

The background of the advertisement features a light green background with a pattern of small, perforated cylindrical and ring-shaped components. A central green band with a repeating pattern of small yellow circles contains the main text.

EPEN BEARING

欧本轴承





嘉善欧本轴承有限公司是一家专业生产滑动轴承，金属塑料复合轴承的企业，秉承做专于精、精益求精、为客户不断创造价值的理念，致力于滑动轴承、复合新材料的研究、开发、推广和应用。公司现有主要产品为金属塑料复合系列滑动轴承、双金属系列轴承、单金属系列滑动轴承等，被广泛应用于汽车工业、冶金、工程机械、建筑机械、塑料机械、机床工业、水利水电等30多个领域。

公司以不断满足顾客对产品多样化、高品质的需求为导向，运用现代技术和设备对产品进行持续改进、提升，从而为客户提供更多产品、更高质量的滑动轴承。

Jiashan Epen Bearing Co.Ltd. is a professional manufacturer of plain bearings and wear plates, and has grown rapidly to a point where now all types of plain bearings can be supplied. Standard catalogue sizes, special sizes and designs can be produced at competitive prices and to a high quality standard. Jiashan Epen Bearing Co.Ltd. serves both the domestic and international markets. The Jiashan Epen Bearing Company intend to stay at the forefront of this market.

The self-lubricating bearings supplied by Jiashan Epen Bearing Co.Ltd. are maintenance free and are ideally suitable to oscillatory motion, linear motion, difficult working environments, high temperature applications, etc.



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1.5 E90 产品介绍 E90 Brief Description

E90轴承是以高密度铜合金（CuSn8）为基体材质卷制而成的具有承载能力大，耐磨性能好的特点。基于铜易加工的良好性能和先进的工装模具，E90轴承可以在带材表面加工出适应各种工况条件的油穴(标准产品为菱形油穴)，油槽等，使轴承在使用中可储存大量的润滑油脂，在工作初期形成油膜，降低摩擦系数，工作中延长加油间隔周期，有效提高轴承使用寿命。与传统的铜套相比，E90轴承具有密度高、薄壁、低重、负载压力大、长寿命，经济等优点，主要应用于农业机械、森林机械、工程机械、采矿机械等领域。

E90 bronze wrapped bushings are made of entirely bronze CuSn8. Because of material properties, the working surface rolled with diamond indentations (standard indentations) or stamped oil grooves according to detailed application. And it also has good performance of anti-corrosion caused by chemical and environments. During the operation, the grease & oil will be released from the indentations, which allow for long-term lubrication. Compare with machined bronze bearings; E90 can offer some advantages including thin wall, lower weight, cheaper cost, high load etc. It is suitable for high load, lower speed application like construction, transport, and agriculture machinery.



1.6 E92 产品介绍 E92 Brief Description

E92 轴承是以 (CuSn8) 为基体材质，表面排布规则的油孔，可在装配前或装配后涂抹油脂，以便在工作中易形成转移油膜，降低摩擦系数。具有油脂储存量大、免维护周期长等优点。产品被广泛应用于农业机械、森林机械、工程机械等。

E92 is deriving from E90; the difference between E90 & E92 is Indentations on working surface, which substituted by Through-holes. These holes will allow greater capacity to collect lubricant, which build up a lubrication film at the start of movement and reduce the friction. It is suitable for high load, lower speed application like construction, Transport, and agriculture machinery.



1.6¹ E90/E92 产品化学成分 E90/E92 Chemical Composition

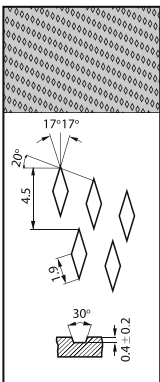
型号 Part No	材料 Material	铜 Cu	锡 Sn	磷 P	铅 Pb	锌 Zn
E90	CuSn8	91.3%	8.5%	0.2%	/	/
E92	CuSn8	91.3%	8.5%	0.2%	/	/

1.6² E90/E92 产品技术参数 E90/E92 Material Characteristics

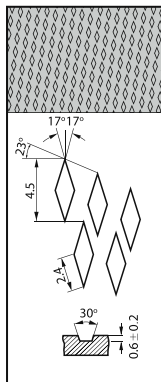
最大承载 P	Max. Load Capacity		
静载	Static Load	N/mm ²	120
动载	Dynamic Load	N/mm ²	40
最高线速度 V	Max. Speed		
E90		m/s	2.0
E92		m/s	>2.5
最高PV值	Max. PV Value	N/mm ² · m/s	2.8
抗拉强度	Tensile Strength	N/mm ²	450
抗压强度	Yield Point	N/mm ²	250
硬 度	Hardness	HB	90-120
延 伸 率	Elongation		40%
摩擦系数	Coefficient of Friction	μ	0.08~0.25
使用温度	Operation Temperature Range	°C	-100~200
导热系数	Thermal Conductivity	W/(m · k)	60
热膨胀系数	Coefficient of Thermal Expansion	k ⁻¹	15 × 10 ⁻⁶

1.6³ E90/E92 标准油穴/油孔 E90/E92 Oil Indentations/Holes

E90

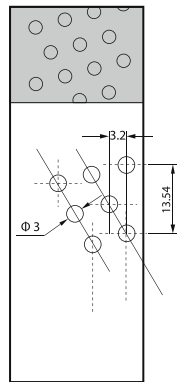


菱形油穴内孔 < Φ 22
Diamond Indentations
Inter Diameter < Φ 22

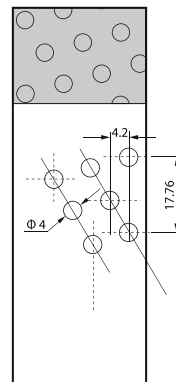


菱形油穴内孔 ≥ Φ 22
Diamond Indentations
Inter Diameter ≥ Φ 22

E92



圆形油孔内孔 ≤ Φ 25
Spherical Holes
Inter Diameter ≤ Φ 25



圆形油孔内孔 > Φ 25
Spherical Holes
Inter Diameter > Φ 25



2 轴承的选型、接触面形式、装配 Bushing Design, Mating Surface, Install

2.1 轴承的选型 Bushing Design

与轴承寿命有关的六个因素:

(1) 载荷 P [N/mm²] Load

载荷越大，轴承使用寿命越短；载荷波动越大，对轴承寿命的影响也越大，轴承寿命越短；无论在任何情况下，最大载荷不可超过理论最大允许负载值。载荷大小等于实际工作载荷除以轴承的投影面积，公式为 $P=F/(D*B)$ 。

(2) 速度 V [m/s]与PV 值

Velocity V & PV Value

轴承的工作寿命取决于PV值的大小，即实际负载 P [N/mm²] 与滑动速度 V [m/s]乘积，PV 值越小，轴承寿命越长。

(3) 温度 T [°C]

Tempature

轴承的寿命也取决于轴承使用时的温度，因此在设计选型时应尽量考虑相关部件的散热特性。

(4) 对磨部件的表面粗糙度

Ra [μm] Roughness of Mating Surface

与轴承对磨的部件接触面粗糙度应在 Ra0.2~Ra0.8之间，轴承在装配和使用的过程中不可有锐利的介质损坏轴承的工作表面。

(5) 对磨部件表面材料，对磨部件表面粗糙度是影响轴套使用寿命的一个因素，一般情况下某表面要求达到 $\leq 0.4 \mu m ka$ 。

(6) 其他因素如轴承座的设计、润滑条件等

Factors of bushing service life:

(1) Operation load is an important factor for

bushing service life, and steady load is beneficial for it. Generally, the specific load determined by the type of loading, and should not exceed theorial value. Specifical load obtained from operation load divided by the projected area of bushing.

(2) Bushing service life determined by PV Value,

$PV = P \times V$.

PV value is smaller, service life of bushing is longer.

(3) Environment tempture and Thermal

Generated from the different movements like Oscillating, rotary & reciprocating will influence the bushing service life. The resions has higher thermal expansion rate with poor thermal conductivity. It is necessary to control the bushing size and clearance.

(4) The roughness of mating surface should be

Ra 0.2-Ra 0.8. During the process of installing, the sharp or burrs etc forbidden to damage the mating surface.

(5) Material of Mating Surface will effected service

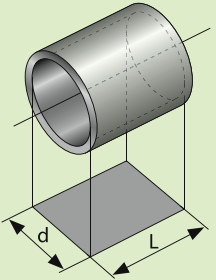
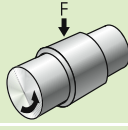
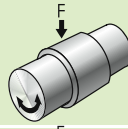
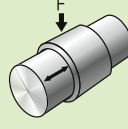
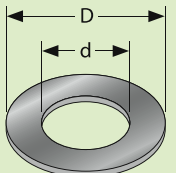
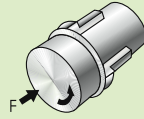
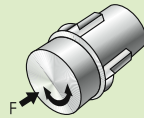
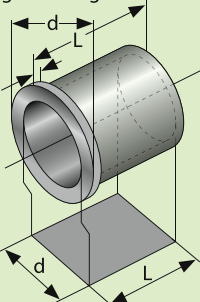
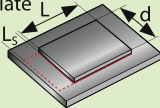
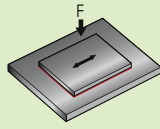
life of bushing the mating surface finish should $\leq 0.4 \mu m ka$.

