

JDB 镶嵌式固体润滑轴承





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.



JDB 镶嵌式固体润滑轴承 Solid-lubricant inlaid bearing

该产品以高强度铜合金为基体，镶嵌特殊配方的固体润滑剂和润滑油，在摩擦过程中逐步释放润滑油和固体润滑剂。产品被广泛应用于注塑机，汽车模具、工程机械、食品机械、水轮机轴承等。

JDB Solid-lubricant inlaid bearing use high grade metal alloys as their base material, inlaid graphite and grease during the process of friction, it will release solidlubricant and lubricant oil automatically. The products are widely used in injection molding, automobile mold, engineering machine, food machinery and water turbines, etc.

※合金材料：Metal Material

对应牌号 Corresponding brands	型号 Type	JDB-1	JDB-2	JDB-3	JDB-4	JDB-5	JDB-6
国际牌号 GB1776-87 China Brands GB1776-87		ZCuZn25 Al6Fe3Mn3	ZCuZn25 Al6Fe3Mn3	ZCuAl9Fe4 Ni4Mn2	GCr15	HT250	ZCuSn10 Zn2
国际ISO1338 International ISO1338		GCuZn25 Al6Fe3Mn3	GCuZn25 Al6Fe3Mn3	GCuAl10 Fe3Ni5	B1	-	GCuSn10 Zn2
德国 DIN Germany DIN		G-CuZn25 Al5	G-CuZn25 Al5	G-CuAl10 Ni	100Cr6	-	G-CuSn10 Zn
日本JIS Japan JIS		HBsC4	HBsC4	AIBC3	SUJ2	FC250	BC3
美国 ASTM/UNS America ASTM/UNS		C86300	C86300	C95500	52100	Class40	C90500
英国标准 (BS) England Standard		HTB2	HTB2	AB2	-	-	G1

※技术参数：Technical Data

性能指标 Performance index	型号 Type	JDB-1	JDB-2	JDB-3	JDB-4	JDB-5	JDB-6
最大动承载 P(N/mm ²) Max Move Load Capacity		100	150	50	200	15	70
最大线速度 V(m/min) Max Sliding Speed		15	10	20	5	15	10
最高PV值 (N/mm ² · m/min) Max PV Value Limit		200	200	200	150	40	200
密度 ρ (g/cm ³) Density		8.0	8.0	7.6	7.8	7.3	8.8
抗拉强度 (N/mm ²) Tensile Strength		> 750	> 780	> 500	> 1500	> 250	> 350
延伸率(%) Elongation		> 12	> 4	> 10	-	-	> 8
硬度(HB) Hardness		> 210	> 250	> 150	HRC > 55	> 160	> 80
最高使用温度℃ Max Working Temperature		300	300	400	300	400	400
摩擦系数 μ Friction coefficient		油润滑：0.03 Oil Lubrication:0.03			干摩擦：0.16 Dry Friction:0.16		

※材料合金化学成份：Alloy Chemical Compositions

化学元素 Chemical elements	JDB-1	JDB-2	JDB-3	JDB-4	JDB-5	JDB-6
Cu(%)	Rest	Rest	Rest	-	-	Rest
Sn(%)	-	-	-	-	-	10
Zn(%)	25	25	-	-	-	2
Ni(%)	-	-	4	-	-	-
Al(%)	6	6	9	-	-	-
Fe(%)	3	3	4	Rest	-	-
Mn(%)	3	3	2	0.20 ~ 0.40	-	-
Cr(%)	-	-	-	1.30 ~ 1.65	-	-
C(%)	-	-	-	0.95 ~ 1.05	-	-
Si(%)	-	-	-	0.15 ~ 0.35	-	-

