

沃科为全球工业提供优质的零部件
Voke for global industry to provide quality parts



嘉善沃科汽车部件有限公司
JIASHAN VOKE AUTO PARTS CO., LTD.

JF-800 双金属卷制轴承



JIASHAN VOKE AUTO PARTS



COMPANY PROFILE

公司简介

嘉善沃科汽车部件有限公司是一家研究和生产各种自润滑轴承、无油轴承、滑动轴承等系列产品的专业厂家。公司拥有专业化的团队，先进齐全的设备，科学完善的管理，产品销售遍布全球各地，深受广大国内外客户的信任与好评。

公司主要产品有：JDB系列自润滑轴承、SF系列无油轴承、JF系列双金属滑动轴承、FB系列单金属滑动轴承、FZ系列钢球保持架、垫片、滑板、轴瓦等十多种系列，上万种规格。产品质量与性能均已达到国内领先水平，广泛配套于各种机械设备的转动和滑动部位。

我们不断致力于新产品和新领域的开发和推广，为客户提供有价值的产品，用心打造完美的品质，更好的回报客户。我们始终本着：以信为本、以质取胜、开拓创新、做强做大的宗旨目标，欢迎广大客户莅临我公司参观指导，一起携手共创美好未来！

JIASHAN VOKE AUTO PARTS CO., LTD., specializes in research and production of a variety of self-lubricating bearings, oil-free bearings, sliding bearings. The company has professional teams, advanced equipments, scientific management. Products are sold throughout the world and popular by the domestic and overseas customers.

Main products are: JDB series self-lubricating bearings, SF, oil-free bearings, JF series bimetal sliding bearing, FB series single metal sliding bearings, FZ series steel ball cage, gaskets, skateboard, bearings, dozens of series, thousands of specifications. Products have taken lead in quality and performance domestically and widely used as a complete set of rotating and sliding parts in all kinds of mechanical equipments.

We are constantly committed to new products and new areas of development and promotion, to provide customers with valuable products, build perfect quality attentively, high returns. We are always in line with faith, quality, innovation, and pursue a big goals, welcome customers to visit our company for guidance, to join hands in creating a better future together!

JF-800 双金属自润滑轴承 JF-800 Bimetal Self-Lubricating Bearing

结构特性 Structure Characteristics



JF-800 双金属复合轴承以优质低碳钢为基体，表面烧结具有低摩擦特性的铜合金（CuPb10Sn10、CuPb6Sn6Zn3、CuPb24Sn4、CuPb30、AlSn20Cu、CuSn8Ni）作为轴承的耐磨层，铜合金表面可以根据使用工况需要加工出各种类型的油槽、油孔、油穴等，以适合于无法持续加油或者难以加油的场合。材料通过二次烧结二次挤压可以得到很好的接合强度和最佳的承载能力。

JF-800 Bi-metallic composite bearing material consists of steel backing with lead bronze or lead-free copper alloy (CuPb10Sn10、CuPb6Sn6Zn3、CuPb24Sn4、CuPb30、AlSn20Cu) lining, bearing material for oil/grease lubricated applications. The copper alloy forms a continuously frame for thermal conductivity. These bearing structures are with high load capacity and good fatigue property. Higher tolerance can be achieved after re-machined from the customers. Lead-free bronze lining bearing material conforms to the European RoHS directive.

产品应用 Application

工程机械：底盘行走机构支重轮轴套、拖带轮轴套、张紧轮轴套；
汽车行业：平衡轴衬套、钢板销衬套、转向节主销轴套、连杆轴套、气门摇臂轴套、凸轮轴轴套、差速器轴套、变速箱轴套、内燃机主轴瓦、止推垫片；
以及柱塞泵侧片，齿轮泵侧片等。

Engineering machine: underpan, thrust wheel, Towing wheel, Steering knuckle, tension pulley...

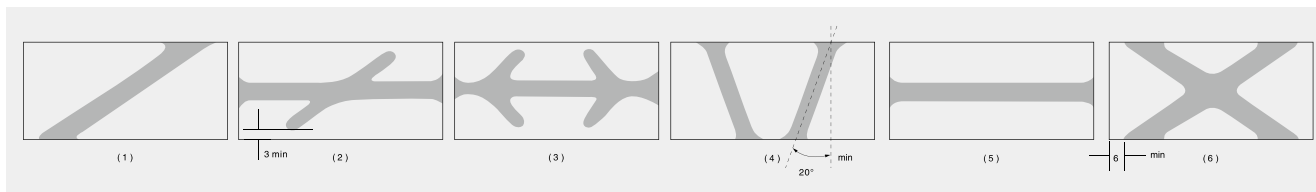
Automotive: trunnion shaft, connecting rod, valve rocker, camshaft, gear box, internal-combustion engine,

And Plunger pump friction plate, gear pump friction plate...