(6) Other Factors like Design of housing,

Lubrication condition etc



2.2 PV值 PV Value

轴套 BUSHING		压力 PRESSURE, P	速度 VELOCITY, V	PV值 PV Value
		PN/mm ² {kgf/cm ² }	m/s {m/min}	N/mm ² *m/s {kgf/cm ² *m/min}
直套 Sleeve Bushing 	1. 径向单向旋转 Rotating motion in single direction of radial journal 	$\frac{F}{dL}$ $\left\{ \frac{10^2 F}{dL} \right\}$	$\frac{\pi dn}{10^3}$ $\left\{ \frac{\pi dn}{10^3} \right\}$	$\frac{\pi Fn}{10^3 L}$ $\left\{ \frac{\pi Fn}{10 L} \right\}$
	2. 摇摆运动 Oscillating motion 	$\frac{F}{dL}$ $\left\{ \frac{10^2 F}{dL} \right\}$	$\frac{dc \theta}{10^3}$ $\left\{ \frac{\pi dc \theta}{180 \times 10^3} \right\}$	$\frac{Fc \theta}{10^3 L}$ $\left\{ \frac{\pi Fc \theta}{180 \times 10^2 L} \right\}$
	3. 往复运动 Reciprocating motion 	$\frac{F}{dL}$ $\left\{ \frac{10^2 F}{dL} \right\}$	$\frac{2cS}{10^3}$ $\left\{ \frac{2cS}{10^3} \right\}$	$\frac{2FcS}{10^3 dL}$ $\left\{ \frac{FcS}{5dL} \right\}$
止推垫片 Thrust Washer 	1. 旋转 Rotating motion 	$\frac{4F}{\pi(D^2-d^2)}$ $\left\{ \frac{400F}{\pi(D^2-d^2)} \right\}$	$\frac{\pi Dn}{10^3}$ $\left\{ \frac{\pi Dn}{10^3} \right\}$	$\frac{4FDn}{10^3(D^2-d^2)}$ $\left\{ \frac{4FDn}{10(D^2-d^2)} \right\}$
	2. 摇摆运动 Oscillating motion 	$\frac{4F}{\pi(D^2-d^2)}$ $\left\{ \frac{400F}{\pi(D^2-d^2)} \right\}$	$\frac{DC \theta}{10^3}$ $\left\{ \frac{\pi Dc \theta}{180 \times 10^3} \right\}$	$\frac{4FDC \theta}{10^3 \pi(D^2-d^2)}$ $\left\{ \frac{4FDc \theta}{180 \times 10(D^2-d^2)} \right\}$
翻边轴套 Flange Bushing 	1. 直套 Sleeve Bushing	翻边直套承载计算用上述直套承载计算公式, 但 L=l+t。 Use above formulas for sleeve bushing (L=l+t)	翻边直套轴速度计算用上述直套速度计算公式。 Use above formulas for sleeve bushing	翻边直套轴PV值计算用上述直套PV值计算公式。 Use above formulas for sleeve bushing
	2. 法兰面 Flange surface	翻边法兰面承载计算按上述垫片承载计算公式。 Use above formulas for thrust washer	翻边法兰面速度计算按上述垫片计算公式。 Use above formulas for thrust washer	翻边法兰面PV值计算按上述垫片PV值计算公式。 Use above formulas for thrust washer
滑块 Slide Plate 	1. 往复运动 Reciprocating motion 	$\frac{F}{BL}$ $\left\{ \frac{10^2 F}{WL} \right\}$	$\frac{2cS}{10^3}$ $\left\{ \frac{2cS}{10^3} \right\}$	$\frac{2FcS}{10^3 BL}$ $\left\{ \frac{FcS}{5WL} \right\}$

F : 承载 load N {kgf}
 N : 转速 Rotations S-1 {rpm}
 c : 往复圆周速度或摇摆 Cylindrical velocity of reciprocating
 or oscillating motion S-1 {cpm}
 S : 往复运动距离 Stroke distance m {mm}
 θ : 摇摆角度 Oscillating angle rad { }
 d : 轴套内径 Bushing ID mm {mm}
 D : 轴套外径 Bushing OD mm {mm}
 L : 轴套长度 Bushing length mm {mm}
 W : 板材或滑动宽度 Strip/Slide way width mm {mm}



3 轴套装配 Bushing Installation

3.1 轴套接触面设计 Bushing Arrangement Design

错误的装配形式会破坏或缩短轴承的使用寿命，下面列出了相关的装配形式，请在设计时参考：

Wrong assemble will broken or reduced useful life the following assemble should be referred when design:

	错误 Error	正确 Correct
翻边套与轴肩接触形式 Flang Bushing & Shaft		
垫片与轴肩接触形式 Thrust Washer & Shaft		
轴套与轴的油槽形式 Bushing & Oil grooves		
润滑油槽及油孔的形式 Oil grooves & Oil hole		
轴肩与轴套的接触面形式 Bushing & Shaft		
轴槽与轴套的接触面形式 Shaft groove & Bushing		
轴与轴套的同心度装配要求 Concentricity between Shaft & Bushing		



3.2 轴套座孔设计 Housing Design

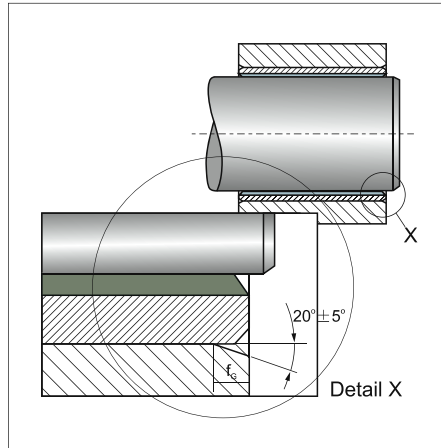
直套装配设计

为了更易于装配，轴承的座孔均应有一个倒角，如表。

Bushing

It's necessary there should have a chamfer on housing bore, it make bushing easier to be pressed into housing.

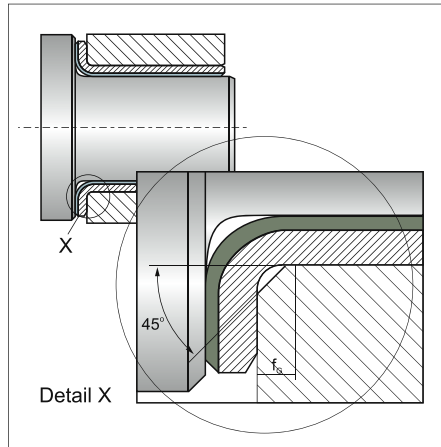
座孔 Housing bore diameter d_G	倒角 Chamfer with f_G
$d_G \leq 30$	0.8 ± 0.3
$30 < d_G \leq 80$	1.2 ± 0.4
$80 < d_G \leq 180$	1.8 ± 0.8
$180 < d_G$	2.5 ± 1.0



翻边套装配设计

Flange Bushing

座孔 Housing bore diameter d_G	倒角 Chamfer with f_G
$d_G \leq 10$	1.2 ± 0.2
$180 < d_G$	1.7 ± 0.2

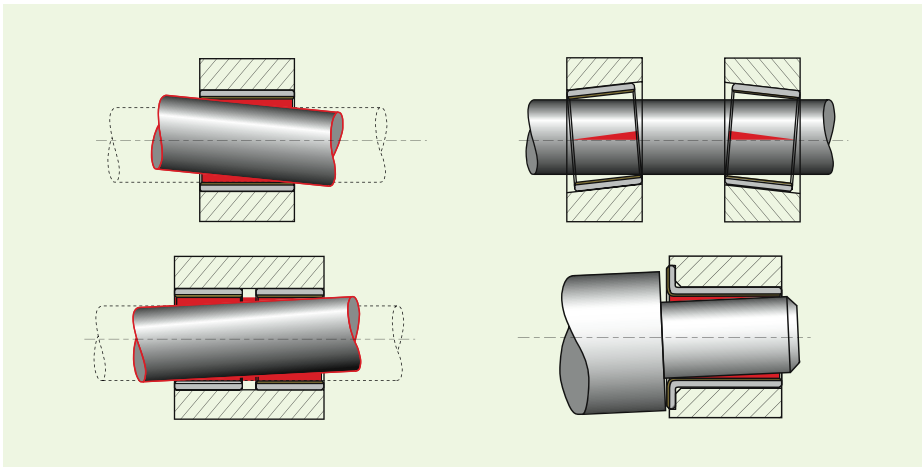


同轴度

Concentricity

精确的同轴度对所有的轴承装配都是一个重要的考虑因素。轴承在一个轴套（或两个）长度内的不同轴度或在止推垫圈直径值内的不同轴度不应该超过0.020mm，如图所示

Concentricity is an important factor for bushing installation.

