



JF-800 双金属白润滑轴承



浙江嘉善海丰轴承厂
JIASHAN HAIFENG BEARING FACTORY



公司简介 INTRODUCTION

嘉善海丰轴承厂（HFB）是一家专业从事轴承设计生产的实体企业，位于浙江嘉善县，地处长三角都市经济圈，与上海、苏州、杭州接壤，地理位置优越，交通便利。

公司生产的产品主要产品SF-1系列无油润滑轴承，SF-2系列边界润滑轴承，FZ系列钢球保持架，JDB系列固体润滑轴承，JF系列双金属轴承，FB系列青铜卷制轴承系列等多个系列产品。

产品广泛应用于冶金、汽车、矿山、石油、化工、电机电器、船舶、印刷、机械、水利、模具、铁路机车等领域。

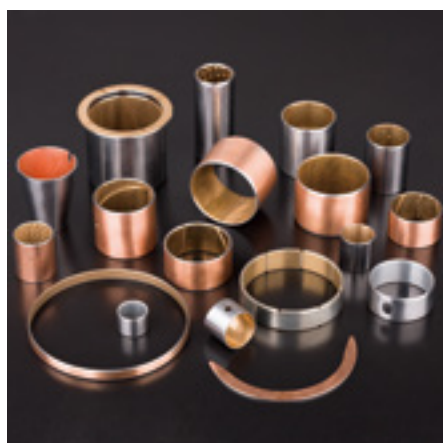
欢迎广大海内外客户与我们洽谈业务，我们将竭诚为您提供一流的产品，一流的服务。

Jiashan Haifeng bearings Co., Ltd, is specialized in manufacturing sliding bearing. Our main products are: SF-1(DU) self-lubricating bearings, SF-2(DX) boundary self-lubricating bearings, JF bi-metal bearings, JDB cast bronze with solid lubricants bearings, FB090 bronze bearings, FZ ball retainer, FR PTFE tape, FD bronze powder with PTFE tape, FU sintered bronze bearings etc.

We can supply products with stable quality, and has won the trophy and certificate authorities. It is widely used in hydraulic elements, automobile, Metallurgical Mines, Ocean Station Vessel, Industrial Machinery, Petroleum Industry Machinery, Textile machine, lifting appliance, Printing, foods and Construction Machinery etc.

We are committed to supplying products of the highest quality and providing a comprehensive and professional service.

JF-800/720/700/20/930 双金属自润滑轴承 Bimetallic self-lubricating bearing



该产品以优质低碳钢为基体，表面烧结青铜粉，适用于高载低速下的旋转，摇摆运动。具有摩擦系数低、耐磨性能好、使用寿命长、抗咬合性能好等特点，铜合金层可根据要求加工出各种类型的油穴、油槽。产品被广泛应用于矿山机械、汽机车、建筑机械、农用机械、轧钢机械等。

JF-800/720/700/20/930 Bimetallic self-lubricating bearing used high quality low-carbon steel plate as base, sintered porous bronze as its surface, suitable for rotatory oscillating, reciprocating movements on the conditions of high load, low speed, low friction, well wear resistance, long lifetime and better prevent from holding-on. The bronze layer surface can be machined with various of grooves, oil pockets in terms of different work condition. The product is widely used in mining machinery, automobile, building machinery, agriculture equipment, rolling steel industry etc.

※材料特性：Material Characteristic

材料牌号 Material Trademark	合金成份 Alloy Composition	合金硬度 Alloy Hardness	国际标准 International Standard
JF-800	CuPb10Sn10	70 ~ 100HB	美国SAE-797/德国GLYCO 66/日本JIS-LBC3
JF-720	CuPb24Sn4	45 ~ 70HB	美国SAE-797/德国GLYCO 68/日本JIS-LBC6
JF-700	CuPb30	40 ~ 60HB	美国SAE-48/日本JIS-KJ3
JF-20	AlSn20Cu	30 ~ 45HB	美国SAE-783/德国GLYCO 74/日本JIS-AJL
JF-930	CuPb6.5P0.1	69 ~ 90HB	

※技术参数：Technical Data

性能指标 Performance index		型号 Type	JF-800	JF-720	JF-700	JF-20	JF-930
最大承载 P(N/mm ²) Max Load Capacity			150	130	120	100	150
拉伸强度 (N/mm ²) Tensile Strength			185	150	200	200	185
最大线速度 (油润滑) V(m/s) Max Sliding Speed (Oil Lubrication)			5	10	10	25	5
摩擦系数 μ Friction coefficient			0.06 ~ 0.14	0.06 ~ 0.16	0.08 ~ 0.16	0.08 ~ 0.17	0.06 ~ 0.16
最高PV值 N/mm ² · m/s Max PV Value Limit	脂润滑 Grease lubrication		2.8	2.8	2.5	—	2.8
	油润滑 Oil lubrication		20	10	8	6	—