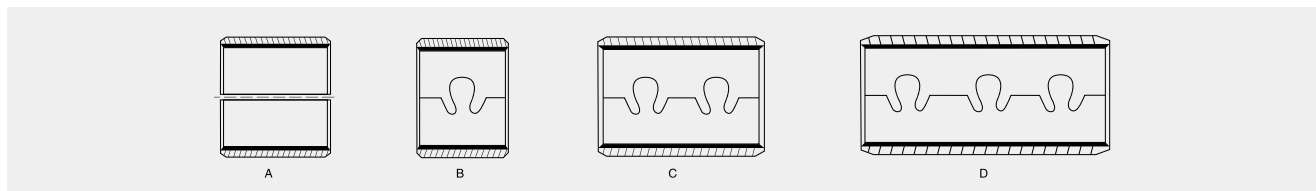
JF-800 双金属内孔加工与不可加工厚度公差 Wall Thickness of The Machinable and Non-machinable Bore of Bearing and Their Tolerances

公称厚度 Nominal Thickness	内孔不可加工厚度公差 Tolerances+ of Series B (non-machinable)	内孔可加工厚度公差 Tolerances of Series C (non-machinable)
1.0	-0.025	+0.25 +0.15
1.5	-0.030	+0.25 +0.15
2.0	-0.035	+0.25 +0.15
2.5	-0.040	+0.30 +0.15
3.0	-0.045	+0.30 +0.15
3.5	-0.050	+0.30 +0.15

双金属自润滑轴承的油槽油穴形式 Type for Bi-Metallic Bearing Grooves and Indents








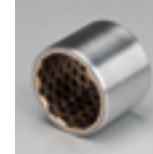
双金属轴承的搭扣形式 Lock Types for Bi-Metallic Bearing



JF-800 双金属自润滑轴承

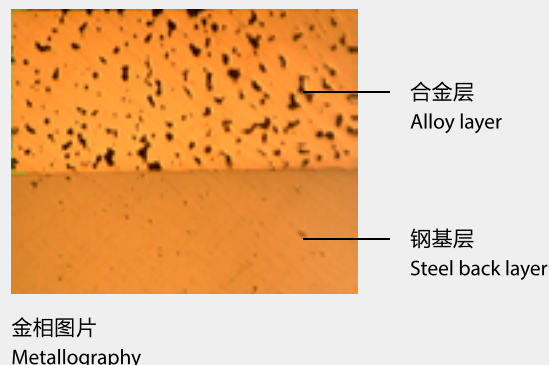
JF-800 Bimetal Self-Lubricating Bearing

JF-800 双金属轴承适用于高载、中高速下的旋转、摇摆运动工况。实际运用中根据使用工况的不同，表面可以烧结不同合金层。由此衍生出JF-801、JF-802、JF-803、JF-804、JF-805、JF-08G各系列产品，其材料结构、运用领域和技术参数汇总表如下：JF-800 bimetal bushing applied to the working condition like heavy load, medium and high rotation speed, Oscillating motion. different alloy material can be sintered on the steel back, like JF-801、JF-802、JF-803、JF-804、JF-805、JF-08G, Detail as below:

