ANCHI

嘉善安驰轴承制造有限公司
JIASHAN ANCHI BEARING MANUFACTURING CO., LTD.

# 自润滑和免维护滑动轴承
# Self-Lubricating and Maintenance-Free Sliding Bearings

CATALOGUE



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嘉善安驰轴承制造有限公司

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# Self-Lubricating and Maintenance-Free Sliding Bearings

## 企业简介

嘉善安驰轴承制造有限公司是专业生产滑动类自润滑轴承的企业，长期为客户定制各种类型的无油润滑轴承。公司加工的产品完整涵盖了具有自润滑性能的各种类型各种材质的轴套、轴瓦、滑板、垫片及轴类系列，产品在汽车制造、机械装备、水利水电、冶金设备、石油工程等行业得到广泛的应用。我们在长期的实际生产过程中,积累了非常丰富的加工经验,同时也将不断的调整产品和服务，以具有特色的解决方案满足客户的需求和苛刻的应用。我们将不断努力并坚持传统价值观，保持灵活服务特性来实现企业目标的要求。我们为您带来更好!

Jiashan Anchi Bearing Manufacturing Co., Ltd. is a professional production of sliding type self-lubricating bearing enterprises, long-term non oil lubricated bearings customized for various types of. Company product complete covered with self-lubricating properties of various materials, various types of sleeve bearing, sliding plate, gasket and shaft series, products are widely used in automobile manufacturing, machinery and equipment, water conservancy and hydropower, metallurgical equipment, petroleum engineering etc.. We are in actual production in the process of long-term accumulation, processing experience is very rich, but also will continue to adjust product and service, the solution has the characteristic to meet customer demand and demanding applications. We will continue our efforts and adhere to traditional values, flexible service characteristics to realize the goal of enterprise requirements. We bring you better!



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# 嘉善安驰轴承制造有限公司
JIASHAN ANCHI BEARING MANUFACTURING CO.,LTD

嘉善安驰轴承制造有限公司的标志创意来源于运转中高性能的免维护轴承,突出体现了自润滑轴承的主要形式和润滑特点.图形由”A”和”C”的首字母组成,呈现产品安全高效的性能和企业对“安驰”品牌的专注,用心为客户带来更好产品服务的核心价值。采用厚重的菱形字母“ANCHI”体现出企业的稳重干练之气，主色调用深蓝色和绿色表示，色彩明快、视觉舒服，不浮躁。蓝色象征理性、科学，绿色代表环保、积极，真实表达出企业的沉着理性又不乏生机创新。

Jiashan Anchi Bearing Manufacturing Co., Ltd logo ideas from the high performance operation maintenance free bearings, highlights the main form and the lubrication characteristics of self lubricating bearing. The graph by "A" and "C" the first letters, presenting the product safety and efficient performance and enterprises focus on the "TICO" brand, core value intentions bring better products for customer service. Manifests the enterprise the sedate capable of gas by using thick diamond letter "ANCHI", the main color called deep blue and Green said, bright color, visual comfort, not impetuous. Blue symbolizes the rational, scientific, environmental protection, green represents positive, true expression calm rational enterprises does not lack the vitality of innovation.



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Bearing design、installation and maintenance



## 1 固体镶嵌自润滑轴承
## Solid Inlaid Self-Lubricating Bearing

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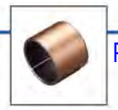
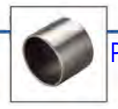
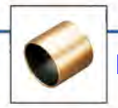
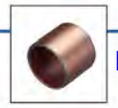
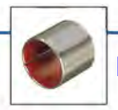
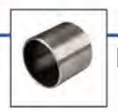
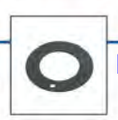
HGB250 法兰固定导套 Flange fixed guide bush P18



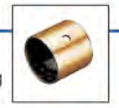
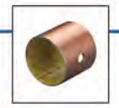
# INEDEX
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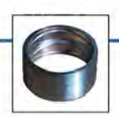

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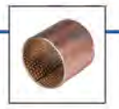
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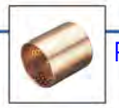
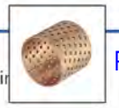
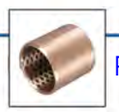
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# 固体润滑轴承
# SOLID LUBRICATING BEARING



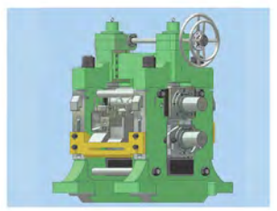
# JDB 铜基固体镶嵌式自润滑轴承
# Bronze Solid Enchase Self-lubricating Bearing

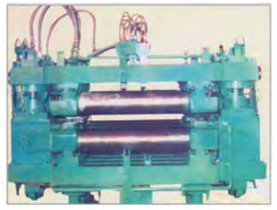


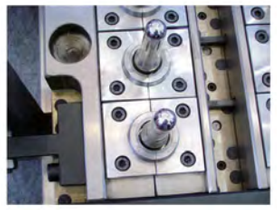


## 应用领域
## Application









## 常用类型
## Common types



## 结构特性及用途
## Structure Characteristics and Applications

固体镶嵌自润滑轴承：以高力黄铜为基体，有很高的力学性能及耐蚀性，铸造性能良好。基体按一定的比例镶嵌固体润滑剂，常作为一些高强度耐磨零件。水利行业有用作桥梁支承板、螺母、耐磨板、滑块和蜗轮，一般结构件和耐蚀零件：如轴套、轴瓦、止推环、手柄和齿轮。也广泛应用在重型机械、船舶、冶金设备上。

Solid inlaid self-lubricating bearings, with high strength brass for matrix, has high mechanical properties and corrosion resistance, good casting properties. Matrix according to certain proportion with solid lubricant. Often as a high-strength wear-resistant parts. Water conservancy industry has used for bridge plate, nut, wear-resisting plate, the slider, and worm gear, general structure and corrosion resistant parts: such as flange, valve seat, nails, handles and nuts. Also widely used in heavy machinery, ships, metallurgy equipment.



固体镶嵌自润滑轴承



水润滑轴承

# JDB 铜基固体镶嵌式自润滑轴承
# Bronze Solid Enchase Self-lubricating Bearing



## 物理机械性能
## Physical and Mechanical Performance

| | | | | | |
|---|---|---|---|---|---|
| 材料牌号 Grade | | ZCuZn25Al6Fe3Mn3 | 线膨胀系数 Coefficient of linear expansion | | $1.9\times10^{-5}$/℃ |
| 密度 Densitty | | 8 | 使用温度 (℃) Max.temp. | | -40 ~ +300 |
| 硬度(HB)Hardness | | >210 | 最大动承载 ($N/mm^2$) Max.load | | 100 |
| 抗拉强度 ($N/mm^2$) Tensile strength | | >750 | 摩擦系数 Coefficient of friction | | <0.16 |
| 屈服强度 ($N/mm^2$) Yield strength | | >450 | 最大静承载 ($N/mm^2$) Max.load | | 200 |
| 延伸率 (%) Elongation | | >12 | 永久压缩变形量 Compression deformation (300N/$mm^2$) | | <0.01mm |
| 最大线速 The largest wire speed | 干dry | 0.5m/s | 最大PV值 The largest PV value. | 无油Without oil | 1.65N/$mm^2$.m/s |
| | 油oil | 2m/s | | 油oil | 3.25N/$mm^2$.m/s |

## 固体润滑剂
## Solid Lubricant

| 固体润滑剂 | 适用环境 working condition | 适用温度 Temperature |
|---|---|---|
| 高纯石墨+添加剂 | 大气环境 Normal atmosphere condition | ≤400℃ |
| SL4+MOS2<br>PTFE+MOS2+CF | (海)水环境、高压工况<br>water (sea) hand heavy load condition | ≤300℃ |

## 化学成份
## Chemical Compositions

| | Cu | Zn | Al | Fe | Mn | Si | Ni | Sn | Pb |
|---|---|---|---|---|---|---|---|---|---|
| JDB-650 | 60-65 | 余量rest | 5.0~7.5 | 2.0~4.0 | 2.5~5.0 | <0.1 | <0.5 | <0.2 | <0.2 |

铸造铜合金标准 GB/1176

## 可供产品
## Product Available

标准品加工或非标尺寸定制。

Standard processing or custom non-standard sizes.


咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743

JDB 铜基固体镶嵌式自润滑轴承
Bronze Solid Enchase Self-lubricating Bearing





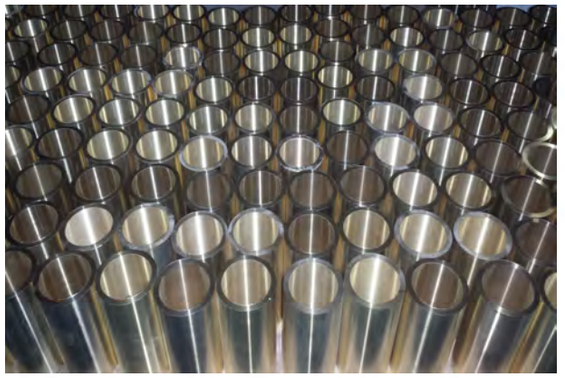


## JDB-650 固体镶嵌润滑轴承
## Solid Lubricant Embedded Bushing

JDB-650固体镶嵌润滑轴承，是在高力黄铜的基体上，镶嵌石墨或$MoS^2$固体润滑剂的高性能固体润滑产品。它突破了一般轴承依靠油膜润滑的局限性。在使用过程中，通过摩擦热使固体润滑剂与轴摩擦，形成油、粉末并存润滑的优异条件，既保护轴不磨损，又使固体润滑特性永恒。它的硬度比一般铜套高一倍，耐磨性能也高一倍。目前已广泛运用于冶金连铸机，注塑机、列车支架、轧钢设备、矿山机械、船舶、气轮机等高温、高载、低速重载等场合使用。

JDB-650 solid lubricant embedded bushing is a new type made from strong brass and homogeneously embedded with solid lubricant in its body It breaks through the limit of general bearing whose lubrication depends on oil film. So it is suitable for high temperature, heavy duty, anti-Corrosion. or where oil is hard to be introduced It performance doubles both on hardness and wear-friction. It is now widely applied in successive casting machines, steel rollers in metallography, mineral machine, ships. steam turbine. hydraulic turbines and injection molding machines for plastics.

轴承基材采用离心浇铸坯料：



## JDB-250 钢基镶嵌轴承
## Nodular Cast Iron

JDB-250钢基镶嵌轴承，是以轴承钢基为基材嵌入固体润滑剂的新产品，是一种典型的省材产品。若在压力<14.5N/$mm^2$。时或机械性能要求不是很高的场合，可作JDB-650材料的取代品。能大大地降低成本，满足使用要求。例如：模具导柱、注塑机模架等领域完全可以使用。

JDB - 250 base steel inlaid bearing is bearing steel base embedded solid lubricant and the material of the new product, is a kind of typical province material products. If the pressure < 14.5 N/was. Or mechanical performance requirements is not very high, can make JDB - 650 material instead of goods. Can greatly reduce the cost and meets the requirement. For example: die guide pillar, injection molding tools and racks, etc can use.

### 技术参数: Technical Data

| 性能指标 Performance index | |
|---|---|
| 基体硬度 Bass Hardness | HRC:55-60 |
| 摩擦系数 Friction coef (μ) | <0.18 |
| 最高使用温度 Temperature limit | 400℃ |
| 使用极限PV值 PV limit | 0.8N/$mm^2$·m/s |
| 极限动载荷 Dynamic load limit | 60N/$mm^2$ |
| 最高滑动速度 Speed limit | 0.5m/s |

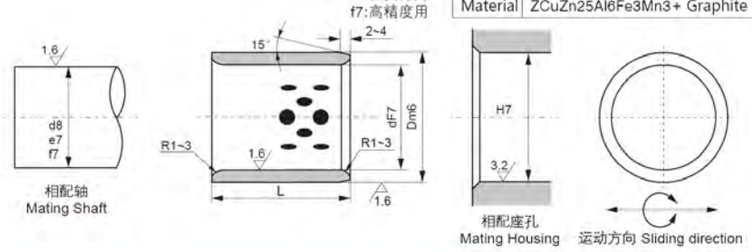
http://www.chinaanchi.com 邮箱: anchi@chinaanchi.com

# JDB-650 铜基固体镶嵌式自润滑轴承
## Bronze Solid Enchase Self-lubricating Bearing



d8:高负荷用
e7:轻负荷用
f7:高精度用

| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |




单位unit:mm

| IDF7 (内径) d | | ODm6 (外径) D | | $L^{0.10}_{0.30}$ | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 8 | 10 | 12 | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 |
| 8 | +0.028 +0.013 | 12 | | 081208 | 081210 | 081212 | 081215 | | | | | | | | | | |
| 10 | | 14 | +0.018 +0.007 | 101408 | 101410 | 101412 | 101415 | | 101420 | | | | | | | | |
| 12 | | 18 | | | 121810 | 121812 | 121815 | 121816 | 121820 | 121825 | 121830 | | | | | | |
| 13 | | 19 | | | 131910 | | 131915 | 131916 | | | | | | | | | |
| 14 | +0.034 +0.016 | 20 | | | 142010 | 142012 | 142015 | | 142020 | 142025 | 142030 | | | | | | |
| 15 | | 21 | +0.021 +0.008 | | 152110 | 152112 | 152115 | 152116 | 152120 | 152125 | 152130 | | | | | | |
| 16 | | 22 | | | 162210 | 162212 | 162215 | 162216 | 162220 | 162225 | 162230 | 162235 | 162240 | | | | |
| 18 | | 24 | | | | 182412 | 182415 | 182416 | 182420 | 182425 | 182430 | 182435 | 182440 | | | | |
| 20 | | 28 | | | 202810 | 202812 | 202815 | 202816 | 202820 | 202825 | 202830 | 202835 | 202840 | 202850 | | | |
| 22 | +0.041 +0.020 | 32 | | | | 223212 | 223215 | | 223220 | 223225 | | | | | | | |
| 25 | | 33 | | | | 253312 | 253315 | 253316 | 253320 | 253325 | 253330 | 253335 | 253340 | 253350 | 253360 | | |
| 30 | | 38 | +0.025 +0.009 | | | 303812 | 303815 | | 303820 | 303825 | 303830 | 303835 | 303840 | 303850 | 303860 | | |
| 35 | | 45 | | | | | | | 354520 | 354525 | 354530 | 354535 | 354540 | 354550 | 354560 | | |
| 40 | +0.050 +0.025 | 50 | | | | | | | 405020 | 405025 | 405030 | 405035 | 405040 | 405050 | 405060 | 405070 | 405080 |
| 45 | | 55 | +0.030 +0.011 | | | | | | | | 455530 | 455535 | 455540 | 455550 | 455560 | | |
| 50 | | 60 | | | | | | | | | 506030 | 506035 | 506040 | 506050 | 506060 | 506070 | 506080 |



JDB-650 铜基固体镶嵌式自润滑轴承
Bronze Solid Enchase Self-lubricating Bearing

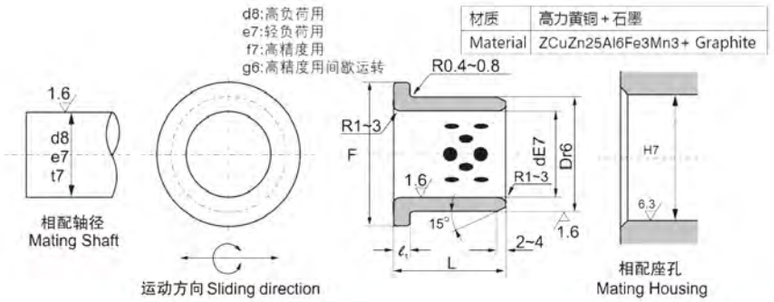
| IDF7 (内径) | | ODm6 (外径) | | $L^{0.10}_{0.30}$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 130 | 140 | 150 |
| 50 | +0.050 +0.025 | 62 | | 506230 | 506235 | 506240 | 506250 | 506260 | 506270 | | | | | | |
| 50 | | 65 | | 506530 | | 506540 | 506550 | 506560 | 506570 | 506580 | 5065100 | | | | |
| 55 | | 70 | | | | 557040 | 557050 | 557060 | 557070 | | | | | | |
| 60 | | 74 | +0.030 +0.011 | 607430 | 607435 | 607440 | 607450 | 607460 | 607470 | 607480 | | | | | |
| 60 | | 75 | | 607530 | 607535 | 607540 | 607550 | 607560 | 607570 | 607580 | 6075100 | | | | |
| 63 | | 75 | | | | | | 637560 | 637570 | 637580 | | | | | |
| 65 | | 80 | | | | | 658050 | 658060 | 658070 | 658080 | | | | | |
| 70 | +0.060 +0.030 | 85 | | | 708535 | 708540 | 708550 | 708560 | 708570 | 708580 | 7085100 | | | | |
| 70 | | 90 | | | | | 709050 | 709060 | 709070 | 709080 | | | | | |
| 75 | | 90 | | | | | | 759060 | 759070 | 759080 | 7590100 | | | | |
| 75 | | 95 | +0.035 +0.013 | | | | | 759560 | 759570 | 759580 | 7595100 | | | | |
| 80 | | 96 | | | | 809640 | 809650 | 809660 | 809670 | 809680 | 8096100 | 8096120 | | | |
| 80 | | 100 | | | | 8010040 | 8010050 | 8010060 | 8010070 | 8010080 | 80100100 | 80100120 | | 80100140 | |
| 90 | | 110 | | 9011030 | | | 9011050 | 9011060 | 9011070 | 9011080 | 90110100 | 90110120 | | | |
| 100 | +0.071 +0.036 | 120 | | | | | | 10012060 | 10012070 | 10012080 | 100120100 | 100120120 | | 100120140 | |
| 110 | | 130 | | | | | | | | 11013080 | 110130100 | 110130120 | | | |
| 120 | | 140 | | | | | | | | 12014080 | 120140100 | 120140120 | | 120140140 | |
| 125 | | 145 | | | | | | | | | 125145100 | 125145120 | | | |
| 130 | | 150 | +0.040 +0.015 | | | | | | | | 130150100 | | 130150130 | | |
| 140 | +0.083 +0.043 | 160 | | | | | | | | | 140160100 | | | 140160140 | |
| 150 | | 170 | | | | | | | | | 150170100 | | | | 150170150 |
| 160 | | 180 | | | | | | | | | 160180100 | | | | 160180150 |

Catalog No. — d — D — L
JDB-650 — 08 — 12 — 08

# JFB 自润滑翻边轴套
## Self Lubricating Flanging Bushing








| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |

单位unit:mm

| IDE7 (内径) | | ODr6 (外径) | | F | $\ell_1$ -0.10 | $L^{-0.10}_{-0.30}$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 80 | 100 |
| 10 | +0.040 +0.025 | 14 | +0.034 +0.023 | 22 | 2 | 1015F | 1020F | | | | | | | | |
| 12 | | 18 | | 25 | | 1215F | 1220F | | | | | | | | |
| 13 | | 19 | | 26 | | 1315F | 1320F | | | | | | | | |
| 14 | +0.050 +0.032 | 20 | | 27 | 3 | 1415F | 1420F | | | | | | | | |
| 15 | | 21 | +0.041 +0.028 | 28 | | 1515F | 1520F | 1525F | 1530F | | | | | | |
| 16 | | 22 | | 29 | | 1615F | 1620F | 1625F | 1630F | | | | | | |
| 20 | | 30 | | 40 | | 2015F | 2020F | 2025F | 2030F | | 2040F | | | | |
| 25 | +0.061 +0.040 | 35 | | 45 | | 2515F | 2520F | 2525F | 2530F | | 2540F | | | | |
| 30 | | 40 | | 50 | | | 3020F | 3025F | 3030F | 3035F | 3040F | 3050F | | | |
| 31.5 | | 40 | +0.050 +0.034 | | | | 3120F | | | 3135F | | | | | |
| 35 | | 45 | | 60 | 5 | | 3520F | | 3530F | | 3540F | 3550F | | | |
| 40 | +0.075 +0.050 | 50 | | 65 | | | 4020F | | 4030F | | 4040F | 4050F | | | |
| 45 | | 55 | | 70 | | | | | 4530F | | 4540F | 4550F | 4560F | | |
| 50 | | 60 | +0.060 +0.041 | 75 | | | | | 5030F | | 5040F | 5050F | 5060F | | |
| 55 | | 65 | | 80 | | | | | | | 5540F | | 5560F | | |
| 60 | | 75 | +0.062 +0.043 | 90 | 7.5 | | | | | | 6040F | 6050F | | 6080F | |
| 63 | +0.090 +0.060 | 75 | | 85 | | | | | | | | | | 6367F | |
| 70 | | 85 | | 105 | | | | | | | | 7050F | | 7080F | |
| 75 | | 90 | +0.073 +0.051 | 110 | | | | | | | | | 7560F | | |
| 80 | | 100 | | 120 | | | | | | | | | 8060F | 8080F | 80100F |
| 90 | | 110 | +0.076 +0.054 | 130 | 10 | | | | | | | | 9060F | 9080F | |
| 100 | +0.107 +0.072 | 120 | | 150 | | | | | | | | | | 10080F | 100100F |
| 120 | | 140 | +0.088 +0.063 | 170 | | | | | | | | | | 12080F | 120100F |

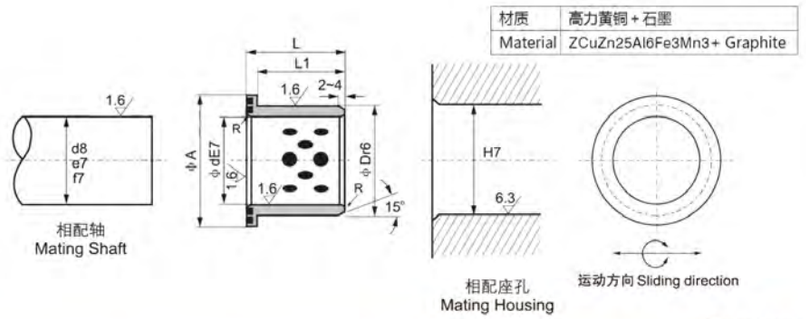
Catalog No. — d — L — F
JFB — 10 — 15 — F



# JDBB 自润滑翻边轴套
## Oilless Flange Bushing








| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |

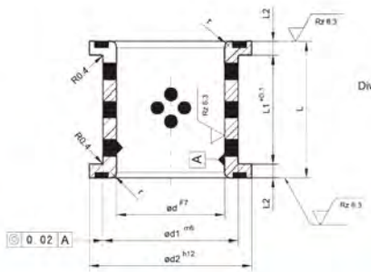
单位unit:mm

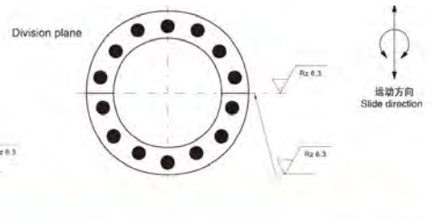
| Stanard No. 规格 | ϕd | E7 | ϕD | r6 | ϕA | L1 | L |
|---|---|---|---|---|---|---|---|
| JDBB-12×15 | 12 | +0.050 +0.032 | 18 | +0.034 +0.023 | 25 | 11 | 15 |
| JDBB-16×20 | 16 | | 22 | +0.041 +0.028 | 30 | 15 | 20 |
| JDBB-20×25 | 20 | +0.061 +0.040 | 28 | | 36 | 20 | 25 |
| JDBB-25×30 | 25 | | 33 | | 43 | 25 | 30 |
| JDBB-30×35 | 30 | +0.075 +0.050 | 38 | +0.050 +0.034 | 48 | 30 | 35 |
| JDBB-40×45 | 40 | | 50 | | 60 | 40 | 45 |
| JDBB-50×55 | 50 | | 62 | +0.060 +0.041 | 75 | 49 | 55 |
| JDBB-60×65 | 60 | +0.090 +0.060 | 75 | +0.062 +0.043 | 90 | 58 | 65 |

Catalog No. — d — L
JDBB — 12 — 15

# JZW 自润滑轴瓦
## Oilless Bearing Bush






单位unit:mm

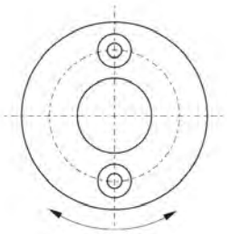
| d | L | d1 | d2 | L1 | L2 | r |
|---|---|---|---|---|---|---|
| 20 | 28 | 28 | 35 | 20 | 4 | 1 |
| 25 | 33 | 33 | 40 | 25 | | |
| 30 | 40 | 38 | 48 | 30 | 5 | 2 |
| 40 | 50 | 50 | 60 | 40 | | |
| 50 | 60 | 62 | 68 | 50 | | |

Catalog No. — d — L
JZW — 20 — 28

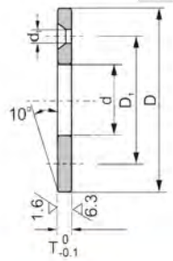
# JTW 自润滑止推垫片
## Oilless Thrust Washer








| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |




单位unit:mm

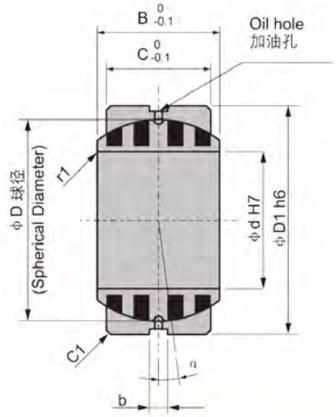
| 规格 Standard No. | d | D | T 0 -0.1 | 螺栓 Bolt | | | |
|---|---|---|---|---|---|---|---|
| | | | | $D_1$ | 数量 Q'ty | 尺寸 size | $d_1$ |
| JTW-10 | 10.2 | 30 | 3 | --- | --- | --- | --- |
| JTW-12 | 12.2 | 40 | | 28 | 2 | M3 | 3.5 |
| JTW-13 | 13.2 | | | | | | |
| JTW-14 | 14.2 | | | | | | |
| JTW-15 | 15.2 | | | 35 | | | |
| JTW-16 | 16.2 | 50 | | | | | |
| JTW-16N | | | | --- | --- | --- | --- |
| JTW-18 | 18.2 | | | 35 | 2 | M3 | 3.5 |
| JTW-20 | 20.2 | | | | | M5 | 6 |
| JTW-20N | | | | --- | --- | --- | --- |
| JTW-25 | 25.2 | 55 | 5 | 40 | 2 | M5 | 6 |
| JTW-25N | | | | --- | --- | --- | --- |
| JTW-30 | 30.2 | 60 | | 45 | 2 | M5 | 6 |
| JTW-35 | 35.2 | 70 | | 50 | | | |
| JTW-40 | 40.2 | 80 | 7 | 60 | | M6 | 7 |
| JTW-45 | 45.3 | 90 | | 67.5 | | | |
| JTW-50 | 50.3 | 100 | 8 | 75 | 4 | M8 | 9 |
| JTW-55 | 55.3 | 110 | | 85 | | | |
| JTW-60 | 60.3 | 120 | | 90 | | | |
| JTW-65 | 65.3 | 125 | | 95 | | | |
| JTW-70 | 70.3 | 130 | 10 | 100 | | | |
| JTW-75 | 75.3 | 140 | | 110 | | | |
| JTW-80 | 80.3 | 150 | | 120 | | | |
| JTW-90 | 90.5 | 170 | | 140 | | M10 | 11 |
| JTW-100 | 100.5 | 190 | | 160 | | | |
| JTW-120 | 120.5 | 200 | | 175 | | | |