※固体润滑剂：Solid Lubricants

固体润滑剂代号 Codes Of Solid Lubricants	SM01	SM02	SM03
主要成份 Main Compositions	石墨 Graphite	石墨+二硫化钼 Graphite+MoS2	聚四氟乙烯+石墨+石蜡 PTFE+Graphite+Olefin
特性 Features	很好的化学稳定性, 使用温度 < 250℃ Good chemical stability, temperature < 250℃	很好的耐磨性和化学稳定性, 使用温度 < 400℃ Good wear performance and chemical stability, temperature < 400℃	极低的摩擦系数和很好的水润滑性, 使用温度范围-40 ~ 80℃ Lowest friction coefficient and good water lubrication,temperature Rang -40 ~ 80℃
适用场合 Application Place	一般用(大气) General(atmosphere)	高温、高载荷 High temperature high load capacity	海(水)用, 高压用 Seawater use, high pressure use

镶嵌式固体润滑轴承的特性

The Advantages of The Solid-lubricant Inlaid Bushing

1、无给油可使用

Dry operation.

2、高载荷、低转速的情况，仍可发挥优越的性能

Can be Performed well with high load and low speed.

3、往返运动、摇摆运动、起动停止频繁等油膜形成困难的场所，仍可发挥优越的耐磨性

Reciprocating motion, wagging motion, start and stop frequently are difficulty for keeping oil surface. It still may play advantageous of wear-resistance.

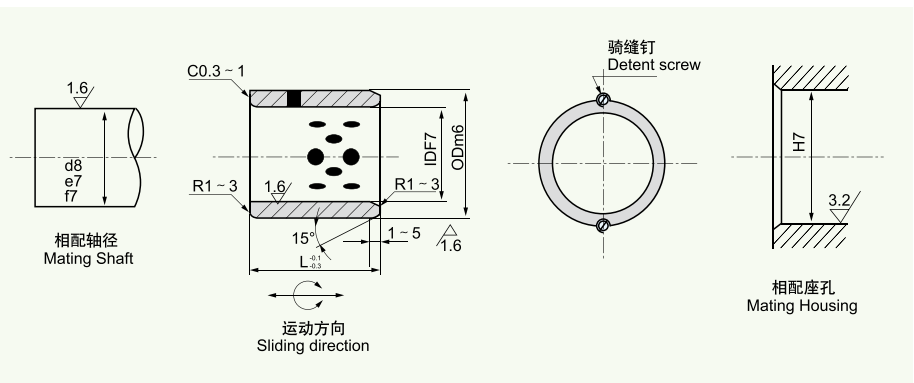
4、优越的耐药品性及耐蚀性

Excellent chemical resistance and low wear.

5、设计灵活、简单、方便，丰富的标准品，可配标准轴心使用

Flexible, simple, convenient and abundant designing of standard, can be choosed by standard axes.

JDB 铜基镶嵌式固体润滑轴承 Cast Bronze Solid-lubricant inlaid bearing



※标准产品标注方式：Standard Bushing Label Mode JDB □ 081208

单位Unit: mm

d	D	ID F7	OD m6	L ^{-0.10} / _{-0.30}												
				8	10	15	20	25	30	35	40	50	60			
8	12	8	12	081208	081210	081215										
10	14	10	14	101408	101410	101415	101420									
12	18	12	18		121810	121815	121820	121825								
13	19	13	19		131910	131915	131920									
14	20	14	20		142010	142015	142020	142025								
15	21	15	21		152110	152115	152120	152125								
16	22	16	22		162210	162215	162220	162225								
18	24	18	24			182415	182420	182425	182430							
20	28	20	28			202815	202820	202825	202830							
20	30	20	30				203020	203025	203030	203035						
22	32	22	32				223215	223220	223225	223230						
25	33	25	33				253315	253320	253325	253330	253335					
25	35	25	35				253515	253520	253525	253530	253535					
28	38	28	38				283820	283825	283830	283835						
30	38	30	38				303820	303825	303830	303835	303840					
30	40	30	40				304020	304025	304030	304035	304040					
32	42	32	42						324230	324235	324240					
35	45	35	45						354530	354535	354540	354550				
38	48	38	48						384830	384835	384840	384850				
40	50	40	50						405030	405035	405040	405050	405060			

