



**BOTE BEARING**  
**波 特 轴 承**



余姚市波特轴承有限公司  
YUYAO BOTE BEARING CO.,LTD.

Factory (工厂)

Tel:0086-574-63477637

Fax:0086-574-63477596

Export Department (外贸部)

Tel:0086-574-22717256

Fax:0086-574-22662625

Website:www.botebearings.com

E-mail:chbo@botebearings.com

**www.botebearings.com**



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## 企业简介 Enterprise brief introduction

余姚市波特轴承有限公司成立于1995年，经过多年的发展，公司已经从一个单一的深沟球轴承加工企业发展成为一个集轴承套圈加工，高品质电机轴承、不锈钢轴承、滚针轴承生产、检测为一体的综合性公司。公司拥有轴承生产加工基地三处，轴承套圈加工基地两处，可以提供全方位的服务。我们生产的深沟球轴承可以用于电动工具，电机马达，家用电器，电动车，汽车电机等领域。

公司在2008年通过ISO9001:2008质量管理体系认证，所有产品均已通过欧盟RoHS检测。  
我们热情的欢迎您来我公司访问，考察！

Yuyao Bote Bearing was founded in 1995. Over the years, the company has developed into an integrated company which can manufacture bearing races, high quality EMQ bearings, Stainless Steel Bearings, Needle Bearings and detections from a company that only produce deep groove ball bearings. We now have five bases- three for producing bearings, others for making races, so we can offer you an all-round service. The deep groove ball bearings we produce can be used in power tools, motors, appliances, electric motors, and auto motors. We passed the ISO9001:2008 certification in 2008, and all products have passed the RoHS testing.

Welcome to visit our company!



波特轴承有限公司



## 深沟球轴承 Deep Groove Ball Bearings



深沟球轴承是轴承类型中最为普及的，用处最为广泛。他们的套圈滚道被制成稍大于球半径的圆弧。深沟球轴承可承受径向、轴向或者联合载荷。因为其低扭矩，非常适合于高转速和低功率损耗的场合。

Deep Groove Ball bearings are the most common type of rolling bearings, their use is very widespread. The raceway grooves on both the inner and outer rings have circular arcs of slightly large radius than that of the balls. In addition to radial loads, axial loads can be imposed in either direction. Because of their low torque, they are highly suitable for applications where high speeds and low power loss are required.

## 深沟球轴承用途 The usage of deep groove ball bearings



电动工具  
Power Tools

电机  
Electric Motor



电动车  
Electric Bike

脚轮  
Caster

汽车  
Auto Mobiles

家用电器  
Appliances



## 2、轴承材料

### 2.1、套圈及滚动体材料

套圈及滚动体通常使用高碳铬轴承钢GCr15 (表2.1.1)

GCr15的化学成分，在世界各国已规格化。

如：美国AISI 52100、德国DIN100Cr6、日本SUJ2

根据特殊用途，还使用耐腐蚀性好的不锈钢。

化学成分见表2.1.2/2.1.3/2.1.4

## 2、Bearing Materials

### 2.1、Materials of Bearing Rings and Rolling Elements

Bearing rings and rolling elements usually use high carbon chromium bearing steel GCr15 (Table 2.1.1)

The chemical composition of GCr15 has uniform specifications all over the world

e.g. American AISI 52100, German DIN100Cr6, Japanese SUJ2

It also uses stainless steel with fine anti-corrosive performance according to special application.

Please refer to Tab 2.1.2/2.1.3/2.1.4 for the chemical composition.

表 2.1.1 高碳铬轴承钢

Table 2.1.1 High carbon chrome bearing steel

规格 Specification	材质 Steel No.	化学成分% Chemical composition (%)						
		C	Si	Mn	S	P	Cr	Mo
GB/T 18254	GCr15	0.95~1.05	0.15~0.35	0.25~0.45	0.025以下 (Below)	0.025以下 (Below)	1.40~1.65	
JIS G 4805	SUJ2	0.95~1.10	0.15~0.35	0.50以下 (Below)	0.025以下 (Below)	0.025以下 (Below)	1.30~1.60	0.08以下 (Below)
ASTM A 295	52100	0.98~1.10	0.15~0.35	0.15~0.35	0.025以下 (Below)	0.025以下 (Below)	1.30~1.60	0.10以下 (Below)
DIN	100Cr6	0.95~1.05	0.15~0.35	0.25~0.45	0.025以下 (Below)	0.025以下 (Below)	1.40~1.65	0.08以下 (Below)

表 2.1.2 滚动轴承用不锈钢的化学成分

Table 2.1.2 The chemical composition of stainless steel for rolling bearing

规格 Specification	材质 Steel No.	化学成分% Chemical composition (%)						
		C	Si	Mn	S	P	Cr	Mo
GB 3806	9Cr18	0.90~1.00	0.80以下 (Below)	0.80以下 (Below)	0.030以下 (Below)	0.035以下 (Below)	17.00~19.00	
JIS G 4303	SUS 440 C	0.95~1.20	1.00以下 (Below)	1.00以下 (Below)	0.030以下 (Below)	0.040以下 (Below)	16.00~18.00	0.75以下 (Below)

表 2.1.3 各种不锈钢材料化学成分

Table 2.1.3 The chemical composition of different stainless steel numbers

Country	China	U. S. A	Germany		Japan	France
			DIN	M-Nr		
Bearing	9Cr18	AISI440	X90CrMoV18	1.4112	SUS440	Z105CrMo17
	9Cr18Mo	AISI440C	X10CrMo17	1.4125	SUS440C	Z105CrMo17
Steel	0Cr18Ni9	AISI304	X5CrNi18-10	1.4301	SUS304	Z7CN18-09
No.	0Cr7Ni12Mo2	AISI316	X5CrMo17-12-2	1.4401	SUS316	Z7CND18-12-03

表2.1.4 不锈钢轴承及其部件，通常采用AISI440C和AISI304不锈钢材料，但也可根据客户指令，采用其他原材料。  
Table 2.1.4 Stainless steel bearings are normally made of AISI440C and AISI304, but the materials are available for specific use in order.

### 常用材料 (Material)

Part Name	MATERIAL			
内外圈 Bearing Rings	AISI440 9Cr18	AISI440C 9Cr18Mo	AISI304 0Cr18Ni9	AISI316 0Cr17Ni12Mo2
钢球 Ball	AISI440	AISI440C	AISI304	AISI316

## 2.2、保持架材料

### 冲压保持架

冲压保持架的材料，使用低碳素钢。

## 2.2、Cage material

### The pressed cage

The pressed cage material is low carbon steel

表2.2.1 保持架用钢板及碳素钢的化学成分

Table 2.2.1 The chemical composition of steel sheet and carbon steel for bearing cage

区分 Difference	规格 Specification	材质 Steel No.	化学成分 Chemical Composition(%)				
			C	Si	Mn	P	S
冲压保持架用钢板 Steel sheet pressed cage	JIS G 3141	SPCC	0.12以下 (Below)		0.50以下 (Below)	0.04以下 (Below)	0.045以下 (Below)
不锈钢轴承保持架 Retainer		AISI304	AISI304				

## 尼龙保持架 Nylon cage

表2.2.2 尼龙保持架的技术要求

Table 2.2.2 The technical requirements for nylon cage

序号 Number	项 目 Description	PA66-GF25	PA66-GF30	PA66-GF15	PA66
1	外观 Appearance	细粒状、无明显色差、无焦粒。 Fine granulation, without obvious color difference, without color particle.			
2	熔点 (°C) Melting point (°C)	≥255			
3	密度 (g/cm <sup>3</sup> ) Density (g/cm <sup>3</sup> )	1.32	1.36	1.23	1.14
4	吸水性 (%) Water absorbing rate (%)	≤1	≤1	≤1	≤1.5
5	模塑收缩率 (%) Constriction rate (%)	0.55	0.50	0.75	1.5~2.5
6	拉伸强度 (MPa) Tensile strength (MPa)	≤150	≤160	≤110	≤70
7	冲击强度 (KJ/m <sup>2</sup> ) Impact strength (KJ/m <sup>2</sup> )	≥42	≥50	≥35	≥60
8	缺口冲击强度 (KJ/m <sup>2</sup> ) Notch impact strength (KJ/m <sup>2</sup> )	≥7	≥8	≥6	≥5
9	球压痕硬度 (MPa) Ball indentation hardness (MPa)	≥200	≥210	≥170	≥130
10	弯曲弹性模量 (GPa) Flexible moduie (GPa)	≥6	≥7	≥5	≥2.5
11	热量变形温度 [ (1.8MPa) °C] Thermal deformation temperature [ (1.8MPa) °C]	≥240	≥240	≥240	≥70
12	线膨胀系数 (10 <sup>-4</sup> /°C) Linear expansion coefficient (10 <sup>-4</sup> /°C)	2~3	1.5~2	3~4	7~10
13	使用温度范围 (°C) Working temperature range (°C)	-40~120	-40~120	-40~110	-40~90
14	耐热老化性能 Heat aging properties	a. 拉伸强度 (MPa) Tensile strength (MPa)	≥110	-	-
		b. 冲击强度 (KJ/m <sup>2</sup> ) Impact strength (KJ/m <sup>2</sup> )	≥15	-	-
		c. 缺口冲击强度 (KJ/m <sup>2</sup> ) Notch impact strength (KJ/m <sup>2</sup> )	≥6	-	-

注: PA66-GF25、PA66-GF30、PA66-GF15的玻璃纤维含量分别是: 25%、30%、15%。  
Not. For PA66-GF25、PA66-GF30、PA66-GF15, the content of glass fibre is respectively, 25%, 30%, and 15%

## 不锈钢轴承保持架

在不锈钢轴承中，通常使用AISI304不锈钢做为保持器材质

The cage material of stainless steel bearings  
The stainless steel of AISI304 always employed as for the standard cage material in the stainless steel bearings.

### 保持器种类 2.2.3

保持器类型	名称
	冲压钢带浪型保持架
	冲压钢带冠型保持架
	合成树脂冠型保持架

### Cage types 2.2.3

Type	Name
	Pressed steel ribbon cage
	Pressed steel snap cage
	Plastic snap cage

## 2.3防尘盖和密封圈的材料

### 防尘盖材料

轴承的防尘盖标准材料是冷轧电镀锡钢板，有时也会使用AISI-300规格的不锈钢

### 密封圈材料

密封圈主要采用丁腈橡胶作为材料，针对高温环境，氟橡胶和硅橡胶也被广泛使用。

## 2.3 The Material of shields and seals.

### The material of shields.

The shields use steel as standard, the option AISI304 stainless steel always be used in stainless steel bearings.

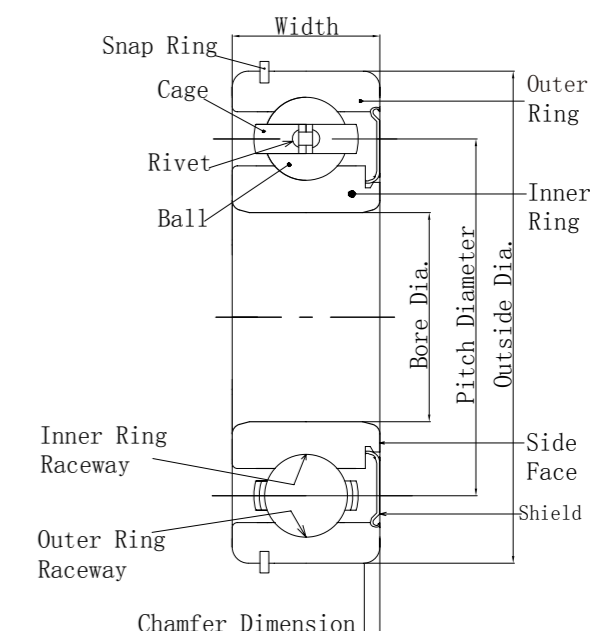
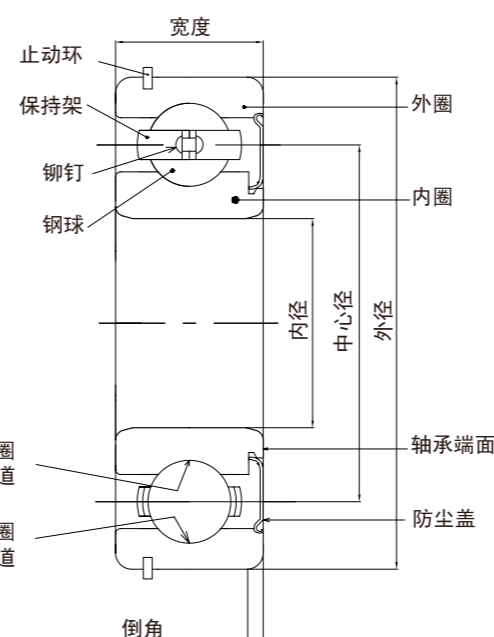
### The material of seals

We use Buna Nitril as the standard material, while fluorocarbon silicone and Teflon seals are commonly specified for high temperature.

