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JXN®

JXN®

滚动轴承技术资料

Rolling Bearing Catalogue

公司简介

捷希尼精工株式会社，成立于 1962 年，总部位于日本大阪，在过去的 50 年里一直致力于生产制造 JXN®高质量的精密轴承。

公司现有员工 2800 余名，其中工程技术人员160 名，专业生产各类深沟球轴承，圆锥滚子轴承，角接触轴承，圆柱滚子轴承和各类非标轴承。JXN®产品广泛用于航空航天，舰船兵器，机床工具，风力发电，矿山冶金，石油化工，医疗器械，汽车与轨道交通，工程机械等各个领域。

高起点、高投入、高精设备和高新技术一直是 JXN®坚持的四高原则。同时公司不断优化产品结构，提升产品性能，满足客户更高标准的要求。

Company Profile

JXN® Seiko Co., Ltd., founded in 1962 and headquartered in Osaka, Japan, has been committed to manufacturing high-quality precision bearings for the past 50 years.

The company has more than 2800 employees, including 160 engineers and technicians, specializing in the production of various types of deep groove ball bearings, tapered roller bearings, angular contact bearings, cylindrical roller bearings and various non-standard bearings. JXN® products are widely used in aerospace, naval weapons, machine tools, wind power, mining and metallurgy, petrochemicals, medical equipment, automobiles and rail transit, construction machinery and other fields.

High starting point, high investment, high precision equipment and high technology have always been the four high principles that JXN® adheres to. At the same time, the company continuously optimizes the product structure, improves product performance, and meets the higher standard requirements of customers.

公差

不同的使用场合对轴承精度的要求不同。按公差等级，P0级适用于正常使用情况下的轴承，P6(P6x)、P5等高精度等级适用于高要求场合下的轴承。

外形尺寸和参数符号

B	内圈宽度
V_{Bs}	内圈宽度的变动量
Δ_{Bs}	内圈单一宽度偏差
C	外圈宽度
V_{Cs}	外圈宽度的变动量
Δ_{Cs}	外圈单一宽度偏差
d	内径
V_{dmp}	平均内径变动量（仅适用于基本圆柱孔）
V_{dsp}	单一平面内径变动量
Δ_{dmp}	单一平面平均内径偏差（对于基本圆锥孔，Δdmp仅指内孔的理论小端）
D	外径
V_{Dmp}	平均外径变动量
V_{Dsp}	单一平面外径变动量
Δ_{Dmp}	单一平面平均外径偏差
Δ_{Ds}	单一外径偏差
K_{ea}	成套轴承外圈径向跳动
K_{ia}	成套轴承内圈径向跳动
S_d	内圈端面对内孔的垂直度
S_D	外圈外表面对端面的垂直度
S_{ea}	成套轴承外圈轴向跳动
S_{ia}	成套轴承内圈轴向跳动

圆锥滚子轴承附加符号

T	成套轴承宽度
T_1	内组件有效宽度
T_2	外圈有效宽度
Δ_{Ts}	成套轴承实际宽度偏差
Δ_{T1s}	内组件实际有效宽度偏差
Δ_{T2s}	外圈实际有效宽度偏差

Tolerance

Different application requires different precision. According to the tolerance grades, grade P0 is applied in normal condition, while high precision grades as P5,P6(P6x), are fit for difficult environments.

Overall Dimension and Symbols of Parameter

B	inner ring width
V_{Bs}	variation of inner ring width
Δ_{Bs}	deviation of a single inner ring width
C	outer ring width
V_{Cs}	variation of outer ring width
Δ_{Cs}	deviation of a single outer ring width
d	bore diameter
V_{dmp}	variation of mean bore diameter （for basic cylindrical bore only)
V_{dsp}	variation of bore diameter in a single plane
Δ_{dmp}	deviation of mean bore diameter in a single plane,(△dmp refers only to the
D	theoretical smaller bore for basically tapered bore.)outerside diameter
V_{Dmp}	variation of mean outside diameter
V_{Dsp}	variation of outside diameter in a single plane
Δ_{Dmp}	deviation of mean outside diameter in a single plane
Δ_{Ds}	deviation of a single outside diameter
K_{ea}	radial runout of outer ring of assembled bearing
K_{ia}	radial runout of inner ring of assembled bearing
S_d	perpendicularity of inner ring face with respect to the bore
S_D	perpendicularity of outer ring outside surface with respect to the face
S_{ea}	axial runout of outer ring of assembled bearing
S_{ia}	axial runout of inner ring of assembled bearing

Suffixes of Tapered Roller Bearing

T	assembled bearing width
T_1	actual effective width of inner subunit
T_2	effective width of outer ring
Δ_{Ts}	deviation of the actual assembled bearing width
Δ_{T1s}	deviation of the actual effective width of inner subunit
Δ_{T2s}	deviation of the actual effective width of outer ring

公差 Tolerance

向心轴承 Radial Bearings

内圈公差 Tolerance of Inner Ring

d		Δ_{dmp}					V_{Bs}					K_{ia}					S_d			S_{ia}			Δ_{Bs} Δ_{Cs}	
over	incl.	P0	P6	P5	P4	P2	P0	P6	P5	P4	P2	P0	P6	P5	P4	P2	P5	P4	P2	P5	P4	P2	P0,P6	P5,P4,P2
μm		μm					μm					μm					μm			μm			μm	
2.5	10	-8	-7	-5	-4	-2.5	15	15	5	2.5	1.5	10	6	4	2.5	1.5	7	3	1.5	7	3	1.5	-120	-40
10	18	-8	-7	-5	-4	-2.5	20	20	5	2.5	1.5	10	7	4	2.5	1.5	7	3	1.5	7	3	1.5	-120	-80
18	30	-10	-8	-6	-5	-2.5	20	20	5	2.5	1.5	13	8	4	3	2.5	8	4	1.5	8	4	2.5	-120	-120
30	50	-12	-10	-8	-6	-2.5	20	20	5	3	1.5	15	10	5	4	2.5	8	4	1.5	8	4	2.5	-120	-120
50	80	-15	-12	-9	-7	-4	25	25	6	4	1.5	20	10	5	4	2.5	8	5	1.5	8	5	2.5	-150	-150
80	120	-20	-15	-10	-8	-5	25	25	7	4	2.5	25	13	6	5	2.5	9	5	2.5	9	5	2.5	-200	-200
120	150	-25	-18	-13	-10	-7	30	30	8	5	2.5	30	18	8	6	2.5	10	6	2.5	10	7	2.5	-250	-250
150	180	-25	-18	-13	-10	-7	30	30	8	5	4	30	18	8	6	5	10	6	4	10	7	2.5	-250	-250
180	250	-30	-22	-15	-12	-8	30	30	10	6	5	40	20	10	8	5	11	7	5	13	8	5	-300	-300
250	315	-35	-25	-18	-	-	35	35	13	-	-	50	25	13	-	-	13	-	-	15	-	-	-350	-350
315	400	-40	-30	-23	-	-	40	40	15	-	-	60	30	15	-	-	15	-	-	20	-	-	-400	-400
400	500	-45	-35	-	-	-	50	45	-	-	-	65	35	-	-	-	-	-	-	-	-	-	-450	-450
500	630	-50	-40	-	-	-	60	50	-	-	-	70	40	-	-	-	-	-	-	-	-	-	-500	-500
630	800	-75	-	-	-	-	70	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-750	-
800	1000	-100	-	-	-	-	80	-	-	-	-	90	-	-	-	-	-	-	-	-	-	-	-1000	-
1000	1250	-125	-	-	-	-	100	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-1250	-
1250	1600	-160	-	-	-	-	120	-	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-1600	-
1600	2000	-200	-	-	-	-	140	-	-	-	-	140	-	-	-	-	-	-	-	-	-	-	-2000	-

公差 Tolerance

向心轴承 Radial Bearings

外圈公差 Tolerance of Outer Ring

D		Δ_{Dmp}					V_{Cs}				K_{ea}					S_{ea}			S_D		
over	incl.	P0	P6	P5	P4	P2	P0、P6	P5	P4	P2	P0	P6	P5	P4	P2	P5	P4	P2	P5	P4	P2
mm		μm					μm				μm					μm			μm		
18	30	-9	-8	-6	-5	-4	与同一轴承内圈的V_{Bs}相同 Same as V_{Bs} of the bearing inner ring	5	2.5	1.5	15	9	6	4	2.5	8	5	2.5	8	4	1.5
30	50	-11	-9	-7	-6	-4		5	2.5	1.5	20	10	7	5	2.5	8	5	2.5	8	4	1.5
50	80	-13	-11	-9	-7	-4		6	3	1.5	25	13	8	5	4	10	5	4	8	4	1.5
80	120	-15	-13	-10	-8	-5		8	4	2.5	35	18	10	6	5	11	6	5	9	5	2.5
120	150	-18	-15	-11	-9	-5		8	5	2.5	40	20	11	7	5	13	7	5	10	5	2.5
150	180	-25	-18	-13	-10	-7		8	5	2.5	45	23	13	8	5	14	8	5	10	5	2.5
180	250	-30	-20	-15	-11	-8		10	7	4	50	25	15	10	7	15	10	7	11	7	4
250	315	-35	-25	-18	-13	-8		11	7	5	60	30	18	11	7	18	10	7	13	8	5
315	400	-40	-28	-20	-15	-10		13	8	7	70	35	20	13	8	20	13	8	13	10	7
400	500	-45	-33	-23	-	-		15	-	-	80	40	23	-	-	23	-	-	15	-	-
500	630	-50	-38	-28	-	-		18	-	-	100	50	25	-	-	25	-	-	18	-	-
630	800	-75	-45	-35	-	-		20	-	-	120	60	30	-	-	30	-	-	20	-	-
800	1000	-100	-60	-	-	-		-	-	-	140	75	-	-	-	-	-	-	-	-	-
1000	1250	-125	-	-	-	-		-	-	-	160	-	-	-	-	-	-	-	-	-	-
1250	1600	-160	-	-	-	-		-	-	-	190	-	-	-	-	-	-	-	-	-	-
1600	2000	-200	-	-	-	-		-	-	-	220	-	-	-	-	-	-	-	-	-	-
2000	2500	-250	-	-	-	-		-	-	-	250	-	-	-	-	-	-	-	-	-	-

公差 Tolerance

圆锥滚子轴承 Tapered Roller Bearings

内圈公差 Tolerance of Inner Ring

d		Δ_{dmp}					V_{dsp}					V_{dmp}					K_{ia}					S_d			S_{ia}				
over	incl.	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P5	P4	P2	P0,P6X	P6	P5	P4	P2
μm		μm					μm					μm					μm					μm			μm				
0	10	-12	-	-7	-5	-4	12	-	5	4	2.5	9	-	5	4	1.5	15	-	5	3	2	7	3	1.5	-	-	-	3	2
10	18	-12	-7	-7	-5	-4	12	7	5	4	2.5	9	5	5	4	1.5	15	7	5	3	2	7	3	1.5	24	12	8	3	2
18	30	-12	-8	-8	-6	-4	12	8	6	5	2.5	9	6	5	4	1.5	18	8	5	3	2.5	8	4	1.5	24	12	8	4	2.5
30	50	-12	-10	-10	-8	-5	12	10	8	6	3	9	8	5	5	2	20	10	6	4	2.5	8	4	2	24	12	8	4	2.5
50	80	-15	-12	-12	-9	-5	15	12	9	7	4	11	9	6	5	2	25	10	7	4	3	8	4	2	30	15	10	4	3
80	120	-20	-15	-15	-10	-6	20	15	11	8	5	15	11	8	5	2.5	30	13	8	5	3	9	5	2.5	30	15	10	5	3
120	180	-25	-18	-18	-13	-7	25	18	14	10	7	19	14	9	7	3.5	35	18	11	6	4	10	7	3.5	36	18	12	7	4
180	250	-30	-22	-22	-15	-8	30	22	17	11	7	23	17	11	8	4	50	20	13	8	5	11	8	5	36	18	12	8	5
250	315	-35	-25	-25	-18	-8	35	25	19	12	8	26	19	13	9	5	60	25	13	9	6	13	9	5.5	42	21	14	9	6
315	400	-40	-30	-30	-	-	40	30	23	-	-	30	23	15	-	-	70	30	15	-	-	15	-	-	48	24	16	-	-
400	500	-45	-	-35	-	-	45	-	28	-	-	34	-	17	-	-	80	-	20	-	-	17	-	-	-	-	-	-	-
500	630	-60	-	-40	-	-	60	-	35	-	-	40	-	20	-	-	90	-	25	-	-	20	-	-	-	-	-	-	-
630	800	-75	-	-50	-	-	75	-	45	-	-	45	-	25	-	-	100	-	30	-	-	25	-	-	-	-	-	-	-
800	1000	-100	-	-60	-	-	100	-	60	-	-	55	-	30	-	-	115	-	37	-	-	30	-	-	-	-	-	-	-
1000	1250	-125	-	-75	-	-	125	-	75	-	-	65	-	37	-	-	130	-	45	-	-	40	-	-	-	-	-	-	-
1250	1600	-160	-	-90	-	-	160	-	90	-	-	80	-	45	-	-	150	-	55	-	-	50	-	-	-	-	-	-	-
1600	2000	-200	-	-	-	-	200	-	-	-	-	100	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-

公差 Tolerance

圆锥滚子轴承 Tapered Roller Bearings

外圈公差 Tolerance of Outer Ring

D		Δ_{Dmp}					V_{Dsp}					V_{Dmp}					K_{ea}					S_{ea}					S_{ea1}		S_D S_{D1}		
over	incl.	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P0,P6X	P6	P5	P4	P2	P4	P2	P5	P4	P2
μm		μm					μm					μm					μm					μm					μm		μm		
-	18	-12	-	-8	-6	-5	12	-	6	5	4	9	-	5	4	2.5	18	-	6	4	2.5	-	-	-	5	2.5	7	4	8	4	1.5
18	30	-12	-8	-8	-6	-5	12	8	6	5	4	9	6	5	4	2.5	18	9	6	4	2.5	40	20	13	5	2.5	7	4	8	4	1.5
30	50	-14	-9	-9	-7	-5	14	9	7	5	4	11	7	5	5	2.5	20	10	7	5	2.5	40	20	13	5	2.5	7	4	8	4	2
50	80	-16	-11	-11	-9	-6	16	11	8	7	4	12	8	6	5	2.5	25	13	8	5	4	40	20	13	5	4	7	6	8	4	2.5
80	120	-18	-13	-13	-10	-6	18	13	10	8	5	14	10	7	6	3	35	18	10	6	5	45	22	15	6	5	8	7	9	5	3
120	150	-20	-15	-15	-11	-7	20	15	11	8	5	15	11	8	7	3.5	40	20	11	7	5	50	25	18	7	5	10	7	10	5	3.5
150	180	-25	-18	-18	-13	-7	25	18	14	10	7	19	14	9	8	4	45	23	13	8	5	60	30	20	8	5	11	7	10	5	4
180	250	-30	-20	-20	-15	-8	30	20	15	11	8	23	15	10	10	5	50	25	15	10	7	70	35	23	10	7	14	10	11	7	5
250	315	-35	-25	-25	-18	-9	35	25	19	14	8	26	19	13	11	5	60	30	18	11	7	80	40	27	10	7	14	10	13	8	6
315	400	-40	-28	-28	-20	-10	40	28	22	15	10	30	21	14	13	6	70	35	20	13	8	90	45	30	13	8	18	11	13	10	7
400	500	-45	-33	-33	-	-	45	33	26	-	-	34	25	17	-	-	80	40	24	-	-	100	50	-	-	-	-	-	17	-	-
500	630	-50	-38	-38	-	-	60	38	30	-	-	38	29	20	-	-	100	50	30	-	-	120	60	-	-	-	-	-	20	-	-
630	800	-75	-	-45	-	-	80	-	38	-	-	55	-	25	-	-	120	-	36	-	-	-	-	-	-	-	-	-	25	-	-
800	1000	-100	-	-60	-	-	100	-	50	-	-	75	-	30	-	-	140	-	43	-	-	-	-	-	-	-	-	-	30	-	-
1000	1250	-125	-	-80	-	-	130	-	65	-	-	90	-	38	-	-	160	-	52	-	-	-	-	-	-	-	-	-	38	-	-
1250	1600	-160	-	-100	-	-	170	-	90	-	-	100	-	50	-	-	180	-	62	-	-	-	-	-	-	-	-	-	50	-	-
1600	2000	-200	-	-125	-	-	210	-	120	-	-	110	-	65	-	-	200	-	73	-	-	-	-	-	-	-	-	-	65	-	-
2000	2500	-250	-	-	-	-	265	-	-	-	-	120	-	-	-	-	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-

公差 Tolerance

圆锥滚子轴承 Tapered Roller Bearings

宽度公差 Width Tolerance

d		△Bs								△Bs				△Cs					
mm		μm								μm				μm					
		P0		P6X		P6		P5		P4		P2		P0		P6X		P6	
超过 exceed	到 incl	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation
-	10	0	-120	0	-50	-	-	0	-200	0	-200	0	-200	0	-120	0	-100	-	-
10	18	0	-120	0	-50	0	-120	0	-200	0	-200	0	-200	0	-120	0	-100	0	-120
18	30	0	-120	0	-50	0	-120	0	-200	0	-200	0	-200	0	-120	0	-100	0	-120
30	50	0	-120	0	-50	0	-120	0	-240	0	-240	0	-240	0	-120	0	-100	0	-120
50	80	0	-150	0	-50	0	-150	0	-300	0	-300	0	-300	0	-150	0	-100	0	-150
80	120	0	-200	0	-50	0	-200	0	-400	0	-400	0	-400	0	-200	0	-100	0	-200
120	180	0	-250	0	-50	0	-250	0	-500	0	-500	0	-500	0	-250	0	-100	0	-250
180	250	0	-300	0	-50	0	-300	0	-600	0	-600	0	-600	0	-300	0	-100	0	-300
250	315	0	-350	0	-50	0	-350	0	-700	0	-700	0	-700	0	-350	0	-100	0	-350
315	400	0	-400	0	-50	0	-400	0	-800	-	-	-	-	0	-400	0	-100	0	-400
400	500	0	-450	0	-50	-	-	0	-900	-	-	-	-	0	-450	0	-100	-	-
500	630	0	-500	-	-	-	-	0	-1100	-	-	-	-	0	-500	-	-	-	-
630	800	0	-750	-	-	-	-	0	-1600	-	-	-	-	0	-750	-	-	-	-
800	1000	0	-1000	-	-	-	-	0	-2000	-	-	-	-	0	-1000	-	-	-	-
1000	1250	0	-1250	-	-	-	-	0	-2000	-	-	-	-	0	-1250	-	-	-	-
1250	1600	0	-1600	-	-	-	-	0	-2000	-	-	-	-	0	-1600	-	-	-	-
1600	2000	0	-2000	-	-	-	-	-	-	-	-	-	-	0	-2000	-	-	-	-

