



浙江双飞无油轴承股份有限公司
ZHEJIANG SF OILLESS BEARING CO.,LTD.

2016

JDB系列镶嵌式固体润滑轴承 JDB SERIES SOLID LUBRICATION BEARINGS

AN ISO9001& ISO/TS16949 CERTIFIED BEARING COMPANY



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不断地超越顾客的期望

Never Stops Exceeding the Expectations of Our Customers

企业宗旨：以质量求生存,以信誉求发展.

企业精神：团结、奋进、求实、创新。

经营理念：以科技为先导，提供尽善尽美的产品及服务。

企业使命：企业是为了满足市场需要而存在，市场是一切工作的出发点和动力。

企业目标：让“ZOB”产品遍布全世界。

双飞客户：“ZOB”所有客户，是一笔巨大的资产，我们将尽全力满足客户个性化的要求，为每位客户提供完善的服务，

创造互惠互利的完美合作关系。

双飞产品：“ZOB”将不断深入的进行技术研究，开发更多适应市场的产品，并依靠严格的品质管理体系，使每一位顾客享受品质稳定的产品。



公司简介 Company introduction

- 1、浙江双飞无油轴承有限公司创立于1988年。
- 2、注册商标为ZOB，同时ZOB也是公司形象的统一缩写形式。
- 3、主导产品：各种无油润滑轴承、包括汽车模具和烧结产品系列。
- 4、生产执行标准：ISO3547、DIN1494和企业内部质量标准。
- 5、各类无油轴承年生产能力超过5亿件。
- 6、公司已通过ISO9001：2000，QS9000和ISO/TS16949、ISO14000认证。
- 7、ZOB系列产品被认定为国家级重点新产品和浙江省名牌产品。
- 8、我们的产品销往全世界三十多个国家和地区，辐射美国、加拿大、德国和日本等。

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- 1、Zhejiang SF Oilless Bearing Co.,LTD.was established in 1988.
 - 2、Registered trademark is ZOB. And meantime, ZOB is also the short from for company image.
 - 3、Main products:all kinds of oilless self-lubrication bearings.
 - 4、Production standard:ISO3547,DIN1494 and internal quality standard.
 - 5、Annual production capacity:more than 500,000,000 pcs bushings,thrust washers and sliding plate.
 - 6、ISO9001:2000,QS9000 and ISO/TS16949、ISO14000 certified.
 - 7、SF series bearing is honored as China National Key Products and Famous Brand in Zhejiang Province".
 - 8、Our products are sold to more than thirty countries, including America,Canada,Germany and Japan etc.
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Enterprise Principle: Quality for survival, Credit for development.

Enterprise Spirit: United, Aggressive, Practical, Innovative.

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

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

Enterprise Goal: Let ZOB cover all over the world.

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

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



性能介绍

JDB系列镶嵌式固体润滑轴承是以金属材料为基体，并在基体上开出排列有序、大小适当的孔穴，再嵌入含油的石墨或二硫化钼颗粒作为固体润滑材料。当轴承在无油润滑条件下工作时，由于摩擦热的作用，固体润滑材料会逐渐转移到摩擦副工作表面，从而起到降低摩擦系数的效果。

本公司是国内最早研制生产JDB系列镶嵌式固体润滑轴承的厂家之一，同时也是相关国家标准的主要起草单位之一，经过十多年的生产与改进，并与国外类似产品进行了多次性能对比试验，产品各项性能已达到国外同类产品的先进水平。产品加工设备全部采用高精度数控机床，生产过程严格按ISO/TS16949相关程序进行质量控制，保证顾客能享受到稳定的高品质产品。

为满足顾客的个性化需求，适应各种不同的工作环境，本公司共研制了五种不同型号的JDB镶嵌式固体润滑轴承供顾客选用。同时还可按顾客的需求进行新产品的研制工作，尽我们的能力使顾客满意。

Performance introduction



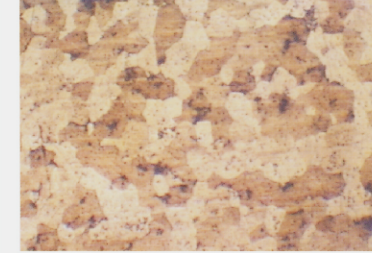

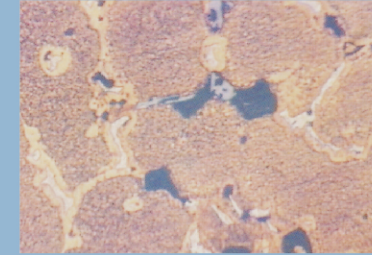


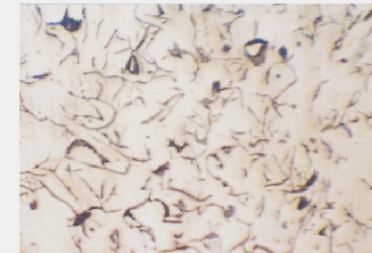

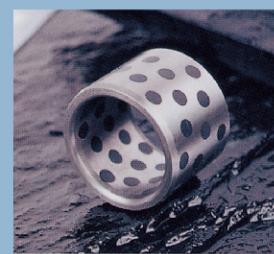
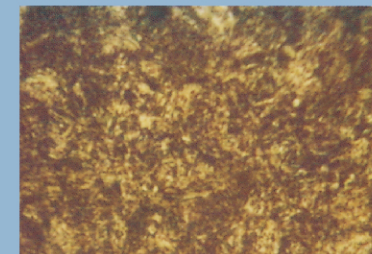

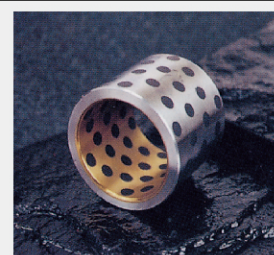
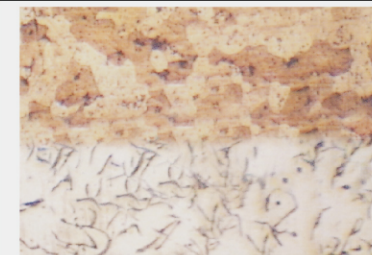
JDB Series Solid Lubrication Bearing is made of metal body, and embedded with solid lubricants in line, which made of graphite or MoS₂ with oil. While the bearing running with no oil, the solid lubricants will run out to the working surface by friction heat, and reduce the friction coefficient.

ZOB is one of the oldest company to design JDB bearings, and is one of the member to edit the national standard of this products. After many years' improving, our JDB products' quality reached advanced world standard, which approved by many times' performance comparing testing with foreign similar products. The JDB bearings were all machined by precise CNC machine, and quality controlled by ISO/TS16949 procedure, which ensure customer can get high quality products always.

To meet customer's increasing demands and adapt more application circumstances, Five types of JDB have been developed for your choice.