有关数据 Data	代号 Grade	JF-801	JF-802	JF-803	JF-804	JF-805	JF-08G
	材料 Material	碳钢/Steel + CuPb ₁₀ Sn ₁₀	碳钢/Steel + CuPb ₂₄ Sn ₄	碳钢/Steel + CuPb ₂₄ Sn	碳钢/Steel + AlSn ₂₀ Cu	碳钢/Steel + CuPb ₃₀	碳钢/Steel + CuPb ₁₀ Sn ₁₀ +石墨/Graphite
除了目录中显示的标准产品外，还可以提供非标产品或根据客户要求订购。 We can also develop according to customers special request while out of this table							
主要运用领域 Typical application		产品适用于汽车发动机连杆，工程机械、农业机械等。 Application: con-rod of automobile engines, engineering and agriculture machinery, heavy duty construction machinery etc.	产品适用于高速、重载的内燃机主轴和变速齿轮。 Application: High speed, heavy load engine main shaft and transmission gearbox, etc.	产品适用于高速、重载的内燃机主轴和连杆轴承。 Application: High speed, heavy load engine main shaft and con rod	产品适用于内燃机主轴和连杆轴承、空压机、制冷机用轴承。 Application: High speed, heavy load engine main shaft and air compressor, cooling machine.etc	产品主要适用于内燃机主轴和连杆轴承。 Application: High speed, heavy load engine main shaft and con rod	产品适用于启动马达机械。 Application: starting motor
最大动载 P N/mm ² Max dynamic Load P		140	120	120	90	100	140
最大线速度 V m/s Max line speed V		2.5	2.5	2.5	—	—	2.5
最高PV值 N/mm ² ·m/s Max PV value	脂润滑 Greases lubrication	2.8	2.8	2.8	—	—	2.8
摩擦系数u Friction coef u		0.05~0.15	0.05~0.15	0.05~0.15	—	—	0.05~0.15
最大线速度 V m/s Max line speed V		5	10	10	15	15	—
最高PV值 N/mm ² ·m/s Max PV value	流体润滑 Oil lubrication	10	10	10	8	8	—
摩擦系数u Friction coef u		0.04~0.12	0.04~0.12	0.04~0.12	0.04~0.12	0.04~0.12	—
最高温度 °C Max Working temperature	脂润滑 Greases lubrication	150	150	150	150	150	150
	流体润滑 Oil lub.	250	250	250	250	250	—
相配轴径 Mating Axis	硬度 HRC Hardness	≥53	≥48	≥45	≥270	≥270	≥53
	粗糙度 Ra Roughness	0.32~0.63	0.16~0.63	0.16~0.63	0.16~0.63	0.16~0.63	0.32~0.63
合金层硬度 HB Alloy layer hardness		60~90	45~70	40~60	30~40	30~45	60~90
导热系数 W/mk Thermal conductivity		47	60	60	47	60	47
线膨胀系数 (轴向) Coefficient of linear expansion		18 × 10 ⁻⁶ /K	19 × 10 ⁻⁶ /K	19 × 10 ⁻⁶ /K	18 × 10 ⁻⁶ /K	19 × 10 ⁻⁶ /K	18 × 10 ⁻⁶ /K

JF-800F 双金属摩擦焊接轴承 JF-800F Friction Welding Bimetal Bearing

结构特性 Structure Characteristics



结构特性及用途 Structure Characteristics and Applications

JF-800F 双金属轴承以优质低碳钢为基体，表面烧结锡青铜合金 CuSn10Pb10，具有很高的抗疲劳强度和承载能力，高的抗冲击力。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承，改善了原工艺合金层厚度不均匀，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。

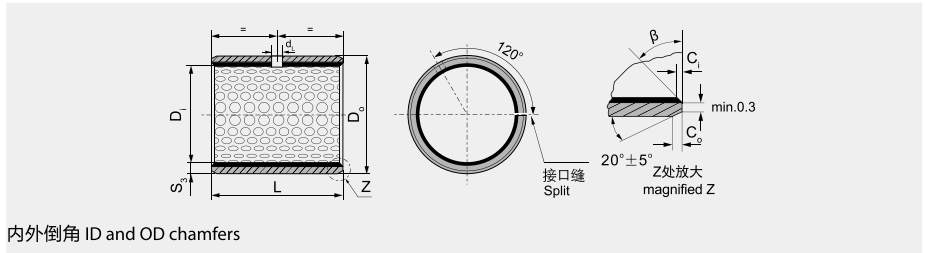
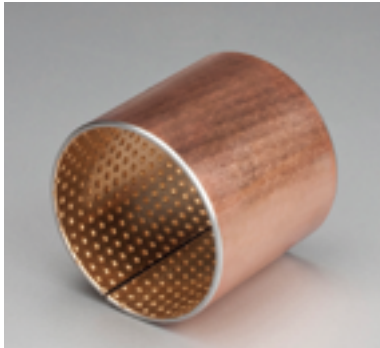
JF-800F bimetal bushing is backed with high quality low carbon steel with tin-lead-bronze alloy (CuSn10Pb10) sintered on its surface. It has high fatigue strength, load capacity and impact strength. The product is applied to track roller, air compressor, especially replaced the Centrifugal casting bimetal bushing for the track roller application. the alloy thickness becomes uniform comparing with the centrifugal casting bimetal bushing, and save lot of material, which make the product cost performance higher.

