

ZWZ

CC型调心滚子轴承

CC-Type Spherical Roller Bearing





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瓦轴集团形成了设计技术、检测试验技术、工艺制造技术三大技术研发平台，针对客户各种需求提供个性化、高品质轴承产品及更全面的服务。

瓦轴集团建立CC型调心滚子轴承专门生产基地，引进国外先进的加工设备，提供高质量的内径45mm至外径440mm,重、中、轻等多个系列，精度至P5级的调心滚子轴承。主要应用于齿轮箱、鼓风机、造纸、钢铁、船舶、煤矿机械、电力等各种行业的各种机械设备中。

ZWZ Group has formed three technology research and development platforms including design technology, test technology and processing technology and provide the service which is personalized, more comprehensive with high quality bearing products.

ZWZ Group established production base specially for CC-type spherical roller bearing, introduce advanced foreign equipment and provide high-quality spherical roller bearings with precision of P5 and inner diameter of 45mm to outer diameter of 440mm which belong to Heavy, Medium, Light series. They are mainly applied in gearbox, blower, paper machinery, steel machinery, ship machinery, coal mining machinery, electric machinery and other machinery for various fields.

CC型调心滚子轴承设计 CC-Type Spherical Roller Bearing

CC型结构是调心滚子轴承中较高级别的设计，结构上具有对称滚子，内圈无档边，每列滚子带有冲压钢板保持架，活动中隔圈靠内圈引导等特征。

CC-type is higher level design for spherical roller bearing. The structure is featured by symmetrical rollers, inner ring without rib, every row of rollers with pressed steel cage and spacer ring guided by inner ring.

1、设计原理：

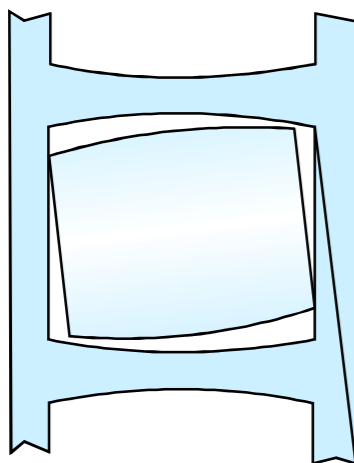
与C型调心滚子轴承相比，引用了滚子自引导理论，通过滚子与内外滚道的摩擦力平衡，避免滚子走偏。其设计还采用了完善的表面结构、精密的内部几何构造、重要项目形位公差压严等技术手段。以往的C型及国内所谓的“CC型”的设计均未采用自引导技术，内部摩擦力较大。保持架的切坡结构设计及加工，目前国内尚无一家可做。

1. Design Principle

Compared with C type spherical roller bearing, it is based on self-guided theory of roller, through friction balance between roller and inner&outer raceway to prevent roller going off course. The design adopts perfect surface structure, precise internal geometric structure and technology means of pressed sealed geometrical tolerance for important item. Previous designs of C type and so-called “CC-Type” in China have not used self-guided technology, the internal friction of which is big. So far, there is no company in China can make the cutting slope structure design and machining for cage.

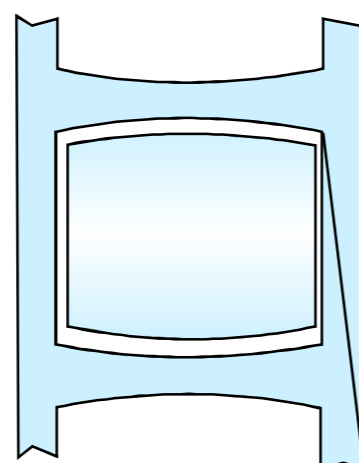
CC型的设计采用自引导技术 CC Design Uses Self-Guided Technology

C型较大的滚子走偏
Big deviation of C type



高摩擦扭矩
High friction torque

CC型较小的滚子走偏
Small deviation of CC type



低摩擦扭矩
Low friction torque

2、结构的改进：

内外圈：

合理设计配合度，减小负荷分布。(图1)

滚子：

采用对称滚子，对滚子表面、曲率进行自引导设计，大大提高对滚子的控制并降低了摩擦。在轴、径向载荷作用下，载荷在滚子上会平均分布。与非对称滚子相比对称滚子会使滚子上的负荷分布不均，同时会在中档边处形成应力集中，固定中档边会阻止滚子的自导向，如图。CC型设计是在C型设计基础上，滚子表面采用了滚子自引导设计理念，对表面形貌及表面粗糙度、曲率进行了优化，有助于滚子引导，并可减少摩擦。(图2)

隔圈：

其作用是防止滚子边缘接触。控制非负荷区滚子的运行；使滚子能正确的进入负荷区；减小了轴承卡死现象的发生概率。与带有固定中档边的轴承相比，更能调节负荷的分配，减小滚子对中档边的摩擦。(图3)

2. Structure Improvement

Inner and Outer Ring:

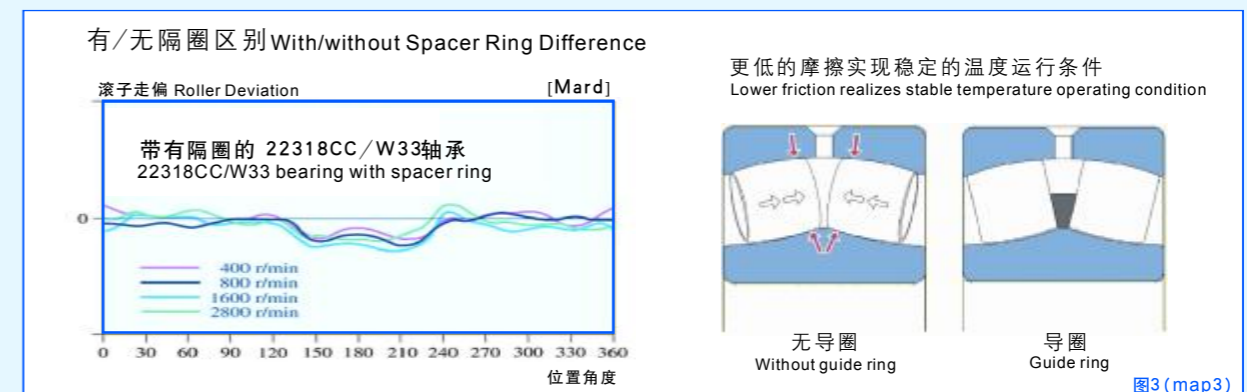
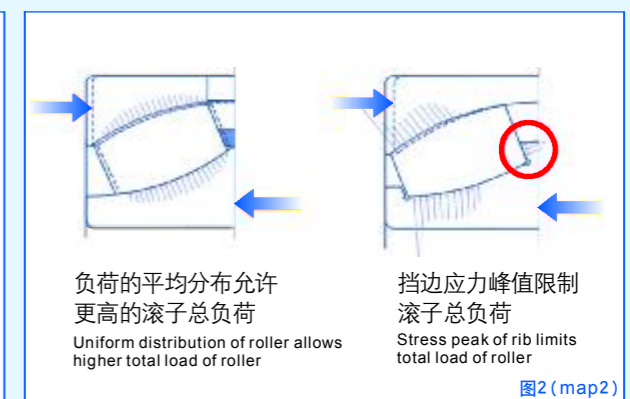
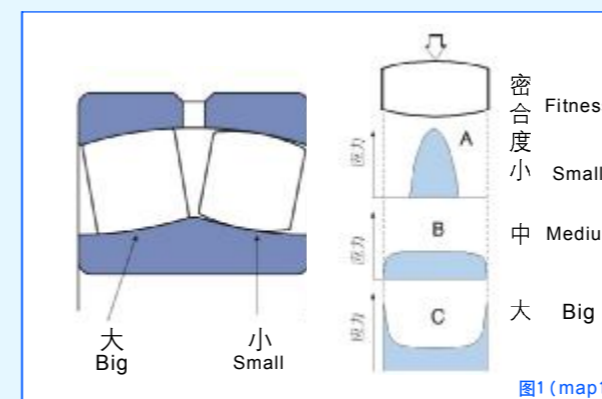
Rational design of fitness, reduce load distribution, as shown in figure. (map1)