类型 Type	ASTM D1418 名称	温度范围 Temperature Range	硬度 (Shore A)	特点	限制
丁腈橡胶	NBR	(-40°C~120°C)	40~90	低压缩特性，高延展性，高耐腐 蚀性优越的耐油性	不适合高温条件，并且避免阳光 直射和化学品的侵蚀
硅橡胶	MQ/PMQ/VMQ/PVMP	(-70°C~200°C)	25~80	抗高温和干燥性，抗阳光和臭氧 的老化性	表面磨损和抗裂性能较差 比较高的耐磨性
氢化(丁腈橡胶)	HNBR/NEM	(-35°C~165°C)	50~90	抗热、高延展性、抗化学腐蚀	不适合超低温条件，避免阳光直 射和化学品的侵蚀
氟橡胶	KFM/FPM	(-28°C~200°C)	50~95	耐高温 显著的抗腐蚀性，对石 油产品具有耐腐蚀性	不适合低温工作状态
聚丙烯橡胶	ACM Rubber	(-18°C~175°C)	40~90	对热油、阳光和臭氧剥蚀有较强 的抵抗力同时具有较强的抗裂 性能	防水性能差不适合超低温工作 状态

警告！在200°C以下的正常工作条件氟橡胶是安全、无害的，但是超过300°C的极限温度，即相当于切割钢管的火光，氟橡胶就会释放出烟雾。这些烟雾进入人体是有害的，包括眼睛，另外注意避免与皮肤接触。

Warning! The fluoro rubber is safe to work in a condition of under 200°C. If the ultimate temperature exceeds 300°C, which is equal to the temperature of flame that cutting steel tube, the fluoro rubber will release smog. The smog is harmful to people's health, including eyes. Please pay attention to avoid skin contact.



### 轴承各部术语

### Nomenclature for Deep Groove Ball Bearing Part

### 3. 轴承公差

滚动轴承外形尺寸的公差值及旋转精度，在国家标准GB307.1中有规定。这些公差标准对照如下：

表 3.1

标准公差等级					
GB\T307.1	P0	P6	P5	P4	P2
ISO 492	Normal Class	Class 6	Class 5	Class 4	Class 2
JIS B 1514	JIS 0级	JIS 6级	JIS 5级	JIS 4级	JIS 2级
AFBMA STD. 20	ABCE 1	ABCE 3	ABCE 5	ABCE 7	ABCE 9
DIN620	P0	P6	P5	P4	P2

### 3. Bearing Tolerance

The rolling bearing boundary dimension, tolerance, rotating precision are stipuated in the National Standard of GB307.1. The following is a comparison table among the different those tolerance Standards:

Table 3.1

Standrd tolerance grades					
GB\T307.1	P0	P6	P5	P4	P2
ISO 492	Normal Class	Class 6	Class 5	Class 4	Class 2
JIS B 1514	JIS 0 Grade	JIS 6 Grade	JIS 5 Grade	JIS 4 Grade	JIS 2 Grade
AFBMA STD. 20	ABCE 1	ABCE 3	ABCE 5	ABCE 7	ABCE 9
DIN620	P0	P6	P5	P4	P2

表 3.2 P0、P6、P5、P4级公差--内圈（成品）

Table 3.2 P0、P6、P5、P4 Classes tolerances--inner ring(Assembled)

公差等级 Tolerances Class	d 公称内径 Nominal bore diameter mm		$\Delta_{dmp}$ 单一内径平均偏差 Deviation of mean bore diameter		$\Delta_{ds}$ 单一内径偏差 Deviation a single bore diameter		$V_{dp}$ 单一内径变动量 Variation of single bore diameter						$\Delta_{BS}$ 内圈单一 宽度偏差 Deviation of inner ring width		$V_{ds}$ 内圈宽度 变动量 Variation of inner ring width			
							直径系列 Diameter series											
							9**	0、1**	(2、3、4)								最大 max	最大 max
							(7、8、9)	(1、7)										
P0 (ABCE-1)	0.6	2.5	0	-8			10	8	6	6	10			-40	12			
	2.5	10	0	-8			10	8	6	6	10	10	20	-120	15			
	10	18	0	-8			10	8	6	6	10	14	20	-120	20			
	18	30	0	-10			13	10	8	8	13	16	24	-120	20			
	30	50	0	-12			15	12	9	9	15			-120	20			
	50	80	0	-15			19	19	11	11	20			-150	25			
P6 (ABCE-3)	0.6	2.5	0	-7			9	7	5	5	5	6	8	10	10			
	2.5	10	0	-7			9	7	5	5	6	8	10	10	10			
	10	18	0	-7			9	7	5	5	7	8	10	10	10			
	18	30	0	-8			10	8	6	6	8	9	12	10	10			
	30	50	0	-10			13	10	8	8	10			-120	20			
	50	80	0	-12			15	15	9	9	10			-150	25			
P5 (ABCE-5)	0.6	2.5	0	-5			5	4	3	4	4	7	7	7	7			
	2.5	10	0	-5			5	4	3	4	4	7	7	7	7			
	10	18	0	-5			5	4	3	4	4	7	7	7	7			
	18	30	0	-6			6	4	3	4	4	8	8	8	8			
	30	50	0	-8			8	4	4	4	5	8	8	8	8			
	50	80	0	-9			9	4	4	5	5	8	8	8	8			
P4 (ABCE-7)	0.6	2.5	0	-4			-4	4	4	2	2.5	3	3	3	3			
	2.5	10	0	-4			-4	4	4	2	2.5	3	3	3	3			
	10	18	0	-4			-4	4	4	2	2.5	3	3	3	3			
	18	30	0	-5			-5	5	4	2.5	3	4	4	4	4			
	30	50	0	-6			-6	6	4	3	4	4	4	4	4			
	50	80	0	-7			-7	7	4	3.5	4	5	4	4	4			

注：

- 表3.2的数值摘自GB/T307.1-2005 滚动轴承向心轴承 公差，JB/T53415-94 (JB/CQ124-90) 微型球轴承及其零件补充技术条件，JB/T10336-2002滚动轴承及其零件补充技术要求。
- P0、P6级的Sia值GB/T307.1-2005没规定，JB/T53415-94和JB/T10336-2002中有规定。
- \*\*括弧内为源国家标准的直径系列代号（新标准中7、8系列无规定）。

Notes:

- Table 3.2 are abstaracted from GB/T307.1-2005 Rolling bearing tolerance, Minitrue ball bearing and accessory complementary technical condition in JB/T53415-94 (JB/CQ124-90)
- Sea vaiues for P0、P6 Classes are not dictated in GB/T307.1-2005, but they have been dictated in JB/T53415-94 and JB/T103636-2002.
- Brackets are diameter series symbols in original natinal standarb (7、8 series are not dictated in new syandarb).

表 3.3 P0、P6、P5、P4级公差--外圈（成品）  
Table 3.3 P0、P6、P5、P4 Classes tolerances--outer ring(Assembled)

公差等级 Tolerances Class	D 外径 Outer diameter mm		$\Delta_{dmp}$ 单一外径平均偏差 Deviation of mean outer diameter		$\Delta_{Ds}$ 单一外径偏差 Deviation a single outer diameter		$V_{Do}$ 单一外径变动量 Variation of single outside diameter				$V_{Dmp}$ 平均外径变 动量 Variation of mean outer diameter	Kea 外圈径向 跳动 Radial runout of outer ring	Sd 外圈母线和 端面垂直度 Variation of outer generatrix inclination with end face	Sea* 端面与深道 跳动量 Axial runout of outer ring	$\Delta_{cs}$ 外圈单一 宽度偏差 Deviation of outer ring width	$V_{cs}$ 外圈宽度 变动量 Variation of outer ring width
							开型 Open		闭型 close							
							9**	0、1**	P0 (2、3、4)							
							(7、8、9)	(1、7)	(0、1、2、3、4)							
P0*** (ABCE-1)	2.5	6	0	-8			10	8	6	10	6	15		24	与同一轴承 内圈的 $\Delta_{Bs}$ 及 $V_{Bs}$ 相同	
	6	18	0	-8			10	8	6	10	6	15	10	30		
	18	30	0	-9			12	9	7	12	7	15	14	36/40		
	30	50	0	-11			14	11	8	16	8	20	16	40		
	50	80	0	-13			16	13	10	20	10	25		40		
	80	120	0	-15			19	19	11	26	11	35		45		
P6 (ABCE-3)	2.5	6	0	-7			9	7	5	9	5	8		12	$\Delta_{Bs}$ & $V_{Bs}$ same with bearing's inner ring	
	6	18	0	-7			9	7	5	9	5	8	10	15		
	18	30	0	-8			10	8	6	10	6	9	10	20		
	30	50	0	-9			11	9	7	13	7	10	10	20		
	50	80	0	-11			14	11	8	16	8	13		20		
	80	120	0	-13			16	16	10	20	10	18		22		
P5 (ABCE-5)	2.5	6	0	-5			5	4	3	5	3	5	8	8		
	6	18	0	-5			5	4	3	5	3	5	8	8		
	18	30	0	-6			6	5	3	6	3	6	8	8		
	30	50	0	-7			7	5	4	7	4	7	8	8		
	50	80	0	-9			9	7	5	9	5	8	8	10		
	80	120	0	-10			10	8	6	12	6	10	9	11		
P4 (ABCE-7)	2.5	6	0	-4			-4	4	4	3	2	3	4	5		
	6	18	0	-4			-4	4	4	3	2	3	4	5		
	18	30	0	-5			-5	5	4	3	2.5	4	4	5		
	30	50	0	-6			-6	6	4	5	3	5	4	5		
	50	80	0	-7			-7	7	4	5	3.5	5	4	5		
	80	120	0	-8			-8	8	4	6	4	6	5	6		

注：

- 表3.3的数值摘自GB/T307.1-2005 滚动轴承向心轴承 公差，JB/T53415-94 (JB/CQ124-90) 微型球轴承及其零件补充技术条件，JB/T10336-2002滚动轴承及其零件补充技术要求。
- P0、P6级的Sea值GB/T307.1-2005没规定，JB/T53415-94和JB/T10336-2002中有规定。
- \*\*括弧内为源国家标准的直径系列代号（新标准中7、8系列无规定）。

Notes:

- Table 3.3 are abstaracted from GB/T307.1-2005 Rolling bearing tolerance, Minitrue ball bearing and accessory complementary technical condition in JB/T53415-94 (JB/CQ124-90)
- Sea vaiues for P0、P6 Classes are not dictated in GB/T307.1-2005, but they have been dictated in JB/T53415-94 and JB/T10336-2002.
- Brackets are diameter series symbols in original natinal standarb (7、8 series are not dictated in new syandarb).