典型JDB产品基材示图

JDB Material And Metallugraphy

| 型号 | 示意图 | 金相 | 基材材质 |
|---|---|---|--|
|  JDB-1 |  |  | 基体材料： CuZn25Al6Fe3Mn3 材料硬度： 210-250HB |
| JDB-2 |  |  | 基体材料： CuSn6Zn6Pb3 材料硬度： 80-120HB |
|  JDB-4 |  |  | 基体材料： HT250 材料硬度： 180-230HB |
|  JDB-5 |  |  | 基体材料： GCr15 材料硬度： HRC55-60 |
|  JDB-6 |  |  | 基体材料： Steel+CuZn25Al6Fe3Mn3 材料硬度： 210-250HB |



JDB主要技术指标:

JDB Main Technical Index:

| 型号 Type | 单位 (Unit) | JDB-1 | JDB-2 | JDB-4 | JDB-5 | JDB-6 |
|------------------------------------|-----------------------------------|-------|-------|-------|-------|-------|
| 摩擦因数 Friction coef | μ | <0.16 | <0.15 | <0.18 | <0.17 | <0.16 |
| 最高使用温度(无润滑) Temp Max. | °C | 300 | 350 | 400 | 350 | 300 |
| 极限载荷 Load Max. | N/mm ² | 100 | 60 | 60 | 250 | 150 |
| 最高滑动速度(无润滑) Velocity Max. (dry) | m/s | 0.4 | 2 | 0.5 | 0.1 | 0.4 |
| 最高滑动速度(油润滑) Velocity Max. (oil) | m/s | 5 | 10 | 5 | 3 | 5 |
| 使用极限PV值(无润滑) PV Max. (dry) | N/mm ² .m/s | 1.8 | 0.5 | 0.8 | 2.5 | 1.8 |
| 使用极限PV值(油润滑) PV Max. (oil) | N/mm ² .m/s | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| 线膨胀系数 Dilatibility | $\times 10^{-6}/^{\circ}\text{C}$ | 16~20 | 16~18 | 8~12 | 8~12 | 8~12 |

JDB磨损性能(与CuSn6Zn6Pb3青铜套的比较耐磨性能如下表):

JDB Wear Performance(Compared with CuSn6Zn6Pb3-composed bushing):

| 试验压强 Load Applied | | 62N/mm ² | | 24.5N/mm ² | | 14.7N/mm ² | |
|----------------------|---------------------|---------------------|------------|-----------------------|------------|-----------------------|------------|
| 项目 Item | | 磨损量 Wear depth | 时间 Time | 磨损量 Wear depth | 时间 Time | 磨损量 Wear depth | 时间 Time |
| 型号 Type | 润滑条件 Lubrication | (mm) | (hrs) | (mm) | (hrs) | (mm) | (hrs) |
| 铜套 CuSn6Zn6SPb3 | 油润滑 oil | 0.098 | 10 | 0.125 | 100 | 0.10 | 100 |
| JDB-1 | 无润滑 dry | 0.075 | 100 | 0.015 | 100 | 0.012 | 100 |
| JDB-2 | 无润滑 dry | 0.025 | 30 | 0.065 | 100 | 0.025 | 100 |
| JDB-4 | 无润滑 dry | 0.03 | 10 | 0.015 | 20 | 0.011 | 100 |
| JDB-5 | 无润滑 dry | 0.022 | 100 | 0.013 | 100 | 0.01 | 100 |
| JDB-6 | 无润滑 dry | 0.075 | 100 | 0.015 | 100 | 0.012 | 100 |

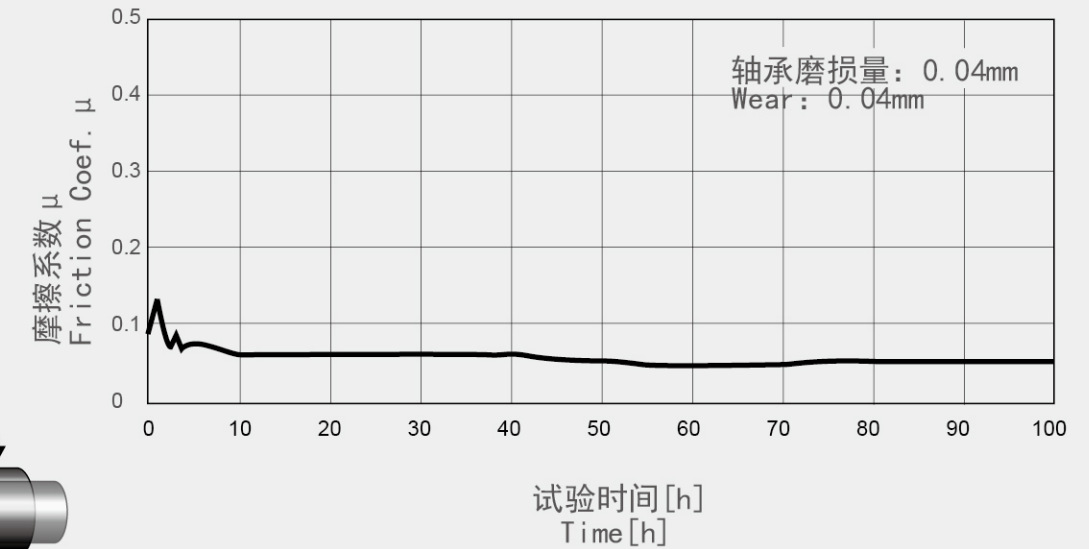
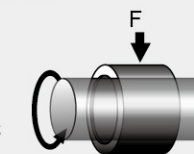
JDB-1性能试验 The Test Of JDB-1

回转运动试验
<试验条件>

轴承尺寸: $\phi 74 \times \phi 60 \times 50$
对磨轴: 45# HRC42-52
压力: 24.5N/mm²
速度: 0.017m/s
试验时间: 100h
温度: 20~25°C
润滑: 无润滑

Rotation Test
<Test Condition>

Bearing Size: $\phi 74 \times \phi 60 \times 50$
Mating Shaft: 45# HRC42-52
Load: 24.5N/mm²
Velocity: 0.017m/s
Time: 100h
Temperature: 20~25°C
Lubrication: Dry

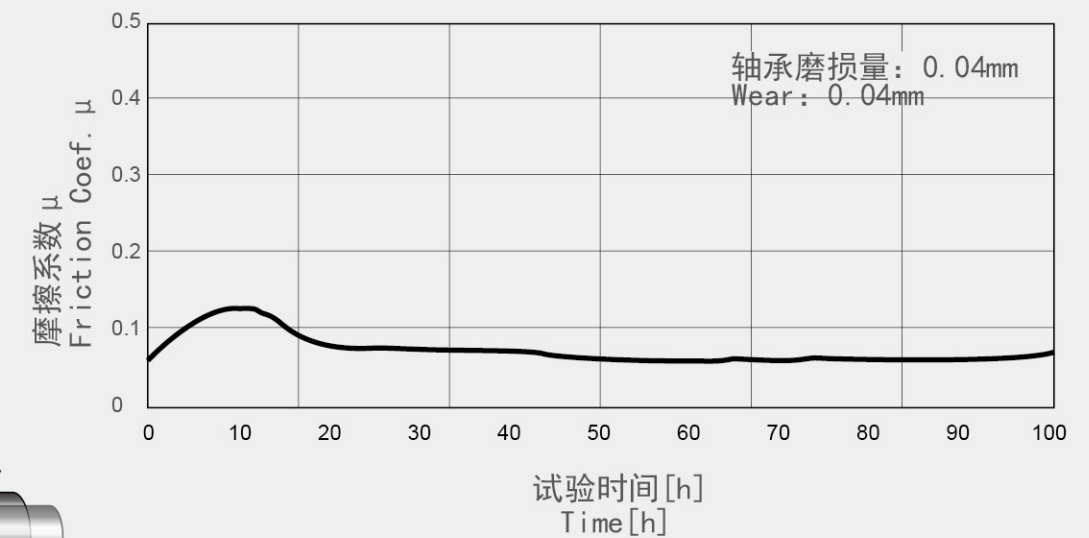
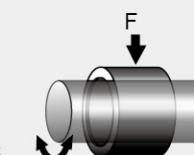


摇摆运动试验
<试验条件>

轴承尺寸: $\phi 50 \times \phi 40 \times 30$
对磨轴: 45# HRC42-52
压力: 24.5N/mm²
速度: 0.017m/s
摆动角: $\pm 45^{\circ}$
试验时间: 100h
温度: 20~25°C
润滑: 无润滑

