tiandi bearing

Jiashan TD
Composite Bearing Factory
嘉善天地复合轴承厂

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JF

Bi-metal Self-lubricating Bearing

双金属自润滑轴承

基材特性 Material Features

该产品以优质低碳钢为基体，表面烧结铜粉，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 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.

JF型双金属合金的技术标准 Specifications for JF Bronze Alloys

材料型号 Material Type	JF–800	JF–720	JF–700	JF–20	JF–930
铜合金牌号 Specification of Bronze Alloy	CuPb10Sn10	CuPb24Sn4	CuPb30	AlSn20Cu	CuSn6.5P0.1
合金层硬度 Hardness of Bronze Alloy HB	70~100	45~70	30~45	30~40	60~90
允许最大动荷载 Allowable Max Dynamic Load	65	38	25	30	65
对磨轴硬度 Hardness of Mating Surface	53HRC	50HRC	270HB	250HB	50HRC
最高使用温度 Max. Temperature ℃	260	200	170	150	200
相当代号 Equivalent Code	美国SAE–797 德国GLYCO66 日本JIS–LBC3 USA SAE–797 GERMANY–GLYCO66 JAPAN JIS–LBC	美国SAE–799 德国GLYCO68 日本JIS–LBC6 USA SAE–797 GERMANY–GLYCO68 JAPAN JIS–LBC3	美国SAE–48 USA SAE–48 日本JIS–KJ3 JAPAN JIS–KJ3	美国SAE–783 德国GLYCO74 日本JIS–AJL USA SAE–783 GERMANY–GLYCO74 JAPAN JIS–AJL	
特性与用途 Application Characteristics	属铜铅合金中最强的一种，应用场合十分广泛，适用于承受高冲击震动载荷的轴套、止推垫片等。 The strongest type, wide application field, most suitable for high impact vibrating load bushes and washers.	有较高的疲劳强度和承载能力，较好的滑动性能，易受润滑油的腐蚀。适用于中载、中速。表面镀软合金时，可用于高速内燃机主轴套连杆轴套。 Relative high fatige strengh & load capaity, good sliding Performance, poor oil corrosion resistance. Fit for middle load. middle speed. Normally applied in main bushes of inner –combushtion engine, connecting rod when plated.	有良好的抗咬性、异物埋没性，工作表面需镀软合金。常用于高速中低何载的内燃机主轴套连杆轴套。 Good seizu ring resistance, good capacity to submerge foreign, overlayer plated. Normally applied in main bearings of high speed. Low to morderate load inner–combustion engine & connecting rod bearing.	有中等的疲劳强度和承载能力，良好的抗腐蚀性能，较好的轴承滑动性能。常用于高速低载的内燃机轴瓦、气压机、制冷机轴承。 Mode rate fatige strength & load capacity good corrosion resistance, relative in half bushs of high speed, low load inner–combustion engine, aircompressor, refigerator bearings.	是一种无铅产品，有较高的疲劳强度和承载能力，较好的滑动性能，应用领域正逐步拓展。 The JF–930 bearing is a kind of product without lead, relative high fatige strength & load capacity, good sliding performance, whose application industry is gradually being expanded.

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JF双金属轴承合金化学成份 Composition of JF Alloy

化学成份 Chemical Elements	JF–800	JF–720	JF–700	JF–20	JF–930
Cu	余量 remainder	余量 remainder	余量 remainder	0.7~1.3	余量 remainder
Pb	9.0~11.0	21.0~27.0	26.0~33.0	–	–
Sn	9.0~11.0	3 ~ 4.5	≤0.5	17.5 ~ 22.5	6~7
Zn	≤0.5	≤0.5	≤0.5	–	–
P	≤0.1	≤0.1	≤0.1	–	0.1~0.25
Fe	≤0.7	≤0.7	≤0.7	≤0.5	–
Ni	≤0.5	≤0.5	≤0.5	≤0.5	–
Sb	≤0.2	≤0.2	≤0.2	–	–
Al	–	–	–	余量 remainder	–
Si	–	–	–	≤0.5	–
Mn	–	–	–	≤0.5	–
Ti	–	–	–	≤0.5	–
其它Other	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5