#### 4、轴承振动和噪音

单个轴承振动加速度（限制）  
采用SO910检测； 单个轴承振  
动速度（限制）采用BVT检测。  
检测标准如下：见表4.1

#### 4、Vibration and Noise of Bearings

The Noise of bearings checked by the instrument  
of SO910 and the Vibration of bearings checked  
by the instrument of BVT, the testing standard as  
below table 4.1

表 4.1 Table 4.1

轴承 内径 Bearing Inside Diameter	单个轴承振动（加速度）限值 dB Single Bearing Vibration(Acceleration)Limit Value dB															单个轴承振动（速度）限值 $\mu\text{m/s}$ Single Bearing Vibration(Speed)Limit Value $\mu\text{m/s}$																
	直径系列 0 Diameter series 0					直径系列 2 Diameter series 2					直径系列 3 Diameter series 3					$V$			$V_1$			$V_2$			$V_3$			$V_4$				
	Z	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>3</sub>	Z <sub>4</sub>	Z	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>3</sub>	Z <sub>4</sub>	Z	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>3</sub>	Z <sub>4</sub>	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M
5	37	36	34	30	26	38	37	34	32	28	39	37	35	33	29	110	72	60	74	48	40	58	36	30	35	21	18	32	11	11		
6	37	36	34	30	26	38	37	34	32	28	39	37	35	33	29	110	72	60	74	48	40	58	36	30	35	21	18	32	11	11		
7	39	38	35	31	27	40	38	36	34	29	41	39	37	35	30	130	96	80	92	66	54	72	48	40	44	28	24	38	12	12		
8	39	38	35	31	27	40	38	36	34	29	41	39	37	35	30	130	96	80	92	66	54	72	48	40	44	28	24	38	12	12		
9	41	40	36	32	28	42	40	37	35	30	43	41	39	37	32	130	96	80	92	66	54	72	48	40	44	28	24	38	12	12		
10	43	42	38	33	28	42	40	39	35	30	46	44	40	37	32	160	120	100	120	80	70	90	60	50	55	35	30	45	14	15		
12	44	43	39	34	29	45	43	39	35	30	47	45	40	37	32	160	120	100	120	80	70	90	60	50	55	35	30	45	14	15		
15	45	44	40	35	30	46	44	41	36	31	48	46	42	38	33	210	150	120	150	100	85	110	78	60	65	46	35	52	18	18		
17	46	44	40	35	30	47	45	41	36	31	49	47	42	38	33	210	150	120	150	100	85	110	78	60	65	46	35	52	25	25		
20	47	45	41	36	31	48	46	42	38	33	50	48	43	39	34	260	190	150	180	125	100	130	100	75	80	60	45	60	25	25		
25	48	46	42	38	34	49	47	43	40	36	51	49	44	41	37	260	190	150	180	125	100	130	100	75	80	60	45	60	30	32		
30	49	47	43	39	35	50	48	44	41	37	52	50	45	42	38	300	240	190	200	150	130	150	120	100	90	75	60	70	35	40		
35	51	49	45	41	37	52	50	46	43	39	54	52	47	44	40	300	240	190	200	150	130	150	120	100	90	75	60	70	42	45		
40	53	51	46	42	38	54	52	47	44	40	56	54	49	45	41	360	300	260	240	180	160	180	150	130	110	90	80	82	50	50		
45	55	53	48	45	42	56	54	49	46	43	58	56	51	47	44	360	300	260	240	180	160	180	150	130	110	90	80	82	60	60		
50	57	54	50	47	44	58	55	51	48	45	60	57	53	49	46	420	320	320	280	200	200	210	160	160	125	100	100	95	70	70		
55	59	56	52	49	-	60	57	53	50	-	62	59	54	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
60	61	58	54	51	-	62	59	54	51	-	64	61	56	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

#### 5、深沟球轴承的径向游隙 ( $\mu\text{m}$ )

游隙是轴承内圈、外圈、滚动体之间的  
间隙量。轴承有径向游隙和轴向游隙。  
我公司的径向游隙检测标准如 表5.1

#### 5、Radial Clearance of Deep Groove Ball Bearings ( $\mu\text{m}$ )

Clearance is gap among bearing inner ring, outer  
ring and rolling elements. Bearing has radial  
clearance and axial clearance. The radial clearance  
testing standards as below table 5.1

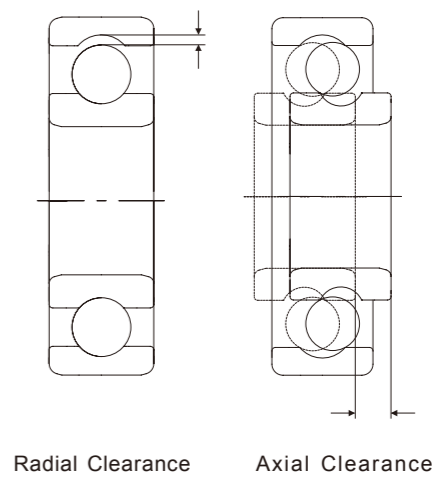
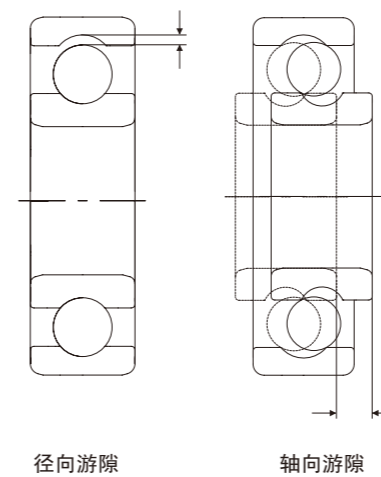
表 5.1 Table 5.1

轴承内径 d (mm) Nominal Inner Diameter		MC <sub>1</sub> 组 Group MC <sub>1</sub>		MC <sub>2</sub> 组 Group MC <sub>2</sub>		MC <sub>3</sub> 组 Group MC <sub>3</sub>		MC <sub>4</sub> 组 Group MC <sub>4</sub>		MC <sub>5</sub> 组 Group MC <sub>5</sub>		MC <sub>6</sub> 组 Group MC <sub>6</sub>	
超过 Over	到 Up-to	最小 Min	最大 Max	最小 Min	最大 Max	最小 Min	最大 Max	最小 Min	最大 Max	最小 Min	最大 Max	最小 Min	最大 Max
-	9	0	5	3	8	5	10	8	13	13	20	20	28
轴承内径 d (mm) Nominal Inner Diameter		C <sub>2</sub> 组 Group C <sub>2</sub>		CM组 (电机专用) Group CM (motor only)		标准组 CN Standard Group CN		C <sub>3</sub> 组 Group C <sub>3</sub>		C <sub>4</sub> 组 Group C <sub>4</sub>		C <sub>5</sub> 组 Group C <sub>5</sub>	
超过 Over	到 Up-to	0	7	3	10	2	13	8	23	14	29	20	37
10	18	0	9	4	11	3	18	11	25	18	33	25	45
18	24	0	10	5	12	5	20	13	28	20	36	28	48
24	30	1	11	5	12	5	20	13	28	23	41	30	53
30	40	1	11	9	17	6	20	15	33	28	46	40	64
40	50	1	11	9	17	6	23	18	36	30	51	45	73
50	65	1	15	-	-	8	28	23	43	38	61	55	90

注：径向游隙为无载荷测量。  
Note: The radial clearance is a measurement without load.

轴承内部游隙表 5.2

Table 5.2 Bearing Internal Clearances





波特轴承常用润滑脂明细表

A detail list of the commonly-used lubricating grease

波特油脂一览表 CHBO Grease data sheet							
制造厂 Maker	牌号 Brand	增稠剂 Viscosity	基油 Base oil	滴点 Drop point °C	稠度 Consi- stency	使用 温度范围 Operating temperature range °C	选用原则 Selection criteria
Exxon	Beacon 325	锂基 (Lithium)	双酯 (Diester)	193	290	-60~+120	低温脂 low-temperature grease
	Andok 260	钠基 (Nathium)	矿物 (Mineral)	200	250	-30~+150	常温脂 normal temperature grease
	Polyrex EM	双尿素 (Diurea)	矿物 (Mineral)	260	288	-40~+180	高温低噪音 high temperature low noise
	Polyrex EP2	尿素 (Urea)	矿物 (Mineral)	280	280	-40~+180	高温低噪音 high temperature low noise
Kyodo Yushi	Multemp PS2	锂基 (Lithium)	双酯 (Diester)	189	280	-50~+110	低温脂 low-temperature grease
	Multemp (SRL)	锂基 (Lithium)	酯(Ester)	191	245	-40~+150	低噪音脂 low noise grease
	Raremax Super N	聚脲 (Diurea)	矿物油+合成油 (Mineral/Synthetic hydrocarbon oil)	255	260	-40~+180	高温低噪音 high temperature low noise
	Multemp SRH	锂基 (Lithium)	酯(Ester)	250	201	-40~+150	低温脂 low-temperature grease
	Multemp SB-M	双尿素 (Diurea)	合成油 (Synthetic oil)	220	260	-40~+200	高温高速脂 high temperature high speed grease
	ET-K	双尿素 (Diurea)	合成油/脂 (Synthetic oil/ Grease)	260	300	-40~+200	高温高速交流发电机脂 high temperature high speed alternators grease
	ET-R		合成油 (Synthetic oil)	260	280	-40~+200	高温脂、低温矩好 high temperature grease low temperature torque good
	Multemp LRL	锂基 (Lithium)	多元醇酯	205	238	-40~+150	高温低噪音 high temperature low noise
Kluber	Asonic GLY32	锂基 (Lithium)	合成 (Synthetic)	190	265~295	-50~+140	低温脂 low-temperature grease
	Asonic GHY72	Polyhastoff	酯-矿物 (Ester Mineral)	250	250~280	-40~+180	高温低噪音 high temperature low noise
	Isoflex Topas NB52	钡基 (Barium)	合成碳氢 (Synthetic hydrocarbon)	240	280	-60~+170	高低温 high-low temperature grease
	Barrierta L55/2	聚四氟乙烯 (PTFE)	氟化油 (Fluorinated)		280	-35~+260	高低温 high-low temperature grease
	Asonic HQ72-102	尿素 (Polyurea)	酯 (Ester)	240	250~280	-40~+180	高低温和低噪音 high-low temperature grease and low noise grease



波特轴承常用润滑脂明细表

A detail list of the commonly-used lubricating grease

波特油脂一览表 CHBO Grease data sheet							
制造厂 Maker	牌号 Brand	增稠剂 Viscosity	基油 Base oil	滴点 Drop point °C	稠度 Consi- stency	使用 温度范围 Operating temperature range °C	选用原则 Selection criteria
Dow Corning	Molykote 33M	锂基 (Lithium)	硅油 (Silicone)	210	260	-70~+180	高、低温 high-low temperature grease
	Molykote 44M	锂基 (Lithium)	硅油 (Silicone)	204	260	-40~+200	高温脂 high temperature grease
	Molykote 55M	锂基 (Lithium)	硅油 (Silicone)			-55~+165	低温脂 low-temperature grease
	Molykote BR2 plus	锂基 (Lithium)	矿物 (Mineral)		280	-30~+150	高速脂 high speed grease
	Molykote FS3451	聚四氟乙烯 (PTFE)	硅 (Phlorosilicon)	≥260	285	-40~+230	抗化学溶剂脂 anti-chemical solvent grease
Shell	Alvania RL2	锂基 (Lithium)	矿物 (Mineral)	182	272	-25~+120	常温脂 normal temperature grease
	Alvania No.3	锂基 (Lithium)	矿物 (Mineral)	183	233	-20~+135	常温脂 normal temperature grease
	Alvania RA	锂基 (Lithium)	矿物 (Mineral)	183	252	-25~+120	常温脂 normal temperature grease
	Alvania EP2	锂基 (Lithium)	矿物 (Mineral)	185	276	-10~+100	常温脂 normal temperature grease
	Aero shell No. 7	Microgel	矿物 (Mineral)	≥260	288	-70~+150	低温脂 low-temperature grease
	Aero shell No. 15A	聚四氟乙烯 (PTFE)	双酯 (Diester)	≥260	280	-70~+260	高温脂 high temperature grease
	Alvania RLQ2	锂基 (Lithium)	矿物 (Mineral)	195	266	-50~+150	低噪音、高速脂 low noise, high speed grease
	Mobil Oil	Mobil 22	锂基 (Lithium)	双酯-矿物 (Diester Mineral)	192	274	-50~+140
Mobil 28	膨润土 (Bentonite)	合成碳氢 Synthetic hydrocarbon	≥260	280	-60~+180	高、低温 high-low temperature grease	
Mobilth SHC100	锂基 (Lithium)	合成油 (Synthetic oil)	250	265~295	-40~+170	高速脂 high speed grease	
Mobilth SHC220	锂基 (Lithium)	合成油 (Synthetic oil)	250	265~295	-40~+170	多用途脂 multiple use grease	
Mobiltemp SHC100	粘土 (glue-earth)	合成油 (Synthetic oil)	250	265~295	-50~+200	高速、高温脂 high speed, high temperature grease	



