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ZOB®
浙江双飞无油轴承有限公司
ZHEJIANG SF OILLESS BEARING CO.,LTD.
TÜV CERT

2007

JF 双金属轴承
JF BIMETAL BEARINGS

AN ISO9001&ISO/TS16949 CERTIFIED BEARING COMPANY

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COMPANY PROFILE

1.Zhejiang SF Oilless Bearing Co.,LTD.was established in1988.
2.Our registered trademark is ZOB, it is also the short form of our company name.
3.Main products:all kinds of oilless self-lubrication bearings.
4.Production standard:ISO3547,DIN1494 and internal quality standard.
5.Annual production capacity:mor than 100,000,000 pcs bushings,thrust washers and sliding plate.
6.ISO9001:2000,QS9000 and ISO/TS16949 certified.
7.ZOB series bearing, is honored as "national key products" and "famous brand in Zhejiang Province".
8.Our products are exported to more than thirty countries,including America,Canada,Germany and Japan etc.
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企业简介

1.浙江双飞无油轴承有限公司创立于1988年。
2.ZOB是公司的注册商标,也是公司名称的缩写。
3.SF系列无油润滑轴承是公司的主导产品。
4.产品按ISO3547、DIN1494和企业内部质量标准执行。
5.各类无油轴承现年生产能力超过1亿件。
6.公司已通过ISO9001:2000，QS9000和ISO/TS16949认证。
7.ZOB系列产品被认定为国家级重点新产品和浙江省名牌产品。
8.产品50%以上出口到欧、亚、美等三十多个国家和地区。
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ABOUT JF BIMETAL BEARINGS

JF双金属轴承简介

JF双金属轴承是本公司滑动轴承系列产品之一，经过近二十年的生产和销售，本公司已建立起一整套完善的质量控制体系，包括设计、生产、销售和服务各个环节，并于2005年通过莱茵公司的ISO/TS16949质量体系审核。目前公司年生产JF双金属轴承约3000万套，已与国内外众多的主机厂家配套供货，产品质量得到主机厂家的认可，产品于2006年被认定为浙江省名牌产品。

The JF bi-metal bearing is among one of the sliding bearing series of our company. Based on twenty years' experience in production and sales, we've set up a complete quality control system for the designing, production, sales, services and others factors for the products,which has got the IS0/TS16949 authentication of Rheinland Group Germany. The present annual turnout for the bi-metal bearings is 30,000,000 PCS. The products are being adopted by many OE customers domestic and abroad with the quality highly approved. The ZOB series products are entitled as "amous brand product" by Zhejiang Province in 2006.

BIMETAL BEARINGS

JF双金属产品结构

JF双金属轴承是以优质低碳钢板为基体，表面烧结铅锡青铜合金或轧制铝锡合金，经过多次轧制烧结而成。产品的结构形式有轴套、轴瓦、止推垫片等，其中应用最为普遍的为轴套形式。JF双金属轴承常用的合金层材料有：CuPb10Sn10，CuPb24Sn4，CuPb30，CuSn6Zn6Pb3，AlSn20Cu等。由于国际上对环境保护的日益重视，目前我公司还研制出了一种适应环保要求的CuSn6.5P0.1合金层材料已在市场上广泛应用。

Applications

The JF bi-metal bushings adopts excellent mild steel as the backing, and then the bronze sintered or mock silver pressed at the surface. There are different types of bushings, engine bearings, thrust washers we are supplying, and among which bushing is the most commonly used type. The material most commonly adopted for the alloy layer for the bi-metal bushings is CuPb10Sn10, CuPb24Sn4, CuPb30, CuSn6Zn6Pb3, AlSn20Cu and so on. For sake of the environmental protection which has drawn much attention internationally,our company developed another kind of material CuSn6.5P0.1 for the alloy layer and it has been widely used in the market.

JF双金属产品的润滑

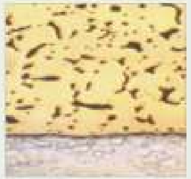
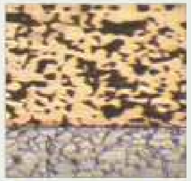
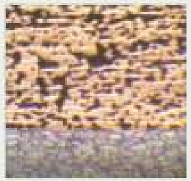
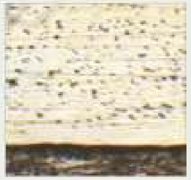
由于JF双金属轴承材料的特点，所以JF双金属轴承必须在有油润滑环境下工作。根据其应用场合的不同，一般可设计为三种润滑条件。在低速运动场合如汽车平衡桥、弹簧钢板、制动蹄、转向节、冲床导板、推土机支动轮、从动轮等部位，可设计为油脂润滑，即在装配时轴承表面涂布油脂，然后在使用过程中定期加注油脂；在中速运动场合如连杆、冲剪机床转轴、输送轮等部位，可设计为配置油杯润滑；在高速运动场合如齿轮箱体、油泵、油缸、发动机、离合器等部位，可设计为浸油润滑。

Technics Design

JF Bimetal bearings are widely used in oil lubricating situations. Normally under low speed and oil lubricating situations assemble with grease and work with adding oil periodically, such as suspension, steering ball joints, brake pedal points, redirector, connecting rod, slide part of punch, construction and earth-moving equipment, ETC.Under middle speed work with oil,such as connecting rod, shaft and transportation parts of cut machine. Under high speed work within oil, such as gear box,fuel pump,engine,clutch,ETC.