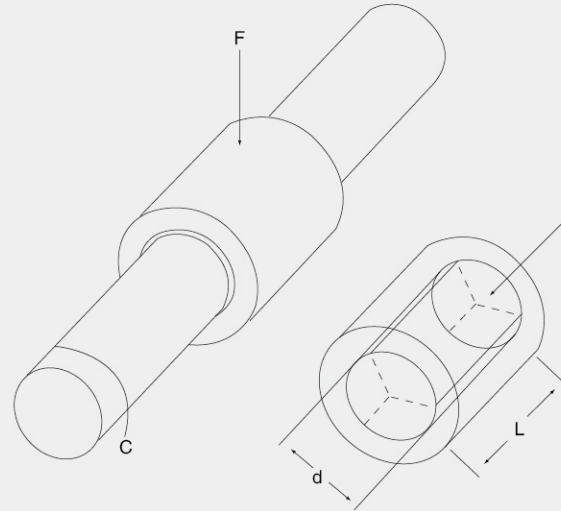
Oscillating Test
<Test Condition>

Bearing Size: $\phi 50 \times \phi 40 \times 30$
Mating Shaft: 45# HRC42-52
Load: 24.5N/mm²
Velocity: 0.017m/s
Angle: $\pm 45^{\circ}$
Time: 100h
Temperature: 20~25°C
Lubrication: Dry





承载压力的计算 Calculation of Load P



F: 轴承工作压力 (working load) 单位 (unit): N
 A: 轴承投影面积 (the projected area of the bearing)
 单位 (unit): mm²
 d: 轴承内径 (I.D. of bearing) 单位 (unit): mm
 L: 轴承高度 (Length of Bearing) 单位 (unit): mm
 P: 轴承承载 (Dynamic Load) 单位 (unit): N/mm²
 轴承工作载荷计算 (Calculation of Load P):

$$P = \frac{F}{A} = \frac{F}{d \times L}$$

工作速度的计算 Calculation of Speed V

① 连续转动 Continuous Rotation

d: 轴承内径 (I.D. of bearing) 单位 (unit): mm
 C: 转速 (rotate speed) 单位 (unit): r/min
 V: 线速度 (Speed) 单位 (unit): m/s
 速度计算 Calculation of Speed V:

$$V = \frac{\pi \times d \times c}{60 \times 1000}$$

② 摇摆运动 (Oscillating Movement)

d: 轴承内径 (I.D. of bearing) 单位 (unit): mm
 C: 转速 (rotate speed) 单位 (unit): cycle/min
 θ : 摆动角度
 V: 线速度 (Speed) 单位 (unit): m/s
 速度计算 Calculation of Speed V:

$$V = \frac{\pi \times d \times 4 \theta \times c}{60 \times 1000 \times 360}$$

③ 直线运动 (Liner movement)

S: 行程 (Distance) 单位 (unit): mm
 C: 转速 (rotate Speed) 单位 (unit): cycle/min
 V: 线速度 (Speed) 单位 (unit): m/s
 速度计算 Calculation of Speed V:

$$V = \frac{2 \times C \times S}{60 \times 1000}$$

PV值的计算 Calculation of PV

$$PV = P \times V$$

产品的装配 Installation

轴套推荐的装配方法有两种,一种是常温压制装配法,另一种是冷却装配法,冷却装配法具有操作方便、配合精度高的优点,在条件具备的情况下,应优先选用。座孔加热的方法由于热量会破坏轴承材料的组织结构,所以应避免使用。

冷却装配的方法

1、所需的材料

冷却介质: 液氮或干冰

容器: 保温隔热容器

2、冷却后轴套外径收缩量 ΔD 的计算

$$\Delta D = D \times \alpha \times (T - T1)$$

式中

D: 轴套外径

α : 轴套线膨胀系数

T: 轴套冷却温度

T1: 装配环境温度

3、操作方法

① 将轴套放入保温隔热容器中,放入冷却介质,一般推荐的冷却温度为 $-40 \sim -70^\circ\text{C}$ 之间

② 冷却时间1小时以上,如果轴套与座孔的过盈量较大时,需要适当延长冷却时间。

③ 再次测量轴套外径与座孔内径尺寸,便于装配顺利进行。

④ 将冷却好的轴套迅速装入座孔中,如果在中途停留时间过长,将造成轴套难以装入。

⑤ 在轴套工作表面涂布润滑油脂。

⑥ 在冬季气温较低时,应让座孔保持在 $20 \sim 30^\circ\text{C}$ 之间。

There have two methods recommended to install the bearings, press fit and shrink fit by cooling. The advantage of shrink fit is easy to operate and very precise, should be used priority.

The method of shrink fit by cooling

1、Medium vessel needed

Cooling medium: liquid nitrogen or frozen carbon dioxide(CO₂)

Vessel: heat preservation and insulation vessel.

2、bushing OD shrunk rate(ΔD) calculate after cooling

$$\Delta D = D \times \alpha \times (T - T1)$$

D: bushing OD,

α : dilatibility

T: cooling temperature

T1: environment temperature of installation.

3、operation method:

①: put the bushing into the heat preservation and insulation vessel, add cooling medium, recommended temperature is $-40 \sim -70^\circ\text{C}$ commonly.

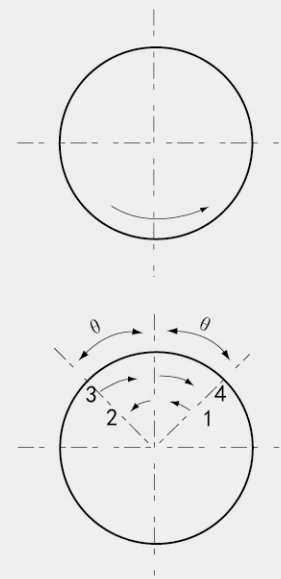
②: cooling time should be more than 1 hour, and it should be longer if the interference between bushing and housing bore is big.

③: inspect bushing OD and housing ID again, easy to installation.

④: put the cooled bushing into housing bore quickly, any delay will make the install difficult.

⑤: add lubricate grease onto working surface of bushing.

⑥: the housing bore temperature should be keep around $20 \sim 30^\circ\text{C}$, if the environment temperature is very low.





产品使用的注意事项

- 1、在设计时尽量选用标准规格，如要采用非标规格，请与我们联系。
- 2、装配前应清洁轴承内外表面，要求内外表面无杂质、异物。
- 3、在装配前，若能用润滑油脂涂布于摩擦表面，可减短摩擦副的走合期，使机械运转更加平稳，延长使用寿命。
- 4、装配时，建议将轴承慢慢压入，严禁野蛮敲击，以免引起轴承变形，降低使用寿命。
- 5、在承载压力较高或往复运动时，建议将轴承与座孔用螺钉固定。
- 6、轴承使用一段时间后，会在轴表面形成黑色或灰黑色的润滑膜，请不要擦洗，正常使用。
- 7、一般说来，轴应选用比轴承硬度高的材料，以保护轴。

NOTICE FOR USING:

- 1、It is better to use standard size and tolerance, please contact us if special size needed.
- 2、Bushing should be clean without impurity inside and outside before install.
- 3、Lubricate grease added onto working surface before install the bushing can reduce the running-in time, make the running more calm, and extend the life time.
- 4、When install, It should fit without force, gravity will usually be adequate for a vertical installation. Strike by force will distort the bushing, and reduce its life time.
- 5、When the bushing with high load or in to-and-fro running, fix it by bolt with housing bore is suggested.
- 6、After running some times, the shaft surface will be covered with black or carbon black lubricate film, please don't scrub away.
- 7、Commonly, the hardness of shaft should be higher than bushing, in order to protect the shaft.