Roller:

Adopt symmetrical roller, self-guided design for curvature that highly increase the control of roller and reduce friction. Under effect of axial and radial load, the load is uniformly distributed on roller. Symmetrical roller will lead to uneven distribution of load on roller compared with asymmetrical roller, meanwhile, there will be stress concentration at middle-rib, the self-directing of roller can be prevented by fixing middle-rib, as shown in figure. CC-type is designed based on C type, roller surface uses self-guided theory of roller and optimize surface appearance, surface roughness and curvature that contribute to roller guided and friction reduction. (map2)

Spacer:

The effect of spacer is to prevent contacting with roller edge. Control roller running in non-loading zone; Make roller enter loading zone correctly; Reduce probability of bearing jammed occurrence. Compared to bearing with middle-rib, it can adjust load distribution and reduce friction between roller and middle-rib. (map3)

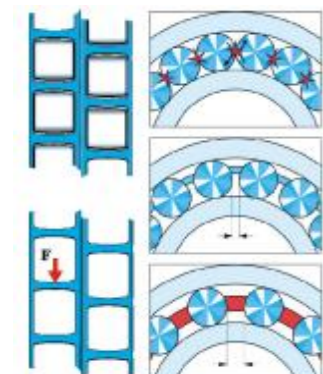


保持架:

保持架的作用在于防止滚子的直接接触，使摩擦和热量的产生最小化。是滚子的导向；提供润滑空间；在轴承分离安装时，保持滚子不散套。该设计采用窗式钢保持架，因为钢本身具有较高的抗疲劳强度；同时封闭式设计的应力最低，是尼龙架不可替代的。与CA型一体铜架相比，两列滚子互不发生干涉。与两体实体保持架相比减小了中档边的应力。保持架采用切坡结构，在保持架锁口处切坡与锁口成一定的角度，并增高锁口相对滚子中心的高度，避免坡与滚子接触，延长使用寿命。切坡结构能够达到增加存油量的目的，从而更好的润滑滚道；在切坡两侧设有引导面，增加滚子运行的平稳度，减小滚子的磨损。保持架采用进口架，材料硬度较高，在滚子歪斜情况下也有很好的保证。保持架的使用寿命不会干涉轴承的使用寿命。(图4)

Cage:

The cage is to prevent direct contacting with roller and make friction and heat minimum. The cage is guide for roller; Provide lubricating space; When bearing mounting separately, avoid roller loosening. The design adopts window steel cage, as steel itself possesses high fatigue resistance; Meanwhile, stress of enclosed design is the lowest, so it can not be replaced by nylon cage. Compared with CA type integrated copper cage, two rows of rollers are not affected by each other. Compared with solid two-body cage, it reduces stress of middle-rib. The cage uses cutting slope structure, make cutting slope at fore shaft of cage with a certain angle, increase fore shaft height relative to roller center, prevent slope contacting with roller and prolong service life. Cutting slope structure can achieve the purpose of increasing oil storage and better lubricating raceway; Set up guiding face on both sides of cutting slope, increase running stability of roller and reduce roller abrasion. Cage adopts imported cage with high hardness and can keep guaranteed when roller skewing. Cage service life will not affect bearing's service life. (map4)



保持架功能 Cage Function

- 防止滚动体间的直接接触，最小化摩擦和热量的生成
- 滚动体的导向
- 提供润滑空间
- 在分离式设计的轴承进行安装和拆卸时，保持滚动体

- Prevent rolling elements direct contacting with each other, generating minimum friction and heat
- Rolling element guide
- Provide lubricating space
- When mounting and dismounting the bearing with separation design, hold rolling elements.

图4 (map4)

3、材料的改进:

采用知名钢厂的钢材，轴承钢不能满足的情况下采用符合ZWZ特殊要求的轴承钢标准，使得钢材的含氧量较低，钢材纯净度较高。延长了轴承的使用寿命。

3. Material Improvement:

Use steel products from well-known steel plant, when bearing steel can not meet requirement, adopt special bearing standard up to ZWZ requirement to make steel with low oxygen content and high purity. Extend bearing service life.

严格按照ZWZ特殊要求轴承钢标准

Strictly Complied with ZWZ Professional Standard for Bearing Steel

4、热处理的改进:

采用了ZWZ特殊的热处理方式，采用下贝氏体热处理方式，硬度提高了一定的幅度，提高了材料的硬度及耐磨性。同时保留了原有的刚性。采用下贝氏体使滚子表面形成压应力，避免了马氏体造成的滚道的直接破裂。同时避免内外径在较大过盈装配情况下易出现裂纹的现象发生。采用下贝氏体热处理方式等工艺，还增加了尺寸稳定性。(图5)

4. Heat Treatment Improvement:

Use professional ZWZ heat treatment method and Lower Bainite heat treatment that make hardness increase a certain range as well as improve hardness and abrasive resistance of material. Meanwhile, keep the original rigidity. Adopt Lower Bainite to form stress on the surface, prevent direct cracking of raceway due to Martensite and also prevent crack when inner and outer diameter are interference fit. To use lower Bainite heat treatment also improve stability of dimension. (map5)

5、完善的表面结构:

改进了表面粗糙度及微观形状。改进后的表面质地可提高轴承使用寿命。(图6)