JF-800/720/700/20/930 双金属自润滑轴承 Bimetallic self-lubricating bearing



※应用特性: Application Characteristics

材料牌号 Material Trademark	适用条件	适用场合
JF-800	很高的耐疲劳强度和承载能力, 抗冲击能力强, 耐磨性、耐腐蚀性好 Very good resistance to fatigue strength, with high shock resistance and good corrosion resistance.	中速、高冲击载荷的衬套, 内燃机连杆活塞销衬套 Fit for middle load, high speed, bushes, washer and connecting rod bearing in internal combustion engine used in mechanical equipment and high shock bushing.
JF-720	较高的耐疲劳强度和承载能力、较好的滑动性能, 易受润滑油腐蚀 Good resistance to fatigue strength and high load capacity, good performance of sliding, liable to be corrupted by lubricating oil.	中载中速、高速内燃机主轴套和连杆轴套 middle load middle speed, principle axis of internal combustion engine.
JF-700	较高的耐疲劳强度、承载能力、抗冲击能力 Good resistance to fatigue strength, load capacity, shock resistance and corrosion.	用于内燃机主轴和连杆轴承、止推垫片 Principle axis of internal combustion engine, connecting rod bushing.
JF-20	良好的抗咬性、异物埋没性, 工作表面镀软合金层 Good performance of anti-seizing, covering eyewinker, soft alloy be plated on working surface.	高速中低载荷的内燃机主轴套, 连杆轴套 High speed, middle or low load, principle axis internal combustion engine
JF-930	中等的耐疲劳强度和承载能力, 良好的抗腐蚀性能, 较好轴承滑动性能。 Moderate fatigue strength, and load capacity, good performance of bearing sliding.	高速低载的内燃机轴瓦、气压机、制冷机轴套 High speed, low load, internal combustion engine half bearing, bushing used in compressing and refrigerating machine.

JF-800/720/700/20/930 标准公制轴套 Metric Standard Bushing

轴套外径公差表

Bushing O.D.Tolerances Table

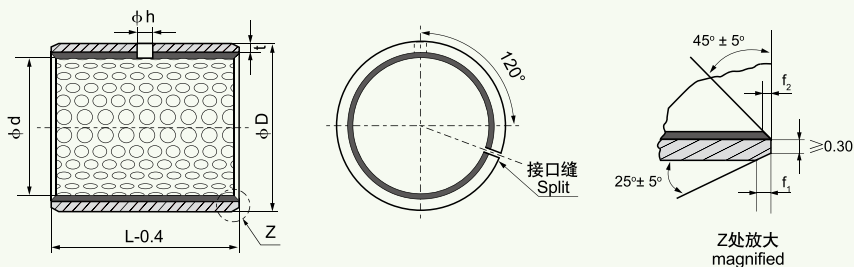
外径 ϕD Outer Diameter ϕD	外径公差 Outer Diameter Tolerance
$\phi D \leq 10$	+0.055 +0.025
$10 < \phi D \leq 18$	+0.065 +0.030
$18 < \phi D \leq 30$	+0.075 +0.035
$30 < \phi D \leq 50$	+0.085 +0.045
$50 < \phi D \leq 80$	+0.100 +0.055
$80 < \phi D \leq 120$	+0.120 +0.070
$120 < \phi D \leq 180$	+0.170 +0.100

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
$8 < \phi d \leq 18$	1.0 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$
$18 < \phi d \leq 25$	1.5 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$
$25 < \phi d < 45$	2.0 $\begin{smallmatrix} 0 \\ -0.035 \end{smallmatrix}$
$45 \leq \phi d \leq 150$	2.5 $\begin{smallmatrix} 0 \\ -0.050 \end{smallmatrix}$