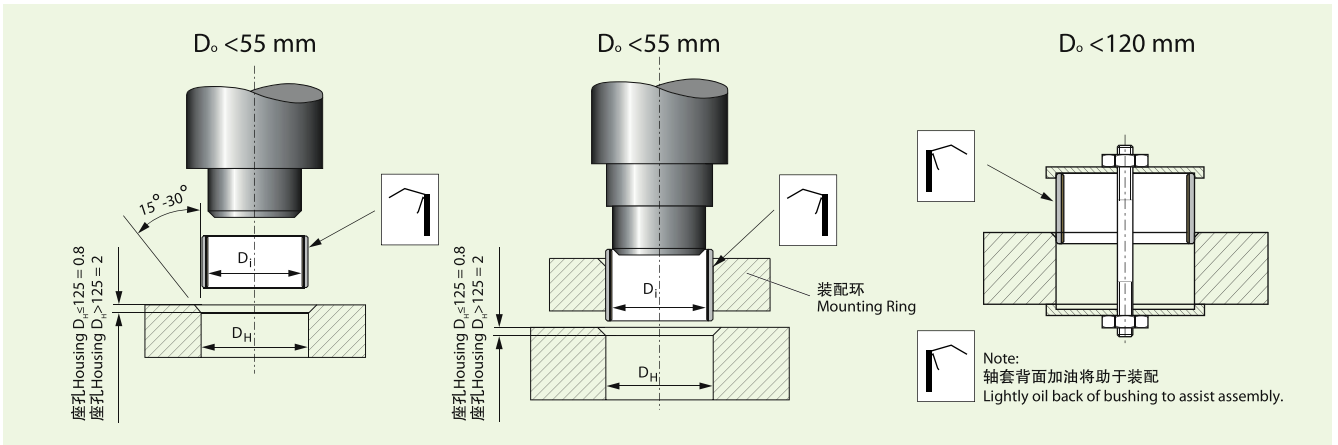




3.3 轴套压装 Bushing Installation

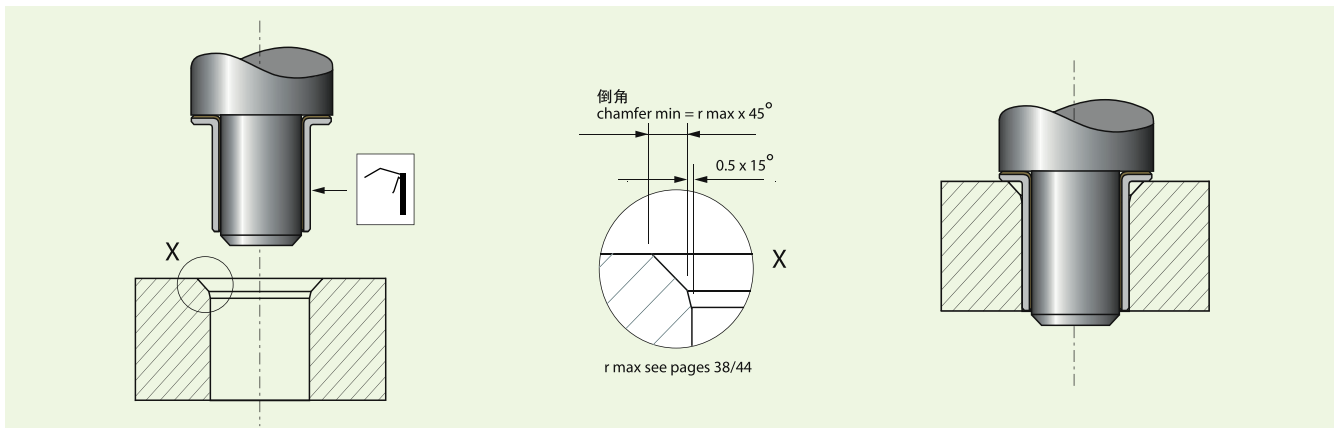
直套压装

Fitting of Cylindrical Bushing



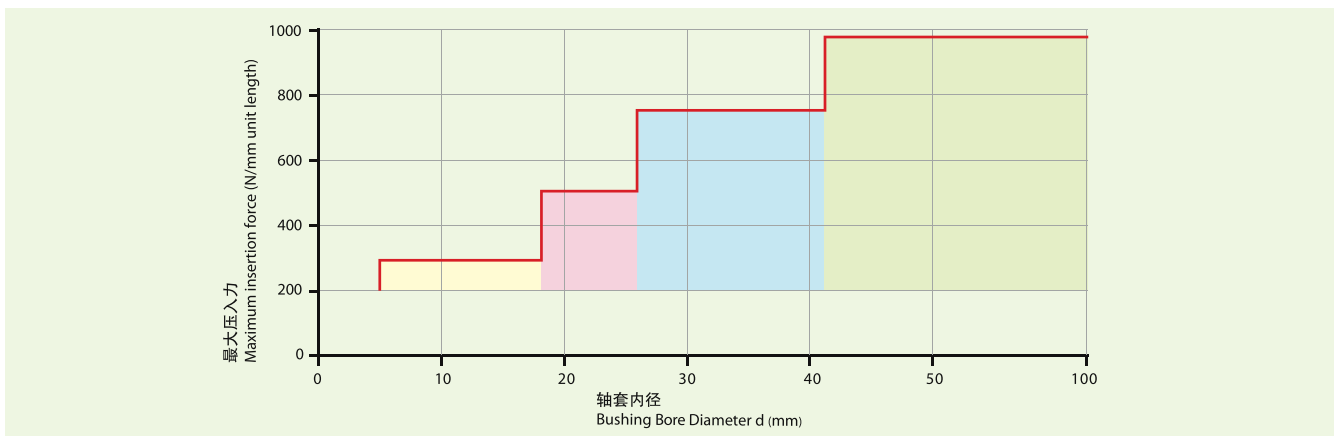
翻边轴套压装

Fitting of Flanged Bushing



压入力

Insertion Force





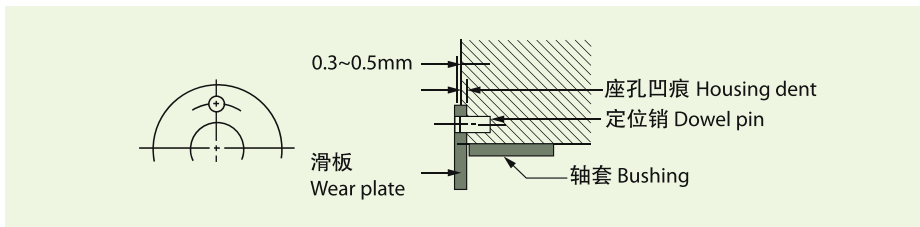
3.4 止推垫片和滑块装配 Thrust washers & Plate Installation

装配止推垫片和滑块时座孔肩有凹穴，定位销则应用于防止产品旋转。

Housing should have hollow dents for installing thrust washer and sliding plates. Dowel pins used for prevent turning.

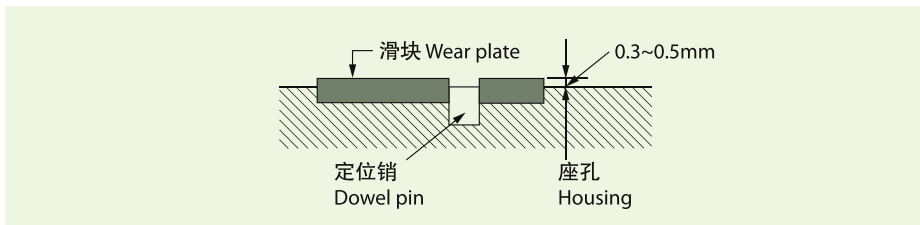
定位销应用（止推垫片）

Dowel Pin Application (Thrust Washer)



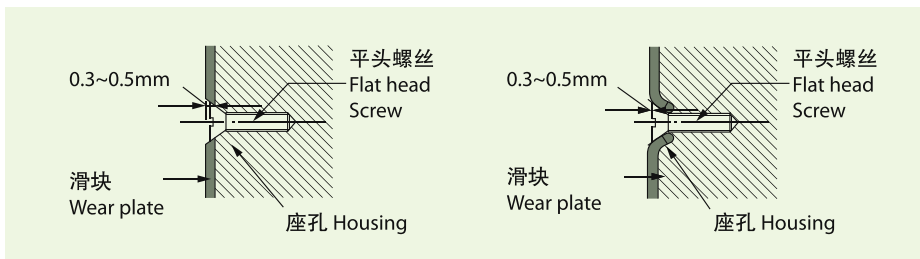
滑块镶嵌装配（滑板）

Inlaid Installation (Plate)



平头螺丝应用

Flat Head Screw Application



1 安装后，垫圈的内径不能碰到旋转轴。

After install, ID of washer can not contact shaft.