物理机械性能 Physical and Mechanical Performance

性能指标 Performance Index		有关数据 Data	性能指标 Performance Index		有关数据 Data
最大线速度 V Linear Velocity	脂润滑 Grease Lubrication	2.5 m/s	相配轴 Mating Axis	硬度 Hardness	≥53HRC
	流体润滑 Oil Lubrication	5 m/s		粗糙度 Roughness	Ra=0.16~0.63
最高 PV 值 Max PV value	脂润滑 Grease Lubrication	2.8N/mm ² ·m/s	最高使用温度 Max Working Temperature	脂润滑 Grease Lubrication	150°C
	流体润滑 Oil Lubrication	10N/mm ² ·m/s		油润滑 Oil Lubrication	250°C
最大承载压力 P Max Load		140N/mm ²	摩擦系数 Friction Coefficient		0.05~0.15
合金硬度 Alloy Hardness		HB 60~90	导热系数 Heat-conducting Coefficient		47W/(m·k)
焊接强度 Weld Strength		140N/mm ²	热膨胀系数 Heat-expansion Coefficient		18·10 ⁻⁶ K ⁻¹

JF-800 双金属轴承规格及公差

JF-800 Bimetal Sleeve Bearing Specification & Tolerance



内外倒角 ID and OD chamfers

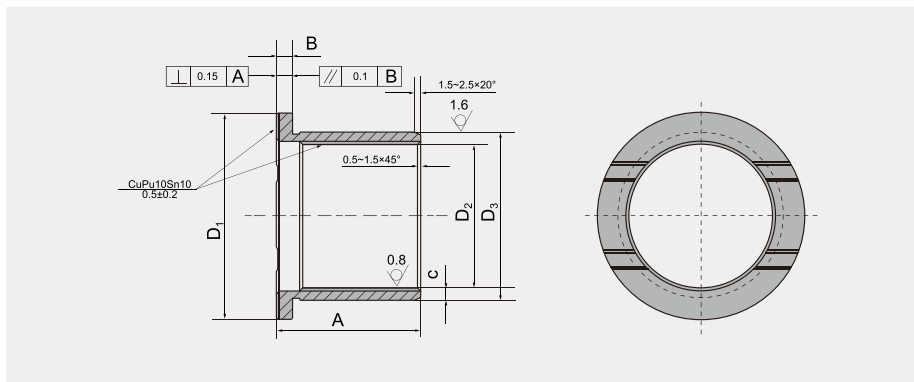
S ₃	C ₀	C ₁	β
0.75	0.5 ± 0.3	0.25 ± 0.2	35° ± 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	35° ± 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	35° ± 5°