JF型双金属合金的技术标准
Specieications for JF Steel–Lead Bronze alloys

双金属合金的化学成份、特性与用途
Chemical Compositions and Application Characteristics of Steel–Lead Bronze alloys

材料型号 Material Type	铜合金牌号 Specification of Bronze	相当代号 Equivalent Code	金相组织图 ×100 Metallographies	合金层硬度 Hardness of Bronze alloy HB	允许最大动荷载 Allowable Max Dynamic Load N/mm²	对磨轴硬度 Hardness of mating surface	最高使用温度 Max.Temperature ℃	特 性 与 用 途 Application Characteristics
JF800	CuPb10Sn10	美国SAE-797 德国GLYCO66 日本JIS-LBC3 USA SAE-797 GERMANY GL-YCO66 JAPAN JIS-LBC3		70-100	65	53HRC	260	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 stype,wide application field, most suitable for high impact vibrating load bushes and washers.
JF720	CuPb24Sn4	美国SAE-799 德国GLYCO68 日本JIS-LBC6 USA SAE-799 GERMANY GL-YCO68 JAPAN JIS-LBC3		45-70	38	50HRC	200	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 mainbushes of inner-combushtion engine, connecting rod when plated.
JF700	CuPb30	美国SAE-48 USA SAE-48 日本 JIS-KJ3 JAPAN JIS-KJ3		30-45	25	270HB	170	有良好的抗咬性、异物埋没性，工作表面需镀软合金。常用于高速中低荷载的内燃机主轴套、连杆轴套。 Good seizuring 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.
JF20	AlSn20Cu	美国SAE-783 德国GLYCO74 日本JIS-AJL USA SAE-783 GERMANY GL-YCO 74 JAPAN JIS-AJL		30-40	30	250HB	150	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。 Moderate fatige strenth & load capacity good corrosion resistance, relative in half bushs of high speed, low load inner combustion engine, aircompressor, refigerator bearings.
JF930	CuSn6.5P0.1			60-90	65	50HRC	200	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 JF930 bearing is a kind of product without lead, Relative high fatige strengh & load capaity, good sliding performance,whose application industry is gradually being expanded.

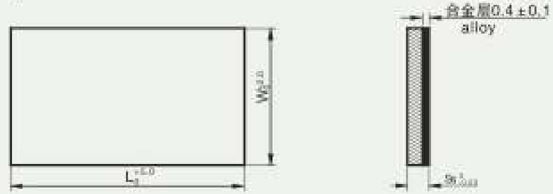
JF双金属轴承合金化学成份
Composition analysis of JF alloy

化学元素 chemical elements	JF800	JF720	JF700	JF20	JF930
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	≤0.7	-
Ni	≤0.5	≤0.5	≤0.5	≤0.1	-
Sb	≤0.2	≤0.2	≤0.2	-	-
Al	-	-	-	余量remainder	-
Si	-	-	-	≤0.7	-
Mn	-	-	-	≤0.7	-
Ti	-	-	-	≤0.2	-
其它Other	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5

JF双金属轴承的物理性能
Phisical characteristics of JF material

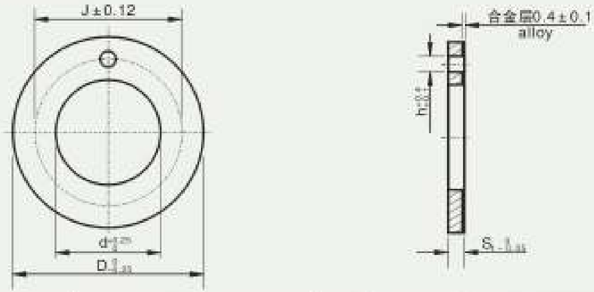
物理性能 PHSICAL PROPERITES		JF800	JF720	JF700	JF20	JF930
最高静承载压力N/mm² Load Limit		150	130	120	100	150
抗拉强度N/mm² Tensile Stronghth		185	150	200	200	185
最高速度(油)m/s Speed Limit Vmax (Oil)		5	10	15	25	5
摩擦因数(油)m/s Friction conefficient (Oil)		0.06~0.14	0.06~0.16	0.08~0.16	0.08~0.17	0.06~0.16
允许PV值 PV Limit N/mm²·m/s	(脂) Greases	2.8	2.8	2.5	-	2.8
	(油) Oil	10	10	8	6	10
"蓝宝石"疲劳级Mpa "Sapphire" fatigue class		125	115	105	85	-