公差 Tolerance

圆锥滚子轴承 Tapered Roller Bearings

宽度公差 Width Tolerance

△Cs μm						△Ts μm				△Ts μm								△T1s μm			
P5		P4		P2		P0		P6X		P6		P5		P4		P2		P0		P6X	
上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation
0	-200	0	-200	0	-200	200	0	100	0	-	-	200	-200	200	-200	200	-200	100	0	50	0
0	-200	0	-200	0	-200	200	0	100	0	200	0	200	-200	200	-200	200	-200	100	0	50	0
0	-200	0	-200	0	-200	200	0	100	0	200	0	200	-200	200	-200	200	-200	100	0	50	0
0	-240	0	-240	0	-240	200	0	100	0	200	0	200	-200	200	-200	200	-200	100	0	50	0
0	-300	0	-300	0	-300	200	0	100	0	200	0	200	-200	200	-200	200	-200	100	0	50	0
0	-400	0	-400	0	-400	200	-200	100	0	200	-200	200	-200	200	-200	200	-200	100	-100	50	0
0	-500	0	-500	0	-500	350	-250	150	0	350	-250	350	-250	350	-250	200	-250	150	-150	50	0
0	-600	0	-600	0	-600	350	-250	150	0	350	-250	350	-250	350	-250	200	-300	150	-150	50	0
0	-700	0	-700	0	-700	350	-250	200	0	350	-250	350	-250	350	-250	200	-300	150	-150	100	0
0	-800	-	-	-	-	400	-400	200	0	400	-400	400	-400	-	-	-	-	200	-200	100	0
0	-900	-	-	-	-	450	-450	200	0	-	-	450	-450	-	-	-	-	225	-225	100	0
0	-1100	-	-	-	-	500	-500	-	-	-	-	500	-500	-	-	-	-	-	-	-	-
0	-1600	-	-	-	-	600	-600	-	-	-	-	600	-600	-	-	-	-	-	-	-	-
0	-2000	-	-	-	-	750	-750	-	-	-	-	750	-750	-	-	-	-	-	-	-	-
0	-2000	-	-	-	-	900	-900	-	-	-	-	750	-750	-	-	-	-	-	-	-	-
0	-2000	-	-	-	-	1050	-1050	-	-	-	-	900	-900	-	-	-	-	-	-	-	-
-	-	-	-	-	-	1200	-1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-

公差 Tolerance

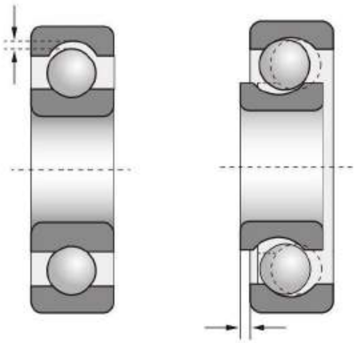
圆锥滚子轴承 Tapered Roller Bearings

宽度公差 Width Tolerance

△T1s μm								△T2s μm												
P6		P5		P4		P2		P0			P6X		P6		P5		P4		P2	
上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation		上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation	上偏差 upper deviation	下偏差 lower deviation
-	-	100	-100	100	-100	100	-100	100	0		50	0	-	-	100	-100	100	-100	100	-100
100	0	100	-100	100	-100	100	-100	100	0		50	0	100	0	100	-100	100	-100	100	-100
100	0	100	-100	100	-100	100	-100	100	0		50	0	100	0	100	-100	100	-100	100	-100
100	0	100	-100	100	-100	100	-100	100	0		50	0	100	0	100	-100	100	-100	100	-100
100	0	100	-100	100	-100	100	-100	100	0		50	0	100	0	100	-100	100	-100	100	-100
100	-100	100	-100	100	-100	100	-100	100	-100		50	0	100	-100	100	-100	100	-100	100	-100
150	-150	150	-150	150	-150	100	-100	200	-100		100	0	200	-100	200	-100	200	-100	100	-150
150	-150	150	-150	150	-150	100	-150	200	-100		100	0	200	-100	200	-100	200	-100	100	-150
150	-150	150	-150	150	-150	100	-150	200	-100		100	0	200	-100	200	-100	200	-100	100	-150
200	-200	200	-200	-	-	-	-	200	-200		100	0	200	-200	200	-200	-	-	-	-
-	-	225	-225	-	-	-	-	225	-225		100	0	-	-	225	-225	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-

轴承游隙

轴承内部游隙，即指轴承在未安装于轴或轴承箱时，将其内圈或外圈的一端固定，然后使未被固定的一端做径向或轴向移动时的移动量。根据移动方向，可分为径向游隙和轴向游隙（如下图所示）。
在实际使用中，轴承游隙又有原始游隙、安装游隙、工作游隙之分，并依次减小。
原始游隙：轴承在制造（合套）组装后的游隙。
安装游隙：轴承安装后的游隙。
工作游隙：轴承在实际运转工作状态时的游隙。



径向游隙　　轴向内部游隙

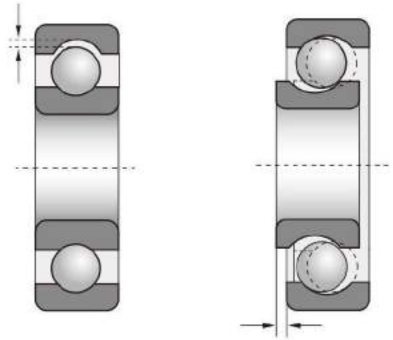
游隙的作用

轴承游隙对轴承的寿命、旋转精度、振动、噪声、温升、摩擦阻力等有较大的影响。其主要作用有：

- 保证轴承的旋转灵活性
- 调节轴承的负荷分布
- 保证轴承获得正确的接触角（角接触球轴承）
- 减少零件之间的摩擦
- 较少或消除零件因热膨胀、过盈配合引起的尺寸变化给轴承运转性能带来的不利影响
- 有助于润滑油膜的形成
- 方便轴承精度检测

Bearing Clearance

Bearing internal clearance is defined as fixing one side of inner ring or liter ring before installating on shaft or house, the total distance through which one bearing ring can be moved relative to the other in the radial direction (radial internal clearance) or in the axial direction (axial internal clearance).(see below figure)
Actually, the bearing clearance refers to initial clearance,clearance in a mounted clearance, operating clearance in a descending order.
Initial clearance: the clearance of a bearing after manufactured and assembled
Mounted clearance: the clearance after mounted
Operating clearance: the clearance in an actual working environment.



Radial clearance　　Axial internal clearance

Clearance Effect

Bearing clearance excert great influence on the bearing life, rotation accuracy, vibration, noise, temperature rise, frictional resistance, its main effect including:

·To ensure the rotation flexbility of bearing
·Adjusting load distribution of bearing
·Guarantee the correct contact angle of bearing (angular contact ball bearing)
·Reduce friction between spareparts
·Reduce or eliminate the adverse effect of dimensional changes on bearing performance which may caused by thermal expansion, interference fit
·Helps to form lubricating oil film
·Easy for testing bearing precision

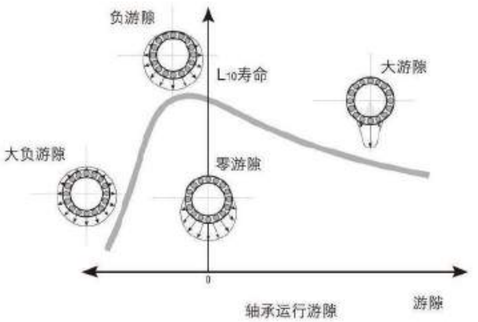
轴承游隙

游隙的选择

为使轴承良好运行，径向游隙十分重要。一般的准则，球轴承的工作游隙应为零，或者有轻微的预紧。但对于圆柱滚子、调心滚子和CARB轴承，在运行时必须有一定的工作游隙（就算是很小的游隙）。圆锥滚子轴承一般也一样，但在需要刚性较高的轴承配置，例如齿轮箱轴承的配置，圆锥滚子轴承以一定的预紧量来安装。另外，需提高轴承的刚性或需降低噪声时，工作游隙需要减小，而在轴承温升剧烈时，工作游隙则需要增加，具体需要根据使用工况分析确定。

通常情况下，轴承以控制径向游隙为主，对于三点、四点接触球轴承及双、四列圆锥滚子轴承等在制造过程中，则控制轴向游隙。

如下图所示，当工作游隙为微负值时，轴承的疲劳寿命最长，但随着负游隙的增大疲劳寿命则显著下降。因此，选择轴承的游隙时，一般使工作游隙为零或略正为宜。



轴承游隙与疲劳寿命之间的关系

JXN的径向游隙代号与ISO代号相同，说明如下：

	说　明
C2	紧游隙，装配后得到最小的径向和轴向位移，如6208/C2
C0	基本游隙，一般能满足配合所推荐的轴和座的配合，如6208
C3	松游隙，用于内圈和外圈都处于额外过盈配合或存在温差的场合，如6208/C3
C4	超松游隙，用于大过盈配合或大温差场合，如6208/C4
C5	特松游隙，用于内外圈都处于大过盈配合同时存在大温差的场合，如6208/C5

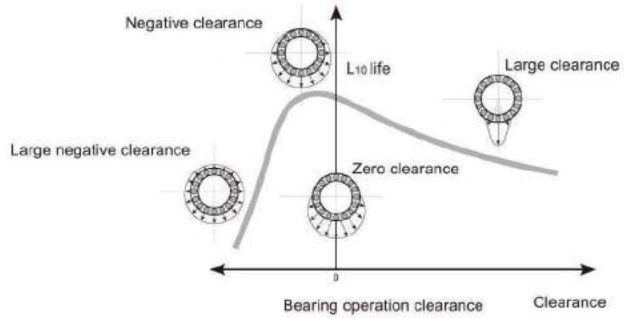
Bearing Clearance

Clearance Selection

Radial clearance plays an important role in sound bearing operation. As a general rule, the operating clearance of ball bearings should be zero or slight preload. However, residual clearance (even a tiny clearance) should be reserved for cylindrical roller, spherical roller and CARB bearings. Tapered roller bearings are generally the same, but for the high rigid type bearing application,e.g. bearing for gears, tapered roller bearings must be assembled with a certain amount of preload. In addition, if it is necessary to improve the rigidity or reduce noise of bearing, the operating clearance should be reduced, while the bearing temperature rise heavily, the operational clearance should be increased, and detailed analysis should be considered according to application requirements.

Radial clearance control should be focused on when manufacturing bearings usually, but axial clearance will be controlled in production of three-point or four-point contact ball bearing, and double-row, four-row tapered roller bearing.

Shown as below figure, the fatigue life is the longest when operating clearance is a slightly negative value, and the fatigue life decrease obviously when negative value becomes too large. Generally it takes zero or slight positive value when selecting operating clearance.



The relationship between bearing clearance and fatigue life

JXN use the same suffixes of ISO, refer as below:

	Instruction
C2	Tight clearance, get the mininum radial and axial distance after assembled, as 6208/C2
C0	Basic clearance, generally meet the coordination of the recommended shaft and seat, as 6208
C3	Loose clearance, applied when inner and outer rings are extra interference fit or working in occasion of temprature difference, as 6208/C3
C4	Ultra loose clearance, applied in interference fit or large temperature difference occasions, like 6208/C4
C5	Extra loose clearance, applied when inner and outer rings are interference fit in large temperature difference occasions, like 6208/C5

额定动载荷和寿命计算

额定寿命

寿命：（单套滚动轴承的）寿命是指轴承的一个套圈或垫圈或滚动体材料上出现第一个疲劳扩展迹象之前，轴承的一个套圈或垫圈相对另一个套圈或垫圈旋转的转数。由于同样的轴承在同样的工作条件下的疲劳寿命具有离散性，所以应该用统计方法来定义轴承的寿命。

基本额定寿命：对于采用当代常用优质材料和具有良好加工质量并在常规运转条件下运转的轴承，系指与90%的可靠度相关的额定寿命。基本额定寿命L10按照下式计算

向心球轴承：	$L_{10}=(C_r/P_r)^3$	单位：百万转
向心滚子轴承：	$L_{10}=(C_r/P_r)^{10/3}$	单位：百万转

上式中，C_r径向基本额定动载荷，单位：N； P_r径向当量动载荷， 单位：N

修正额定寿命：考虑90%或其他可靠度水平、轴承疲劳载荷和（或）特殊的轴承性能和（或）被污染的润滑剂和（或）其他非常规运转条件，对基本额定寿命进行修正所得到的额定寿命。修正额定寿命L_{na}按照下式计算：

$$L_{na}=a_1a_2a_3L_{10}$$

上式中，a_1可靠性寿命修正系数，其数值列于下表

可靠度%	90	95	96	97	98	99
a1	1	0.64	0.55	0.47	0.37	0.25

a_2特殊轴承性能寿命修正系数，对于从 JXN订购的常规轴承产品，a_2取为1。若需要a_2>1，请联络JXN 技术部门特殊订购 。

a_3特殊运行条件寿命修正系数。该系数考虑的运行条件包括润滑是否充分，外来有害物质，以及其他会引起材料性能改变的条件，如高温造成硬度降低等。如无上述不利影响时，则取a_3=1。如有上述不利影响时，应考虑取a_3小于1。只有当润滑条件非常理想而大大降低表面引起的疲劳破坏概率时，才能考虑去a_3值大于1。

基本额定动载荷

径向基本额定动载荷C_r是指一套滚动轴承理论上所能承受的恒定不变的径向载荷，在该载荷作用下，轴承的基本额定寿命为一百万转。对于单列角接触轴承，该载荷是指引起轴承套圈相互间产生纯径向位移载荷的径向分量。各种轴承的径向基本额定动载荷可从本样本内查得。

轴承组配时的基本额定动载荷：

两套相同的单列径向球或滚子轴承并排安装在同一轴上，组成一个整体（成对安装），这一轴承组的径向基本额定载荷是单个这种轴承的基本额定载荷的1.6倍（对于球轴承）或1.7倍（对于滚子轴承）。

当量动载荷

径向当量动载荷P_r是指一恒定不变的径向载荷，在该载荷作用下，滚动轴承具有与实际载荷条件下相同的寿命。

Caculation of Dynamic Load Rating and Life

Rating Life

Life:The individual life of a rolling bearing is expressed as the number of revolutions of a ferrule or washer, comparing with another ring or washer, before the first sign of metal fatigue (spalling) appears on the rolling element or ring, or washer. Since the fatigue life of the same bearing which under the same operating conditions is discrete, so statistical method of bearing life caculation should be used.

Basic rating life: for the bearing made of modern high-quality materials which well machined and working in normal operating conditions, refers to the 90% reliability with the rated life. The basic rating life L10 is calculated as follows:

Radial ball bearings:	$L_{10}=(C_r/P_r)^3$	Unit: million revolutions
Radial roller bearings:	$L_{10}=(C_r/P_r)^{10/3}$	Unit: million revolutions

In the above formula, Cr is the basic radial dynamic load rating, unit: N

Pr Equivalent dynamic load, unit: N

Revised rating life: Revised rating life is the rating life after correcting basic rating life with consideration of 90% or other reliability levels, bearing fatigue loading and/or special bearing performance and/or contaminated lubricant and/or other non-routine operating conditions. The revised rated life L_{na} is calculated as follow:

$$L_{na}=a_1a_2a_3L_{10}$$

In the above formula, a1 is correction factor of reliability life , its value is listed in the following table

Reliability %	90	95	96	97	98	99
a1	1	0.64	0.55	0.47	0.37	0.25

a_2 is correction factor of special bearing life-cycle.For general bearings ordered from JXN , a_2 is taken as 1. If a_2>1 is required, please contact JXN technical department for special order.

a_3 is modification factor of life in special operational condition. Operating conditions considered for this factor include adequacy of lubrication, foreign hazardous materials, and other conditions that may cause material properties to change, such as the reduction in hardness due to heat. a_3=1 without above adverse conditions, while a_3<1 when subject to above conditions. Only when the lubrication conditions are considerable and greatly reduce the probability of fatigue failure caused by the surface, a_3>1 could be considered.

Basic Dynamic Load Rating

Radial basic dynamic load rating Cr refers to a set of rolling bearings can bear theoretically constant radial load, under the force of the load, the basic rated life is one million revolutions. For single row angular contact bearing, this load is the radial component of the load that causes the bearing rings to produce pure radial displacement from each other. All kinds of basic radial dynamic load rating can be found in this catalog.

The basic dynamic load rating when assembling bearing:

Two sets of identical single-row radial ball or roller bearings are mounted side-by-side on the same shaft as an integral (in pairs), its basic radial load rating is 1.6 times of a single bearing's(for ball bearings) or 1.7 times (for roller bearings).

Equivalent Dynamic Load

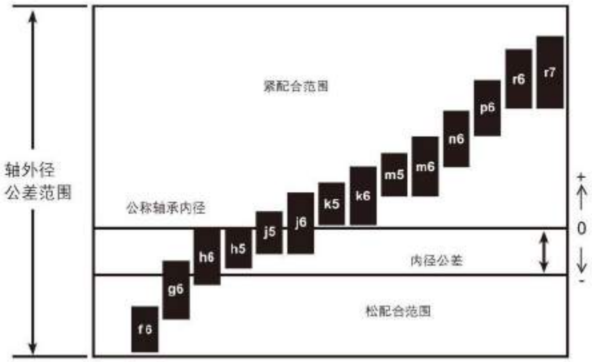
Radial equivalent dynamic load Pr means a constant radial load under which the rolling bearing has the same service life with the actual load.

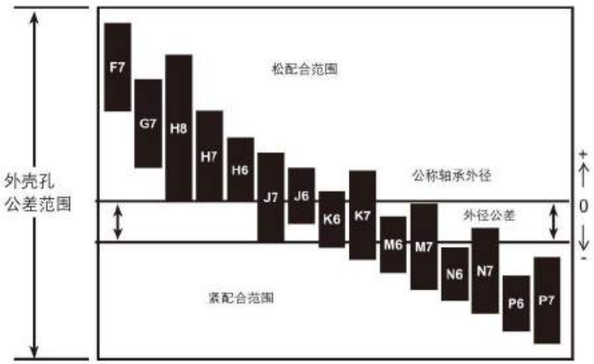
配合

轴和外壳的配合

向心球轴承、调心滚子轴承、圆柱滚子轴承

符合ISO标准的轴承与轴和外壳的配合的选择，如下图所示，这些标有g6、h6等的块表示在不同负荷和套圈旋转的情况下，为满足不同松和紧配合的要求。



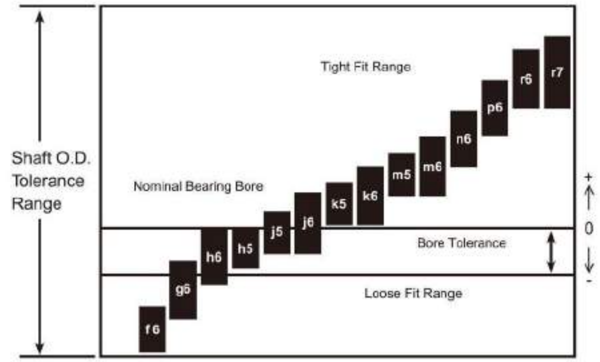


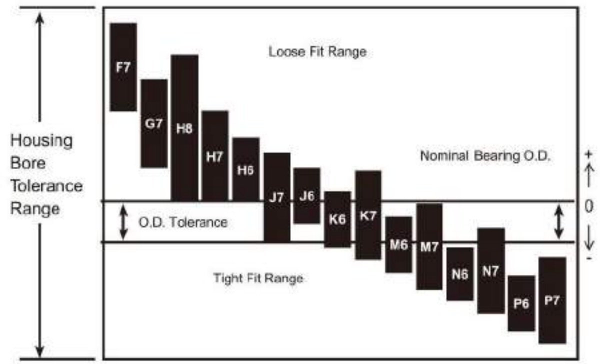
Coordination

Shaft and Housing Coordination

Radial Ball Bearings, Spherical Roller Bearings, Cylindrical Roller Bearings

The fit standard between bearing and shaft, hoursing, is comply with ISO standard, its tolerance rang please refer to below figure. The bars designated by g6, h6 etc. represent shaft/housing diameter and tolerance ranges to achieve various loose and interference fits required for various load and ring rotation conditions.