5. Perfect Surface Structure:

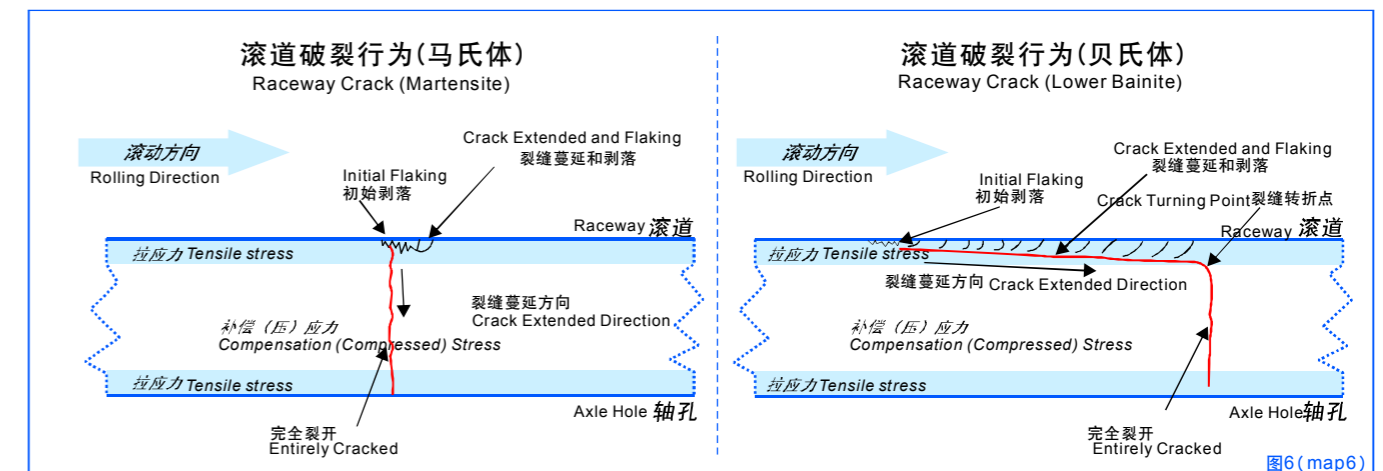
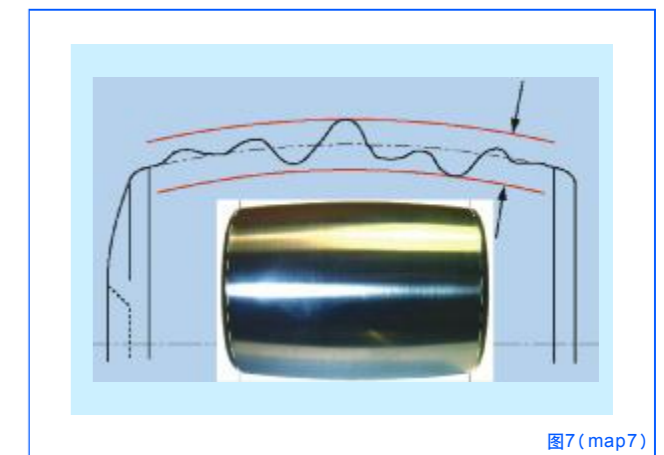
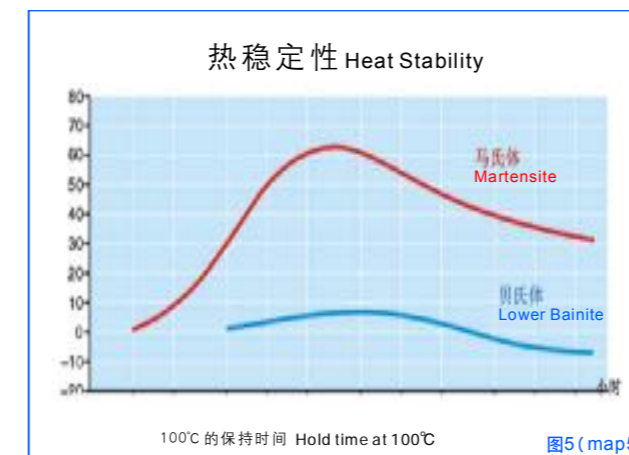
Improve surface roughness and micro-shape. The improved surface can prolong bearing service life. (map6)

6、公差:

严格控制同一组滚子直径相互差，使得负荷区内滚子载荷分担均匀。严格控制滚子轮廓度，并严格控制内外圈的沟位置及形状有很高的精度储备，如果用户需要可生产P5级的CC型产品。(图7)

6. Tolerance:

Strictly control diameter grading tolerance of the same group to make load-sharing on rollers distributed evenly in load zone. Strictly control profile tolerance as well as groove location of inner&outer ring and groove shape with high precision reserve. If customers need, CC-type bearings with precision P5 can be produced. (Map7)



CC型调心滚子轴承提升了性能标准

CC-Type Spherical Roller Bearing Improves Performance Standard

CC型产品通过极限转速试验及寿命试验，温度标准值为100℃，ZWZ产品达到94—98℃。比CA型调心滚子轴承转速提高30%。寿命提高10%。

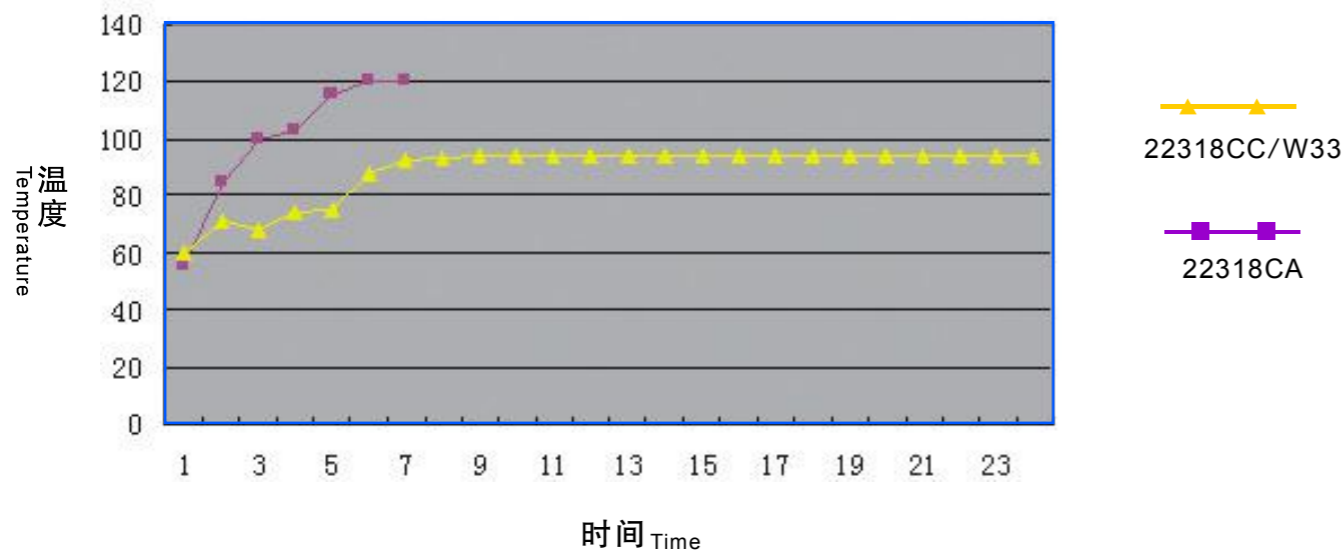
CC-type Products passed limit speed test and life test, temperature standard is 100 and ZWZ products reach 94-98℃. Rotation speed of CC-type bearing is 30% higher than CA type spherical roller bearing and their service life is 10% longer.