Catalog No. — d — D
JTW — 10.2 — 30

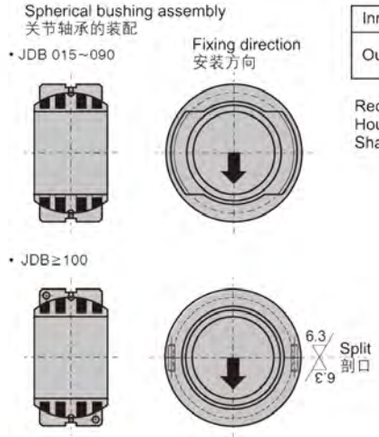

咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743

# JQB 自润滑关节轴承
## Sphere Oscillating Bearing






Spherical bushing assembly
关节轴承的装配




| Inner ring内圈 | Material材料 | 650# + Gr石墨 |
|---|---|---|
| Outer ring外圈 | Material | S45C |
| | Hardness硬度 | HRC25~30 |

Recommend shaft & housing: 推荐轴和座孔公差
Housing: H7 座孔
Shaft: g6 轴



单位unit:mm

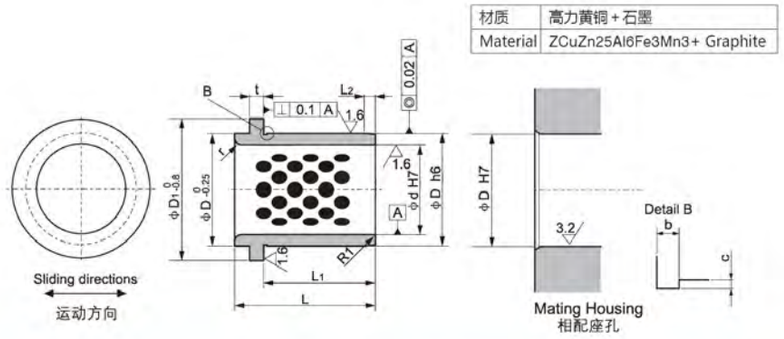
| Standard No. 型号规格 | d | H7 | D1 | h6 | B | C | D | b | Alignment Angle α° 调整角度 | Allowable Radial Load ( kN ) 径向承载 | Allowable Thrust Load ( kN ) 轴向载荷 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JQB-015 | 15 | +0.018 0 | 26 | 0 -0.013 | 12 | 9 | 22 | 4 | 8 | 6.5 | 0.5 |
| JQB-020 | 20 | | 32 | | 16 | 14 | 28 | | 4 | 12.6 | 1.4 |
| JQB-025 | 25 | +0.021 0 | 42 | 0 -0.016 | 21 | 18 | 36 | | 5 | 21.8 | 2.5 |
| JQB-030 | 30 | | 50 | | 27 | 23 | 44 | | 6 | 32.0 | 3.5 |
| JQB-035 | 35 | | 55 | | 30 | 26 | 49 | | 5 | 43.7 | 4.8 |
| JQB-040 | 40 | +0.025 0 | 62 | 0 -0.019 | 33 | 28 | 55 | | 6 | 54.7 | 5.7 |
| JQB-045 | 45 | | 72 | | 36 | 31 | 62 | | 5 | 69.7 | 7.2 |
| JQB-050 | 50 | | 80 | | 42 | 36 | 70 | | | 92.4 | 10 |
| JQB-060 | 60 | | 100 | | 53 | 45 | 90 | | 6 | 143 | 16 |
| JQB-070 | 70 | +0.030 0 | 110 | 0 -0.022 | 58 | 50 | 99 | | 5 | 181 | 20 |
| JQB-080 | 80 | | 130 | | 70 | 60 | 115 | | | 254 | 30 |
| JQB-090 | 90 | | 140 | | 76 | 65 | 125 | | 6 | 313 | 36 |
| JQB-100 | 100 | +0.035 0 | 160 | 0 -0.025 | 88 | 75 | 145 | 6 | | 544 | 64 |
| JQB-110 | 110 | | 170 | | 93 | 80 | 155 | | 5 | 642 | 73 |
| JQB-120 | 120 | | 190 | | 105 | 90 | 170 | | 6 | 797 | 94 |
| JQB-130 | 130 | | 200 | | 110 | 95 | 180 | | 5 | 880 | 105 |
| JQB-140 | 140 | | 210 | 0 -0.029 | 90 | 70 | 180 | | 7 | 668 | 56 |
| JQB-150 | 150 | +0.040 0 | 220 | | 120 | 105 | 200 | | 5 | 1135 | 129 |
| JQB-160 | 160 | | 230 | | 105 | 80 | 200 | | 8 | 891 | 73 |
| JQB-180 | 180 | | 260 | 0 -0.032 | 105 | 80 | 225 | | 6 | 1002 | 74 |
| JQB-200 | 200 | | 290 | | 130 | 100 | 250 | | 7 | 1434 | 117 |
| JQB-220 | 220 | +0.046 0 | 320 | | 135 | 100 | 275 | | 8 | 1577 | 118 |
| JQB-240 | 240 | | 340 | 0 -0.036 | 140 | 100 | 300 | 9 | | 1720 | 118 |
| JQB-260 | 260 | | 370 | | 150 | 110 | 325 | | 7 | 2075 | 143 |
| JQB-280 | 280 | +0.052 0 | 400 | | 155 | 120 | 350 | | 6 | 2455 | 172 |
| JQB-300 | 300 | | 430 | 0 -0.040 | 165 | 120 | 375 | | 7 | 2630 | 172 |

Catalog No. — d — D
JQB — 15 — 22

http://www.chinaanchi.com 邮箱: anchi@chinaanchi.com

# SNG 标准型导套
# Standard guide bush






| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |

单位unit:mm

| Standard No. 型号规格 | d H7 | | D h6 | | L | $D_1$ | $L_1$ | $L_2$ | t | r | bxc | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNG-25 | 25 | +0.021 0 | 32 | 0 -0.016 | 40 | 40 | 30 | 3 | 6.3 | 5 | 0.6×0.3 | 58 |
| SNG-32 | 32 | +0.025 0 | 40 | | 50 | 50 | 40 | 4 | | | | 66 |
| SNG-40 | 40 | | 50 | | 63 | 63 | 50 | 5 | | | | 79 |
| SNG-50 | 50 | | 63 | 0 -0.019 | 71 | 71 | 56 | 6.3 | | 5 | | 89 |
| SNG-63 | 63 | +0.030 0 | 80 | | 80 | 90 | 63 | 8 | | 6 | | 123 |
| SNG-80 | 80 | | 100 | 0 -0.022 | 100 | 112 | 80 | 10 | | 8 | | 143 |
| SNG-100 | 100 | | 125 | 0 -0.025 | 125 | 140 | 106 | 12.5 | 10 | 10 | 1.0×0.4 | 168 |
| SNG-125 | 125 | +0.040 0 | 160 | | 160 | 180 | 132 | 16 | | 12 | | 203 |
| SNG-160 | 160 | | 200 | 0 -0.029 | 200 | 220 | 170 | 16 | | 18 | | 243 |

Catalog No. — d — D
SNG — 25 — 32

## 模具导套的其它类型

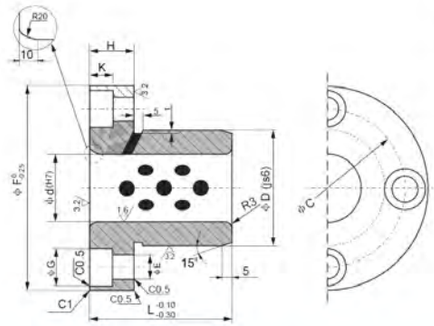


★按标准加工或按图定制★


咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743

# HGB250 法兰固定导套
# Flange fixed guide bush






| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |

| 材质 | FC铸铁+石墨 |
|---|---|
| Material | HT250#+ Graphite |

单位unit:mm

| 项目 | 代号 | 尺寸 | ΦF | ΦD | Φd | H | L | ΦC | ΦE | ΦG | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HGB250-30 | 90/50×30×50 | 90 | 50 | 30 | 20 | 50 | 70 | 11 | 17.5 | 10.8 |
| 2 | HGB250-40 | 100/60×40×65 | 100 | 60 | 40 | 20 | 65 | 80 | 11 | 17.5 | 10.8 |
| 3 | HGB250-50 | 125/75×50×80 | 125 | 75 | 50 | 20 | 80 | 100 | 11 | 17.5 | 10.8 |
| 4 | HGB250-60 | 135/85×60×100 | 135 | 85 | 60 | 20 | 100 | 110 | 11 | 17.5 | 10.8 |
| 5 | HGB250-80 | 170/110×80×130 | 170 | 110 | 80 | 25 | 130 | 140 | 14 | 20 | 13 |
| 6 | HGB250-100 | 190/130×100×160 | 190 | 130 | 100 | 25 | 160 | 160 | 14 | 20 | 13 |

Catalog No. — d — D
HGB250 — 30 — 50

## 模具导套的其它类型



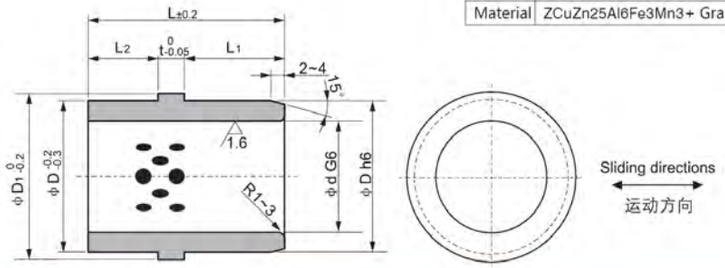
★按标准加工或按图定制★

http://www.chinaanchi.com 邮箱: anchi@chinaanchi.com

# JEB/JEK 自润滑导套
## Self-lubricating guide bush



| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |




单位unit:mm

| Standard No. 型号规格 | d | L | d G6 | D h6 | $D_1$ | $L_1$ | $L_2$ | t |
|---|---|---|---|---|---|---|---|---|
| JEB-16×26 | 16 | 26 | 16 +0.017 +0.006 | 25 0 -0.013 | 30 | 12 | 10 | 4 |
| JEB-16×28 | | 28 | | | | 14 | | |
| JEB-16×33 | | 33 | | | | 19 | | |
| JEB-16×38 | | 38 | | | | 24 | | |
| JEB-20×26 | 20 | 26 | 20 +0.020 +0.007 | 30 0 -0.016 | 35 | 12 | | |
| JEB-20×28 | | 28 | | | | 14 | | |
| JEB-20×33 | | 33 | | | | 19 | | |
| JEB-20×38 | | 38 | | | | 24 | | |
| JEB-25×26 | 25 | 26 | 25 +0.020 +0.007 | 35 0 -0.016 | 40 | 12 | | |
| JEB-25×28 | | 28 | | | | 14 | | |
| JEB-25×33 | | 33 | | | | 19 | | |
| JEB-25×38 | | 38 | | | | 24 | | |
| JEB-30×33 | 30 | 33 | 30 +0.020 +0.007 | 40 0 -0.016 | 45 | 14 | 15 | |
| JEB-30×38 | | 38 | | | | 19 | | |
| JEB-30×46 | | 43 | | | | 24 | | |
| JEB-35×38 | 35 | 38 | 35 +0.025 +0.009 | 46 0 -0.019 | 50 | 19 | | |
| JEB-35×43 | | 43 | | | | 24 | | |
| JEB-35×48 | | 48 | | | | 29 | | |
| JEB-40×48 | 40 | 48 | 40 +0.025 +0.009 | 52 0 -0.019 | 57 | 24 | 20 | |
| JEB-40×53 | | 53 | | | | 29 | | |
| JEB-50×48 | 50 | 48 | 50 +0.025 +0.009 | 62 0 -0.019 | 67 | 24 | | |
| JEB-50×53 | | 53 | | | | 29 | | |

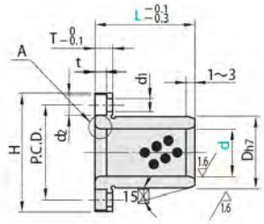
| Standard No. 型号规格 | d | L | d G6 | D h6 | $D_1$ | $L_1$ | $L_2$ | t |
|---|---|---|---|---|---|---|---|---|
| JEK-25×33 | 25 | 33 | 25 +0.020 +0.007 | 35 0 -0.016 | 40 | 19 | 6 | 8 |
| JEK-25×38 | | 38 | | | | 24 | | |
| JEK-30×48 | 30 | 48 | 30 +0.020 +0.007 | 42 0 -0.016 | 47 | 29 | 11 | |
| JEK-30×47 | | 47 | | | | 24 | 15 | |
| JEK-30×52 | | 52 | | | | 29 | | |
| JEK-35×63 | 35 | 63 | 35 +0.025 +0.009 | 45 0 -0.016 | 50 | 39 | 16 | |
| JEK-40×60 | 40 | 60 | 40 +0.025 +0.009 | 50 0 -0.016 | 55 | 32 | 20 | |
| JEK-40×70 | | 70 | | | | 42 | | |
| JEK-40×78 | | 78 | | 55 0 -0.019 | 60 | 49 | 21 | |
| JEK-40×57 | | 57 | | | | 24 | 25 | |
| JEK-40×67 | | 67 | | | | 29 | 30 | |
| JEK-45×88 | 45 | 88 | 45 +0.025 +0.009 | | | 59 | 21 | |
| JEK-45×95 | | 98 | | | | 69 | | |
| JEK-50×67 | 50 | 67 | 50 +0.025 +0.009 | 62 0 -0.019 | 67 | 29 | 30 | |
| JEK-50×87 | | 87 | | | | 39 | 40 | |
| JEK-60×67 | 60 | 67 | 60 +0.029 +0.010 | 74 0 -0.019 | 82 | 29 | 30 | |
| JEK-60×87 | | 87 | | | | 39 | 40 | |

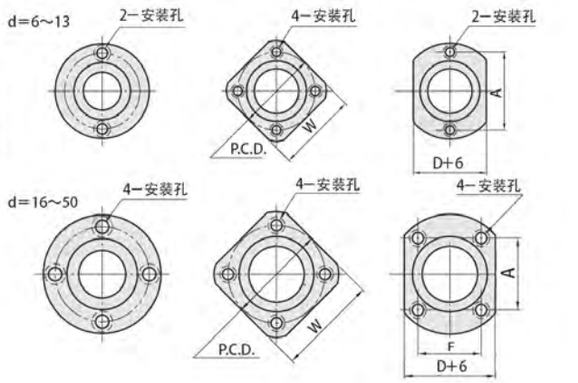
Catalog No. — d — L
JEB — 16 — 26

# JMPT 法兰一体导套
## Flange guide bush



| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |




单位unit:mm

| 型式 Type | dF7 | | L 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | Dh7 | | H | T | t | $d_1$ | $d_2$ | P.C.D. | W | F | A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 内径F7型 JMP01 JMP02 JMP03 | 6 | +0.022 +0.010 | 15 | 20 | | | | | | | | | | 10 | 0 -0.015 | 25 | | | | | 17 | 20 | | 17 |
| | 8 | +0.028 +0.013 | | 20 | 25 | | | | | | | | | 12 | | 27 | 4 | 2.2 | 3.5 | 6 | 19 | 22 | | 19 |
| | 10 | | | 20 | 25 | 30 | | | | | | | | 14 | 0 -0.018 | 29 | | | | | 21 | 23 | - | 21 |
| | 12 | | | 20 | 25 | 30 | | | | | | | | 18 | | 36 | | | | | 26 | 28 | | 26 |
| | 13 | +0.034 +0.016 | | 20 | 25 | 30 | 35 | | | | | | | 19 | | 37 | 5 | 3 | 4.5 | 7.5 | 27 | 29 | | 27 |
| | 16 | | | 20 | 25 | 30 | 35 | 40 | | | | | | 22 | 0 -0.021 | 40 | | | | | 30 | 31 | 18 | 24 |
| | 20 | | | | 25 | 30 | 35 | 40 | 50 | | | | | 28 | | 49 | 6 | 3.7 | 5.5 | 9 | 38 | 38 | 22 | 31 |
| | 25 | +0.041 +0.020 | | | | 30 | 35 | 40 | 50 | 60 | | | | 33 | | 54 | | | | | 43 | 42 | 25 | 35 |
| | 30 | | | | | | 35 | 40 | 50 | 60 | 70 | | | 38 | 0 -0.025 | 63 | 8 | 4.2 | 6.6 | 11 | 50 | 50 | 30 | 40 |
| | 35 | | | | | | | | 50 | 60 | 70 | | | 44 | | 69 | | | | | 56 | 54 | 36 | 43 |
| | 40 | +0.050 +0.025 | | | | | | | | 60 | 70 | 80 | | 50 | | 82 | 10 | 5.2 | 9 | 14 | 66 | 64 | 38 | 54 |
| | 50 | | | | | | | | | | 70 | 80 | 100 | 62 | 0 -0.030 | 94 | | | | | 78 | 73 | 50 | 60 |

Catalog No. — d — L
JMPT — 6 — 15

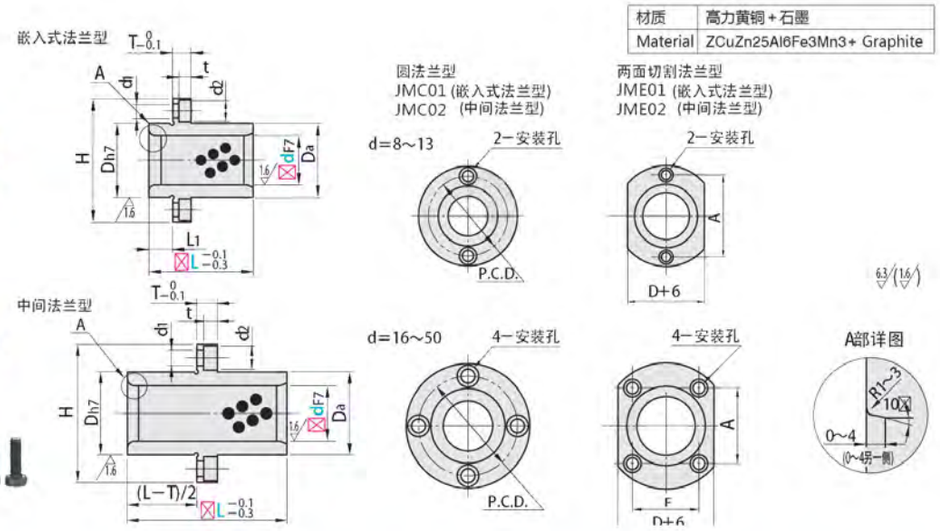
# JMPT 法兰一体导套
# Flange guide bush



| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |








| 型式 Type | dF7 | | L: 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | Dh7 | | $D_a$ | $L_1$ | H | T | t | $d_1$ | $d_2$ | P.C.D. | F | A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 嵌入式法兰型 JMC01 JMC02 中间法兰型 JME01 JME02 *()内的L尺寸仅限嵌入式法兰型 | 8 | +0.028 +0.013 | 20 | (25) | | | | | | | | | 12 | 0 -0.018 | 11.5 | 5 | 27 | 4 | 2.2 | 3.5 | 6 | 19 | | 19 |
| | 10 | | | 25 | 30 | | | | | | | | 14 | | 13.5 | 6 | 29 | | | | | 21 | | 21 |
| | 12 | | | 25 | 30 | | | | | | | | 18 | | 17.5 | | 36 | | | | | 26 | | 26 |
| | 13 | +0.034 +0.016 | | (25) | (30) | 35 | | | | | | | 19 | | 18.5 | | 37 | 5 | 3 | 4.5 | 7.5 | 27 | | 27 |
| | 16 | | | 25 | 30 | 35 | 40 | | | | | | 22 | 0 -0.021 | 21.5 | | 40 | | | | | 30 | 18 | 24 |
| | 20 | | | | 30 | 35 | 40 | 50 | | | | | 28 | | 27.5 | 8 | 49 | 6 | 3.7 | 5.5 | 9 | 38 | 22 | 31 |
| | 25 | +0.041 +0.020 | | | (30) | (35) | (40) | (50) | 60 | | | | 33 | | 32.5 | | 54 | | | | | 43 | 25 | 35 |
| | 30 | | | | | (35) | (40) | (50) | (60) | 70 | | | 38 | 0 -0.025 | 37.5 | 10 | 63 | 8 | 4.2 | 6.6 | 11 | 50 | 30 | 40 |
| | 35 | | | | | | | (50) | | 70 | | | 44 | | 43.5 | | 69 | | | | | 56 | 36 | 43 |
| | 40 | +0.050 +0.025 | | | | | | | (60) | (70) | 80 | | 50 | | 49.5 | 13 | 82 | 10 | 5.2 | 9 | 14 | 66 | 38 | 54 |
| | 50 | | | | | | | | | (70) | | 100 | 62 | 0 -0.030 | 61.5 | | 94 | | | | | 78 | 50 | 60 |

Catalog No. — d — L
JMPT — 8 — 20


咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743

# SEWP 自润滑滑板
# Self-lubricating skateboard

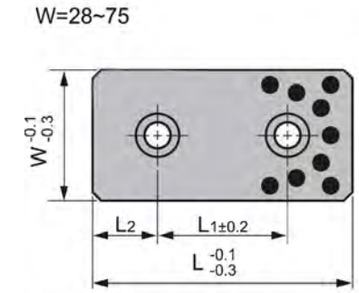


| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |



Sliding directions
运动方向

W=28・38 W≥48




单位unit:mm

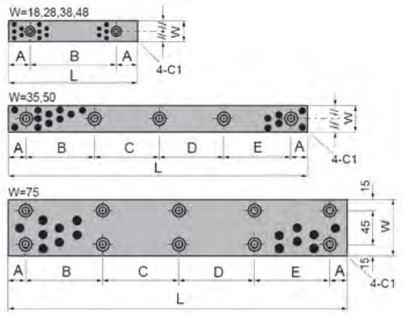
| Standard No. 型号规格 | W | L | $W_1$ | $W_2$ | $L_1$ | $L_2$ |
|---|---|---|---|---|---|---|
| SEWP-28×75 | 28 | 75 | - | - | 45 | 15 |
| SEWP-28×100 | | 100 | | | 50 | 25 |
| SEWP-28×150 | | 150 | | | 100 | |
| SEWP-38×75 | 38 | 75 | | | 45 | 15 |
| SEWP-38×100 | | 100 | | | 50 | 25 |
| SEWP-38×150 | | 150 | | | 100 | |
| SEWP-48×75 | 48 | 75 | | | 45 | 15 |
| SEWP-48×100 | | 100 | | | 50 | 25 |
| SEWP-48×125 | | 125 | | | 75 | |
| SEWP-48×150 | | 150 | | | 100 | |
| SEWP-48×200 | | 200 | | | 150 | |
| SEWP-58×75 | 58 | 75 | | | 45 | 15 |
| SEWP-58×100 | | 100 | | | 50 | 25 |
| SEWP-58×150 | | 150 | | | 100 | |
| SEWP-75×75 | 75 | 75 | | | 25 | 25 |
| SEWP-75×100 | | 100 | | | 50 | |
| SEWP-75×125 | | 125 | | | 75 | |
| SEWP-75×150 | | 150 | | | 100 | |
| SEWP-75×200 | | 200 | | | 150 | |

| Standard No. 型号规格 | W | L | $W_1$ | $W_2$ | $L_1$ | $L_2$ |
|---|---|---|---|---|---|---|
| SEWP-100×100 | 100 | 100 | 50 | 25 | 50 | 25 |
| SEWP-100×125 | | 125 | | | 75 | |
| SEWP-100×150 | | 150 | | | 100 | |
| SEWP-100×200 | | 200 | | | 150 | |
| SEWP-100×250 | | 250 | | | 200 | 50 |
| SEWP-100×300 | | 300 | | | | |
| SEWP-125×125 | 125 | 125 | | 37.5 | 75 | 25 |
| SEWP-125×150 | | 150 | | | 100 | |
| SEWP-125×200 | | 200 | | | 150 | |
| SEWP-125×250 | | 250 | | | | |
| SEWP-125×300 | | 300 | | | 200 | 50 |
| SEWP-125×350 | | 350 | | | | 75 |
| SEWP-150×150 | 150 | 150 | 100 | 25 | 100 | 25 |
| SEWP-150×200 | | 200 | | | 150 | |
| SEWP-150×250 | | 250 | | | 200 | |

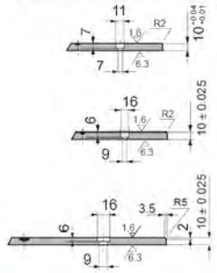
Catalog No. — W — L
SEWP — 28 — 75

# JSP 自润滑滑板
## Self-lubricating skateboard






| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |



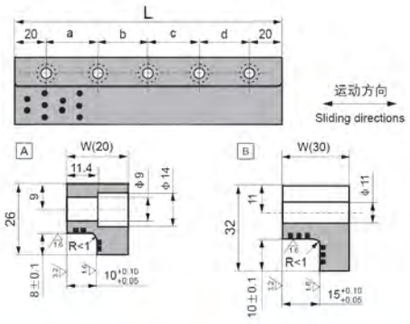

单位unit:mm

| 型号规格 Standard No. | W | L | A | B | C | D | E | 平头螺钉 Flat Head Screw | 孔数 No. of Holes |
|---|---|---|---|---|---|---|---|---|---|
| JSP-1875 | 18 | 75 | 15 | 45 | | | | M6 | 2 |
| JSP-18100 | | 100 | 20 | 60 | | | | | |
| JSP-18125 | | 125 | 25 | 75 | | | | | |
| JSP-18150 | | 150 | | 100 | | | | | |
| JSP-2875 | 28 | 75 | 15 | 45 | | | | | |
| JSP-28100 | | 100 | 20 | 50 | | | | | |
| JSP-28125 | | 125 | 25 | 75 | | | | | |
| JSP-28150 | | 150 | | 100 | | | | | |
| JSP-35100 | 35 | 100 | 20 | 60 | | | | M8 | |
| JSP-35150 | | 150 | | 55 | 55 | | | | 3 |
| JSP-35200 | | 200 | | 55 | 50 | 55 | | | 4 |
| JSP-35250 | | 250 | | 70 | 70 | 70 | | | 4 |
| JSP-35300 | | 300 | | 65 | 65 | 65 | 65 | | 5 |
| JSP-35350 | | 350 | | 80 | 75 | 75 | 80 | | 5 |
| JSP-3875 | 38 | 75 | 15 | 45 | | | | M6 | |
| JSP-38100 | | 100 | 20 | 50 | | | | | |
| JSP-38125 | | 125 | 25 | 75 | | | | | |
| JSP-38150 | | 150 | | 100 | | | | | |
| JSP-4875 | 48 | 75 | 15 | 45 | | | | | 2 |
| JSP-48100 | | 100 | 20 | 50 | | | | | |
| JSP-48125 | | 125 | 25 | 75 | | | | | |
| JSP-48150 | | 150 | | 100 | | | | | |
| JSP-50100 | 50 | 100 | 20 | 60 | | | | M8 | |
| JSP-50150 | | 150 | | 55 | 55 | | | | 3 |
| JSP-50200 | | 200 | | 55 | 50 | 55 | | | 4 |
| JSP-50250 | | 250 | | 70 | 70 | 70 | | | 4 |
| JSP-50300 | | 300 | | 65 | 65 | 65 | 65 | | 5 |
| JSP-50400 | | 400 | | 90 | 90 | 90 | 90 | | 5 |
| JSP-75150 | 75 | 150 | | 110 | | | | | 4 |
| JSP-75200 | | 200 | | 80 | 80 | | | | 6 |
| JSP-75250 | | 250 | | 105 | 105 | | | | 6 |
| JSP-75300 | | 300 | | 85 | 90 | 85 | | | 8 |
| JSP-75400 | | 400 | | 120 | 120 | 120 | | | 8 |
| JSP-75500 | | 500 | | 115 | 115 | 115 | 115 | | 10 |