JDB 铜基镶嵌式固体润滑轴承 Cast Bronze Solid-lubricant inlaid bearing

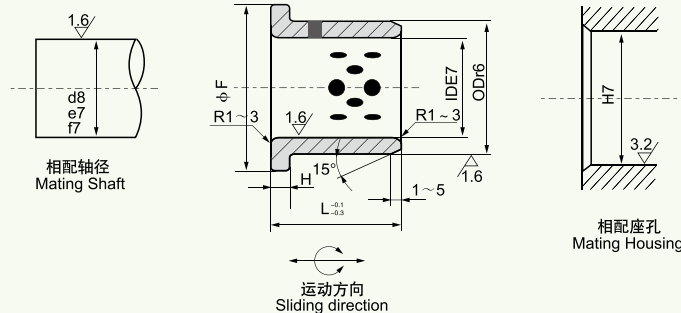


d	D	ID F7		OD m6		L ^{-0.10} / _{-0.30}									
						30	35	40	50	60	70	80	100		
40	55	40	+0.050 +0.025	55	+0.030 +0.011	405530	405535	405540	405550	405560					
45	60	45		60			456035	456040	456050	456060					
50	60	50		60				506035	506040	506050	506060	506070			
50	62	50		62					506235	506240	506250	506260	506270		
50	65	50		65						506540	506550	506560	506570		
55	70	55	+0.060 +0.030	70	+0.035 +0.013			557040	557050	557060	557070				
60	74	60		74					607440	607450	607460	607470			
60	75	60		75						607540	607550	607560	607570		
63	75	63		75							637550	637560	637570		
65	80	65		80							658050	658060	658070	658080	
70	85	70		85							708550	708560	708570	708580	
70	90	70		90							709050	709060	709070	709080	
75	90	75		90								759060	759070	759080	
80	96	80		96							809650	809660	809670	809680	
80	100	80		100							8010050	8010060	8010070	8010080	
100	120	100	+0.071 +0.036	120	+0.040 +0.015					10012060	10012070	10012080	100120100		
110	130	110		130									11013070	11013080	110130100
120	140	120		140									12014070	12014080	120140100
125	145	125		145										12514580	125145100
130	150	130		150										13015080	130150100
140	160	140		+0.083 +0.043		160								14016080	140160100
150	170	150				170								15017080	150170100
160	180	160				180								16018080	160180100

※推荐座孔公差H7，轴径公差d8(高承载)、e7(低承载)、f7(高精度)

Note: recommended tolerance of the housing is H7 and the diameter tolerance of the shaft is d8 (High Load).
e7 (Low Load) or f7 (High Precision)

JFB 铜基翻边镶嵌式固体润滑轴承 Cast Bronze Flanged Solid-lubricant inlaid bearing



※标准产品标注方式：Standard Bushing Label Mode JDB □ 1015

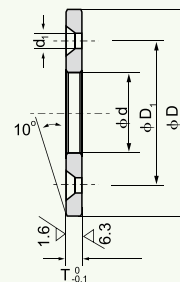
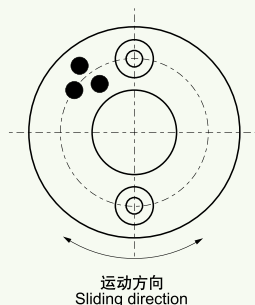
单位Unit: mm

ID F7	OD r6	F	H _{-0.10} ⁰	L _{-0.30} ^{-0.10}												
				15	20	25	30	35	40	50	60	80	100			
10	+0.040 +0.025	14	22	2	1015	1020										
12		18	25	3	1215	1220										
13		19	26		1315	1320										
14	+0.050 +0.032	20	27		1415	1420										
15		21	28		1515	1520	1525	1530								
16		22	29		1615	1620	1625	1630								
20		30	40	5		2020	2025	2030	2035							
25	+0.061 +0.040	35	45			2520	2525	2530	2535							
30		40	50			3020	3025	3030	3035	3040	3050					
35		45	60				3525	3530	3535	3540	3550					
40		50	65					4030	4035	4040	4050					
45	+0.075 +0.050	55	70					4530	4535	4540	4550	4560				
50		60	75							5050	5050	5060				
55		65	80							5540	5550	5560				
60		75	90							6040	6050	6060	6080			
70	+0.090 +0.060	85	105		7.5						7050	7060	7080			
75		90	110							7550	7560					
80		100	120	10								8060	8080	80100		
100		120	150										10060	10080	100100	
120	+0.107 +0.072	140	170										12060	12080	120100	