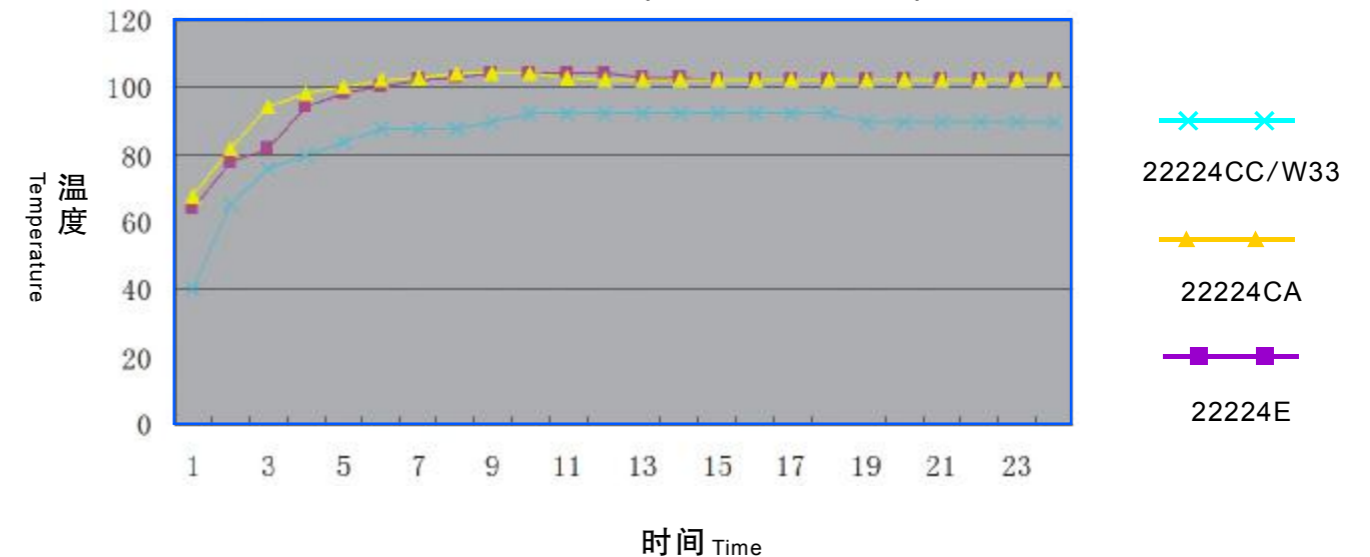
试验名称 Test Name	极限转速试验 Limit Speed Test	
试验轴承 Tested Bearing	22318CC/W33	22318CA
试验条件 Test Condition	1、额定动载荷: Cr=477KN 2、当量动载荷: P=0.1Cr=47.7KN 3、轴承极限转速: nL=2400r/min 4、轴承试验转速: n=2400r/min 5、润滑条件: L-FC型32油强力循环	1. Rated Dynamic Load: Cr=477KN 2. Equivalent Dynamic Load: P=0.1Cr=47.7KN 3. Limit Speed of Bearing: nL=2400r/min 4. Test Speed of Bearing: n=2400r/min 5. Lubricating Condition: L-FC type 32 oil forced circulating
试验结果 Test Result	CC型轴承表现明显好于CA型轴承 试验轴承未出现振动或噪音突然增大、卡死等现象，温度都在100℃以下。达到了试验要求。	CC-type bearing's performance is better than CA type bearing. There is no vibrating, sudden noise increase or stuck for tested bearing, temperature is all under 100℃. Reach the test requirement.

试验名称 Test Name	极限转速试验 Limit Speed Test		
试验轴承 Tested Bearing	22224CC/W33	22224CA	22224E
试验条件 Test Condition	1、额定动载荷: Cr=466KN 2、当量动载荷: P=0.1Cr=46.6KN 3、轴承极限转速: nL=2400r/min 4、轴承试验转速: n=2400r/min 5、润滑条件: L-FC型32油强力循环	1. Rated Dynamic Load: Cr=466KN 2. Equivalent Dynamic Load: P=0.1Cr=46.6KN 3. Limit Speed of Bearing: nL=2400r/min 4. Test Speed of Bearing: n=2400r/min 5. Lubricating Condition: L-FC type 32 oil forced circulating	
试验结果 Test Result	CC型轴承表现明显好于CA型、E型轴承 试验轴承未出现振动或噪音突然增大、卡死等现象，温度都在100℃以下。达到了试验要求。	CC-type bearing's performance is better than CA type bearing. There is no vibrating, sudden noise increase or stuck for tested bearing, temperature is all under 100℃. Reach the test requirement.	

极限转速试验对比 Comparison of Limit Speed Test



极限转速试验对比 Comparison of Limit Speed Test



CC型调心滚子轴承制造

Manufacturing of CC-Type Spherical Roller Bearing

瓦轴集团建立专门的CC型调心滚子生产基地，产能130万套。

整条生产线在装备选型、工艺控制及现场管理等各方面均按照当今世界最先进理念进行运作和管理，硬车代替粗磨，外径一次精磨成型、实现在线自动控制测量游隙等；在更换工装等生产衔接上借用F1赛车维修站模式，预设工序团队管理，做到以小时计划，瓶颈工序永不停机，最大限度的保证各制造加工环节连续顺畅运行。

ZWZ Group established production base specially for CC-type spherical roller bearing with capacity of 1,300,000 sets.

All production lines, at aspects of the choose of technology equipment, process control and field management, are all in accordance with most advanced concept in the world to operate and manage, including hard turning takes place of rough grinding, one-time molding by fine grinding of outer diameter and realizing to measure clearance by automatically control online, etc; Use F1 racing pit pattern for production links like changing uniforms, pre-set process team management, make plans by hour, never stop machines due to bottleneck process, in order to guarantee all machining processes to operate smoothly.