Catalog No. — W — L
JSP — 18 — 75

# JSL L型自润滑块
## L self-lubrication fast






| 材质 | 高力黄铜+石墨 |
|---|---|
| Material | ZCuZn25Al6Fe3Mn3+ Graphite |

单位unit:mm

| 规格 Standard No. | W | L | 螺孔位置 Bole Hole a | b | c | d | Bolt 螺栓 Size | 数量 Number | Type |
|---|---|---|---|---|---|---|---|---|---|
| JSL-20×100 | 20 | 100 | 60 | —— | —— | —— | M8 | 2 | A |
| JSL-20×150 | | 150 | 55 | 55 | —— | —— | | 3 | |
| JSL-20×200 | | 200 | 55 | 50 | 55 | —— | | 4 | |
| JSL-30×100 | 30 | 100 | 60 | —— | —— | —— | M10 | 2 | B |
| JSL-30×150 | | 150 | 55 | 55 | —— | —— | | 3 | |
| JSL-30×200 | | 200 | 55 | 50 | 55 | —— | | 4 | |
| JSL-30×250 | | 250 | 70 | 70 | 70 | —— | | 4 | |
| JSL-45×200 | 45 | 200 | 55 | 50 | 55 | —— | | 4 | C |
| JSL-45×250 | | 250 | 70 | 70 | 70 | —— | | 4 | |
| JSL-45×300 | | 300 | 65 | 65 | 65 | 65 | | 5 | |
| JSL-45×350 | | 350 | 80 | 75 | 75 | 80 | | 5 | |

Catalog No. — W — L
JSL — 20 — 100

## 铜基自润滑导板物理性能
## The physical properties of copper based self lubricating Guide

| 润滑剂种类 Lubricant type | 给油条件 Oil supply conditions | 环境条件 Environmental conditions | 最大承载 P（N/mm²） Max Load Capacity | 最高线速度 V（m/min） Max Sliding Speed | 最高PV值 (N/mm²·m/s) Max PV Value Limit | 使用温 (℃) Working temperature |
|---|---|---|---|---|---|---|
| 固体润滑剂 GR-1 | 干摩擦 Dry friction | 大气中 The atmosphere | 100 | 15 | 150 | -50～+300 |
| | 油润滑 Oil lubrication | | | 30 | 200 | -50～+150 |

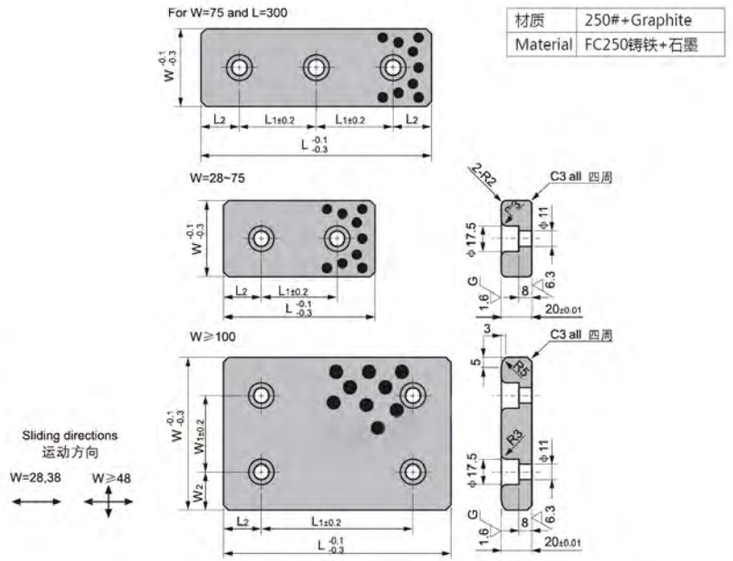
| 密度（g/cm³） Densitty | 硬度（HB） Hardness | 延伸率（%） Elongation | 屈服强度(N/mm²) Yield strength | 线膨胀系数（×10⁻⁵/℃） Coefficient of linear expansion |
|---|---|---|---|---|
| 8 | >210 | >12 | >755 | 1.9 |

# JSMF 自润滑滑板
## Self-lubricating skateboard










| 材质 | 250#+Graphite |
|---|---|
| Material | FC250铸铁+石墨 |

单位unit:mm

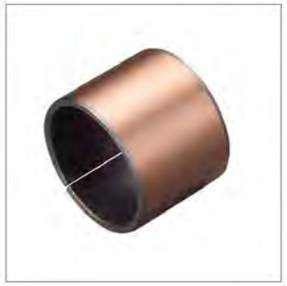
| Standard No. 型号规格 | W | L | $W_1$ | $W_2$ | $L_1$ | $L_2$ |
|---|---|---|---|---|---|---|
| JSMF-28×75 | 28 | 75 | - | - | 45 | 15 |
| JSMF-28×100 | | 100 | | | 50 | 25 |
| JSMF-28×125 | | 125 | | | 75 | |
| JSMF-28×150 | | 150 | | | 100 | |
| JSMF-28×200 | | 200 | | | 150 | |
| JSMF-38×75 | 38 | 75 | | | 45 | 15 |
| JSMF-38×100 | | 100 | | | 50 | 25 |
| JSMF-38×125 | | 125 | | | 75 | |
| JSMF-38×150 | | 150 | | | 100 | |
| JSMF-38×200 | | 200 | | | 150 | |
| JSMF-48×75 | 48 | 75 | | | 45 | 15 |
| JSMF-48×100 | | 100 | | | 50 | 25 |
| JSMF-48×125 | | 125 | | | 75 | |
| JSMF-48×150 | | 150 | | | 100 | |
| JSMF-48×200 | | 200 | | | 150 | |
| JSMF-58×75 | 58 | 75 | | | 45 | 15 |
| JSMF-58×100 | | 100 | | | 50 | 25 |
| JSMF-58×125 | | 125 | | | 75 | |
| JSMF-58×150 | | 150 | | | 100 | |
| JSMF-75×75 | 75 | 75 | | | 25 | 25 |
| JSMF-75×100 | | 100 | | | 50 | |
| JSMF-75×125 | | 125 | | | 75 | |

| Standard No. 型号规格 | W | L | $W_1$ | $W_2$ | $L_1$ | $L_2$ |
|---|---|---|---|---|---|---|
| JSMF-75×150 | 75 | 150 | - | - | 100 | 25 |
| JSMF-75×200 | | 200 | | | 150 | |
| JSMF-75×250 | | 250 | | | 200 | |
| JSMF-75×300 | | 300 | | | 100 | 50 |
| JSMF-100×100 | 100 | 100 | 50 | 25 | 50 | 25 |
| JSMF-100×125 | | 125 | | | 75 | |
| JSMF-100×150 | | 150 | | | 100 | |
| JSMF-100×200 | | 200 | | | 150 | |
| JSMF-100×250 | | 250 | | | 200 | |
| JSMF-100×300 | | 300 | | | | 50 |
| JSMF-125×125 | 125 | 125 | 50 | 37.5 | 75 | 25 |
| JSMF-125×150 | | 150 | | | 100 | |
| JSMF-125×200 | | 200 | | | 150 | |
| JSMF-125×250 | | 250 | | | 200 | |
| JSMF-125×300 | | 300 | | | | 50 |
| JSMF-150×150 | 150 | 150 | 100 | 25 | 100 | 25 |
| JSMF-150×200 | | 200 | | | 150 | |
| JSMF-150×250 | | 250 | | | 200 | |
| JSMF-150×300 | | 300 | | | 250 | |
| JSMF-200×200 | 200 | 200 | 150 | 25 | 150 | |
| JSMF-200×250 | | 250 | | | 200 | |
| JSMF-200×300 | | 300 | | | 250 | |

Catalog No. — W — L
JSMF — 28 — 75


咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743

# SF-1 无油润滑轴承
## Oilless Bushing






1.聚四氟乙烯与铅的混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.PTFE with lead
2.Porous bronze
3.Steel backing
4.Tin-plating

## SF-1 无油润滑轴承
## Oilless Bushing

该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制改性聚四氟乙烯（PTFE）和铅的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、走合性能好、低噪音等性能，产品广泛应用于各种机械的滑动部位，如纺织机、印刷机、液压搬运车、烟草机、健身器、农业机械等。

SF-1 Carbon Steel self-lubricating bearings used high quality low-carbon steel plate as base, sintered porous bronze as its interlayer and the Compound of PTFE and Lead as its surface. It offers the property of good self-lubrication, low wear, low friction good sliding characteristics, low noise. It has been widely applied to various mechanical sliding positions, such as textile machinery, printing machinery, hydraulic pressure transit vehicle, tobacco machinery, gymnastic instrument and agricultural machinery etc.

**技术参数：Technical Data**

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 250N/mm² |
| | 动载 Dynamic load | 140N/mm² |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3.6N/mm²·m/s |
| | 油润滑 Oil lubrication | 50N/mm²·m/s |
| 摩擦系数 μ<br>Friction coefficient | 干摩擦 Dry friction | 0.04 ~ 0.20 |
| | 油润滑 Oil lubrication | 0.02 ~ 0.07 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 42W/m·K |
| 热膨胀系数 Coefficient of thermal expansion | | $11 \times 10^{-6}$/K |






1.聚四氟乙烯与铅及其他填充混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.PTFE with lead
2.Porous bronze
3.Steel backing
4.Tin-plating

## SF-1T 齿轮泵专用轴承
## Gear Pump Bushing

该产品与SF-1具有相同结构，是齿轮油泵专用轴承。根据齿轮油泵的高PV值条件而设计的特殊配方产品。它具有摩擦系数小而稳定，耐磨性能好，抗冲击的特点，产品广泛应用于齿轮油泵、柱塞泵、叶片泵等。

SF-1 Carbon Steel self-lubricating bearing (Gear pump) has the same structure as SF-1, it is special for gear pump. It is a special formula product devised by high PV value operational mode conditions of gear oil pump. Characterized by low friction factor, stability, well wearing performance and impact resistance, it has been widely applied to gear pumps, radial piston pumps and vane pumps etc.

**技术参数：Technical Data**

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 250N/mm² |
| | 动载 Dynamic load | 140N/mm² |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 10m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 4.2N/mm²·m/s |
| | 油润滑 Oil lubrication | 60N/mm²·m/s |
| 摩擦系数 μ Friction coefficient | | 0.03 ~ 0.18 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 42W/m·K |

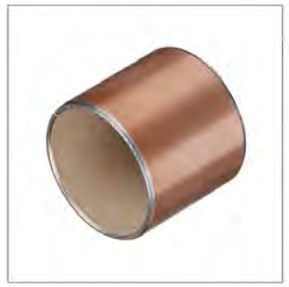
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# SF-1 无油润滑轴承
# Oilless Bushing



SF-1 无油润滑轴承
Oilless Bushing








1.聚四氟乙烯与铜的混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.PTFE with Cu
2.Porous bronze
3.Steel backing
4.Tin-plating

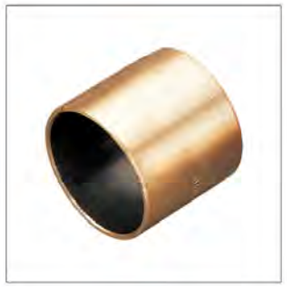
## SF-1P 往复运动轴承
## Reciprocating Motion Bushing

该产品与SF-1具有相同结构，是根据往复运动的特殊工况条件而设计的特殊配方产品，具有断油条件下润滑能力强，耐磨性能好，保持油膜的特点。产品广泛应用于汽车减震器、摩托车减震器、液压马达、气动元件等，其性能与国外DD2相似。

SF-1P Carbon Steel Pb-free self-lubricating bearing has the same structure as SF-1, particularly suitable for intermittent operation, reciprocating or oscillating movements. Characterized by good lubrication and wear performace in the conditions of dry operation of oil. It is applied to shock absorber of automobile, motorcycles and various hydraulic motors and pneumatic elements etc.

技术参数：Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 250N/mm$^2$ |
| | 动载 Dynamic load | 140N/mm$^2$ |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3.6N/mm$^2$·m/s |
| | 油润滑 Oil lubrication | 50N/mm$^2$·m/s |
| 摩擦系数 μ Friction coefficient | | 0.04 ~ 0.20 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 42W/m·K |






1.聚四氟乙烯与铅的混合物
2.球形青铜粉
3.铜背
1.PTFE with lead
2.Porous bronze
3.Copper Back

## SF-1B 铜基无给油轴承
## Bronze Based Bushing

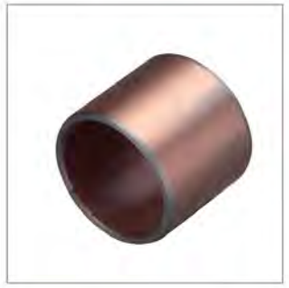
该产品以特殊配方铜合金为基体，中间烧结球形青铜层，表面轧制聚四氟乙烯和亲油性纤维的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、耐腐蚀等性能，产品广泛应用于冶金机械、连铸轧机、水泥灌浆机械、螺旋式输送机等。

SF-1B Bronze Pb-free self-lubricating bearing used bronze alloy as base with special formulation, sintered porous bronze as its interlayer and the Compound of PTFE and lipophilicity fiber as its surface. It offers the property of good self-lubricating, low wear, low friction, corrosion resistence. It has been widely applied to metallurgy steel machinery, joined casting machinery, cement grout pump and spiral conveyer machinery etc.

技术参数：Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 140N/mm$^2$ |
| | 动载 Dynamic load | 140N/mm$^2$ |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3.6N/mm$^2$·m/s |
| | 油润滑 Oil lubrication | 50N/mm$^2$·m/s |
| 摩擦系数 μ<br>Friction coefficient | 干摩擦 Dry friction | 0.03 ~ 0.08 |
| | 油润滑 Oil lubrication | 0.02 ~ 0.07 |
| 使用温度 Working temperature | | -195℃ ~ +300℃ |
| 导热系数 Thermal conductivity | | 70W/m·K |
| 热膨胀系数 Coefficient of thermal expansion | | 17 × 10$^{-6}$/K |


咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743






1.聚四氟乙烯与亲油性纤维混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.PTFE with lead
2.Porous bronze
3.Steel backing
4.Tin-plating

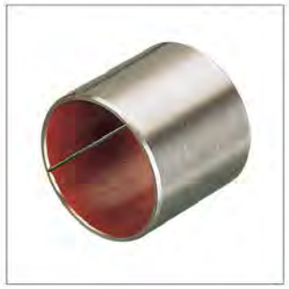
## SF-1D 液压专用轴承
## Hydraulic Bushing

该产品与SF-1具有相同结构，是液压专用轴承，是结合油缸及减震器的工作原理而设计的特殊配方产品。它具有SF-1P优点外，特别适用于往复频繁的大侧向力场合，产品适用于汽车减震器、摩托车减震器以及各种液压油缸等。

SF-1D has the same structure with SF-1, particularly suitable for hydraulic pump. It is a special formula designed by combining oil cylinder with the working principle of bumpers. Besides the advantages of SF-1P, it is particularly applicable for the situation of great cross range force of frequent to-and-fro. It is applicable for automobile shock absorbers, motorcycle bumper and various hydraulic pressure cylinders etc.

技术参数：Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 250N/mm$^2$ |
| | 动载 Dynamic load | 140N/mm$^2$ |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3.8N/mm$^2$·m/s |
| | 油润滑 Oil lubrication | 50N/mm$^2$·m/s |
| 摩擦系数 μ Friction coefficient | | 0.04 ~ 0.20 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 42W/m·K |






1.聚四氟乙烯与亲油性纤维混合物
2.球形青铜粉
3.不锈钢背
1.PTFE with Fiber
2.Porous bronze
3.Stainless Steel Back

## SF-1S 不锈钢耐腐蚀轴承
## Stainless Steel Bushing

该产品以不锈钢为基体，中间烧结球形青铜层，表面轧制聚四氟乙烯和铅的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、耐腐蚀等性能。产品广泛应用于印染机械、化工机械、海洋工业耐腐蚀部位等。

SF-1SS Stainless steel self-lubricating bearing uses stainless steel as base, sintered porous bronze as its interlayer and the Compound of PTFE and Lead as its surface. It offer the property of good self-lubrication, low wear, low friction, corrosion resistence. It has been widely applied to dyeing machinery, chemical engineering machinery and marine industry etc.

技术参数：Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 250N/mm$^2$ |
| | 动载 Dynamic load | 140N/mm$^2$ |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3.8N/mm$^2$·m/s |
| | 油润滑 Oil lubrication | 50N/mm$^2$·m/s |
| 摩擦系数 μ Friction coefficient | | 0.04 ~ 0.20 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 50W/m·K |

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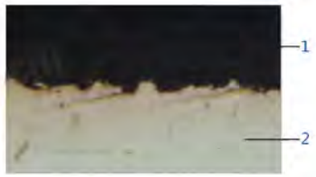
# SF-1 无油润滑轴承
# Oilless Bushing



# SF-1/1W/1B/1S/1T/1P/1D/1SS
## 标准公差尺寸表 Standard Metric Size








1.聚四氟乙烯与亲油性纤维混合物
2.不锈钢背
1.PTFE with Fiber
2.Stainless Steel Back

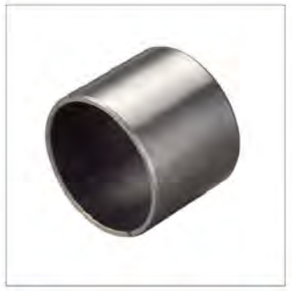
## SF-1SS 不锈钢喷塑轴承
## Lining-Sprayed Stainless Steel Bushing

该产品以不锈钢为基体，表面喷涂聚四氟乙烯。它具有较好的耐酸、耐碱、耐海水、环保等特点。产品广泛应用于化工中酸碱流量计、泵、阀以及海洋工业耐腐蚀部位等。

SF-1S Stainless steel Pb-free self-lubricating bearing used stainless steel material as base, spray painting PTFE on the surface. It is characterized by acid-resistant, alkaline-resistant, ocean water resistant and environmental protection. It is t is used widely as fluid valve of measuring acid and alkalizing flow in chemical industry, and corrosion resisting sliding position in marine industry.

技术参数：Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | | 100N/mm² |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.0m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3N/mm²·m/s |
| | 油润滑 Oil lubrication | 40N/mm²·m/s |
| 摩擦系数 μ<br>Friction coefficient | 干摩擦 Dry friction | 0.08 ~ 0.20 |
| | 油润滑 Oil lubrication | 0.02 ~ 0.07 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 42W/m·K |
| 热膨胀系数 Coefficient of thermal expansion | | 15 × 10⁻⁶/K |






1.聚四氟乙烯与纤维混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.PTFE with fibre
2.Porous bronze
3.Steel backing
4.Tin-plating

## SF-1W 无铅环保轴承
## Lead-Free Bushing

RoHS

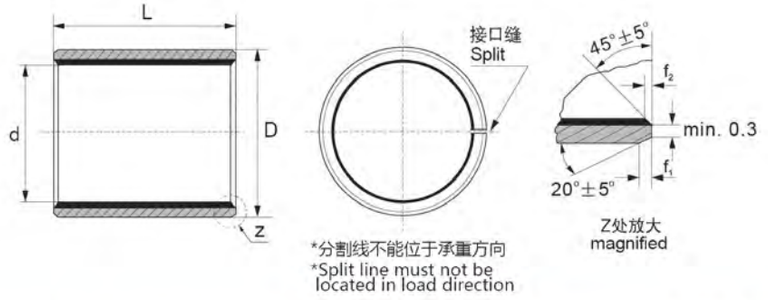
SF-1W无铅轴承，是在SF-1材料基础上根据国际环保要求而开发的一种新产品。该产品除广泛适用于一般通用机械外，对食品机械、制药机械、烟草机械尤其适用，无铅效果符合欧洲卫生标准，是无油润滑轴承发展的方向。

SF-1W is a new type bushing without lead composition which is developed aiming at increasing demands on environmental protection. Besides its wide application on general machines, SF-1 is particularly suitable for food machine, Pharmaceutical machine, tobacco, machine etc.

技术参数：Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 250N/mm² |
| | 动载 Dynamic load | 140N/mm² |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 2.5m/s |
| | 油润滑 Oil lubrication | 5.0m/s |
| 最高PV值<br>Max PV Value Limit | 干摩擦 Dry friction | 3.6N/mm²·m/s |
| | 油润滑 Oil lubrication | 50N/mm²·m/s |
| 摩擦系数 μ<br>Friction coefficient | 干摩擦 Dry friction | 0.08 ~ 0.20 |
| | 油润滑 Oil lubrication | 0.02 ~ 0.07 |
| 使用温度 Working temperature | | -195℃ ~ +280℃ |
| 导热系数 Thermal conductivity | | 42W/m·K |
| 热膨胀系数 Coefficient of thermal expansion | | 15 × 10⁻⁶/K |






*分割线不能位于承重方向
*Split line must not be located in load direction

单位unit:mm

| 轴径 尺寸 | 轴径 公差 f7 | 座孔 尺寸 | 座孔 公差 H7 | 外径公差 $D_o$ | | 压装后内孔公差 $D_{i,a}$ | 壁厚 $S_3$ | $f_1$ | $f_2$ | L 0 -0.40 (d≤Φ28 L-0.30; d>Φ30 L-0.40) 6 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 0 -0.006 | 3.5 | +0.008 | 3.5 | +0.055 +0.025 | 2.055 1.990 | 0.750 | 0.4 | 0.3 | | | | | | | | | | |
| 4 | 0 -0.008 | 5.5 | +0.008 | 5.5 | +0.055 +0.025 | 4.055 3.990 | 0.730 | | | 0406 | 0408 | | | | | | | | |
| 5 | -0.010 -0.022 | 7 | +0.015 | 7 | +0.055 +0.025 | 5.055 4.990 | | | | 0506 | 0508 | 0510 | | | | | | | |
| 6 | -0.010 -0.022 | 8 | +0.015 | 8 | +0.055 +0.025 | 6.055 5.990 | | | | 0606 | 0608 | 0610 | | | | | | | |
| 8 | -0.013 -0.028 | 10 | +0.015 | 10 | +0.055 +0.025 | 8.055 7.990 | | | | 0806 | 0808 | 0810 | 0812 | 0815 | | | | | |
| 10 | -0.013 -0.028 | 12 | +0.018 | 12 | +0.065 +0.030 | 10.058 9.990 | | | | 1006 | 1008 | 1010 | 1012 | 1015 | 1020 | | | | |
| 12 | -0.016 -0.034 | 14 | +0.018 | 14 | +0.065 +0.030 | 12.058 11.990 | | | | 1206 | 1208 | 1210 | 1212 | 1215 | 1220 | 1225 | | | |
| 13 | -0.016 -0.034 | 15 | +0.018 | 15 | +0.065 +0.030 | 13.058 12.990 | 1.005 0.980 | 0.6 | 0.3 | | | 1310 | | | 1320 | | | | |
| 14 | -0.016 -0.034 | 16 | +0.018 | 16 | +0.065 +0.030 | 14.058 13.990 | | | | | | 1410 | 1412 | 1415 | 1420 | 1425 | | | |
| 15 | -0.016 -0.034 | 17 | +0.018 | 17 | +0.065 +0.030 | 15.058 14.990 | | | | | | 1510 | 1512 | 1515 | 1520 | 1525 | | | |
| 16 | -0.016 -0.034 | 18 | +0.018 | 18 | +0.065 +0.030 | 16.058 15.990 | | | | | | 1610 | 1612 | 1615 | 1620 | 1625 | | | |
| 17 | -0.016 -0.034 | 19 | +0.021 | 19 | +0.075 +0.035 | 17.061 16.990 | | | | | | 1710 | 1712 | | 1720 | | | | |
| 18 | -0.016 -0.034 | 20 | +0.021 | 20 | +0.075 +0.035 | 18.061 17.990 | | | | | | 1810 | 1812 | 1815 | 1820 | 1825 | | | |
| 20 | -0.020 -0.041 | 23 | +0.021 | 23 | +0.075 +0.035 | 20.071 19.990 | | | | | | 2010 | 2012 | 2015 | 2020 | 2025 | 2030 | | |
| 22 | -0.020 -0.041 | 25 | +0.021 | 25 | +0.075 +0.035 | 22.071 21.990 | 1.505 1.475 | 0.6 | 0.4 | | | 2210 | 2212 | 2215 | 2220 | 2225 | 2230 | | |
| 24 | -0.020 -0.041 | 27 | +0.021 | 27 | +0.075 +0.035 | 24.071 23.990 | | | | | | | | 2415 | 2420 | 2425 | 2430 | | |
| 25 | -0.020 -0.041 | 28 | +0.021 | 28 | +0.075 +0.035 | 25.071 24.990 | | | | | | 2510 | 2512 | 2515 | 2520 | 2525 | 2530 | 2540 | 2550 |
| 28 | -0.020 -0.041 | 32 | +0.025 | 32 | +0.085 +0.045 | 28.085 27.990 | | | | | | | | 2815 | 2820 | 2825 | 2830 | 2840 | |
| 30 | -0.020 -0.041 | 34 | +0.025 | 34 | +0.085 +0.045 | 30.085 29.990 | | | | | | | 3012 | 3015 | 3020 | 3025 | 3030 | 3040 | |
| 32 | -0.025 -0.050 | 36 | +0.025 | 36 | +0.085 +0.045 | 32.085 31.990 | 2.005 1.970 | 1.2 | 0.4 | | | | | | 3220 | | 3230 | 3240 | |
| 35 | -0.025 -0.050 | 39 | +0.025 | 39 | +0.085 +0.045 | 35.085 34.990 | | | | | | | | 3512 | 3515 | 3520 | 3525 | 3530 | 3540 | 3550 |
| 38 | -0.025 -0.050 | 42 | +0.025 | 42 | +0.085 +0.045 | 38.085 37.990 | | | | | | | | | 3815 | | | 3830 | 3840 | |
| 40 | -0.025 -0.050 | 44 | +0.025 | 44 | +0.085 +0.045 | 40.085 39.990 | | | | | | | | 4012 | | 4020 | 4025 | 4030 | 4040 | 4050 |