滑板标准产品
JF standard slide plate



L	W	S
500	125	1.0
		1.5
		2.0
		2.5

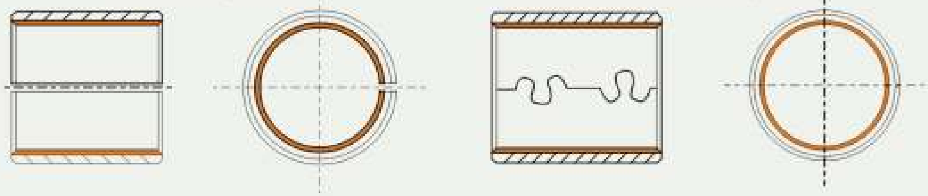
垫片标准产品
JF standard washer



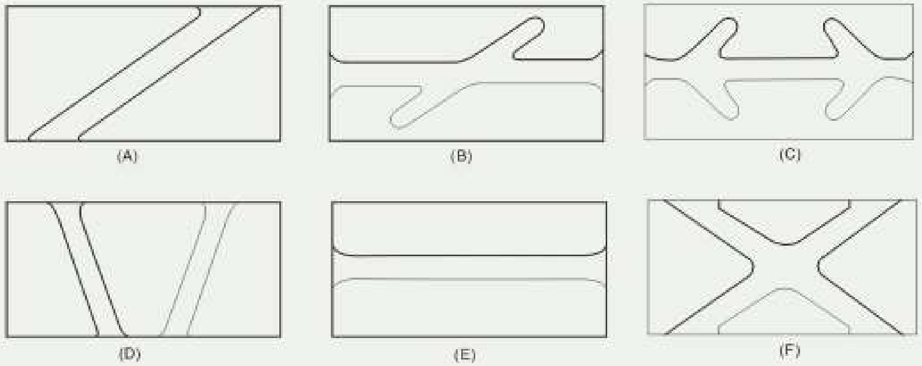
ΦD	ΦD	S	ΦJ±0.12	Φh
12	24	1.5	18	1.5
14	26		20	2
16	30		22	
18	32		25	
20	36		28	3
22	38		30	
24	42		33	
26	44		35	
28	48		38	4
32	54		43	
38	62		50	
42	6. 6		54	
48	74	2	61	
52	78		65	

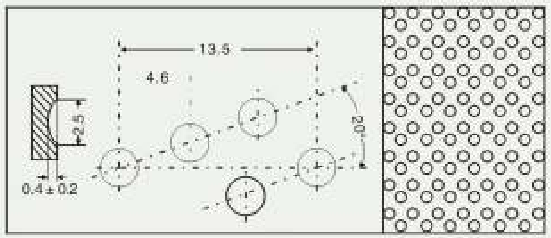
接口形式
Lock Types of JF Bushes

a.开口型 Straight Joint　　b.互锁搭扣型 Inter Locking Joint



润滑油穴、油槽
Types for JF bush's grooves & indentations





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润滑油孔
The Designing of Oil 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油孔，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 aera and designed to be easy oil feeding as well.

轴承外径 O.D.	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

单位：mm
Unit：mm

公称厚度 Nominal 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 layer	0.4	0.5	0.6	0.6	0.7	0.7	0.8	1.0
Manufacturable wall Thickness	$1^{+0.25}_{+0.15}$	$1.5^{+0.25}_{+0.15}$	$2^{+0.25}_{+0.15}$	$2.5^{+0.25}_{+0.15}$	$3^{+0.25}_{+0.15}$	$3.5^{+0.25}_{+0.15}$	$4^{+0.25}_{+0.15}$	$5^{+0.25}_{+0.15}$
Manufactured wall Thickness	$1_{-0.025}$	$1.5_{-0.03}$	$2_{-0.0035}$	$2.5_{-0.04}$	$3_{-0.045}$	$3.5_{-0.05}$	$4_{-0.055}$	$5_{-0.06}$

壁厚测量方法
Inspecting the tolerance of wall thickness

对宽度L≤15mm的轴套，测量点应选在轴套宽度中间截面的圆周上。

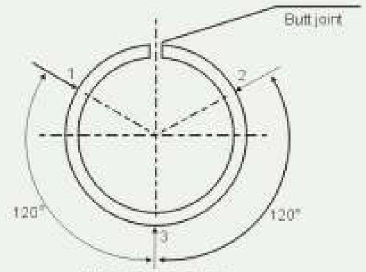
对宽度L>15mm的轴套，测量点应选在距离轴承一端5mm处的圆周上。

测量点应避开油槽、油穴、油孔和钢印标记位置，角度分布按右图。

Bush for width L≤15mm,measurement should be carried out on the circle of the middle section of the width.