配合

轴和外壳的配合
向心球轴承、调心滚子轴承、圆柱滚子轴承

表内所示的是轴承内径偏差和轴直径（相对于公称轴承内径）的偏差。配合一栏列出该种配合可能出现的最紧和最松状态的数值，“L”代表松或间隙，“T”代表紧或过盈。

Coordination

Shaft and Housing Coordination
Radial Ball Bearings, Spherical Roller Bearings, Cylindrical Roller Bearings

The deviation of bore diameter and shaft diameter (relative to nominal bore diameter) refers to below table. The column of fit shows the possible values of the tightest and the loosest, "L" stands for loose or clearances, and "T" for tight or interference.

轴承内径 Bearing bore diameter				k6			m5			m6			n6			p6			r6			r7		
公称 Nominal		单一平面平均内径偏差 Single plane mean bore diameter deviation		轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit
超过 Over	至 Incl	上偏差 Upper deviation	下偏差 Lower deviation	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.	最小 Min.		最大 Max.	最小 min.	
mm		μm		μm			μm			μm			μm			μm			μm			μm		
3	6	0	-8				+9	+4	4T 17T															
6	10	0	-8				+12	+6	6T 20T															
10	18	0	-8				+15	+7	7T 23T															
18	30	0	-10				+17	+8	8T 27T															
30	50	0	-12	+18	+2	2T 30T	+20	+9	9T 32T	+25	+9	9T 37T												
50	80	0	-15	+21	+2	2T 36T	+24	+11	11T 39T	+30	+11	11T 45T	+39	+20	20T 54T									
80	120	0	-20	+25	+3	3T 45T	+28	+13	13T 48T	+35	+13	13T 55T	+45	+23	23T 65T	+59	+37	37T 79T						
120	180	0	-25	+28	+3	3T 53T	+33	+15	15T 58T	+40	+15	15T 65T	+52	+27	27T 77T	+68	+43	43T 93T	+90	+65	65T 115T			
180	200	0	-30				+37	+17	17T 67T	+46	+17	17T 76T	+60	+31	31T 90T	+79	+50	50T 109T	+106	+77	77T 136T			
200	225	0	-30				+37	+17	17T 67T	+46	+17	17T 76T	+60	+31	31T 90T	+79	+50	50T 109T	+109	+80	80T 139T	+126	+80	80T 156T
225	250	0	-30				+37	+17	17T 67T	+46	+17	17T 76T	+60	+31	31T 90T	+79	+50	50T 109T	+113	+84	84T 143T	+130	+84	84T 160T
250	280	0	-35				+43	+20	20T 78T	+52	+20	20T 87T	+66	+34	34T 101T	+88	+56	56T 123T	+126	+94	94T 161T	+146	+94	94T 181T
280	315	0	-35				+43	+20	20T 78T	+52	+20	20T 87T	+66	+34	34T 101T	+88	+56	56T 123T	+130	+98	98T 165T	+150	+98	98T 185T

配合

轴和外壳的配合
向心球轴承、调心滚子轴承、圆柱滚子轴承

表内所示的是轴承内径偏差和轴直径（相对于公称轴承内径）的偏差。配合一栏列出该种配合可能出现的最紧和最松状态的数值，“L”代表松或间隙，“T”代表紧或过盈。

Coordination

Shaft and Housing Coordination
Radial Ball Bearings, Spherical Roller Bearings, Cylindrical Roller Bearings

The deviation of bore diameter and shaft diameter (relative to nominal bore diameter) refers to below table. The column of fit shows the possible values of the tightest and the looseest, "L" stands for loose or clearances, and "T" for tight or interference.

轴承内径 Bearing bore diameter				f6			g6			h6		
公称 Nominal		单一平面平均内径偏差 Single plane mean bore diameter deviation		轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit
超过 Over	至 Incl	上偏差 Upper deviation	下偏差 Lower deviation	最大 Max.	最小 Min.		最大 Max.	最小 Min.		最大 Max.	最小 Min.	
mm		μm		μm			μm			μm		
3	6	0	-8	-10	-18	18L 2L	-4	-12	12L 4T	0	-8	8L 8T
6	10	0	-8	-13	-22	22L 5L	-5	-14	14L 3T	0	-9	9L 8T
10	18	0	-8	-16	-27	27L 8L	-6	-17	17L 2T	0	-11	11L 8T
18	30	0	-10	-20	-33	33L 10L	-7	-20	20L 3T	0	-13	13L 10T
30	50	0	-12	-25	-41	41L 13L	-9	-25	25L 3T	0	-16	16L 12T
50	80	0	-15	-30	-49	49L 15L	-10	-29	29L 5T	0	-19	19L 15T
80	120	0	-20	-36	-58	58L 16L	-12	-34	34L 8T	0	-22	22L 20T
120	180	0	-25	-43	-68	68L 18L	-14	-39	39L 11T	0	-25	25L 25T
180	200	0	-30	-50	-79	79L 20L	-15	-44	44L 15T	0	-29	29L 30T
200	225	0	-30	-50	-79	79L 20L	-15	-44	44L 15T	0	-29	29L 30T
225	250	0	-30	-50	-79	79L 20L	-15	-44	44L 15T	0	-29	29L 30T
250	280	0	-35	-56	-88	88L 21L	-17	-49	49L 18T	0	-32	32L 35T
280	315	0	-35	-56	-88	88L 21L	-17	-49	49L 18T	0	-32	32L 35T

超过 Over	至 Incl	h5			j5			j6			k5		
		轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit	轴直径 Shaft dia.		配合 Fit
		最大 Max.	最小 Min.		最大 Max.	最小 Min.		最大 Max.	最小 Min.		最大 Max.	最小 min.	
mm		μm			μm			μm			μm		
3	6	0	-5	5L 8T	+3	-2	2L 11T	+6	-2	2L 14T	+6	+1	1T 14T
6	10	0	-6	6L 8T	+4	-2	2L 12T	+7	-2	2L 15T	+7	+1	1T 15T
10	18	0	-8	8L 8T	+5	-3	3L 13T	+8	-3	3L 16T	+8	+1	1T 17T
18	30	0	-9	9L 10T	+5	-4	4L 15T	+9	-4	4L 19T	+11	+2	2T 21T
30	50	0	-11	11L 12T	+6	-5	5L 18T	+11	-5	5L 23T	+13	+2	2T 25T
50	80	0	-13	13L 15T	+6	-7	7L 21T	+12	-7	7L 27T	+15	+2	2T 30T
80	120	0	-15	15L 20T	+6	-9	9L 16T	+13	-9	9L 33T	+18	+3	3T 38T
120	180	0	-18	18L 25T	+7	-11	11L 32T	+14	-11	11L 39T	+21	+3	3T 46T
180	200	0	-18	18L 25T	+7	-13	13L 37T	+16	-13	13L 46T	+24	+4	4T 54T
200	225	0	-20	20L 30T	+7	-13	13L 37T	+16	-13	13L 46T	+24	+4	4T 54T
225	250	0	-20	20L 30T	+7	-13	13L 37T	+16	-13	13L 46T	+24	+4	4T 54T
250	280	0	-23	23L 35T	+7	-16	16L 42T	+16	-16	16L 51T	+27	+4	4T 62T
280	315	0	-23	23L 35T	+7	-16	16L 42T	+16	-16	16L 51T	+27	+4	4T 62T

配合

轴和外壳的配合
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Coordination

Shaft and Housing Coordination
Radial Ball Bearings, Spherical Roller Bearings, Cylindrical Roller Bearings

The deviation of outer diameter and housing bore diameter (relative to nominal bore diameter) refers to below table. The column of fit shows the possible values of the tightest and the looseest, "L" stands for loose or clearances, and "T" for tight or interference.

轴承外径 Bearing outer diameter				F7			G7			H8			H7			H6			J6			J7		
公称 Nominal		单一平面平均外径偏差 Single plane mean outer diameter deviation		外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit
超过 Over	至 Incl	上偏差 Upper deviation	下偏差 Lower deviation	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.		最小 Min.	最大 Max.	
mm		μm		μm			μm			μm			μm			μm			μm			μm		
10	18	0	-8	+16	+34	16L 42L	+6	+24	6L 32L	0	+27	0L 35L	0	+18	0L 26L	0	+11	0L 19L	-5	+6	5T 14L	-8	+10	8T 18L
18	30	0	-9	+20	+41	20L 50L	+7	+28	7L 37L	0	+33	0L 42L	0	+21	0L 30L	0	+13	0L 22L	-5	+8	5T 17L	-9	+12	9T 21L
30	50	0	-11	+25	+50	25L 61L	+9	+34	9L 45L	0	+39	0L 50L	0	+25	0L 36L	0	+16	0L 27L	-6	+10	6T 21L	-11	+14	11T 25L
50	80	0	-13	+30	+60	30L 73L	+10	+40	10L 53L	0	+46	0L 59L	0	+30	0L 43L	0	+19	0L 32L	-6	+13	6T 26L	-12	+18	12T 31L
80	120	0	-15	+36	+71	36L 86L	+12	+47	12L 62L	0	+54	0L 69L	0	+35	0L 50L	0	+22	0L 37L	-6	+16	6T 31L	-13	+22	13T 37L
120	150	0	-18	+43	+83	43L 101L	+14	+54	14L 72L	0	+63	0L 81L	0	+40	0L 58L	0	+25	0L 43L	-7	+18	7T 36L	-14	+26	14T 44L
150	180	0	-25	+43	+83	43L 108L	+14	+54	14L 79L	0	+63	0L 88L	0	+40	0L 65L	0	+25	0L 50L	-7	+18	7T 43L	-14	+26	14T 51L
180	250	0	-30	+50	+96	50L 126L	+15	+61	15L 91L	0	+72	0L 102L	0	+46	0L 76L	0	+29	0L 59L	-7	+22	7T 52L	-16	+30	16T 60L
250	315	0	-35	+56	+108	56L 143L	+17	+69	17L 104L	0	+81	0L 116L	0	+52	0L 87L	0	+32	0L 67L	-7	+25	7T 60L	-16	+36	16T 71L
315	400	0	-40	+62	+119	62L 159L	+18	+75	18L 115L	0	+89	0L 129L	0	+57	0L 97L	0	+36	0L 76L	-7	+29	7T 69L	-18	+39	18T 79L
400	500	0	-45	+68	+131	68L 176L	+20	+83	20L 128L	0	+97	0L 142L	0	+63	0L 108L	0	+40	0L 85L	-7	+33	7T 78L	-20	+43	20T 88L
500	630	0	-50	+76	+146	76L 196L	+22	+92	22L 142L	0	+110	0L 160L	0	+70	0L 120L	0	+44	0L 94L	-7	+37	7T 87L	-22	+48	22T 98L
630	800	0	-75	+80	+160	80L 235L	+24	+104	24L 179L	0	+125	0L 200L	0	+80	0L 155L	0	+50	0L 125L	-10	+40	10T 115L	-24	+56	24T 131L

配合

轴和外壳的配合

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Coordination

Shaft and Housing Coordination

Radial Ball Bearings, Spherical Roller Bearings, Cylindrical Roller Bearings

The deviation of outer diameter and housing bore diameter (relative to nominal bore diameter) refers to below table. The column of fit shows the possible values of the tightest and the looseest, "L" stands for loose or clearances, and "T" for tight or interference.

轴承外径 Bearing outer diameter				K6			K7			M6		
公称 Nominal		单一平面平均外径偏差 Single plane mean outer diameter deviation		外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit
超过 Over	至 Incl	上偏差 Upper deviation	下偏差 Lower deviation	最小 Min.	最大 Max.		最小 Min.	最大 Max.		最小 Min.	最大 Max.	
mm		μm		μm			μm			μm		
10	18	0	-8	-9	+2	9T 10L	-12	+6	12T 14L	-15	-4	15T 4L
18	30	0	-9	-11	+2	11T 11L	-15	+6	15T 15L	-17	-4	17T 5L
30	50	0	-11	-13	+3	13T 14L	-18	+7	18T 18L	-20	-4	20T 7L
50	80	0	-13	-15	+4	15T 17L	-21	+9	21T 22L	-24	-5	24T 8L
80	120	0	-15	-18	+4	18T 19L	-25	+10	25T 25L	-28	-6	28T 9L
120	150	0	-18	-21	+4	21T 22L	-28	+12	28T 30L	-33	-8	33T 10L
150	180	0	-25	-21	+4	21T 29L	-28	+12	28T 37L	-33	-8	33T 17L
180	250	0	-30	-24	+5	24T 35L	-33	+13	33T 43L	-37	-8	37T 22L
250	315	0	-35	-27	+5	27T 40L	-36	+16	36T 51L	-41	-9	41T 26L
315	400	0	-40	-29	+7	29T 47L	-40	+17	40T 57L	-46	-10	46T 30L
400	500	0	-45	-32	+8	32T 53L	-45	+18	45T 63L	-50	-10	50T 35L
500	630	0	-50	-44	0	44T 50L	-70	0	70T 50L	-70	-26	70T 24L
630	800	0	-75	-50	0	50L 75L	-80	0	80T 75L	-80	-30	80T 45L

M7			N6			N7			P6			P7		
外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit	外壳孔径 Bore diameter of housing		配合 Fit
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.	
μm			μm			μm			μm			μm		
-18	0	18T 8L	-20	-9	20T 1T	-23	-5	23T 3L	-26	-15	26T 7T	-29	-11	29T 3T
-21	0	21T 9L	-24	-11	24T 2T	-28	-7	28T 2L	-31	-18	31T 9T	-35	-14	35T 5T
-25	0	25T 11L	-28	-12	28T 1T	-33	-8	33T 3L	-37	-21	37T 10T	-42	-17	42T 6T
-30	0	30T 13L	-33	-14	33T 1T	-39	-9	39T 4L	-45	-26	45T 13T	-51	-21	51T 8T
-35	0	35T 15L	-38	-16	38T 1T	-45	-10	45T 5L	-52	-30	52T 15T	-59	-24	59T 9T
-40	0	40T 18L	-45	-20	45T 2T	-52	-12	52T 6L	-61	-36	61T 18T	-68	-28	68T 10T
-40	0	40T 25L	-45	-20	45T 5L	-52	-12	52T 13L	-61	-36	61T 11T	-68	-28	68T 3T
-46	0	46T 30L	-51	-22	51T 8L	-60	-14	60T 16L	-70	-41	70T 11T	-79	-33	79T 3T
-52	0	52T 35L	-57	-25	57T 10L	-66	-14	66T 21L	-79	-47	79T 12T	-88	-36	88T 1T
-57	0	57T 40L	-62	-26	62T 14L	-73	-16	3T 24L	-87	-51	87T 11T	-98	-41	98T 1T
-63	0	63T 45L	-67	-27	67T 18L	-80	-17	80T 28L	-95	-55	95T 10T	-108	-45	108T 0T
-96	-26	96T 24L	-88	-44	88T 6L	-114	-44	114T 6L	-122	-78	122T 28T	-148	-78	148T 28T
-110	-30	110T 45L	-100	-50	100T 25L	-130	-50	130T 25L	-138	-88	138T 13T	-168	-88	168T 13T

配合

轴和外壳的配合
向心球轴承、圆柱滚子轴承

此表列出相对于特定工作条件下所推荐的主轴和外壳的配合

轴

球轴承（对于所有公称直径）			运行条件	运行实例	圆柱滚子轴承			
负荷		轴公差符号			负荷		轴直径 mm	轴公差符号
下限	上限				上限	下限		
内圈静止								
0	Cr[5]	g6	内圈要在轴上容易位移	飞轮、不旋转的轴	0	Cr	全部 g6	全部
0	Cr	h6	内圈不需要容易位移	张紧轮	0	Cr	全部 h6	全部
内圈旋转或方向不确定							超过 至	
0	0.07Cr	j6[1]	轻负荷	电器、机床、泵、换气风扇、工业卡车	0	0.08Cr	100 140 140 320 320 500 500 -	k6[3] m6[4] n6 p6
0.07Cr	0.15Cr	k5	一般负荷	电机、涡轮、泵、内燃机、齿轮传动等	0.08Cr	0.18Cr	100 140 140 320 320 500 500 -	m6 n6 p6 r6
0.15Cr 0	Cr Cr	m5 j6[2]	重负荷，冲击负荷	铁路车辆、牵引马达	0.18Cr	Cr	100 140 140 320 320 500 500 -	n6[2] p6[2] r6[2] r7[2]
轴向负荷								
			纯轴向力	全部				

[1] j6用于更精确的场合
[2] 游隙大于基本组值的轴承一定要用
[3] k5用于更精确的场合
[4] m5用于更精确的场合
[5] Cr为额定动载荷

Coordination

Shaft and Housing Coordination
Radial Ball Bearings, Cylindrical Roller Bearings

This table lists the mating of the shaft and housing as recommended for specific operating conditions

Shaft

Ball bearing (for all nominal diamteter)			Operating condition	Operating example	Cylindrical roller bearing			
Load		Shaft tolerance symbols			Load		Shaft diameter mm	Shaft tolerance symbols
Lower limit	Upper limit				Upper limit	Lower limit		
The inner ring is static								
0	Cr[5]	g6	The inner ring can be easily displaced on the shaft	Flywheel, non-rotating shaft	0	Cr	All g6	All
0	Cr	h6	The inner ring is not necessary to displace	Tension wheel	0	Cr	All h6	All
Inner ring rotating ,of indeterminate							Over incl	
0	0.07Cr	j6[1]	Light load	Electrical appliances, machine tools, pumps, ventilation fans, industrial trucks	0	0.08Cr	100 140 140 320 320 500 500 -	k6[3] m6[4] n6 p6
0.07Cr	0.15Cr	k5	General load	Motors, turbines, pumps, internal combustion engines, gear drives etc.	0.08Cr	0.18Cr	100 140 140 320 320 500 500 -	m6 n6 p6 r6
0.15Cr 0	Cr Cr	m5 j6[2]	Heavy load/impact load	Railway vehicles, traction motors	0.18Cr	Cr	100 140 140 320 320 500 500 -	n6[2] p6[2] r6[2] r7[2]
Axial load								
			Pure axial force	All				

[1] J6 applied for more accurate occasions
[2] bearing of large basic value clearance must be used
[3] K5 for more accurate occasions
[4] m5 for more accurate occasions
[5] Cr is the rated dynamic load

配合

轴和外壳的配合
向心球轴承、圆柱滚子轴承

此表列出相对于特定工作条件下所推荐的主轴和外壳的配合

外壳

运行条件		运行实例	外壳公差符号	外圈轴向位移
外圈旋转				
重负荷且外壳壁薄		重负吊车支撑轮、车毂(滚子轴承)、曲柄轴承荷且外壳壁薄	P6	无需
一般到重负荷		车毂(球轴承)、曲柄轴承	N6	无需
		传输带托辊、滑轮、张紧轮	M6	无需
外圈不确定负载方向				
重冲击负荷		牵引电机	M7	无需
一般负荷到重负荷，外圈无需轴向位移		电机、泵、曲柄主轴承	K6	一般不需要
轻负荷到一般负荷，外圈需轴向位移		电机、泵、曲柄主轴承	J6	一般不需要
外圈静止				
冲击负荷，暂时空载		重型铁路车辆	J6	一般需要
各种负荷	一体的外壳	重型铁路车辆、一般情况	H6	容易
	径向分体外壳	传动驱动	H7	容易
通过轴传输热量		干燥机缸	G7	容易

此线以下的外壳可以是一体的，也可以是分开的。此线以上不建议使用分开外壳

当允许较大的公差时，可用P7, N7, M7, K7, J7, H7去替换P6, M6, N6, K6, J6, H6

Coordination

Shaft and Housing Coordination
Radial Ball Bearings, Cylindrical Roller Bearings

This table lists the mating of the shaft and housing as recommended for specific operating conditions

Housing

Operating Conditions		Operating Examples	Housing Tolerance Symbols	Axial displacement of the outer ring
Outer ring rotation				
Thin housing with Heavy load		Crane support wheel, car hub (roller bearings), crank bearings	P6	Not necessary
From general load to heavy load		Car hub (ball bearings), crank bearings	N6	Not necessary
		Conveyor belt roller, pulley, tension wheel	M6	Not necessary
The load direction of outer ring is uncertain				
Heavy and impact load		Traction motor	M7	Not necessary
The outer ring without axial displacement, from general load to heavy load		Motor, pump, crank main bearing	K6	Not necessary generally
The outer ring will take axial displacement from light to general load		Motor, pump, crank main bearing	J6	Not necessary generally
Static outring				
Impact load, temporarily no load		Heavy rail vehicles	J6	Necessary generally
All loads	Intergrated housing	Heavy rail vehicles as generally	H6	Easy
	Radial split housing	Transmission drive	H7	Easy
Heat is transferred through the shaft		Dryer cylinder	G7	Easy

Below this line, housing can either be one-piece or split above this line, a split housing is not recommended.