### 波特轴承常用润滑脂明细表

A detail list of the commonly-used lubricating grease

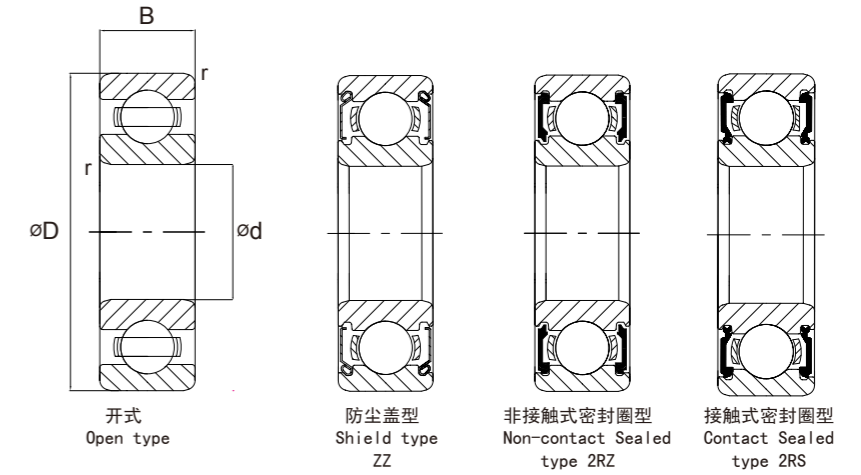
波特油脂一览表 CHBO Grease data sheet							
制造厂 Maker	牌号 Brand	增稠剂 Viscosity	基油 Base oil	滴点 Drop point °C	稠度 Consi- stency	使用 温度范围 Operating temperature range °C	选用原则 Selection criteria
Du Pont	Krytox 240AC	聚四氟乙烯 (PTFE)	氟化油 (PFAE)		282	-34~+288	高温脂 high temperature grease (航空油脂av' grease)
	Krytox GPL223	聚四氟乙烯 (PTFE)	氟化油 (PFAE)			-60~+154	高温、发电机、风扇、离合器轴承脂 high temperature, alternator, fan, clutch bearing grease
	Krytox GPL224	聚四氟乙烯 (PTFE)	氟化油 (PFAE)			-51~+179	
	Krytox GPL226	聚四氟乙烯 (PTFE)	氟化油 (PFAE)			-36~+260	Cv万向节 Cv joint
	Krytox GPL227	聚四氟乙烯 (PTFE)	氟化油 (PFAE)			-30~+288	高温、抗蚀脂 high temperature, corrosion resisting grease
Toray Silicone	SH44M	锂基 (Lithium)	硅 (Phlorosilicon)	210	260	-40~+180	高温脂 high temperature grease
	SH33L	锂基 (Lithium)	硅 (Phlorosilicon)	210	300	-70~+140	低温脂 low-temperature grease
	SH41	锂基 (Lithium)	硅 (Phlorosilicon)		280	-10~+200	高温脂 high temperature grease
Galtex	Chevron SRI-2	素尿 (Urea)	矿物 (Mineral)	243	280	-30~+150	高温脂 high temperature grease
	RPM Greas SRI-2	素尿 (Polyurea)	矿物 (Mineral)	243	280	-30~+150	高温高速脂 high temperature high speed grease
Lubcon	Turmogrease N2	素尿 (Polyurea)	合成油/脂 (PAO/Ester)	≥250	280	-40~+160	通用轴承 commonly-used bearing
	Lubteksonic BQg	锂基 (Lithium)	矿物 (Mineral)	250	280	-35~+150	低噪音 low noise
	Turmogrease SHL182	锂基 (Lithium)	合成油/脂 (PAO/Ester)	250	280	-70~+130	低温高速脂 low temperature high speed grease
	Turmogrease SHL252	特种锂基 (Lithium)	合成油/脂 (PAO/Ester)	220	280	-40~+120	高速脂 high speed grease
	Turmogrease NBI300	素尿 (Polyurea)	合成油/脂 (PAO/Ester)	250	280	-40~+180	高温高负荷脂 high temperature high load grease

注:如需选用另外牌号的油脂,请联系我们!

Note:Please contact us if you need other brand grease!

### 深沟球轴承技术参数表

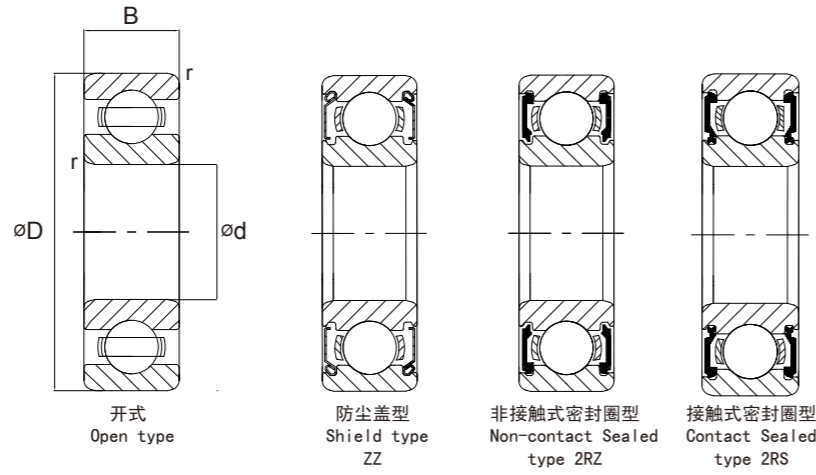
Deep Groove Ball Bearing Specification



d	外形尺寸 Dimension (mm)			轴承代号 Bearing No.		额定载荷 Basic Load Rating (N)		极限转速 Limting speed(rpm)		重量 Weight (Kg)
	D	B	r (min)	轴承钢 Chrome	不锈钢 Stainless	动载荷 Dynamic	静载荷 Static	脂润滑 Grease	油润滑 Oil	
5	11	3	0.15	685	SS685	775	317	41000	49000	0.0011
	13	4	0.2	695	SS695	1070	393	38000	45000	0.0024
	14	5	0.2	605	SS605	1080	438	37000	44000	0.0035
	16	5	0.3	625	SS625	1460	598	35000	42000	0.0048
6	19	6	0.3	635	SS635	2230	903	32000	38000	0.008
	13	3.5	0.15	686	SS686	1080	438	37000	44000	0.0019
	15	5	0.2	696	SS696	1460	598	35000	42000	0.0038
	17	6	0.3	606	SS606	1960	731	33000	40000	0.006
7	19	6	0.3	626	SS626	2800	1058	32000	38000	0.0081
	22	7	0.3	636	SS636	3310	1350	30000	35000	0.0134
	14	3.5	0.15	687	SS687	1170	511	35000	42000	0.0021
	17	5	0.3	697	SS697	1600	714	33000	39000	0.0052
8	19	6	0.3	607	SS607	1870	1058	32000	38000	0.008
	22	7	0.3	627	SS627	3310	3150	30000	35000	0.013
	26	9	0.3	637	SS637	4560	1980	28000	48000	0.024
	16	4	0.2	688	SS688	1600	714	33000	39000	0.0031
8	19	6	0.3	698	SS698	2240	917	31000	37000	0.0073
	22	7	0.3	608	SS608	3310	1350	30000	35000	0.012
	24	8	0.3	628	SS628	3330	1410	29000	34000	0.017
	28	9	0.3	638	SS638	4550	1950	27000	32000	0.029

## 深沟球轴承技术参数表

Deep Groove Ball Bearing Specification

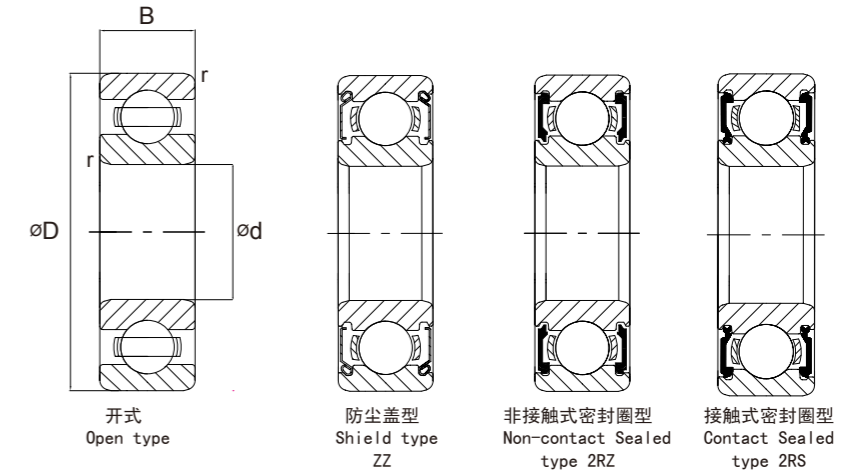


开式 Open type  
防尘盖型 Shield type ZZ  
非接触式密封圈型 Non-contact Sealed type 2RZ  
接触式密封圈型 Contact Sealed type 2RS

d	外形尺寸 Dimension (mm)			轴承代号 Bearing No.		额定载荷 Basic Load Rating (N)		极限转速 Limiting speed(rpm)		重量 Weight (Kg)
	D	B	r (min)	轴承钢 Chrome	不锈钢 Stainless	动载荷 Dynamic	静载荷 Static	脂润滑 Grease	油润滑 Oil	
9	17	4	0.2	689	SS689	1600	734	31000	37000	0.0032
	20	6	0.3	699	SS699	2470	1088	29000	35000	0.0082
	24	7	0.3	609	SS609	3330	1410	27000	33000	0.014
	26	8	0.3	629	SS629	4550	1950	25000	31000	0.02
	30	10	0.6	639	SS639	4650	2070	24000	26000	0.036
10	19	5	0.3	6800	SS6800	1590	760	30000	36000	0.005
	22	6	0.3	6900	SS6900	2690	1270	28000	34000	0.009
	26	8	0.4	6000	SS6000	4550	1950	27000	32000	0.019
	30	9	0.6	6200	SS6200	5110	2390	23000	28000	0.032
	35	11	0.6	6300	SS6300	7460	3470	21000	25000	0.053
12	21	5	0.3	6801	SS6801	1900	1000	25000	30000	0.006
	24	6	0.3	6901	SS6901	2890	1450	25000	30000	0.011
	28	8	0.3	6001	SS6001	5110	2390	24000	28000	0.021
	32	10	0.6	6201	SS6201	6800	3050	20000	24000	0.037
	37	12	1	6301	SS6301	9750	4230	18000	22000	0.06
15	24	5	0.3	6802	SS6802	1960	1260	24000	29000	0.007
	28	7	0.3	6902	SS6902	4320	2260	22000	26000	0.016
	32	9	0.3	6002	SS6002	5590	2850	20000	24000	0.03
	35	11	0.6	6202	SS6202	7600	3680	17000	21000	0.045
	42	13	1	6302	SS6302	11420	5420	15000	19000	0.082

## 深沟球轴承技术参数表

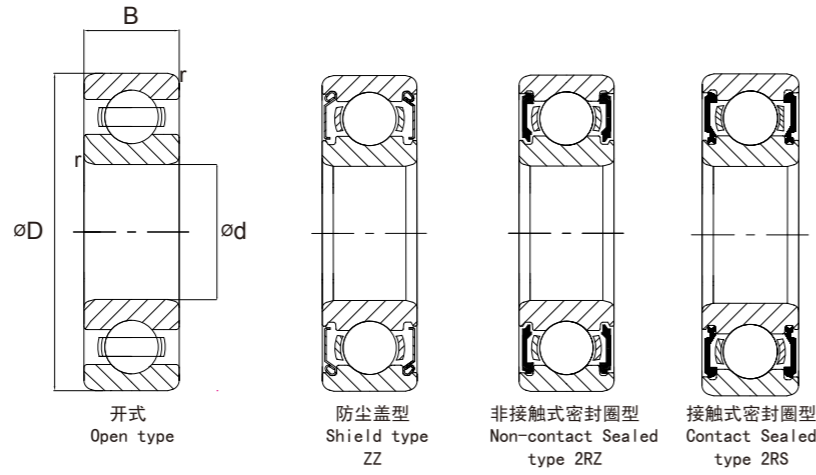
Deep Groove Ball Bearing Specification



开式 Open type  
防尘盖型 Shield type ZZ  
非接触式密封圈型 Non-contact Sealed type 2RZ  
接触式密封圈型 Contact Sealed type 2RS