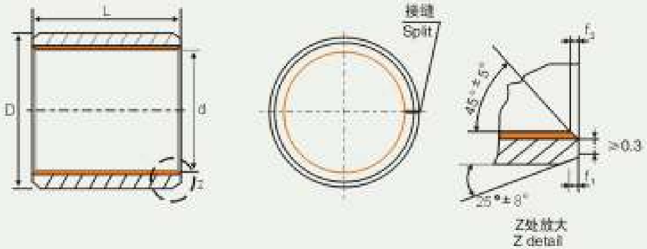
Bush for width L>15mm, measurement should be carried out on the two circles (5mm from each end).

The measuring point should be selected according to Fig. (avoiding oil grooves, pockets, indentations and print mark).



轴套壁厚测量示意图
(Figure to inspect bush wall thickness)

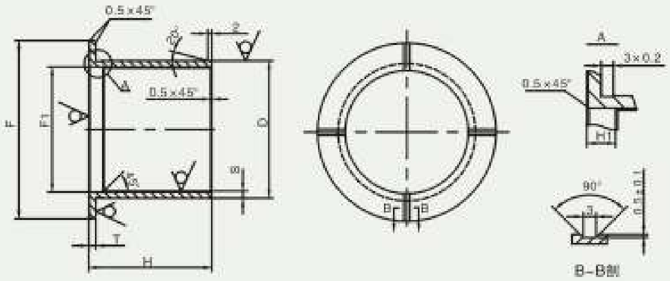
轴承标准产品
Stand Size Series of JF Bushing



d	D	壁厚 Wall Thickness	外径 O.D.	内径 I.D.	座孔 Housing Bore	轴径 Journal Diameter	f_1	f_2	$L_{-0.40}$										
									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	Δ	Δ	Δ								
12	14		$14^{+0.065}_{+0.030}$	$12^{+0.027}_{+0.000}$	$14^{+0.018}$	$12^{-0.016}_{-0.034}$	0.5	0.3	Δ	Δ	Δ								
14	16		$16^{+0.065}_{+0.030}$	$14^{+0.027}_{+0.000}$	$16^{+0.018}$	$14^{-0.016}_{-0.034}$	0.5	0.3	Δ	Δ	Δ								
15	17		$17^{+0.065}_{+0.030}$	$15^{+0.027}_{+0.000}$	$17^{+0.018}$	$15^{-0.016}_{-0.034}$	0.5	0.3	Δ	Δ	Δ								
16	18		$18^{+0.075}_{+0.035}$	$16^{+0.027}_{+0.000}$	$18^{+0.018}$	$16^{-0.016}_{-0.034}$	0.8	0.4	Δ	Δ	Δ								
18	20		$20^{+0.075}_{+0.035}$	$18^{+0.033}_{+0.000}$	$20^{+0.021}$	$18^{-0.016}_{-0.034}$	0.8	0.4	Δ	Δ	Δ	Δ							
20	23	$1.5_{-0.03}$	$23^{+0.075}_{+0.035}$	$20^{+0.033}_{+0.000}$	$23^{+0.021}$	$20^{-0.020}_{-0.041}$	0.8	0.4	Δ	Δ	Δ	Δ							
22	25		$25^{+0.075}_{+0.035}$	$22^{+0.033}_{+0.000}$	$25^{+0.021}$	$22^{-0.020}_{-0.041}$	0.8	0.4	Δ	Δ	Δ	Δ							
24	27		$27^{+0.075}_{+0.035}$	$24^{+0.033}_{+0.000}$	$27^{+0.021}$	$24^{-0.020}_{-0.041}$	1.0	0.5	Δ	Δ	Δ	Δ	Δ						
25	28		$28^{+0.075}_{+0.035}$	$25^{+0.033}_{+0.000}$	$28^{+0.021}$	$25^{-0.020}_{-0.041}$	1.0	0.5		Δ	Δ	Δ	Δ						
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		Δ	Δ	Δ	Δ						
28	32		$32^{+0.085}_{+0.045}$	$28^{+0.033}_{+0.000}$	$32^{+0.025}$	$28^{-0.020}_{-0.041}$	1.0	0.5		Δ	Δ	Δ	Δ	Δ					
30	34		$34^{+0.085}_{+0.045}$	$30^{+0.039}_{+0.000}$	$34^{+0.025}$	$30^{-0.020}_{-0.041}$	1.2	0.6		Δ	Δ	Δ	Δ	Δ					
32	36		$36^{+0.085}_{+0.045}$	$32^{+0.039}_{+0.000}$	$36^{+0.025}$	$32^{-0.025}_{-0.050}$	1.2	0.6		Δ	Δ	Δ	Δ	Δ					
35	39		$39^{+0.085}_{+0.045}$	$35^{+0.039}_{+0.000}$	$39^{+0.025}$	$35^{-0.025}_{-0.050}$	1.2	0.6			Δ	Δ	Δ	Δ	Δ				
38	42		$42^{+0.085}_{+0.045}$	$38^{+0.039}_{+0.000}$	$42^{+0.025}$	$38^{-0.025}_{-0.050}$	1.2	0.6			Δ	Δ	Δ	Δ	Δ				
40	44		$44^{+0.085}_{+0.045}$	$44^{+0.039}_{+0.000}$	$44^{+0.025}$	$40^{-0.025}_{-0.050}$	1.2	0.6			Δ	Δ	Δ	Δ	Δ				