# SF-1/1W/1B/1S/1T/1P/1D/1SS
## 标准公差尺寸表 Standard Metric Size

单位unit:mm

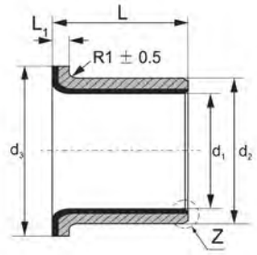
| 轴径 | | 座孔 | | 外径公差 $D_O$ | | 压装后内孔公差 $D_{i.a}$ | 壁厚 $S_3$ | $f_1$ | $f_2$ | $L^{0}_{-0.40}$ (d≤Φ28 L-0.30; d>Φ30 L-0.40) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 公差 f7 | 尺寸 | 公差 H7 | | | | | | | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 100 | 115 |
| 45 | -0.025 -0.050 | 50 | +0.025 | 50 | +0.085 +0.045 | 45.105 44.990 | | | | 4520 | 4525 | 4530 | 4540 | 4550 | | | | | |
| 50 | -0.025 -0.050 | 55 | +0.030 | 55 | +0.100 +0.055 | 50.110 49.990 | | | | 5020 | | 5030 | 5040 | 5050 | 5060 | | | | |
| 55 | -0.030 -0.060 | 60 | +0.030 | 60 | +0.100 +0.055 | 55.110 54.990 | | | | | | 5530 | 5540 | 5550 | 5560 | | | | |
| 60 | -0.030 -0.060 | 65 | +0.030 | 65 | +0.100 +0.055 | 60.110 59.990 | 2.505 2.460 | 1.8 | 0.6 | | | 6030 | 6040 | 6050 | 6060 | 6070 | | | |
| 65 | -0.030 -0.060 | 70 | +0.030 | 70 | +0.100 +0.055 | 65.110 64.990 | | | | | | 6530 | 6540 | 6550 | 6560 | 6570 | | | |
| 70 | -0.030 -0.060 | 75 | +0.030 | 75 | +0.100 +0.055 | 70.110 69.990 | | | | | | | 7040 | 7050 | 7060 | 7070 | 7080 | | |
| 75 | -0.030 -0.060 | 80 | +0.030 | 80 | +0.100 +0.055 | 75.110 74.990 | | | | | | 7530 | 7540 | 7550 | 7560 | 7570 | 7580 | | |
| 80 | -0.045 | 85 | +0.035 | 85 | +0.120 +0.070 | 80.155 80.020 | | | | | | | 8040 | 8050 | 8060 | 8070 | 8080 | 80100 | |
| 85 | -0.054 | 90 | +0.035 | 90 | +0.120 +0.070 | 85.155 85.020 | | | | | | | 8540 | | 8560 | | 8580 | 85100 | |
| 90 | -0.054 | 95 | +0.035 | 95 | +0.120 +0.070 | 90.155 90.020 | | | | | | | 9040 | 9050 | 9060 | | 9080 | 90100 | |
| 95 | -0.054 | 100 | +0.035 | 100 | +0.120 +0.070 | 95.155 95.020 | 2.490 2.440 | 1.8 | 0.6 | | | | | 9550 | 9560 | | 9580 | 95100 | |
| 100 | -0.054 | 105 | +0.035 | 105 | +0.120 +0.070 | 100.155 100.020 | | | | | | | | 10050 | 10060 | | 10080 | | 100115 |
| 105 | -0.054 | 110 | +0.035 | 110 | +0.120 +0.070 | 105.155 105.020 | | | | | | | | | 10560 | | 10580 | | 105115 |
| 110 | -0.054 | 115 | +0.035 | 115 | +0.120 +0.070 | 110.115 110.020 | | | | | | | | | 11060 | | 11080 | | 110115 |
| 120 | -0.054 | 125 | +0.040 | 125 | +0.170 +0.100 | 120.210 120.070 | | | | | | | | | 12060 | | 12080 | 120100 | |
| 125 | -0.063 | 130 | +0.040 | 130 | +0.170 +0.100 | 125.210 125.070 | | | | | | | | | 12560 | | | 125100 | 125115 |
| 130 | -0.063 | 135 | +0.040 | 135 | +0.170 +0.100 | 130.210 130.070 | 2.465 2.415 | 1.8 | 0.6 | | | | | | 13060 | | 13080 | 130100 | |
| 140 | -0.063 | 145 | +0.040 | 145 | +0.170 +0.100 | 140.210 140.070 | | | | | | | | | 14060 | | 14080 | 140100 | |
| 150 | -0.063 | 155 | +0.040 | 155 | +0.170 +0.100 | 150.210 150.070 | | | | | | | | | 15060 | | 15080 | 150100 | |
| 160 | -0.063 | 165 | +0.040 | 165 | +0.170 +0.100 | 160.210 160.070 | | | | | | | | | 16060 | | 16080 | 160100 | 160115 |
| 180 | -0.063 | 185 | +0.046 | 185 | +0.210 +0.130 | 180.216 180.070 | | | | | | | | | | | 18080 | 180100 | |
| 190 | -0.072 | 195 | +0.046 | 195 | +0.210 +0.130 | 190.216 190.070 | 2.465 2.415 | 1.8 | 0.6 | | | | | | | | 19080 | 190100 | |
| 200 | -0.072 | 205 | +0.046 | 205 | +0.210 +0.130 | 200.016 200.070 | | | | | | | | | | | 20080 | 200100 | |
| 220 | -0.072 | 225 | +0.046 | 225 | +0.210 +0.130 | 220.216 220.070 | | | | | | | | | 20060 | | 22080 | 220100 | |
| 250 | -0.072 | 255 | +0.052 | 255 | +0.260 +0.170 | 250.222 250.070 | | | | | | | | | | | 25080 | 250100 | |
| 260 | -0.081 | 265 | +0.052 | 265 | +0.260 +0.170 | 260.222 260.070 | 2.465 2.415 | 1.8 | 0.6 | | | | | | | | 26080 | 260100 | |
| 280 | -0.081 | 285 | +0.052 | 285 | +0.260 +0.170 | 280.222 280.070 | | | | | | | | | | | 28080 | 280100 | |
| 300 | -0.081 | 305 | +0.052 | 305 | +0.260 +0.170 | 300.222 300.070 | | | | | | | | | | | | | |

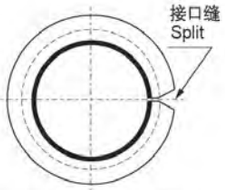
Catalog No. — d — L
SF-1 — 15 — 10



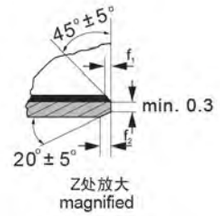
# SF-1F 无油翻边轴套标准尺寸表
## Oil-Flanged Bushes Standard Metric Size






*分割线不能位于承重方向
*Split line must not be located in load direction



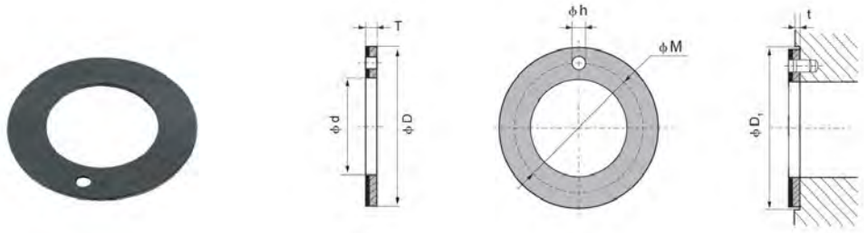

单位unit:mm

| 轴径 | | 座孔 | | 规格标志 Desc. | 尺寸 | | | | | $f_1$ | $f_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 公差 f7 | 尺寸 | 公差 H7 | | $d_1$ | $d_2$ | $d_3$ ± 0.5 | L ± 0.25 | $L_1$ ± 0.2 | | |
| 6 | -0.013 -0.028 | 8 | +0.015 | SF-1F 06040 | 6 | 8 | 12 | 4 | | | |
| | | | | SF-1F 06070 | | | | 7 | | | |
| 8 | -0.013 -0.028 | 10 | +0.015 | SF-1F 08055 | 8 | 10 | 15 | 5.5 | | | |
| | | | | SF-1F 08075 | | | | 7.5 | | | |
| 10 | -0.016 -0.034 | 12 | +0.018 | SF-1F 10070 | 10 | 12 | 18 | 7 | | | |
| | | | | SF-1F 10090 | | | | 9 | | | |
| | | | | SF-1F 10120 | | | | 12 | | | |
| 12 | -0.016 -0.034 | 14 | +0.018 | SF-1F 12070 | 12 | 14 | 20 | 7 | 1 | 0.5 | 0.4 |
| | | | | SF-1F12090 | | | | 9 | | | |
| | | | | SF-1F12120 | | | | 12 | | | |
| 14 | -0.016 -0.043 | 16 | +0.018 | SF-1F14120 | 14 | 16 | 22 | 12 | | | |
| | | | | SF-1F14170 | | | | 17 | | | |
| 15 | -0.016 -0.034 | 17 | +0.018 | SF-1F15090 | 15 | 17 | 23 | 9 | | | |
| | | | | SF-1F15120 | | | | 12 | | | |
| | | | | SF-1F15170 | | | | 17 | | | |
| 16 | -0.016 -0.034 | 18 | +0.018 | SF-1F16120 | 16 | 18 | 24 | 12 | | | |
| | | | | SF-1F16170 | | | | 17 | | | |
| 18 | -0.016 -0.034 | 20 | +0.021 | SF-1F18120 | 18 | 20 | 26 | 12 | | | |
| | | | | SF-1F18170 | | | | 17 | | | |
| | | | | SF-1F18200 | | | | 20 | | | |
| 20 | -0.020 -0.041 | 23 | +0.021 | SF-1F20115 | 20 | 23 | 30 | 11.5 | | | |
| | | | | SF-1F20165 | | | | 16.5 | | | |
| | | | | SF-1F20215 | | | | 21.5 | | | |
| 22 | -0.020 -0.041 | 25 | +0.021 | SF-1F22150 | 22 | 25 | 32 | 15 | 1.5 | 0.8 | 0.4 |
| | | | | SF-1F22200 | | | | 20 | | | |
| 25 | -0.020 -0.041 | 28 | | SF-1F25115 | 25 | 28 | 35 | 11.5 | | | |
| | | | | SF-1F25165 | | | | 16.5 | | | |
| | | | | SF-1F25215 | | | | 21.5 | | | |
| 30 | -0.025 -0.050 | 34 | +0.025 +0.021 | SF-1F30160 | 30 | 34 | 42 | 16 | | | |
| | | | | SF-1F30260 | | | | 26 | | | |
| 35 | -0.025 -0.050 | 39 | +0.025 | SF-1F35160 | 35 | 39 | 47 | 16 | 2 | 1.0 | 0.5 |
| | | | | SF-1F35260 | | | | 26 | | | |
| 40 | -0.025 -0.050 | 44 | +0.025 | SF-1F40260 | 40 | 44 | 53 | 26 | | | |
| | | | | SF-1F40400 | | | | 40 | | | |

Catalog No. — d — L
SF-1F — 15 — 12

# SF-1WC 复合止推垫片
## 标准公差尺寸表 Standard Metric Size





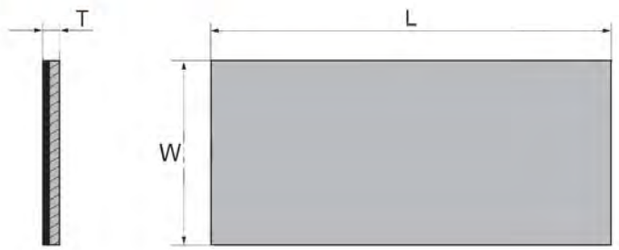

单位unit:mm

| 相配轴径 Axle | 型号规格 Designation | 垫片尺寸 Washer Dimension | | | | 安装尺寸 Installation Size | | |
|---|---|---|---|---|---|---|---|---|
| | | ϕD 0 -0.25 | ϕd +0.25 0 | T 0 -0.050 | ϕM ± 0.125 | ϕh +0.40 +0.10 | t ± 0.20 | ϕD1 0 +0.12 |
| 8 | SF-1□WC 10 | 20 | 10 | 1.5 | 15 | 1.5 | 1.0 | 20 |
| 10 | SF-1□WC 12 | 24 | 12 | | 18 | | | 24 |
| 12 | SF-1□WC 14 | 26 | 14 | | 20 | 2.0 | | 26 |
| 14 | SF-1□WC 16 | 30 | 16 | | 23 | | | 30 |
| 16 | SF-1□WC 18 | 32 | 18 | | 25 | | | 32 |
| 18 | SF-1□WC 20 | 36 | 20 | | 28 | 3.0 | | 36 |
| 20 | SF-1□WC 22 | 38 | 22 | | 30 | | | 38 |
| 22 | SF-1□WC 24 | 42 | 24 | | 33 | | | 42 |
| 24 | SF-1□WC 26 | 44 | 26 | | 35 | | | 44 |
| 26 | SF-1□WC 28 | 48 | 28 | | 38 | 4.0 | | 48 |
| 30 | SF-1□WC 32 | 54 | 32 | | 43 | | | 54 |
| 36 | SF-1□WC 38 | 62 | 38 | | 50 | | | 62 |
| 40 | SF-1□WC 42 | 66 | 42 | | 54 | | | 66 |
| 46 | SF-1□WC 48 | 74 | 48 | 2.0 | 61 | | 1.5 | 74 |
| 50 | SF-1□WC 52 | 78 | 52 | | 65 | | | 78 |
| 60 | SF-1□WC 62 | 90 | 62 | | 76 | | | 90 |

Catalog No. — d
SF-1WC — 10

# SF-1/1W/1B/1S/1T/1P/1D/1SS 滑板
## 标准公差尺寸表 Standard Metric Size






单位unit:mm

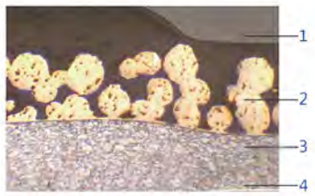
| 型号规格 Designation | 长度 Length L +5.0 0 | 宽度 Width W +2.0 0 | 厚度 Thickness T 0 -0.050 |
|---|---|---|---|
| SF-1□SP 010130 | 500 | 130 | 1.0 |
| SF-1□SP 015130 | 500 | 130 | 1.5 |
| SF-1□SP 020130 | 500 | 130 | 2.0 |
| SF-1□SP 025130 | 500 | 130 | 2.5 |



# SF-2 边界润滑轴承
## Boundary Lubricating Bushing








1.聚甲醛与纤维混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.POM with fiber
2.Porous bronze
3.Steel backing
4.Tin-plating

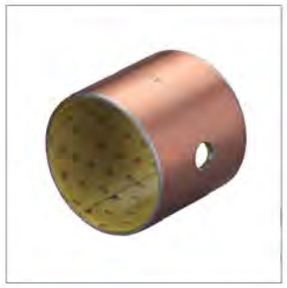
## SF-2 边界润滑轴承（标准公差尺寸见第24页）
## Marginal Lubrication Bushing

该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制改性聚甲醛(POM)。在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于冶金机械、矿山机械、水利机械、汽车、建筑机械、农用机械、轧钢行业等。

SF-2 Marginal Pb-free self-lubricating bearing is used steel-backing as its structure, sintered porous bronze as its interlayer, surface inlaid the modified POM. Suitable for marginally lubricated and dry operation on the conditions of lubrication indents grease. It has been widely applied to metallurgical machinery, Mine machinery, water conservancy machinery, vapor locomotive, building machinery, agriculture machinery, steel rolling industry 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 | 250N/mm² |
| | 动载 Dynamic load | 150N/mm² |
| 最高线速度 V Max Sliding Speed | 脂润滑 Grease lubrication | 2.5m/s |
| 最高PV值 Max PV Value Limit | 脂润滑 Grease lubrication | 2.8N/mm²·m/s |
| 摩擦系数 μ Friction coefficient | 脂润滑 Grease lubrication | 0.05 ~ 0.25 |
| 使用温度 Working temperature | | -40℃ ~ +130℃ |
| 导热系数 Thermal conductivity | | 4W/m·K |
| 热膨胀系数 Coefficient of thermal expansion | | 12×10⁻⁶/K |






1.聚甲醛与纤维混合物
2.球形青铜粉
3.钢背
4.电镀层（铜或锡）
1.POM with fiber
2.Porous bronze
3.Steel backing
4.Tin-plating

## SF-2Y 边界润滑无铅轴承
## Marginal Lubricating Lead-Free Bushing

该产品与SF-2具有相同结构和使用性能，同时具有环保功能，在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于冶金机械、矿山机械、水利机械、汽机车、建筑机械、农用机械、轧钢行业、食用机械、制药机械、烟草机械等。

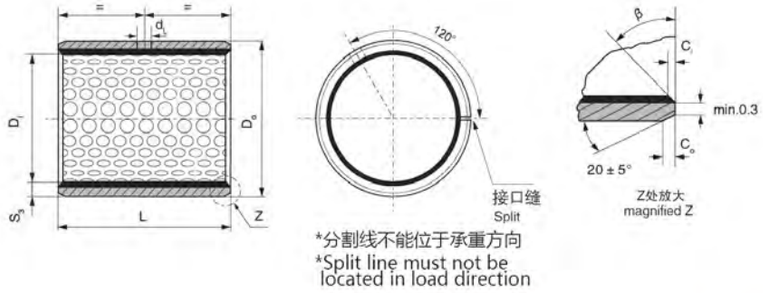
SF-2Y has the same structure and functional performance with SF-2. It can work long time without oil in the condition of prelubricated with lubrication indents.Widely applied to metallurgy machinery, Mining machinery, water conservancy machinery, automobile, building machinery, agriculture machinery, rolling steel industry 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 | 250N/mm² |
| | 动载 Dynamic load | 150N/mm² |
| 最高线速度 V Max Sliding Speed | 脂润滑 Grease lubrication | 2.5m/s |
| 最高PV值 Max PV Value Limit | 脂润滑 Grease lubrication | 3.6N/mm²·m/s |
| 摩擦系数 μ Friction coefficient | 脂润滑 Grease lubrication | 0.05 ~ 0.25 |
| 使用温度 Working temperature | | -40℃ ~ +130℃ |
| 导热系数 Thermal conductivity | | 4W/m·K |
| 热膨胀系数 Coefficient of thermal expansion | | 12×10⁻⁶/K |

# SF-2 边界润滑轴承标准公制尺寸
## Marginal-lubricationg Bearing Stangdard Metric Size






*分割线不能位于承重方向
*Split line must not be located in load direction

单位unit:mm

| 轴径 | | 座孔 | | 外径公差 $D_O$ | | 压装后内孔公差 $D_{i,a}$ | 配合间隙 $C_D$ | 壁厚 $S_3$ | 油孔 $d_L$ | $L^{0}_{-0.4}$ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 公差 h8 | 尺寸 | 公差 H7 | | | | | | | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 |
| 10 | -0.022 | 12 | +0.018 | 12 | +0.065<br>+0.030 | 10.108<br>10.040 | 0.130<br>0.040 | | | 1010 | 1015 | 1020 | | | | | | | |
| 12 | -0.027 | 14 | +0.018 | 14 | +0.065<br>+0.030 | 12.108<br>12.040 | | | | 1210 | 1215 | 1220 | | | | | | | |
| 14 | -0.027 | 16 | +0.018 | 16 | +0.065<br>+0.030 | 14.108<br>14.040 | 0.135<br>0.040 | 0.980<br>0.955 | 4 | | 1415 | 1420 | | | | | | | |
| 15 | -0.027 | 17 | +0.018 | 17 | +0.065<br>+0.030 | 15.108<br>15.040 | | | | | 1515 | 1520 | 1525 | | | | | | |
| 16 | -0.027 | 18 | +0.018 | 18 | +0.065<br>+0.030 | 16.108<br>16.040 | | | | | 1615 | 1620 | 1625 | | | | | | |
| 18 | -0.027 | 20 | +0.021 | 20 | +0.075<br>+0.035 | 18.111<br>18.040 | 0.138<br>0.040 | | | | 1815 | 1820 | 1825 | | | | | | |
| 20 | -0.033 | 23 | +0.021 | 23 | +0.075<br>+0.035 | 20.131<br>20.050 | | | | | 2015 | 2020 | 2025 | 2030 | | | | | |
| 22 | -0.033 | 25 | +0.021 | 25 | +0.075<br>+0.035 | 22.131<br>22.050 | 0.164<br>0.050 | 1.475<br>1.445 | | | 2215 | | 2225 | | | | | | |
| 25 | -0.033 | 28 | +0.021 | 28 | +0.075<br>+0.035 | 25.131<br>25.050 | | | | | 2515 | 2520 | 2525 | 2530 | | | | | |
| 28 | -0.033 | 32 | +0.025 | 32 | +0.085<br>+0.045 | 28.155<br>28.060 | 0.188<br>0.060 | | 6 | | | 2820 | | 2830 | | | | | |
| 30 | -0.033 | 34 | +0.025 | 34 | +0.085<br>+0.045 | 30.155<br>30.060 | | 1.970 | | | | 3020 | 3025 | 3030 | | 3040 | | | |
| 35 | -0.039 | 39 | +0.025 | 39 | +0.085<br>+0.045 | 35.155<br>35.060 | 0.194<br>0.060 | 1.935 | | | | 3520 | | 3530 | 3535 | 3540 | | | |
| 40 | -0.039 | 44 | +0.025 | 44 | +0.085<br>+0.045 | 40.155<br>40.060 | | | | | | 4020 | | 4030 | | 4040 | | 4050 | |
| 45 | -0.039 | 50 | +0.025 | 50 | +0.085<br>+0.045 | 45.195<br>45.080 | 0.234<br>0.080 | | 8 | | | 4520 | | 4530 | | 4540 | 4545 | 4550 | |
| 50 | -0.039 | 55 | +0.030 | 55 | +0.100<br>+0.055 | 50.200<br>50.080 | 0.239<br>0.080 | 2.460<br>2.415 | | | | | | 5030 | | 5040 | | 5050 | 5060 |
| 55 | -0.046 | 60 | +0.030 | 60 | +0.100<br>+0.055 | 55.200<br>55.080 | 0.246<br>0.080 | | | | | | | 5530 | | 5540 | | 5550 | 5560 |
| 60 | -0.046 | 65 | +0.030 | 65 | +0.100<br>+0.055 | 60.200<br>60.080 | | | | | | | | 6030 | | 6040 | | 6050 | 6060 |



SF-2 边界润滑轴承标准公制尺寸
Marginal-lubricationg Bearing Stangdard Metric Size

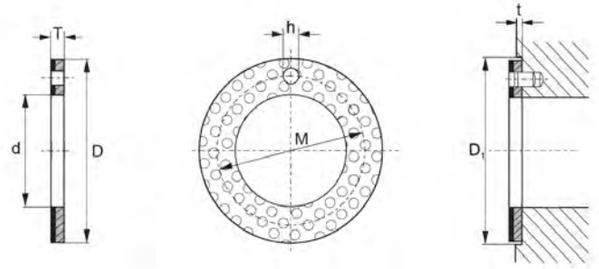
单位unit:mm

| 轴径 | | 座孔 | | 外径公差 $D_O$ | | 压装后内孔公差 $D_{i,a}$ | 配合间隙 $C_D$ | 壁厚 $S_3$ | 油孔 $d_L$ | $L^{0}_{-0.4}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 公差 h8 | 尺寸 | 公差 H7 | | | | | | | 40 | 50 | 60 | 80 | 90 | 95 | 100 | 110 | 120 |
| 65 | -0.046 | 70 | +0.030 | 70 | +0.100<br>+0.055 | 65.200<br>65.080 | | | | 6540 | | 6560 | | | | | | |
| 70 | -0.046 | 75 | +0.030 | 75 | +0.100<br>+0.055 | 70.200<br>70.080 | 0.246<br>0.080 | 2.460<br>2.415 | 8 | 7040 | 7050 | | 7080 | | | | | |
| 75 | -0.046 | 80 | +0.030 | 80 | +0.100<br>+0.055 | 75.200<br>75.080 | | | | 7540 | | 7560 | 7580 | | | | | |
| 80 | -0.046 | 85 | +0.035 | 85 | +0.120<br>+0.070 | 80.265<br>80.100 | 0.313<br>0.100 | | | 8040 | | 8060 | 8080 | | | | | |
| 85 | -0.054 | 90 | +0.035 | 90 | +0.120<br>+0.070 | 85.265<br>85.100 | | | | 8540 | | 8560 | 8580 | | | | | |
| 90 | -0.054 | 95 | +0.035 | 95 | +0.120<br>+0.070 | 90.265<br>90.100 | | | | 9040 | | 9060 | 9080 | 9090 | | | | |
| 100 | -0.054 | 105 | +0.035 | 105 | +0.120<br>+0.070 | 100.265<br>100.100 | 0.321<br>0.100 | | | | 10050 | | 10080 | | 10095 | | | |
| 105 | -0.054 | 110 | +0.035 | 110 | +0.120<br>+0.070 | 105.265<br>105.100 | | | | | | 10560 | 10580 | | 10595 | | 105110 | |
| 110 | -0.054 | 115 | +0.035 | 115 | +0.120<br>+0.070 | 110.265<br>110.110 | | | 9.5 | | | 11060 | 11080 | | 11095 | | 110110 | |
| 120 | -0.054 | 125 | +0.040 | 125 | +0.170<br>+0.100 | 120.270<br>120.110 | | | | | | 12060 | 12080 | | | | 120110 | |
| 125 | -0.063 | 130 | +0.040 | 130 | +0.170<br>+0.100 | 125.270<br>125.110 | | | | | | 12560 | | | | | 125110 | |
| 130 | -0.063 | 135 | +0.040 | 135 | +0.170<br>+0.100 | 130.270<br>130.110 | | | | | 13050 | 13060 | 13080 | | | 130100 | | |
| 140 | -0.063 | 145 | +0.040 | 145 | +0.170<br>+0.100 | 140.270<br>140.110 | 0.324<br>0.100 | | | | 14050 | 14060 | 14080 | | | 140100 | | |
| 150 | -0.063 | 155 | +0.040 | 155 | +0.170<br>+0.100 | 150.270<br>150.110 | | 2.450<br>2.385 | | | 15050 | 15060 | 15080 | | | 150100 | | |
| 160 | -0.063 | 165 | +0.040 | 165 | +0.170<br>+0.100 | 160.270<br>160.110 | | | | | 16050 | 16060 | 16080 | | | 160100 | | |
| 170 | -0.063 | 175 | +0.040 | 175 | +0.170<br>+0.100 | 170.270<br>170.110 | | | | | 17050 | | 17080 | | | 170100 | | |
| 180 | -0.063 | 185 | +0.046 | 185 | +0.210<br>+0.130 | 180.270<br>180.110 | | | 9.5 | | 18050 | 18060 | 18080 | | | 180100 | | |
| 190 | -0.072 | 195 | +0.046 | 195 | +0.210<br>+0.130 | 190.276<br>190.110 | | | | | 19050 | 19060 | 19080 | | | 190100 | | 190120 |
| 200 | -0.072 | 205 | +0.046 | 205 | +0.210<br>+0.130 | 200.276<br>200.110 | 0.339<br>0.110 | | | | 20050 | 20060 | 20080 | | | 200100 | | 200120 |
| 220 | -0.072 | 225 | +0.046 | 225 | +0.210<br>+0.130 | 220.276<br>220.110 | | | | | 22050 | 22060 | 22080 | | | 220100 | | 220120 |
| 240 | -0.072 | 245 | +0.046 | 245 | +0.210<br>+0.130 | 240.276<br>240.110 | | | | | 24050 | 24060 | 24080 | | | 240100 | | 240120 |
| 250 | -0.072 | 255 | +0.052 | 255 | +0.260<br>+0.170 | 250.282<br>250.110 | | | 9.5 | | 25050 | 25060 | 25080 | | | 250100 | | 250120 |
| 260 | -0.081 | 265 | +0.052 | 265 | +0.260<br>+0.170 | 260.282<br>260.110 | 0.354<br>0.110 | | | | 26050 | 26060 | 26080 | | | 260100 | | 260120 |
| 280 | -0.081 | 285 | +0.052 | 285 | +0.260<br>+0.170 | 280.282<br>280.110 | | | | | 28050 | 28060 | 28080 | | | 280100 | | 280120 |
| 300 | -0.081 | 305 | +0.052 | 305 | +0.260<br>+0.170 | 300.282<br>300.110 | | | | | 30050 | 30060 | 30080 | | | 300100 | | 300120 |