2 垫圈的钢背与轴承座相接触。

Backing of washer contact housing.

3 定位销应比止推垫圈表面下凹0.25 ~ 0.50mm。

Dowel pin should 0.25 ~ 0.50mm lower than surface of thrust washer

4 平头螺丝应比止推垫圈表面下沉0.25 ~ 0.50mm。

Flat head screw should 0.25 ~ 0.50mm lower than surface of thrust washer.



4 产品应用 Application

4.1 EU 产品应用 EU Application

由于材料的特性和性能的结合，EU产品比一般的自润轴承得到了更广泛的应用和推广。薄壁结构，体积小，重量轻，使EU轴套方便使用。基于耐磨层PTFE混合物的材料特性，EU产品适用于难维护的无法加油或难加油，无油润滑和少油润滑的场合。在使用过程中，PTFE混合物形成转移膜保护对磨轴从而避免咬轴现象。PTFE混合物具有出色的耐磨性能和低摩擦系数，还有适量的弹塑性，能将应力分布在较宽的接触面上，从而提高EU产品的承载能力(见)，所以EU产品适用于旋转，摇摆，轴向滑动等场合。

Base on the combinations of properties & performance capabilities; Eu has greater application range than other self-lubricating bearings. Thin-wall compact, lightweight, Eu bearings are economic & convenient to use. EU's PTFE-based bushing surface permits smooth, low coefficient of friction, low wear rate operation with no lubricant, no maintenance & dry running. During operation, the transfer film created will protect the mating shaft surface. EU bearings has great capacity of load & wild range of operation temperatures from -190 to 280, can be suitable for rotary, oscillating and axial sliding motion.

具体的应用。

Detailed application.

下列是有关EU轴承的部分具体应用

The following list covers some of the many types of EU bearing applications.

汽车工业 Automotive

在这个行业的典型的应用包括:

油门、制动、离合器踏板、反光镜调节机构、雨刮器、玻璃窗提升机构、天窗机构、操纵杆、车门铰链车门锁、安全带张紧机构、座椅调节机构、减震器、引擎减震、化油器、行李箱、引擎盖铰链、横直拉杆及球头、节流阀、驾驶杆、转向装置、弹簧钢板等。

Typical applicaiton in this area include:

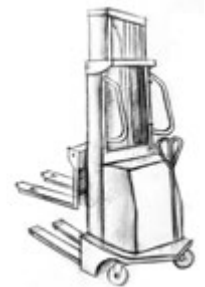
accelerator linkages, brake, clutch foot pedal, reflector control, windscreen wipers, windscreen lift system, roof window system, gear level, door hinges, door lock, seat belt system, seating system, shock absorbers, engin absorbers, carburetor, trunk & bonnet hinges, suspension ball joint, throttle valves, steering columns, steering rods, king-pin assemblies etc.

农业机械和食品机械

Agricultural Machinery/Equipments

拖拉机、联合收割机、(干草、稻草等的)打包机; 压捆机、肉类加工设备、土豆收获机、喷雾机、谷物干燥机、栽(种植)设备、酿造设备等。

Tractors, combine harvesters, balers, meat processing equipment, potato harvesters, crop sprayers, grain dryers, planting apparatus, brewing equipment, etc.





4.1 EU 产品应用 EU Application

工程机械、运输机械

Construction Equipments

挖掘机、液压升降机、混凝土搅拌机、叉式提升搬运车、液压缸、传动带张紧装置、起重机、砂浆车、托盘叉式起重车、气力升降机、推土机、自动扶梯、自动行人道、重型挂车、液体灌输设备、侧向装卸机等。

Excavator hydraulic lifts, concrete mixers, fork lift trucks, hydraulic cylinders, tensioning pulleys, crane, mortar vehicles, pallet fork lift trucks, pneumatic lifts, graders, escalators, moving walkways, heavy-duty trailers, Liquid filling equipment, side loader roller assemblies, power take-off units etc.

家用电器、商业电器、医院设备

Home Appliances, Hospital Equipments

空调、吸尘器、洗碗机、缝纫机、洗衣机、冰箱、复印机、打印机、扫描仪、邮件处理系统、信件分类装置、牙科设备、X射线设备、手术台等。

Air conditioners, cleaners, dish-washing machine, sewing machines, clothes washing machines, refrigerator, copy machines, automatic print machines, scanner, mail processing machinery,

mail sorters, dental equipment, x-ray equipment, operating table etc.

液压行业

Hydraulics

齿轮泵、水泵、活塞泵、球阀、蝶阀、混合阀、控制阀、往复式空压机、液压制动器、离心式压缩机、液压油缸等。

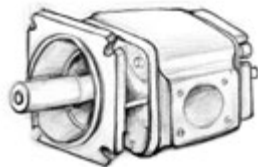
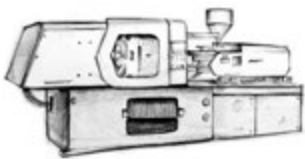
Gear pump, water pump, piston pump, ball valves, butterfly valves, mixing valves, pilot valve, reciprocating air compressors, hydraulic actuators, centrifugal compressors, hydraulic cylinder etc.

其它应用

Other Applications

自行车、摩托车、工具、蒸纱机、往复锯、割绒机、纺织机、编织机、纽扣机、包装系统、钉装机械设备、玻璃制造设备等。

Bike, motobicycle, hand tools, yarn & wool machinery, reciprocating saws, cutting machines, spinning machines, knitting machines, button machines, packaging system, bookbinding equipment, glass manufacturing equipments etc.





4.2 EX 产品应用 EX Application

EX轴套通常被推荐用于间断运行和边界润滑的环境中，特别是轴套内孔的油穴设计，很好的适用于不能连续不断或重复加油的场合，但在无润滑条件下，EX轴套的工作长短取决于承载，表面速度，具体的环境温度等的相互作用。同时，轴套内表面的塑料层可以在加工成型前留有余量，在装入座孔后可加工到更好的装配尺寸。

EX bushings have been recommended for application involving intermittent operation or boundary lubrication. Base on the unique lubrication-retaining pockets on surface, EX bushings are well suitable for application, where lubricant can not be supplied continuously or repeated. Under the no lubrication, the EX operating life depends on interaction of the specific load, surface velocity and temperature etc. EX bushings can be supplied as machining allowance on POM, it can be machined to Better assembly dimensions after installed into housing.

具体的应用。

Detailed application.

下列是有关EX轴承的部分具体应用

The following list covers some of the many types of EX bushing applications.

汽车工业

Automotive

悬挂系统，悬挂接头，大王销主件，汽车驱动联合铰链，转向及连杆机构，转向及关节接头，后部底盘铰链等。

Suspension system, suspension joints, king-pin assemblies, automobile driving joint hinges, steering and other linkages, steering and articulation joints, rear chassis hinges etc.

农业机械

Agricultural Machinery/Equipments

齿轮箱、离合器、收割机主销轴承、前桥支点轴承、转向托辊轴承箱、拖拉机的配件中的起重齿轮、播种设备等。

Gearbox, clutch, kingpin bearings for harvesters, front axle pivot bearings, steering idler box bearings, seeding equipment, etc.

机床制造业

Machine Tool Building Industry

磨床、铣床、钻机主轴、精密磨床的偏心驱动单元等。

Grinding machines, milling machines, spindles in drill; Eccentric drive unit in precision grinding machines etc

其它应用

Other Applications

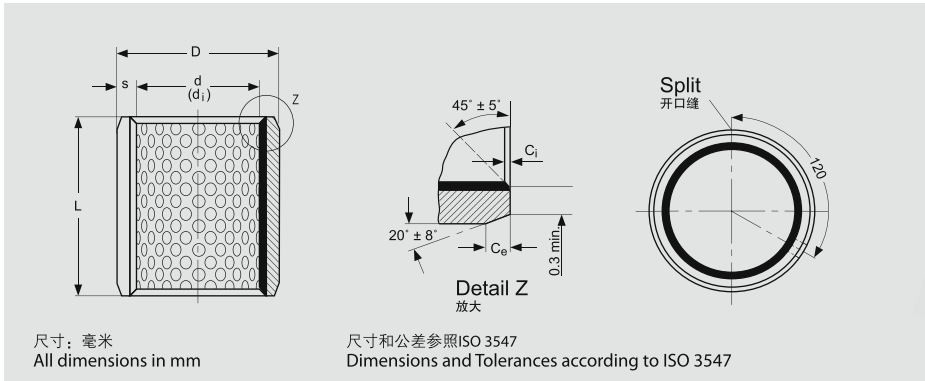
油齿轮泵、旋转器支持轴承、液压泵变量斜盘耳轴轴承、液压缸和气动缸活塞杆导承、叉车变速箱、起重机变速箱和传输托链链轮、车输送机、蜗杆传动齿轮等。

Oil gear pumps, support bearings in rotary actuators; variable swash plate trunnion bearings in hydraulic pumps, piston rod guide in hydraulic and pneumatic cylinders; Transfer gearbox for forklift trucks, gearbox and in idler chain sprockets for crane transmissions, car conveyors, worm drive gear, etc.