JF-800/720/700/20/930标准公制轴承 Metric Standard Bushing



※标准直套标注方式: Standard Bushing Label Mode JF □ 1015

单位Unit: mm

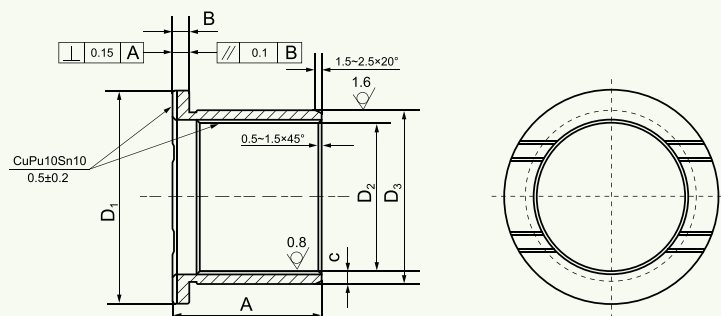
型号 Type	外径 ϕD	内径 ϕd	相配轴径 Axle	相配座孔 Housing H7	Hole ϕh	f_1	f_2	L - 0.4					
								15	20	25	30	40	50
JF □	12	10	10 ^{-0.013 -0.028}	12 ^{+0.018 0}	$\phi 4$	0.6	0.3	1015	1020				
JF □	14	12	12 ^{-0.016 -0.034}	12 ^{+0.018 0}				1215	1220				
JF □	16	14	14 ^{-0.016 -0.034}	16 ^{+0.018 0}				1415	1420				
JF □	17	15	15 ^{-0.016 -0.034}	17 ^{+0.018 0}				1515	1520	1525			
JF □	18	16	16 ^{-0.016 -0.034}	18 ^{+0.018 0}				1615	1620	1625			
JF □	19	17	17 ^{-0.016 -0.034}	19 ^{+0.021 0}				1715	1720	1725			
JF □	20	18	18 ^{-0.016 -0.034}	20 ^{+0.021 0}				1815	1820	1825			
JF □	23	20	20 ^{-0.020 -0.041}	23 ^{+0.021 0}	$\phi 6$	0.8	0.4	2015	2020	2025			
JF □	25	22	22 ^{-0.020 -0.041}	25 ^{+0.021 0}					2220	2225	2230		
JF □	27	24	24 ^{-0.020 -0.041}	27 ^{+0.021 0}					2420	2425	2430		
JF □	28	25	25 ^{-0.020 -0.041}	28 ^{+0.021 0}					2520	2525	2530		
JF □	30	26	26 ^{-0.020 -0.041}	30 ^{+0.021 0}					2620	2625	2630		
JF □	32	28	28 ^{-0.020 -0.041}	32 ^{+0.025 0}					2820	2825	2830		
JF □	34	30	30 ^{-0.020 -0.041}	34 ^{+0.025 0}					3020	3025	3030		
JF □	36	32	32 ^{-0.025 -0.050}	36 ^{+0.025 0}	$\phi 8$	1.2	0.6		3220	3225	3230	3240	
JF □	39	35	35 ^{-0.025 -0.050}	39 ^{+0.025 0}					3520	3525	3530	3540	
JF □	42	38	38 ^{-0.025 -0.050}	42 ^{+0.025 0}					3820	3825	3830	3840	
JF □	44	40	40 ^{-0.025 -0.050}	44 ^{+0.025 0}						4025	4030	4040	
JF □	50	45	45 ^{-0.025 -0.050}	50 ^{+0.025 0}						4525	4530	4540	
JF □	55	50	50 ^{-0.025 -0.050}	55 ^{+0.025 0}							5030	5040	5050
JF □	60	55	55 ^{-0.030 -0.060}	60 ^{+0.030 0}							5530	5540	5550

JF-800/720/700/20/930标准公制轴承 Metric Standard Bushing



型号 Type	外径 φ D	内径 φ d	相配轴径 Axle	相配座孔 Housing H7	Hole φ h ₁	f ₁	f ₂	L – 0.4					
								40	50	60	70	80	100
JF □	65	60	60 ^{-0.030 -0.060}	65 ^{+0.030 0}	φ 8	1.6	0.8	6040	6050	6060			
JF □	70	65	65 ^{-0.030 -0.060}	70 ^{+0.030 0}				6540	6550	6560			
JF □	80	75	75 ^{-0.030 -0.060}	80 ^{+0.030 0}	φ 9.5			7540	7550	7560			
JF □	85	80	80 ^{-0.030 -0.060}	85 ^{+0.035 0}				8040	8050	8060			
JF □	90	85	85 ^{-0.036 -0.071}	90 ^{+0.035 0}					8550	8560	8570		
JF □	95	90	90 ^{-0.036 -0.071}	95 ^{+0.035 0}					9050	9060	9070		
JF □	100	95	95 ^{-0.036 -0.071}	100 ^{+0.035 0}					9550	9560	9570		
JF □	105	100	100 ^{-0.036 -0.071}	105 ^{+0.035 0}					10050	10060	10070		
JF □	110	105	105 ^{-0.036 -0.071}	110 ^{+0.035 0}					10550	10560	10570		
JF □	115	110	110 ^{-0.036 -0.071}	115 ^{+0.035 0}					11050	11060	11070		
JF □	120	115	115 ^{-0.036 -0.071}	120 ^{+0.035 0}						11560	11570	11580	
JF □	125	120	120 ^{-0.036 -0.071}	125 ^{+0.040 0}						12060	12070	12080	
JF □	130	125	125 ^{-0.043 -0.083}	130 ^{+0.040 0}						12560	12570	12580	
JF □	135	130	130 ^{-0.043 -0.083}	135 ^{+0.040 0}						13060	13070	13080	
JF □	145	135	135 ^{-0.043 -0.083}	145 ^{+0.040 0}								13580	135100
JF □	150	145	145 ^{-0.043 -0.083}	150 ^{+0.040 0}								14580	145100
JF □	155	150	150 ^{-0.043 -0.083}	155 ^{+0.040 0}								15080	150100