CC型调心滚子轴承代号介绍

Bearing Code Introduction for CC-Type Spherical Roller Bearing

1、代号构成

1.1 代号书写顺序：

类型代号+宽度系列代号+直径系列代号+内径代号+内部结构代号+游隙组别代号

1.2 示例：24030CC-2RS/C3W33

“2” — 轴承类型代号：调心滚子轴承

“4” — 轴承宽度系列代号

“0” — 轴承直径系列代号

“30” — 轴承内径代号，内径尺寸为30×5mm

“CC” — 轴承结构代，CC型调心滚子轴承

“/C3” — 轴承游隙组别代号，表示径向游隙3组

“/W33” — 轴承外圈带有油槽及3个润滑油孔

2、后置代号意义

CC — Cc型结构，滚子引导方式有改进（滚子表面粗糙度、滚道表面粗糙度、热处理方法改变等），以减少摩擦，保持架为切坡结构

/C3 — 游隙符合标准规定的3组

/C4 — 游隙符合标准规定的4组

/C9 — 轴承游隙不同于现行标准

/P5 — 公差等级符合标准规定的5级

/P6 — 公差等级符合标准规定的6级

K — 圆锥孔轴承，锥度1:12

K30 — 圆锥孔轴承，锥度1:30

1. Code Composition

1.1 Code Written Sequence:

Type Composition+Width Series Code+OD Series Code+ ID Code+Inner Structure Code+Clearance

Group Code

1.2 For Example: 24030CC-2RS/C3W33

“2” - Bearing Type Code: Self-aligning Roller Bearing

“4” - Bearing Width Series Code

“0” - Bearing OD Series Code

“30” - Bearing ID Code, ID dimension is 30*5mm

“CC” - Bearing Structure Code, CC-type Spherical Roller Bearing

“/C3” - Bearing Clearance Group Code, indicating radial clearance Group 3

“/W33” - Bearing outer ring has oil groove and 3 lubricating oil holes.

2. Suffix Code Implication

CC - CC-type structure, guiding way of rollers is improved (roughness of roller surface, roughness of raceway surface, change of heat treatment, etc.) to reduce friction. Cutting slope structure is used for cage.

/C3 — Clearance conforms to the standard group 3.

/C4 — Clearance conforms to the standard group 4.

/C9 — Bearing clearance not conforms to the present standard.

/P5 — Tolerance grade conforms to the standard P5.

/P6 — Tolerance grade conforms to the standard P6.

K — Tapered bore bearing. Conicity is 1: 12.

K30 — Tapered bore bearing. Conicity is 1: 30.

CC型调心滚子选型依据及注意事项

Selection Basis of CC-Type Spherical Roller Bearing and Attention

CC型调心滚子轴承是调心滚子轴承的一种类型。具有调心性、可承受径向及轴向等多方向载荷。正确把握轴承在机械主机的使用部位及使用条件与环境条件是选择适宜轴承的前提。其次还要考虑载荷、转速、温度、振动、调心性 etc 来选取合理的结构。除振动筛等振动场合外，均可选用CC型调心滚子轴承。

CC-type spherical roller bearing is a type of self-aligning ball bearing possessing adjustable mind and it is able to withstand load in radial, axial and other directions. The premise of choosing suitable bearing is to judge bearing position in machinery host, related service condition and environmental condition. Secondly, load, speed, temperature, vibration and adjustable mind should also take into consideration for selection of appropriate structure. Except vibrating situation such as vibrating screen, CC-type spherical roller bearing is able to be selected.

CC型调心滚子轴承P5级宽度公差见表1

表1 Cc型宽度公差

See P5 Width Tolerance of CC-Type Spherical Roller Bearing at Table 1
Table 1 CC-Type Width Tolerance

μm

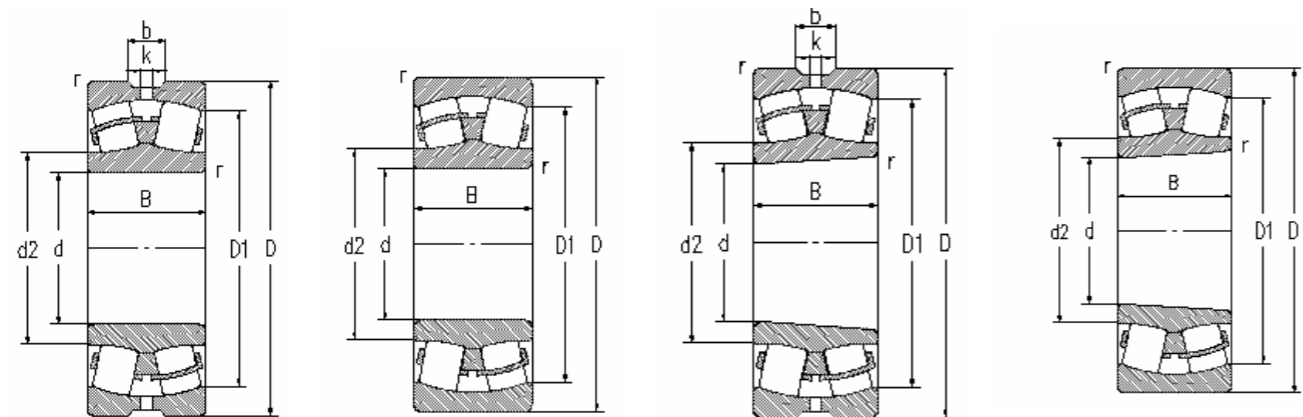
d		ZWZ CC 标准 Standard		ISO	
大于 Over	至 To	上偏差 High	下偏差 Low	上偏差 High	下偏差 Low
mm		μm			
18	50	0	-60	0	-120
50	80	0	-60	0	-150
80	120	0	-80	0	-200
120	180	0	-80	0	-250
180	250	0	-80	0	-300
250	300	0	-100	0	-300



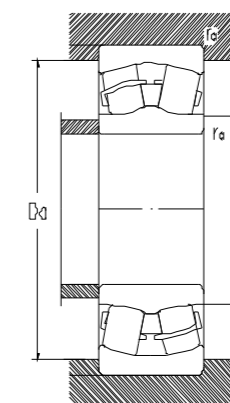
CC调心滚子轴承型号目录

CC-Type Spherical Roller Bearing Catalogue

CC型调心滚子轴承 CC-Type Spherical Roller Bearing



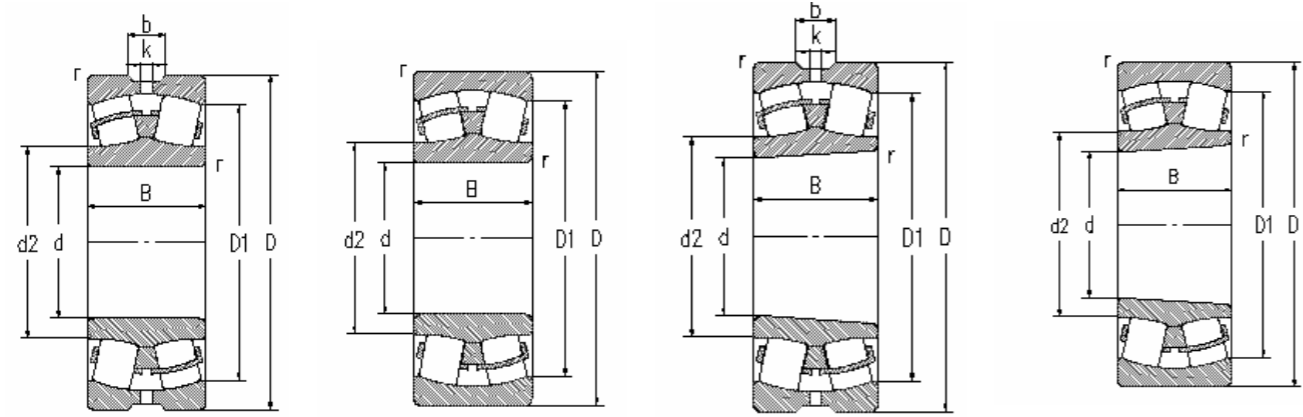
CC/W33型结构 (Structure) CC型结构 (Structure) CCK/W33型结构 (Structure) CCK型结构 (Structure)