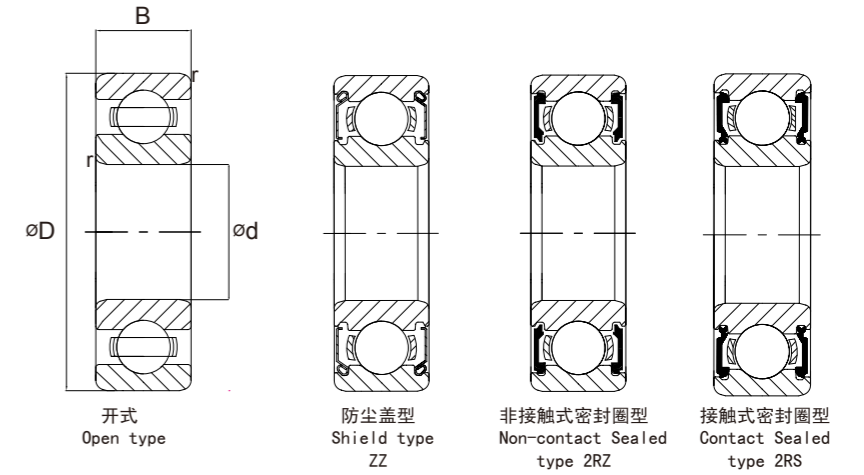
d	外形尺寸 Dimension (mm)			轴承代号 Bearing No.		额定载荷 Basic Load Rating (N)		极限转速 Limiting speed(rpm)		重量 Weight (Kg)
	D	B	r (min)	轴承钢 Chrome	不锈钢 Stainless	动载荷 Dynamic	静载荷 Static	脂润滑 Grease	油润滑 Oil	
17	26	5	0.3	6803	SS6803	2130	1360	22000	26000	0.008
	30	7	0.3	6903	SS6903	4310	2310	20000	24000	0.018
	35	10	0.3	6003	SS6003	6000	3260	18000	22000	0.039
	40	12	0.6	6203	SS6203	9580	4800	16000	19000	0.066
	47	14	1	6303	SS6303	12670	6560	14000	17000	0.115
20	32	7	0.3	6804	SS6804	3470	2240	19000	23000	0.019
	37	9	0.3	6904	SS6904	6380	3660	17000	21000	0.036
	42	12	0.6	6004	SS6004	9380	5080	16000	19000	0.069
	47	14	1	6204	SS6204	12830	6650	14000	16000	0.106
	52	15	1.1	6304	SS6304	16380	7800	12000	15000	0.144
25	37	7	0.3	6805	SS6805	3600	2640	16000	19000	0.022
	42	9	0.3	6905	SS6905	6650	4190	14000	17000	0.042
	47	12	0.6	6005	SS6005	10070	5800	13000	16000	0.08
	52	15	1	6205	SS6205	14020	7930	11000	13000	0.128
	62	17	1.1	6305	SS6305	22460	11380	10000	12000	0.232
30	42	7	0.3	6806	SS6806	4020	3120	13000	16000	0.026
	47	9	0.3	6906	SS6906	7200	5040	12000	15000	0.048
	55	13	1	6006	SS6006	13130	8250	11000	13000	0.116
	62	16	1	6206	SS6206	19470	11430	9000	11000	0.199
	72	19	1.1	6306	SS6306	27010	15200	8000	10000	0.36

### 深沟球轴承技术参数表 Deep Groove Ball Bearing Specification



d	外形尺寸 Dimension (mm)			轴承代号 Bearing No.		额定载荷 Basic Load Rating (N)		极限转速 Limiting speed(rpm)		重量 Weight (Kg)
	D	B	r (min)	轴承钢 Chrome	不锈钢 Stainless	动载荷 Dynamic	静载荷 Static	脂润滑 Grease	油润滑 Oil	
35	47	7	0.3	6807	SS6807	4310	3160	11000	14000	0.029
	55	10	0.6	6907	SS6907	10370	7180	10000	13000	0.074
	62	14	1	6007	SS6007	15950	10320	10000	12000	0.155
	72	17	1.1	6207	SS6207	25700	15220	7800	9000	0.288
	80	21	1.5	6307	SS6307	33350	19220	6800	8000	0.457
40	52	7	0.3	6808	SS6808	4420	3890	10000	12000	0.033
	62	12	0.6	6908	SS6908	11270	8450	9000	11000	0.11
	68	15	1	6008	SS6008	16820	11490	8000	10000	0.19
	80	18	1.1	6208	SS6208	29520	18140	6700	8000	0.366
	90	23	1.5	6308	SS6308	40750	24010	5800	7200	0.63
45	58	7	0.3	6809	SS6809	4590	4320	9000	10000	0.04
	68	12	0.6	6909	SS6909	11580	9120	8000	9000	0.128
	75	16	1	6009	SS6009	21080	13900	7200	8200	0.237
	85	19	1.1	6209	SS6209	31660	20730	6800	7500	0.398
	100	25	1.5	6309	SS6309	53000	32000	5000	6200	0.829
50	65	7	0.3	6810	SS6810	6600	6080	7600	9000	0.052
	72	12	0.6	6910	SS6910	11830	9880	6900	8500	1.132
	80	16	1	6010	SS6010	20670	15450	6400	7800	0.261
	90	20	1.1	6210	SS6210	35060	23220	6100	6300	0.454
	110	27	2	6310	SS6310	62000	38500	4400	5500	1.06

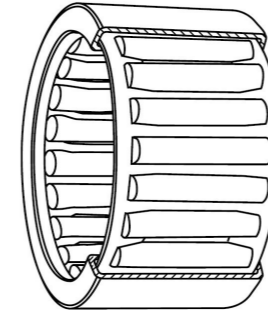
### 深沟球轴承技术参数表 Deep Groove Ball Bearing Specification



d	外形尺寸 Dimension (mm)			轴承代号 Bearing No.		额定载荷 Basic Load Rating (N)		极限转速 Limiting speed(rpm)		重量 Weight (Kg)
	D	B	r (min)	轴承钢 Chrome	不锈钢 Stainless	动载荷 Dynamic	静载荷 Static	脂润滑 Grease	油润滑 Oil	
55	72	9	0.3	6811	SS6811	8800	8500	8500	10000	0.081
	80	13	1	6911	SS6911	16000	13300	8000	9500	0.189
	90	18	1.1	6011	SS6011	28300	21200	5700	7000	0.362
	100	21	1.5	6211	SS6211	43500	29200	6400	7600	0.602
	120	29	2	6311	SS6311	74100	45000	4200	5300	1.37
60	78	10	0.3	6812	SS6812	11500	10900	8000	9500	0.103
	85	13	1	6912	SS6912	19400	16300	7500	9000	0.192
	95	18	1.1	6012	SS6012	29500	23200	5000	6300	0.385
	110	22	1.5	6212	SS6212	52500	36000	6000	7000	0.789
	130	31	2.1	6312	SS6312	85200	52000	4000	5100	1.72



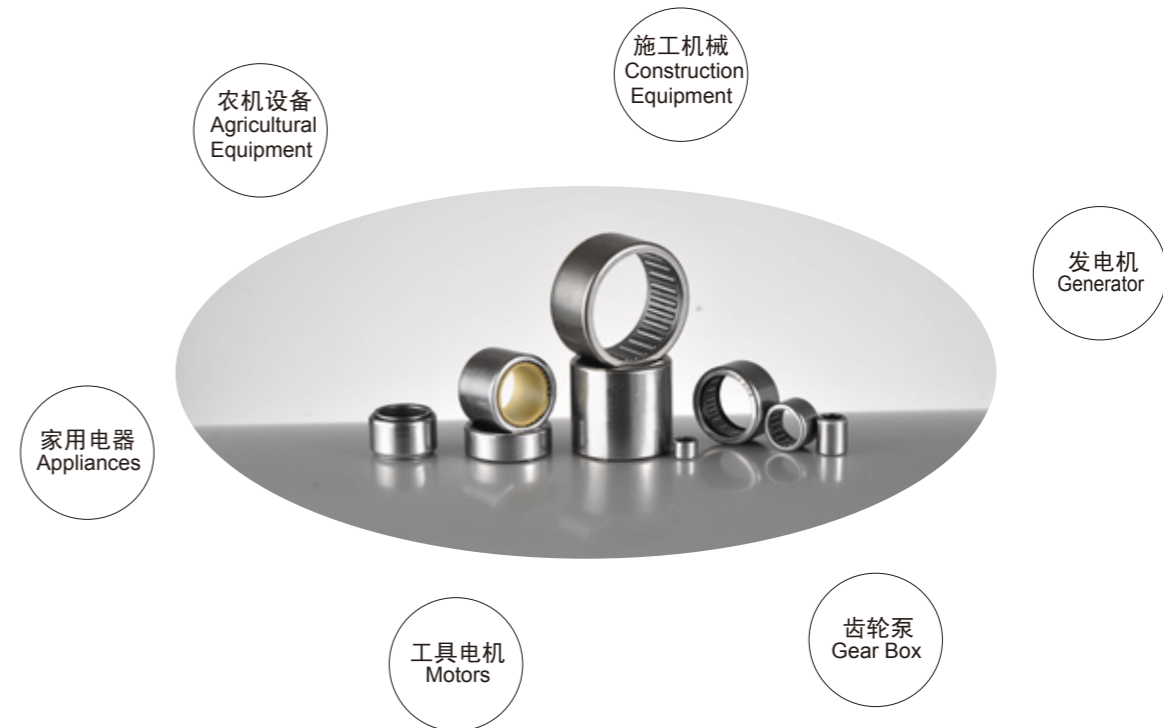
滚针轴承  
Needle Roller Bearings



滚针轴承内部有很多根细长的滚针，每一根的长度是其直径的3到10倍。因此，外径与内径的比例相差不大。这类轴承有相对较高的径向载荷。滚针轴承有很多种类，有一些没有内圈。冲压外圈型滚针轴承有冲压外圈。实体套圈有车加工外圈。也有一部分无套圈型的，由保持器与滚动体直接组成。大部分的滚针轴承有保持器，也有一部分没有保持器的。

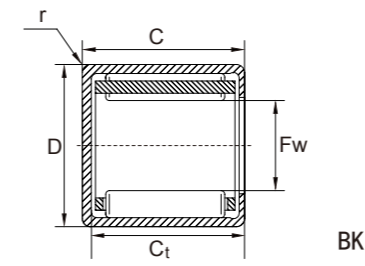
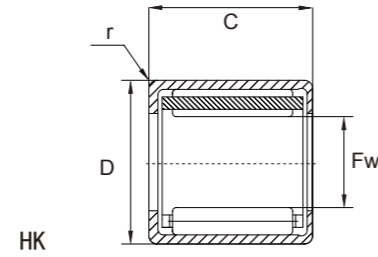
Needle roller bearings contain many slender rollers with a length 3 to 10 times their diameter. As a result, the ratio of the bearing outside diameter to the inscribed circle diameter is small, and they have a rather high radial load capacity. There are numerous types available, and many have no inner rings. The drawn-cup type has a pressed steel outer ring and the solid type has a machined outer ring. There are also cage and roller assemblies without rings. Most bearings have pressed steel cages, but some are without cages.