JDB应用特点:

JDB-1是通用型的基础产品，无论高压、低压、高温、低温、有油润滑、无油润滑还是水中润滑，都能适用。产品的基体是高强度黄铜，比一般的铜套硬度提高一倍，耐磨性能提高一倍以上，因此在冶金行业的连铸机、轧机、输送机上都可采用。还用于注塑机锁模机构，挤出机构，高压电的自动开关，建筑机械的起吊支撑部位，以及水利枢纽工程的弧门支撑，滑轮和传动轮部位。还有造纸机烘道、汽车模具、船舶起锚滑动部位等。

JDB-2主要适应低载高温中速的使用场合，例如壁炉门铰链、烘炉滚道、轻工机械、机床工业等。

JDB-4是一种典型的省材产品，特别是在一些壁厚较厚的场合，材料成本优势明显，同时由于基材采用了低碳钢，与JDB-1产品相比，其抗击性能更好，例：高端精密模具导套、港口机械等。

JDB-5是一种加强型的产品，它具有极高的抗压性能，在起重机械的支撑部位特别适应，例：挖土机支承、卷扬机支承、吊车支承等。但由于基体为钢材，所以不宜在水中或酸、碱的场合使用。

JDB-6的内材与JDB-1同样，除了具有JDB-1的功能外，还体现了节省成本，提高抗压强度和可以端面与基体焊接安装的优点，适用于建筑机械、冶金机械和输送机械中的不加油润滑部位。

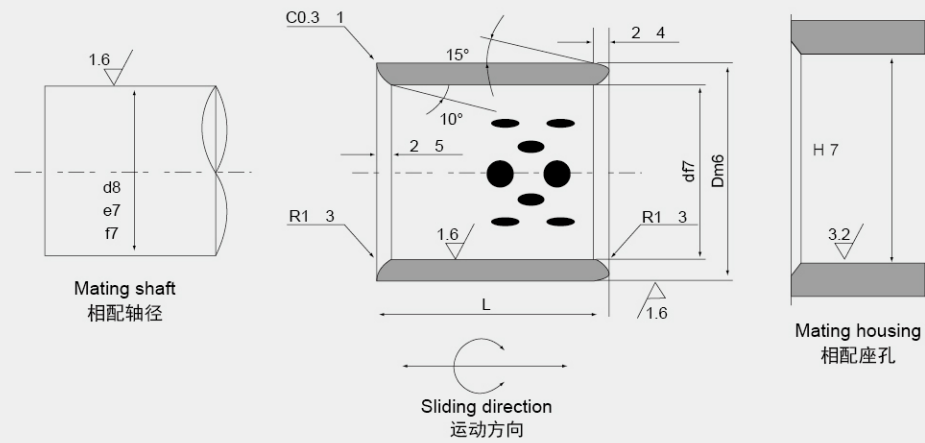
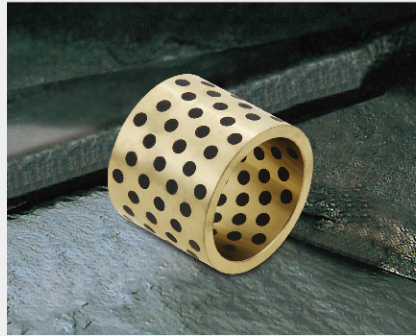
JDB APPLICATION

| TYPE | APPLICATION FEATURES |
|-------|--|
| JDB-1 | basically general-purpose products, suitable for various circumstances including high or low load, high or low temperature, with oil or oilless lubrication, or even in the water. With it's matrix made of high strength brass, it's hardness doubles than normal bronze bushings and the wear performance improves in large degree, so it is applicable for conticaster, pitching machine, converors of metallurgy industry. It could also be used in plastic injection machines, in the automatic switch of high=tension electricity, in the luffing and surpporting parts of construction machines, hydraulic gate supporter, pilley, drive wheels of water control project, and drying tunnel of paper machines, auto die, sliding parts for ships unmooring etc. |
| JDB-2 | products of JDB-2 series are mainly for circumstances with low load and high temperature, for example: gemel of fireplace gate, raceway of baker, machines of light industry, machine tools industry and so on. |
| JDB-4 | Products of JDB-4 are a typical kind of material-saving product.They could replace JDB-2 products where the mechanical requiements are not so high.They could reduce the cost largely,and meet the demands for application.Such as:mould guide bushing,die carrier of plastic moulding machines and so on. |
| JDB-5 | Products of JDB-5 serise are a kind of fortified products. Due to it's excellent comprehensive capability, it's especially suited in the surpporting parts of hoisting machines, for example: surrport of rooter, surrport of hoist engine, surrport of crane and so on. But as for their matrix being steel, they are not suitable for circumstances with water, acid and alkali. |
| JDB-6 | The innerside material of products of JDB-6 series is the sane as that of the JDB-1 series, so they could function as well as the that of JDB-1 series, In additional, they have other advantages such as saving material costs, improving compressive strength, and that they could be assembled by welding the bushing surface together with other matrix. They are suitable for parts which need not oil lubrication of construction machines, metallurgy machines and conveying machines. |



JDB标准轴承套尺寸

JDB BEARING



| D | dF7 | Dm6 | L ^{-0.10} / _{-0.30} | | | | | | | | | | | | | | | |
|----|--|--|---------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|
| | | | 8 | 10 | 12 | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | | |
| 12 | 8 ^{+0.028} / _{+0.013} | 12 ^{+0.018} / _{+0.007} | ● | ● | ● | ● | | | | | | | | | | | | |
| 14 | 10 ^{+0.034} / _{+0.016} | 14 ^{+0.021} / _{+0.008} | ● | ● | ● | ● | ● | ● | | | | | | | | | | |
| 18 | 12 | 18 | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| 19 | 13 | 19 | | ● | ● | ● | ● | | | | | | | | | | | |
| 20 | 14 ^{+0.034} / _{+0.016} | 20 ^{+0.021} / _{+0.008} | | ● | ● | ● | | ● | ● | ● | | | | | | | | |
| 21 | 15 | 21 ^{+0.021} / _{+0.008} | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| 22 | 16 | 22 | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| 24 | 18 | 24 | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| 28 | 20 | 28 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| 32 | 22 ^{+0.041} / _{+0.020} | 32 ^{+0.025} / _{+0.009} | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| 33 | 25 | 33 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| 38 | 30 | 38 ^{+0.025} / _{+0.009} | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | |
| 45 | 35 | 45 | | | | | | ● | ● | ● | ● | ● | ● | | | | | |
| 50 | 40 ^{+0.050} / _{+0.025} | 50 ^{+0.030} / _{+0.011} | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| 55 | 45 | 55 ^{+0.030} / _{+0.011} | | | | | | | ● | ● | ● | ● | ● | | | | | |
| 60 | 50 | 60 ^{+0.030} / _{+0.011} | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |

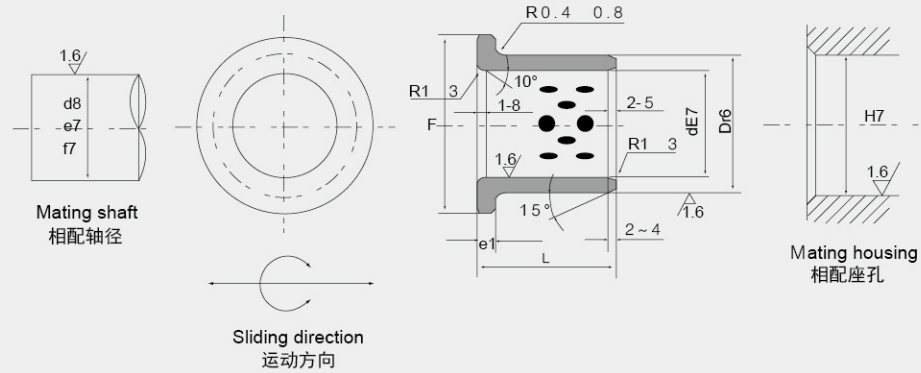
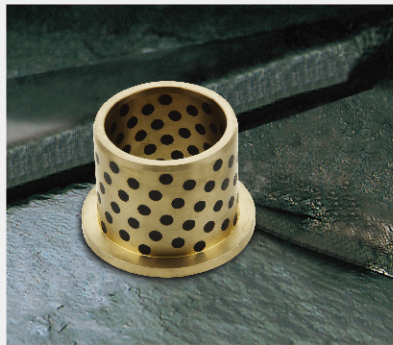
| d | D | dF7 | Dm6 | L ^{-0.10} / _{-0.30} | | | | | | | | | | | | |
|-----|-----|---|---|---------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|---|
| | | | | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 130 | 140 | 150 | |
| 50 | 62 | 50 ^{+0.050} / _{+0.025} | 62 | ● | ● | ● | ● | ● | | | | | | | | |
| 50 | 65 | 50 ^{+0.050} / _{+0.025} | 65 | ● | | ● | ● | ● | ● | ● | | | | | | |
| 55 | 70 | 55 | 70 | | | ● | ● | ● | ● | | | | | | | |
| 60 | 74 | 60 | 74 ^{+0.030} / _{+0.011} | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| 60 | 75 | 60 | 75 | ● | ● | ● | ● | ● | ● | ● | ● | | | | | |
| 63 | 75 | 63 | 75 | | | | | ● | ● | ● | | | | | | |
| 65 | 80 | 65 | 80 | | | | | ● | ● | ● | ● | | | | | |
| 70 | 85 | 70 ^{+0.060} / _{+0.030} | 85 | | ● | ● | ● | ● | ● | ● | ● | | | | | |
| 70 | 90 | 70 | 90 | | | | | ● | ● | ● | ● | ● | | | | |
| 75 | 90 | 75 | 90 | | | | | | ● | ● | ● | ● | ● | | | |
| 75 | 95 | 75 | 95 | | | | | | ● | ● | ● | ● | ● | | | |
| 80 | 96 | 80 ^{+0.060} / _{+0.030} | 96 ^{+0.035} / _{+0.013} | | | | | | ● | ● | ● | ● | ● | ● | ● | |
| 80 | 100 | 80 | 100 | | | | | | ● | ● | ● | ● | ● | ● | ● | ● |
| 90 | 110 | 90 | 110 | ● | | | | | ● | ● | ● | ● | ● | ● | ● | |
| 100 | 120 | 100 ^{+0.071} / _{+0.036} | 120 | | | | | | | ● | ● | ● | ● | ● | ● | ● |
| 110 | 130 | 110 | 130 | | | | | | | | | | ● | ● | ● | |
| 120 | 140 | 120 | 140 | | | | | | | | | | ● | ● | ● | ● |
| 125 | 145 | 125 | 145 ^{+0.040} / _{+0.015} | | | | | | | | | | | ● | ● | |
| 130 | 150 | 130 | 150 | | | | | | | | | | | ● | | ● |
| 140 | 160 | 140 ^{+0.083} / _{+0.043} | 160 | | | | | | | | | | | | ● | |
| 150 | 170 | 150 | 170 | | | | | | | | | | | | ● | ● |
| 160 | 180 | 160 | 180 | | | | | | | | | | | | ● | ● |

装配方法为轴套外径经冷氮收缩后装配，如果采用压制方式装配，则外径应采用p7



JFB标准轴承套尺寸

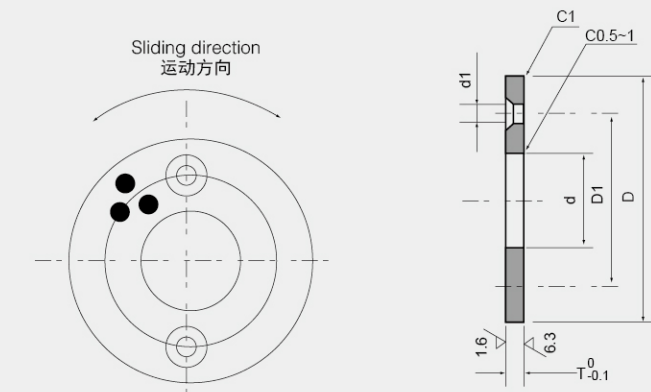
JFB BEARING



| d | D | dE7 | Dr6 | F | L | | | | | | | | | | | | | | | | |
|-----|-----|-----|----------------------|-----|--------------------------------|-----|-----|----|----|----|----|----|----|----|-----|---|---|---|---|---|--|
| | | | | | T _{-0.1} ⁰ | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 80 | 100 | | | | | | |
| 10 | 14 | 10 | $+0.040$ $+0.025$ | 14 | $+0.034$ $+0.023$ | 22 | 2 | ● | ● | | | | | | | | | | | | |
| 12 | 18 | 12 | | 18 | | 25 | 3 | ● | ● | | | | | | | | | | | | |
| 13 | 19 | 13 | $+0.050$ $+0.032$ | 19 | | 26 | | ● | ● | | | | | | | | | | | | |
| 14 | 20 | 14 | | 20 | | 27 | | ● | ● | | | | | | | | | | | | |
| 15 | 21 | 15 | | 21 | $+0.041$ $+0.028$ | 28 | ● | ● | ● | ● | | | | | | | | | | | |
| 16 | 22 | 16 | | 22 | | 29 | ● | ● | ● | ● | | | | | | | | | | | |
| 20 | 30 | 20 | | 30 | | 40 | 5 | ● | ● | ● | ● | | ● | | | | | | | | |
| 25 | 35 | 25 | $+0.061$ $+0.040$ | 35 | | 45 | | | ● | ● | ● | ● | ● | ● | | | | | | | |
| 30 | 40 | 30 | | 40 | | 50 | | | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| 32 | 40 | 32 | $+0.050$ $+0.034$ | 40 | | 60 | | | ● | | | ● | | | | | | | | | |
| 35 | 45 | 35 | | 45 | | 65 | | | ● | | ● | ● | ● | ● | | | | | | | |
| 40 | 50 | 40 | $+0.075$ $+0.050$ | 50 | | 70 | | | | ● | | ● | ● | ● | ● | | | | | | |
| 45 | 55 | 45 | | 55 | | 75 | | | | | ● | ● | ● | ● | ● | ● | | | | | |
| 50 | 60 | 50 | | 60 | $+0.060$ $+0.041$ | 80 | | | | | | ● | ● | ● | ● | ● | | | | | |
| 55 | 65 | 55 | | 65 | | 85 | | | | | | | ● | ● | ● | ● | | | | | |
| 60 | 75 | 60 | | 75 | $+0.062$ $+0.043$ | 90 | | | | | | | ● | ● | ● | ● | ● | | | | |
| 63 | 75 | 63 | | 75 | | 85 | 7.5 | | | | | | | | | ● | | | | | |
| 70 | 85 | 70 | $+0.090$ $+0.060$ | 85 | | 105 | | | | | | | | | | ● | | ● | | | |
| 75 | 90 | 75 | | 90 | $+0.073$ $+0.051$ | 110 | | | | | | | | | | | ● | | | | |
| 80 | 100 | 80 | | 100 | | 120 | 10 | | | | | | | | | ● | ● | ● | | | |
| 90 | 110 | 90 | | 110 | $+0.072$ $+0.037$ | 130 | | | | | | | | | | | ● | ● | | | |
| 100 | 120 | 100 | $+0.107$ $+0.072$ | 120 | | 150 | | | | | | | | | | | | ● | ● | | |
| 120 | 140 | 120 | | 140 | $+0.083$ $+0.043$ | 170 | | | | | | | | | | | | | ● | ● | |