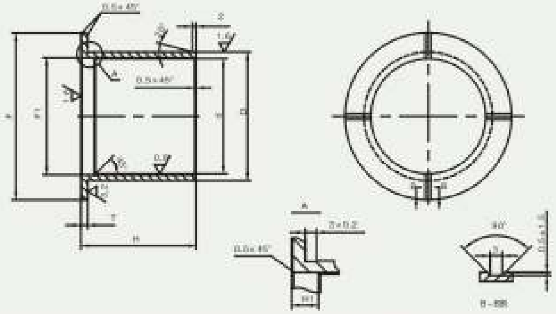
d	D	壁厚 Wall Thickness	外径 O.D.	内径 I.D.	座孔 Housing Bore	轴径 Journal Diameter	f_1	f_2	$L_{-0.40}$										
									10	15	20	25	30	40	50	60	80	90	100
45	50	$2.5_{-0.040}$	$50^{+0.085}_{+0.045}$	$45^{+0.039}_{+0.000}$	$50^{+0.025}$	$45^{-0.025}_{-0.05}$	1.5	1.0			Δ	Δ	Δ	Δ	Δ				
50	55		$55^{+0.100}_{+0.055}$	$50^{+0.039}_{+0.000}$	$55^{+0.030}$	$50^{-0.030}_{-0.060}$	1.5	1.0					Δ	Δ	Δ	Δ			
55	60		$60^{+0.100}_{+0.055}$	$55^{+0.046}_{+0.000}$	$60^{+0.030}$	$55^{-0.030}_{-0.060}$	1.5	1.0					Δ	Δ	Δ	Δ			
60	65		$65^{+0.100}_{+0.055}$	$60^{+0.046}_{+0.000}$	$65^{+0.030}$	$60^{-0.030}_{-0.060}$	1.5	1.0					Δ	Δ	Δ	Δ			
65	70		$70^{+0.100}_{+0.055}$	$65^{+0.046}_{+0.000}$	$70^{+0.030}$	$65^{-0.030}_{-0.060}$	1.5	1.0					Δ	Δ	Δ	Δ			
70	75		$75^{+0.100}_{+0.055}$	$70^{+0.046}_{+0.000}$	$75^{+0.030}$	$70^{-0.030}_{-0.060}$	1.5	1.0					Δ	Δ	Δ	Δ	Δ		
75	80		$80^{+0.100}_{+0.055}$	$75^{+0.046}_{+0.000}$	$80^{+0.035}$	$75^{-0.030}_{-0.060}$	1.5	1.0					Δ	Δ	Δ	Δ			
80	85		$85^{+0.120}_{+0.070}$	$80^{+0.054}_{+0.000}$	$85^{+0.035}$	$80^{-0.030}_{-0.060}$	1.5	1.0						Δ	Δ	Δ	Δ		
84	90	$3_{-0.045}$	$90^{+0.120}_{+0.070}$	$84^{+0.054}_{+0.000}$	$90^{+0.035}$	$84^{-0.036}_{-0.071}$	1.8	1.2						Δ	Δ	Δ	Δ		
89	95		$95^{+0.120}_{+0.070}$	$89^{+0.054}_{+0.000}$	$95^{+0.035}$	$89^{-0.036}_{-0.071}$	1.8	1.2						Δ	Δ	Δ	Δ		
94	100		$100^{+0.120}_{+0.070}$	$94^{+0.054}_{+0.000}$	$100^{+0.035}$	$94^{-0.036}_{-0.071}$	1.8	1.2							Δ	Δ	Δ	Δ	
99	105		$105^{+0.120}_{+0.070}$	$99^{+0.054}_{+0.000}$	$105^{+0.035}$	$99^{-0.036}_{-0.071}$	1.8	1.2							Δ	Δ	Δ	Δ	
104	110		$110^{+0.120}_{+0.070}$	$104^{+0.054}_{+0.000}$	$110^{+0.035}$	$104^{-0.036}_{-0.071}$	1.8	1.2							Δ	Δ	Δ		
109	115		$115^{+0.120}_{+0.070}$	$109^{+0.054}_{+0.000}$	$115^{+0.035}$	$109^{-0.036}_{-0.071}$	1.8	1.2							Δ	Δ	Δ		
114	120		$120^{+0.120}_{+0.070}$	$114^{+0.054}_{+0.000}$	$120^{+0.040}$	$114^{-0.036}_{-0.071}$	1.8	1.2							Δ	Δ	Δ		
119	125		$125^{+0.170}_{+0.100}$	$119^{+0.054}_{+0.000}$	$125^{+0.040}$	$119^{-0.036}_{-0.071}$	1.8	1.2							Δ	Δ	Δ		
123	130	$3.5_{-0.050}$	$130^{+0.170}_{+0.100}$	$123^{+0.063}_{+0.000}$	$130^{+0.040}$	$123^{-0.043}_{-0.083}$	2	1.5							Δ	Δ	Δ		Δ
128	135		$135^{+0.170}_{+0.100}$	$128^{+0.063}_{+0.000}$	$135^{+0.040}$	$128^{-0.043}_{-0.083}$	2	1.5							Δ	Δ	Δ		Δ
133	140		$140^{+0.170}_{+0.100}$	$133^{+0.063}_{+0.000}$	$140^{+0.040}$	$133^{-0.043}_{-0.083}$	2	1.5							Δ	Δ	Δ		Δ
138	145		$145^{+0.170}_{+0.100}$	$138^{+0.063}_{+0.000}$	$145^{+0.040}$	$138^{-0.043}_{-0.083}$	2	1.5								Δ	Δ		Δ
143	150		$150^{+0.170}_{+0.100}$	$143^{+0.063}_{+0.000}$	$150^{+0.040}$	$143^{-0.043}_{-0.083}$	2	1.5								Δ	Δ		Δ
148	155		$155^{+0.170}_{+0.100}$	$148^{+0.063}_{+0.000}$	$155^{+0.040}$	$148^{-0.043}_{-0.083}$	2	1.5								Δ	Δ	Δ	
153	160		$160^{+0.170}_{+0.100}$	$153^{+0.063}_{+0.000}$	$160^{+0.040}$	$153^{-0.043}_{-0.083}$	2	1.5								Δ	Δ	Δ	
158	165		$165^{+0.170}_{+0.100}$	$158^{+0.063}_{+0.000}$	$165^{+0.040}$	$158^{-0.043}_{-0.083}$	2	1.5								Δ	Δ		Δ
163	170		$170^{+0.170}_{+0.100}$	$163^{+0.063}_{+0.000}$	$170^{+0.040}$	$163^{-0.043}_{-0.083}$	2	1.5								Δ	Δ		Δ
168	175		$175^{+0.170}_{+0.100}$	$168^{+0.063}_{+0.000}$	$175^{+0.040}$	$168^{-0.043}_{-0.083}$	2	1.5								Δ	Δ		Δ
173	180		$180^{+0.170}_{+0.100}$	$173^{+0.063}_{+0.000}$	$180^{+0.040}$	$173^{-0.043}_{-0.083}$	2	1.5								Δ	Δ		Δ