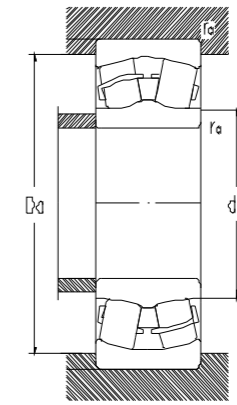
安装图 Installation Drawing

基本尺寸 (mm) Basic Dimension				基本额定载荷 (kN) Basic Load Rating		极限转速 Limiting Speed		轴承代号 Limiting Speed				其他尺寸 (mm) Other Dimensions				接触面与倒角尺寸 Contact Surface and Chamfer Dimension			计算系数 Calculation Coefficient			重量 Weight (kg)	
d	D	B	rsmin	Cr	Cor	脂润滑 Grease Lubrication	油润滑 Oil Lubrication	CC/W33	CC	CCK/W33	CCK	d2	D1	b	k	da	Da	ra	e	Y1	Y2		Yo
mm				KN		r/min						mm				mm							
45	100	36	1.5	175	175	3800	4800	22309CC/W33	22309CC	22309CCK/W33	22309CCK	57.6	82.5	5.5	3	54	91	1.5	0.37	1.80	2.70	1.80	1.37
50	90	23	1.1	99	110	5000	6300	22210CC/W33	22210CC	22210CCK/W33	22210CCK	60	79.2	5.5	3	57	83	1	0.24	2.80	4.20	2.80	0.608
55	100	25	1.5	120	130	4500	5600	22211CC/W33	22211CC	22211CCK/W33	22211CCK	66	88.1	5.5	3	64	91	1.5	0.24	2.80	4.20	2.80	0.776
60	110	28	1.5	150	160	4000	5000	22212CC/W33	22212CC	22212CCK/W33	22212CCK	72.7	96.6	5.5	3	69	101	1.5	0.24	2.8	4.20	2.80	1.1
	130	46	2.1	295	310	3000	3800	22312CC/W33	22312CC	22312CCK/W33	22312CCK	74.9	109	8.3	4.5	72	118	2	0.35	1.9	2.90	1.80	2.85
65	140	48	2.1	323	330	2600	3400	22313CC/W33	22313CC	22313CCK/W33	22313CCK	82	118	8.3	4.5	77	128	2	0.35	1.90	2.90	1.80	3.46
70	125	31	1.5	170	205	3600	4500	22214CC/W33	22214CC	22214CCK/W33	22214CCK	84.6	111	5.5	3	79	116	1.5	0.23	2.90	4.40	2.80	1.59
	150	51	2.1	390	410	2400	3200	22314CC/W33	22314CC	22314CCK/W33	22314CCK	88	127	8.3	4.5	82	138	2	0.35	1.90	2.90	1.80	4.26
75	130	31	1.5	202	229	3400	4300	22215CC/W33	22215CC	22215CCK/W33	22215CCK	89.7	116	5.5	3	84	121	1.5	0.22	3.00	4.60	2.80	1.68
	160	55	2.1	420	460	2200	3000	22315CC/W33	22315CC	22315CCK/W33	22315CCK	94.2	134	8.3	4.5	87	148	2	0.35	1.90	2.90	1.80	5.30
80	140	33	2	205	230	3200	4000	22216CC/W33	22216CC	22216CCK/W33	22216CCK	95.1	124	5.5	3	90	130	2	0.22	3.00	4.60	2.80	2.11
	170	58	2.1	425	500	2000	2800	22316CC/W33	22316CC	22316CCK/W33	22316CCK	100	144	8.3	4.5	92	158	2	0.35	1.90	2.90	1.80	6.16
85	150	36	2	235	270	3000	3800	22217CC/W33	22217CC	22217CCK/W33	22217CCK	100	132	5.5	3	95	140	2	0.22	3.00	4.60	2.80	2.67
	180	60	3	430	525	1900	2600	22317CC/W33	22317CC	22317CCK/W33	22317CCK	106	154	8.3	4.5	99	166	2.5	0.33	2.00	3.00	2.00	7.18
90	160	52.4	2	345	480	1900	2600	23218CC/W33	23218CC	23218CCK/W33	23218CCK	106	138	5.5	3	100	150	2	0.31	2.20	3.30	2.20	4.42
	190	64	3	580	670	1800	2400	22318CC/W33	22318CC	22318CCK/W33	22318CCK	112	160	11.1	6	104	176	2.5	0.35	1.90	2.90	1.80	8.62
95	170	43	2.1	361	410	2400	3200	22219CC/W33	22219CC	22219CCK/W33	22219CCK	113	149	8.3	4.5	107	158	2	0.24	2.80	4.20	2.80	4.07
	200	67	3	640	730	1800	2400	22319CC/W33	22319CC	22319CCK/W33	22319CCK	118	168	11.1	6	109	186	2.5	0.35	1.90	2.90	1.80	9.85
100	165	52	2	365	520	2000	2800	23120CC/W33	23120CC	23120CCK/W33	23120CCK	115	145	5.5	3	110	155	2	0.3	2.30	3.40	2.20	4.35
	180	46	2.1	363	460	2200	3000	22220CC/W33	22220CC	22220CCK/W33	22220CCK	120	157	8.3	4.5	112	168	2	0.24	2.80	4.20	2.80	4.95
	180	60.3	2.1	460	620	1700	2200	23220CC/W33	23220CC	23220CCK/W33	23220CCK	117	153	8.3	4.5	112	168	2	0.33	2.00	3.00	2.00	6.55
	215	73	3	775	905	1700	2200	22320CC/W33	22320CC	22320CCK/W33	22320CCK	125	180	11.1	6	114	201	2.5	0.35	1.90	2.90	1.80	12.6
110	170	45	2	300	470	2200	3000	23022CC/W33	23022CC	23022CCK/W33	23022CCK	125	152	5.5	3	120	160	2	0.23	2.90	4.40	2.80	3.65
	180	56	2	420	600	1900	2600	23122CC/W33	23122CC	23122CCK/W33	23122CCK	126	157	8.3	4.5	120	170	2	0.30	2.30	3.40	2.20	5.47
	200	53	2.1	530	615	2000	2800	22222CC/W33	22222CC	22222CCK/W33	22222CCK	132	173	8.3	4.5	122	188	2	0.25	2.70	4.00	2.50	7.14
	240	80	3	905	1060	1600	2000	22322CC/W33	22322CC	22322CCK/W33	22322CCK	140	200	13.9	7.5	124	226	2.5	0.35	1.90	2.90	1.80	17.7

