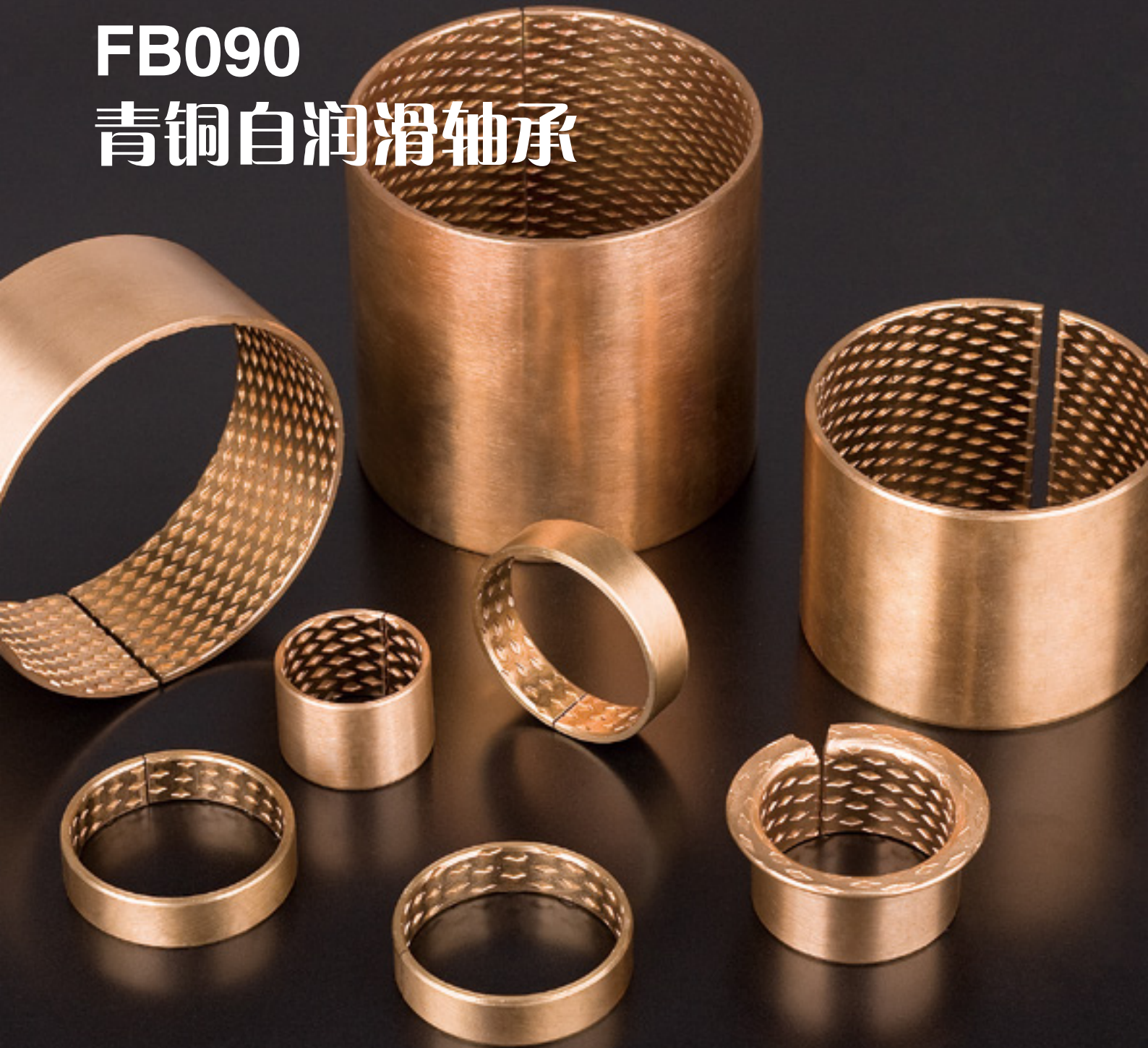


FB090 青铜白润滑轴承





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.



FB090 青铜自润滑轴承 Bronze self-lubricating bearing

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。

FB090 Bronze self-lubricating bearings used a kind of high density broze 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		2.0m/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%



FB092 青铜冲孔自润滑轴承 Bronze self-lubricating bearing with through holes

该产品CuSn8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。

FB092 Bronze punch hole self-lubricating bearing used CuSn8 as base, designed regular oil holes bestrewn 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	250N/mm ²
	动载 Dynamic load	140N/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		0.05 ~ 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		11 × 10 ⁻⁶ /K



FB09G 青铜固体自润滑轴承 Bronze with graphite solid-lubricating bearing

该产品CuSn8为基体，表面轧制螺旋角度菱形油穴，内嵌石墨或二硫化钼，润滑面积25%。具有摩擦系数小，良好的润滑性和抗磨性。产品被广泛应用于汽车起动电机，发电机，汽机车离合器等。