JTW止推垫片标准尺寸

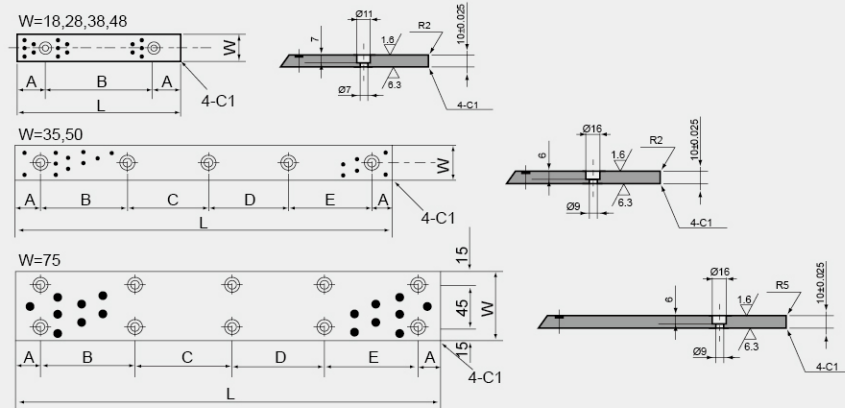
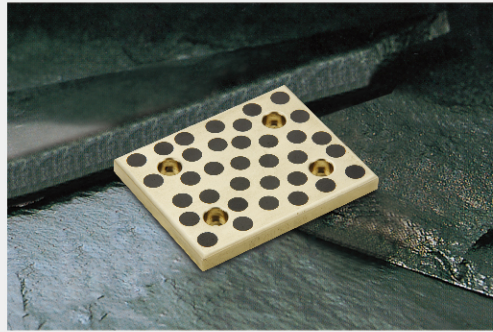
JTW THRUST WASHER



| d | D | T | D1±0.20 | d1 | 螺钉 | 孔数 | |
|-------|-----|-----|---------|-----|----|-----|----|
| 10.2 | 30 | 3 | 20 | 3.5 | M3 | 2 | |
| 12.2 | 40 | | 28 | | | | |
| 13.2 | | | | | | | |
| 14.2 | 50 | 35 | | | | | |
| 15.2 | | | | | | | |
| 16.2 | | | | | | | |
| 18.2 | | | | | | | |
| 20.2 | | | | | | | |
| 25.2 | 55 | 40 | 6 | | | | M5 |
| 30.2 | 60 | 45 | | | | | |
| 35.2 | 70 | 50 | 7 | M6 | | | |
| 40.2 | 80 | 60 | | | | | |
| 45.2 | 90 | 70 | | | | | |
| 50.3 | 100 | 75 | | | | | |
| 55.3 | 110 | 85 | 8 | M8 | | | |
| 60.3 | 120 | 90 | | | | | |
| 65.3 | 125 | 95 | | | | | |
| 70.3 | 130 | 100 | 10 | M8 | | | |
| 75.3 | 140 | 110 | | | | | |
| 80.3 | 150 | 120 | | | | | |
| 90.5 | 170 | 140 | | | | | |
| 100.5 | 190 | 160 | | | 11 | M10 | |
| 120.5 | 200 | 175 | | | | | |

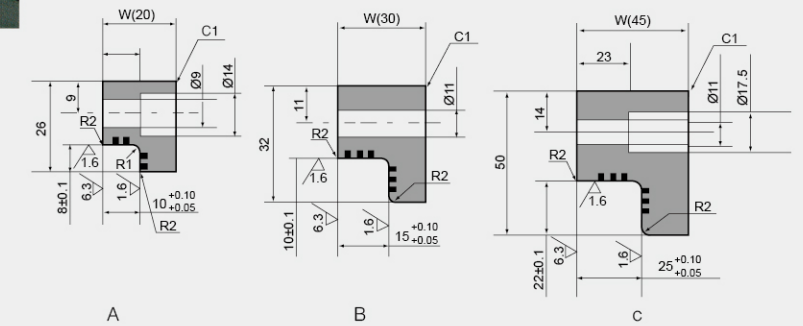
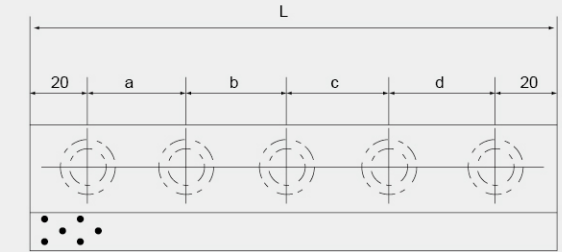
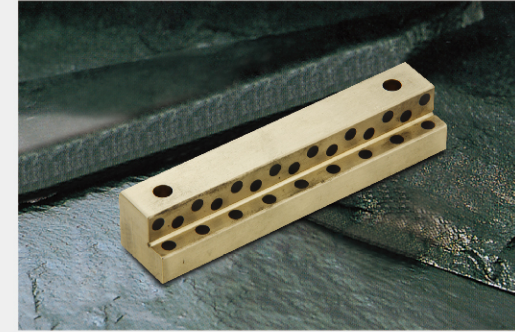


JSP滑板标准尺寸
JSP SLIDING PLATE



| W | L | A | B | C | D | E | 螺钉尺寸 | 孔数 |
|-----|-----|-----|-----|-----|-----|----|------|----|
| 18 | 75 | 15 | 45 | | | | M6 | 2 |
| | 100 | | 50 | | | | | |
| | 125 | 25 | 75 | | | | | |
| 28 | 150 | | 100 | | | | M8 | 3 |
| | 75 | 15 | 45 | | | | | |
| | 100 | 25 | 50 | | | | | |
| 35 | 125 | | 75 | | | | M8 | 4 |
| | 150 | | 100 | | | | | |
| | 200 | 20 | 55 | 55 | | 55 | | |
| | 250 | | 70 | 70 | 70 | 70 | | |
| | 300 | | 65 | 65 | 65 | 65 | | |
| 38 | 350 | | 80 | 75 | 75 | 80 | M6 | 2 |
| | 75 | 15 | 45 | | | | | |
| | 100 | 25 | 50 | | | | | |
| 48 | 125 | | 75 | | | | M8 | 3 |
| | 150 | | 100 | | | | | |
| | 75 | 15 | 45 | | | | | |
| 50 | 100 | 25 | 50 | | | | M8 | 4 |
| | 150 | | 60 | | | | | |
| | 200 | | 55 | 55 | | 55 | | |
| | 250 | | 55 | 50 | 55 | | | |
| | 300 | | 70 | 70 | 70 | 65 | | |
| 75 | 400 | | 65 | 65 | 65 | 90 | M8 | 5 |
| | 150 | 20 | 110 | | | | | |
| | 200 | | 80 | 80 | | | | |
| | 250 | | 105 | 105 | | | | |
| | 300 | | 85 | 90 | 85 | | | |
| | 400 | | 120 | 120 | 120 | | | |
| 500 | | 115 | 115 | 115 | 115 | | | |