5.14 E90/E92 直套规格及公差 E90/E92 Sleeve Bushing Specification & Tolerance



内外倒角尺寸表 Inside & Outside Chamfers

壁厚 Wall thickness S	内倒角 Inside Chamfer C _i	外倒角 Outside Chamfer C _o
1.00	0.30 ± 0.20	0.60 ± 0.40
1.50	0.40 ± 0.30	0.60 ± 0.40
2.00	0.40 ± 0.30	1.20 ± 0.40
2.50	0.60 ± 0.40	1.80 ± 0.60

直套型号标注方式 Bushing Symbol

直套型号标注方式 Bushing Symbol	E9 - □	× ×	× ×
直套型号 Bushing Type			
直套内径 Bushing I. D.			
直套高度 Bushing Length			

内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φ D _s	装配后内孔尺寸 Φ d _i (H9)	外径 D	装配座孔 Housing- Φ D _H	理论外径公差 O.D. Φ D _i	ID < 80 L ± 0.25 ID > 80 L ± 0.50	
10	9.984 9.957	10.043 10.000	12	12.018 12.000	+0.065 +0.030	10	E90/E92 1010
						15	E90/E92 1015
						20	E90/E92 1020
12	11.984 11.957	12.043 12.000	14	14.018 14.000		10	E90/E92 1210
						15	E90/E92 1215
						20	E90/E92 1220
14	13.984 13.957	14.043 14.000	16	16.018 16.000		10	E90/E92 1410
						15	E90/E92 1415
						20	E90/E92 1420
15	14.984 14.957	15.043 15.000	17	17.018 17.000		25	E90/E92 1425
						10	E90/E92 1510
						15	E90/E92 1515
16	15.984 15.957	16.043 16.000	18	18.018 18.000	20	E90/E92 1520	
					25	E90/E92 1525	
					10	E90/E92 1610	
						15	E90/E92 1615
						20	E90/E92 1620
						25	E90/E92 1625



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_i	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
18	17.984 17.957	18.043 18.000	20	20.018 20.000	+0.065 +0.030	10	E90/E92 1810
						15	E90/E92 1815
						20	E90/E92 1820
						25	E90/E92 1825
20	19.980 19.947	20.052 20.000	23	23.021 23.000		10	E90/E92 2010
						15	E90/E92 2015
						20	E90/E92 2020
						25	E90/E92 2025
22	21.980 21.947	22.052 22.000	25	25.021 25.000		10	E90/E92 2210
						15	E90/E92 2215
						20	E90/E92 2220
						25	E90/E92 2225
24	23.980 23.947	24.052 24.000	27	27.021 27.000		30	E90/E92 2230
						15	E90/E92 2415
						20	E90/E92 2420
						25	E90/E92 2425
25	24.980 24.947	25.052 25.000	28	28.021 28.000	+0.075 +0.035	30	E90/E92 2430
						15	E90/E92 2515
						20	E90/E92 2520
						25	E90/E92 2525
28	27.980 27.947	28.052 28.000	32	32.021 32.000		30	E90/E92 2530
						15	E90/E92 2815
						20	E90/E92 2820
						25	E90/E92 2825
30	29.980 29.947	30.052 30.000	34	34.021 34.000		30	E90/E92 2830
						15	E90/E92 3015
						20	E90/E92 3020
						25	E90/E92 3025
32	31.975 31.936	32.062 32.000	36	36.025 36.000	+0.085 +0.045	30	E90/E92 3030
						35	E90/E92 3035
						40	E90/E92 3040
						15	E90/E92 3215
						20	E90/E92 3220
						25	E90/E92 3225
						30	E90/E92 3230



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No	
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t	ID<80 L \pm 0.25 ID>80 L \pm 0.50		
32	31.975 31.936	32.062 32.000	36	36.025 36.000	+0.085 +0.045	35	E90/E92 3235	
						40	E90/E92 3240	
						50	E90/E92 3250	
35	34.975 34.936	35.062 35.000	39	39.025 39.000		15	E90/E92 3515	
						20	E90/E92 3525	
						25	E90/E92 3525	
						30	E90/E92 3530	
						35	E90/E92 3535	
						40	E90/E92 3540	
40	39.975 39.936	40.062 40.000	44	44.025 44.000		20	E90/E92 4020	
						25	E90/E92 4025	
						30	E90/E92 4030	
						35	E90/E92 4035	
						40	E90/E92 4040	
45	44.975 44.936	45.062 45.000	50	50.025 50.000		50	E90/E92 4050	
						20	E90/E92 4520	
						25	E90/E92 4525	
						30	E90/E92 4530	
						35	E90/E92 4535	
						40	E90/E92 4540	
50	49.975 49.936	50.062 50.000	55	55.025 55.000		50	E90/E92 4550	
						20	E90/E92 5020	
						25	E90/E92 5025	
						30	E90/E92 5030	
						35	E90/E92 5035	
						40	E90/E92 5040	
						50	E90/E92 5050	
55	54.970 54.924	55.074 55.000	60	60.030 60.000		+0.100 +0.055	60	E90/E92 5060
						20	E90/E92 5520	
						25	E90/E92 5525	
						30	E90/E92 5530	
						35	E90/E92 5535	
					40	E90/E92 5540		
					50	E90/E92 5550		
60	E90/E92 5560							



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_i	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
60	59.970 59.924	60.074 60.000	65	65.030 65.000		25	E90/E92 6025
						30	E90/E92 6030
						35	E90/E92 6035
						40	E90/E92 6040
						50	E90/E92 6050
						60	E90/E92 6060
						70	E90/E92 6070
65	64.970 64.924	65.074 65.000	70	70.030 70.000		30	E90/E92 6530
						35	E90/E92 6535
						40	E90/E92 6540
						50	E90/E92 6550
						60	E90/E92 6560
						70	E90/E92 6570
						80	E90/E92 6580
70	69.970 69.924	70.074 70.000	75	75.030 75.000	+0.100 +0.055	30	E90/E92 7030
						35	E90/E92 7035
						40	E90/E92 7040
						50	E90/E92 7050
						60	E90/E92 7060
						70	E90/E92 7070
						80	E90/E92 7080
75	74.970 74.924	75.074 75.000	80	80.030 80.000		30	E90/E92 7530
						35	E90/E92 7535
						40	E90/E92 7540
						50	E90/E92 7550
						60	E90/E92 7560
						70	E90/E92 7570
						80	E90/E92 7580
80	79.970 79.924	80.074 80.000	85	85.030 85.000		30	E90/E92 8030
						35	E90/E92 8035
						40	E90/E92 8040
						50	E90/E92 8040
						60	E90/E92 8060
						70	E90/E92 8070
						80	E90/E92 8080



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
85	84.964 84.910	85.087 85.000	90	90.035 90.000		30	E90/E92 8530
						35	E90/E92 8535
						40	E90/E92 8540
						50	E90/E92 8550
						60	E90/E92 8560
						70	E90/E92 8570
						80	E90/E92 8580
						90	E90/E92 8590
90	89.964 89.910	90.087 90.000	95	95.035 95.000		30	E90/E92 9030
						35	E90/E92 9035
						40	E90/E92 9040
						50	E90/E92 9050
						60	E90/E92 9060
						70	E90/E92 9070
						80	E90/E92 9080
						90	E90/E92 9090
95	94.964 94.910	95.087 95.000	100	100.035 100.000	+0.120 +0.070	40	E90/E92 9540
						50	E90/E92 9550
						60	E90/E92 9560
						70	E90/E92 9570
						80	E90/E92 9580
						90	E90/E92 9590
						100	E90/E92 95100
						100	99.964 99.910
60	E90/E92 10060						
70	E90/E92 10070						
80	E90/E92 10080						
90	E90/E92 10090						
100	E90/E92 100100						
105	104.964 104.910	105.087 105.000	110	110.035 110.000		50	E90/E92 10550
						60	E90/E92 10560
						70	E90/E92 10570
						80	E90/E92 10580
						90	E90/E92 10590
						100	E90/E92 105100



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_i	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
110	109.964 109.910	110.087 110.000	115	115.035 115.000		50	E90/E92 11050
						60	E90/E92 11060
						70	E90/E92 11070
						80	E90/E92 11080
						90	E90/E92 11090
						100	E90/E92 110100
115	114.964 114.910	115.087 115.000	120	120.035 120.000	+0.120 +0.070	50	E90/E92 11550
						60	E90/E92 11560
						70	E90/E92 11570
						80	E90/E92 11580
						90	E90/E92 11590
						100	E90/E92 115100
120	119.964 119.910	120.087 120.000	125	125.035 125.000		60	E90/E92 12060
						70	E90/E92 12070
						80	E90/E92 12080
						90	E90/E92 12090
						100	E90/E92 120100
						125	124.957 124.894
70	E90/E92 12570						
80	E90/E92 12580						
90	E90/E92 12590						
100	E90/E92 125100						
130	129.957 129.894	130.100 130.000	135	135.040 135.000	+0.170 +0.100		
						70	E90/E92 13070
						80	E90/E92 13080
						90	E90/E92 13090
						100	E90/E92 130100
						135	134.957 134.894
70	E90/E92 13570						
80	E90/E92 13580						
90	E90/E92 13590						
100	E90/E92 135100						
140	139.957 139.894	140.100 140.000	145	145.040 145.000			
						70	E90/E92 14070
						80	E90/E92 14080