P6, M6, N6, K6, J6, H6 can be replaced with P7, N7, M7, K7, J7, H7 when larger tolerances are acceptable

配合

轴和外壳的配合
调心滚子轴承

此表列出相对特定工作条件下所推荐的主轴和外壳的配合

轴

	条件	运行实例	轴直径	公差符号	备注
		圆柱内孔			
静止的内圈负荷	内圈要在轴上容易位移	两轴承主轴结构	所有的直径	f6	
		静止主轴上的轮子		g6	
	内圈不需要在轴上位移 内圈不需要容易位移	张紧轮和滑轮		h6	
旋转的内圈负荷或负荷方向无法判断	轻负荷和可变负荷 P≤0.07Cr	电器、机床、泵、换气扇、工业卡车	超过 至 18 100 100 200	k6 m6	在非常精确的情况下，k5、m5分别用来代替k6、m6
	普通负荷和重负荷 P>0.07Cr P≥0.25Cr	适用通用机械、电机、涡轮、泵、内燃机、齿轮传动、木工机械等	18 65 65 100 100 140 140 280 280 500 500 -	m5 m6 n6 p6 r6 r7	
	超重负荷和冲击负荷 P>0.25Cr	火车头及其它铁路用重型车辆的轴颈箱、牵引马达	所有的直径	m6 n6 p6 r6 r7	大于正常游隙
		带锥孔及紧定套的轴承			
	各种负荷	通用情况	所有的直径		见径向内部游隙减小值

Coordination

Shaft and Housing Coordination
Spherical Roller Bearings

This table lists the mating of the shaft and housing as recommended for specific operating conditions

Shaft

	Conditions	Operational Example	Shaft Diameter	Tolerance Symbol	Remark
		Cylindrical bore			
Static inner ring load	The inner ring on the shaft which is easy to displace.	Two-bearings spindle structure	All diameters	f6	
		The wheels on the stationary spindle		g6	
	The inner ring is not necessary to displace	Tension wheel and pulleys		h6	
Rotating inner ring load or load direction can not be judged	Light load and variable load P≤0.07Cr	Electrical appliances, machine tools, pumps, ventilation fans, industrial trucks	Over Incl. 18 100 100 200	k6 m6	k5, m5 are used instead of k6, m6 in highly accurate situation.
	General load and heavy load P≥0.07Cr P≤0.25Cr	Applicable general machinery, motors, turbines, pumps, internal combustion engines, gear drives, woodworking machinery	18 65 65 100 100 140 140 280 280 500 500 -	m5 m6 n6 p6 r6 r7	
	Heavy load and impact load P>0.25Cr	Journal boxes and traction motors for locomotives and other railway heavy vehicles	All diameters	m6 n6 p6 r6 r7	larger than general clearance
		Bearings with tapered bore and adapter sleeve			
	All loads	General situation	All diameters		See radial internal clearance reduction

配合

轴和外壳的配合
调心滚子轴承

此表列出相对特定工作条件下所推荐的主轴和外壳的配合

外壳

条件			运行实例		公差符号	备注
一体的外壳	旋转的外圈负荷	可变负荷方向	双轴承偏心轴结构		P6	外圈不能轴向位移
		薄壁外壳、重负荷的轴承	吊车用支撑轮车毂、曲柄轴承		P7	
		普通负荷和可变负荷	车毂、曲柄轴承		N7	
		轻负荷和可变负荷	传送辊、滑轮、张紧轮		M7	
	不确定的负荷方向	重冲击负荷	牵引电机			
分开或一体的外壳		重负荷，普通，外圈无需轴向位移	电机、泵、曲轴主轴承		K7	外圈作为轴线的固定端
		重负荷、轻负荷、需要轴向更换外圈	电机、泵、曲轴主轴承		J7	外圈作为轴线的浮动端
	静止的外圈负荷	冲击负荷、暂时完全空载	货车用轴颈箱			
		各种负荷	通用，火车用轴颈箱		H7	外圈可轻易地轴向位移
		普通负荷或轻负荷，一操作状态下的负荷	传动轴条		H8	
		通过轴供热	烘干机		G7	
一体的外壳	需特别精度的情况	很精确的运行在不同负荷下变形小	用于机床主轴	外径小于125mm	M6	外圈不可轴向位移
				外径125至250mm	N6	
				外径超过250mm	P6	
		在轻负荷或方向不确定负荷下的很精确的运行	高速离心压缩机中的定位轴承		K6	外圈不可轴向位移
		很精确的运行，外圈需轴向位移	高速离心压缩机中的浮动端轴承		J6	外圈可轻易地进行轴向位移

Coordination

Shaft and Housing Coordination
Spherical Roller Bearings

This table lists the mating of the shaft and housing as recommended for specific operating conditions

Housing

Condition			Operational Example		Tolerance Symbol	Remark
General housing	Rotating outer ring load	Variable load direction	Double bearing eccentric shaft structure		P6	Outer ring could not be displaced axially
		Thin-walled housing, heavy-load bearings	Crane bearing wheel hub, crank bearing		P7	
		General and variable load	Hub, crank bearing		N7	
		Light and variable load	Conveying roller, pulley, tension wheel		M7	
	Uncertained load direction	Heavy impact load	Traction motor			
Separate or integral housing		Heavy load, general, outer ring is not necessary axial displaced.	Motor, pump, main bearing of crankshaft		K7	The outer ring serves as the fixed end of the axis
		Heavy load, light load, axial replacement of the outer ring is required	Motor, pump, crankshaft main bearing		J7	The outer ring acts as the floating end of the axis
	Static outer ring load	Impact load, temporarily idling completely	Journal box for trucks			
		All loads	General purpose, train journal box		H7	The outer ring can be easily displaced axially
		General or light load, load of single operation state	Driven shaft strip		H8	
		Heating through the shaft	Dryer		G7	
General housing	Special precision required	The deformation is small when operating accurately with different loads	For machine tool spindles	Outer diameter <125mm	M6	The outer ring cannot be easily displaced axially
				125mm<Outer diameter< 250mm	N6	
				Outer diameter >250mm	P6	
		Operating precisely with light load or uncertained direction	Locating bearings in high-speed centrifugal compressors		K6	The outer ring cannot be easily displaced axially
		Outer ring will take axial displacement in accurate operation.	Bearings at floated end in high speed centrifugal compressors		J6	The outer ring can be easily displaced axially

配合

内圈-工业设备轴承精度等级K和N（公制）

圆锥滚子轴承-内圈

Coordination

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

Tapered Roller Bearings - Inner Ring

轴承内径 Bearing inner diameter			内圈旋转 Inner ring rotation						内圈静止 The outer ring static											
范围 Range		公差 Tolerance	轴磨削 Shaft grinding 带有中等冲击的恒定载荷 Constant load with moderate impact			内圈旋转或静止 Inner ring in rotation or static 轴磨削或未磨削 Shaft grinded or without grinded 重载荷或高速或冲击 Heavy load or high speed or impact			轴未磨削 Shaft without grinded 中等载荷无冲击 Midium load without impact			轴磨削 Shaft grinded 中等载荷无冲击 Midium load without impact			轴未磨削 Shaft without grinded 滑轮、轮毂、惰轮 Pulley, wheel, idler			轴淬火和磨削 Shaft quenching and grinding 轮子心轴 Wheel spindle		
大于 Larger than	包括 Incl.		轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in	
10.000	18.000	-0.012	0.018	0.030T	m6	+0.023	0.035T	n6	0.000	0.012T	h6	-0.006	0.006T	g6	-0.006	0.006T	g6	-0.016	0.004L	f6
		0.000	0.007	0.007T		+0.012	0.012T		-0.011	0.011L		-0.017	0.017L		-0.017	0.017L		-0.027	0.027L	
0.3937	0.7087	-0.0005	0.0007	0.0012T		+0.0009	0.0014T		0.0000	0.0005T		-0.0002	0.0002T		-0.00025	-0.00025T		-0.0006	0.0002L	
		0.0000	0.0003	0.0003T		+0.0005	0.0005T		-0.0004	0.0004L		-0.0007	0.0007L		-0.00065	-0.00065L		-0.0011	0.0011L	
18.000	30.000	-0.012	0.021	0.033T	m6	+0.028	0.040T	n6	0.000	0.012T	h6	-0.007	0.005T	g6	-0.007	0.005T	g6	-0.020	0.008L	f6
		0.000	0.008	0.008T		+0.015	0.015T		-0.013	0.013L		-0.020	0.020L		-0.020	0.020L		-0.033	0.033L	
0.7087	1.1811	-0.0005	0.0008	0.0013T		+0.0011	0.0016T		0.0000	0.0005T		-0.0003	0.0002T		-0.0003	0.0002T		-0.0008	0.0003L	
		0.000	0.0003	0.0003T		+0.0006	0.0006T		-0.0005	0.0005L		-0.0008	0.0008L		-0.0008	0.0008L		-0.0013	0.0013L	
30.000	50.000	-0.012	0.025	0.037T	m6	+0.033	0.045T	n6	0.000	0.012T	h6	-0.009	0.003T	g6	-0.009	0.003T	g6	-0.025	0.013L	f6
		0.000	0.009	0.009T		+0.017	0.017T		-0.016	0.016L		-0.025	0.025L		-0.025	0.025L		-0.041	0.041L	
1.1811	1.9685	-0.0005	0.0010	0.0015T		+0.0013	0.0018T		0.0000	0.0005T		-0.0004	0.0001T		-0.0004	0.0001T		-0.0010	0.0005L	
		0.000	0.0004	0.0004T		+0.0007	0.0007T		-0.0006	0.0006L		-0.0010	0.0010L		-0.0010	0.0010L		-0.0016	0.0016L	
50.000	80.000	-0.015	0.030	0.045T	m6	+0.039	0.054T	n6	0.000	0.015T	h6	-0.010	0.005T	g6	-0.010	0.005T	g6	-0.030	0.015L	f6
		0.000	0.011	0.011T		+0.020	0.020T		-0.019	0.019L		-0.029	0.029L		-0.029	0.029L		-0.049	0.049L	
1.9685	3.1496	-0.0006	0.0012	0.0018T		+0.0015	0.0021T		0.0000	0.0006T		-0.0004	0.0002T		-0.0004	0.0002T		-0.0012	0.0006L	
		0.0000	0.0004	0.0005T		+0.0008	0.0008T		-0.0007	0.0007L		-0.0011	0.0011L		-0.0011	0.0011L		-0.0019	0.0019L	
80.000	120.000	-0.020	0.035	0.055T	m6	+0.045	0.065T	n6	0.000	0.020T	h6	-0.012	0.008T	g6	-0.012	0.008T	g6	-0.036	0.016L	f6
		0.000	0.013	0.013T		+0.023	0.023T		-0.022	0.022L		-0.034	0.034L		-0.034	0.034L		-0.058	0.058L	
3.1496	4.7244	-0.0008	0.0014	0.0022T		+0.0019	0.0027T		0.0000	0.0008T		-0.0005	0.0003T		-0.0005	0.0003T		-0.0014	0.0006L	
		0.0000	0.0005	0.0005T		+0.0010	0.0010T		-0.0009	0.0009L		-0.0014	0.0014L		-0.0014	0.0014L		-0.0023	0.0023L	
120.000	180.000	-0.025	0.052	0.077T	n6	+0.068	0.093T	p6	0.000	0.025T	h6	-0.014	0.011T	g6	-0.014	0.011T	g6	-0.043	0.018L	f6
		0.000	0.027	0.027T		+0.043	0.043T		-0.025	0.025L		-0.039	0.039L		-0.039	0.039L		-0.068	0.068L	
4.7244	7.0866	-0.0010	0.0020	0.0030T		+0.0027	0.0037T		0.0000	0.0010T		-0.0006	0.0004T		-0.0006	0.0004T		-0.0016	0.0006L	
		0.0000	0.0011	0.0011T		+0.0017	0.0017T		-0.0010	0.0010L		-0.0016	0.0016L		-0.0016	0.0016L		-0.0026	0.0026L	

T=过盈配合 Interference fit
L=间隙配合 Clearance fit

配合

内圈-工业设备轴承精度等级K和N（公制）

圆锥滚子轴承-内圈

Coordination

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

Tapered Roller Bearings - Inner Ring

轴承内径 Bearing inner diameter 范围 Range		公差 Tolerance	内圈旋转 Inner ring rotation: 轴磨削 Shaft grinding 带有中等冲击的恒定载荷 Constant load with moderate impact			内圈旋转或静止 Inner ring in rotation or static: 轴磨削或未磨削 Shaft grinded or without grinded 重载荷或高速或冲击 Heavy load or high speed or impact			内圈静止 The outer ring static: 轴未磨削 Shaft without grinded 中等载荷无冲击 Midium load without impact			内圈静止 The outer ring static: 轴磨削 Shaft grinded 中等载荷无冲击 Midium load without impact			内圈静止 The outer ring static: 轴未磨削 Shaft without grinded 滑轮、轮毂、惰轮 Pulley, wheel, idler			内圈静止 The outer ring static: 轴淬火和磨削 Shaft quenching and grinding 轮子心轴 Wheel spindle		
大于 Larger than	包括 Incl.		轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in	
180.000 7.0866	200.000 7.8740					+0.106 +0.077 +0.042 +0.0030	0.136T 0.077T 0.0054T 0.0030T													
200.000 7.8740	225.000 8.8583	-0.030 0.000 -0.0012 0.0000	+0.060 +0.031 +0.0024 +0.0012	0.090T 0.031T 0.0035T 0.0012T	n6	+0.109 +0.080 +0.0043 +0.0031	0.139T 0.080T 0.0055T 0.0031T	r6	0.000 -0.029 0.0000 -0.0011	0.030T 0.029L 0.0012T 0.0011L	h6	-0.015 -0.044 -0.0006 -0.0017	0.015T 0.044L 0.0006T 0.0017L	g6	-0.015 -0.044 -0.0006 -0.0017	0.015T 0.044L 0.0006T 0.0017L	g6	-0.050 -0.079 -0.0020 -0.0031	0.020L 0.079L 0.0008L 0.0031L	f6
225.000 8.8583	250.000 9.8425					+0.113 +0.084 +0.0044 +0.0033	0.143T 0.084T 0.0056T 0.0033T													
250.000 9.8425	280.000 11.0236	-0.035 0.000 -0.0014 0.0000	-0.035 0.000 +0.0026 +0.0013	-0.035 0.000 0.0040T 0.0013T	n6	+0.146 +0.094 +0.0057 +0.0037	0.181T 0.094T 0.0071T 0.0037T	r7	0.000 -0.032 0.0000 -0.0012	0.035T 0.032L 0.0014T 0.0012L	h6	-0.017 -0.049 -0.0007 -0.0019	0.018T 0.049L 0.0007T 0.0019L	g6	-0.017 -0.049 -0.0007 -0.0019	0.018T 0.049L 0.0007T 0.0019L	g6	-0.056 -0.068 -0.0022 -0.0027	0.021L 0.088L 0.0008L 0.0035L	f6
280.000 11.0236	315.000 12.4016					+0.150 +0.098 +0.0059 +0.0039	0.185T 0.098T 0.0073T 0.0039T													
315.000 12.4016	355.000 13.9764	-0.040 0.000 -0.0016 0.0000	+0.073 +0.037 +0.0029 +0.0015	0.113T 0.037T 0.0044T 0.0015T	n6	+0.165 +0.108 +0.0065 +0.0043	0.205T 0.108T 0.0081T 0.0043T	r7	0.000 -0.036 0.0000 -0.0014	0.040T 0.036L 0.0016T 0.0014L	h6	-0.018 -0.075 -0.0007 -0.0030	0.022T 0.075L 0.0009T 0.0030L	g7	-0.018 -0.075 -0.0007 -0.0029	0.022T 0.075L 0.0009T 0.0029L	g7	-	-	-