JF-MZ模具成型摩擦焊接轴承标准产品
Stand Size Series of JF-MZ Bearing



代 号	F	D (平均值)	S (平均值)	H	T	F1	H1±0.5
MZ4040	60	46	3.0	39.5	3..5	41	6.5
MZ4035	62	47	3.5	35	3.5	41	6.5
MZ4555	62	55	5.0	55	3.5	46	6.5
MZ5040A	72	57	3.5	40	3.5	51	6.5
MZ5040B	70	57	3.5	40	3.5	51	6.5
MZ5050	70	57	3.3	50	3.5	51	6.5
MZ5460	92	60.6	3.5	60	3.5	55	6.5
MZ6053	83	67	3.5	53	3.5	61	6.5
MZ6060	87	67	3.5	60	3.5	61	6.5
MZ6065	77	67	3.5	65	3.5	61	6.5
MZ6060A	88	68	4.0	60	4.0	61	7.0
MZ6060B	87	68	4.0	60	4.0	61	7.0
MZ6465	102.6	70.4	3.5	65	3.5	64.5	6.5
MZ6473	103	70.8	3.5	73	3.5	64.8	6.5
MZ6553	85	72	3.5	53	3.5	66	6.5
MZ6564	87	72	3.5	64	3.5	66	6.5
MZ6575	108	72	3.5	75	3.5	66	6.5
MZ7060	93	77	3.5	60	3.5	71	6.5
MZ7090	108	80	5.0	90	5.0	71	8.0
MZ7560	100	82	3.5	60	3.5	76	6.5
MZ8068	105	87	3.5	68	3.5	81	6.5
Mz8580	127	92	3.5	80	3.5	86	6.5
MZ85103	128	92	3.8	103.5	3.5	86	6.5
MZ89123	138	97.5	4.2	126.5	4.2	90.2	7.2
MZ95127	144	105	5.0	127	5.0	96	8.0