CC型调心滚子轴承 CC-Type Spherical Roller Bearing



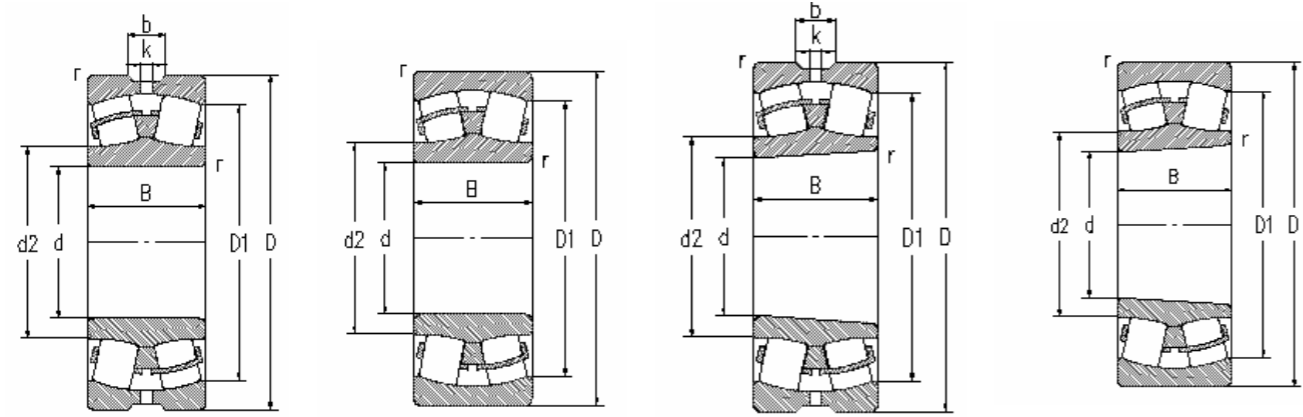
CC/W33型结构 (Structure) CC型结构 (Structure) CCK/W33型结构 (Structure) CCK型结构 (Structure)



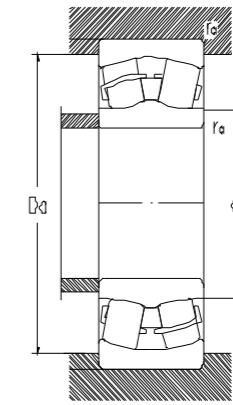
安装图 Installation Drawing

基本尺寸 (mm) Basic Dimension				基本额定载荷 (kN) Basic Load Rating		极限转速 Limiting Speed		轴承代号 Limiting Speed				其他尺寸 (mm) Other Dimensions				接触面与倒角尺寸 Contact Surface and Chamfer Dimension			计算系数 Calculation Coefficient			重量 Weight (kg)	
d	D	B	rsmin	Cr	Cor	脂润滑 Grease Lubrication	油润滑 Oil Lubrication	CC/W33	CC	CCK/W33	CCK	d2	D1	b	k	da	Da	ra	e	Y1	Y2		Yo
mm				KN		r/min						mm				mm							
120	180	46	2	345	520	2000	2800	23024CC/W33	23024CC	23024CCK/W33	23024CCK	136	164	5.5	3	130	170	2	0.22	3.00	4.60	2.80	3.92
	180	60	2	420	680	2300	3300	24024CC/W33	24024CC	24024CCK/W33	24024CCK	132	159	5.5	3	130	170	2	0.30	2.30	3.40	2.20	5.53
	200	62	2	510	715	1800	2400	23124CC/W33	23124CC	23124CCK/W33	23124CCK	139	173	8.3	4.5	130	190	2	0.28	2.40	3.60	2.50	7.63
	200	80	2	630	970	900	1200	24124CC/W33	24124CC	24124CCK30/W33	24124CCK30	135	169	5.5	3	130	190	2	0.37	1.80	2.70	1.80	9.93
	215	58	2.1	600	710	1900	2600	22224CC/W33	22224CC	22224CCK/W33	22224CCK	143	186	11.1	6	132	203	2	0.25	2.70	4.00	2.50	8.85
	215	76	2.1	670	950	1500	1900	23224CC/W33	23224CC	23224CCK/W33	23224CCK	141	183	8.3	4.5	132	203	2	0.35	1.90	2.90	1.80	11.9
	260	86	3	925	1120	1400	1800	22324CC/W33	22324CC	22324CCK/W33	22324CCK	152	216	13.9	7.5	134	246	2.5	0.35	1.90	2.90	1.80	22.1
130	210	64	2	535	795	1700	2200	23126CC/W33	23126CC	23126CCK/W33	23126CCK	148	184	8.3	4.5	140	200	2	0.28	2.40	3.60	2.50	8.41
	230	64	3	695	880	1800	2400	22226CC/W33	22226CC	22226CCK/W33	22226CCK	153	200	11.1	6	144	216	2.5	0.26	2.60	3.90	2.50	11.2
	230	80	3	750	1100	1300	1700	23226CC/W33	23226CC	23226CCK/W33	23226CCK	152	196	8.3	4.5	144	216	2.5	0.33	2.00	3.00	2.00	13.9
	280	93	4	1065	1320	1300	1700	22326CC/W33	22326CC	22326CCK/W33	22326CCK	164	233	16.7	9	148	262	3	0.35	1.90	2.90	1.80	27.5
140	225	68	2.1	605	950	1600	2000	23128CC/W33	23128CC	23128CCK/W33	23128CCK	159	196	8.3	4.5	152	213	2	0.28	2.40	3.60	2.50	10.3
	250	68	3	680	1000	1700	2200	22228CC/W33	22228CC	22228CCK/W33	22228CCK	166	216	11.1	6	154	236	2.5	0.26	2.60	3.90	2.50	13.8
	300	102	4	1250	1950	1100	1500	22328CC/W33	22328CC	22328CCK/W33	22328CCK	175	247	16.7	9	158	282	3	0.35	1.90	2.90	1.80	35.2
150	225	56	2.1	490	800	1700	2200	23030CC/W33	23030CC	23030CCK/W33	23030CCK	169	203	8.3	4.5	162	213	2	0.22	3.00	4.60	2.80	7.58
	250	80	2.1	800	1200	1400	1800	23130CC/W33	23130CC	23130CCK/W33	23130CCK	173	216	11.1	6	162	238	2	0.30	2.30	3.40	2.20	15.4
	270	73	3	820	1100	1600	2000	22230CC/W33	22230CC	22230CCK/W33	22230CCK	179	234	13.9	7.5	164	256	2.5	0.26	2.60	3.90	2.50	17.6
	320	108	4	1400	1810	1000	1400	22330CC/W33	22330CC	22330CCK/W33	22330CCK	189	267	16.7	9	168	302	3	0.35	1.90	2.90	1.80	41.3
160	240	60	2.1	560	880	1700	2200	23032CC/W33	23032CC	23032CCK/W33	23032CCK	181	217	11.1	6	172	228	2	0.22	3.00	4.60	2.80	9.17
	270	86	2.1	935	1450	1300	1700	23132CC/W33	23132CC	23132CCK/W33	23132CCK	185	234	13.9	7.5	172	258	2	0.30	2.30	3.40	2.20	19.6
	270	109	2.1	1130	1760	700	900	24132CC/W33	24132CC	24132CCK30/W33	24132CCK30	181	228	8.3	4.5	172	258	2	0.4	1.70	2.50	1.60	24.8
	290	80	3	960	1390	1500	1900	22232CC/W33	22232CC	22232CCK/W33	22232CCK	191	250	13.9	7.5	174	276	2.5	0.26	2.60	3.90	2.50	22.7
	340	114	4	1530	2100	950	1300	22332CC/W33	22332CC	22332CCK/W33	22332CCK	201	282	16.7	9	178	322	3	0.35	1.90	2.90	1.80	49.3
170	260	67	2.1	675	1100	1600	2000	23034CC/W33	23034CC	23034CCK/W33	23034CCK	192	232	11.1	6	182	248	2	0.23	2.90	4.40	2.80	12.7
	280	88	2.1	995	1540	1200	1600	23134CC/W33	23134CC	23134CCK/W33	23134CCK	195	244	13.9	7.5	182	268	2	0.30	2.30	3.40	2.20	21.3
	310	86	4	1065	1460	1300	1700	22234CC/W33	22234CC	22234CCK/W33	22234CCK	204	267	16.7	9	188	292	3	0.27	2.50	3.70	2.50	27.9
	360	120	4	1680	2160	950	1300	22334CC/W33	22334CC	22334CCK/W33	22334CCK	213	300	16.7	9	188	342	3	0.33	2.00	3.00	2.00	58.8
180	280	74	2.1	795	1285	1400	1800	23036CC/W33	23036CC	23036CCK/W33	23036CCK	204	248	13.9	7.5	192	268	2	0.24	2.80	4.20	2.80	16.3
	300	96	3	1150	1810	1100	1500	23136CC/W33	23136CC	23136CCK/W33	23136CCK	207	259	13.9	7.5	194	286	2.5	0.30	2.30	3.40	2.20	27.3
	320	86	4	1120	1560	1300	1700	22236CC/W33	22236CC	22236CCK/W33	22236CCK	214	277	16.7	9	198	302	3	0.26	2.60	3.90	2.50	29.1
	380	126	4	1905	2450	900	1200	22336CC/W33	22336CC	22336CCK/W33	22336CCK	224	317	22.3	12	198	362	3	0.35	1.90	2.90	1.80	67.9