※推荐座孔公差H7，轴径公差d8(高承载)、e7(低承载)、f7(高精度)

Note: recommended tolerance of the housing is H7 and the diameter tolerance of the shaft is d8 (High Load), e7 (Low Load) or f7 (High Precision)

JTW 止推垫片 Oilless Thrust Washers

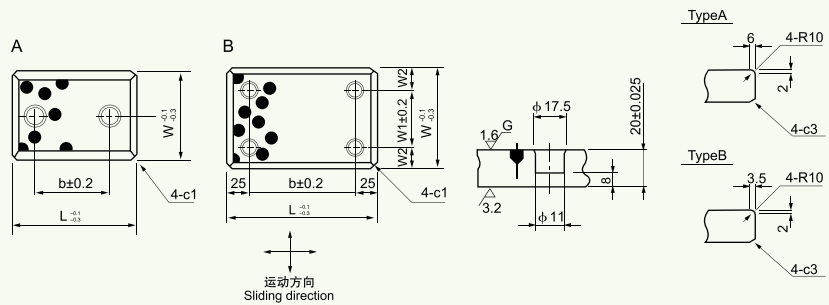


※标准产品标注方式: Standard Bushing Label Mode JFB □ 10

单位Unit: mm

型号规格 Designation	φ d	φ D	T _{-0.10} ⁰	螺孔 Bolt Hole						
				φ D ₁	平头螺钉 Crop Bolt	孔数 Bore Number	φ d ₁			
JTW 10	10.2	30	3	20	M3	2	3.5			
JTW 12	12.2	40		28	M3	2	3.5			
JTW 13	13.2									
JTW 14	14.2									
JTW 15	15.2	50		35	M3	2	3.5			
JTW 16	16.2									
JTW 16A			-					-	-	-
JTW 18	18.2		35					M3	2	3.5
JTW 20	20.2	M5		2	6.0					
JTW 20A			-			-	-	-		
JTW 25	25.2	55	5	40	M5	2	6			
JTW 25A				-	-	-	-			
JTW 30	30.2	60	7	45	M5	2	6			
JTW 35	35.2	70						60	M6	2
JTW 40	40.2	80	7	67.5	M6	2	7			
JTW 45	45.3	90								
JTW 50	50.3	100	8	75	M6	4	7			
JTW 55	55.3	110		85				M8	4	9
JTW 60	60.3	120								
JTW 70	70.3	130	10	100	M8	4	9			
JTW 75	75.3	140		110				M8	4	9
JTW 80	80.3	150								
JTW 90	90.5	170		140	M10	4	11			
JTW 100	100.5	190						160	M10	4
JTW 120	120.5	200								

JTWP 滑块 Wear Plate



※标准产品标注方式：Standard Bushing Label Mode JTWP □ 2875

单位Unit: mm

型号规格 Designation	W _{-0.10 -0.30}	L _{-0.10 -0.30}	W1	W2	b	类型 Type
JTWP 2875	28	75	-	-	45	A
JTWP 28100		100				
JTWP 28150		150				
JTWP 3875	38	75	-	-	45	
JTWP 38100		100				
JTWP 38150		150				
JTWP 4875	48	75	-	-	45	
JTWP 48100		100				
JTWP 48150		150				
JTWP 48200		200				
JTWP 5875	58	75	-	-	45	
JTWP 58100		100				
JTWP 58150		150				
JTWP 7575	75	75	-	-	25	
JTWP 75100		100				
JTWP 75125		125				
JTWP 75150		150				
JTWP 75200		200				
JTWP 100100		100			100	50
JTWP 100125	125					
JTWP 100150	150					
JTWP 100200	200					
JTWP 125125	125	125	50	37.5	75	B
JTWP 125150		150				
JTWP 125200		200				
JTWP 150150	150	150	100	25	100	
JTWP 150200		200				
JTWP 150250		250				
JTWP 200200	200	200	150	25	150	
JTWP 200250		250				