JF-MP精加工型摩擦焊接轴承标准产品
Stand Size Series of JF-MP Bearing



代 号	F	D	d	H	T	F1	H1±0.5
MP4040	60	46	40	39.5	3.5	41	6.5
MP4035	62	47	40	35	3.5	41	6.5
MP4555	68	55	45	55	3.5	46	6.5
MP5040A	72	57	50	40	3.5	51	6.5
MP5040B	70	57	50	40	3.5	51	6.5
MP5050	70	57	50	50	3.5	51	6.5
MP5460	92	60.6	54	60	3.5	55	6.5
MP6053	83	67	60	53	3.5	61	6.5
MP6060	87	67	60	60	3.5	61	6.5
MP6065	77	67	60	65	3.5	61	6.5
MP6060A	88	68	60	60	4.0	61	7.0
MP6060B	87	68	60	60	4.0	61	7.0
MP6465	102.6	70.4	63.5	65	3.5	64.5	6.5
MP6473	103	70.8	63.8	73	3.5	64.8	6.5
MP6553	85	72	65	53	3.5	66	6.5
MP6564	87	72	65	64	3.5	66	6.5
MP6575	108	72	70	75	3.5	66	6.5
MP7060	93	77	70	60	3.5	71	6.5
MP7090	108	80	70	90	5.0	71	8.0
MP7560	100	82	75	60	3.5	76	6.5
MP8068	105	87	80	68	3.5	81	6.5
MP8580	127	92	85	80	3.5	86	6.5
MP85103	128	92.6	85	103.5	3.5	86	6.5
MP89123	138	97.5	89.2	126.5	4.2	90.2	7.2
Mp95127	144	105	95	127	5.0	96	8.0

一、JF轴套外径检测方法

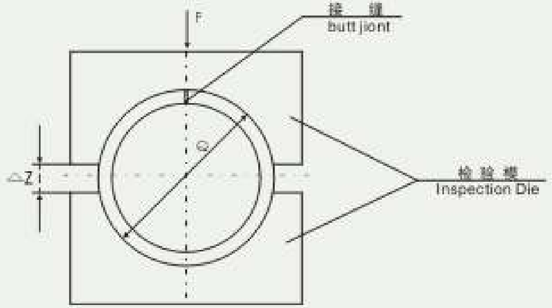
Ⅰ.O.D. Inspecting method of JF beating's

(一）外径采用ISO3547-2第一种方式检验，其步骤如下：

In accordance to ISO3547-2-A;the method is described as follows:

1.设定测量外径装置(如图所示)。先把一个直径与检测模内径一样的调节芯轴Q放在检验模之间，然后施加一定的试验力F,在检验模之间出现间隙Z,做为最初调整值。

1.Set the measuring device(see figure).Fist a core bar Q with the same diameter as the inside diameter of inspecting mould is put into the mould,then load F is given until clearance Z appears on the mould,which is logged as the reference parameter.



2.取出调节芯轴,将被测轴套开口上,放入检孔中,并施加同样试验力F,记录Z的变化值ΔZ。

2.Get the mandril out of the mould, then put the bush with the spilt upward into the inspecting bore, and the load F is given. Mean while a changed value ΔZ is logged.

3.芯轴Q和实验力F的取值和计算方法

3.Inspection and Caculation for the dimension of Q & F

D(mm)	≤6	>6-12	>12-80	>80-180
Q(mm)	$D_{max-0.003}$	$D_{max-0.008}$	$D_{max-0.013}$	$D_{max-0.025}$
F(N)	1500·A/Q 取100倍数值 (100fold value)	3000·A/Q 取250倍数值 (250fold)	6000·A/Q 取500倍数值 (500fold)	12000·A/Q 取500倍数值 (500fold)

A=L·$(S_1+S_2/2)$适用钢铜合金轴套For JF steel-copper alloy bushes.

A=L·$(S_1+S_2/3)$ 适用JF-20钢铝合金轴套 For JF-20 steel-aluminum alloy bushes.

L为轴套宽度,S1为钢板厚度,S2为合金层厚度

L:Bush Width S1:Steel Layer Thickness ,S2:Alloy Layer Thickness

ΔZ上极限值0,下极限值-π/2×ΔD ΔZ extremum:upper 0,lower:-π/2×ΔD

ΔD为轴套外径公差值ΔD:Bush Outside Diameter Tolerance

4.测定数据的举例Example For inspecting Date

轴套(Bush) Φ30×Φ34×30,轴套宽(Width)L=30±0.25

外径(O.D.)D=34 $^{+0.85}_{+0.45}$ 总壁厚(Total Thickness)S3=2$_{-0.015}$

钢板厚度(Steel Backing thickness)S1=1.55±0.2

(1)调节芯轴外径(Adjusting Mandril' S O.D.) Q=Dmax-0.013=34.085-0.013=34.072

(2)试验力芯轴外径(Load)F=6000·A/Q=6000×53.25/34.072=9377,取整后(After modulatd) F=9500(N)

其中(Here)A=L·(S1+S2/2)=30(1.55+0.45/2)=53.25

(3)ΔZ极限值ΔZextremeum 上极限值(Upper)0

下极限值(Lower)-π/2·ΔD=-π/2×0.04=-0.0628

取整数后(After modulated) -0.063

(即被轴套外径在检验模中的允许变化值为0--0.063）

(That's to say ,the permitted vatiable of O.D is 0--0.063 when bush in the inspecting gauge).