Catalog No. — d — L
SF-2 — 15 — 15

# SF-2WC 边界润滑止推垫片
## Marginal Lubricating Thrust Washer





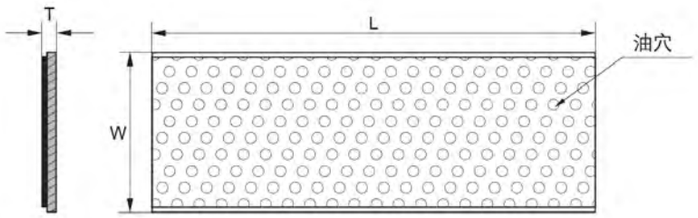

单位unit:mm

| 轴径 Axle | 型号规格 Designation | 垫片尺寸 Washer Dimension | | | | 安装尺寸 Installation Size | | |
|---|---|---|---|---|---|---|---|---|
| | | d +0.25 | D -0.25 | T -0.05 | M ± 0.125 | h $^{+0.40}_{+0.10}$ | t ± 0.20 | $D_1$+0.12 |
| 8 | SF-2WC 10 | 10 | 20 | 1.5 | 15 | 1.5 | 1.0 | 20 |
| 10 | SF-2WC 12 | 12 | 24 | | 18 | | | 24 |
| 12 | SF-2WC 14 | 14 | 26 | | 20 | 2.0 | | 26 |
| 14 | SF-2WC 16 | 16 | 30 | | 23 | | | 30 |
| 16 | SF-2WC 18 | 18 | 32 | 2.0 | 25 | | | 32 |
| 18 | SF-2WC 20 | 20 | 36 | | 28 | 3.0 | | 36 |
| 20 | SF-2WC 22 | 22 | 38 | | 30 | | | 38 |
| 22 | SF-2WC 24 | 24 | 42 | | 33 | | | 42 |
| 24 | SF-2WC 26 | 26 | 44 | | 35 | | | 44 |
| 26 | SF-2WC 28 | 28 | 48 | | 38 | 4.0 | | 48 |
| 30 | SF-2WC 32 | 32 | 54 | | 43 | | | 54 |
| 36 | SF-2WC 38 | 38 | 62 | | 50 | | | 62 |
| 40 | SF-2WC 42 | 42 | 66 | | 54 | | | 66 |
| 46 | SF-2WC 48 | 48 | 74 | | 61 | | 1.5 | 74 |
| 50 | SF-2WC 52 | 52 | 78 | | 65 | | | 78 |
| 60 | SF-2WC 62 | 62 | 90 | | 76 | | | 90 |

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SF-2WC — 10

## SF-2PS 滑板 标准公差尺寸表
## Standard Metric Size






单位unit:mm

| 代号 Code number | 长度(L) ± 1 | 宽度(W) ± 1 | 壁厚(T)-0.05 |
|---|---|---|---|
| SF-2 PS | 500 | 150 | 1.0 |
| SF-2 PS | 500 | 150 | 1.5 |
| SF-2 PS | 500 | 150 | 2.0 |
| SF-2 PS | 500 | 150 | 2.5 |



# JDB-600 油沟铜衬套
## Oil groove copper bushing



### 材料组织 Structure

精加工铜合金轴套提供了简单、经济的轴承运用方式，具有承载高，耐腐蚀性好，尺寸加工任意性等特点。同时可以根据不同的使用情况提供不同牌号的铜合金，并按照要求加工出不同的形式，它比卷制类铜轴承具有更高尺寸精度。

Refined copper alloy bushing provides a simple and economic way of bearing use, has high bearing, good corrosion resistance, processing arbitrary size, etc. At the same time can be used according to different situation provide different grades of copper alloy, and work out different forms in accordance with the requirements, rolled copper bearing is higher than that in its dimension precision.

铸造铜合金主要特性和应用举例（GB/T1176-1987）

| 合金牌号 | 主要特性 | 应用举例 |
|---|---|---|
| ZCuZn25Al6Fe3Mn3 | 有很高的力学性能，铸造性能良好，承载性能及耐蚀性较好。有一定的抗疲劳和耐 磨性。 | 适用高强、耐磨零件，如桥梁支承板、螺母、螺杆、耐磨板、滑块和蜗轮等，一般用途的结构件、船舶、仪表等使用的外型简单铸件，如套筒、衬套、轴瓦、滑块等 |
| ZCuSn6Zn6Pb3 | 耐磨性较好，易加工，铸造性能好，气密性较好、耐腐蚀，可在流动海水下工作。 | 结构材料，耐蚀、耐酸的配件以及破碎机衬套、轴瓦，耐磨性和耐蚀性好，易加工，铸造性能和气密性较好,在一般负荷，中等滑动速度下工作的耐磨耐腐蚀零件，如透平机、电动机、压缩机、活塞离合器、连杆衬套、摇臂衬套。 |
| ZCuPb10Sn10 | 润滑性能、耐磨性能和耐蚀性能好，适合用作双金属铸造材料 | 表面压力高，又存在侧压力的滑动轴承，如轧辊、车辆用轴承、负荷峰值60MPa的受冲击的零件，以及最高峰值达100MPa的内燃机双金属轴瓦，以及活塞销套、摩擦片等 |
| ZCuAl9Fe4Ni4Mn2 | 有很高的力学性能，在大气、淡水和海水中耐磨性好，铸造性能好，组织致密，气密性高，耐磨性好，不易钎焊，铸造性能尚好。 | 要求强度高，耐蚀性好的重要铸件，是制造船舶螺旋桨的主要材料之一，也可用做耐磨和400℃以下工作的零件，如轴承、齿轮、蜗轮，螺帽、法兰、阀体，导向套管 |
| ZCuSn10Pb1 | 硬度高，耐磨性极好，不易产生咬死现象，有较好的铸造性能和切削加工性能，在大气和淡水中有良好的耐蚀性。 | 可用于高负荷（20MPa以下）和高滑动速度（8m/s）下工作的耐磨零件，如连杆、衬套、轴瓦、齿轮、蜗轮等 |
| ZCuSn5Pb5Zn5 | 耐磨性和耐蚀性好，易加工，铸造性能和气密性较好。 | 在较高负荷，中等滑动速度下工作的耐磨耐腐蚀零件，如轴瓦、衬套、缸套、活塞离合器、泵件压盖以及蜗轮等 |

### Available 可供形式

Cylindrical bushes 直套　　Flange bushes 垫片
Thrust washers 翻边　　Non-standard parts as design 滑板

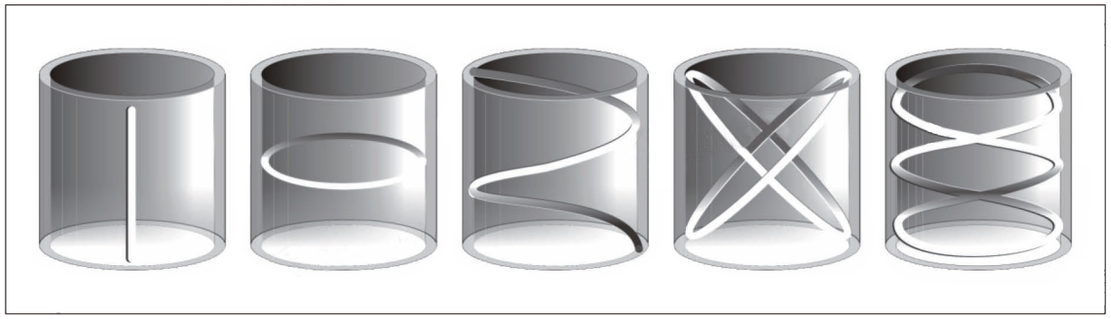


# JDB-600 油沟铜衬套
## Oil groove copper bushing



# JDB-250G 钢基精加工轴承
## Steel finishing bearing

### 油槽 Oil Groove



### 材料选择 Material selection

| 成分及物理性能 Composition and physical properties | | 材料牌号 Material | | | | | |
|---|---|---|---|---|---|---|---|
| | | ZCuZn25Al6Fe3Mn3 | ZCuSn5Pb5Zn5 | ZCuSn6Zn6Pb3 | ZCuSn10P1 | ZCuPb10Sn10 | ZCuAl9Fe4Ni4Mn2 |
| Cu | | 余量 | 余量 | 余量 | 余量 | 余量 | 余量 |
| Zn | | 25 | 4.0-6.0 | 4.0-7.0 | | | |
| Sn | | 0.2 | 9.0-11.0 | 4.0-7.0 | 9.0-11.5 | 9.0-11.0 | |
| Pb | | 0.2 | 3.0-6.0 | 2.0-4.0 | 0.5-1.0 | 8.0-11.0 | |
| Al | | 4.5-7.0 | | | | | 8.5-10 |
| Fe | | 3.0-4.0 | | | | | 4.0-5.0 |
| Mn | | 1.5-4.0 | | | | | 0.8-0.25 |
| P | | | | | 0.8-1.1 | 0.05 | |
| Ni | | | | | | | 4.0-5.0 |
| 抗拉强度 Tensile strength (MPa) | | 750 | 220 | 230 | 360 | ≤220 | ≤630 |
| 屈服强度 Yield point (MPa) | | 400 | 100 | 110 | 170 | ≤140 | ≤250 |
| 伸长率 Elongation (%) | | 10 | 13 | | 6 | ≥5 | ≥16 |
| 硬度 Hardness (HB) | | 200-270 | 60-80 | 60-80 | 88 | 65 | 150 |
| 密度 Density | | 8.2 | 8.7 | 8.5 | 8.7 | 8.9 | 7.6 |
| 线膨胀率 Line expansion α/10-6/℃-1 | | 19.8 | 19.1 | 19.5 | 18.5 | 19.2 | 20 |
| 导热率 Thermal conductivity W/(M·℃) | | 50 | 56 | 55 | 50 | 45 | 71 |
| 摩擦系数 Friction factor | 有润滑剂 Lubricant | 0.12 | 0.01 | 0.02 | 0.08 | 0.005 | 0.01 |
| | 无润 滑剂 No Lubricants | | 0.16 | 0.2 | 0.1 | 0.1 | 0.18 |
| 耐蚀性 (质量损失) /[g/(m²·24h)] | 在10%酸中 In 10% of the acid | 1.46 | 4.9 | 4.9 | 4.9 | 0.14 | 0.14 |
| | 在海水中 In seawater | | 0.67 | 0.67 | 0.67 | 0.92 | 0.92 |





JDB-250G以优质碳素钢为基体，通过合理的油路设计，在装配时 涂上油脂使得其在工作时能较长时间的储存所需要的足够油脂，并且能均匀的分布在轴承及轴的表面上，从而达到了延长使用寿 命缩短加油频率的目的；同时由于特殊的油路系统能够存入工作 时侵入轴承的灰尘和其它异物，从而最大限度的降低对轴承使用过程中的影响。JDB-250G另外一个特殊性是在轴承的工作表面经 过一种特殊工艺的处理，使其表面覆盖了一层特殊的固体润滑 剂，这层特殊的润滑剂在起始动作时能很快的转移到对磨轴的表 面上，从而较快的降低了起始摩擦系数，提高了轴承的耐磨性。

JDB-250G is produced by carbon steel with oil groove, the initial grease given can be deposited the mass lubrication for long time working. The work surface has been sprayed a special solid lubricant, this solid lubricant can be transfer to the mating material during the operation and forming a solid lubrication film between the bearing and shaft which make the bearing material have high load capacity with lower friction and excellent wear resistance.

以优质钢材为基体，内壁离心浇铸铜层后，在铜层表面加工规则的导油槽提升润滑性能，或者在基体上嵌入固体润滑剂能达到免维护性能的钢铜合金产品。它的端面可以与基体焊接安装使用，产品具有耐冲击，耐高温，抗压性能强等特点。适用于冶金机械，模具导套、建筑机械和输油机械中等不可加油的领域。

High quality steel as matrix, the inner wall of the centrifugal casting copper layer, the surface of the copper layer to enhance the processing rules guide sump lubrication performance, or embedded solid lubricant to achieve maintenance-free performance of steel and copper alloy products in the matrix. It's the end surface and the substrate can be welded installation, the product has impact resistance, high temperature resistance, compression performance characteristics. Suitable for metallurgical machinery, molds guide sleeve, construction machinery and oil field machinery moderate non-refueling.













## Material selection 材料选择

**45号钢（油钢）**

| 性能 Performance | 硬度（HB） | 抗拉强度 (MPa) | 屈服强度 (MPa) | 伸长率 (%) |
|---|---|---|---|---|
| | 270 | 600 | 355 | 16 |
| 硬度处理方式 Hardness treatment | 淬火、调质 | | | |

| 化学成分 Chemical composition | C | Si | P | S | Cr | Ni | Cu |
|---|---|---|---|---|---|---|---|
| | 0.42~0.50 | 0.17~0.37 | ≤0.040 | ≤0.045 | ≤0.25 | ≤0.25 | ≤0.25 |

| | |
|---|---|
| 密度 Density | 7.85 |
| 属性 Property | 中碳调质结构钢 |
| 特性 Feature | 调质处理后零件具有良好的综合机械性能，广泛应用于各种重要的结构零件，特别是那些在交变负荷下工作的连杆、螺栓、齿轮及轴类等。但表面硬度较低，可用调质＋表面淬火提高零件表面硬度。 |

**轴承钢(GCr15)**

| 性能 Performance | 硬度（HRC） | 抗拉强度 (MPa) | 屈服强度 (MPa) | 伸长率 (%) |
|---|---|---|---|---|
| | 25.8 | 861.3 | 518.42 | 27.95 |
| 硬度处理方式 Hardness treatment | 淬火、调质 | | | |

| 化学成分 Chemical composition | C | Mn | Si | S | P | Cr | Mo | Ni | Cu | Ni+Cu |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0.95~1.05 | 0.20~0.40 | 0.15~0.35 | ≤0.020 | ≤0.027 | 1.30~1.65 | ≤0.01 | ≤0.30 | ≤0.25 | ≤0.50 |

| | |
|---|---|
| 属性 Property | 高碳铬轴承钢 |
| 特性 Feature | 综合性能良好.球化退火后有良好的切削加工性能.淬火和回火后硬度高而且均匀,耐磨性能和接触疲劳强度高.热加工性能好.含有较多的合金元素具有高而均匀的硬度,良好的耐磨性.用于制作承受负荷较大的小截面调质件和应力较小的大型正火零件. |

**HT250（灰铸铁）**

| 性能 Performance | 硬度（HB） | 抗拉强度 (MPa) | 屈服强度 (MPa) | 伸长率 (%) |
|---|---|---|---|---|
| | 200 | 143-269 | 100-350 | 17 |

| 化学成分 Chemical composition | C | Si | Mn | S | P |
|---|---|---|---|---|---|
| | 3.16~3.30 | 1.79~1.93 | 0.89~1.04 | 0.094~0.125 | 0.120~0.170 |

| | |
|---|---|
| 属性 Property | HT250 |
| 特性 Feature | 可用于要求高强度和一定耐蚀能力的轴套、法兰及压盖等；还可制作机床床身、立柱、耐磨导板、齿轮以及需经表面淬火的零件。因其受热变形量较小，常使用于高温场合。 |

**球墨铸铁（QT-500）**

| 性能 Performance | 硬度（HB） | 抗拉强度 (MPa) | 屈服强度 (MPa) | 伸长率 (%) |
|---|---|---|---|---|
| | 190~270 | ≥400 | ≥250 | 7 |

| 化学成分 Chemical composition | C | Si | Mn | S | P | Mg | Re |
|---|---|---|---|---|---|---|---|
| | 3.45~3.64 | 2.47~3.00 | 0.45~0.57 | 0.012~0.026 | 0.047~0.060 | 0.029~0.062 | 0.032~0.047 |

| | |
|---|---|
| 属性 Property | QT400 QT500 |
| 特性 Feature | 具有中高等强度、中等韧性和塑性，综合性能较高，耐磨性和减振性良好，铸造工艺性能良好等特点。脆性转变温度低，同时低温韧性也较好。用作能承受高冲击振动及扭转等动、静载荷的零件，要求较高的韧性和塑性，特别在低温工作要求一定冲击值的零件。 |

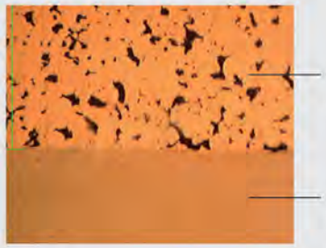
## Available 可供形式

Cylindrical bushes 直套　Thrust washers 翻边　Flange bushes 垫片　Non-standard parts as design 滑板

除以上材质，可以根据实际工况设计其它特殊牌号钢材为轴承的基体材质。

# JF-800双金属轴承
## Bimetallic Self-Lubricating Bearing






金相图片
Metallography

JF-800 双金属轴承以优质低碳钢为基体，表面烧结铅锡青铜合金CuSn10Pb10，合金表面轧制球形油穴，便于储存油脂，有效降低磨损。钢背根据需要可以镀铜或镀锡。适用于中载、中到高速，以及有大冲击载荷的轴承，机械设备上用于卷制轴承、止推垫片、内燃机连杆活塞销轴承。

JF-800 bimetal bushing is backed with high quality low carbon steel with tin-lead-bronze alloy(CuSn10Pb10)sintered on its surface. To effectively decrease abrasion, its alloy surface can be machined with ball shaped oil sockets for easier oil storage. When necessary, it could be plated copper or tin on the steel back. It can be applied to conditions of mediate load with mediate or high running belocity and conditions with enormous impact load. In mechanical applications, KDB301 is used to make wrapped bushes, thrust washer and bushes on connecting rod level of gas engine.





JF-800双金属轴承，是以低碳钢板为基体材料，表面烧结CuSn6Zn6Pb3或CuPb10Sn10材料的钢铜合金产品。该产品是双合金轴承中承载能力最强的一种，重型车的平衡桥衬套，均使用该产品。它是一种用途很广的高载荷低速运动轴承。

JF-800 bimetal bearing, is a low-carbon steel as the base material, the surface of the material sintered CuSn6Zn6Pb3 or CuPb10Sn10 steel and copper alloy products. The product is a two-alloy bearings in the bearing capacity of the strongest one, the balance of the bridge sleeve heavy vehicles are using the product. It is a very versatile and any low speed high load bearings.





咨询电话: 0573-84616009 84612745 84516877 传真: 0573-84613743

JF-800双金属轴承
Bimetallic Self-Lubricating Bearing

| 合金层牌号 Alloy layer of | | CuSn6Zn6Pb3 | CuPb10Sn10 | CuPb24Sn4 | CuSn6.5P0.1 | AlSn20Cu |
|---|---|---|---|---|---|---|
| 表面硬度 HB Surface hardness | | 65-75 | 60-90 | 40-60 | 90-120 | 30-35 |
| 工作温度 ℃ Operating Temperature | | -40—+250 | -40—+250 | -40—+250 | -40—+250 | -40—+150 |
| 导热率 W/(m•k) Thermal conductivity | | 60 | 44 | 60 | 58 | 47 |
| 线膨胀率 α/10-6/℃-1 Coefficient of thermal expansion | | 19.5 | 19 | 18 | 10 | 18 |
| 最大线速（油润滑） Linear Velocity (Lubricating oil) | | 8m / s | 10m / s | 10m / s | 8m / s | 15 m / s |
| 摩擦系数 Friction coefficient | 无润滑 No lubrication | 0.2 | 0.1 | 0.1 | 0.2 | 0.17 |
| | 油润滑 Lubricating oil | 0.02 | 0.05 | 0.05 | 0.06 | 0.04 |
| 动载 N/mm² Dynamic load | | 60 | 150 | 100 | 65 | 75 |
| 静载 N/mm² Static load | | 120 | 250 | 200 | 120 | 100 |
| 加工方式 Processing methods | | 高温烧结 High temperature sintering | 高温烧结 High temperature sintering | 高温烧结 High temperature sintering | 高温烧结 High temperature sintering | 机械辊轧 Mechanical rolling |
| 相配轴 Mating shaft | 硬 度 Hardness | HRC40 | HRC53 | HRC48 | HRC50 | HB250 |
| | 粗糙度 Roughness | < 0.8 | < 0.8 | < 0.8 | < 0.8 | < 0.63 |
| 润滑方式 Lubrication | | 流体或油脂 | 流体或油脂 | 流体或油脂 | 流体或油脂 | 流体或油脂 |

## 内壁材质性能
## Material properties of the inner wall

| | |
|---|---|
| CuPb24Sn4 | 具有较高的疲劳强度和承载能力，抗冲击能力，但由于合金中铅的含量较高且比重较大易产生铅偏析，从而降低轴套的耐磨性的同时也使合金层与钢背的结合强度降低.这种铜层的成本较高.使用于高速、摆动和旋转工资条件下的轴承。 |
| CuPb10Sn10 | 有很高的抗疲劳强度和承载能力较好的润滑性能、耐磨性能和耐蚀性能好，适用于中载、中到高速以及有较大冲击载荷的轴承,机械设备上用的卷制轴承,垫圈 表面压力高，又存在侧压力的滑动轴承，如轧辗、车辆用轴承、双金属轴瓦，以及活塞销套、摩擦片等. |
| CuSn6Zn6Pb3 | 耐磨性和耐蚀性好，易加工，铸造性能和气密性较好,在一般负荷，中等滑动速度下工作的耐磨耐腐蚀零件，如透平机、电动机、压缩机、活塞离合器、连杆衬套、摇臂衬套等,目前用量较大. |
| CuSn6.5P0.1 | 无铅双金属轴承,主要广泛应用于重型车的平衡桥衬套、垫片、内燃机主轴瓦、连杆衬套、摇臂衬套、油泵侧摩擦片、中小功率的内燃机轴瓦、火车发动机轴瓦、空气压力机轴套、制冷机等等。 |
| AlSn20Cu | 具有中等疲劳强度和承载能力，良好的抗腐蚀性能，较好的滑动性能等特点可与软轴配合。 该产品常用作中小功率的内燃机轴瓦、火车发动机轴瓦、空气压缩机轴套，是取代巴氏合金的新颖产品。 |

http://www.chinaanchi.com 邮箱: anchi@chinaanchi.com

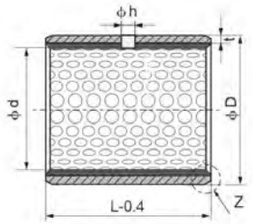
# JF-800 标准公制轴承
## Metric Standard Bushing



JF-800 标准公制轴承
Metric Standard Bushing



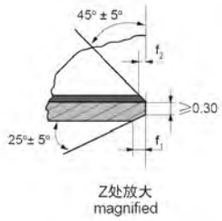








*分割线不能位于承重方向
*Split line must not be located in load direction




Z处放大
magnified

单位unit:mm

| 型号 Type | 外径 ϕD | 内径 ϕd | 相配轴径 尺寸 | 相配轴径 公差 f7 | 相配座孔 尺寸 | 相配座孔 公差 H7 | Hole ϕh | $f_1$ | $f_2$ | L -0.4 15 | 20 | 25 | 30 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JF-800 | 12 | 10 | 10 | -0.013 -0.028 | 12 | +0.018 0 | | | | 1015 | 1020 | | | | |
| JF-800 | 14 | 12 | 12 | -0.016 -0.034 | 14 | +0.018 0 | | | | 1215 | 1220 | | | | |
| JF-800 | 16 | 14 | 14 | -0.016 -0.034 | 16 | +0.018 0 | | | | 1415 | 1420 | | | | |
| JF-800 | 17 | 15 | 15 | -0.016 -0.034 | 17 | +0.018 0 | ϕ4 | 0.6 | 0.3 | 1515 | 1520 | 1525 | | | |
| JF-800 | 18 | 16 | 16 | -0.016 -0.034 | 18 | +0.018 0 | | | | 1615 | 1620 | 1625 | | | |
| JF-800 | 19 | 17 | 17 | -0.016 -0.034 | 19 | +0.021 0 | | | | 1715 | 1720 | 1725 | | | |
| JF-800 | 20 | 18 | 18 | -0.016 -0.034 | 20 | +0.021 0 | | | | 1815 | 1820 | 1825 | | | |
| JF-800 | 23 | 20 | 20 | -0.020 -0.041 | 23 | +0.021 0 | | | | 2015 | 2020 | 2025 | | | |
| JF-800 | 25 | 22 | 22 | -0.020 -0.041 | 25 | +0.021 0 | | | | | 2220 | 2225 | 2230 | | |
| JF-800 | 27 | 24 | 24 | -0.020 -0.041 | 27 | +0.021 0 | | 0.8 | 0.4 | | 2420 | 2425 | 2430 | | |
| JF-800 | 28 | 25 | 25 | -0.020 -0.041 | 28 | +0.021 0 | | | | | 2520 | 2525 | 2530 | | |
| JF-800 | 30 | 26 | 26 | -0.020 -0.041 | 30 | +0.021 0 | | | | | 2620 | 2625 | 2630 | | |
| JF-800 | 32 | 28 | 28 | -0.020 -0.041 | 32 | +0.025 0 | ϕ6 | | | | 2820 | 2825 | 2830 | | |
| JF-800 | 34 | 30 | 30 | -0.020 -0.041 | 34 | +0.025 0 | | | | | 3020 | 3025 | 3030 | | |
| JF-800 | 36 | 32 | 32 | -0.025 -0.050 | 36 | +0.025 0 | | | | | 3220 | 3225 | 3230 | 3240 | |
| JF-800 | 39 | 35 | 35 | -0.025 -0.050 | 39 | +0.025 0 | | 1.2 | 0.6 | | 3520 | 3525 | 3530 | 3540 | |
| JF-800 | 42 | 38 | 38 | -0.025 -0.050 | 42 | +0.025 0 | | | | | 3820 | 3825 | 3830 | 3840 | |
| JF-800 | 44 | 40 | 40 | -0.025 -0.050 | 44 | +0.025 0 | | | | | | 4025 | 4030 | 4040 | |
| JF-800 | 50 | 45 | 45 | -0.025 -0.050 | 50 | +0.025 0 | ϕ8 | | | | | 4525 | 4530 | 4540 | |
| JF-800 | 55 | 50 | 50 | -0.025 -0.050 | 55 | +0.025 0 | | 1.6 | 0.8 | | | | 5030 | 5040 | 5050 |
| JF-800 | 60 | 55 | 55 | -0.030 -0.060 | 60 | +0.030 0 | | | | | | | 5530 | 5540 | 5550 |