CC型调心滚子轴承 CC-Type Spherical Roller Bearing



CC/W33型结构 (Structure) CC型结构 (Structure) CCK/W33型结构 (Structure) CCK型结构 (Structure)



安装图 Installation Drawing

基本尺寸 (mm) Basic Dimension				基本额定载荷 (kN) Basic Load Rating		极限转速 Limiting Speed		轴承代号 Limiting Speed				其他尺寸 (mm) Other Dimensions				接触面与倒角尺寸 Contact Surface and Chamfer Dimension			计算系数 Calculation Coefficient			重量 Weight (kg)	
d	D	B	rsmin	Cr	Cor	脂润滑 Grease Lubrication	油润滑 Oil Lubrication	CC/W33	CC	CCK/W33	CCK	d2	D1	b	k	da	Da	ra	e	Y1	Y2		Yo
mm				KN		r/min						mm				mm							
190	290	75	2.1	825	1450	1300	1700	23038CC/W33	23038CC	23038CCK/W33	23038CCK	216	260	13.9	7.5	202	278	2	0.23	2.90	4.40	2.80	17.5
	340	92	4	1215	1700	1200	1600	22238CC/W33	22238CC	22238CCK/W33	22238CCK	226	294	16.7	9	208	322	3	0.19	3.60	5.30	3.60	35.3
	340	120	4	1600	2400	850	1100	23238CC/W33	23238CC	23238CCK/W33	23238CCK	223	287	16.7	9	208	322	3	0.35	1.90	2.90	1.80	46.2
	400	132	5	2020	2650	850	1100	22338CC/W33	22338CC	22338CCK/W33	22338CCK	237	333	22.3	12	212	378	4	0.35	1.90	2.90	1.80	79
200	360	98	4	1400	1960	1100	1500	22240CC/W33	22240CC	22240CCK/W33	22240CCK	238	312	16.7	9	218	342	3	0.26	2.60	3.90	2.50	42.2
	420	138	5	2030	2900	850	1100	22340CC/W33	22340CC	22340CCK/W33	22340CCK	249	351	22.3	12	222	398	4	0.33	2.00	3.00	2.00	91.0
220	370	150	4	2020	3420	500	630	24144CC/W33	24144CC	24144CCK30/W33	24144CCK30	248	310	11.1	6	238	352	3	0.4	1.70	2.50	1.60	64.5
	400	144	4	2250	3450	750	950	23244CC/W33	23244CC	23244CCK/W33	23244CCK	260	338	16.7	9	238	382	3	0.35	1.90	2.90	1.80	79.2
240	360	92	3	1230	2080	1000	1400	23048CC/W33	23048CC	23048CCK/W33	23048CCK	271	325	13.9	7.5	254	346	2.5	0.23	2.90	4.40	2.80	31.9
	360	118	3	1520	2800	800	1000	24048CC/W33	24048CC	24048CCK30/W33	24048CCK30	265	316	11.1	6	254	346	2.5	0.3	2.30	3.40	2.20	41.8
	400	128	4	1980	3200	850	1100	23148CC/W33	23148CC	23148CCK/W33	23148CCK	277	347	16.7	9	258	382	3	0.3	2.30	3.40	2.20	64.2
	400	160	4	2280	3900	480	600	24148CC/W33	24148CC	24148CCK30/W33	24148CCK30	271	337	11.1	6	258	382	3	0.4	1.70	2.50	1.60	80.4
260	440	144	4	2470	3900	1000	1400	23152CC/W33	23152CC	23152CCK30/W33	23152CCK30	300	379	16.7	9	278	422	3	0.31	2.20	3.30	2.20	90.2
280	420	140	4	2050	3800	670	850	24056CC/W33	24056CC	24056CCK30/W33	24056CCK30	309	368	11.1	6	298	402	3	0.31	2.20	3.30	2.20	68.0
300	420	90	3	1200	2500	950	1300	23960CC/W33	23960CC	23960CCK/W33	23960CCK	333	385	11.1	6	314	406	2.5	0.19	3.60	5.30	3.60	38.1



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