JF-800/720/700/20/930 双金属翻边轴承 Metric Standard Bushing



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

以上规格外径推荐公差 (+0.12 ~ +0.16)，配合轮体内孔 (+0.03 ~ +0.05)；
 内孔推荐公差 (+0.20 ~ +0.25)，配合轴 (-0.14 ~ -0.16)。

□ 基材特性 Material Features

该产品以优质低碳钢为基体，表面烧结锡青铜合金，经多次烧结轧制而成，具有很高的疲劳强度和承载能力，高的抗冲击力。经过技术人员的进一步优化工艺，广泛应用到工程机械底盘四轮，空调压缩机等部位。特别在挖掘机四轮部位已广泛替代离心浇铸式双金属轴套，改善了原工艺材料不稳定，合金层偏心，材料浪费严重等缺点，在满足客户性能要求的前提下，进一步提高性价比，降低采购成本。

It is made of high quality low-carbon steel, and sintered and rolled copper alloy as its surface. It has high fatigue strength, load capacity and impact strength. The product is applies to con-rod of automobile engines, transmission gearbox, engineering and agriculture machinery, etc.



※ 通用外径检验方法 (ISO3547-2: 1999 Test B) :

Common test method of outside diameter (ISO3547-2: 1999 Test B:

轴套用手压入环规通端 (最大用力250N) , 通过

Press the bushes into the GO ring gauge and then push them through with hand pressure

(maximum force 250N)

轴套用同样方法与同样力, 压入环规止端, 不通过

On the other hand with the same force, It shall not be possible for them to go into the

NOGO ring gauge



※ 通用的内径检验方法 (ISO3547-2: 1999 Test C) :

Common test method of inner diameter test (ISO3547-2: 1999 Test C) :

检验内径, 轴承压入环规, 塞规通端通过用较小力, 塞规止端通不过用力最大不超过250N。

To check the inner diameter, the bush is to be press into a ring gauge. The GO plug gauge shall be inserted by a minimum effort. The NOGO Plug gauge shall not be insert by mutual pressure (maximum force 250N)

(注意: 当轴承压入环规, 轴承外径可能会被永久减小)

Note: When the bush is pressed into the ring gauge, It is possible that There will be a permanent reduction in the outside diameter)

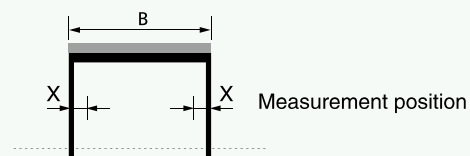


※ 通用的壁厚测量方法:

Common method of wall thickness measurement:

轴承的壁厚测量一点、二点、三点, 在轴向上依据轴承高度尺寸

The wall thickness is measured at one, two or three positions axially according to the bearing dimensions.



B[mm]	X[mm]	measurement position
$B \leq 15$	$B/2$	1
$15 < B \leq 50$	4	2
$50 < B \leq 90$	6 and $B/2$	3
$B > 90$	8 and $B/2$	3

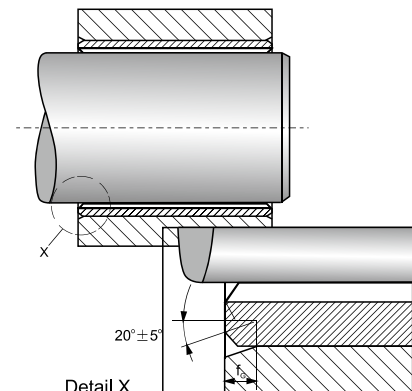
轴承安装设计 Design of Bearing Arrangement

※直套 Cylindrical Bushes

座孔被倒角 $f_G \times 20^\circ \pm 5^\circ$ ，使衬套压入座孔变的更加容易。

The housing bore should have a chamfer $f_G \times 20^\circ \pm 5^\circ$, The chamfer makes it easier to press the bushes into the housing.