※ **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 gague, It is possible that There will be a permanent reduction in the outside diameter)

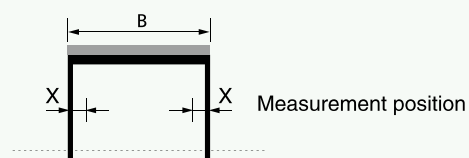


※ **通用的壁厚测量方法:**

Common methed 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

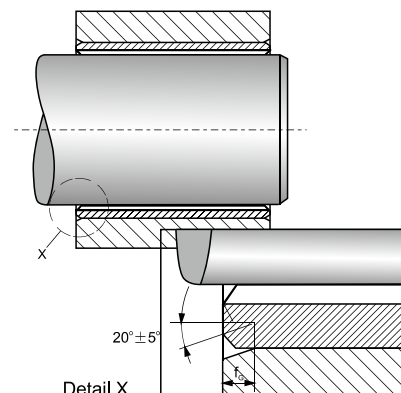
轴承安装设计 Design of Bearing Arrangement

※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
$d_G \leq 30$	$0.8 \pm 0.3 \times 20^\circ \pm 5^\circ$
$30 < d_G \leq 80$	$1.2 \pm 0.4 \times 20^\circ \pm 5^\circ$
$80 < d_G \leq 180$	$1.8 \pm 0.8 \times 20^\circ \pm 5^\circ$
$d_G > 180$	$2.5 \pm 1.0 \times 20^\circ \pm 5^\circ$

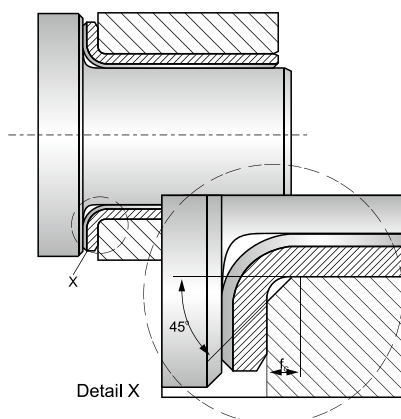


※翻边套 Flange Bushes

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
$d_G \leq 10$	$1.2 \pm 0.2 \times 45^\circ \pm 5^\circ$
$d_G > 10$	$1.7 \pm 0.2 \times 45^\circ \pm 5^\circ$

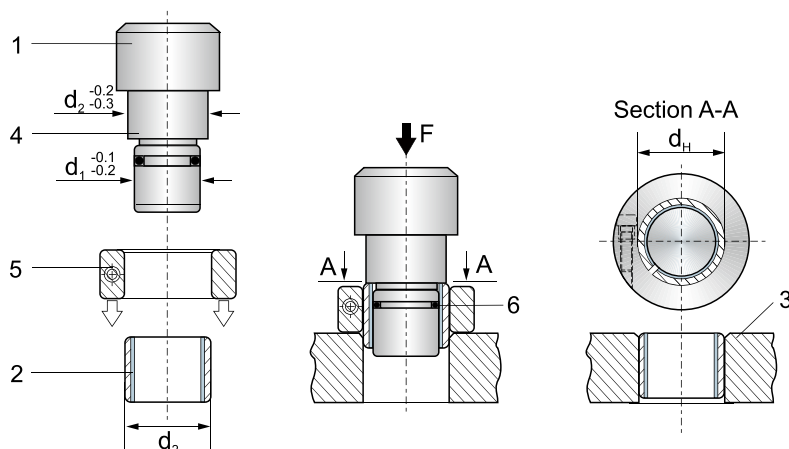


滑动轴承与座孔的装配

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 rotate or move. The outside surface of the bushing must have a through contact with the housing, in general the connecting part must be over 85%, and this will be good 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 good 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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