JSL导轨标准尺寸
JSL SLIDING PLATE

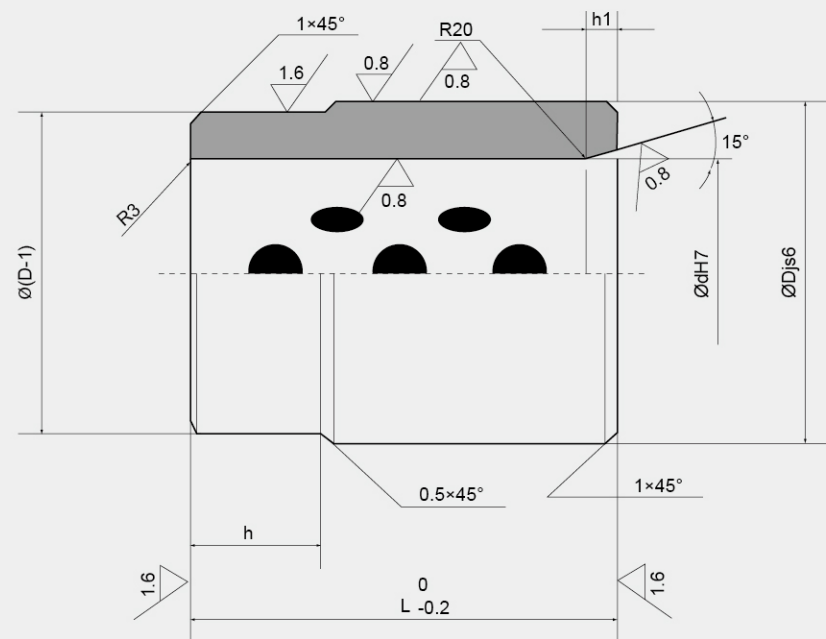


| W | L | (螺钉) Bolt | | | | 螺钉尺寸 | 孔数 | 型式 Type |
|----|-----|-----------|----|----|----|------|----|------------|
| | | a | b | c | d | | | |
| 20 | 100 | 60 | — | — | — | M8 | 2 | A |
| | 150 | 55 | 55 | — | — | | 3 | |
| | 200 | 55 | 50 | 55 | — | | 4 | |
| 30 | 100 | 60 | — | — | — | M10 | 2 | B |
| | 150 | 55 | 55 | — | — | | 3 | |
| | 200 | 55 | 50 | 55 | — | | 4 | |
| | 250 | 70 | 70 | 70 | — | | 4 | |
| 45 | 200 | 55 | 50 | 55 | — | M10 | 4 | C |
| | 250 | 70 | 70 | 70 | — | | 4 | |
| | 300 | 65 | 65 | 65 | 65 | | 5 | |
| | 350 | 80 | 75 | 75 | 80 | | 5 | |



JGB 导套标准尺寸

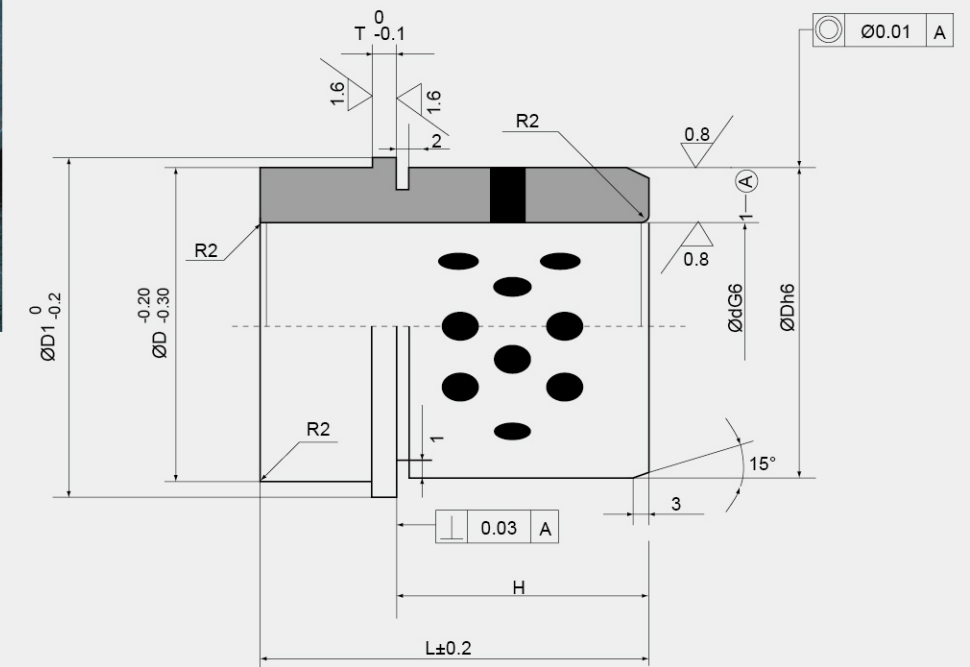
JGB BEARING



| Ød | ØD | L | h | h1 |
|-----|-------------|-----|---------|-----|
| 30 | +0.021 0 | 50 | ±0.008 | 50 |
| 35 | +0.025 0 | 60 | ±0.0095 | 10 |
| 40 | | 60 | | 15 |
| 50 | | 70 | | 5 |
| 60 | +0.030 0 | 80 | 90 | 20 |
| 80 | +0.035 0 | 100 | ±0.011 | 120 |
| 100 | | 120 | 25 | 150 |
| 120 | | 140 | ±0.125 | 180 |

JNA 导套标准尺寸

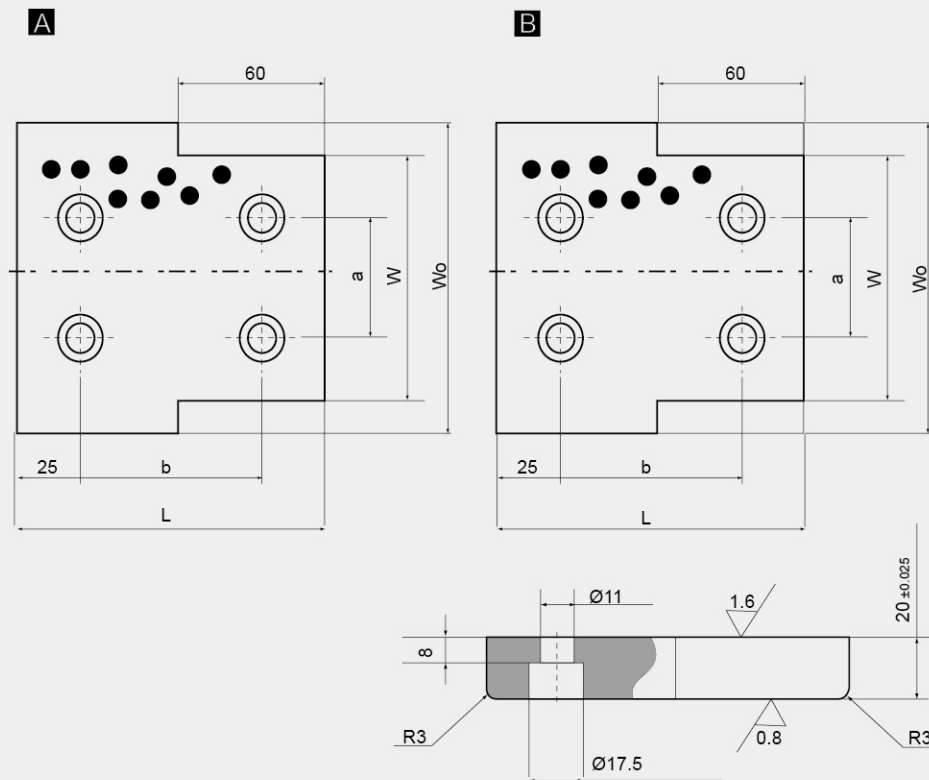
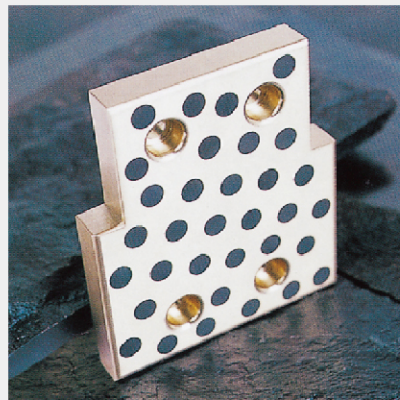
JNA BEARING



| ØdG6 | ØDh6 | ØD1 | L | H | T | |
|------|------------------|-------------|-------------|-----|----|-----|
| 32 | 45 | 0 -0.016 | 53 | 65 | 38 | |
| 40 | +0.025 +0.009 | 55 | 63 | 75 | 48 | |
| 50 | | 65 | 73 | 90 | 65 | |
| 60 | 78 | 90 | 100 | 76 | 8 | |
| 80 | +0.029 +0.010 | 100 | 112 | 125 | | 98 |
| 100 | | 125 | 0 -0.025 | 137 | | 160 |