T=过盈配合 Interference fit
L=间隙配合 Clearance fit

JXN®

配合

Coordination

内圈-工业设备轴承精度等级K和N（公制）

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

圆锥滚子轴承-内圈

Tapered Roller Bearings - Inner Ring

轴承内径 Bearing inner diameter			内圈旋转 Inner ring rotation						内圈静止 The outer ring static												
范围 Range		公差 Tolerance	轴磨削 Shaft grinding 带有中等冲击的恒定载荷 Constant load with moderate impact			内圈旋转或静止 Inner ring in rotation or static 轴磨削或未磨削 Shaft grinded or without grinded 重载荷或高速或冲击 Heavy load or high speed or impact			轴未磨削 Shaft without grinded 中等载荷无冲击 Midium load without impact			轴磨削 Shaft grinded 中等载荷无冲击 Midium load without impact			轴未磨削 Shaft without grinded 滑轮、轮毂、惰轮 Pulley, wheel, idler			轴淬火和磨削 Shaft quenching and grinding 轮子心轴 Wheel spindle		
大于 Larger than	包括 Incl.		轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol	轴外径偏差 Deviation of shaft outer diameter	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in	
355.000	400.000	-0.040	+0.073	0.113T		+0.171	0.211T		0.000	0.040T		-0.018	0.022T		-0.018	0.022T				
		0.000	+0.037	0.037T	n6	+0.114	0.114T	r7	-0.036	0.036L	h6	-0.075	0.075L	g7	-0.075	0.075L	g7	-	-	-
13.9764	15.7580	-0.0016	+0.0029	0.0044T		+0.0067	0.0083T		0.0000	0.0016T		-0.0007	0.0009T		-0.0007	0.0009T				
		0.0000	+0.0015	0.0015T		+0.0045	0.0045T		-0.0014	0.0014L		-0.0030	0.0030L		-0.0029	0.0029L				
400.000	450.000					+0.189	0.234T													
						+0.126	0.126T													
15.7580	17.7165	-0.045	+0.080	0.0125T		+0.0074	0.0092T		0.000	0.045T		-0.020	0.025T		-0.020	0.025T				
		0.000	+0.040	0.040T	n6	+0.0092	0.0050T	r7	-0.040	0.040L	h6	-0.083	0.083L	g7	-0.083	0.083L	g7	-	-	-
450.000	500.000	-0.0018	+0.0031	0.0049T		+0.195	0.240T		0.0000	0.0018T		-0.0008	0.0008T		-0.0008	0.0008T				
		0.0000	+0.0016	0.0016T		+0.132	0.132T		-0.0020	0.0016L		-0.0033	0.0033L		-0.0033	0.0033L				
						+0.0077	0.0094T													
17.7165	29.6850					+0.0052	0.0052T													
500.000	630.000	-0.050	+0.100	0.150T		+0.200	0.250T		0.000	0.050T		-0.050	0.000		-0.050	0.000				
		0.000	+0.050	0.050T	-	+0.125	0.125T	-	-0.050	0.050L	-	-0.100	0.100L	-	-0.100	0.100L	-	-	-	-
29.6850	24.8032	-0.0020	+0.0039	0.0059T		+0.0079	0.0098T		0.0000	0.0020T		-0.0020	0.0000		-0.0020	0.0000				
		0.0000	+0.0020	0.0020T		+0.0049	0.0049T		-0.0020	0.0020L		-0.0039	0.0039L		-0.0039	0.0039L				
630.000	800.000	-0.080	+0.125	0.205T		+0.225	0.305T		0.000	0.080T		-0.080	0.000		-0.080	0.000				
		0.000	+0.050	0.050T	-	+0.150	0.105T	-	-0.075	0.075L	-	-0.150	0.150L	-	-0.150	0.150L	-	-	-	-
24.8032	31.4961	-0.0031	+0.0049	0.0081T		+0.0089	0.0102T		0.0000	0.0031T		-0.0031	0.0000		-0.0031	0.0000				
		0.0000	+0.0020	0.0020T		+0.0059	0.0041T		-0.0030	0.0030L		-0.0059	0.0059L		-0.0059	0.0059L				
800.000	1000.000	-0.100	+0.150	0.250T		+0.275	0.375T		0.000	0.100T		-0.100	0.000		-0.100	0.000				
		0.000	+0.050	0.050T	-	+0.175	0.175T	-	-0.100	0.100L	-	-0.200	0.200L	-	-0.200	0.200L	-	-	-	-
31.4961	39.3701	-0.0039	+0.0059	0.0098T		+0.0108	0.0148T		0.0000	0.0039T		-0.0039	0.0000		-0.0039	0.0000				
		0.0000	+0.0020	0.0020T		+0.0069	0.0069T		-0.0039	0.0039L		-0.0079	0.0079L		-0.0079	0.0079L				

T=过盈配合 Interference fit
L=间隙配合 Clearance fit

配合

内圈-工业设备轴承精度等级K和N（公制）

圆锥滚子轴承-外圈—工业设备 轴承精度等级K与N（公制）

Coordination

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

Tapered Roller Bearings - Outer Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

轴承外径 Bearing outer diameter / 范围 Range / 大于 Larger than	包括 Incl.	公差 Tolerance	外圈静止 Outside ring is static / 外圈浮动或被夹紧 The outside ring is floating or clamped / 轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	外圈静止 Outside ring is static / 外圈可调 Outside ring is ajustable / 轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	外圈不可调或在调整套内 The outer ring is not adjustable or in the adjustment sleeve / 轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	外圈旋转 Outer ring is rotating / 外圈不可调或在调整套内或滑轮—被夹紧的外圈 The outer ring is not adjustable or in the adjustment sleeve or pulley - the clamped outer ring / 轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in	
		0.000	+0.007	0.007L		-0.009	0.009T		-0.035	0.035T		-0.041	0.041T	
18.000	30.000	-0.012	+0.028	0.040L	G7	+0.012	0.024L	J7	-0.014	0.002T	P7	-0.020	0.008T	R7
0.7087	1.1811	0.0000	+0.0003	0.0003L		-0.0004	0.0004T		-0.0014	0.0014T		-0.0016	0.0016T	
		-0.0005	+0.0011	0.0016L		+0.0005	0.0009L		-0.0005	0.0001T		-0.0009	0.0003T	
		0.000	+0.009	0.009L		-0.011	0.011T		-0.042	0.042T		-0.050	0.050T	
30.000	50.000	-0.014	+0.034	0.048L	G7	+0.014	0.028L	J7	-0.017	0.003T	P7	-0.025	0.011T	R7
1.1811	1.9685	0.0000	+0.0004	0.0004L		-0.0004	0.0004T		-0.0017	0.0017T		-0.0020	0.0020T	
		-0.0006	+0.0013	0.0019L		+0.0006	0.0011L		-0.0007	0.0001T		-0.0010	0.0004T	
												-0.060	0.060T	
50.000	65.000											-0.030	0.014T	
1.9685	2.5591	0.000	+0.010	0.010L		-0.012	0.012T		-0.051	0.051T		-0.0024	0.0024T	
		-0.016	+0.040	0.056L	G7	+0.018	0.034L	J7	-0.021	0.005T	P7	-0.0012	0.0006T	R7
		0.0000	+0.0004	0.0004L		-0.0005	0.0005T		-0.0020	0.0020T		-0.062	0.062T	
65.000	80.000	-0.0006	+0.0016	0.0022L		+0.0007	0.0013L		-0.0008	0.0002T		-0.032	0.016T	
2.5591	3.1496											-0.0021	0.0024T	
												-0.0013	0.0006T	
												-0.073	0.073T	
80.000	100.000											-0.038	0.020T	
3.1496	3.9370	0.000	+0.012	0.012L		-0.013	0.013T		-0.059	0.059T		-0.0029	0.0029T	
		-0.018	+0.047	0.065L	G7	+0.022	0.040L	J7	-0.024	0.006T	P7	-0.0015	0.0008T	R7
		0.0000	+0.0005	0.0005L		-0.0005	0.0005T		-0.0023	0.0023T		-0.076	0.076T	
100.000	120.000	-0.0007	+0.0019	0.0026L		+0.0009	0.0016L		-0.0009	0.0002T		-0.041	0.023T	
3.9370	4.7244											-0.0030	0.0030T	
												-0.0016	0.0009T	

配合

Coordination

内圈-工业设备轴承精度等级K和N（公制）

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

圆锥滚子轴承-外圈—工业设备 轴承精度等级K与N（公制）

Tapered Roller Bearings - Outer Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

轴承外径 Bearing outer diameter		公差 Tolerance	外圈静止 Outside ring is static				外圈静止 Outside ring is static						外圈旋转 Outer ring is rotating		
范围 Range			外圈浮动或被夹紧 The outside ring is floating or clamped				外圈可调 Outside ring is ajustable			外圈不可调或在调整套内 The outer ring is not adjustable or in the adjustment sleeve			外圈不可调或在调整套内或滑轮—被夹紧的外圈 The outer ring is not adjustable or in the adjustment sleeve or pulley - the clamped outer ring		
大于 Larger than	包括 Incl.		轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol		轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in			mm in	mm in		mm in	mm in		mm in	mm in	
													-0.088	0.088T	
120.000	140.000												-0.048	0.028T	
4.7244	5.5188	0.000	+0.014	0.014L			+0.014	0.014L		-0.068	0.068T		-0.0035	0.0035T	
		-0.020	+0.054	0.074L	G7		+0.026	0.046L	J7	-0.028	0.074T	P7	-0.0019	0.0011T	R7
		0.0000	+0.0006	0.0006L			+0.0006	0.0006L		-0.0027	0.0027T		-0.090	0.090T	
140.000	150.000	-0.0008	+0.0021	0.0029L			+0.0010	0.0018L		-0.0011	0.0003T		-0.050	0.030T	
5.5188	5.9055												-0.0035	0.0035T	
													-0.0020	0.0012T	
													-0.090	0.090T	
150.000	160.000												-0.050	0.025T	
5.9055	6.2992	0.000	+0.014	0.014L			+0.014	0.014L		-0.068	0.068T		-0.0035	0.0035T	
		-0.025	+0.054	0.079L	G7		+0.026	0.051L	J7	-0.028	0.003T	P7	-0.0020	0.0010T	R7
		0.0000	+0.0006	0.0006L			+0.0006	0.0006L		-0.0027	0.0027T		-0.093	0.093T	
160.000	180.000	-0.0010	+0.0021	0.0031L			+0.0010	0.0020L		-0.0011	0.0001T		-0.053	0.028T	
6.2992	7.0866												-0.0037	0.0037T	
													-0.0021	0.0011T	
													-0.106	0.106T	
180.000	200.000												-0.060	0.030T	
7.0866	7.8740	0.000	+0.015	0.015L			-0.016	0.016T		-0.079	0.079T		-0.0042	0.0042T	
		-0.030	+0.061	0.091L	G7		+0.030	0.060L	J7	-0.033	0.003T	P7	-0.0024	0.0012T	R7
		0.0000	+0.0006	0.0006L			-0.00076	0.0006T		-0.0031	0.0031T		-0.109	0.109T	
200.000	225.000	-0.0012	+0.0024	0.0036L			+0.0012	0.0024L		-0.0014	0.0001T		-0.063	0.033T	
7.8740	8.8583												-0.0043	0.0043T	
													-0.0025	0.0013T	

配合

Coordination

内圈-工业设备轴承精度等级K和N（公制）

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

圆锥滚子轴承-外圈—工业设备 轴承精度等级K与N（公制）

Tapered Roller Bearings - Outer Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

轴承外径 Bearing outer diameter			外圈静止 Outside ring is static			外圈静止 Outside ring is static						外圈旋转 Outer ring is rotating		
范围 Range		公差 Tolerance	外圈浮动或被夹紧 The outside ring is floating or clamped			外圈可调 Outside ring is ajustable			外圈不可调或在调整套内 The outer ring is not adjustable or in the adjustment sleeve			外圈不可调或在调整套内或滑轮—被夹紧的外圈 The outer ring is not adjustable or in the adjustment sleeve or pulley - the clamped outer ring		
大于 Larger than	包括 Incl.		轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in		mm in	mm in		mm in	mm in		mm in	mm in	
		0.000	+0.015	0.015L		-0.016	0.016T		-0.079	0.079T		-0.113	0.113T	
225.000	250.000	-0.030	+0.061	0.091L	G7	+0.030	0.060L	J7	-0.033	0.003T	P7	-0.067	0.037T	R7
8.8583	9.8425	0.0000	+0.0006	0.0006L		-0.00076	0.0006T		-0.0031	0.0031T		-0.0044	0.0044T	
		-0.0012	+0.0024	0.0036L		+0.0012	0.0024L		-0.0014	0.0001T		-0.0026	0.0015T	
												-0.126	0.126T	
250.000	280.000											-0.074	0.039T	
9.8425	11.0236	0.000	+0.017	0.017L		-0.016	0.016T		-0.088	0.088T		-0.0050	0.0050T	
		-0.035	+0.069	0.104L	G7	+0.036	0.071L	J7	-0.036	0.001T	P7	-0.0029	0.0015T	R7
		0.0000	+0.0007	0.0007L		-0.0006	0.0006T		-0.0035	0.0035T		-0.130	0.130T	
280.000	315.000	-0.0014	+0.0027	0.0041L		+0.0013	0.0028L		-0.0014	0.0000		-0.078	0.043T	
11.0236	12.4016											-0.0051	0.0051T	
												-0.0031	0.0017T	
												-0.144	0.144T	
315.000	355.000											-0.087	0.047T	
12.4016	13.9764	0.000	+0.062	0.062L		-0.018	0.018T		-0.098	0.098T		-0.0057	0.0057T	
		-0.040	+0.098	0.138L	F6	+0.039	0.079L	J7	-0.041	0.001T	P7	-0.0034	0.0019T	R7
		0.0000	+0.0024	0.0024L		-0.0007	0.0007T		-0.0039	0.0039T		-0.150	0.150T	
355.000	400.000	-0.0016	+0.0039	0.0054L		+0.0015	0.0031L		-0.0016	0.0001T		-0.093	0.053T	
13.9764	15.7480											-0.0059	0.0059T	
												-0.0037	0.0021T	

配合

Coordination

内圈-工业设备轴承精度等级K和N（公制）

Inner Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

圆锥滚子轴承-外圈—工业设备 轴承精度等级K与N（公制）

Tapered Roller Bearings - Outer Rings - Industrial Equipment Bearing Accuracy Classes K and N (Metric)

轴承外径 Bearing outer diameter			外圈静止 Outside ring is static				外圈静止 Outside ring is static						外圈旋转 Outer ring is rotating		
范围 Range		公差 Tolerance	外圈浮动或被夹紧 The outside ring is floating or clamped				外圈可调 Outside ring is ajustable			外圈不可调或在调整套内 The outer ring is not adjustable or in the adjustment sleeve			外圈不可调或在调整套内或滑轮—被夹紧的外圈 The outer ring is not adjustable or in the adjustment sleeve or pulley - the clamped outer ring		
大于 Larger than	包括 Incl.		轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol		轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol	轴承座内径偏差 Bore diameter deviation of bearing housing	配合 Fit	符号 Symbol
mm in	mm in	mm in	mm in	mm in			mm in	mm in		mm in	mm in		mm in	mm in	
400.000 15.7480	450.000 17.7165	0.000 -0.045 0.0000 -0.0018	+0.068 +0.095 +0.0027 +0.0037	0.068L 0.140L 0.0027L 0.0055L	F5		-0.020 +0.043 -0.0008 +0.0017	0.020T 0.088L 0.0008T 0.0035L	J7	-0.108 -0.045 -0.0043 -0.0018	0.108T 0.000 0.0043T 0.0000	p7	-0.166 -0.103 -0.0065 -0.0041	0.166T 0.058T 0.0065T 0.0023T	R7
450.000 17.7165	500.000 19.6850												-0.172 -0.109 -0.0068 -0.0043	0.172T 0.064T 0.0068T 0.0025T	
500.000 19.6850	630.000 24.8032	0.000 -0.050 0.0000 -0.0020	+0.065 +0.115 +0.0026 +0.0045	0.065L 0.165L 0.0026L 0.0065L	-		-0.022 +0.046 -0.0009 +0.0018	0.022T 0.096L 0.0009T 0.0038L	-	-0.118 -0.050 -0.0046 -0.0020	0.118T 0.000 0.0046T 0.0000	-	-0.190 -0.120 -0.0075 -0.0047	0.190T 0.070T 0.0075T 0.0028T	R7
630.000 24.8032	800.000 31.4961	0.000 -0.080 0.0000 -0.0031	+0.075 +0.150 +0.0030 +0.0059	0.075L 0.225L 0.0030L 0.0089L	-		-0.025 +0.050 -0.0098 +0.0020	0.025T 0.130L 0.0098T 0.0051L	-	-0.150 -0.175 -0.0059 -0.0030	0.150T 0.000 0.0059T 0.0000	-	-	-	R7
800.000 31.4961	1000.000 39.3701	0.000 -0.100 0.0000 -0.0039	+0.075 +0.175 +0.0030 +0.0069	0.075L 0.275L 0.0030L 0.0108L	-		-0.025 +0.075 -0.0098 +0.0030	0.025T 0.175L 0.0098T 0.0069L	-	-0.200 -0.100 -0.0079 -0.0039	0.200T 0.000 0.0079T 0.0000	-	-	-	R7

滚动轴承的配置

机器中的旋转轴通常由两套滚动轴承做支承.根据实际应用,可以采用不同的轴承配置。

固定—浮动轴承配置

由于工作温度的变化导致轴的伸长或缩短，所以在配置的轴承中，为防止轴的轴向滑动，将一套轴承作为固定轴承，用于轴的定位与固定。轴的另一端是浮动轴承，浮动轴承可轴向移动以解决轴向定位的调整以及温度变化导致的轴向位移。

定位轴承通常采用的是能够承受径向载荷和轴向载荷的径向轴承，包括：深沟球轴承、自调心球轴承、双列或配对单列角接触球轴承，调心滚子轴承、配组的圆锥滚子轴承、NUP型圆柱滚子轴承，或带HJ角圈的NJ型圆柱滚子轴承及能承受轴向及径向载荷的轴承组合。

浮动轴承通常采用带保持架的圆柱滚子轴承N和NU系列或者滚针轴承。其他类型的轴承作为浮动轴承使用时，须在安装时外圈与轴承座采用间隙配合，以保证轴承在受到轴向力时可以自由轴向移动。

图1采用两套深沟球轴承配置，浮动端轴承外圈采用松配合保证轴向游动。图2、图3、图4、图5、图6通过NU型圆柱滚子轴承的内圈保证轴向游动。图7采用一套调心滚子轴承的外圈采用松配合保证轴向游动。

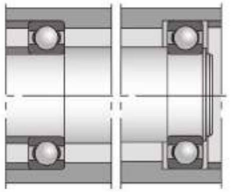


图1 深沟球轴承—深沟球轴承

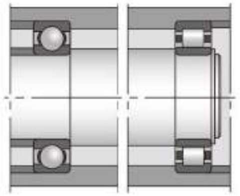


图2 深沟球轴承—圆柱滚子轴承

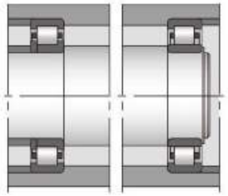


图3 圆柱滚子轴承—圆柱滚子轴承

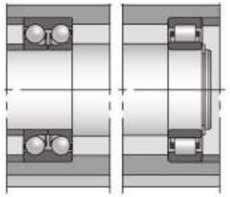


图4 双列角接触球轴承—圆柱滚子轴承

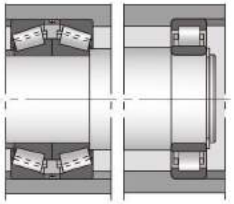


图5 配组圆锥滚子轴承—圆柱滚子轴承

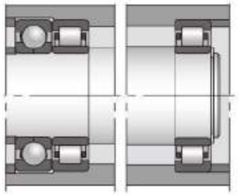


图6 组合轴承—圆柱滚子轴承

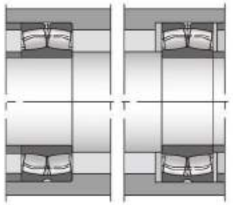


图7 双列调心滚子轴承—双列调心滚子轴承

Rolling Bearing Figuration

The rotating shaft in the machine is usually supported by two sets of rolling bearings. Different bearing configurations depending on actual application.