Catalog No. — d — L
JF-800 — 15 — 15

单位unit:mm

| 型号 Type | 外径 ϕD | 内径 ϕd | 相配轴径 尺寸 | 相配轴径 公差 f7 | 相配座孔 尺寸 | 相配座孔 公差 H7 | Hole $\phi h_1$ | $f_1$ | $f_2$ | L -0.4 40 | 50 | 60 | 70 | 80 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JF-800 | 65 | 60 | 60 | -0.030 -0.060 | 65 | +0.030 0 | ϕ8 | | | 6040 | 6050 | 6060 | | | |
| JF-800 | 70 | 65 | 65 | -0.030 -0.060 | 70 | +0.030 0 | | | | 6540 | 6550 | 6560 | | | |
| JF-800 | 80 | 75 | 75 | -0.030 -0.060 | 80 | +0.030 0 | | | | 7540 | 7550 | 7560 | | | |
| JF-800 | 85 | 80 | 80 | -0.030 -0.060 | 85 | +0.035 0 | | | | 8040 | 8050 | 8060 | | | |
| JF-800 | 90 | 85 | 85 | -0.036 -0.071 | 90 | +0.035 0 | | | | | 8550 | 8560 | 8570 | | |
| JF-800 | 95 | 90 | 90 | -0.036 -0.071 | 95 | +0.035 0 | | | | | 9050 | 9060 | 9070 | | |
| JF-800 | 100 | 95 | 95 | -0.036 -0.071 | 100 | +0.035 0 | | | | | 9550 | 9560 | 9570 | | |
| JF-800 | 105 | 100 | 100 | -0.036 -0.071 | 105 | +0.035 0 | | | | | 10050 | 10060 | 10070 | | |
| JF-800 | 110 | 105 | 105 | -0.036 -0.071 | 110 | +0.035 0 | | 1.6 | 0.8 | | 10550 | 10560 | 10570 | | |
| JF-800 | 115 | 110 | 110 | -0.036 -0.071 | 115 | +0.035 0 | ϕ9.5 | | | | 11050 | 11060 | 11070 | | |
| JF-800 | 120 | 115 | 115 | -0.036 -0.071 | 120 | +0.035 0 | | | | | | 11560 | 11570 | 11580 | |
| JF-800 | 125 | 120 | 120 | -0.036 -0.071 | 125 | +0.040 0 | | | | | | 12060 | 12070 | 12080 | |
| JF-800 | 130 | 125 | 125 | -0.043 -0.083 | 130 | +0.040 0 | | | | | | 12560 | 12570 | 12580 | |
| JF-800 | 135 | 130 | 130 | -0.043 -0.083 | 135 | +0.040 0 | | | | | | 13060 | 13070 | 13080 | |
| JF-800 | 140 | 135 | 135 | -0.043 -0.083 | 140 | +0.040 0 | | | | | | | | 13580 | 135100 |
| JF-800 | 150 | 145 | 145 | -0.043 -0.083 | 150 | +0.040 0 | | | | | | | | 14580 | 145100 |
| JF-800 | 155 | 150 | 150 | -0.043 -0.083 | 155 | +0.040 0 | | | | | | | | 15080 | 150100 |

# FB-090/092 系列青铜卷制轴承
# Monometallic Self-lubricating Bearing



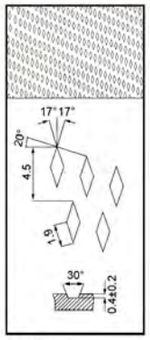
FB-090/092 系列青铜卷制轴承
Monometallic Self-lubricating Bearing



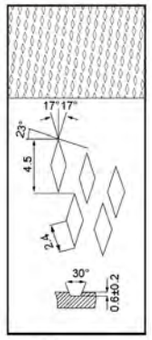
## 材料组织
## Material Structure

采用高密度青铜卷制成形，球形油袋或油穴特殊合成内部表面以减少磨损延长使用时间并且很好的做到防腐功能。

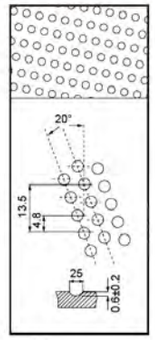
High-density bronze is rolled into shape or oil bags and oil holes are specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.




轴衬套内
Inside the bush of the shaft
菱形油穴r≤φ22
Rhomb oil holes r≤φ22




轴衬套内
Inside the bush of the shaft
菱形油穴r>φ22
Rhomb oil holes r>φ22




形成菱形
Forming a rhomb

## 化学成份
## Chemical Compositions

| 材料 Material | 铜 Cu | 锡 Sn | 磷 P | 铅 Pb | 锌 Zn |
|---|---|---|---|---|---|
| CuSn6.5P0.1 | 93.4 | 6.5 | 0.1 | - | - |

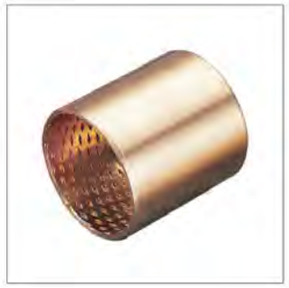
## 物理机械性能
## Physical and Mechanical Performance

| 型号 Type | 密度 Density | 散热热涨 Heat emission and expansion | 热传导 Heat conducting | 硬度 Hardness | 抗压强度 Extensile | 延伸率 Extensile |
|---|---|---|---|---|---|---|
| FB090/092 | 8.8g/cm$^3$ | 18.5×10$^{-6}$×K$^{-1}$ | 58W(m·k) | 90~120HB | 470N/mm$^2$ | 40% |

## 应用范围
## Application scope

此系列轴承广泛应用与农用、建设机械以及工程机械等。
This series of bearing is widely applied to agric ultural, construction and engineering machineries, etc.
油穴类别（依据 DIN1494/ISO3547)。
Categories of oil holes (As per to DIN1494/ISO3547)。





## FB-090 青铜卷制轴承
## Wrapped Bronze Bushing

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。

FB-090 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 | | 2.5m/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℃～+200℃ |
| 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 Chemica 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% |



## FB-092 青铜布孔轴承
## Wrapped Hole Bronze Bushing

该产品CuSn6.5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。

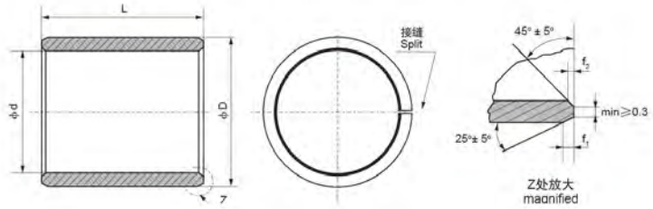
FB-092 Bronze punch hole self-lubricating bearing used CuSn6.5 as base, designed regular oil holes bestrewn working surface, it has high load capacity, well wearing resistance and low friction coefficient, it has been widely applied to transportation machinery, elevator, coiling machinery and agriculture 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 | 110N/mm$^2$ |
| | 动载 Dynamic load | 30N/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 | | 0.08～0.25 |
| 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 |

# FB-090/092 标准公制轴承
## Metric Standard Bushing






单位unit:mm

| 外径 φD | 内径 φd | 相配轴径 Axle 尺寸 | 相配轴径 Axle 公差 f7 | 相配座孔 Housing 尺寸 | 相配座孔 Housing 公差 H7 | $f_1$ | $f_2$ | L±0.25 10 | 15 | 20 | 25 | 30 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 10 | 10 | -0.013 -0.028 | 12 | +0.018 0 | | | 1010 | 1015 | 1020 | | | | |
| 14 | 12 | 12 | -0.016 -0.034 | 14 | +0.018 0 | | | 1210 | 1215 | 1220 | | | | |
| 16 | 14 | 14 | -0.016 -0.034 | 16 | +0.018 0 | | | | 1415 | 1420 | | | | |
| 17 | 15 | 15 | -0.016 -0.034 | 17 | +0.018 0 | 0.6 | 0.3 | | 1515 | 1520 | 1525 | | | |
| 18 | 16 | 16 | -0.016 -0.034 | 18 | +0.018 0 | | | | 1615 | 1620 | 1625 | | | |
| 19 | 17 | 17 | -0.016 -0.034 | 19 | +0.021 0 | | | | 1715 | 1720 | 1725 | | | |
| 20 | 18 | 18 | -0.016 -0.034 | 20 | +0.021 0 | | | | 1815 | 1820 | 1825 | | | |
| 23 | 20 | 20 | -0.020 -0.041 | 23 | +0.021 0 | | | | 2015 | 2020 | 2025 | 2030 | | |
| 25 | 22 | 22 | -0.020 -0.041 | 25 | +0.021 0 | 0.8 | 0.4 | | 2215 | 2220 | 2225 | 2230 | | |
| 27 | 24 | 24 | -0.020 -0.041 | 27 | +0.021 0 | | | | | 2420 | 2425 | 2430 | | |
| 28 | 25 | 25 | -0.020 -0.041 | 28 | +0.021 0 | | | | | 2520 | 2525 | 2530 | | |
| 32 | 28 | 28 | -0.020 -0.041 | 32 | +0.025 0 | | | | | 2820 | 2825 | 2830 | | |
| 34 | 30 | 30 | -0.020 -0.041 | 34 | +0.025 0 | | | | | 3020 | 3025 | 3030 | 3040 | |
| 36 | 32 | 35 | -0.025 -0.050 | 36 | +0.025 0 | 1.2 | 0.6 | | | 3220 | 3225 | 3230 | 3240 | |
| 39 | 35 | 35 | -0.030 -0.060 | 39 | +0.025 0 | | | | | 3520 | 3525 | 3530 | 3540 | |
| 44 | 40 | 40 | -0.025 -0.050 | 44 | +0.025 0 | | | | | 4020 | 4025 | 4030 | 4040 | |
| 50 | 45 | 45 | -0.025 -0.050 | 50 | +0.025 0 | | | | | 4520 | 4525 | 4530 | 4540 | |
| 55 | 50 | 50 | -0.025 -0.050 | 55 | +0.030 0 | | | | | | | 5030 | 5040 | 5050 |
| 60 | 55 | 55 | -0.030 -0.060 | 60 | +0.030 0 | 1.6 | 0.8 | | | | | 5530 | 5540 | 5550 |
| 65 | 60 | 60 | -0.030 -0.060 | 65 | +0.030 0 | | | | | | | 6030 | 6040 | 6050 |
| 70 | 65 | 65 | -0.030 -0.060 | 70 | +0.030 0 | | | | | | | 6530 | 6540 | 6550 |
| 75 | 70 | 70 | -0.030 -0.060 | 75 | +0.030 0 | | | | | | | 7030 | 7040 | 7050 |

Catalog No. — d — L
FB-090 — 15 — 15



FB-090/092 标准公制轴承
Metric Standard Bushing

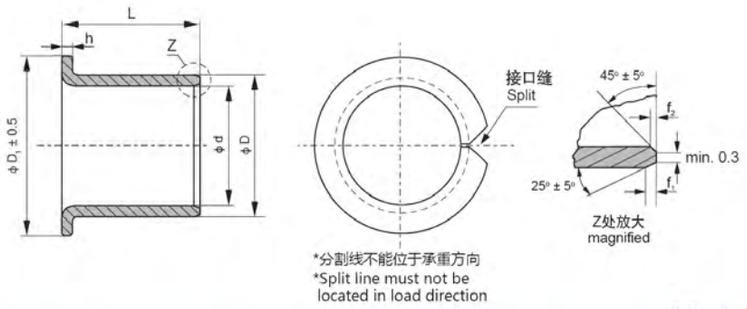


单位unit:mm

| 外径 φD | 内径 φd | 相配轴径 Axle 尺寸 | 相配轴径 Axle 公差 f7 | 相配座孔 Housing 尺寸 | 相配座孔 Housing 公差 H7 | $f_1$ | $f_2$ | L±0.25 30 | 40 | 50 | 60 | 80 | 100 | 120 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | 70 | 70 | -0.030 -0.060 | 75 | +0.030 0 | | | 7030 | 7040 | 7050 | | | | |
| 80 | 75 | 75 | -0.030 -0.060 | 80 | +0.030 0 | | | | 7540 | 7550 | 7560 | | | |
| 85 | 80 | 80 | -0.030 -0.060 | 85 | +0.035 0 | | | | 8040 | 8050 | 8060 | | | |
| 90 | 85 | 85 | -0.036 -0.071 | 90 | +0.035 0 | | | | 8540 | 8550 | 8560 | | | |
| 95 | 90 | 90 | -0.036 -0.071 | 95 | +0.035 0 | | | | | 9050 | 9560 | 9580 | | |
| 100 | 95 | 95 | -0.036 -0.071 | 100 | +0.035 0 | | | | | 9550 | 9560 | 9580 | | |
| 105 | 100 | 100 | -0.036 -0.071 | 105 | +0.035 0 | | | | | 10050 | 10060 | 10080 | 100100 | |
| 110 | 105 | 105 | -0.036 -0.071 | 110 | +0.035 0 | | | | | 10550 | 10560 | 10580 | 105100 | |
| 115 | 110 | 110 | -0.036 -0.071 | 115 | +0.035 0 | | | | | 11050 | 11060 | 11080 | 110100 | |
| 120 | 115 | 115 | -0.036 -0.071 | 120 | +0.035 0 | | | | | 11550 | 11560 | 11580 | 115100 | |
| 125 | 120 | 120 | -0.036 -0.071 | 125 | +0.040 0 | | | | | | 12060 | 12080 | 12100 | |
| 130 | 125 | 125 | -0.043 -0.083 | 130 | +0.040 0 | | | | | | 12560 | 12580 | 125100 | |
| 135 | 130 | 130 | -0.043 -0.083 | 135 | +0.040 0 | | | | | | 13060 | 13080 | 130100 | |
| 140 | 135 | 135 | -0.043 -0.083 | 140 | +0.040 0 | | | | | | 13560 | 13580 | 135100 | |
| 145 | 140 | 140 | -0.043 -0.083 | 145 | +0.040 0 | 1.6 | 0.8 | | | | 14060 | 14080 | 140100 | |
| 150 | 145 | 145 | -0.043 -0.083 | 150 | +0.040 0 | | | | | | 14560 | 14580 | 145100 | |
| 160 | 155 | 155 | -0.043 -0.083 | 160 | +0.040 0 | | | | | | | 15580 | 155100 | 155120 |
| 170 | 165 | 165 | -0.043 -0.083 | 170 | +0.040 0 | | | | | | | 16580 | 165100 | 165120 |
| 180 | 175 | 175 | -0.043 -0.083 | 180 | +0.040 0 | | | | | | | 17580 | 175100 | 175120 |
| 190 | 185 | 185 | -0.050 -0.096 | 190 | +0.046 0 | | | | | | | 18580 | 185100 | 185120 |
| 200 | 195 | 195 | -0.050 -0.096 | 200 | +0.046 0 | | | | | | | 19580 | 195100 | 195120 |
| 210 | 205 | 205 | -0.050 -0.096 | 210 | +0.046 0 | | | | | | | 20580 | 205100 | 205120 |
| 220 | 215 | 215 | -0.050 -0.096 | 220 | +0.046 0 | | | | | | | 21580 | 215100 | 215120 |
| 230 | 225 | 225 | -0.050 -0.096 | 230 | +0.046 0 | | | | | | | 22580 | 225100 | 225120 |
| 240 | 235 | 235 | -0.050 -0.096 | 240 | +0.046 0 | | | | | | | 23580 | 235100 | 235120 |
| 250 | 245 | 245 | -0.050 -0.096 | 250 | +0.046 0 | | | | | | | 24580 | 245100 | 245120 |
| 265 | 260 | 260 | -0.056 -0.108 | 265 | +0.052 0 | | | | | | | 26080 | 260100 | 260120 |
| 285 | 280 | 280 | -0.056 -0.108 | 285 | +0.052 0 | | | | | | | 28080 | 280100 | 280120 |
| 305 | 300 | 300 | -0.056 -0.108 | 305 | +0.052 0 | | | | | | | 30080 | 300100 | 300120 |

# FB-090F/092F 青铜卷制翻边轴承
## Wrapped Bronze Flanged Bushing






单位unit:mm

| 内径 φd | 外径 φD | 法兰外径 φD1 ± 0.5 | 法兰壁厚 h | 高度 L ± 0.25 | f1 | f2 | 相配轴径 Axle 尺寸 | 相配轴径 Axle 公差 f7 | 相配座孔 Housing 尺寸 | 相配座孔 Housing 公差 H7 |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 28 | 35 | 1.5 | 20 | 0.8 | 0.4 | 25 | -0.020<br>-0.041 | 28 | +0.021<br>0 |
| | | | | 25 | | | | | | |
| 30 | 34 | 45 | | 20 | | | 30 | -0.020<br>-0.041 | 34 | +0.025<br>0 |
| | | | | 25 | | | | | | |
| | | | | 30 | | | | | | |
| 35 | 39 | 50 | 2.0 | 30 | 1.2 | 0.6 | 35 | -0.025<br>-0.050 | 39 | +0.025<br>0 |
| | | | | 40 | | | | | | |
| | | | | 50 | | | | | | |
| 40 | 44 | 55 | | 30 | | | 40 | -0.025<br>-0.050 | 44 | +0.025<br>0 |
| | | | | 40 | | | | | | |
| | | | | 50 | | | | | | |
| 50 | 55 | 65 | | 30 | | | 50 | -0.025<br>-0.050 | 55 | +0.030<br>0 |
| | | | | 40 | | | | | | |
| | | | | 50 | | | | | | |
| 55 | 60 | 70 | | 30 | | | 55 | -0.030<br>-0.060 | 60 | +0.030<br>0 |
| | | | | 40 | | | | | | |
| | | | | 50 | | | | | | |
| 60 | 65 | 75 | | 40 | | | 60 | -0.030<br>-0.060 | 65 | +0.030<br>0 |
| | | | | 50 | | | | | | |
| | | | | 60 | | | | | | |
| 80 | 85 | 100 | 2.5 | 50 | 1.6 | 0.8 | 80 | -0.030<br>-0.060 | 85 | +0.035<br>0 |
| | | | | 60 | | | | | | |
| | | | | 80 | | | | | | |
| 100 | 105 | 120 | | 50 | | | 100 | -0.036<br>-0.071 | 105 | +0.035<br>0 |
| | | | | 60 | | | | | | |
| | | | | 80 | | | | | | |
| 160 | 165 | 190 | | 60 | | | 160 | -0.043<br>-0.083 | 165 | +0.040<br>0 |
| | | | | 80 | | | | | | |
| 200 | 205 | 235 | | 60 | | | 200 | -0.050<br>-0.096 | 205 | +0.046<br>0 |
| | | | | 80 | | | | | | |

Catalog No. — d — L
FB-090F — 25 — 20



# FB-90G 固体镶嵌青铜卷制轴承
## Solid inlaid bronze rolling bearing



### 基材特性
### Material Features

与FB-090具有相同的生产工艺及使用场合，但在其菱形油穴内填充了以石墨为主的固体润滑剂，使产品在起始运用阶段及过程中能有更低的摩擦系数，在短时间断油的情况下仍能保持良好的工作状态。因此被广泛使用在工程机械、齿轮箱传动部件、汽机车离合器等高载中速部位。

These are similar to the FB-090 range,except there are solid lubricants embedded into the diamond shaped lubrication indents on the bearing surface,which provide good lubrication conditions at the start up stage, even with a lack of oil.It can be used in construction machinery,gear boxes,automotive clutch parts etc.

### 技术参数:
### Technical Data

| 性能指标 Performance index | | 数据 Data |
|---|---|---|
| 最大承载 Max.Load | 静承载Static | 120N/mm² |
| | 动承载Dynamic | 40N/mm² |
| 最高线速度（润滑）Max.Speed(Lubrication) | | 2.5m/s |
| 最大PV Max.PV | | 2.8N/mm²*m/s |
| 抗拉强度 Tensile strength | | 450N/mm² |
| 硬度 Hardness | | HB > 110 |
| 延伸率Elongation | | 40% |
| 使用温度Temp. | | -100℃ ~ +200℃ |
| 摩擦系数Friction coefficient | | 0.05 ~ 0.25 |
| 导热系数Thermal conductivity | | 58W(m*k)⁻¹ |
| 热膨胀系数Coef.of thermal expansion | | 18.5*10⁻⁶K⁻¹ |



## FU-1 铜基含油粉末冶金轴承
## Sintered Bronze Bushing

FU-1铜基含油轴承,是以锡青铜粉末为原料，经过模具压制， 在高温中烧结后整形而成。它的基体有细微、均布的孔隙，经润滑油真空浸渍后形成含油状态。该产品具有短期不加油润滑，使用成本低，内外径尺寸可变化等特点，适应于中速、低载荷的场所使用。产品已广泛应用于家用电机、电动工具、纺织机械、化工机械、汽车工业和办公设备等场合。

FU-1 sintered bronze bushing powder is mold pressed under high pressure and then sintered under high temperature, and oil is soaked into the homogeneously spreaded tiny pores of the metal under vacuum. Fu bearing can withstand dry condition in medium speed and low load for sometime. Moreover it is cheap and stable in dimension. This is widely used in domestic electric and electronic machines, electric tools, textile machines, chemical engineering machines, automobiles and official business machines.

| 技术参数：Technical Data | |
|---|---|
| 性能指标 Performance Index | 有关数据 Data |
| 最大承载压力 P Max Load Capacity P | 45N/mm$^2$ |
| 工作温度 Working Temperature | -60℃~+160℃ |
| 最高滑动速度 Max.Sliding Speed V | 2.5m/s |
| 材质 Material | CuSn6-6-3 |
| 允许最高PV值 Maximum PV Value | 2.45N/mm$^2$·m/s |



## FU-2 铁基含油粉末冶金轴承
## Sintered Iron Bushing

FU-2铁基含油轴承，是一种铁基粉末冶金产品，由于含油的作用，可以防止咬轴现象。在低载荷的情况下，可以有与铜粉末冶金相似的耐磨性能。该产品广泛应用于纺织机械、汽车、摩托车减震器和电动工具的滑动部位。在静态使用的环境下可用作导向定位轴套的基座.

FU-2 sintered iron power bearing, it can avoid seizing shaft due to the oil content in the bushing. Same as bronze power bushings, FU-2 bushing has good performance of anti-friction if it works under low load. It can be widely used in sliding part of textile machines, electric tools, shock absorbers of automobile and motorcycle. Under static condition, it can be used as base housing for guiding and fixing position.

| 技术参数：Technical Data | |
|---|---|
| 性能指标 Performance Index | 有关数据 Data |
| 最大承载压力 P Max Load Capacity P | 45N/mm$^2$ |
| 工作温度 Working Temperature | -60℃~+160℃ |
| 最高滑动速度 Max.Sliding Speed V | 2.5m/s |
| 材质 Material | Fe |
| 允许最高PV值 Maximum PV Value | 1.6N/mm$^2$·m/s |







## FU-3 铜铁合基含油粉末冶金轴承
## Sintered Bronze-Iron Bushing

FU-3铜铁含油轴承，是一种集FU-1和FU-2合而为一的粉末冶金产品，其Fe与Cu的配比完全可以按顾客的使用要求而确定，既考虑满足生产条件，又考虑降低成本，是机械零部件中，满足顾客个性化需求最理想的专用产品。

FU-3 sintered bronze & iron bearing has advantages of FU-1 and FU-2. The proportion of iron and bronze can be decided by customers' actual application. The bushing is of low cost but it can satisfy customers' variety requirement better.

| 技术参数：Technical Data | |
|---|---|
| 性能指标 Performance Index | 有关数据 Data |
| 最大承载压力 P<br>Max Load Capacity P | 45N/mm$^2$ |
| 工作温度<br>Working Temperature | -60℃~+160℃ |
| 最高滑动速度<br>Max.Sliding Speed V | 2.5m/s |
| 材质<br>Material | Cu+Fe |
| 允许最高PV值<br>Maximum PV Value | 1.8N/mm$^2$·m/s |



## FR 四氟软带轴承
## PTFE Soft Strips

该产品以青铜丝网为基体，通过特殊工艺，表面轧制聚四氟乙烯和亲油性纤维。它具有较低的摩擦系数、较好的耐磨性以及柔软性好。产品广泛应用于纺织机械关节轴承、汽车门铰链、汽车操纵杆等场合。

FR Bronze Pb-free self-lubricating bearing uses bronze mesh as its structure, by means of special technology, rolled by PTFE at the surface and lipophilicity fiber. It performs well with lower friction and well anti-wear good pliability. It has been widely used in linkage of textile machinery, tailgate hinges, automotive steering and so on.

| 技术参数：Technical Data | | |
|---|---|---|
| 性能指标 Performance index | | 数据 Data |
| 最大承载 P<br>Max Load Capacity | 静载 Static load | 80N/mm$^2$ |
| | 动载 Dynamic load | 40N/mm$^2$ |
| 最高线速度 V<br>Max Sliding Speed | 干摩擦 Dry friction | 0.5m/s |
| | 油润滑 Oil lubrication | 2.5m/s |
| 最高PV值 Max PV Value Limit | | 1.6N/mm$^2$·m/s |
| 摩擦系数 μ Friction coefficient | | 0.03~0.20 |
| 使用温度 Working temperature | | -50℃ ~ +250℃ |

# FZ 保持架系列
# FZ Keep Series





## FZH 铜基钢球保持架
## Bronze Ball Retainer

该产品以铜基，配以优质钢球，按一定的角度和密度有序地排列，采用特殊工艺加工而成。产品适用于冷冲模具，精密机床等。

The basement of this product is copper. With the high quality roller being arranged orderly in certain angle and density, it is produced by special workmanship. This kind of products is used in punching mold and high-precision machine tools.

技术参数：Technical Data

| | | | |
|---|---|---|---|
| 最大承载压力<br>The maximum load | 30N/mm² | 装配过盈<br>Assembly interference | 0.01mm~0.02mm |



## FZL 铝基钢球保持架
## Aluminium Ball Retainer

该产品以铝基为基体，配以优质钢球，按一定的角度和密度有序地排列，采用特殊工艺加工而成。产品适用于冷冲模具，精密机床等。

The basement of this product is aluminum. With the high quality roller being arranged orderly in certain angle and density, it is produced by special workmanship. This kind of products is used in punching mold and high-precision machine tools.