单位unit:mm

内径 D _i φ d	外径 D _o φ D	轴径(h8) Shaft D _s	座孔(H7) Housing D _H	压装后 内孔公差 Arter fixed D _{1a}	配合 间隙 Clearance C _D	壁厚 Wall thickness S ₃	油孔 Oil hole d _L	长度 L ^{0 -0.40}																	
								10	15	20	25	30	40	50	60	80	90	100							
15	17	15 ^{-0.027}	17 ^{+0.018}	+0.148 +0.010	0.175 0.010	0.995 0.935	4	1510	1515	1520															
16	18	16 ^{-0.027}	18 ^{+0.018}					1610	1615	1620															
18	20	18 ^{-0.027}	20 ^{+0.021}	+0.151 +0.010	0.178 0.010				1810	1815	1820	1825													
20	23	20 ^{-0.033}	23 ^{+0.021}					2010	2015	2020	2025														
22	25	22 ^{-0.033}	25 ^{+0.021}	+0.161 +0.020	0.194 0.020	1.490 1.430	6	2210	2215	2220	2225														
24	27	24 ^{-0.033}	27 ^{+0.021}					2410	2415	2420	2425	2430													
25	28	25 ^{-0.033}	28 ^{+0.021}					2515	2520	2525	2530														
26	30	26 ^{-0.033}	30 ^{+0.021}	+0.181 +0.040	0.214 0.040	1.980 1.920	8	2615	2620	2625	2630														
28	32	28 ^{-0.033}	32 ^{+0.025}		0.218 0.040			2815	2820	2825	2830	2840													
30	34	30 ^{-0.033}	34 ^{+0.025}					3015	3020	3025	3030	3040													
32	36	32 ^{-0.039}	36 ^{+0.025}	+0.185 +0.040				3215	3220	3225	3230	3240													
35	39	35 ^{-0.039}	39 ^{+0.025}		0.224 0.040				3520	3525	3530	3540	3550												
38	42	38 ^{-0.039}	42 ^{+0.025}							3820	3825	3830	3840	3850											
40	44	40 ^{-0.039}	44 ^{+0.025}							4020	4025	4030	4040	4050											
45	50	45 ^{-0.039}	50 ^{+0.025}	+0.225 +0.080	0.264 0.080						4525	4530	4540	4550											
50	55	50 ^{-0.039}	55 ^{+0.030}		0.269 0.080							5030	5040	5050	5060										
55	60	55 ^{-0.046}	60 ^{+0.030}										5530	5540	5550	5560									
60	65	60 ^{-0.046}	65 ^{+0.030}	+0.230 +0.080									6030	6040	6050	6060									
65	70	65 ^{-0.046}	70 ^{+0.030}		0.276 0.080								6530	6540	6550	6560									
70	75	70 ^{-0.046}	75 ^{+0.030}										7030	7040	7050	7060	7080								
75	80	75 ^{-0.046}	80 ^{+0.030}										7530	7540	7550	7560	7580								
80	85	80 ^{-0.046}	85 ^{+0.035}		0.281 0.080								8030	8040	8050	8060	8080	8090							
85	90	85 ^{-0.054}	90 ^{+0.035}										8530	8540	8550	8560	8580	8590	85100						
90	95	90 ^{-0.054}	95 ^{+0.035}											9040	9050	9060	9080	9090	90100						
95	100	95 ^{-0.054}	100 ^{+0.035}	+0.235 +0.080		2.460 2.400	9.5							9550	9560	9580	9590	95100							
100	105	100 ^{-0.054}	105 ^{+0.035}		0.289 0.080											10050	10060	10080	10090	100100					
105	110	105 ^{-0.054}	110 ^{+0.035}												10550	10560	10580	10590	105100						
110	115	110 ^{-0.054}	115 ^{+0.035}													11050	11060	11080	11090	110100					
115	120	115 ^{-0.054}	120 ^{+0.035}														11550	11560	11580	11590	115100				
120	125	120 ^{-0.054}	125 ^{+0.040}															12050	12060	12080	12090	120100			
125	130	125 ^{-0.063}	130 ^{+0.040}																12560	12580	12590	125100			
130	135	130 ^{-0.063}	135 ^{+0.040}																	13060	13080	13090	130100		
135	140	135 ^{-0.063}	140 ^{+0.040}	+0.240 +0.080	0.303 0.080															13560	13580	13590	135100		
140	145	140 ^{-0.063}	145 ^{+0.040}																		14060	14080	14090	140100	
150	155	150 ^{-0.063}	155 ^{+0.040}																			15060	15080	15090	150100

JF-800F 双金属摩擦焊接轴承规格及公差

JF-800F Friction Welding Bi-metallic Bearing Specification & Tolerance



单位unit:mm

D ₁	B	D ₃	D ₂	A	C	D ₁	B	D ₃	D ₂	A	C
42	3.5	37	30	30	3.5	87	3.5	67	60	65	3.5
43	2	34	30	28	2	87	4	68	60	60	4
44	3.5	39	32	35	3.5	94	3.5	72	65	60	3.5
47	3.5	39	32	50	3.5	87	3.5	72	65	65	3.5
48	2	39	35	37	2	87.5	1.95	69.12	65.22	64.5	2
52	3	41	35	35	3	88	3.5	67	60	60	3.5
55	3.5	42	35	35	3.5	88	3.5	72	65	65	3.5
55	3.5	45	38	35	3.5	92	3.5	77	70	67	3.5
55	3.5	45	38	40	3.5	93	3.5	75	68	60	3.5
60	3	41	35	42	3	94	3.5	77	70	70	3.5
60	3	46	40	62	3	95	3.5	77	70	65	3.5
63	3.5	47	40	40	3.5	95	4	78	70	70	4
65	3.5	52	45	40	3.5	97	3.48	77.14	70.18	62	3.5
68	3.5	54	47	35	3.5	97	3.5	82	75	74	3.5
70	3.5	54	47	40	3.5	100	5	85	75	70	5
70	3.5	57	50	48	3.5	103	3.525	70.8	63.75	73	3.5
72	3.5	57	50	45	3.5	105	3.5	82	75	75	3.5
72	3.5	57	50	50	3.5	105	3.5	87	80	70	3.5
75	3.5	57	50	50	3.5	107	4	83	75	74	4
77	3	60	54	55	3	115	5	100	90	75	5
83	3.5	66	59	53	3.5	128	3.8	92.6	85	103	4
85	3.5	65	58	60	3.5	108	3.5	72	65	75	3.5
87	3.5	67	60	53	3.5	108	3.5	77	70	98	3.5
87	3.5	67	60	60	3.5	108	5	80	70	90	5

JF系列双金属衬套
Series Bimetal Bushings





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