座孔直径 Housing bore diameter d_G	座孔倒角 Chamfer of housing f_G
$d_G \leq 30$	$0.8 \pm 0.3 \times 20^\circ \pm 5^\circ$
$30 < d_G \leq 80$	$1.2 \pm 0.4 \times 20^\circ \pm 5^\circ$
$80 < d_G \leq 180$	$1.8 \pm 0.8 \times 20^\circ \pm 5^\circ$
$d_G > 180$	$2.5 \pm 1.0 \times 20^\circ \pm 5^\circ$

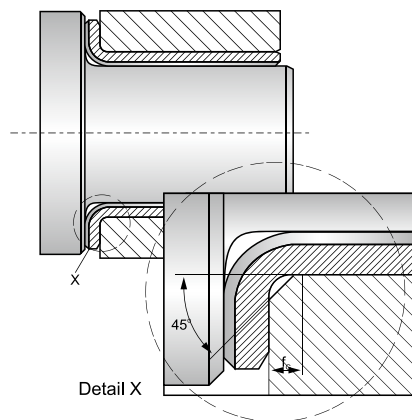


※翻边套 Flange Bushes

关于翻边套，从翻边套口到轴向转换组件必须考虑半径的转变，切面要有一个足够大的倒角。以防翻边套口聚集污垢后仍然可以支持轴向载荷部件的边缘。

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.

座孔直径 Housing bore diameter d_G	座孔倒角 Chamfer of housing f_G
$d_G \leq 10$	$1.2 \pm 0.2 \times 45^\circ \pm 5^\circ$
$d_G > 10$	$1.7 \pm 0.2 \times 45^\circ \pm 5^\circ$

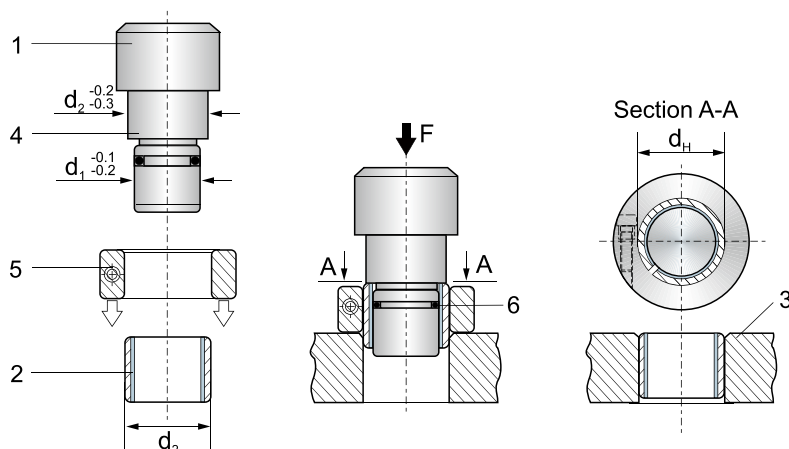


滑动轴承与座孔的装配

The installation of the sliding bushing and the housing

滑动轴承与座孔装配时，要保证轴承在座孔内不发生转动和轴向移动，又要使轴承外表面和座孔充分接触，一般应保证接触面大于85%，有利于承受载荷和传导摩擦热，采用较轻级的过盈配合，既要保证使用时，轴承不会在座孔内发生相对移动，又不会使轴承外径过盈量过大致使轴承内孔变形过大为有利于装配，轴承内外表面应涂以少量油或油脂，再将轴承均匀压入。

When installing the sliding bushing and the housing, make sure the bushing doesn't roate or move. The outside surface of the bushing must have a through contact with the housing, in peneral the connecting part must be over 85%, and this will be poood for the load pressure and the conduction of friction heat. Using surplus quantity loosely, that is when it is used the bushing does not move relatively and also the surplus quantity of the bushing outside diameter, will not be too big to cause serious distortion of the bushing inside hole, when installing, it is poood to lay a little lubricant, such as oil on the inside and outside surface of the bushing. then press bushing slowly.



$d \geq 55\text{mm}$

1. 芯轴 Pressing-in arbor
2. 轴承 Bushes
3. 座孔 Housing
4. 档边尺寸 Shoulder diameter
5. 辅助套 Auxiliary ring
6. O型圈 O ring

轴承 d_2	d_H
>55到100	$d_2 \begin{matrix} +0.28 \\ +0.25 \end{matrix}$
>100到200	$d_2 \begin{matrix} +0.40 \\ +0.36 \end{matrix}$
>200到305	$d_2 \begin{matrix} +0.50 \\ +0.40 \end{matrix}$



浙江嘉善海丰轴承厂

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