JF双金属轴承合金化学成份 Composition Analysis of JF Alloy

物理性能 Phsical Properites		JF–800	JF–720	JF–700	JF–20	JF–930
最高静承载压力N/mm^2 Load Limit		150	130	120	100	150
抗拉强度N/mm^2 Tensile Strength		185	150	200	200	185
最高速度(油)m/s Speed Limit Vmax (Oil)		5	10	15	25	5
摩擦因数(油)m/s Friction Coefficient (Oil)		0.06~0.14	0.06~0.16	0.08~0.16	0.08~0.17	0.06~0.16
允许PV值 PV Limit N/mm^2 · m/s	(脂) Greases	2.8	2.8	2.5	–	2.8
	(油) Oil	20	10	8	6	10
“蓝宝石”疲劳级Mpa "Sapphire" fatigue class		125	115	105	85	–

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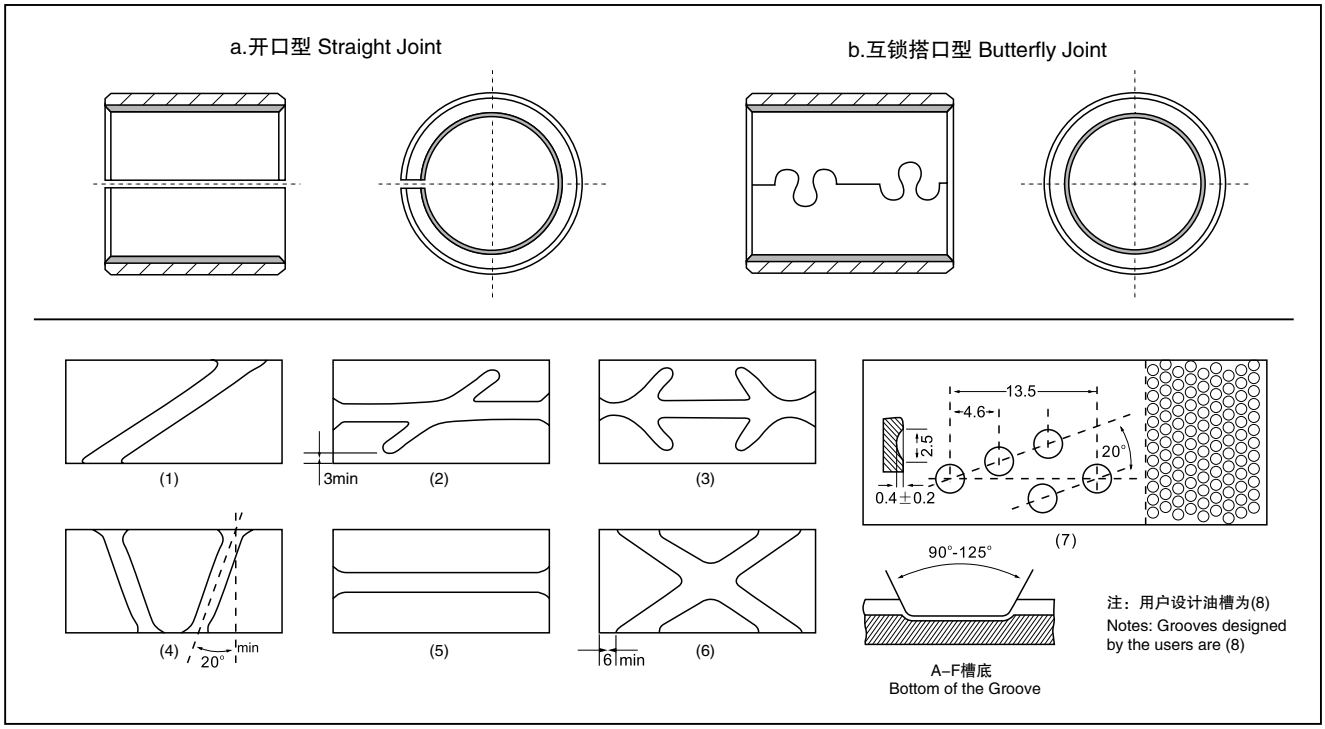
JF型双金属轴套的接口形式 The Connection Type of JF Bimetal Bushings