FB09G bronze solid self-lubricating bearing used CuSn8 as base, agglomerated by porous bronze powder, surface of alloy is rolled the spirally diamond type of the oil hole, embedded lead and molybdenum disulfide, the lubrication area of the bearing surface is being about 25%. Characterized by low friction coefficient, good lubricating action and wear resistant action. This type of bearing is particularly applied in starting motor for automobiles, generators, automotive clutch parts 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	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		0.05 ~ 0.25
使用温度 Working TEMP		-100℃ ~ +200℃
导热系数 Thermal conductivity		60W/m · K
热膨胀系数 Coefficient of thermal expansion		15 × 10 ⁻⁶ /K



FB08G 双金属固体自润滑轴承 Bimetallic solid 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。

FB08G Bimetallic solid self-lubricating bearing based on high quality low-carbon steel backing, sintered porous bronze as its surface. Surface of alloy is rolled the spirally diamond type of the oil pockets, embedded lead and molybdenum disulfide, the lubrication area of the bearing surface is being about 25%. Performed well by low friction coefficient, good lubricating action and wear resistant action. Particularly suit for starting motor for automobiles, generators, hoisting machines and metallurgical machinery.

※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	干摩擦 Dry friction	70N/mm ²
	油润滑 Oil lubrication	90N/mm ²
最高线速度 V Max Sliding Speed	干摩擦 Dry friction	0.4m/s
	油润滑 Oil lubrication	2.0m/s
最高PV值 Max PV Value Limit	干摩擦 Dry friction	2.6N/mm ² · m/s
	油润滑 Oil lubrication	15N/mm ² · m/s
摩擦系数 μ Friction coefficient	干摩擦 Dry friction	< 0.22
	油润滑 Oil lubrication	< 0.08
使用温度 Working temperature	干摩擦 Dry friction	250℃
	油润滑 Oil lubrication	200℃
导热系数 Thermal conductivity		76W/m · K
热膨胀系数 Coefficient of thermal expansion		22 × 10 ⁻⁶ /K

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
$180 < \phi D \leq 250$	+0.210 +0.130
$250 < \phi D \leq 305$	+0.260 +0.170

轴套内径公差
Bushing Inner Diameter Tolerances Table

内径 ϕd Inner Diameter ϕd	安装后内径公差H9 Inner Diameter Tolerance
$\phi d \leq 10$	+0.036 0
$10 < \phi d \leq 18$	+0.043 0
$18 < \phi d \leq 30$	+0.052 0
$30 < \phi d \leq 50$	+0.062 0
$50 < \phi d \leq 80$	+0.074 0
$80 < \phi d \leq 120$	+0.087 0
$120 < \phi d \leq 180$	+0.100 0
$180 < \phi d \leq 250$	+0.115 0
$250 < \phi d \leq 350$	+0.130 0

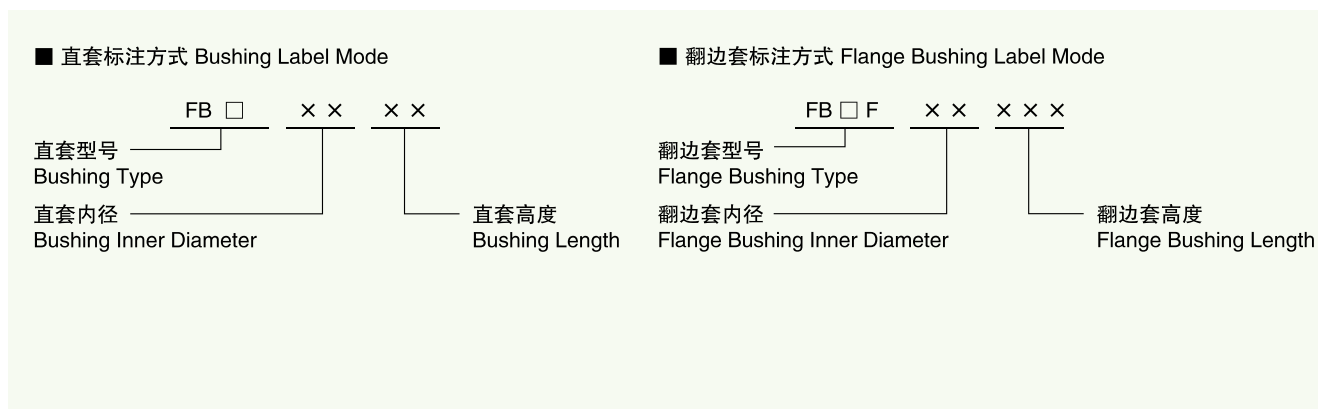
※材料特性: Material Characterisitc

外径 ϕD Out Diameter ϕD	0 ~ 10	10 ~ 18	18 ~ 30	30 ~ 50	50 ~ 80	80 ~ 120	120 ~ 180	180 ~ 250
坐孔H7中值 Housing H7 Middle	D+0.008	D+0.009	D+0.011	D+0.013	D+0.015	D+0.018	D+0.020	D+0.023