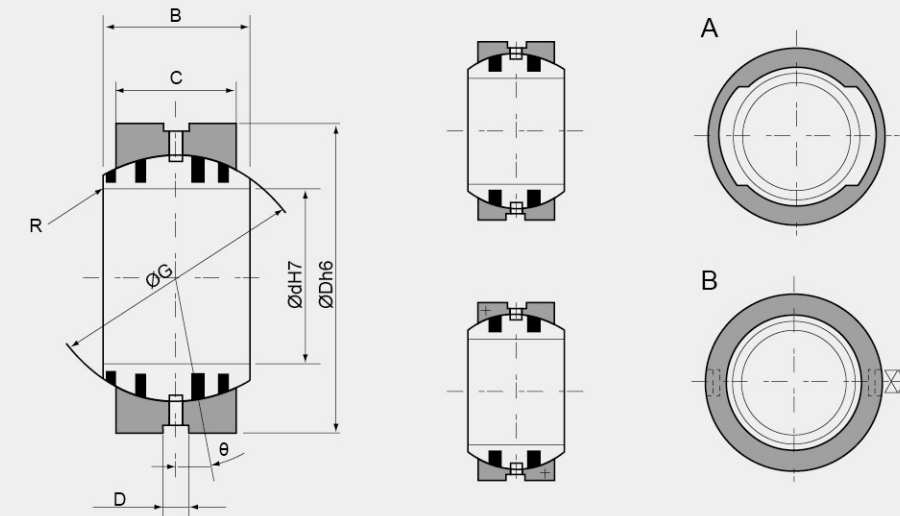


JPRP 滑板标准尺寸
JPRP SLIDING PLATE



| W | L | Wo | a | b | 型式type |
|-----|-----|-----|-----|-----|--------|
| 100 | 125 | 130 | 50 | 75 | A |
| | 150 | | | 100 | |
| 125 | 150 | 155 | 75 | 100 | |
| | 200 | | | 150 | |
| | 250 | | | 200 | |
| 150 | 200 | 180 | 100 | 150 | |
| | 250 | | | 200 | |
| 100 | 125 | 115 | 50 | 75 | B |
| | 150 | | | 100 | |
| 125 | 150 | 140 | 75 | 100 | |
| | 200 | | | 150 | |
| | 250 | | | 200 | |
| 150 | 200 | 165 | 100 | 150 | |
| | 250 | | | 200 | |

JDB-QJ关节轴承
JDB-QJ JOINT BEARING



JDB-QJ关节轴承是由JDB-1球面轴承和外环组成，外环通常分为两瓣，轴向或径向对开。外环材料为45# 钢淬火，硬度HRC40~50
JDB-QJ关节轴承外环与座孔的配合为H8/p6，球面轴承与轴的配合为H7/p7，轴承尺寸见下表。

JDB-QJ joint bearing is made of spherical bearing and outer ring, usually the outer ring divided into two halves, axial or radial open.
The outer ring material is hardened 45# steel, hardness is HRC40~50.

The match between outer ring of JDB-QJ bearing with housing bore is H8/p6, between bearing ID with shaft is H7/p7. bearing size as chart below.

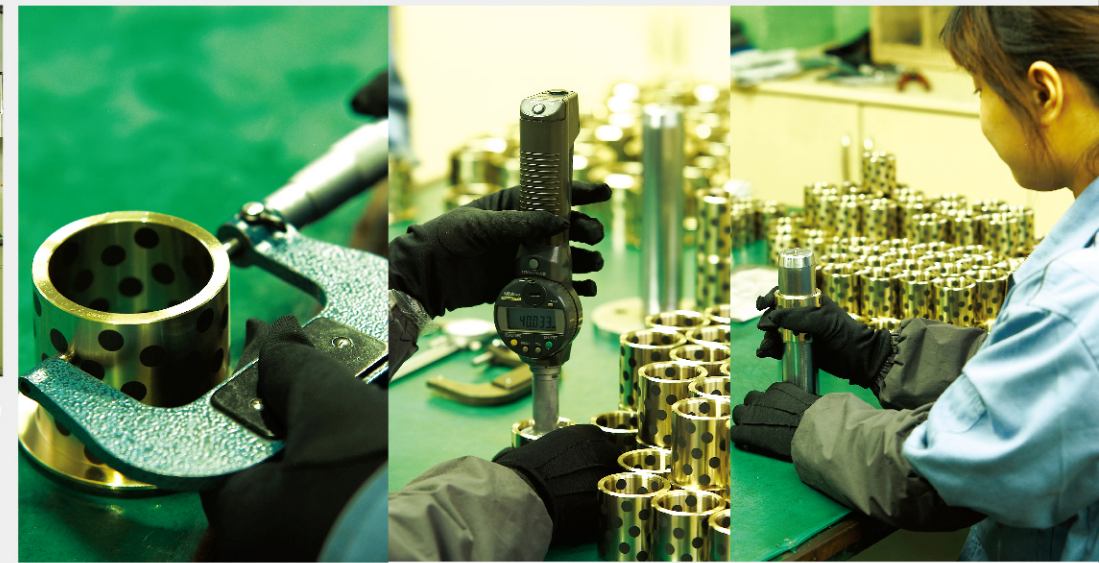
| DIMENSION 尺寸 | | | | | | | ALIGNING ANGLE 调整角度 θ | 型式 Type |
|--------------|-----|----|----|-----|------|---|-----------------------|---------|
| Ød | ØD | B | C | ØG | R | D | | |
| 15 | 26 | 12 | 9 | 22 | R0.5 | 4 | 8 | A |
| 20 | 32 | 16 | 14 | 28 | | | 4 | |
| 25 | 42 | 21 | 18 | 30 | | | 5 | |
| 30 | 50 | 27 | 23 | 44 | R1 | | 6 | |
| 35 | 55 | 30 | 26 | 49 | | | 5 | |
| 40 | 62 | 33 | 28 | 55 | | | 6 | |
| 50 | 80 | 42 | 36 | 70 | | 5 | | |
| 60 | 100 | 53 | 45 | 90 | R1 | 5 | A | |
| 70 | 110 | 58 | 50 | 99 | | 6 | | |
| 80 | 130 | 70 | 60 | 115 | | 6 | | |
| 90 | 140 | 76 | 65 | 125 | | 6 | | |
| 100 | 180 | 88 | 75 | 145 | R1 | 4 | 6 | B |

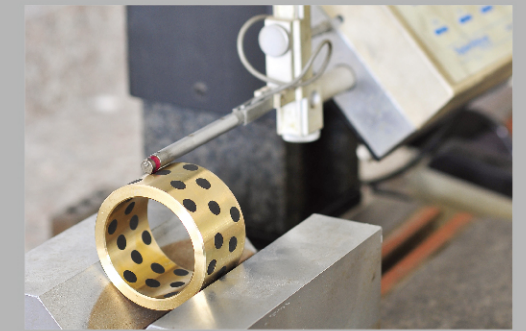
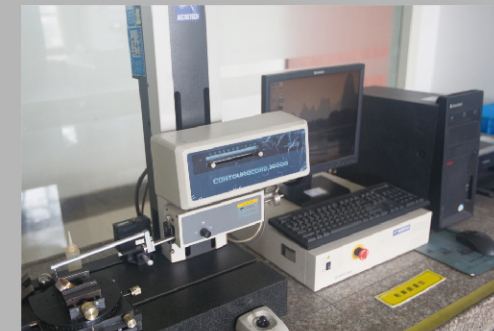


Workshop production



◎车间生产





我们严格按照ISO-TS16949的质量体系，从原材料投入、模具制造、成形、烧结...等直到服务，全过程加以控制。操作工首先进行自检，专职检验人员进行巡回检，每道工序都进行严格把关，每道工序都做到有据可查。同时以先进的检测设备保证了产品100%的出厂合格率！





应用实例

EXAMPLES OF APPLICATION