技术参数：Technical Data

| | | | |
|---|---|---|---|
| 最大承载压力<br>The maximum load | 25N/mm² | 装配过盈<br>Assembly interference | 0.01mm~0.02mm |



## FZP 树脂基钢球保持架
## Resin Ball Retainer

该产品以POM为基体，配以优质钢球，按一定的角度和密度有序地排列，采用特殊工艺加工而成。产品适用于冷冲模具，精密机床等。

The basement of this product is POM. With the high quality roller being arranged orderly in certain angle and density, it is produced by special workmanship. This kind of products is used in punching mold and high-precision machine tools.

技术参数：Technical Data

| | | | |
|---|---|---|---|
| 最大承载压力<br>The maximum load | 20N/mm² | 装配过盈<br>Assembly interference | 0.01mm~0.02mm |

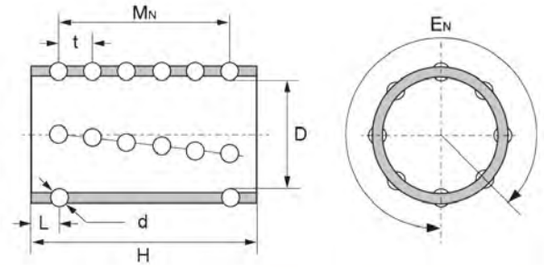
球状误差和表面粗糙度：Error and the spherical surface roughnessData　　单位：μm

| 等级<br>Grade | 球直径变动量<br>$V_{DWS}$(max) | 球形误差<br>max | 表面粗糙度<br>$R_a$(max) |
|---|---|---|---|
| G10 | 0.25 | 0.25 | 0.020 |
| G16 | 0.4 | 0.4 | 0.025 |
| G20 | 0.5 | 0.5 | 0.032 |



# FZ 钢球保持架标准尺寸
# Ball Retainer Standard Metric Sizes





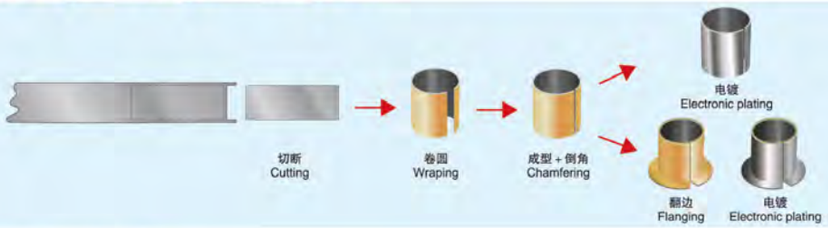

单位Unit: mm

| 型号规格<br>Designation | ϕD | H | ϕd | $E_N$ | $M_N$ | 钢球数量<br>Balls | t | L |
|---|---|---|---|---|---|---|---|---|
| FZ □ 1950 | 19 | 50 | 3 | 12 | 8 | 96 | 5.5 | 5.75 |
| FZ □ 1960 | | 60 | | | 10 | 120 | | 5.25 |
| FZ □ 2050 | 20 | 50 | | | 8 | 96 | | 5.75 |
| FZ □ 2060 | | 60 | | | 10 | 120 | | 5.25 |
| FZ □ 2250 | 22 | 50 | | 14 | 8 | 112 | | 5.75 |
| FZ □ 2260 | | 60 | | | 10 | 140 | | 5.25 |
| FZ □ 2360 | 23 | 60 | | | 10 | 140 | | 5.25 |
| FZ □ 2475 | 24 | 75 | | 16 | 13 | 208 | 5.45 | 4.80 |
| FZ □ 2550 | 25 | 50 | | | 8 | 128 | 5.5 | 5.75 |
| FZ □ 2560 | | 60 | | | 10 | 160 | | 5.25 |
| FZ □ 2775 | 27 | 75 | | | 13 | 208 | 5.45 | 4.80 |
| FZ □ 2860 | 28 | 60 | 4 | 14 | 8 | 112 | 6.5 | 7.25 |
| FZ □ 2875 | | 75 | | | 11 | 154 | | 5.0 |
| FZ □ 3060 | 30 | 60 | | | 8 | 112 | | 7.25 |
| FZ □ 3075 | | 75 | | | 11 | 154 | | 5.0 |
| FZ □ 3260 | 32 | 60 | | 16 | 8 | 128 | | 7.25 |
| FZ □ 3275 | | 75 | | | 11 | 176 | | 5.0 |
| FZ □ 3685 | 36 | 85 | | | 12 | 192 | | 6.75 |
| FZ □ 3690 | | 90 | | | 13 | 208 | | 6.0 |
| FZ □ 3870 | 38 | 70 | 5 | | 8 | 128 | 8.0 | 7.0 |
| FZ □ 3890 | | 90 | | | 11 | 176 | 7.9 | 5.5 |
| FZ □ 4090 | 40 | 90 | | | 11 | 176 | | 5.5 |
| FZ □ 4590 | 45 | 90 | | 18 | 11 | 195 | | 5.5 |
| FZ □ 45110 | | 110 | | | 13 | 234 | 8.0 | 7.0 |
| FZ □ 5090 | 50 | 90 | | 20 | 11 | 220 | 7.9 | 5.5 |
| FZ □ 50110 | | 110 | | | 13 | 260 | 8.0 | 7.0 |
| FZ □ 6090 | 60 | 90 | | 22 | 11 | 242 | 7.9 | 5.5 |
| FZ □ 60110 | | 110 | | | 13 | 286 | 8.0 | 7.0 |
| FZ □ 80130 | 80 | 130 | | 28 | 15 | 420 | | 9.0 |

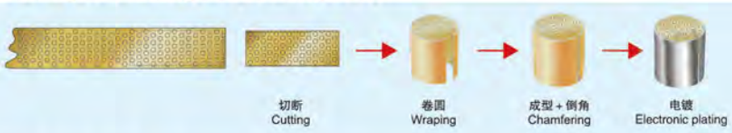
Catalog No. — d — D — H
FZH1950 — 3 — 19 — 50

# 工艺流程
# Process

## SF-1 系列直缝轴承加工工艺流程
## SF-1 Series Straight Bushing Processing Flow



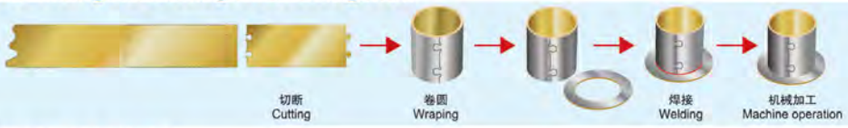

## SF-2 系列轴承加工工艺流程
## SF-2 Series Straight Bushing Processing Flow



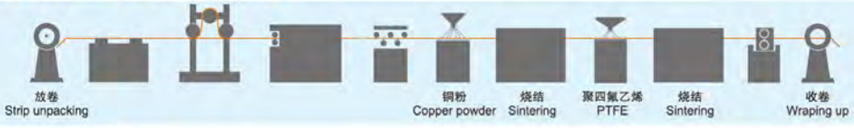

## JF-800 系列轴承加工工艺流程
## JF-800 Series Bushing Processing Flow



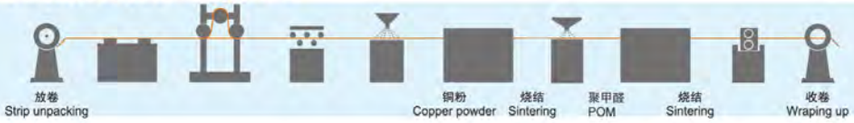

## JF-800 系列法兰轴承加工工艺流程
## JF-800 Series Flanged Bushing Processing Flow




## SF-1 系列材料加工工艺流程
## SF-1 Series Material Processing Flow




## SF-2 系列材料加工工艺流程
## SF-2 Series Material Processing Flow






# 轴套的检验方式
# The Inspection Way. Sleeves



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）:

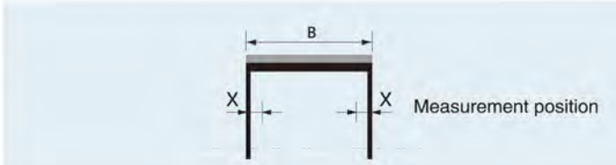
检验内径，轴承压入环规，塞规通端通过用较小力，塞规止端通不过用力最大不超过250N。
To check the inner diameter, the bush is to be press into a ring gauge. The GO plug gauge shall be inserted by a minimum effort. The NOGO Plug gauge shall not be insert by mutual pressure (maximum force 250N )

(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≤15 | B/2 | 1 |
| 15＜B≤50 | 4 | 2 |
| 50＜B≤90 | 6 and B/2 | 3 |
| B＞90 | 8 and B/2 | 3 |

# 钢背复合衬套的使用特性
# The use of the steel back of composite liner features

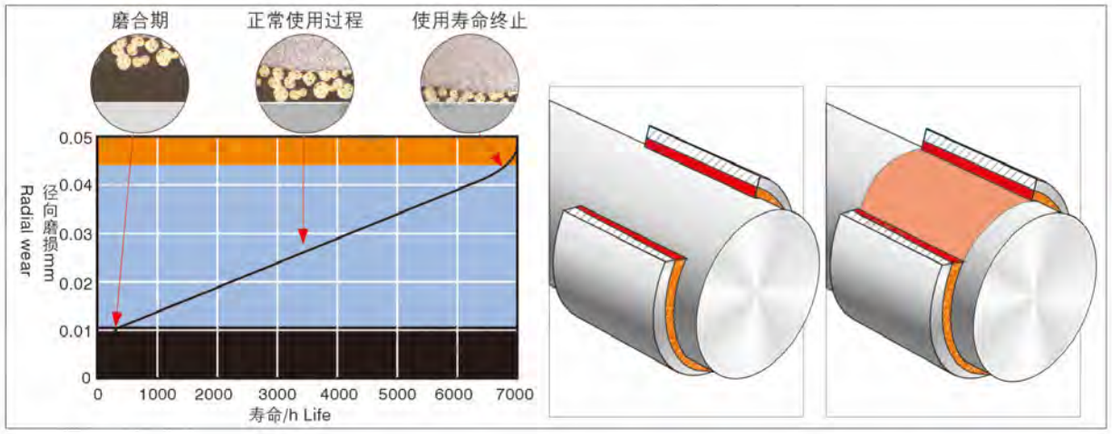


钢背复合衬套的使用特性
The use of the steel back of composite liner features

## 材料特性 Material properties

PTFE的优点是摩察系数小，但不足之处是抹茶系数取决于滑动速度，同时热导性能差、热膨胀系数大、耐磨性和抗蠕变性能差；ANCHI生产的以优质金属为基体中间烧结铜粉层表面覆着以PTFE为主添加了各种填充材料如玻璃纤维、石墨及MoS2等的轴承材料从根本上改进了PTFE的力学强度低、导热率与蠕变性差、导热系数大及耐磨性差等缺陷，组合成了一种较为合理的干摩擦材料。这种轴承材料在起始磨合过程中PTFE耐磨材料会迅速转移到对偶条件并与之产生物理结合形成一层固体薄膜，它和轴承材料上的薄表面层一样，在轴承的整个使用寿命期间都是始终存在的；这层固体保护膜隔断了对偶条件与轴承之间的直接接触，降低了磨损率延长了轴承的使用寿命。

PTFE has the advantage of frictional coefficient was small, but the downside is matcha coefficient depends on the sliding velocity, and poor thermal conductivity performance, large thermal expansion coefficient, abrasion resistance and creep resistance is poor; The ANCHI sintering production of high-quality metal matrix surface covered with copper powder layer is given priority to with PTFE added all kinds of packing materials such as glass fiber, graphite and MoS2 bearing materials such as fundamentally improved the low mechanical strength, thermal conductivity of PTFE with poor creep, large thermal conductivity and wear some shortcomings, combination has become a relatively reasonable dry friction material. This bearing material in the process of starting running in PTFE wear-resistant materials and quickly moved to the dual conditions, and the resulting physical form a layer of solid film, as well as a thin surface layer on it and bearing material, during the the whole service life of bearing is always there; The solid layer protective film partition dual conditions with direct contact between bearing, reduce the wear rate to extend the service life of the bearing.




## 磨合期 Period

磨合期过后，磨损速率会减少到最小值，而随之铜粉层裸露面积也会逐渐增加。
After the period, the wear rate will be reduced to the minimum, and then exposed area of copper powder layer will increase gradually.

## 有效使用寿命的50% 50% of the effective service life

在正常工作条件下，PTFE混合物会迅速转移到对偶件表面并与之产生物理结合，即初期磨损大约为0.015mm，这时轴承的摩擦表面露出的青铜面积大约在10%，而多余的PTFE混合物以细片装颗粒脱落。

Under normal working conditions, and on the surface of the PTFE mixture will move quickly to the dual, and the resulting physical union, namely the early wear and tear is about 0.015 mm, then the bearing friction surface with bronze area of about 10%, whereas the redundant PTFE mixture to fritter particles fall off.

## 使用寿命终止 The service life of the termination

随着摩擦表面显露出的青铜基体的面积越来越大，磨损率增大，这时轴承的使用寿命就接近末期了；在这个阶段，显露出的青铜基体的面积至少占轴承表面面积的70%，径向磨损率约为0.06mm。

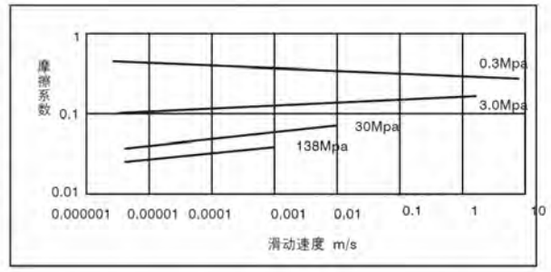
As the area of the friction surface show bronze substrates is more and more big, the wear rate increases, then the service life of bearing is close to the end; At this stage, showing the area of the bronze substrates for at least 70% of the bearing surface area, the radial wear rate of about 0.06 mm.




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## 摩擦性能 The friction performance

PTFE基轴承一般没有“粘-滑”现象，摩擦表面滑动平稳；轴承的摩擦系数与承载、滑动速度、对偶件的表面粗糙度以及工作温度等有关，图示为轴承在干摩擦条件下磨合期过后的摩擦系数，实际工作实际可根据工况波动±20%，而在磨合期时摩擦系数可能高于50%以上。
PTFE base bearing generally no phenomenon of "sticky - slide, slide friction surface smooth; Bearing friction coefficient and load, sliding velocity, surface roughness and the working temperature of duality, graphic for the bearing under the condition of dry friction the friction coefficient after the period, the actual work according to the actual working condition of fluctuation plus or minus 20%, while in the period when the coefficient of friction may be higher than 50%.




除了滑动速度和额定负荷外，对偶条件表面粗糙度和环境温度也会影响到摩擦系数。
Except the rated load and sliding speed, the dual conditions of surface roughness and temperature can also affect the friction coefficient.

## 轴承性能 Bearing performance

当设计轴承尺寸和产品使用寿命时主要考虑的因数为：

| | |
|---|---|
| 实际的轴承P | The actual bearing P |
| 线速度V | Linear velocity V |
| PV值 | PV value |
| 对偶条件材料及表面粗糙度 | Dual conditions of materials and surface roughness |
| 环境温度 | The environment temperature |
| 滑动条件 | Sliding conditions |
| 安装方法 | Installation method |
| 以及其他环境因素比如：湿度、粉尘、密封条件、腐蚀等等。 | And other environmental factors such as humidity, dust, corrosion, sealing conditions and so on. |

When design the service life of the bearing size and product main consideration factor for:

## 实际载荷P The actual load P

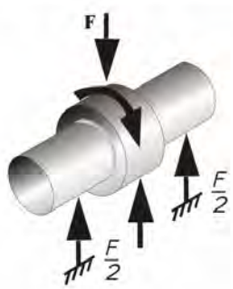
是工作载荷除以轴承的投影面积得到的其单位为Mpa。

Is divided by the load bearing of the projection area of the unit for the Mpa.

负荷的类型：




静负荷，轴套静止，轴承转




静负荷，轴套静止，轴承转

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# 钢背复合衬套的使用特性
# The use of the steel back of composite liner features

PTFE基负荷材料实际载荷建议不要大于表中数据所列的值

PTFE material base load the actual load is not recommended is greater than the value of the data listed in the table

| 负荷类别<br>Load category | 推荐比压极限值<br>Mpa Recommend specific pressure limit Mpa |
|---|---|
| 静负荷下，很慢的转动场合（低于0.1m/mm）<br>Under static load, slow the rotation of the occasion (less than 0.1 m/mm) | 140 |
| 回转和摆动场合，负荷对于轴承表面时静止的<br>For rotary and oscillating occasions, load bearing surface static | 50 |
| 变动的负荷长时间使用<br>The changes of load for a long time use | 14 |

## 线速度V Linear velocity V

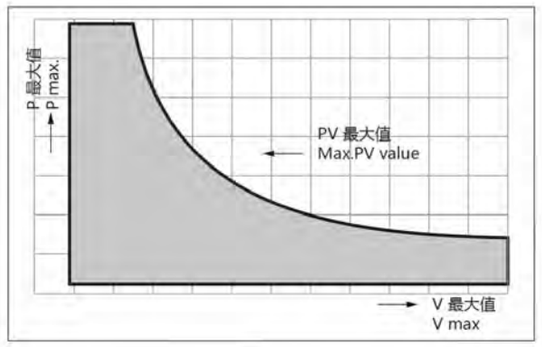
发热主要是轴承表面的摩擦引起，根据实验我们得知线速度对于轴承表面的温升超过表面负荷对齐的影响，在相同的PV值情况下，较高的线速度会引起更高的温度。为了获得更好的耐磨性，建议轴承在设计时应通过油润滑来降低摩擦系数，一方面可以带走轴承表面由于摩擦而产生的热量同时可以有效的起到润滑作用。

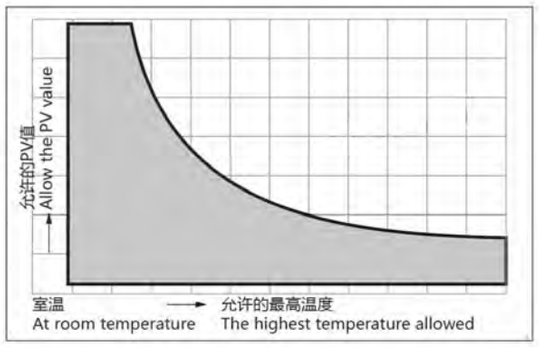
Fever is mainly on the surface of the bearing friction, we learn that linear velocity according to the experiment on the bearing temperature rise on the surface of the alignment over surface load, under the condition of the same PV value, high linear velocity can lead to higher temperatures. In order to obtain better resistance to wear, it is recommended that the bearing should be through the oil lubrication when the design to reduce the friction coefficient, on the one hand can take away the heat generated by the bearing surface due to friction and lubrication can be effective.

## PV系数 Coefficient of PV

PV是指轴承在一定的承载和线速度条件下的乘积，PV值与轴承的使用寿命成反比例关系；我们建议尽可能的设计小的PV值以延长轴承的使用寿命，当然在设计时更要考虑不同材料在承载、线速度、使用温度等极限值并尽可能的最小。样本所颁布的PV值是指轴旋转径向受力的情况下所能够达到的极限值，在许多情况下工程师需要考虑许多实际其它因素，比如环境温度。对偶件等等。

PV is refers to the bearing under the certain condition of the bearing and linear velocity of the product, the service life of PV value and bearing inversely proportional relationship; We suggest that as far as possible the design of small PV value in order to prolong the service life of bearing, of course more to consider in the design of different materials used in bearing, linear velocity, temperature and so on limit and the minimum as much as possible. Sample promulgated by PV value refers to the axis of rotation under the condition of the radial stress can reach the limit value, in many cases, engineers need to consider many other factors, actually, such as environmental temperature. Dual pieces and so on.





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钢背复合衬套的使用特性
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由多种材料包括不锈钢、镀硬铬的钢、硬质阳极氧化铝等制作的轴对PTFE基轴承都可以适用。建议负荷小于49Mpa时要求轴表面硬度＞HB120，粗糙度＜0.8a，当负荷大于49Mpa时轴表面硬度＞HRC50，粗糙度Ra0.4～0.6,而采用不锈钢或者镀硬铬的轴时，轴承的使用寿命可以延长一倍，但此时轴的粗糙度建议在Ra0.4以内。对轴表面进行碾磨后应该去除表面的磨粒，而碾磨加工的方向建议与轴承相对于对磨件运行的方向一致。

By a variety of materials including stainless steel, hard chrome plated steel, hard anodic alumina production shaft of PTFE base bearing can apply. Suggest shaft surface hardness requirement when load is less than 49 mpa ＞ HB120, roughness of ＜ 0.8 a, when the load is greater than 49 mpa shaft surface hardness ＞ HRC50, roughness Ra0.4 ～ 0.6, and using the axis of the stainless steel or hard chrome plating, the service life of bearing can extend one times, but at the moment, the roughness of the shaft proposal within Ra0.4. Of the shaft surface should remove surface after grinding of abrasive, and the direction of the milling suggestion and bearing relative to the ground a run in the same direction.

## 环境温度 The environment temperature

环境温度对于轴承的使用寿命有很大的影响，在干摩擦条件下，轴承摩擦表面产生的摩擦热取决于PV值的情况，在PV因素给定的情况下，轴承的工作温度取决于周围环境温度、轴承座和对磨件表面的散热情况。

Ambient temperature for the service life of bearing has a great influence, under the condition of dry friction, bearing friction surface depend on the condition of the PV value, the friction heat in PV factors in a given situation, the working temperature of bearing depends on the ambient temperature, bearing seat, and on the grinding surface heat loss.

## 润滑 Lubrication

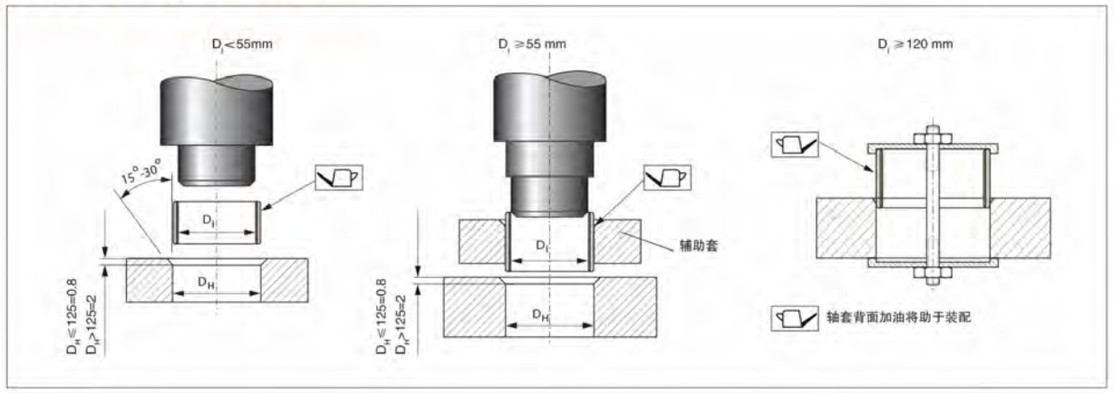
虽然PTFE基轴承时设计用于干摩擦工况下使用，但在润滑条件下更能表现出优越的性能，PTFE基轴承可在大多数润滑剂内使用：水、润滑油、机械齿轮油、冷冻剂等等，总的来说，只要对轴承的PTFE耐磨层、合金层不起化学腐蚀的一般都可以使用，如果对此有疑问可以将轴承在室温下浸泡一周的时间观察期变化，如果壁厚有明显的变化、轴承表面起了明兴的变化或发生颜色的差异、铜粉层在微观上有明显变化的则表面轴承不适合在此工况下使用。

Although PTFE base bearing designed for use under dry friction condition, but under the condition of lubrication performance more superior performance, PTFE base bearing can be used in most of the lubricant, water, lubricating oil, machinery, gear oil, coolant, etc., in general, as long as the PTFE wear-resisting layer, of bearing alloy layer not chemical etching can be used commonly, if there are questions about bearing can be soaked a week observation period at room temperature change, if there is a obvious change wall thickness, the change of bearing surface up Ming xing or color difference, copper powder layer on the micro has obvious change of the surface of bearing is not suitable for use in this condition.

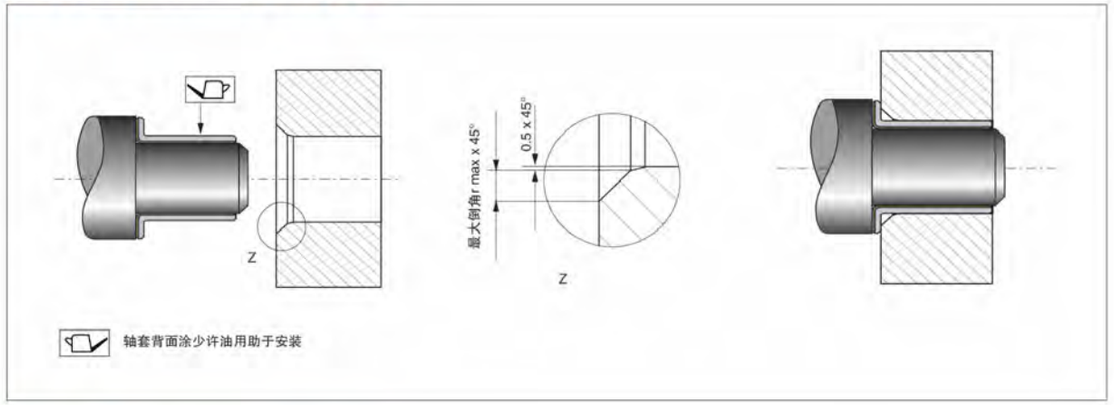
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# 卷制轴承的安装
# The installation of rolling bearings class

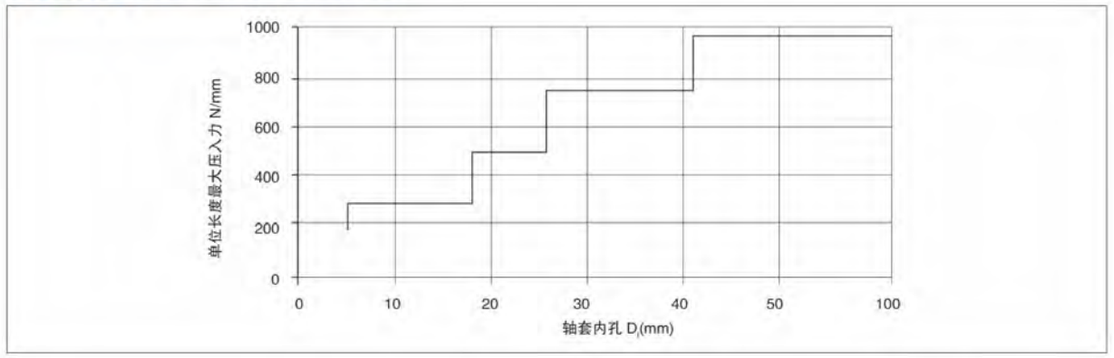
## 直套安装 Straight sets to install




## 翻边套安装 Installation flange set




## 压入力计算 Indentation Calculation





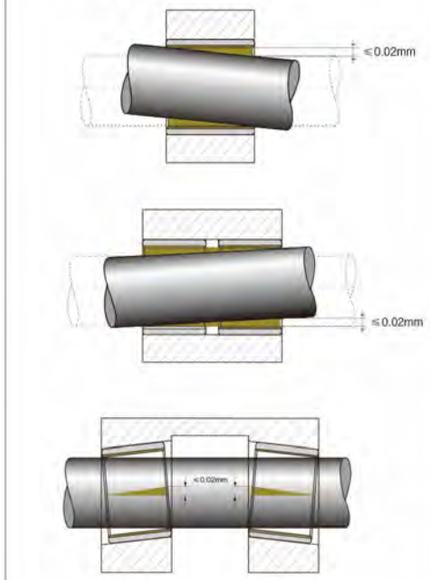

# 轴承的安装
# Bearing installation

## 同轴度 Concentricity

精确的同轴度对于轴承的正常使用非常重要， 要求轴套在一个或者两个长度内的不同轴度以及在翻边或止推片直径内的不同轴度控制在0.02mm内。

Degree of precision coaxial bearing the normal use for a very important requirement sleeve length in one or two degrees of the different axes and in the flange or thrust washer diameter of the different degree of control shaft within 0.02mm.