润滑油孔 The Designing Indentation

为使轴承得到充分的润滑，一般在设计轴承时需要考虑润滑孔，油孔尺寸推荐按下表。

In order to fully lubricate the bush when in the performance, the size of lubrication hole as follows are recommended.

油孔的位置应避开接缝处和承载区域，并应有利于进油。

The lubrication hole should be away from butt joint and loading area and designed to be easy oil feeding as well.

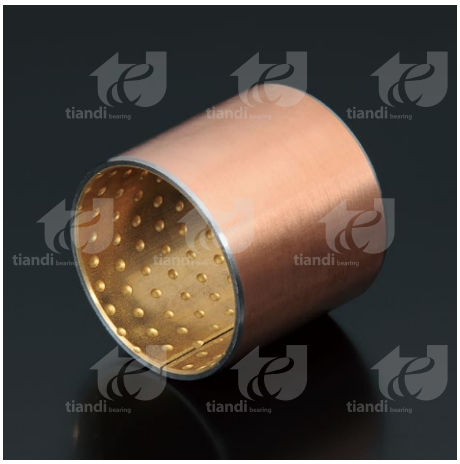
轴承外径 大于From O.D. 至To	14~22	22~40	40~50	50~100	100~180
油孔直径(mm) Lubrication Hole	3	4	5	6	7

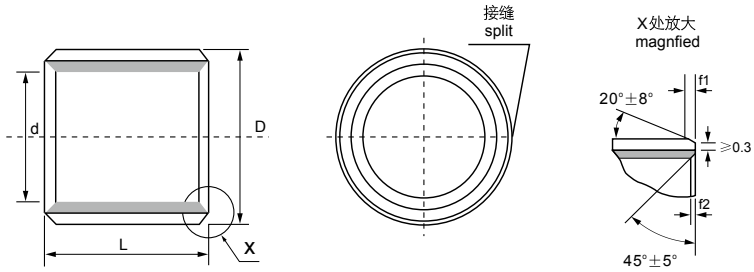
壁厚尺寸 Thickness of JF Bearing

公称厚度 Nomimal Thickness of	1	1.5	2	2.5	3	3.5	4	5
钢背厚度 Thickness of Steel Baking	0.6	1	1.4	1.9	2.3	2.8	3.2	4
铜合金层厚度 Thickness of Bronze	0.4	0.5	0.6	0.6	0.7	0.7	0.8	1.0
留加工余量轴承推荐壁厚 Manufacturable Wall Thickness	$1^{+0.25}_{+0.15}$	$1.5^{+0.25}_{+0.15}$	$2^{+0.25}_{+0.15}$	$2.5^{+0.25}_{+0.15}$	$3^{+0.25}_{+0.15}$	$3.5^{+0.25}_{+0.15}$	$4^{+0.25}_{+0.15}$	$5^{+0.25}_{+0.15}$
直接装配轴承推荐壁厚 Manufactured Wall Thickness	$1_{-0.025}$	$1.5_{-0.03}$	$2_{-0.0035}$	$2.5_{-0.04}$	$3_{-0.045}$	$3.5_{-0.05}$	$4_{-0.055}$	$5_{-0.06}$

