0

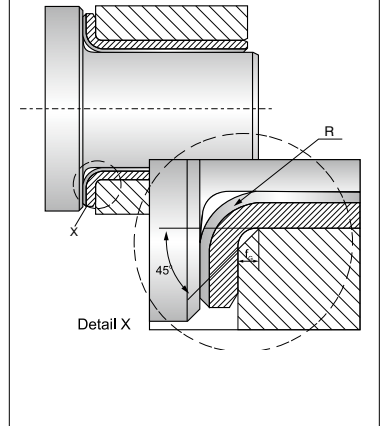


翻边套 Flange cover

在翻边轴套的安装过程中，必须注意轴套的翻边角度R对于轴在使用时的影响；座孔倒角可以使得轴套能够容易贴合在座孔端面上，同时可以承受轴向推力。

The radius at the transition from the radial to the axial component must be taken into consideration for flange bushes. A sufficiently large chamfer must be provided on the housing to prevent the flanged bushes fouling in the area of the radius. Sufficient support must be provided for the flange in applications with axial loading.

座孔内尺寸 d_c Housing bore diameter d_c	座孔内倒角 f_c Chamfer with f_c
$d_c \leq 10$	1.2 ± 0.2
$d_c > 10$	1.7 ± 0.2



卷制轴承的安装

The installation of rolling bearings class

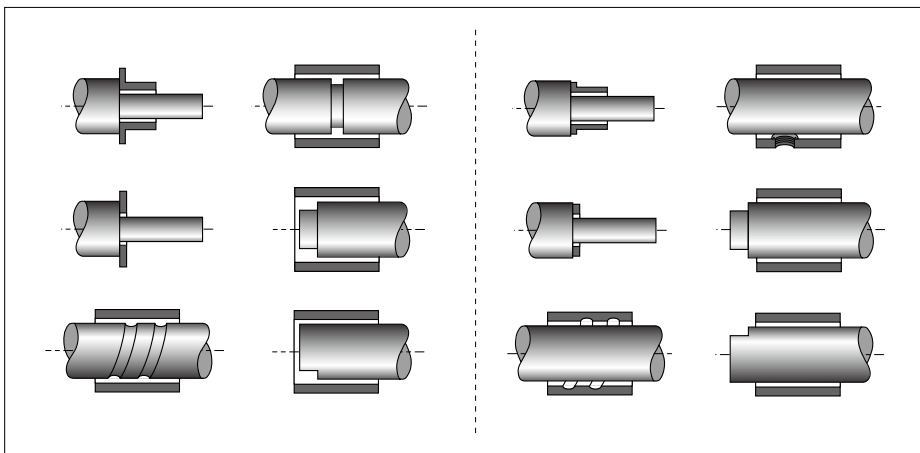
对磨轴 The shaft

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 for the life of bearing a great impact, in general, we recommend that the hardness of the shaft HRC > 50, surface roughness Ra0.4 below; in damp or recommended where corrosive stainless steel, hard chrome plating.

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磨损型物质进入时应当安装合适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.