滚针轴承用途  
The usage of needle roller bearings



冲压外圈滚针轴承  
Drawn Cup Needle Roller Bearings

HK BK系列 HK BK Series

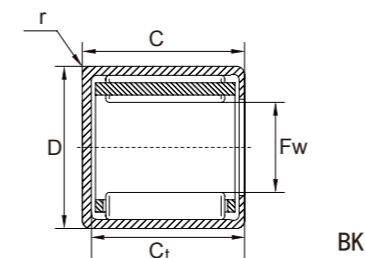
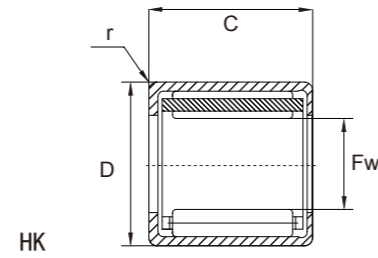


尺寸表 Boundary dimensions mm							
轴径 Shaft Diameter	穿孔型 Open type	封口型 Closed type	F <sub>w</sub>	D	C	C <sub>t</sub>	r <sub>min</sub>
3	HK0306TN	BK0306TN	3	6.5	6	5.2	0.3
4	HK0408	BK0408	4	8	8	6.4	0.3
5	HK0509	BK0509	5	9	9	7.4	0.4
6	HK0608	-	6	10	8	-	0.4
	HK0609	BK0609	6	10	9	7.4	0.4
7	HK0709	BK0709	7	11	9	7.4	0.4
8	HK0808	BK0808	8	12	8	6.4	0.4
	HK0810	BK0810	8	12	10	8.4	0.4
9	HK0908	-	9	13	8	-	0.4
	HK0910	BK0910	9	13	10	8.4	0.4
	HK0912	BK0912	9	13	12	10.4	0.4
10	HK1010	BK1010	10	14	10	8.4	0.4
	HK1012	BK1012	10	14	12	10.4	0.4
	HK1015	BK1015	10	14	15	13.4	0.4
12	HK1210	BK1210	12	16	10	8.4	0.4
	HK1212	BK1212	12	18	12	9.3	0.8
13	HK1312	BK1312	13	19	12	9.3	0.8
14	HK1412	BK1412	14	20	12	9.3	0.8
15	HK1512	BK1512	15	21	12	9.3	0.8
	HK1516	BK1516	15	21	16	13.3	0.8
	HK1522	-	15	21	22	-	0.8
16	HK1612	BK1612	16	22	12	9.3	0.8
	HK1616	BK1616	16	22	16	13.3	0.8
	HK1622	BK1622	16	22	22	19.3	0.8
17	HK1712	-	17	23	12	-	0.8
18	HK1812	BK1812	18	24	12	9.3	0.8
	HK1816	BK1816	18	24	16	13.3	0.8
20	HK2010	-	20	26	10	-	0.8
	HK2012	-	20	26	12	-	0.8
	HK2016	BK2016	20	26	16	13.3	0.8
	HK2020	BK2020	20	26	20	17.3	0.8
	HK2030	-	20	26	30	-	0.8
22	HK2210	-	22	28	10	-	0.8
	HK2212	BK2212	22	28	12	9.3	0.8
	HK2216	BK2216	22	28	16	13.3	0.8
	HK2220	-	22	28	20	-	0.8

基本额定载荷 Basic Load Rating KN		极限转速 Limiting Speed Oil (rpm)	参考转速 Rated Speed (rpm)	适合的内圈 (单独订货) Matched inner ring (to order Separately)	
封口型动 Closed type Dynamic	封口型静 Closed type Static			LR 代号	IR 代号
1.23	0.84	46000	65000	-	-
1.78	1.31	41000	50000	-	-
2.4	1.99	38000	42000	-	-
2.03	1.65	35000	36000	-	-
2.85	2.6	35000	35000	-	-
3.1	2.95	31000	31000	-	-
2.75	2.6	28000	27000	-	-
3.8	3.95	28000	27000	-	IR5x8x12
3.55	3.75	25000	23000	-	-
4.25	4.65	25000	24000	-	-
5.3	6.3	25000	23000	-	IR6x9x12
4.4	5.1	23000	22000	LR7x10x10.5	IR7x10x10.5
5.5	6.8	23000	21000	-	IR7x10x12
6.8	8.8	23000	21000	-	IR7x10x16
4.95	6.2	20000	18000	LR8x12x10.5	IR8x12x10.5
6.5	7.3	19000	18000	LR8x12x12.5	IR8x12x12.5
6.8	7.9	18000	17000	LR10x13x12.5	IR10x13x12.5
7.1	8.5	16000	16000	-	IR10x14x13
7.9	9.4	16000	14000	LR12x15x12.5	IR12x15x12.5
10.5	14.4	16000	14000	LR12x15x16.5	IR12x15x16.5
13.4	19.5	16000	14000	LR12x15x22.5	IR12x15x22.5
7.6	9.7	15000	14000	-	IR12x16x13
10.9	15.3	15000	13000	-	IR12x16x16
13.1	19.4	15000	14000	-	IR12x16x22
7.9	10.3	14000	13000	-	-
8.1	10.9	13000	12000	LR15x18x12.5	-
11.6	17.3	13000	12000	LR15x18x16.5	IR15x18x16.5
6.4	8.2	12000	12000	-	-
8.6	12.1	12000	11000	-	IR15x20x13
12.7	20.1	12000	11000	LR17x20x16.5	IR17x20x16.5
15.7	26	12000	11000	LR17x20x20.5	IR17x20x20.5
21.8	40	12000	11000	LR17x20x30.5	IR17x20x30.5
7.5	10.5	11000	10000	-	-
9.1	13.4	11000	10000	-	IR17x22x13
13.4	22.1	11000	10000	-	IR17x22x16
16.5	29	11000	10000	-	IR17x22x23

冲压外圈滚针轴承  
Drawn Cup Needle Roller Bearings

HK BK系列 HK BK Series

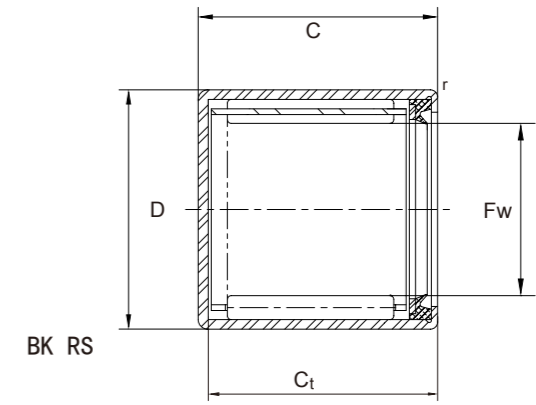
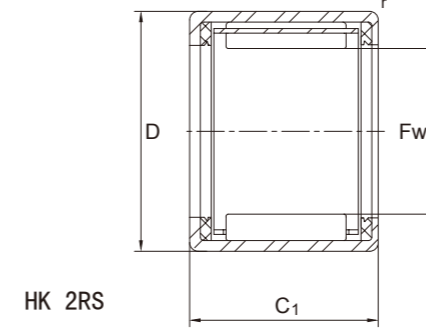
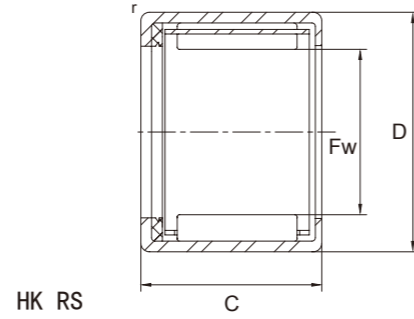


尺寸表 Boundary dimensions mm							
轴径 Shaft Diameter	穿孔型 Open type	封口型 Closed type	Fw	D	C	C <sub>t</sub>	r <sub>min</sub>
25	HK2512	-	25	32	12	-	0.8
	HK2516	-	25	32	16	-	0.8
	HK2520	BK2520	25	32	20	17.3	0.8
	HK2526	BK2526	25	32	26	23.3	0.8
	HK2538	BK2538	25	32	38	35.3	0.8
28	HK2816	-	28	35	16	-	0.8
	HK2820	-	28	35	20	-	0.8
30	HK3012	BK3012	30	37	12	9.3	0.8
	HK3016	BK3016	30	37	16	13.3	0.8
	HK3020	BK3020	30	37	20	17.3	0.8
	HK3026	BK3026	30	37	26	23.3	0.8
	HK3038	BK3038	30	37	38	35.3	0.8
35	HK3512	-	35	42	12	-	0.8
	HK3516	-	35	42	16	-	0.8
	HK3520	BK3520	35	42	20	17.3	0.8
40	HK4012	-	40	47	12	-	0.8
	HK4016	-	40	47	16	-	0.8
	HK4020	BK4020	40	47	20	17.3	0.8
45	HK4512	-	45	52	12	-	0.8
	HK4516	-	45	52	16	-	0.8
	HK4520	BK4520	45	52	20	-	0.8
50	HK5020	-	50	58	20	-	0.8
	HK5025	-	50	58	25	-	0.8
55	HK5520	-	55	63	20	-	0.8
	HK5528	-	55	63	28	-	0.8
60	HK6012	-	60	68	12	-	0.8
	HK6020	-	60	68	20	-	0.8
	HK6032	-	60	68	32	-	0.8

基本额定载荷 Basic Load Rating KN		极限转速 Limiting Speed Oil (rpm)	参考转速 Rated Speed (rpm)	适合的内圈 (单独订货) Matched inner ring (to order Separately)	
封口型动 Closed type Dynamic	封口型静 Closed type Static			LR 代号	IR 代号
11	15.2	10000	9000	LR20x25x12.5	-
15.6	24	10000	9000	LR20x25x16.5	IR20x25x17
19.9	33	10000	8500	LR20x25x20.5	IR20x25x20.5
25.5	45	10000	8500	LR20x25x26.5	IR20x25x26.5
34	66	10000	8500	LR20x25x38.5	IR20x25x38.5
16.4	26.5	9000	8000	-	IR22x28x17
20.9	36	9000	8000	LR22x28x20.5	IR22x28x20.5
12.1	18.2	8500	7500	LR25x30x12.5	-
17.2	29	8500	7500	LR25x30x16.5	IR25x30x17
22	39.5	8500	7500	LR25x30x20.5	IR25x30x20.5
28	54	8500	7500	LR25x30x26.5	IR25x30x26.5
37.5	79	8500	7500	LR25x30x38.5	IR25x30x38.5
13.1	21.3	7500	6600	LR30x35x12.5	-
18.7	33.5	7500	6500	LR30x35x16.5	IR30x35x17
23.8	46	7500	6500	LR30x35x20.5	IR30x35x20.5
14	24.3	6500	6000	LR35x40x12.5	-
20	38.5	6500	6000	LR35x40x16.5	IR35x40x17
25.5	52	6500	5500	LR35x40x20.5	IR35x40x20.5
14.9	27.5	6000	5500	-	-
21.3	43	6000	5500	LR40x45x16.5	IR40x45x17
27	59	6000	5500	LR45x50x20.5	IR40x45x20.5
31	63	5000	4700	LR45x50x20.5	-
38.5	84	5000	4700	LR45x50x25.5	IR45x50x25.5
31.5	67	4700	4400	LR50x55x20.5	-
44	103	4700	4300	-	-
17.4	32	4400	4300	-	-
33.5	75	4400	4100	-	-
53	135	4400	4000	-	-

冲压外圈滚针轴承  
Drawn Cup Needle Roller Bearings

HK RS/BK RS系列  
HK RS/BK RS Series



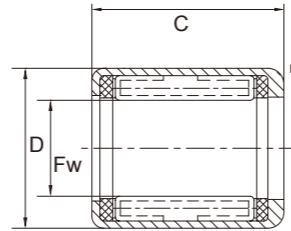
尺寸表 Boundary dimensions mm									
轴径 Shaft Diameter	穿孔型单面密封 Open type Sealed on one side	穿孔型双面密封 Open type Sealed on both sides	封口型单面密封 Open type Sealed on one side	Fw	D	C	C <sub>1</sub>	C <sub>tmin</sub>	r <sub>min</sub>
8	HK0810RS	HK0812.2RS	-	8	12	10	12	-	0.4
10	HK1012RS	HK1014.2RS	-	10	14	12	14	-	0.4
12	HK1214RS	HK1216.2RS	-	12	18	14	16	11.3	0.8
14	HK1414RS	HK1416.2RS	BK1414RS	14	20	14	16	-	0.8
15	HK1514RS	HK1516.2RS	-	15	21	14	16	-	0.8
	HK1518RS	HK1520.2RS	-	15	21	18	20	11.3	0.8
16	HK1614RS	HK1616.2RS	BK1614RS	16	22	14	16	-	0.8
	-	HK1620.2RS	-	16	22	-	20	-	0.8
18	HK1814RS	HK1816.2RS	-	18	24	14	16	-	0.8
20	-	HK2016.2RS	-	20	26	-	16	15.3	0.8
	HK2018RS	HK2020.2RS	BK2018RS	20	26	18	20	-	0.8
22	HK2214RS	HK2216.2RS	-	22	28	14	16	-	0.8
	HK2218RS	HK2220.2RS	-	22	28	18	20	-	0.8
25	-	HK2516.2RS	-	25	32	-	16	-	0.8
	HK2518RS	HK2520.2RS	BK2518RS	25	32	18	20	-	0.8
	-	HK2524.2RS	-	25	32	-	24	-	0.8
	-	HK2530.2RS	-	25	32	-	30	-	0.8
28	HK2818RS	HK2820.2RS	-	28	35	18	20	-	0.8
30	-	HK3016.2RS	-	30	37	-	16	-	0.8
	HK3018RS	HK3020.2RS	-	30	37	18	20	-	0.8
	-	HK3024.2RS	-	30	37	-	24	-	0.8
35	-	HK3516.2RS	-	35	42	-	16	-	0.8
	HK3518RS	HK3520.2RS	-	35	42	18	20	-	0.8
40	-	HK4016.2RS	-	40	47	-	16	-	0.8
	HK4018RS	HK4020.2RS	-	40	47	18	20	-	0.8
45	HK4518RS	HK4520.2RS	-	45	52	18	20	-	0.8
50	HK5022RS	HK5024.2RS	-	50	58	22	24	-	0.8