Bimetallic Self-lubricating Bearings Metric Size

双金属润滑轴承尺寸





单位unit:mm

d	D	壁厚 Wall Thickness	外径公差 O.D. Tolerance	内径公差 I.D.(H8) Tolerance	相配座孔 H_7 Housing Bore	相配轴径 f_7 Shaft Dia.	f1	f2	L $^{0}_{-0.4}$ 10	15	20	25	30	40	50	60	80	90	100
10	12	1 $^{}_{-0.025}$	12 $^{+0.065}_{+0.030}$	10 $^{+0.022}_{+0.000}$	12 $^{+0.018}_{}$	10 $^{-0.013}_{-0.028}$	0.5	0.3	1010	1015	1020								
12	14		14 $^{+0.065}_{+0.030}$	12 $^{+0.027}_{+0.000}$	14 $^{+0.018}_{}$	12 $^{-0.016}_{-0.034}$	0.5	0.3	1210	1215	1220								
14	16		16 $^{+0.065}_{+0.030}$	14 $^{+0.027}_{+0.000}$	16 $^{+0.018}_{}$	14 $^{-0.016}_{-0.034}$	0.5	0.3	1410	1415	1420								
15	17		17 $^{+0.065}_{+0.030}$	15 $^{+0.027}_{+0.000}$	17 $^{+0.018}_{}$	15 $^{-0.016}_{-0.034}$	0.5	0.3	1510	1515	1520								
16	18		18 $^{+0.075}_{+0.035}$	16 $^{+0.027}_{+0.000}$	18 $^{+0.018}_{}$	16 $^{-0.016}_{-0.034}$	0.8	0.4	1610	1615	1620								
18	20		20 $^{+0.075}_{+0.035}$	18 $^{+0.033}_{+0.000}$	20 $^{+0.021}_{}$	18 $^{-0.016}_{-0.034}$	0.8	0.4	1810	1815	1820	1825							
20	23	1.5 $^{}_{-0.030}$	23 $^{+0.075}_{+0.035}$	20 $^{+0.033}_{+0.000}$	23 $^{+0.021}_{}$	20 $^{-0.020}_{-0.041}$	0.8	0.4	1210	1215	1220	1225							
22	25		25 $^{+0.075}_{+0.035}$	22 $^{+0.033}_{+0.000}$	25 $^{+0.021}_{}$	22 $^{-0.020}_{-0.041}$	0.8	0.4	2210	2215	2220	2225							
24	27		27 $^{+0.075}_{+0.035}$	24 $^{+0.033}_{+0.000}$	27 $^{+0.021}_{}$	24 $^{-0.020}_{-0.041}$	1.0	0.5	2410	2415	2420	2425	2430						
25	28		28 $^{+0.075}_{+0.035}$	25 $^{+0.033}_{+0.000}$	28 $^{+0.021}_{}$	25 $^{-0.020}_{-0.041}$	1.0	0.5		2515	2520	2525	2530						
26	30	2 $^{}_{-0.035}$	30 $^{+0.075}_{+0.035}$	26 $^{+0.033}_{+0.000}$	30 $^{+0.021}_{}$	26 $^{-0.020}_{-0.041}$	1.0	0.5		2615	2620	2625	2630						
28	32		32 $^{+0.085}_{+0.045}$	28 $^{+0.033}_{+0.000}$	32 $^{+0.025}_{}$	28 $^{-0.020}_{-0.041}$	1.0	0.5		2815	2820	2825	2830	2840					
30	34		34 $^{+0.085}_{+0.045}$	30 $^{+0.039}_{+0.000}$	34 $^{+0.025}_{}$	30 $^{-0.020}_{-0.041}$	1.2	0.6		3015	3020	3025	3030	3040					
32	36		36 $^{+0.085}_{-0.045}$	32 $^{+0.039}_{+0.000}$	36 $^{+0.025}_{}$	32 $^{-0.025}_{-0.050}$	1.2	0.6		3215	3220	3225	3230	3240					
35	39		39 $^{+0.085}_{+0.045}$	35 $^{+0.039}_{+0.000}$	39 $^{+0.025}_{}$	35 $^{-0.025}_{-0.050}$	1.2	0.6			3520	3525	3530	3540	3550				
38	42		42 $^{+0.085}_{+0.045}$	38 $^{+0.039}_{+0.000}$	42 $^{+0.025}_{}$	38 $^{-0.025}_{-0.050}$	1.2	0.6			3820	3825	3830	3840	3850				
40	44		44 $^{+0.085}_{+0.045}$	40 $^{+0.039}_{+0.000}$	44 $^{+0.025}_{}$	40 $^{-0.025}_{-0.050}$	1.2	0.6			4020	4025	4030	4040	4050				
45	50	2.5 $^{}_{-0.040}$	50 $^{+0.085}_{+0.045}$	45 $^{+0.039}_{+0.000}$	50 $^{+0.025}_{}$	45 $^{-0.025}_{-0.050}$	1.5	1.0			4520	4525	4530	4540	4550				
50	55		55 $^{+0.100}_{+0.055}$	50 $^{+0.039}_{+0.000}$	55 $^{+0.030}_{}$	50 $^{-0.030}_{-0.060}$	1.5	1.0					5030	5040	5050	5060			
55	60		60 $^{+0.100}_{+0.055}$	55 $^{+0.046}_{+0.000}$	60 $^{+0.030}_{}$	55 $^{-0.030}_{-0.060}$	1.5	1.0					5530	5540	5550	5560			
60	65		65 $^{+0.100}_{+0.055}$	60 $^{+0.046}_{+0.000}$	65 $^{+0.030}_{}$	60 $^{-0.030}_{-0.060}$	1.5	1.0					6030	6040	6050	6560			
65	70		70 $^{+0.100}_{+0.055}$	65 $^{+0.046}_{+0.000}$	70 $^{+0.030}_{}$	65 $^{-0.030}_{-0.060}$	1.5	1.0					6530	6540	6550	6560			
70	75		75 $^{+0.100}_{+0.055}$	70 $^{+0.046}_{+0.000}$	75 $^{+0.030}_{}$	70 $^{-0.030}_{-0.060}$	1.5	1.0					7030	7040	7050	7060	7080		