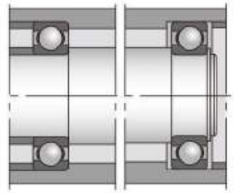
Fixed - Floating Bearing Configuration

Since the shaft will be shortened or lengthened due to the change of operation tempreature, for the bearing configuration, in order to prevent shaft axial sliding, a set of bearings as a fixed bearing for positioning and fixing the shaft. The other end of the shaft is a floating bearing, the floating bearing can be moved axially to adjust the axial positioning and axial displacement caused by temperature changes.

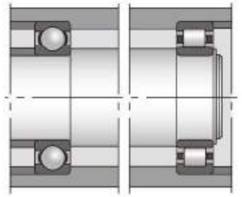
Positioning bearings usually use radial bearings which bear the radial and axial load, including: deep groove ball bearings, self-aligning ball bearings, double-row or single-row angular contact ball bearings, spherical roller bearings, matched tapered roller bearings, NUP type cylindrical roller bearings, NJ-type cylindrical roller bearings with HJ angle ring, and bearing combinations which bear axial and radial load .

Floating bearings usually use cylindrical roller bearings N and NU series with cage or needle roller bearings. Other types of bearings as a floating bearing, the clearance fit should be guaranteed when installing outer ring and bearing housing, to ensure the bearing can move axially and smoothly when subject to the axial force.

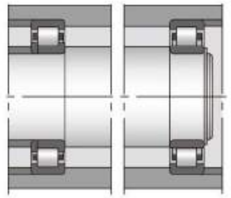
Figure 1 uses two sets of deep groove ball bearing configuration, outer ring of floating bearing with loose fit to ensure axial movement. Figure 2, figure 3, figure 4, figure 5, figure 6 to ensure the axially movement through the inner ring of NU-type cylindrical roller bearings. Figure 7 use the outer ring of a set of Spherical roller bearing with loose fit to ensure axial swimming.



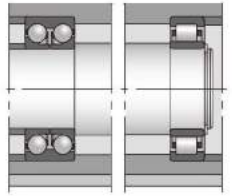
pic1 deep groove ball bearing - deep groove ball bearing



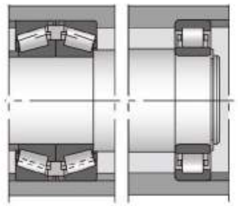
pic2 deep groove ball bearing - cylindrical roller bearing



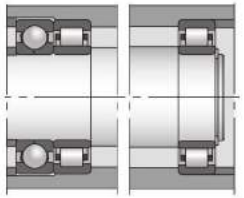
pic3 cylindrical roller bearing - cylindrical roller bearing



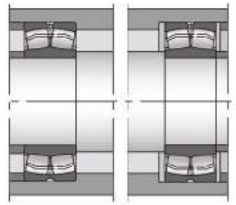
pic4 double row angular contact ball bearings - cylindrical roller bearing



pic5 matched tapered roller bearing - cylindrical roller bearing



pic6 combined bearing - cylindrical roller bearing



pic7 Double row spherical roller bearing - Double row spherical roller bearing

滚动轴承的配置

可调整的轴承配置

因便于调整，该配置适用于轴向定位精度要求较高的场合，通常由两个对称安装的角接触球轴承或圆锥滚子轴承组成，通过调节轴承的一个套圈，获得合适的游隙或所需的预载荷。根据不同工况，轴承布置有O型和X型布置。

图8、图11通过调节一端轴承内圈的预紧来调节两套轴承的预载荷。图9、图10是通过调节外圈的预紧来调节两套轴承的预载荷。

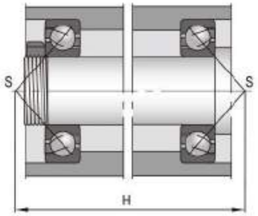


图8 角接触球轴承 O型配置

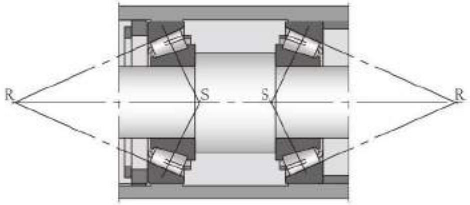


图10 圆锥滚子轴承 X型配置

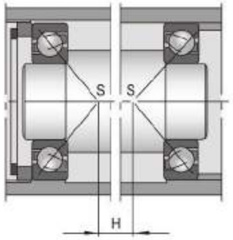


图9 角接触球轴承 X型配置

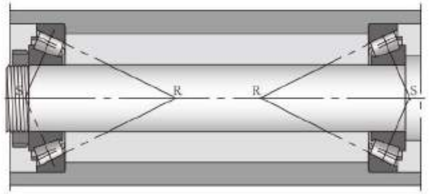


图11 圆锥滚子轴承 O型配置

浮动—浮动轴承配置

在轴向定位要求精度不高的场合，可采用两端均为浮动的轴承配置。适合作为浮动轴承配置的轴承包括：深沟球轴承、调心球轴承、调心滚子轴承以及圆柱滚子轴承。

图12、图13 是通过预留外圈与端面间隙保证轴承的浮动。图14是安装时预留内圈与滚子端面间隙保证使用中的轴向位移。

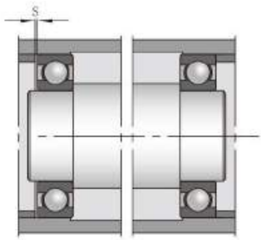


图12 深沟球轴承

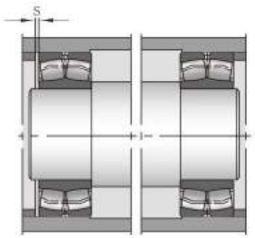


图13 双列调心滚子轴承

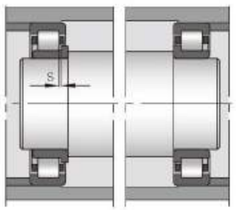


图14 圆柱滚子轴承

Rolling Bearing Figuration

Adjustable Bearing Configuration

To make adjustment easy, the configuration is suitable for the occasion with strict requirement on accurate axial positioning generally it is assembled by two angular contact ball bearings which installed symmetrically, or tapered roller bearings. To obtain the appropriate clearance or the required preload by adjusting a ring of the bearing. According to different conditions, the bearing is arranged in O and X type.

Figure 8,11 adjusting the preload of two sets of bearings by adjusting the pre-tightening of inner ring of one end bearing. Figure 9,10 adjusting the preload of two sets of bearings by adjusting the pre-tightening of outer ring.

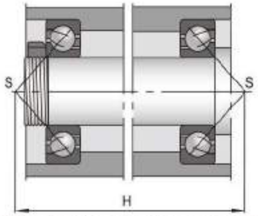


figure8 Angular contact ball bearings - Type O configuration

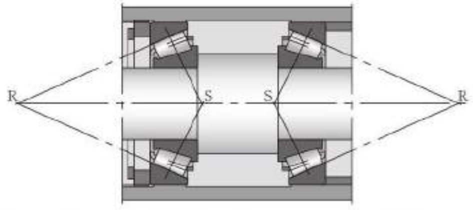


figure10 Tapered ball bearing - Type X configuration

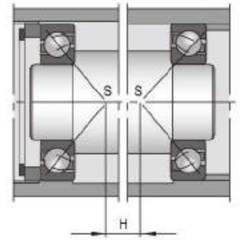


figure9 Angular contact ball bearings - Type X configuration

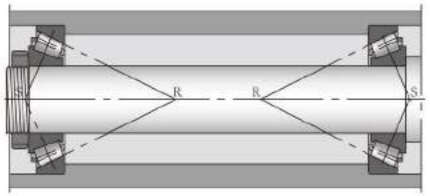


figure11 Tapered ball bearing - Type O configuration

Floating - Floating Bearing Configuration

In the occasions with general accuracy requirement on axial positioning, the ends could be configurated with floating bearing. The bearings fit for floating configuration include: deep groove ball bearings, spherical ball bearings and spherical roller bearings and cylindrical roller bearings.

Figure 12, figure 13 the clearance between outer ring and the end is reserved to ensure floating. Figure 14 the clerance between inner ring and roller end is reserved to guarantee the axial displacement.

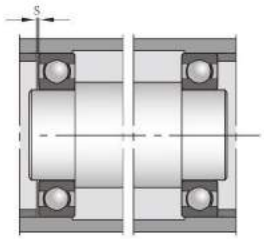


figure12 Deep groove ball bearing

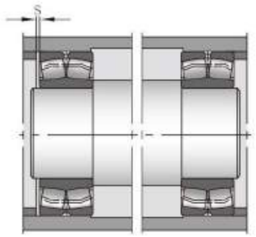


figure13 Double-row spherical roller bearing

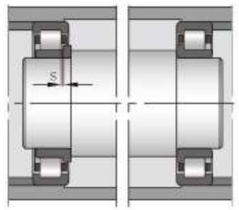


figure14 Cylinderical roller bearing

滚动轴承的配置

轴承的轴向定位

为保证固定端轴承的定位，轴承的内外圈必须同时在轴的两个方向固定。浮动端轴承的轴向定位，紧配合的套圈必须轴向固定，而松配合的套圈必须能在其配合面之间自由轴向移动。

定位轴承

内外圈同时通过轴肩、座孔、弹性挡圈、轴端挡盖和螺母等端面压紧，限制轴承内外圈的移动，如图15所示的双列调心滚子轴承通过挡圈和轴肩固定；图16所示的深沟球轴承通过弹性挡圈和轴肩固定；图17所示的双列角接触轴承通过轴承端盖、挡圈和轴肩固定；图18所示的圆柱滚子轴承通过弹性挡圈、端盖进行固定；图19所示的SL系列轴承外圈通过两端的弹性挡圈固定，内圈通过轴肩和挡圈固定。

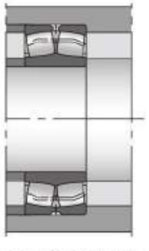


图15双列调心滚子轴承

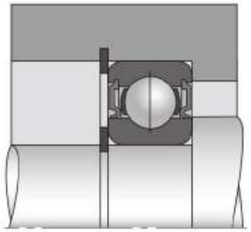


图16深沟球轴承

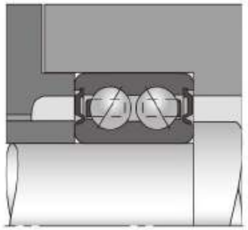


图17 双列角接触球轴承

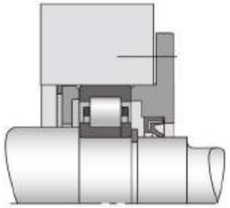


图18 圆柱滚子轴承

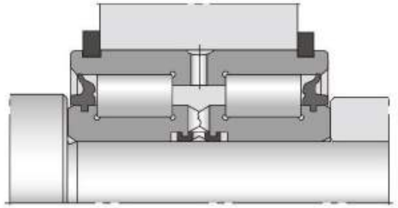


图19 SL系列轴承

浮动轴承：

浮动端轴承与轴(或座孔)配合较紧的内圈(或外圈)必须固定在轴(或座孔)上；另一套圈采用松配合，轴向不固定。如图20、图21所示内圈紧配合，并轴肩和挡圈或挡圈轴向固定，外圈采用松配合，端面两侧留出移动间隙。图22所示的圆柱滚子轴承则是内外圈固定，轴承的轴向浮动通过滚子与内圈的相对移动保证。

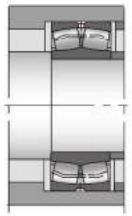


图20 双列调心滚子轴承

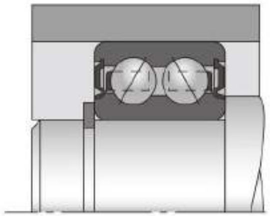


图21 双列角接触球轴承

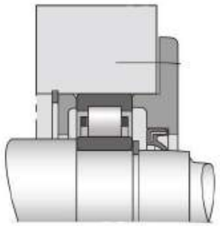


图22 圆柱滚子轴承

Rolling Bearing Figuration

The Axial Positioning of Bearing

In order to ensure the bearing positioning of the fixed end, the inner and outer rings of the bearing must be fixed in both directions of the shaft at the same time. The axial positioning of the floating end bearing, and the tight fitting ring must be axially fixed, and the loose fitted ring must be free to move axially between its mating faces.

Position Bearing

Inner and outer ring through the shoulder, housing, the elastic ring, shaft end cover and nut are pressed tighting at the same time , to limit the movement of the bearing inner and outer rings, as shown in figure 15, the double row spherical roller bearing is fixed through the rib and shaft shoulder. The deep groove ball bearing shown in figure 16 is fixed through the elastic ring and shaft shoulder, double row angular contact bearing shown in figure 17 is fixed by bearing end cap, ring and shaft shoulder; a cylindrical roller bearing shown in figure 18 is fixed through elastic ring, end cap. The outer ring of SL series bearing shown in figure 19 is fixed by elastic ring at both ends, and the inner ring is fixed by shoulder and retainer ring.

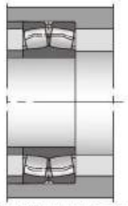


figure15 Double-row spherical roller bearing

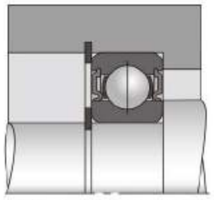
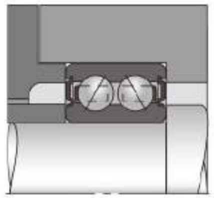


figure16 Deep groove ball bearing


pic-17 Double-row angular contact ball bearing

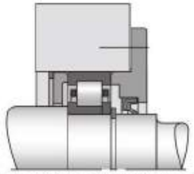
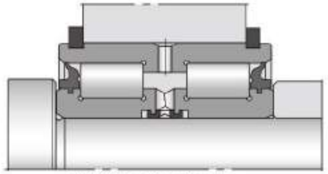


figure18 Cylindrial roller bearing


pic 19 SL series bearing

Floating Bearing

Floating end bearing and shaft (or housing hole) which matched tightly with inner (or outer) ring must be fixed in the shaft (or housing hole) ; another ring is not fixed axially, with loose fit. As shown in figure 20, figure 21 the inner ring fit tightly, and the shoulder and ring or rib are fixed axially, the outer ring is fit in loose, leaving the clearance of movement on both sides. The cylindrical roller bearing shown in figure 22 is fixed by inner and outer rings, and the axial movement of the bearing is ensured by the relative movement between the roller and the inner ring.

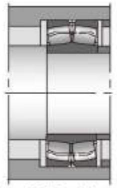


figure20 Double-row spherical roller bearing

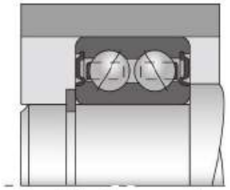


figure21 Double-row angular contact ball bearing

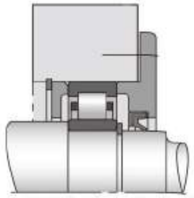


figure22 Cylindrical roller bearing

滚动轴承的配置

滚动轴承的预紧

滚动轴承在使用过程中，根据不同使用场合，轴承在配置时带有正或负的工作游隙，在大部分的情况下,轴承在运转过程时，防止轴承发热卡死，会留有一定的游隙。而在一些应用场合为了提高轴承配置的刚性和旋转精度，会对轴承在安装时进行预紧。

预紧的目的

1. 提高轴承的刚度。
2. 防止轴向振动及共振引起的异音。
3. 在轴的径向及轴向精确定位的同时，抑制轴的跳动，提高轴引导的精度。
4. 防止滚动体在自转及公转过程中打滑，降低零件磨损。
5. 保持滚动体相对套圈的正确位置。
6. 延长轴承的工作寿命。

预紧的形式

根据轴承的类型，预紧的形式可采用轴向预紧和径向预紧。圆柱滚子轴承由于结构原因只能采用径向预紧，对于推力轴承则只能采用轴向预紧。深沟球轴承预紧时也普遍采用轴向预紧。

对于圆锥滚子轴承和角接触球轴承也采用轴向预紧，通常采用背对背或面对面的配置使用，参见图8、图9、图10、图11、图23。图8和图11是采用调整预紧螺母改变成对轴承预紧力，图9和图10是通过改变轴承盖与箱体之间的垫片厚度改变成对轴承预紧力。图23是通过外圈端面的波形弹簧进行预紧。

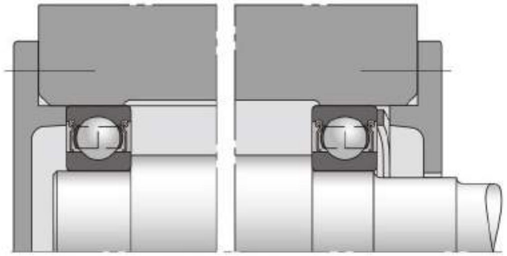


图23 通过波形弹簧片预紧的深沟球轴承

Rolling Bearing Figuration

Preload of Rolling Bearing

During the use of rolling bearings, a positive or negative operational clearance will be arranged according to differenct occasions, most of the time the clearance will be arranged when bearing is running, which will avoid the bearing being locked caused by heat expansion. In order to improve the rigidity of bearing configuration and rotation accuracy, preload will be arranged in installation, in some applications.

Purpose of Preload

1. Improve the rigidity of bearing
2. To eliminate the abnormal noise coused by axial vibration.
3. Preventing the shaft runout when axial and radial positioning precisely, improving the shaft guidance.
4. To prevent the rolling body from slipping in the process of rotation and revolution, to reduce the wear of components.
5. Keep the proper position of the rolling element relative to the ring.
6. Extend the working life of the bearing.

Way of Preload

Axial preload and radial preload could be applied according to the bearing type. Radial preload is the only way for cylindrical roller bearings due to its structure, axial preload must be applied for thrust bearing. It is widely to use axial preload for deep groove ball bearings.

Axial preload is also used for tapered roller bearings and angular contact ball bearings, typically in back-to-back or face-to-face arrangements, see figure 8, 9, 10, 11 and 23. Picuture 8 and 11 shows the adjustment of paired bearings preload through adjusting the preload nut. Figure 9 and 10 shows changing the paired bearing preload through adjusting the thickness of gasket between bearing cover and housing. Figure 23 is preloading by the wave spring of the outer ring end surface.