(4)实际被测轴套外径计算举例:

Exmaple for the caculation of the acttual bush being inspected.

若上述举例中实际测得ΔZ=-0.035,则被测轴套实际外径D

If the actual ΔZ=-0.035,then the actual O.D.

Dmax+ΔZ·2/π=34.085+(-0.035×2/3.14）=34.063

(二）外径采用ISO3547-2标准第二种方法检测

Inspecting O.D in accordance to ISO3547-2-B

在手的压力作用下（最大值为250N），轴套应能推入"通"环规，而不能进入"止"环规。"通"环规的内径等于轴套的最大理论外径，"止"环规的内径应等于轴套的最小理论外径。此方法较简便，通常较适应批量检测和提高工作效率，并易使供货双方简便地达成验收协议。也能满足装配的过盈配合要求。

Under the pressure of the hand(the masimum value is 250N),bush shuld be pushed into the go end of the ring gauge while can't come through the stop end.

The I.D of the go end should be equal to the maximum therotical O.D of the bush,while the I.D of the stop end equals tothe minimum therotical O.D of the bush.

Due to its relative easiness,the method generally is more suitable for batch inspection and can improve the working effciency as well.It will also more conveniently lead to inspection agreements between the customer and the manufacturer.Moreover,the demand of sharink fit in installation can be realized.

二、JF双金属轴套内径测量方法

JF轴套的内径测量方法可参照ISO3547-2中的第三种方法检测，对于产品内径小于120mm的产品，测量方法是将轴承压入一个检验孔中（座孔内径按H7中值制造，公差为±0.003 mm)，然后用三点内径千分尺或塞规测量轴套内孔。在手的压力作用下（最大值为250N），"通"塞规应能通过轴套内孔，"止"塞规不能通过轴套内孔。"通"塞规的外径等于轴套的最小理论内径，"止"塞规的外径应等于轴套的最大理论内径。但因本方法为破坏性测验，产品经测量后外径尺寸会发生变化，产品经检测后不得再次使用，所以本测量方法只适用于批量产品的抽检

内径大于120mm的产品，测方法由供需双方协商确定。

2.The inspecting method of JF bush inside diameter

To check the inside diameter,the bush is to be pressed into a ring gage,the size of the ring gauge inside diameter is made up of the outside diameter and the rounded average value of the tolerance class H7.The inside diameter shall be measred with 3 point measure instrument or checked with a GO and NO GO plug gauge .The plug gauge diameters are determined empirically based on the maxinmum and minimum values of bush's outside diameter.The GO plug gauge shall enter the bush with minimum ffort;the NO GO plug gauge shall not enter the bush manually(mximum force 250N).The test is appropriate for inside diameters up to 120mm.When the bush is pressed into the ring gauge it is possible that there will be permanent reduction in the outside diameter. For inside diameters overs 120mm,the test shall be argeed between supplier and user.

企业文化

◇企业宗旨

以质量求生存,以信誉求发展。

◇企业文化

团结、进取、诚心、博爱、创新、好学、严格、规范和注重社会效益。

◇企业理念

以市场为先导，为客户提供尽善尽美的产品和服务。

◇企业使命

为维护市场经济发展而运转，
为创造社会效益而生存。

◇企业目标

让“ZOB”产品遍布全世界。

◇企业客户

是我们双飞公司的巨大财富,我们将全力满足客户个性化的要求,
为每一位客户提供完善的服务,创造互惠互利的完美合作关系。

◇企业产品

“ZOB”将不断深入地进行技术研究、开发更多适应市场的产品，
并依靠严格的质量管理体系，使每一位客户享受高品质的产品。

ENTERPRISE CULTURE

Enterprise Principle:
Quality for survival,Credt for development.

Enterprise Spirit:
United,Aggressive,Practical,Innovative.

Operation Concept:
Technology-oriented,providing perfect product and service.

Enterprise Commission:
Enterprise exists for meeting the needs of market.
The needs of the market is the starting point and original drive power for all work.

Enterprise Goal:
Let ZOB cover all over the world.

ZOB's Customer:
All ZOB's customers are a huge treasure.
We will try every effort to satisfy different and individualized needs of customers.
We hope to establish a WIN-WIN cooperation relation with our cherished customers.

ZOB's Product:
ZOB will continue to make R&D,improve the production tech and quality.
Based on the strict quality control system,
provide every customer stable and reliable quality product.