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
140	139.957 139.894	140.100 140.000	145	145.040 145.000		90	E90/E92 14090
						95	E90/E92 14095
						100	E90/E92 140100
145	144.957 144.894	145.100 145.000	150	150.040 150.000		60	E90/E92 14560
						70	E90/E92 14570
						80	E90/E92 14580
						90	E90/E92 14590
						100	E90/E92 145100
150	149.957 149.894	150.100 150.000	155	155.040 155.000		60	E90/E92 15060
						70	E90/E92 15070
						80	E90/E92 15080
						90	E90/E92 15090
						100	E90/E92 150100
155	154.957 154.894	155.100 155.000	160	160.040 160.000		60	E90/E92 15560
						70	E90/E92 15570
						80	E90/E92 15580
						90	E90/E92 15590
						100	E90/E92 155100
160	159.957 159.894	160.100 160.000	165	165.040 165.000		60	E90/E92 16060
						70	E90/E92 16070
						80	E90/E92 16080
						90	E90/E92 16090
						100	E90/E92 160100
165	164.957 164.894	165.100 165.000	170	170.040 170.000		60	E90/E92 16560
						70	E90/E92 16570
						80	E90/E92 16580
						90	E90/E92 16590
						100	E90/E92 165100
170	169.957 169.894	170.100 170.000	175	175.040 175.000		60	E90/E92 17060
						70	E90/E92 17070
						80	E90/E92 17080
						90	E90/E92 17090
						100	E90/E92 170100
175	174.957 174.894	175.100 175.000	180	180.040 180.000		60	E90/E92 17560
						70	E90/E92 17570



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_i	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
175	174.957 174.894	175.100 175.000	180	180.040 180.000		80	E90/E92 17580
						85	E90/E92 17585
						90	E90/E92 17590
						100	E90/E92 175100
180	179.957 179.894	180.100 180.000	185	185.040 185.000	+0.170 +0.100	60	E90/E92 18060
						70	E90/E92 18070
						80	E90/E92 18080
						90	E90/E92 18090
						100	E90/E92 180100
185	184.950 184.878	185.115 185.000	190	190.046 190.000		60	E90/E92 18560
						65	E90/E92 18565
						70	E90/E92 18570
						80	E90/E92 18580
						90	E90/E92 18590
190	189.950 189.878	190.115 190.000	195	195.046 195.000		100	E90/E92 185100
						60	E90/E92 19060
						70	E90/E92 19070
						80	E90/E92 19080
						90	E90/E92 19090
195	194.950 194.878	195.115 195.000	200	200.046 200.000	+0.210 +0.130	100	E90/E92 190100
						60	E90/E92 19560
						70	E90/E92 19570
						80	E90/E92 19580
						90	E90/E92 19590
200	199.950 199.878	200.115 200.000	205	205.046 205.000		100	E90/E92 195100
						60	E90/E92 20060
						70	E90/E92 20070
						80	E90/E92 20080
						90	E90/E92 20090
205	204.950 204.878	205.115 205.000	210	210.046 210.000		100	E90/E92 200100
						60	E90/E92 20560
						70	E90/E92 20570
						80	E90/E92 20580
						90	E90/E92 20590
						100	E90/E92 205100



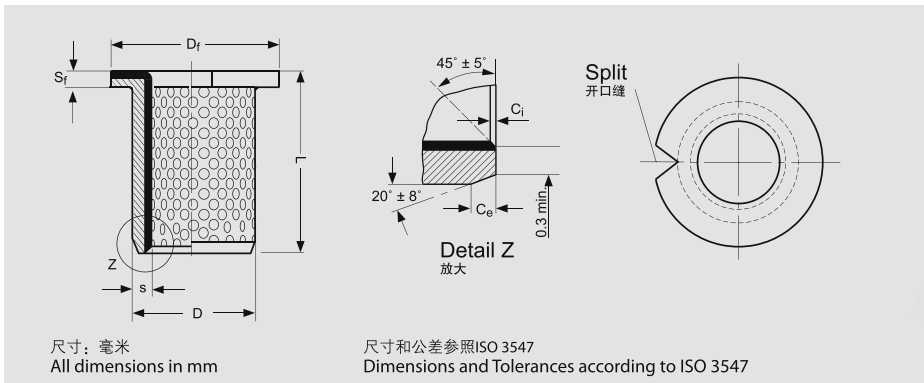
内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
215	214.950 214.878	215.115 215.000	220	220.046 220.000		60	E90/E92 21560
						70	E90/E92 21570
						80	E90/E92 21580
						90	E90/E92 21590
						100	E90/E92 215100
225	224.950 224.878	225.115 225.000	230	230.046 230.000		60	E90/E92 22560
						70	E90/E92 22570
						80	E90/E92 22580
						90	E90/E92 22590
						100	E90/E92 225100
230	229.950 229.878	230.115 230.000	235	235.046 235.000	+0.210 +0.130	60	E90/E92 23060
						70	E90/E92 23070
						80	E90/E92 23080
						90	E90/E92 23090
						100	E90/E92 230100
240	239.950 239.878	240.115 240.000	245	245.046 245.000		60	E90/E92 24060
						70	E90/E92 24070
						80	E90/E92 24080
						90	E90/E92 24090
						100	E90/E92 240100
250	249.950 249.878	250.115 250.000	255	255.046 255.000		60	E90/E92 25060
						70	E90/E92 25070
						80	E90/E92 25080
						90	E90/E92 25090
						100	E90/E92 250100
260	259.944 259.863	260.130 260.000	265	265.052 265.000		60	E90/E92 26060
						70	E90/E92 26070
						80	E90/E92 26080
						90	E90/E92 26090
						100	E90/E92 260100
270	269.944 269.863	270.130 270.000	275	275.052 275.000	+0.260 +0.170	60	E90/E92 27060
						70	E90/E92 27070
						80	E90/E92 27080
						90	E90/E92 27090
						100	E90/E92 270100



内径 Internal Diameter			外径 External Diameter			高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 Φd_i (H9)	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t	ID<80 L \pm 0.25 ID>80 L \pm 0.50	
280	279.944 279.863	280.130 280.000	285	285.052 285.000		60	E90/E92 28060
						70	E90/E92 28070
						80	E90/E92 28080
						90	E90/E92 28090
						100	E90/E92 280100
290	289.944 289.863	290.130 290.000	295	295.052 295.000	+0.260 +0.170	60	E90/E92 29060
						70	E90/E92 29070
						80	E90/E92 29080
						90	E90/E92 29090
						100	E90/E92 290100
300	299.944 289.863	300.130 300.000	305	305.052 305.000		60	E90/E92 30060
						70	E90/E92 30070
						80	E90/E92 30080
						90	E90/E92 30090
						100	E90/E92 300100



5.15 E90/E92 翻边规格及公差 E90/E92 Flange Bushing Specification & Tolerance



内外倒角尺寸表 Inside & Outside Chamfers

壁厚 Wall thickness S	内倒角 Inside Chamfer C _i	外倒角 Outside Chamfer C _e
1.00	0.30 ± 0.20	0.60 ± 0.40
1.50	0.40 ± 0.30	0.60 ± 0.40
2.00	0.40 ± 0.30	1.20 ± 0.40
2.50	0.60 ± 0.30	1.80 ± 0.60

翻边型号标注方式 Bushing Symbol

直套型号标注方式 Bushing Symbol	E9□ - F	× ×	× ×
直套型号 Bushing Type			
直套内径 Bushing I. D.			
直套高度 Bushing Length			

内径 Internal Diameter			外径 External Diameter			法兰外径 Flang Φ D _f	高度 Length	型号 Part No
内径 d	装配轴径 Shaft-Φ d _s	装配后内孔尺寸 Φ d _i (H9)	外径 D	装配座孔 Housing-Φ D _H	理论外径公差 O.D. Φ D _t		ID<80 L ± 0.25 ID>80 L ± 0.50	
25	24.980 24.947	25.052 25.000	28	28.021 28.000	+0.075 +0.035	35	15	E90F/E92F 2515
							20	E90F/E92F 2520
							25	E90F/E92F 2525
30	29.980 29.947	30.052 30.000	34	34.021 34.000	+0.075 +0.035	45	20	E90F/E92F 3020
							25	E90F/E92F 3025
							20	E90F/E92F 3020
35	34.975 34.936	35.062 35.000	39	39.025 39.000	+0.075 +0.035	50	20	E90F/E92F 3520
							25	E90F/E92F 3525
							30	E90F/E92F 3530
							35	E90F/E92F 3535
40	39.975 39.936	40.062 40.000	44	44.025 44.000	+0.085 +0.045	55	25	E90F/E92F 4025
							30	E90F/E92F 4030
							35	E90F/E92F 4035
							40	E90F/E92F 4040
45	44.975 44.936	45.062 45.000	50	50.025 50.000	+0.085 +0.045	60	30	E90F/E92F 4530
							35	E90F/E92F 4535
							40	E90F/E92F 4540
							50	E90F/E92F 4550