同轴度要求
Concentricity requirements

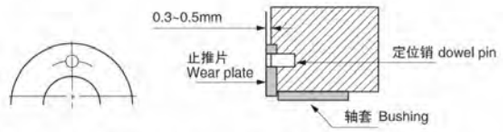



## 垫片和滑板的安装
## Gasket and slide installation

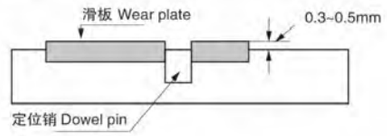
建议垫片和滑板安装在凹陷的座孔内， 为了避免移动，同时建议采用定位销加以固定。

Recommended installation of gaskets and slide the bracket hole in the Depression, in order to avoid the move, also proposed to be fixed with pins.

1. 定位销在垫片上的使用 Pins used on the gasket




2. 定位销在滑板上的使用 Pins in the slide with the use



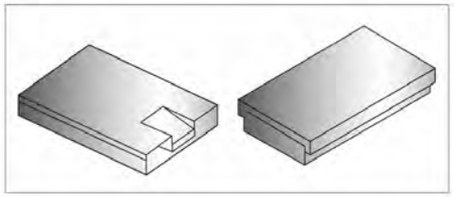

3. 平头螺丝的使用 The use of flat head screws




## 其他固定方法
## Other fixation methods

当无法使用定位销时，可以采用激光焊接，粘结剂和钎焊 （温度<320℃ ）的方法加以固定；此时必须主意使用的温度不能超过轴承材料本身能够承受的范围，轴套工作面防止与粘合剂等接触。

When the pin is not available, you can use laser welding, adhesives and brazing (temperature < 320 ℃) method to be fixed; idea to use this time to the temperature of not more than bearing material itself can withstand the scope of sleeve face prevent contact with adhesives.



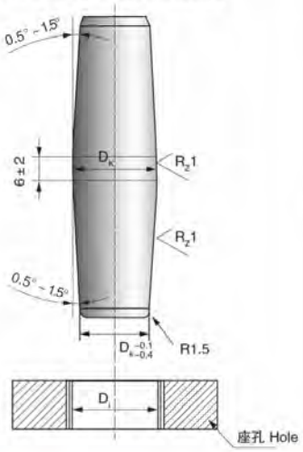


## PTFE基轴承的加工和安装注意事项
## PTFE–based bearing the processing and installation considerations

PTFE基轴承一般都是成品零件，组装后内孔不再进行铰、镗等加工，若座孔按推荐的尺寸加工时，卷制类轴承内径的整圆度完全能满足使用要求；
如果客户可以接受干摩擦性能大幅度降低，可以对PTFE基轴承在安装后进行内孔挤压以达到更高的精度，强烈建议对挤压芯棒表面进行热处理（深度0.6mm，HRC > 55）并抛光处理至Rz1；
当轴承的比压力小或摆动小而要求运行平稳时，可以增大工作间隙，在高温下使用时，每升高100℃时建议轴径减少0.008mm；
若轴承座材质是青铜、铝或锌合金时，建议减少轴承座孔以增加轴承装配过盈量，为保证轴承座的刚性，轴承座外径通常为轴承外径的1.5倍，薄壁座孔使用时需要考虑压装和使用过程的产生的变形；
PTFE轴承需要加工时，为了避免毛刺的产生建议从PTFE一侧进行加工或钻孔，在钻孔过程中轴套应当有足够的支撑已确保不会由于钻孔压力导致变形，带材的加工方法可以通过剪切、水切割、激光切割等方法。

PTFE-based bearing are generally finished parts, assembled in the hole is no longer the hinge, boring, and other processing, if the bore size of the recommended process, the rolling type bearings with bore roundness can meet the requirements;
If the client can accept a significant reduction of dry friction behavior can be installed on the PTFE-based bearing in the hole after the compression to achieve higher accuracy, we strongly recommend the extrusion mandrel surface treatment (depth of 0.6mm, HRC> 55) and polished to Rz1;
When the bearing pressure than small or small and required to run a smooth swing, you can increase the working space, when used at high temperatures, is increased by 100 ℃, the proposed reduction of shaft diameter 0.008mm; if the bearing material is bronze, aluminum or zinc alloy, it is recommended to reduce the bearing hole to increase the amount of interference bearing assembly; to ensure the bearing rigidity, bearing bearing diameter is usually 1.5 times the diameter, thin-walled bore with pressure to consider when installed and used in the process of the deformation;
PTFE bearings need processing, in order to avoid the generation of burrs from the PTFE side of the proposed processing or drilling in the drilling process should have sufficient support sleeve has been to ensure that no pressure leads to deformation of the borehole; processing methods strip You can cut, water jet cutting, laser cutting and other methods.

PTFE基轴承安装后内孔挤压




| 内孔$D_i$ Bore $D_i$ | 挤压芯棒$D_K$ Extrusion Mandrel $D_K$ | 使用寿命 Life |
|---|---|---|
| $D_i$ | $D_K$ | 100% |
| <55+0.02 | <55+0.06 | 80% |
| ≥55+0.03 | ≥55+0.08 | 60% |
| ≥120+0.04 | ≥120+0.10 | 30% |

## 热塑性聚合物边界润滑轴承的加工和安装注意事项
## Boundary lubrication bearing thermoplastic polymer processing and installation notes

SF-2轴承一般都是成品零件，组装后内孔不再进行铰、镗等加工，若座孔按推荐的尺寸加工时，卷制类轴承内径的真圆度完全能满足使用要求，如果装配需要，可以对此类轴承在安装后进行内孔加工以达到更高的精度，加工的方式可以采用铰、镗和拉刀等方法，此时需要注意塑料层可加工的厚度不能大于0.12mm以确保油穴的存在，另外需要注意在加工时注意塑料层出现毛刺而影响轴承的使用，具体请咨询工程师。在高温下使用时，需要增加轴与内孔的配合间隙，建议每升高20℃时建议轴径减少0.005mm;若轴承座材质是青铜、铝或锌合金时，建议减少轴承座孔以增加轴承装配过盈量，为保证轴承座的刚性，轴承座外径通常为轴承外径的1.5倍，薄壁座孔使用时需要考虑压装和使用过程的产生的变形，轴承需要加工时，为了避免毛刺的产生建议从塑料层一侧进行加工或钻孔，在钻孔过程中轴套应当有足够的支撑已确保不会由于钻孔压力导致变形，带材的加工方法可以通过剪切、水切割、激光切割等方法。

SF-2 bearing are generally finished parts, assembled in the hole is no longer the hinge, boring, and other processing, if the bore size of the recommended process, the rolling type bearings with bore roundness can meet the requirements;
If you need the assembly can be of such bearings in the hole after installation in order to achieve higher precision machining and processing methods can be used hinge, boring and other methods broach, can be processed at this time to note the thickness of plastic layer can not be greater than 0.12mm hole to ensure the presence of oil, the other to note the attention in the processing of plastic bearing layer appears to affect the use of glitches, please contact the specific engineer. When used at high temperatures, need to increase the shaft and the hole with the gap, the proposed recommendations for every increase of 20℃, less shaft diameter 0.005mm; If the bearing material is bronze, aluminum or zinc alloy, it is recommended to reduce the bearing hole to increase the amount of interference bearing assembly; to ensure the bearing rigidity, bearing bearing diameter is usually 1.5 times the diameter, thin-walled bore need to consider when using press-fit and use of the deformation; bearings need processing, in order to avoid the generation of burrs from the plastic layer side of the proposed processing or drilling in the drilling process should have sufficient support sleeve has been to ensure that no pressure leads to deformation of the borehole; processing methods strip You can cut, water jet cutting, laser cutting and other methods.





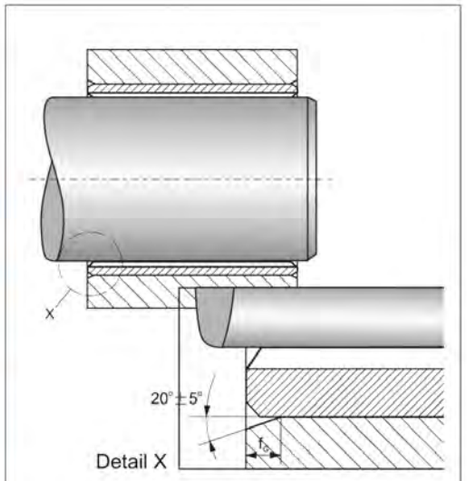


## 直套 Straight sets

压装前座孔必须在内径上进行有效的倒角，倒角的大小需要根据轴套尺寸进行调整。

There should be chamfers on the housing bore during the assembly. A chamfer $F_g$×25°±5°is important for the easier pressing of the bushing into the housing.

| 座孔内尺寸 $d_G$ Housing bore diameter $d_G$ | 座孔内倒角$f_G$ Chamfer with $f_G$ |
|---|---|
| $d_G$≤30 | 0.8±0.3 |
| 30 < $d_G$≤80 | 1.2±0.4 |
| 80 < $d_G$≤180 | 1.8±0.8 |
| $d_G$ > 180 | 2.5±1.0 |

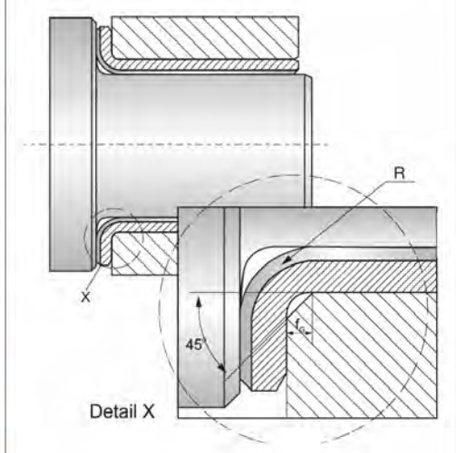



## 翻边套 Flange cover

在翻边轴套的安装过程中，必须注意轴套的翻边角度R对于轴在使用时的影响；座孔倒角可以使得轴套能够容易贴合在座孔端面上，同时可以承受轴向推力。

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.

| 座孔内尺寸 $d_G$ Housing bore diameter $d_G$ | 座孔内倒角$f_G$ Chamfer with $f_G$ |
|---|---|
| $d_G$≤10 | 1.2±0.2 |
| $d_G$ > 10 | 1.7±0.2 |









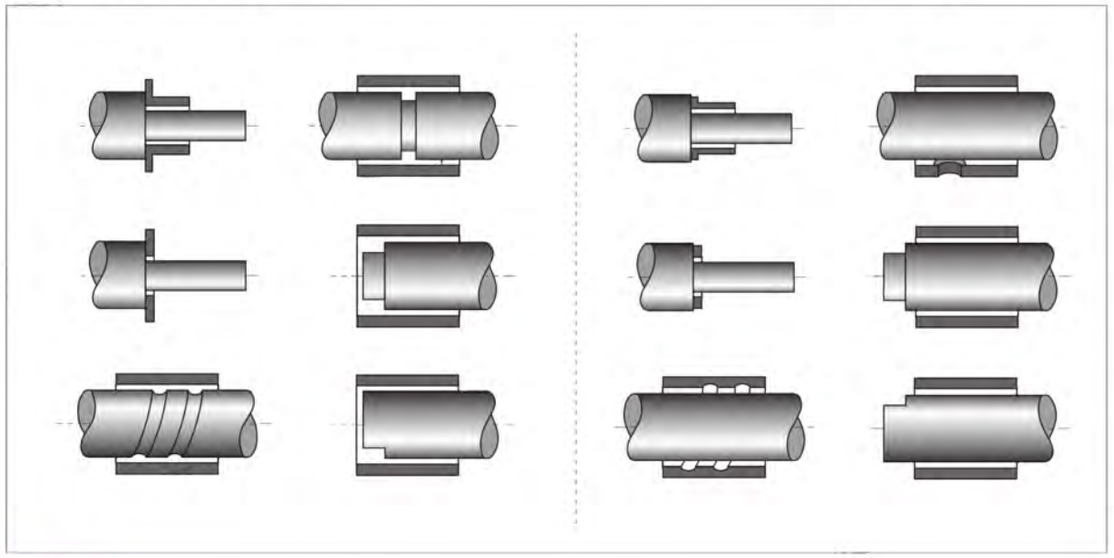
## 对磨轴 The shaft

对磨件的材料、表面硬度、表面粗糙度以及表面处理方式对于轴承的使用寿命的影响很大，一般情况下我们建议轴的硬度在HRC > 50，表面粗糙度Ra0.4以下；在潮湿或易腐蚀的场合建议使用不锈钢、硬质铬镀层。

Grinding pieces of material, surface hardness, surface roughness and surface treatments for the life of bearing a great impact, in general, we recommend that the hardness of the shaft HRC> 50, surface roughness Ra0.4 below; in damp or recommended where corrosive stainless steel, hard chrome plating.

不正确的设计
Incorrect design

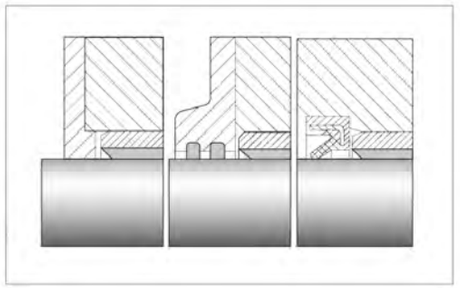
正确的设计
Correct design



## 密封 Seal

金属塑料基自润滑轴承允许一些不会损害轴承表面材料的异物进入，但当异物的侵入增加或高碾磨型物质进入时应当安装合适的密封圈以提高轴承的使用寿命。

If increased levels of contamination occur or the bearing is used in an aggressive environment, the bearing section should be protected from dust and containment. The normal solution is to re-design the surrounding structure so that the contamination cannot reach the bearing section. If the contamination is critical, a collar of grease or a shaft seal is recommended.



| 机器名称 | 轴承名称 | 许用压强 $p_p$/MPa | 许用速度 $v_p$/m•8$^{-1}$ | 许用pv值 $(pv)_p$ /MPa•m•s$^{-1}$ | 适宜黏度 η/Pa•S | 许用最小 $\frac{\eta n}{p} \times 10^9$ / $\frac{(Pa•s)•(r/s)}{Pa}$ | 相对间瞅 ψ | 宽径比 B/D |
|---|---|---|---|---|---|---|---|---|
| 金属切削机床 | 主轴承 | 0.5-5 | - | 1-5 | 0.04 | 2.5 | <0.001 | 1-3 |
| 传动装置 | 轻载轴承<br>重载轴承 | 0.15-0.3<br>0.5-1.5 | - | 1-2 | 0.025-0.06 | 230<br>66 | 0.001 | 1-2 |
| 减速器 | 轴承 | 0.5-4 | 1.5-6 | 3-20 | 0.03-0.05 | 83 | 0.001 | 1-3 |
| 轧钢机 | 主轴承 | 5-30 | 0.5-30 | 50-80 | 0.05 | 23 | 0.0015 | 0.8-1.5 |
| 冲压机<br>铜床 | 主轴承<br>曲柄轴承 | 28<br>55 | - | - | 0.1 | - | 0.001 | 1-2 |
| 铁路车辆 | 货车轴承<br>客车轴承 | 3-5<br>3-4 | 1-3 | 10-15 | 0.1 | 116 | 0.001 | 1.4-2 |
| 发电机<br>电动机<br>离心压缩机 | 转子轴承 | 1-3 | - | 2-3 | 0. 025 | 416 | 0.0013 | 0.8 -1.5 |
| 汽轮机 | 主轴承 | 1-3 | 5-60 | 85 | 0.002-0.016 | 250 | 0.001 | 0.8-1.25 |
| 活塞式泵<br>压缩机 | 主轴承<br>连杆轴承<br>活塞销轴承 | 2-10<br>4-10<br>7-13 | - | 2-3<br>3-4<br>5 | 0.03-0.088 | 66<br>46<br>23 | 0.001<br><0.001<br><0.001 | 0.8-2<br>0.9-2<br>0.5-2 |
| 蒸汽机车 | 传动轴<br>连杆轴承<br>活寒销轴承 | 10-16<br>8-14<br>20-35 | - | 30-50<br>20-25<br>- | 0.1<br>0.04<br>0.3 | 66<br>12<br>12 | 0.001<br><0.001<br><0.001 | 1-1.8<br>0.7-1.1<br>0.8-1.3 |
| 精纺机 | 锭子 | 0.01-0.02 | - | - | 0.002 | 25000 | 0.005 | - |
| 汽车发动机 | 主轴承<br>连杆轴承<br>活塞销轴承 | 6-15<br>6-20<br>18-40 | 6-8<br>6-8<br>- | >50<br>>80<br>- | 0.007-0.008 | 33<br>23<br>16 | 0.001<br>0.001<br><0.001 | 0.35-0.7<br>0.5-0.8<br>0.8-1 |
| 航空发动机 | 主轴承<br>连杆轴承(排形)<br>连杆轴承( 星形)<br>活塞销轴承 | 12-22<br>13-20<br>20-26<br>50-85 | 8-10<br>8-10<br>8-10<br>- | >80<br>>100<br>>100<br>>100 | 0.007 -0. 008 | 36<br>23<br>23<br>18 | 0.001<br>0.001<br>0.001<br><0.001 | 0.4-0.6<br>0.7-1<br>0.7-1<br>0.8-0.9 |
| 柴油发动机<br>(2冲程) | 主轴承<br>连杆轴承<br>活塞销轴承 | 5-9<br>7-10<br>9-13 | 1-5<br>1-5<br>- | 10-15<br>15-20<br>- | 0.02-0.065 | 58<br>28<br>23 | 0.001<br><0.001<br><0.001 | 0.6-0.75<br>0.5-1<br>1.5-2 |
| 柴油发动机<br>(4冲程) | 主轴承<br>连杆轴承<br>活塞销轴承 | 6-13<br>12-15<br>15-20 | 1-5 | 15-20<br>20-30<br>- | 0.02-0.065 | 47<br>23<br>12 | 0.001<br><0.001<br><0.001 | 0.45-0.9<br>0.5-0.8<br>1-2 |

注：1.本表仅作参考。 2. $\rho_p$与轴瓦材料和润滑方法有关：小值用于滴油、油环或飞溅润滑，瓦轴材料强度较低者；大值用于压力供油润滑，轴承材料强度较高者。

# 化学性能
# Chemical Resistance



The following table shows the chemical resistance of the JDB-650# alloys. We recommend to test the actual performance under realistic operating conditions.

JDB-650#的化学性能取决于金属的基材，各类铜合金在各种化学介质的耐腐蚀性能如下；建议有可能的话在使用前进行试验来确认。

## Chemical resistance 化学性能

| Chemical Substance 化学物质 | | Conc. ratio 浓度 % | Temp. 温度℃ | 650# | 650S1 | 650S2 | 650S3 |
|---|---|---|---|---|---|---|---|
| **强酸** | **Strong acids** | | | | | | |
| 盐酸 | Hydrochloride acid | 5 | 20 | × | × | × | × |
| 氢氟酸 | Hydrofluoric acid | 5 | 20 | × | △ | △ | △ |
| 硝酸 | Nitric acid | 5 | 20 | × | × | × | × |
| 硫酸 | Sulphuric acid | 5 | 20 | × | △ | ○ | ○ |
| 磷酸 | Phosphoric acid | 5 | 20 | × | △ | ○ | ○ |
| **弱酸** | **Light acid** | | | | | | |
| 醋酸 | Acetic acid | 5 | 20 | × | × | ○ | ○ |
| 甲酸 | Formic acid | 5 | 20 | × | × | ○ | ○ |
| 硼酸 | Boric acid | 5 | 20 | × | × | ○ | ○ |
| 柠檬酸 | Citrus acid | 5 | 20 | × | × | ○ | ○ |
| **碱** | **Bases** | | | | | | |
| 氨 | Ammonia | 10 | 20 | × | × | × | × |
| 氢氧化钠 | Sodium hydroxide | 5 | 20 | △ | △ | ○ | ○ |
| 氢氧化钾 | Potassium hydroxide | 5 | 20 | △ | △ | ○ | ○ |
| **溶剂** | **Solvents** | | | | | | |
| 丙酮 | Acetone | | 20 | △ | △ | ○ | ○ |
| 四氯化碳 | Carbon tetrachloride | | 20 | △ | △ | ○ | ○ |
| 乙醇 | Ethyl alcohol | | 20 | △ | △ | ○ | ○ |
| 醋酸乙酯 | Ethyl acetate | | 20 | △ | △ | ○ | ○ |
| 乙基氯 | Ethyl chloride | | 20 | △ | △ | ○ | ○ |
| 甘油 | Glycerol | | 20 | △ | △ | ○ | ○ |
| **盐** | **Salts** | | | | | | |
| 硝酸氨 | Ammonium nitrate | | | × | × | × | × |
| 氯化钙 | Calcium chloride | | | ○ | ○ | ○ | ○ |
| 氯化镁 | Magnesium chloride | | | ○ | ○ | ○ | △ |
| 硫酸镁 | Magnesium sulphate | | | ○ | ○ | ○ | △ |
| 氯化钠 | Sodium chloride | | | ○ | ○ | ○ | ○ |
| 硝酸钠 | Sodium nitrate | | | ○ | ○ | ○ | ○ |
| 氯化锌 | Zinc chloride | | | × | × | ○ | × |
| 硫酸锌 | Zinc sulphate | | | △ | △ | ○ | ○ |
| **气体** | **Gases** | | | | | | |
| 氨 | Ammonium gas | | | △ | △ | △ | △ |
| 氯 | Chlorine gas | | | × | × | × | × |
| 二氧化碳 | Carbon dioxide | | | △ | ○ | ○ | ○ |
| 烟道气 | Fluorine | | | × | × | × | × |
| 二氧化硫 | Sulphur dioxide | | | × | △ | ○ | ○ |
| 硫化氢 | Hydrogen sulphide | | | △ | △ | △ | △ |
| 氮 | Nitrogen oxide | | | × | △ | ○ | ○ |
| 氢 | Hydrogen | | | × | △ | ○ | ○ |
| **润滑剂和燃油** | **Lubricants and fuel** | | | | | | |
| 石蜡 | Paraffin | | | ○ | ○ | ○ | ○ |
| 汽油 | Petrol | | | ○ | ○ | ○ | ○ |
| 煤油 | Fuel oil | | | ○ | ○ | ○ | ○ |
| 柴油 | Diesel fuel | | | ○ | ○ | ○ | ○ |
| 矿物油 | Mineral oil | | | ○ | ○ | ○ | ○ |
| HFA-ISO46油/乳液 | HFA ISO46 oil/water emulsion | | | ○ | ○ | ○ | ○ |
| HFC-水/乙二醇 | HFC Water/ethylene | | | ○ | ○ | ○ | ○ |
| HFD-磷酸酯 | HFD Phosphate ester | | | ○ | ○ | ○ | ○ |
| **其它** | **Others** | | | | | | |
| 水 | Water | | | △ | ○ | ○ | ○ |
| 海水 | Sea water | | | × | △ | ○ | ○ |
| 树脂 | Resin | | | △ | ○ | ○ | ○ |
| 碳氢化合物 | Hydrocarbon | | | △ | ○ | ○ | ○ |

**说明：** ○：耐腐蚀　△：取决于浓度温度等情况　×：不推荐
**Remark:** ○: Excellent　△: Conditionally resistant depend on concentration, temperature etc.　×: Not recommended



# 轴承的选型与计算
# Bearing Selection & Calculation



## 轴承选型 Bearing Selection

滑动轴承根据不同的工况条件设计了不同的轴承材料。用户在使用和设计时应当根据轴承的使用温度、轴承的承载面压、线速度、耐磨性能要求、运动类型、安装情况、轴承成本等各方面因素综合考虑。

Bush have developed kinds of bearing material according to difference work condition, the user can select the material base on bearing work environment, load, speed, wear, resistance request, moving method, installation, the cost of the material etc.

## 面压计算 Bearing Load

直套、翻边轴承 Cylidrncal bushes、flange bushes

$$P = \frac{F}{dL} \ (N/mm^2)$$

F = 轴承载值 Load (N)
d = 轴径 Shaft (mm)
L = 轴承长度 Bearing Leagth (mm)

止推垫片 Thrust Washer

$$P = \frac{4F}{(D^2-d^2)\pi} \ (N/mm^2)$$

F = 垫片承载值 Load (N)
D = 垫片外径 Washer OD (mm)
d = 垫片内径 Washer ID (mm)

由于受配合间隙、材料强度、轴承倒角、内部 油槽等原因的影响，轴承的真正承载面压（Pact）会大于理论计算值（Pmean）。

As the factor of clearance, bushes chamfer, oil groove etc. The actually load (Pact) is higher than theory of calculation($P_{mean}$).

## 线速度计算 Velocity

旋转运动 Rotating motion

$$V = \frac{dn\pi}{1000\times60} \ (m/s)$$

d = 轴径 Shaft (mm)
n = 转数/分 Rpm

摇摆运动 Oscillating motion

$$V = \frac{dc\theta\pi}{1000\times360\times60} \ (m/s)$$

d = 轴径 Shaft (mm)
c = 摇摆频率 Frepuency（次数/分）
θ= 摇摆角度 Oscillating angle

往复运动 Reciprocating motion

$$V = \frac{2sc}{60} \ (m/s)$$

s = 行程长度 (m)
c = 往复频率 Frepuency（次数/分）

## PV值计算 PV=P×V (N/mm²×m/s)

PV是指轴承在一定的承载和线速度条件下的乘积之和。设备的PV值与轴承的使用寿命承反比关系，因此建议设计时设备的PV取值尽量使用比较低的安全PV值，以确保轴承会有更长的使用寿命。同时也要考虑设备上轴承实际的承载、线速度、使用温度等不能超过所选择材料的极限值，并尽可能地小。

PV is the product ot the specific bearing load P and the sliding speed V which is very important design data. We recommend design lower PV value will lead to longer serive life. Also don't exceed the max. Of material load, speed, temp. And lower if possible.