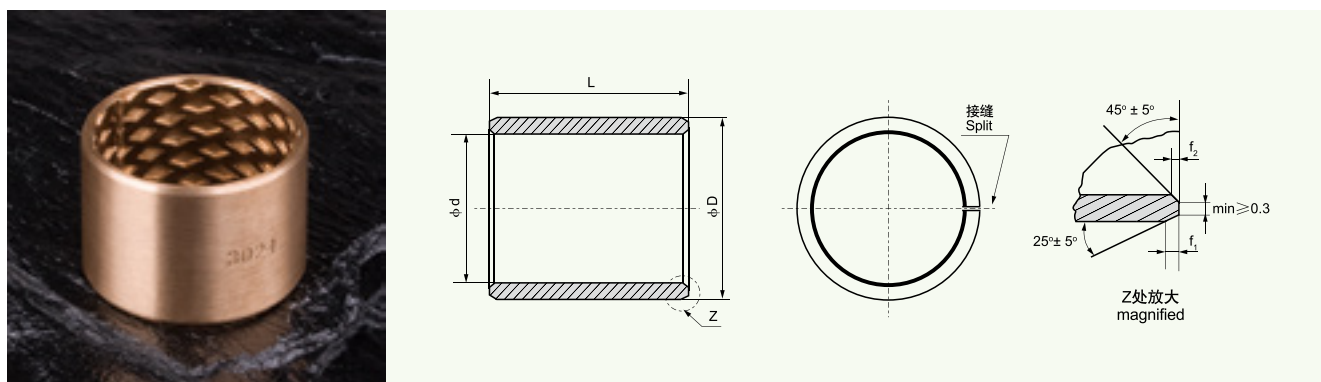
FB090/092/09G/08G 系列产品压入座孔H7中值, 内孔精度达到H9

FB090/092/09G/08G Series products press into Housing H7 Middle, accuracy of inner diameter can reach H9.

可供标准产品的标注方式
Standard Bushing Label Mode



FB090/092/09G/08G 标准公制轴承 Metric Standard Bushing



※标准直套标注方式: Standard Bushing Label Mode FB □ 1010

单位Unit: mm

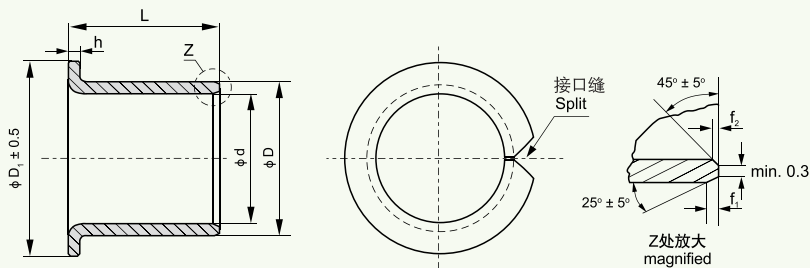
型号 Type	外径 φ D	内径 φ d	相配轴径 Axle	相配座孔 Housing	f ₁	f ₂	L ± 0.25						
							10	15	20	25	30	40	50
FB □	12	10	10 ^{-0.013 -0.028}	12 ^{+0.018 0}	0.6	0.3	1010	1015	1020				
FB □	14	12	12 ^{-0.016 -0.034}	14 ^{+0.018 0}			1210	1215	1220				
FB □	16	14	14 ^{-0.016 -0.034}	16 ^{+0.018 0}				1415	1420				
FB □	17	15	15 ^{-0.016 -0.034}	17 ^{+0.018 0}				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}	0.8	0.4		2015	2020	2025	2030		
FB □	25	22	22 ^{-0.020 -0.041}	25 ^{+0.021 0}				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}	1.2	0.6			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}					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}	1.6	0.8		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}							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

FB090/092/09G/08G 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	f1	f2	L ± 0.25					
							40	50	60	80	100	120
FB □	80	75	75 ^{-0.030} _{-0.060}	80 ^{+0.030} ₀	1.6	0.8	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					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