TN=塑料保持架, 容许运转温度: 120℃ (连续工作)  
油润滑极限转速对脂润滑, 其容许值为表中所给值的25%

基本额定载荷 Basic Load Rating KN		极限转速 (rpm) Limiting Speed Oil	适合的内圈 (单独订货) Matched inner ring (to order Separately)		
封口型动 Closed type Dynamic	封口型静 Closed type Static		HK. .RS and HK. .2RS LR代号	LR 代号	BK. .RS LR. IR代号
2.75	2.6	20000	-	-	-
4.4	5.1	17000	-	-	-
6.5	7.3	14000	-	-	-
7.1	8.5	12000	-	-	-
7.8	9.8	11000	LR12x15x16.5	LR12x15x16.5	LR12x15x12.5
10.54	14.4	11000	-	-	-
7.6	9.7	11000	-	LR12x16x20	LR12x16x13
10.9	15.3	11000	-	-	-
8.1	10.9	9500	LR15x18x16.5	LR15x18x16.5	-
8.6	12.1	8500	LR17x20x16.5	LR17x20x16.5	-
12.7	20.1	8500	LR17x20x20.5	LR17x20x20.5	LR17x20x16.5
9.1	13.4	8000	-	LR17x22x16	-
13.4	22.1	8000	-	LR17x22x23	-
11	15.2	7000	LR20x25x16.5	LR20x25x17	-
15.6	24	7000	LR20x25x20.5	LR20x25x20.5	LR20x25x16.5
19.9	33	7000	-	-	-
25.5	45	7000	-	LR20x25x30	-
16.4	26.5	6000	LR22x28x20.5	LR22x28x20.5	-
12.1	18.2	6000	LR25x30x16.5	LR25x30x17	-
17.2	29	6000	LR25x30x20.5	LR25x30x20.5	-
22	39.5	6000	-	-	-
13.1	21.3	5000	LR30x35x16.5	LR30x35x17	-
18.7	33.5	5000	LR30x35x20.5	LR30x35x20.5	-
14	24.3	4500	LR35x40x16.5	LR35x40x17	-
20	38.5	4500	LR30x45x20.5	LR30x45x20.5	-
21.3	43	4000	LR40x45x20.5	LR40x45x20.5	-
31	63	3600	LR45x50x25.5	LR45x50x25.5	-

TN means Nylon Cage. The working temperature for nylon cage: 120℃.(continusly)  
The Limited speed is 25% of the data in this table if it is grease lubrication.

冲压外圈滚针离合器和轴承组件  
Drawn Cup Roller Clutches and Bearings Sets



轴径 Shaft Dia. mm	轴承型号 Bearing No.		重量 Mass 近似 Approx g	外形尺寸 Boundary Dimensions mm			传动力矩 Permissible Torque Md Nm	极限转速 Limiting Speed Min <sup>-1</sup>		适合的冲压外圈滚针轴承 Suitable Drawn cup Bearings
	塑料弹簧 Plastic Springs	钢弹簧 Steel Springs		Fw	D	C		轴旋转 Rotating Shaft	外圈旋转 Rotating Outer Ring	
3	HF0306KF		0.9	3	6.5	6	0.2	36000	7000	HK0306TN
4	HF0406KF	-	1	4	8	6	0.34	34000	8000	HK0408TN
	HF0406KFR	-	1	4	8	6	0.1	34000	8000	HK0408TN
6	HK0608KF		2.8	6	10	8	1.5	20000	11000	HK0608
	HF0612KF	HF0612	3	6	10	12	1.76	23000	13000	HK0608
	HF0612KFR	HF0612R	3	6	10	12	0.5	23000	13000	HK0608
		HF061210	3.5	6	12	10	3	20000	13000	HK061208
8	HF0812KF	HF0812	3.5	8	12	12	3.15	17000	12000	HK0808
	HF0812KFR	HF0812R	3.5	8	12	12	4	17000	12000	HK0808
		HF081210	3.2	8	12	10	3	16000	12000	HK0808
		HF081410	3.6	8	14	10	4.6	15000	11000	HK081410
		HF081610	4.1	8	16	10	5.5	15000	11000	HK081610
		HF081412	4	8	14	12	5	16000	12000	HK081410
10	HF1012KF	HF1012	4	10	14	12	5.3	14000	11000	HK1010
	HF1012KFR	HF1012R	4	10	14	12	1.5	14000	11000	HK1010
12	-	HF1216	11	12	18	16	12.2	11000	8000	HK1212
14	-	HF1416	13	14	20	16	17.3	9500	8000	HK1412
16	-	HF1616	14	16	22	16	20.5	8500	7500	HK1612
18	-	HF1816	16	18	24	16	24.1	7500	7500	HK1812
20	-	HF2016	17	20	26	16	28.5	7000	6500	HK2010
25	-	HF2520	30	25	32	20	66	5500	5500	HK2512
30	-	HF3020	36	30	37	20	90	4500	4500	HK3012
35	-	HF3520	40	35	42	20	121	3900	3900	HK3512

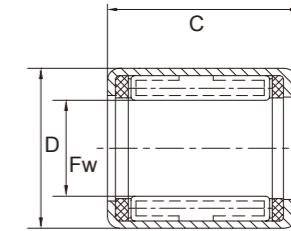
型号 Item	重量 Weight/g	主要尺寸 Dimensions			传动力矩
		dr	D	B	
FC4K	1	4	8	6	0.34
FC6	3	6	10	12	1.76
FC6K	3	6	10	12	1.76
FC8	4	8	14	12	5.3
FCL8K	3.5	8	12	12	5
FC10	4.8	10	16	12	6
FCL10K	4	10	14	12	5.3
FC12	11	12	18	16	12.2
FC14K	13	14	20	16	17.3
FC16	14	16	22	16	20.5
FC20	17	20	26	16	28.5
FC25	30	25	32	20	66
FC30	36	30	37	20	90
FC35	40	35	42	20	121

型号 Item	重量 Weight/g	主要尺寸 Dimensions			传动力矩
		dr	D	B	
RC040708	3.5	6.35	11.112	12.7	1.9
RC040708-FS	3.5	6.35	11.112	12.7	1.9
RC061008	4.7	9.525	15.875	12.7	4.83
RC061008-FC	4.7	9.525	15.875	12.7	4.83
RC081208	9.2	12.7	19.05	12.7	7.9
RC081208-FS	9.2	12.7	19.05	12.7	7.9
RC101410	14.5	15.875	22.225	15.88	15.4
RC101410-FC	14.5	15.875	22.225	15.88	15.4
RC121610	17	19.05	25.4	15.88	20.9
RC121610-FS	17	19.05	25.4	15.88	20.9
RC162110	16.2	25.4	33.338	15.88	45
RC162110-FC	16.2	25.4	33.338	15.88	45

型号	重量	主要尺寸			传动力矩
		Fw	D	C	
FCB8	10	8	14	20	5
FCB10	15	10	16	20	10
FCB12	18	12	18	26	12.2
FCB16	22	16	22	26	20.5
FCB20	27	20	26	26	28.5
FCB25	44	25	32	30	66
FCB30	51	30	37	30	90
FCB35	58	35	42	30	121

型号	重量	主要尺寸			传动力矩
		Fw	D	C	
RCB061014	12	9.525	15.875	22.22	4.83
RCB061014-FS	12	9.525	15.875	22.22	4.83
RCB081214	16	12.7	19.05	22.22	7.9
RCB081214-FC	16	12.7	19.05	22.22	7.9
RCB101416	21.3	15.875	22.225	25.4	15.4
RCB101416-FS	21.3	15.875	22.225	25.4	15.4
RCB121616	26.5	19.05	25.4	25.4	20.9
RCB121616-FC	26.5	19.05	25.4	25.4	20.9
RCB162117	44.8	25.4	33.338	26.99	45
RCB162117-FS	44.8	25.4	33.338	26.99	45

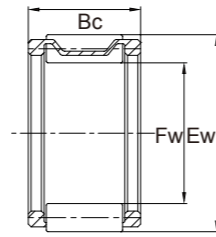
冲压外圈滚针离合器和轴承组件  
Drawn Cup Roller Clutches and Bearings Sets



轴径 Shaft Diameter mm	轴承型号 Bearing designation		重量 Mass 近似 Approx g	外形尺寸 Boundary Dimensions mm			传动力矩 Permissible Torque Md Nm	极限转速 Limiting Speed Min <sup>-1</sup>		基本额定负荷 Basic Load Ratings KN	
	塑料弹簧 Plastic Springs	钢弹簧 Steel Springs		Fw	D	C		轴旋转 Rotating Shaft	外圈旋转 Rotating Outer Ring	C	Co
3	HFL0308		3	3	3.6	8	1				
4	HFL0408		3.5	4	8	8	1.5				
6	HFL0615KF	HFL0615	4	6	10	15	1.76	23000	13000	-	-
	HFL0615KFR	HFL0615R	4	6	10	15	0.5	23000	13000	-	-
		HFL061012K	5	6	10	12		21000	12000		
8		HFL081212K	6	8	12	12		20000	12000		
		HFL081412K	7	8	14	12		19000	12000		
	HFL0822KF	HFL0822	7	8	12	22	3.15	17000	12000	4.05	4.15
10	HFL0822KFR	HFL0822R	7	8	12	22	1	17000	12000	-	-
	HFL1022KF	HFL1022	8	10	14	22	5.3	14000	11000	4.3	4.65
	HFL1022KFR	HFL1022R	8	10	14	22	1.5	14000	11000	-	-
12	-	HFL1226	18	12	18	26	12.2	11000	8000	6.3	6.5
14	-	HFL1426	20	14	20	26	17.3	9500	8000	7.1	7.7
16	-	HFL1626	22	16	22	26	20.5	8500	7500	7.7	9
18	-	HFL1826	25	18	24	26	24.1	7500	7500	8.3	10.3
20	-	HFL2026	27	20	26	26	28.5	7000	6500	8.9	11.5
25	-	HFL2530	44	25	32	30	66	5500	5500	10.9	14.1
30	-	HFL3030	51	30	37	30	90	4500	4500	12.6	17.6
35	-	HFL3530	58	35	42	30	121	3900	3900	13	19.3