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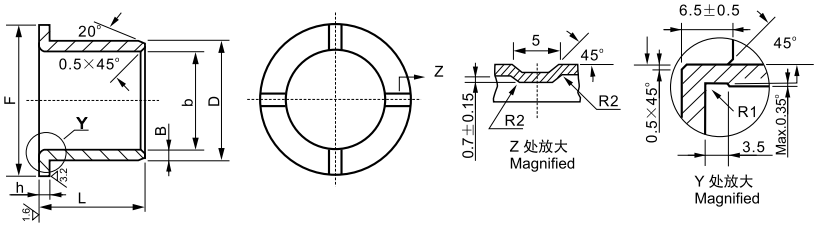
Bimetallic Self-lubricating Bearings Metric Size

双金属润滑轴承尺寸



单位unit:mm

规格型号 Type	F-0.5	D $^{+0.28}_{+0.20}$	d $^{+0.20}_{+0.15}$	L $^{0}_{-0.04}$	h	B
4040	60	46	40	39.5	3.5	3.0
4035	62	47	40	35	3.5	3.5
4055	68	55	45	55	3.5	5.0
5040A	72	57	50	40	3.5	3.5
5040B	70	57	50	40	3.5	3.5
5050	70	57	50	50	3.5	3.5
5460	92	60.6	54	60	3.5	3.3
6053	83	67	60	53	3.5	3.5
6060	87	67	60	60	3.5	3.5
6065	77	67	60	65	3.5	3.5
6060A	88	68	60	60	4.0	4.0
6060B	87	68	60	60	4.0	4.0
6465	102.6	70.4	63.5	65	3.5	3.5
6473	103	70.8	63.8	73	3.5	3.5
6553	85	72	65	53	3.5	3.5
6564	87	72	65	64	3.5	3.5
6575	108	72	65	75	3.5	3.5
7060	93	77	70	60	3.5	3.5
7090	108	80	70	90	5.0	5.0
7560	100	82	75	60	3.5	3.5
8060	105	87	80	68	3.5	3.5
8580	127	92	85	80	3.5	3.5
85103	128	92.6	85	103.5	3.5	3.8
89126	138	97.5	89.2	126.5	4.2	4.2
95127	144	105	95	127	5.0	5.0

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