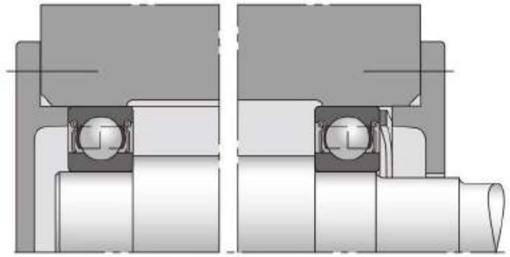


figure 23 The deepp groove ball bearing thatpreloaded by the wave spring

轴承的安装和拆卸

安装程序
根据不同轴承尺寸和应用，以及防止轴承提前失效，可采用不同的安装方法，然而，必须遵循其基本原则。

清洁度
选择一个清洁的环境，在没有灰尘和水气的场合工作，如不能达到该要求，装配人员应尽最大努力使用保护屏罩和清洁布来保持清洁。

工作计划
需知道先要做什么并准备好所需的全部工具，这可以节省工作时间，减少轴承染上灰尘的机会。

检查和准备
1. 安装前准备好所有需要的机器零件，并在安装前彻底地清洗。
   外壳孔要清洗干净，油孔吹干净，不可使用空气软管朝轴承吹风。如使用盲孔，要用磁辊将生产中残留的金属碎片清除掉。
2. 安装前，先仔细阅读总装图并检查即将安装的轴承是否与图中安装轴承相符。
   仔细研究图纸及相关说明，以保证不同零部件的安装顺序正确。
3. 安装前，检查外壳孔、轴的配合面的尺寸与形状精度以及清洁度。
   在最初安装时，按图纸对相关零部件的尺寸精度进行检查，对轴和外壳孔的尺寸和圆度进行仔细的检查，保证其必须达到所需的精度并符合规定的公差范围。与轴承接触的轴台肩和衬垫套应与轴线垂直，轴与台肩相接处圆角必须小到不与轴承孔圆角的半径相接触。
4. 记录并保存相关检查和测量结果，以供需要时参考。

注意：当一切准备工作做好开始安装轴承时，才可将轴承的包装拆掉。

轴和外壳孔的表面粗糙度
安装轴承的轴表面必须干净无任何划痕和毛刺。对于在外壳固定而轴旋转的应用情况下，轴上安装轴承的外圆的粗糙度建议最大Ra=1.6μm。如无法磨削加工，在许多情况下，可用精车达到表面粗糙度为Ra=3.2μm，但过盈配合的量略需增加。可向本公司技术部门咨询推荐量。
对于要求浮动的静止外圈（如在外壳孔内轴向滑动），建议外壳孔粗糙度最大为Ra=1.6μm。如果外圈不要求浮动，表面粗糙度最大Ra=3.2μm一般已令人满意。

Bearing Installation and Disassembly

Installation Procedure
Depending on the bearing size and application, and the prevention of premature failure, different assemble methods may be used, however, the basic principles must be followed.

Cleanliness
Selecting a clean environment to work in which there is no dust and moisture, the assembly operator should make all effort to keep cleanliness by using the protective shield and cleaning cloth.

Working Plan
The time could be saved if preparing all the necessary tools and the bearing dust will be reduced if you understand what should be done first.

Check and Preparation
1. Preparing and cleaning all required parts before installation.
Cleaning the shell housing and the oil hole. Do not use air hose to blow the bearing. Before using the blind hole, the remained metal fragments in the production should be removed by magnetic roller.
2. Read carefully the assembly drawing before installation, and check whether the bearing which will be installed is the same with the bearing of the drawing.
Carefully study the drawings and instructions to ensure the correct installation order of different parts.
3. Before installation, checking the housing hole, matching surface dimension of the shaft, and the geometrical tolerance accuracy of shape, and cleanliness as well.
In the initial installation, dimensional accuracy of the relevant parts should be checked with the drawing, and the dimensions and roundness of the shaft and housing holes should be checked carefully, to ensure the required accuracy and spcified tolerances. The shaft shoulders and liners that are in contact with the bearing shall be perpendicular to the axis, and the radius of the shoulder shall be smaller that the radius of the bearing bore.
4. Record and save the inspection and measurement results for reference when needed.

Note: bearing packaging cannot be removed untill bearing installation could be started after preparation.

The Surface Roughness of The Shaft and Housing
The shaft surface of the mounting bearing must be clean without any scratches and burrs. For applications where the housing is fixed and the shaft is rotating, the roughness of the surface of the shaft-mounted bearing is recommended to be max Ra = 1.6 μm. If cannot be grinded, in many cases, it can be turned precisely to reach roughness Ra = 3.2μm, but the value of interference fit should be slightly increased. It is recommended to inquire our technical department.
For floating outer rings(such as axial sliding in the housing bore), it is recommended that the housing matching surface roughness be max Ra = 1.6 μm. If the outer ring is not required as floating, the maximum surface roughness Ra = 3.2μm is a good result generally.

轴承的安装和拆卸

配合表面的粗糙度和形位公差

配合表面的粗糙度和形位公差，直接影响产品的使用性能。如耐磨性，抗腐蚀性和配合性质等。为此，合理规定轴和外壳孔的形位公差并提出配合表面的粗糙度要求，对于稳定配合性质，提高过盈配合的联接强度至关重要。

轴和外壳孔的配合表面粗糙度及形位公差见表1、表2和图1.

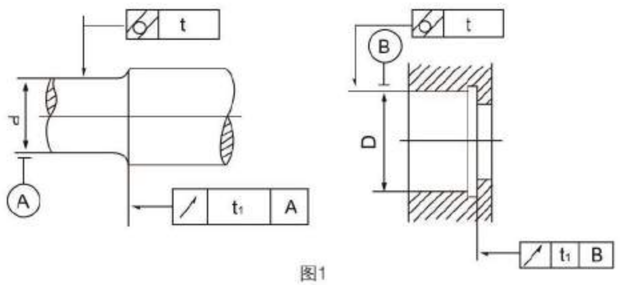


图1

表1 配合表面的粗糙度
Table 1 Roughness of Shaft and Housing

配合表面 Fitting surface	轴承精度等级 Precision grade of bearing	配合表面的尺寸公差等 Tolerance grade of fitting surface	轴承公称内径或外径（mm） Nominal bore or O.D.	
			-80	>80-500
			Ra（μm）（GB1031-95） 表面粗糙度参数Ra（μm）（GB1031-95）	
轴颈 Shaft	P0	IT6	1	1.6
	P6	IT5	0.63	1
	P5		0.4	0.63
	P4		0.25	0.4
外壳孔 Housing bore	P0	IT7	1.6	2.5
	P6	IT6	1	1.6
	P5		0.63	1
	P4		0.4	0.63
轴肩和外壳孔肩端面 Face of shoulder	P0		2	2.5
	P6		1.25	2
	P5		1	1.6
	P4		0.8	1.25

注:轴承装在紧定套或推卸套上时，轴颈表面的粗糙度Ra不应大于2.5μm
Note: Shaft Ra 2.5μ m when the shaft is fitted on a sleeve

Bearing Assembly and Disassembly

Roughness and Tolerance of Shaft and Housing

The roughness and geomatic tolerance of matched surfacea exert the direct influence on product performance. Such as wear resistance, corrosion resistance and fit property etc. Therefore, geomatic tolerance of shaft and housing bore, and roughness of matched surface plays an important role in stabilizing the fit property and improving the connection strength of interference fit.

The matched surface roughness and tolerances of the shaft and the housing bore are shown in Table 1, Table 2 and figure 1.

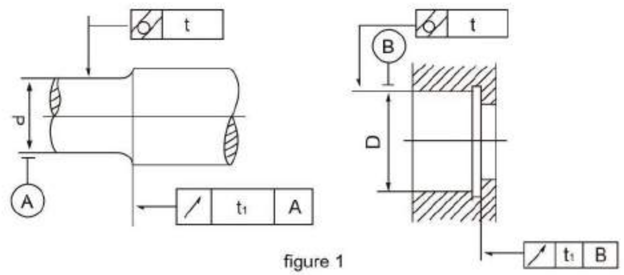


figure 1

表2 轴和外壳孔的形位公差
Table2 Tolerance of Shaft and Housing

基本尺寸 Basic dimention (mm)		圆柱度 t Cylindricity t								端面圆跳动 t_1 Circle runout of end surface t_1							
		轴颈 Shaft				外壳孔 Housing bore				轴肩 Should of shaft				外壳孔肩 Should of housing			
		轴承精度等级 Bearing precision grade															
		P0	P6	P5	P4	P0	P6	P5	P4	P0	P6	P5	P4	P0	P6	P5	P4
超过 Exceed	到 To	公差值 Tolerance value μm															
	6	2.5	1.5	1	0.6	4	2.5	1.5	1	5	3	2	1.2	8	5	3	2
6	10	2.5	1.5	1	0.6	4	2.5	1.5	1	6	4	2.5	1.5	10	6	4	2.5
10	18	3	2	1.2	0.8	5	3	2	1.2	8	5	3	2	12	8	5	3
18	30	4	2.5	1.5	1	6	4	2.5	1.5	10	6	4	2.5	15	10	6	4
30	50	4	2.5	1.5	1	7	4	2.5	1.5	12	8	5	3	20	12	8	5
50	80	5	3	2	1.2	8	5	3	2	15	10	6	4	25	15	10	6
80	120	6	4	2.5	1.5	10	6	4	2.5	15	10	6	4	25	15	10	6
120	180	8	5	3.5	2	12	8	5	3.5	20	12	8	5	30	20	12	8
180	250	10	7	4.5	3	14	10	7	4.5	20	12	8	5	30	20	12	8

轴承的安装和拆卸

安装

直孔轴承的安装

热膨胀法

绝大多数情况下，轴承需要在轴上采用紧过盈配合。将轴承加热，使其足够膨胀，以便可以容易地滑上轴，因此安装十分简便，下面是两种常见加热法：

1) 油池加热
2) 感应加热

第一种方法是将轴承放在装有高燃点油的油池中加热。油温不可超过121℃，大多数应用情况，93℃就足够了，通常轴承在油中停留时间为20或30分钟，使其充分膨胀，以便很容易地套上轴。
感应加热法特别适用于装配生产线上小型轴承的安装。这种方法速度快，但必须小心，温度不可超过93℃。有必要通过试运行来获得准确的时间。可使用在预定温度下溶化的热电蜡笔来测量轴承温度。后当轴承保持一定温度时，使其垂直地靠在轴肩上，然后用锁紧垫圈，锁紧螺母或夹板来进行固定。轴承冷却后，应旋紧锁紧螺母或夹板。
在外圈旋转的情况下，外圈与外壳孔为紧配合，此时可对外壳进行加热。
轴承不可直接与热源相接触，一般是在离底部5cm的地方放上一个网板，并用小的支撑块将轴承和网板分开。将轴承和局部温度很高的热源分开很重要，不然，轴承温度过高会降低其硬度。
火焰燃烧器是常用的加热器，还需使用一个自动温度控制装置，如果安全规则不允许使用开式加热油池，可在水中混合15%的可溶油，但这种混合剂最高可加热到93℃，而不会产生火焰。使用这种方法，必须经常检查油池，已确信水和油混合是否合适。这种油浴在轴承表面留下一层薄薄的可起到临时防锈功能的油膜，但在安装后，应尽早地进行润滑，并保证轴承内的可溶油都被排干净。

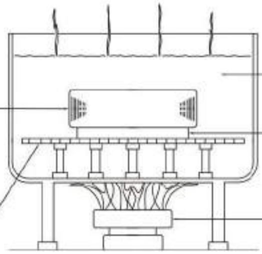


图2 油池加热

Bearing Assembly and Disassembly

Assembly

Straight Bore Bearing Installation

Thermodilatometry

In most occassions, the bearings require a interference fit on the shaft. The bearing is heated so that it is sufficiently expanded so as to be easily slide onto the shaft, thus the installation is very simple. Here are two common heating methods:

1) Oil tank heating
2) Induction heating

The first method is to heating the bearing in a tank filled with high ignition oil. The oil temperature should not exceed 121℃. For most applications, 93℃ is sufficient, and the bearing is usually heated in 20 or 30 minutes in the oil, which allows it to expand sufficiently and easy to fit the shaft.
Induction heating method is particularly applicable to the installation of small bearings, this method is fast, but must be careful, the temperature can not exceed 93℃. It is necessary to obtain the correct time by trial operation. The bearing temperature can be measured by using a thermoelectric crayon that melts at a predetermined temperature.
To make the bear perpendicular to the shoulder when the bearing is still hot, and then use the lock washer, lock nut or clamping plate to fixed. After the bearing cool down, tighten the lock nut or clamp.
In case of the outer ring is fitted closely with the housing hole when the outer ring is rotating, the housing can be heated at this time.
Bearings can not be directly contact with the heat source, generally a stencil is placed 5cm away from the bottom, and with a small support block to separate the bearing and the stencil. It is important to separate the bearing from the heat source with high localized temperature. Otherwise, the bearing temperature will be too high to reduce its hardness.
Flame burners are common heaters which require an automatic temperature control. If the safety rule does not permit to use open heating sumps, mix 15% soluble oil in water, but this mixture can be heated up to 93℃ without generating flame. The oil sump must always be checked if use this kind of method, to make sure whether the water-oil mixing is appropriate. This oil bath leaves a thin film of oil on the surface of the bearing that temporary anti-rust, it should be lubricated as soon as possible after installation, and ensure that soluble oil in bearings is clean up.

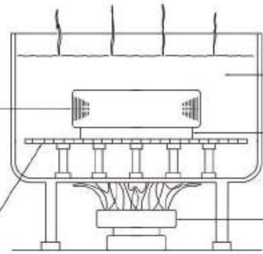


Figure 2: Heat Expansion Method

轴承的安装和拆卸

安装

直孔轴承的安装

芯棒压力法

对于小尺寸的轴承，另一种可选择的安装法是使用一台图3所示的芯棒压力机和安装管将轴承压到轴上或压入座孔中。安装管可用软钢制成，内径比主轴承稍微大一些，外径不应超过表中规定的最大台肩，管子两端应与芯棒和轴承端面垂直，内外需干净，并具有足够的长度以保证轴承安装后主轴端不露出。

如果外圈被压入到外壳孔中，安装管的外径应比外壳孔稍小一些，且内径不应小于规定的轴承座台肩的直径，如图4所示。

如果轴承套圈与轴和外壳孔均为紧配合时，采用特制安装套筒同时将轴承压在轴和外壳孔上进行压装，如图5所示。

在轴承上涂一些轻机油以减小压装配合所需要的力，小心将轴承置于轴上，保证它与主轴轴线垂直。

切不可当轴承与轴为紧配合时，对外圈施加压力，或当轴承与外壳孔为紧配合时，对内圈施加压力。

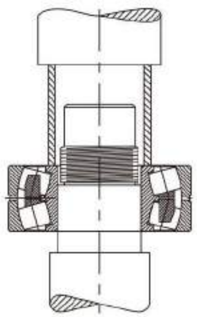


图3 内圈紧配合

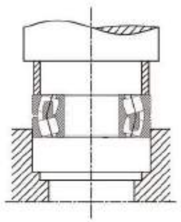


图4 外圈紧配合

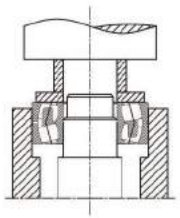


图5 内外圈均为紧配合

Bearing Assembly and Disassembly

Assembly

Straight Bore Bearing Installation

Mandrel Pressure Method

Another solution for small size bearings is to use a mandrel press and mounting tube as shown in Figure 3 to press the bearing against the shaft or into the housing. The mounting sleeve can be made of mild steel, The inner diameter should be slightly larger than the main bearing, the outer diameter should not exceed the maximum shoulder listed in the table. The two ends of the sleeve should be perpendicular to the mandrel and bearing bore. The inside and outside should be clean and have sufficient length to ensure the sfhat ends will not be exposed after installed.

If the outer ring is pressed into the housing bore, the outer diameter of the mounting tube shall be slightly smaller than the outer housing bore and shall not be less than the diameter of the specified bearing housing shoulder, as shown in Fig.4

If the bearing rings are tightly fitted to the shaft and the housing bore, a customized mounting sleeve is used to press the bearing against the shaft and housing bore, as shown in Fig.5

Apply a little light oil on the bearing to reduce the force required to press fit. Place the bearing carefully on the shaft so that it is perpendicular to the spindle axis.

Do not apply pressure to the outer ring when the bearing is tightly fitted to the shaft, or apply pressure to the inner ring when the bearing is in tight fit with the outer ring.

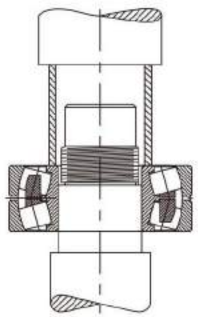


Figure 3:
Arbor Press Method

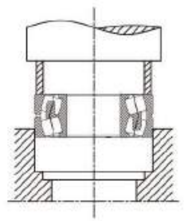


Figure 4:
tight fit of outer ring

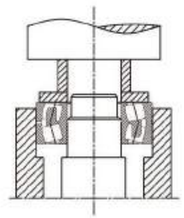


Figure 5:
tight fit of outer ring and inner ring

轴承的安装和拆卸

安装

锥孔调心滚子轴承在轴上的安装

尽管我们可以通过测量轴承装配到圆锥轴上的距离来决定锥孔调心滚子轴承的配合,但更实用的方法是测量由于内圈的受力膨胀而减少的径向游隙。这需要确定安装前的起始径向游隙，并在安装时不断测量直至降低到合适的径向游隙。

为了确定起始径向游隙，可采用下列程序。使用最薄到0.04mm的塞尺，先将轴承竖起，使内、外圈端面平行，将大拇指按住内圈并摆动2-3次，向下按紧，使内圈和滚动体定位入座，如图6所示。定位各滚子位置，使在内圈滚道顶部两边各有一个滚子，将顶部两个滚子向内推，以保证它们和内圈滚道保持合适的接触，当滚子处于正确位置时，塞入一个薄塞片，沿着顶部的滚子慢慢地在滚子和外圈滚道间移动，如图7所示；然后换上一个厚些的塞片重复一遍，直至厚到无法移动为止。最大能通过的塞尺厚度就是安装前的径向游隙。


图6

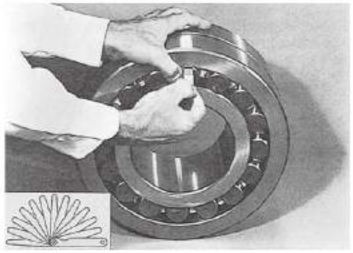


图7

然后用前面例子里介绍的方法确定径向游隙减少量的目标值。安装时，将轴承尽可能深地滑移到主轴上去(如图8所示)或者通过紧定套(如图9所示)、退卸套(如图10所示)安装在圆柱轴上。当锁紧螺母上紧后，内圈的膨胀就达到了过盈配合。定期地测量径向游隙，以获得它的减少量，重复此操作，直到获得了合适的减少量(不可超过推荐的减少量)。做最后一次检查时，要保证残留的径向游隙等于或超过下表所示的最小安装游隙。

安装时，应检查无负荷滚子的径向游隙，如果无负荷滚子是在底部，检查时要确保滚子被抬起并可靠地坐定在内圈滚道内。

当达到推荐的径向游隙时，轴承就合适地配合好了。然后，将锁紧垫圈齿卡入锁紧螺母的槽中，或固紧夹板。

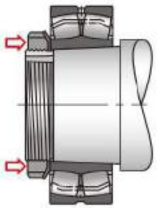


图8

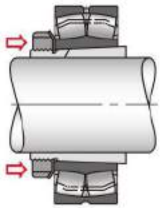


图9

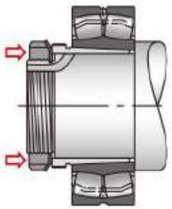


图10

Bearing Assembly and Disassembly

Assembly

Installation of Tapered Bore Spherical Roller Bearings on Shafts

Although we can define the fit of tapered bore spherical roller bearings by measuring the distance of bearing mounted to the tapered sucft, but more practical method is to measure radial clearance that is reduced by the force due to the expansion of the inner ring. The initial radial clearance prior to installation should be defined, and measuring continuously during installation until reduced to the appropriate radial clearance.