内径 Internal Diameter			外径 External Diameter			法兰外径 Flang ΦD_f	高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 $\Phi d_i(H9)$	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t		ID<80 L \pm 0.25	
							ID>80 L \pm 0.50	
50	49.975 49.936	50.062 50.000	55	55.025 55.000	+0.085 +0.045	65	30	E90F/E92F 5030
							35	E90F/E92F 5035
							40	E90F/E92F 5040
							50	E90F/E92F 5050
55	54.970 54.924	55.074 55.000	60	60.030 60.000	+0.100 +0.055	70	30	E90F/E92F 5530
							35	E90F/E92F 5535
							40	E90F/E92F 5540
							50	E90F/E92F 5550
60	59.970 59.924	60.074 60.000	65	65.030 65.000		75	30	E90F/E92F 6030
							35	E90F/E92F 6035
							40	E90F/E92F 6040
							50	E90F/E92F 6050
							60	E90F/E92F 6060
65	64.970 64.924	65.074 65.000	70	70.030 70.000		80	30	E90F/E92F 6530
							35	E90F/E92F 6535
							40	E90F/E92F 6540
							50	E90F/E92F 6550
							60	E90F/E92F 6560
70	69.970 69.924	70.074 70.000	75	75.030 75.000		85	35	E90F/E92F 7035
							40	E90F/E92F 7040
							50	E90F/E92F 7050
							60	E90F/E92F 7060
							70	E90F/E92F 7070
75	74.970 74.924	75.074 75.000	80	80.030 80.000		90	35	E90F/E92F 7535
					40		E90F/E92F 7540	
					50		E90F/E92F 7550	
					60		E90F/E92F 7560	
					70		E90F/E92F 7570	
80	79.970 79.924	80.074 80.000	85	85.030 85.000	100	40	E90F/E92F 8040	
						50	E90F/E92F 8050	
						60	E90F/E92F 8060	
						70	E90F/E92F 8070	
						80	E90F/E92F 8080	
90	89.964 89.910	90.087 90.000	100	100.035 100.000	+0.120 +0.070	110	50	E90F/E92F 9050
							60	E90F/E92F 9060



内径 Internal Diameter			外径 External Diameter			法兰外径 Flang ΦD_f	高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 $\Phi d_i(H9)$	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t		ID<80 L \pm 0.25	
							ID>80 L \pm 0.50	
95	94.964 94.910	95.087 95.000	100	100.035 100.000	+0.120 +0.070	115	70	E90F/E92F 9070
							80	E90F/E92F 9080
							90	E90F/E92F 9090
100	99.964 99.910	100.087 100.000	105	105.035 105.000		120	50	E90F/E92F 10050
							60	E90F/E92F 10060
							70	E90F/E92F 10070
							80	E90F/E92F 10080
							90	E90F/E92F 10090
							90	E90F/E92F 10090
110	109.964 109.910	110.087 110.000	115	115.035 110.000		130	50	E90F/E92F 11050
							60	E90F/E92F 11060
							70	E90F/E92F 11070
							80	E90F/E92F 11080
							90	E90F/E92F 11090
							90	E90F/E92F 11090
120	119.964 119.910	120.087 120.000	125	125.035 125.000		140	60	E90F/E92F 12060
							70	E90F/E92F 12070
							80	E90F/E92F 12080
							90	E90F/E92F 12090
130	129.957 129.894	130.100 130.000	135	135.040 135.000		155	60	E90F/E92F 13060
							70	E90F/E92F 13070
							80	E90F/E92F 13080
							90	E90F/E92F 13090
140	139.957 139.894	140.100 140.000	145	145.040 145.000		165	60	E90F/E92F 14060
							70	E90F/E92F 14070
							80	E90F/E92F 14080
							90	E90F/E92F 14090
150	149.957 149.894	150.100 150.000	155	155.040 155.000		180	60	E90F/E92F 15060
							70	E90F/E92F 15070
							80	E90F/E92F 15080
					90		E90F/E92F 15090	
160	159.957 159.894	160.100 160.000	165	165.040 165.000	190	60	E90F/E92F 16060	
						70	E90F/E92F 16070	
						80	E90F/E92F 16080	
						90	E90F/E92F 16090	
170	169.957 169.894	170.100 170.000	175	175.040 175.000	200	60	E90F/E92F 17060	
						70	E90F/E92F 17070	



内径 Internal Diameter			外径 External Diameter			法兰外径 Flang ΦD_f	高度 Length	型号 Part No
内径 d	装配轴径 Shaft- Φd_s	装配后内孔尺寸 $\Phi d_i(H9)$	外径 D	装配座孔 Housing- ΦD_H	理论外径公差 O.D. ΦD_t		ID<80 L \pm 0.25	
							ID>80 L \pm 0.50	
170	169.957 169.894	170.100 170.000	175	175.040 175.000		200	80	E90F/E92F 17080
							90	E90F/E92F 17090
180	179.957 179.894	180.100 180.000	185	185.040 185.000	+0.170 +0.100	215	60	E90F/E92F 18060
							70	E90F/E92F 18070
							80	E90F/E92F 18080
							90	E90F/E92F 18090
190	189.950 189.878	190.115 190.000	195	195.046 195.000		225	60	E90F/E92F 19060
							70	E90F/E92F 19070
							80	E90F/E92F 19080
							90	E90F/E92F 19090
200	199.950 199.878	200.115 200.000	205	205.046 205.000	+0.210 +0.130	235	60	E90F/E92F 20060
							70	E90F/E92F 20070
							80	E90F/E92F 20080
							90	E90F/E92F 20090
225	224.950 224.878	225.115 225.000	230	230.046 230.000		260	60	E90F/E92F 22560
							70	E90F/E92F 22570
							80	E90F/E92F 22580
							90	E90F/E92F 22590
250	249.950 249.878	250.115 250.000	255	255.046 255.000		290	60	E90F/E92F 25060
							70	E90F/E92F 25070
							80	E90F/E92F 25080
							90	E90F/E92F 25090
265	264.944 264.863	265.130 265.000	270	270.052 270.000		305	60	E90F/E92F 26560
							70	E90F/E92F 26570
							80	E90F/E92F 26580
							90	E90F/E92F 26590
285	284.944 284.863	285.130 285.000	290	290.052 290.000	+0.260 +0.170	325	60	E90F/E92F 28560
							70	E90F/E92F 28570
							80	E90F/E92F 28580
							90	E90F/E92F 28590
300	299.944 299.863	300.130 300.000	305	305.052 305.000		340	60	E90F/E92F 30060
							70	E90F/E92F 30070
							80	E90F/E92F 30080
							90	E90F/E92F 30090



6 轴公差表(250) Shaft Tolerance Table (250)