FB090/092 标准公制轴承 Metric Standard Bushing



※标准直套标注方式: Standard Bushing Label Mode SF-4 □ 1010

单位Unit: mm

型号 Type	内径 ϕd	外径 ϕD	法兰外径 $\phi D_1 \pm 0.5$	法兰壁厚 $h_{-0.20}^0$	高度 $L \pm 0.25$	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	2.0	20	1.2	0.6		-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	1.6	0.8		-0.025 -0.050	39	+0.025 0
FB □F 3540					40						
FB □F 3550					50						
FB □F 4030	40	44	55	2.5	30	1.6	0.8		-0.025 -0.050	44	+0.025 0
FB □F 4040					40						
FB □F 4050					50						
FB □F 5030	50	55	65	2.5	30	1.6	0.8		-0.025 -0.050	55	+0.030 0
FB □F 5040					40						
FB □F 5050					50						
FB □F 5530	55	60	70	2.5	30	1.6	0.8		-0.030 -0.060	60	+0.030 0
FB □F 5540					40						
FB □F 5550					50						
FB □F 6040	60	65	75	2.5	40	1.6	0.8		-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		-0.030 -0.060	85	+0.035 0
FB □F 8060					60						
FB □F 8080					80						
FB □F 10050	100	105	120	2.5	50	1.6	0.8		-0.036 -0.071	105	+0.035 0
FB □F 10060					60						
FB □F 10080					80						
FB □F 16060	160	165	190	2.5	60	1.6	0.8		-0.043 -0.083	165	+0.040 0
FB □F 16080					80						
FB □F 20060	200	205	235	2.5	60	1.6	0.8		-0.050 -0.096	205	+0.046 0
FB □F 20080					80						



※ **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)

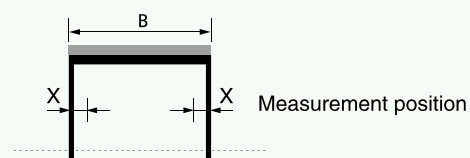


※ **通用的壁厚测量方法:**

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

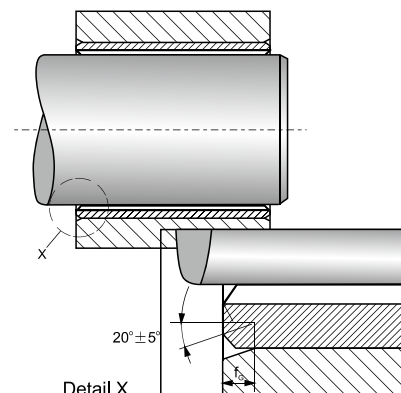
轴承安装设计 Design of Bearing Arrangement

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

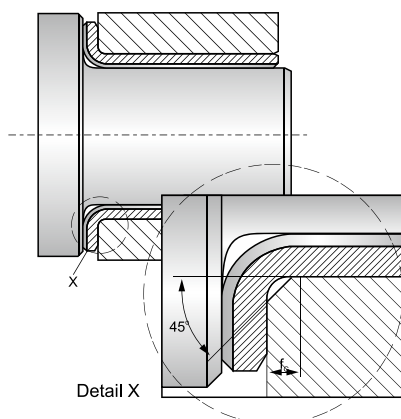


※翻边套 Flange Bushes

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

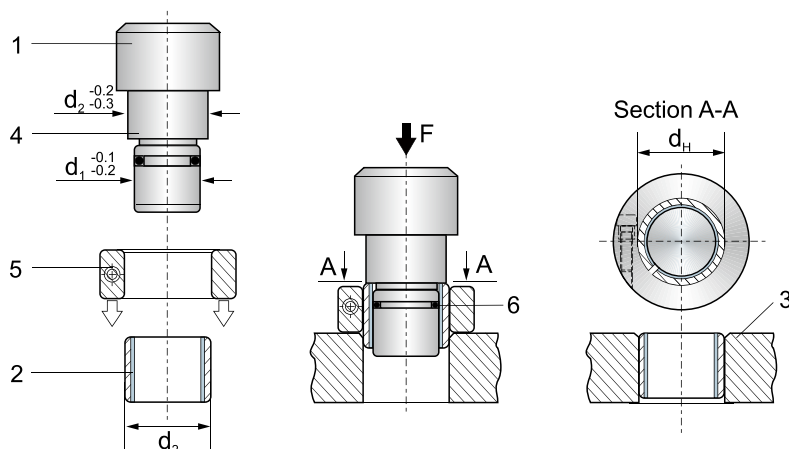


滑动轴承与座孔的装配

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 roate 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 pood 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 pood 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

JIASHAN HAIFENG BEARING FACTORY

地址: 浙江省嘉善县魏塘镇长秀路211号

邮编: 314100

电话: 0573-84161166

传真: 0573-84162567

网址: www.hfbushing.com

邮件: 404258740@qq.com

ADD: No. 211, Changxiu Rd, Weitang

Town, Jiashan, Zhejiang, China.

Post Code: 314100

TEL: +86-0573-84161166

FAX: +86-0573-84162567

Website: www.hfbushing.com

E-mail: 404258740@qq.com
