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

应用领域 / Application








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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

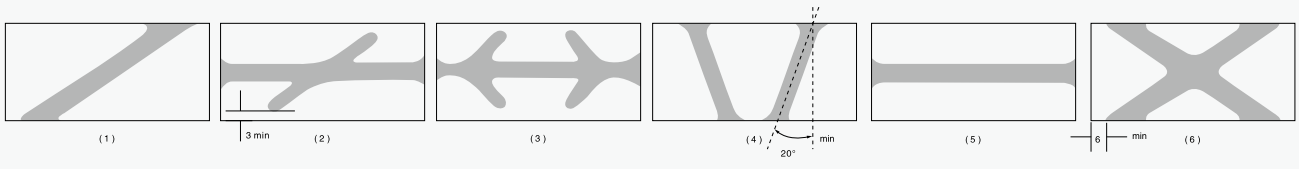
工程机械：底盘行走机构支重轮轴套、拖带轮轴套、张紧轮轴套；
汽车行业：平衡轴衬套、钢板销衬套、转向节主肖轴套、连杆轴套、气门摇臂轴套、凸轮轴轴套、差速器轴套、变速箱轴套、内燃机主轴瓦、止推垫片；
以及柱塞泵侧片，齿轮泵侧片等。

Angineering 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...

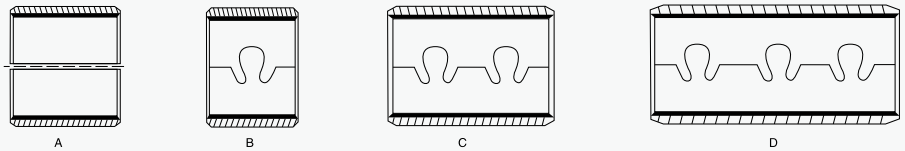
JF-800 双金属内孔加工与不可加工厚度公差 Wall Thickness of The Machinable and Non-machinable Bore of Bearing and Their Tolerances

公称厚度 Norminal Thiickness	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-Metaltic Bearing Grooves and Indents



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



JF-800 双金属自润滑轴承
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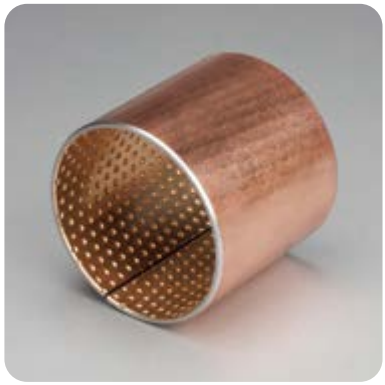
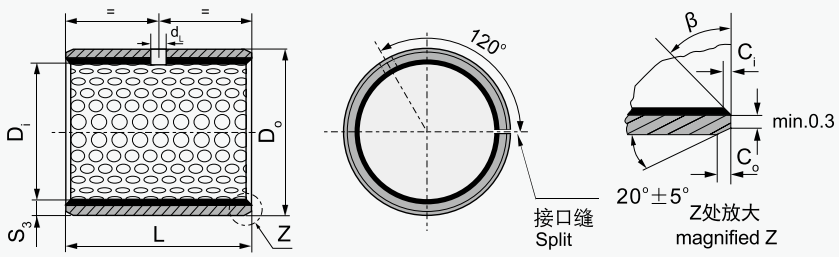
JF-800 双金属轴承适用于高载、中高速下的旋转、摇摆运动工况。实际运用中根据使用工况的不同，表面可以烧结不同合金层。由此衍生出JF-800、JF-801、JF-802、JF-803、JF-804、JF-80G各系列产品，其材料结构、运用领域和技术参数汇总表如下：

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-800、JF-801、JF-802、JF-803、JF-804、JF-80G, Detail as below:

有关数据 Data	代号 Grade	JF-800	JF-801	JF-802	JF-803	JF-804	JF-80G
	材料 Materiai	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 Typicai applicaton		产品适用于汽车发动机连轩，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 ransmission 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	脂润滑 Greaes lubrication	2.5	2.5	2.5	--	--	2.5
最高PV值 $N/mm^2 \cdot m/s$ Max PV value		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	流体润滑 Oil lubrication	5	10	10	15	15	--
最高PV值 $N/mm^2 \cdot m/s$ Max PV value		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 ℃ Max Working temperature	脂润滑 Greaes 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-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_o	C_i	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°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

单位unit:mm

内径 D_i φd	外径 D_O φD	轴径(h8) Shaft D_s	座孔(H7) Housing D_H	压装后内孔公差 Arter fixed $D_{i,a}$	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
10	12	10 $^{-0.022}$	12 $^{+0.018}$		0.170 0.010			1010	1015	1020				
12	14	12 $^{-0.027}$	14 $^{+0.018}$					1210	1215	1220				
14	16	14 $^{-0.027}$	16 $^{+0.018}$	+0.148 +0.010	0.175 0.010	0.995 0.935		1410	1415	1420				
15	17	15 $^{-0.027}$	17 $^{+0.018}$				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		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		6		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		1.980 1.920			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 $^{+0.025}$				8			3820	3825	3830	3840	3850
40	44	40 $^{-0.039}$	44 $^{+0.025}$							4020	4025	4030	4040	4050

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内径 D_i φd	外径 D_O φD	轴径(h8) Shaft D_s	座孔(H7) Housing D_H	压装后内孔公差 Arter fixed $D_{i,a}$	配合间隙 Clearance C_D	壁厚 Wall thickness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$							
								25	30	40	50	60	80	90	100
45	50	45 $^{-0.039}$	50 $^{+0.025}$	+0.225 +0.080	0.264 0.080	2.460 2.400	8	4525	4530	4540	4550				
50	55	50 $^{-0.039}$	55 $^{+0.030}$	+0.230 +0.080	0.269 0.080				5030	5040	5050	5060			
55	60	55 $^{-0.046}$	60 $^{+0.030}$		0.276 0.080				5530	5540	5550	5560			
60	65	60 $^{-0.046}$	65 $^{+0.030}$						6030	6040	6050	6060			
65	70	65 $^{-0.046}$	70 $^{+0.030}$						6530	6540	6550	6560			
70	75	70 $^{-0.046}$	75 $^{+0.030}$						7030	7040	7050	7060	7080		
75	80	75 $^{-0.046}$	80 $^{+0.030}$				9.5		7530	7540	7550	7560	7580		
80	85	80 $^{-0.046}$	85 $^{+0.035}$	+0.235 +0.080	0.281 0.080				8030	8040	8050	8060	8080	8090	
85	90	85 $^{-0.054}$	90 $^{+0.035}$		0.289 0.080				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 $^{+0.035}$								9550	9560	9580	9590	95100
100	105	100 $^{-0.054}$	105 $^{+0.035}$								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 $^{+0.040}$	+0.240 +0.080							12050	12060	12080	12090	120100
125	130	125 $^{-0.063}$	130 $^{+0.040}$		0.303 0.080							12560	12580	12590	125100
130	135	130 $^{-0.063}$	135 $^{+0.040}$									13060	13080	13090	130100
135	140	135 $^{-0.063}$	140 $^{+0.040}$									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