≥	<	c9	d8	e7	e8	f7	g6	h5	h6	h7	h8	js6	js7	k6	m6	n6	p6	p7	r6	s6		
-	3	-60 -85	-20 -34	-14 -24	-14 -28	-6 -16	-2 -8	0 -4	0 -6	0 -10	0 -14	± 3	± 5	+6 0	+8 +2	+10 +4	+12 +6	+16 +6	+16 +10	+20 +14		
3	6	-70 -100	-30 -48	-20 -32	-20 -38	-10 -22	-4 -12	0 -5	0 -8	0 -12	0 -18	± 4	± 6	+9 +1	+12 +4	+16 +8	+20 +12	+24 +12	+23 +15	+27 +19		
6	10	-80 -116	-40 -62	-25 -40	-25 -47	-13 -28	-5 -14	0 -6	0 -9	0 -15	0 -22	± 4.5	± 7	+10 +1	+15 +6	+19 +10	+24 +15	+30 +15	+28 +19	+32 +23		
10	18	-95 -138	-50 -77	-32 -50	-32 -59	-16 -34	-6 -17	0 -8	0 -11	0 -18	0 -27	± 5.5	± 9	+12 +1	+18 +7	+23 +12	+29 +18	+36 +18	+34 +23	+39 +28		
18	24	-110 -162	-65 -98	-40 -61	-40 -73	-20 -41	-7 -20	0 -9	0 -13	0 -21	0 -33	± 6.5	± 10	+15 +2	+21 +8	+28 +15	+35 +22	+43 +22	+41 +28	+48 +35		
24	30																					
30	40	-120 -182	-80 -119	-50 -75	-50 -89	-25 -50	-9 -25	0 -11	0 -16	0 -25	0 -39	± 8	± 12	+18 +2	+25 +9	+33 +17	+42 +26	+51 +26	+50 +34	+59 +43		
40	50	-130 -192																				
50	65	-140 -214	-100 -146	-60 -90	-60 -106	-30 -60	-10 -29	0 -13	0 -19	0 -30	0 -46	± 9.5	± 15	+21 +2	+30 +11	+39 +20	+51 +32	+62 +32	+60 +41	+72 +53		
65	80	-150 -224																			+62 +43	+78 +59
80	100	-170 -257	-120 -174	-72 -107	-72 -126	-36 -71	-12 -34	0 -15	0 -22	0 -35	0 -54	± 11	± 17	+25 +3	+35 +13	+45 +23	+59 +37	+72 +37	+73 +51	+93 +71		
100	120	-180 -267																			+76 +54	+101 +79
120	140	-200 -300	-145 -208	-85 -125	-85 -148	-43 -83	-14 -39	0 -18	0 -25	0 -40	0 -63	± 12.5	± 20	+28 +3	+40 +15	+52 +27	+68 +43	+83 +43	+88 +63	+117 +92		
140	160	-210 -310																			+90 +65	+125 +100
160	180	-230 -330																			+93 +68	+133 +108
180	200	-240 -355	-170 -242	-100 -146	-100 -172	-50 -96	-15 -44	0 -20	0 -29	0 -46	0 -72	± 14.5	± 23	+33 +14	+46 +17	+60 +31	+79 +50	+96 +50	+106 +77	+151 +122		
200	225	-260 -375																			+109 +80	+159 +130
225	250	-280 -395																			+113 +84	+169 +140
250	280	-300 -430																			+126 +94	+190 +158
280	315	-330 -460	-210 -299	-125 -182	-125 -214	-62 -119	-18 -54	0 -25	0 -36	0 -57	0 -89	± 16	± 26	+36 +14	+52 +20	+66 +34	+88 +56	+108 +56	+126 +94	+190 +158		
315	355	-360 -500																			+130 +98	+202 +170
355	400	-400 -540	-230 -327	-135 -198	-135 -232	-68 -131	-20 -60	0 -27	0 -40	0 -63	0 -97	± 18	± 28	+40 +4	+57 +21	+73 +37	+98 +62	+119 +62	+114 +108	+226 +190		
400	450	-440 -595																			+150 +114	+244 +208
450	500	-480 -635																			+166 +126	+272 +232
												± 20	± 31	+45 +5	+63 +23	+80 +40	+108 +68	+131 +68	+172 +132	+292 +252		



7 座孔公差表(250) Housing Tolerance Table (250)

≥	<	B10	C9	D8	E7	E8	F7	G7	H6	H7	H8	JS7	K7	M7	N7	P7	R7	S7	T7
-	3	+180 +140	+85 +60	+34 +20	+24 +14	+28 +14	+16 +6	+12 +2	+6 0	+10 0	+14 0	±5	0 -10	-2 -12	-4 -14	-6 -16	-10 -20	-14 -24	-
3	6	+188 +140	+100 +70	+48 +30	+32 +20	+38 +20	+22 +10	+16 +4	+8 0	+12 0	+18 0	±6	+3 -9	0 -12	-4 -16	-8 -20	-11 -23	-15 -27	-
6	10	+208 +150	+116 +80	+62 +40	+40 +25	+47 +25	+28 +13	+20 +5	+9 0	+15 0	+22 0	±7	+5 -10	0 -15	-4 -19	-9 -24	-13 -28	-17 -32	-
10	14	+200 +150	+138 +95	+77 +50	+50 +32	+59 +32	+34 +16	+24 +6	+11 0	+18 0	+27 0	±9	+6 -12	0 -18	-5 -23	-11 -29	-16 -34	-21 -39	-
18	24	+244 +160	+162 +110	+98 +65	+61 +40	+73 +40	+41 +20	+28 +7	+13 0	+21 0	+33 0	±10	+6 -15	0 -21	-7 -28	-14 -35	-20 -41	-27 -48	-
24	30																		-33 -54
30	40	+270 +170	+182 +120	+119	+75	+89	+50	+34	+16	+25	+39	±12	+7	0	-8	-17	-25	-34	-39 -64
40	50	+280 +180	+192 +130	+80	+50	+50	+25	+9	0	0	0		-18	-25	-33	-42	-50	-59	-45 -70
50	65	+310 +190	+214 +140	+146	+90	+106	+60	+40	+19	+30	+46	±15	+9	0	-9	-21	-30	-42	-55 -85
65	80	+320 +200	+224 +150	+100	+60	+60	+30	+10	0	0	0		-21	-30	-39	-51	-32	-48	-64 -94
80	100	+360 +220	+257 +170	+174	+107	+125	+71	+47	+22	+35	+54	±17	+10	0	-10	-24	-38	-58	-78 -113
100	120	+380 +240	+267 +180	+120	+72	+72	+36	+12	0	0	0		-25	-35	-45	-59	-41	-66	-91 -126
120	140	+420 +260	+300 +200	+208	+125	+148	+83	+54	+25	+40	+63	±20	+12	0	-12	-28	-48	-77	-107 -147
140	160	+440 +280	+310 +210	+145	+85	+85	+43	+14	0	0	0		-28	-40	-52	-68	-50	-85	-119 -159
160	180	+470 +310	+330 +230														-53	-93	-131 -171
180	200	+525 +340	+355 +240	+242	+146	+172	+96	+61	+29	+46	+72	±23	+13	0	-14	-33	-60	-105	-149 -195
200	225	+565 +380	+375 +260	+170	+100	+100	+50	+15	0	0	0		-33	-46	-60	-79	-63	-113	-163 -209
225	250	+605 +420	+395 +280														-67	-123	-179 -225
250	280	+690 +480	+430 +300	+271	+162	+191	+108	+69	+32	+52	+81	±26	+16	0	-14	-36	-74	-138	-198 -250
280	315	+750 +540	+460 +330	+190	+110	+110	+56	+17	0	0	0		-36	-52	-66	-88	-78	-150	-220 -272
315	355	+830 +600	+500 +360	+299	+182	+214	+119	+75	+36	+57	+89	±28	+17	0	-16	-41	-87	-169	-247 -304
355	400	+910 +680	+540 +400	+210	+125	+125	+62	+18	0	0	0		-40	-57	-73	-98	-93	-187	-273 -330
400	450	+1010 +760	+595 +440	+327	+198	+232	+131	+83	+40	+63	+97	±31	+18	0	-17	-45	-103	-209	-307 -370
450	500	+1090 +840	+635 +480	+230	+135	+135	+68	+20	0	0	0		-45	-63	-80	-108	-109	-229	-337 -400



8 卷制轴套检测 Wrapped Bushing Measurement

在自由状态下，卷制类轴套有一定的开口缝，不能精确的测量外径和内径。所以，卷制类轴承的内径应有专业的测量工具和设备进行。

In free state, wrapped bushing will not be closed, which is impossible to accurately measure External diameter & Internal diameter. When wrapped bushing Measured, special gauges and test equipments is necessary.

外径检测

Test external diameter ISO 3547-2 TEST B

轴套用力压入环规通规（最大加力250N）通过
Press the bushing into Go ring gage. And push bushing through by hand (Max. force 250N)
用上述同样方法和相同力压入环规止端不通过
Use the above same way & press, bushing can not go into No Go ring gauge.



内径检测

Test Internal diameter ISO 3547-2 TEST C

当轴套压入环规，塞规通端通过用较小力，塞规止端通过用较大力不超过250N

Press the bushing into ring gauge. The Go plug gauge could be inserted by a light pressure. The No Go plug gauge could not be inserted by heavy pressure (Max. force 250N)

注意：轴套压入环规，轴套外径可能会永久减小

Note: When the bushing is pressed into ring gauge, external diameter could be permanent reduction.

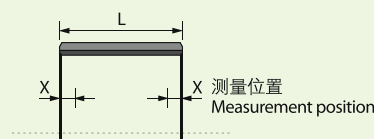


壁厚测量

Wall thickness Meaurment

轴套壁厚测量：按轴套高度在轴套轴向上测量一点，两点或三点。

The wall thickness of bushing is measured by profession gauge at one, two, or three positions according to bushing length.



L [mm]	X [mm]	Measurement position
$L \leq 15$	$L/2$	1
$15 < L \leq 50$	4	2
$50 < L \leq 90$	6 and $L/2$	3
$L > 90$	8 and $L/2$	3

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嘉善欧本轴承有限公司
JIASHAN EPEN BEARING CO., LTD

地址 浙江嘉善经济开发区 (惠民街道) 成功路161号
邮编 314100

电话 +86 573 8482 4388
传真 +86 573 8482 4386
网址 www.cnepen.cn
邮件 epen@cnepen.cn

No 161 ChengGong Road, Economic Development
Zone (HuiMin Street) Jiashan Zhejiang China
Post Code 314100

Tel +86 573 8482 4388
Fax +86 573 8482 4386
Http www.cnepen.cn
E-mail epen@cnepen.cn