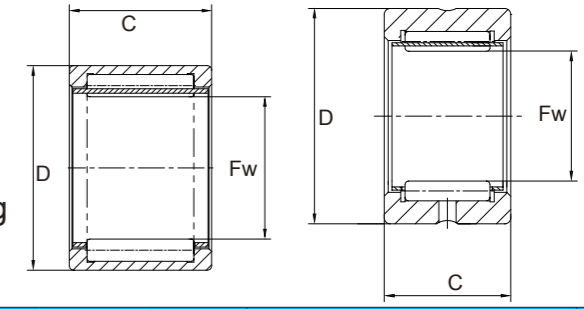


向心滚针轴承和保持架组件  
Radial Needle Roller and Cage Assemblise



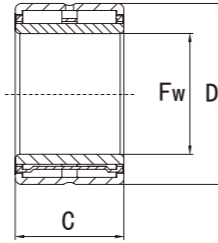
轴径 Shaft Diame- ter	轴承型号 Bearing Designation		重量 Mass 近似 Approx	外形尺寸 Boundary Dimensions			基本额定负荷 Basic Load Rating		极限转速 Limiting Speed	
	现行的 Current	原型号 Original Code		Fw	Ew	Bc	动 Cr Dynamic	静 Cor Static		油润滑 Oil
mm			g	mm			N		rpm	
5	K5x8x8TN	29241/5	0.7	5	8	8	2300	1880	37000	
	K5x8x10TN	39241/5	0.9	5	8	10	2800	2450	37000	
6	K6x9x8TN	29241/6	0.8	6	9	8	2560	2240	35000	
7	K7x10x8TN	29241/7	0.9	7	10	8	2750	2550	32000	
8	K8x11x8TN	29241/8	1.1	8	11	8	3000	2900	30000	
	K8x11x10TN	39241/8	1.7	8	11	10	3830	3950	30000	
	K8x12x10TN	29242/8	1.3	8	12	10	4900	4600	30000	
9	K9x12x10TN	39241/9	1.5	9	12	10	4200	4700	30000	
10	K10x13x10TN	39241/10	1.6	10	13	10	4500	5250	27000	
	K10x13x13TN	39241/10	2.1	10	13	13	6000	7600	27000	
	K10x14x10TN	29242/10	2.9	10	14	10	7000	7900	27000	
12	K12x15x10TN	39241/12	1.9	12	15	10	4320	5730	25000	
	K12x16x8	19242/12	2.9	12	16	8	4200	4700	25000	
	K12x16x13	39242/12	3.4	12	16	13	7900	9200	25000	
	K12x18x12TN	19244/12	5	12	18	12	9800	8000	24000	
14	K14x18x13	39241/14	6.3	14	18	13	8100	9800	23000	
	K14x18x15	49241/14	7.3	14	18	15	10000	13000	23000	
	K14x18x17	59241/14	8.1	14	18	17	10500	13900	23000	
15	K15x18x17	-	6.4	15	18	17	9600	15900	23000	
	K15x19x17	59241/15	8.8	15	19	17	10300	15000	22000	
	K15x21x12	19243/15	10	15	21	12	10000	13000	22000	
16	K16x20x17	59241/16	9.2	16	20	17	11200	16300	22000	
	K16x22x12	19243/16	10.4	16	22	12	11000	12000	21000	
	K16x22x16	-	13.7	16	22	16	14300	17000	21000	
17	K17x21x10	29241/17	5.6	17	21	10	7900	10100	21000	
18	K18x22x17	59241/18	10.8	18	22	17	11900	17600	20000	
	K18x24x12	19243/18	11.6	18	24	12	11200	12900	20000	
	K18x25x14	-	14.9	18	25	14	16500	18800	20000	
19	K19x23x17	-	11.1	19	23	17	12000	18600	20000	
20	K20x24x17	59241/20	11.2	20	24	17	12400	20000	19000	
	K20x26x12	19243/20	13.2	20	26	12	13100	15700	19000	
	K20x26x17	39243/20	18.2	20	26	17	18700	25500	19000	
	K20x26x20	49243/20	22	20	26	20	20600	28500	19000	
	K20x28x20	19245/20	26.8	20	28	20	23400	28000	18000	
21	K21x25x13	-	9	21	25	13	9600	14500	19000	
22	K22x26x10	29241/22	7.1	22	26	10	8700	12900	18000	
	K22x26x17	59241/22	12.1	22	26	17	13100	22100	18000	
	K22x27x13	29242/22	10.8	22	27	13	14000	23000	18000	
	K22x28x17	39243/22	19.7	22	28	17	19000	26500	18000	
	K22x29x16	19244/22	22.2	22	29	16	19500	25000	17000	
24	K24x28x10	-	8.1	24	28	10	9400	14300	17000	
	K24x28x13	-	10.1	24	28	13	10500	17000	17000	
	K24x28x17	9243/24	13.2	24	28	17	14000	24500	17000	
25	K25x29x13	39241/25	10.4	25	29	13	10800	17900	16000	

无内圈滚针轴承  
Heavy Duty Needle Bearing Without Inner Ring



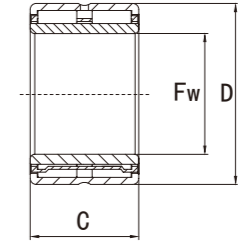
轴径 Shaft Diame- ter	轴承型号 Bearing Designation		重量 Mass 近似 Approx	外形尺寸 Boundary Dimensions			基本额定负荷 Basic Load Rating		极限转速 Limiting Speed	
	现行的 Current	原型号 Original Code		Fw	D	C	动 Cr Dynamic	静 Cor Static		油润滑 Oil
mm			g	mm			N		rpm	
5	NK5/10TN		2.9	5	10	10	2100	1400	36780	
8	NK8/12TN		8.3	8	15	12	3050	3650	29112	
10	NK10/12TN	4624097K	10	10	17	12	4750	5350	23500	
		5624097	16.6	10	17	15	4860	7100	23500	
12	NK12/12	644079	11.8	12	19	12	6050	6400	21640	
		5624098	15.4	12	19	15	6400	7100	21640	
14	NK12/16		16.8	12	19	16	8200	9800	21640	
	NK14/16	4624900K	20.8	14	22	16	8260	9600	18322	
14	NKS14		27	14	25	16	10400	10800	17652	
	RNA4900	4624900	24.4	14	22	13	8060	9000	18322	
	RNA6900	6634900	29.1	14	22	22	8281	11612	18322	
15	NK15/12	644800K	18.5	15	23	12	8600	10070	21004	
		7948/15	16.1	15	22	12	8200	9800	8412	
		644302	18.2	15	25	12	10600	13500	17144	
16	NK16/16		20.8	16	24	16	9030	11900	15522	
	NK16/20	624701	23.9	16	24	20	10400	16800	15522	
	RNA4901	4624901	16.6	16	24	13	6400	8900	15522	
	RNA6901	6634901	28.7	16	24	22	14000	18600	15522	
	NKS16		30	16	28	16	14900	15000	20000	
17	NK17/16	644903K	21.5	17	25	16	9000	13500	14163	
18	NK18/20		30.5	18	26	20	10500	13800	13628	
20	NK20/16	644802	25.7	20	28	16	11500	13400	12716	
	NK202616		20.8	20	26	16	9600	10800	9125	
	NKS20		46.8	20	32	20	20000	22000	18000	
		6624101	24.3	20	28	25	11000	12900	12716	
	RNA4902	4624902	20.5	20	28	13	10800	12800	12716	
22	RNA6902	6634902	35.4	20	28	23	13000	25000	12716	
	NK22/16	NK223016	29.2	22	30	16	13500	18000	11527	
		NK223516	34.6	22	35	16	18600	20800	12711	
	NKS22		60.2	22	35	20	21500	25000	17000	
	RNA4903	4644903	20.7	22	30	13	12000	16800	16300	
	RNA6903	6634903	39.8	22	30	23	14000	19900	16300	
		624703	53	22	35	25	24500	28000	14187	
25		644704	27.4	22	28	16	10500	15050	15172	
	NK25/16	624904	30	25	33	16	12900	20400	15000	
	NK25/20	644804	38.4	25	33	20	16800	28500	15000	
	RNA4904	4644904	50.8	25	37	17	11912	16594	14060	
	RNA6904	6634904	97.7	25	37	30	26000	43000	14060	
	NKS25		65	25	38	20	25800	31000	16300	
		624704	100.1	25	35	25	14900	22400	14060	
26		644804K	63	25	33	30	18800	30500	14060	
	NK26/16		30	26	34	16	15000	23000	16300	
28	NK25/20		40	26	34	20	17000	30000	16300	
	F3833		99.8	28	38	33	33000	57000	12000	

无内圈滚针轴承  
Heavy Duty Needle Bearing Without Inner Ring



轴径 Shaft Diame ter	轴承型号 Bearing Designation		重量 Mass 近似 Approx g	外形尺寸 Boundary Dimensions			基本额定负荷 Basic Load Rating		极限转速 Limiting Speed
	现行的 Current	原型号 Original Code		Fw	D	C	动 Cr Dynamic	静 Cor Static	油润滑 Oil
									N
28	NKS28		80	28	42	20	25900	33500	14600
30	NK30/20	644805	57.9	30	40	20	20600	32000	12066
	NK30/30		95	30	40	30	31500	50000	14500
	RNA4905	4624905	57	30	42	17	13452	20475	12066
	RNA6905	6634905	106.5	30	42	30	26300	31750	12066
		624905K	68	30	42	20	15400	24500	12066
32	NK32/20	624705	75.4	32	42	20	17500	33500	12066
	RNA49/28	46449/32K	80	32	45	17	17400	30050	12000
	NKS32		100	32	47	22	31000	40000	12100
	RNA69/28		125	32	45	30	39500	61300	13100
		644906	42	32	38	11	10750	30500	12000
	644706	193	32	50	35	40500	63000	12000	
35	NK35/20	644806	70	35	45	20	13851	26900	12000
	RNA4906	4624906	62.8	35	47	17	17000	30500	12000
	RNA6906	6634906	116	35	47	30	35000	67000	12000
		644907	161	35	51	32	43500	71000	11680
37		624706	154	37	52	22	28500	45500	9027
40	NK40/20		78.9	40	50	20	19600	43000	8881
	NK40/30		120	40	50	30	22200	513500	8881
	RNA69/32	66349/32	147	40	52	36	25500	68500	8881
42	NK42/20		83	42	52	20	23900	45000	10000
	NK42/30		125	42	52	30	27000	49000	10000
	RNA4907	4624907	99.3	42	55	20	19800	41500	8710
	RNA69C7	6634907	160	42	55	36	26000	60500	8710
	644708	148	42	65	22	31500	51000	8710	
43	NK43/30		126	43	53	30	39000	75000	10000
45	NK45/20	644808	81.5	45	55	20	19800	46500	7650
		624708	75.3	45	55	22	20500	49600	7650
		46449/38	80	45	58	20	21600	50500	7650
48	RNA4908	4644908	132	48	62	22	31036	63873	8120
	RNA6908	6634908	238	48	62	40	64000	112000	8120
50	NK50/25		167	50	62	25	28000	67000	8140
	NK50/35		236	50	62	35	32000	70100	8140
		624708K	328	50	65	34	40000	62000	8140
52	RNA4909	4624909	163	52	68	22	37000	69500	7625
	RNA6909	6634909	308	52	68	40	61500	123500	7625
55	NK55/25		167	55	68	25	30600	60800	7625
		624709	210	55	68	25	36000	68000	7625
58	RNA4910	4644910	161	58	72	22	41000	72000	7500
	RNA6910	6634910	296	58	72	40	68000	135000	7500
60	NK60/25		154	60	72	25	39000	86000	7000
63	RNA4911	4644911	241	63	80	25	50600	96580	6340
	RNA6911	6634911	430	63	80	45	82560	127000	6340
68	RNA4912	4644912	257	68	85	25	52800	91050	6100

无内圈滚针轴承  
Heavy Duty Needle Bearing Without Inner Ring



轴径 Shaft Diame ter	轴承型号 Bearing Designation		重量 Mass 近似 Approx g	外形尺寸 Boundary Dimensions			基本额定负荷 Basic Load Rating		极限转速 Limiting Speed
	现行的 Current	原型号 Original Code		Fw	D	C	动 Cr Dynamic	静 Cor Static	油润滑 Oil
									N
68	RNA6912	6634912	436	68	85	45	88500	186000	6100
72	RNA4913	4644913	300	72	90	25	57500	110500	6100
80	RNA4914	4644914	400	80	100	30	79000	154000	5130
	RNA6914	6634914	815	80	100	54	121000	263000	5130
85	RNA4915	4644915	472	85	105	30	82000	158000	5130
90	RNA4916	4644916	496	90	110	30	81000	170500	4927
	RNA6916	6634916	978	90	110	54	130500	280600	4927
96		SG-421	496	96	115	29	73000	137000	4600
100	RNA4917	4644917	608	100	120	35	98000	207000	4600
	RNA6917	6634917	1112	100	120	63	161000	337000	4600
105	RNA4918	4644918	713	105	125	35	98500	239000	4000
110	RNA4919	4644919	685	110	130	35	112000	245000	3870
	RNA6919	6634919	1325	110	130	63	196000	400000	3870
115	RNA4920	4624920	1006	115	140	40	120000	264000	3710
125	RNA4922	6634922	1200	125	150	40	124000	270000	3350
135	RNA4924	4644924	1760	135	165	45	174000	386000	2920