The following procedure can be used in order to define the initial radial clearance. Use a feeler gauge as thin as 0.04mm. Firstly holding bearing up, so that the inner and outer ring end face parallel. Pressing the inner ring by thumb and swing 2 to 3 times, press down firmly, so that the inner ring and the rolling element will be seated in position as shown in Figure 6. Positioning each roller so that there is a roller on either side of the top of the inner ring raceway, and push the top two rollers inward to ensure proper contact with the inner ring raceway. When the roller is in the correct position , insert a thin feeler, rollers along the top move slowly in the raceway between rollers and the outer ring, as shown in Figure 7; and then put on a thicker feeler to repeat, untill it is thick enough and can not move. The maximum thickness that can pass through the feeler is the radial clearance before installation.


Figure 6

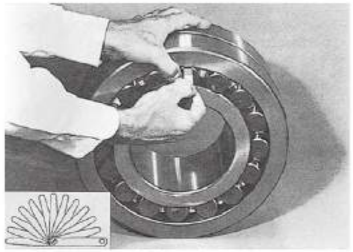


Figure 7

Then use the method described in the former example to define the target value of radial clearance reduction. Sliding the bearing as deep as possible to the spindle (Figure 8) or through the adapter sleeve (Figure 9) when assembly. The withdrawal sleeve (shown in Figure 10) is assembled on the shaft. When the locking nut is tightened, the expansion of the inner ring reaches the interference fit. The radial clearance is measured periodically to obtain its reduction and this is repeated until a suitable reduction is achieved (not to exceed the recommended reduction). For the last inspection, ensure that the radial clearance is equal to or more than the minimum assembly clearance shown in the table

The radial clearance of the unloaded roller should be checked when assembling. If the unloaded roller is at the bottom, ensure that the roller is lifted and seated securely in the inner ring raceway.

The bearings are properly fitted when reached the recommended radial clearance. Then, insert the lock washer teeth into the groove of the lock nut or tighten clamp.

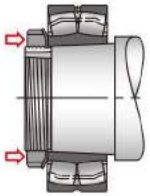


Figure 8

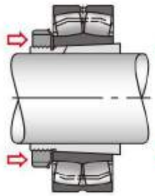


Figure 9

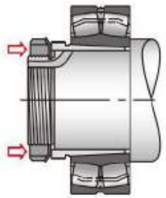


Figure 10

轴承的安装和拆卸

安装

锥孔调心滚子轴承在轴上的安装

下表为锥孔调心滚子轴承安装到轴或接头套上时的推荐径向游隙。

推荐的径向游隙减小值						
轴承内径d		推荐的径向游隙减小值		具有起始游隙的轴承安装后最小径向游隙		
超过	至	最小	最大	一般（标准）	C3	C4
mm		μm		μm	μm	μm
30	40	20	25	15	25	41
40	50	25	30	20	30	51
50	65	30	36	25	36	64
65	80	38	51	25	43	76
80	100	46	64	36	51	76
100	120	51	71	51	64	102
120	140	64	89	56	76	114
140	160	76	102	56	76	127
160	180	76	114	61	89	152
180	200	89	127	71	102	165
200	225	102	140	76	114	176
225	250	114	152	89	114	203
250	280	114	165	102	140	229
280	315	127	178	102	152	254
315	355	140	190	114	165	279
355	400	152	203	127	191	330
400	450	165	216	152	229	356
450	500	178	229	165	267	406
500	560	203	254	178	292	445
560	630	229	279	203	318	508
630	710	254	305	203	368	546
710	800	279	356	229	394	610
800	900	305	381	254	457	686
900	1000	356	432	279	495	762
1000	1120	406	483	279	546	813
1120	1250	432	508	330	610	914

例：22328CAK/C3轴承（内径为140mm，C3组游隙）装配到锥形轴上。

a. 用塞尺测到起始径向游隙为0.178mm。

b. 从上表查出当径向游隙下降0.064~0.089mm或约为0.076mm，就获得合适的配合。

起始游隙 0.178mm
径向游隙减少量 −0.076mm
0.102mm

c. 上紧锁紧螺母，使径向游隙达到0.102mm，最后检查安装后的最小径向游隙，标明此值是安全的。

注：锥孔调心滚子轴承在安装前必须要有合适的径向游隙，以便在安装时提供所需的径向游隙减少量，以及补偿在异常温度情况下径向游隙的减少，对于特殊的应用，可向我公司技术部门垂询推荐径向游隙。

Bearing Assembly and Disassembly

Assembly

Installation of Tapered Bore Spherical Roller Bearings on Shafts

The following table shows the recommended radial clearance for tapered bore spherical roller bearings assembled on shafts or adapter sleeves.

Min.value of recommended radial clearance						
Inner diamtere		Recommended reduced value of radial clearance		Min. radial clearance after installation of bearing with initial clearance		
Exceed	To	Min.	Max.	General(standard)	C3	C4
mm		μm		μm	μm	μm
30	40	20	25	15	25	41
40	50	25	30	20	30	51
50	65	30	36	25	36	64
65	80	38	51	25	43	76
80	100	46	64	36	51	76
100	120	51	71	51	64	102
120	140	64	89	56	76	114
140	160	76	102	56	76	127
160	180	76	114	61	89	152
180	200	89	127	71	102	165
200	225	102	140	76	114	176
225	250	114	152	89	114	203
250	280	114	165	102	140	229
280	315	127	178	102	152	254
315	355	140	190	114	165	279
355	400	152	203	127	191	330
400	450	165	216	152	229	356
450	500	178	229	165	267	406
500	560	203	254	178	292	445
560	630	229	279	203	318	508
630	710	254	305	203	368	546
710	800	279	356	229	394	610
800	900	305	381	254	457	686
900	1000	356	432	279	495	762
1000	1120	406	483	279	546	813
1120	1250	432	508	330	610	914

Example: a 22328CAK / C3 bearing (140mm ID, C3 set of clearance) is fitted to the tapered shaft.

a. Measured the initial radial clearance is 0.178mm with a feeler.

b. From the above table to find out when the radial clearance reduces 0.064 ~ 0.089mm or about 0.076mm, that is the right fit.

initial clearance 0.178mm
radial clearance decrement −0.076mm
0.102mm

c. Tighten the lock nut and the radial clearance reaches 0.102mm, finally check the minimum radial clearance after installation, indicating that this value is safe.

Note: The tapered bore spherical roller bearings must leave a suitable radial clearance before installation, which provide the required decrement of radial clearance during installation, and compensate for radial clearance reduction in case of abnormal temperature. For special applications, please inqure our technical department.

轴承的安装和拆卸

拆卸

在定期检修、更换时需要拆卸轴承。如果拆卸下来的轴承还要继续使用，在拆卸时应注意以下事项：

1. 拆卸时决不可通过滚动体承受拆卸力；
2. 应避免通过直接敲击轴承内外圈进行拆卸；
3. 拆卸过程中不应使用火焰或烈焰进行拆卸；
4. 拆卸后的轴承应进行仔细的清洗。

小型轴承的拆卸可以直接采用机械拉拔设备，将拉拔设备作用在紧配合的套圈上将套圈拆卸下来，如图11所示。也可采用感应加热的方法拆卸。

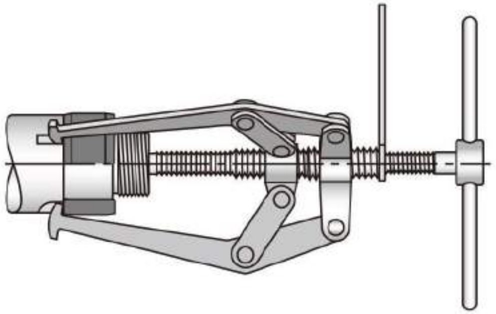


图11

对于圆锥孔滚动轴承的拆卸，可以采用液压拆卸和机械拆卸的方法拆卸，对于拆卸安装在锥形套或者紧定套上的轴承，可以通过取下锁紧螺母后用金属棒或套筒将内圈从轴上取下。如图12、图13所示。

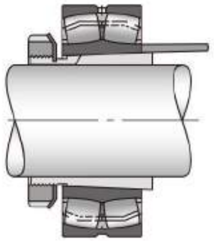


图12

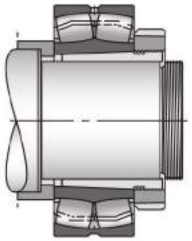


图13

对于大型轴承的拆卸，采用机械方式比较困难，当轴承的配合部位具备高供压油道和油槽的情况下可采用油压法进行拆卸。

Bearing Assembly and Disassembly

Bearing Disassembly

Bearing disassembly is necessary in regular maintenance and replacement. If the disassembled bearing will continued to be used, the following precedure should be noted:

1. The rolling element cannot bear the force of disassembly.
2. Inner and outer rings cannot be beaten directly when disassembling.
3. Flame cannot be used during disassembling.
4. The disassembled bearing should be cleaned carefully.

The small bearings can be disassembled directly by mechanical pulling equipment, the tightly fitted rings will be removed through the pulling device as shown in Figure 11. The method of induction heating could also be taken.

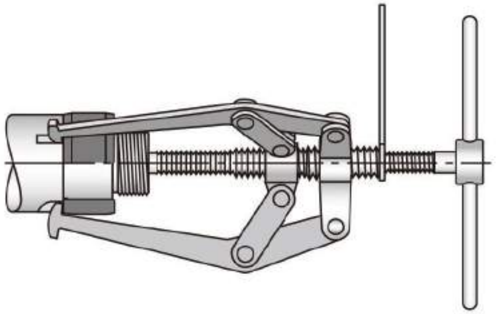


Figure 11

The disassembly of the tapered roller bearing can be conducted by hydraulic disassembly and mechanical disassembly. For the bearing installed on the conical sleeve or the adapter sleeve, it can be disassembled by using metal bar or sleeve after removing the lock nut. See Figs. 12 and 13.

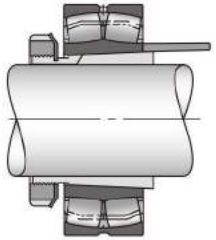


Figure 12

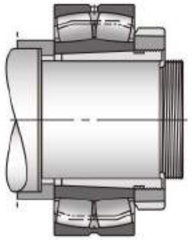


Figure 13

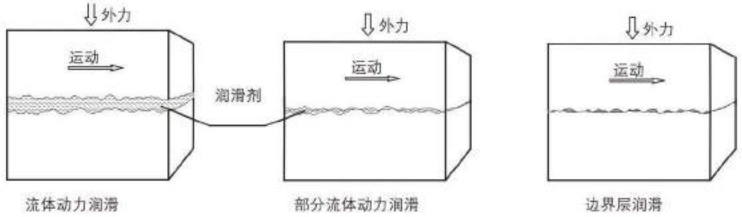
For the disassembly of large-type bearing, it is difficult to use mechanical way, if there is high-pressure oil and oil tank prepared around the parts that bearing is fitted, the oil pressure method could be adapted.

润滑

润滑目的

滚动轴承润滑的目的是通过选择适当的润滑剂，采取适当的手段和措施，使滚动轴承在相对运动的元件之间尽可能维持正常工作的润滑膜层将滚动体与滚动面分开，从而减少轴承内部摩擦及磨损，防止烧结。主要作用如下：

a）分隔相邻的运动件，防止金属接触，减少摩擦、磨损；
b）延长轴承寿命；
c）冷却，排出摩擦热或外部传来的热，防止轴承过热及润滑油老化；
d）防止生锈、腐蚀及异物侵入等。



图：润滑机理

润滑方法

轴承的润滑方法分为脂润滑和油润滑。脂润滑和油润滑都有自己的特点，为了使轴承很好的发挥机能，设计阶段就需要考虑选择适合使用条件、使用目的的润滑方法。决定润滑方法的主要因素有：

a）工况
b）轴承类型及尺寸
c）润滑剂的供给
d）相邻结构设计

表1：脂润滑与油润滑特点比较

项　目	脂润滑	油润滑
外壳结构、密封设计	可简略化、设计简单	较复杂、保养维修麻烦
旋转速度	极限转速是油润滑的65%-80%	适用于高速旋转
冷却作用	无	可以排除热量
润滑剂的更换	较麻烦、特定场合可终生润滑	比较简单
润滑剂的流动性	不好、摩擦能耗高	较容易、摩擦能耗低
尘埃的过滤	困难、不能带走磨损颗粒等	较容易
环境污染	由泄漏造成的污染少	容易泄漏污染

Lubricating

Purpose of Lubricating

The purpose of rolling bearing lubrication is to select the appropriate lubricant, take appropriate methods and measures to maintain the lubricating film, which and contributes for normal operation of bearing among the components in the relative motion, separating the rolling element from the rolling surface, so as to reduce the internal friction and wear of bearing, to prevent sintering. The main function find as follows:

a) Separation of adjacent moving components, to prevent metal contact, reduce friction and wear;
b) Extending the bearing life;
c) Cooling, discharge friction heat or heat from the outside, to prevent overheating of the bearing and lubricating oil aging;
d) To prevent rust, corrosion and foreign invasion.

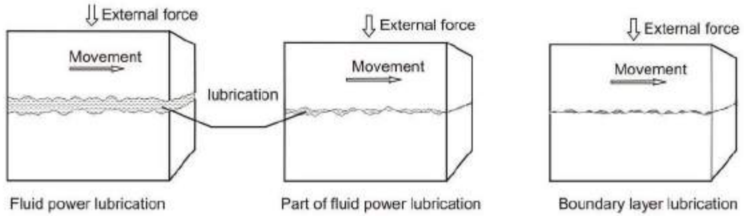


Figure: lubrication mechanism

Lubrication Methods

Bearing lubrication methods are divided into grease lubrication and oil lubrication, each one has typical characteristics, in order to make the bearing run well, the application condition and the purpose of lubrication should be considered into design stage. The lubrication methods are determined by follow factors:

a) working condition
b) bearing type and dimension
c) supply of lubricatnt
d) Adjacent structural design

Table 1: Comparison of grease lubrication and oil lubrication characteristics

Project	Grease lubrication	Oil lubrication
Shell structure, seal design	Be simplified with simple design	More complex, maintenance is troublesome
Rotation speed	Limit rotational speed is oil65%-80%	For high speed rotation
Cooling	NA	Heat can be released
Lubricant replacement	More trouble, permenant lubrication in particular occasion	Easy
Fluidity of lubricant	Not good with high friction energy consumption	Easy with low friction energy consumption
Filter of dust	Difficult, can not take away wear particles	Easy
Environmental pollution	Less pollution caused by leakage	Easy to be leaked and get polluted

润滑

脂润滑

润滑脂的组成及特性

润滑脂由基础油、稠化剂、添加剂三部分组成,是在基础油里添加了一些能起稠化作用的物质，把液体稠化而成半固体产品。润滑脂实际上是稠化的润滑油，在常温下是半固体膏状。一般润滑脂中基础油含量约为75%～90%，稠化剂含量约为10%～20%，添加剂及填料的含量在5%以下。

a) 基础油

基础油是润滑脂分散体系中的分散介质，它对润滑脂的性能有较大影响。一般润滑脂多采用中等粘度及高粘度的矿物油作为基础油，也有一些为适应在苛刻条件下工作的机械润滑及密封的需要，采用合成油作为基础油，如二脂油、硅酮油、聚乙二脂油等。

b) 稠化剂

稠化剂是润滑脂的重要组分，稠化剂分散在基础油中并形成润滑脂的结构骨架，使基础油被吸附和固定在结构骨架中。润滑脂的抗水性及耐热性主要由稠化剂所决定。用于制备润滑脂的稠化剂有两大类：皂基稠化剂（即脂肪酸金属盐）和非皂基稠化剂（烃类、无机类和有机类）。

皂基稠化剂分为单皂基（如钙基脂、锂基脂）、混合皂基（如钙钠基脂）、复合皂基（如复合钙基脂）三种。90%的润滑脂是用皂基稠化剂制成的。

c) 添加剂

润滑脂根据需要可加入各种添加剂。它们能延长油的寿命、减少结胶和氧化、延缓锈蚀、增加抗磨性、抑制粘结，或提高润滑脂对活动部件的附着能力。有的添加剂可改变润滑脂的物理特性，如耐水性粘度、抗剪切性及温度限制等。

d) 稠度

稠度是表示脂的软硬程度的量。太稠则易产生贫油，增加阻力；太稀则保持力不足，易漏脂。我国和国际上通用的稠度等级是按照美国润滑脂会（NLGI）的稠度等级，共分9个等级，滚动轴承的润滑剂多用1级、2级或3级。

表2：润滑脂的稠度和使用条件、用途

稠度号码	0	1	2	3	4
稠度（1/10mm）	355~385	310~340	265~295	220~250	175~205
用途	集中供脂用	集中供脂用	泛用	泛用	高温用
	易发生微振摩损时	易发生微振摩损时低温用	密封轴承用	密封轴承用	润滑脂密封时

*稠度：标准锥体靠自重在5S内浸入润滑脂中的深度（1/10mm单位），数值越大润滑脂越软

e）润滑脂的混合

不同种类、不同品牌的润滑脂不能混合使用，如难以避免混合使用不同种类的润滑脂时，至少要选用增稠剂种类相同基础油类似的润滑脂。即使这样，由于添加剂的不同，润滑脂的性质可能也会发生变化，应事先进行试验！

Lubricating

Grease Lubrication

The Composition and Characteristics of Grease

Grease is composed by the base oil, thickener, additive, is a semi-solid product in which adding the thickener in the base oil to thickening the liquid. Grease is actually a thicken lubricating oil in semi-solid at the room temperature. General grease contains about 75% to 90% of base oil, about 10% to 20% thickener, 5% or less of additives and other fillers.

a) Base oil

Base oil is a dispersion medium in the grease dispersion system, it exert a greate impact on the performance of grease. General grease use mineral oil with medium to high viscosity as a base oil. In order to meet the mechanical lubrication and sealing needs under harsh working conditions, somtimes synthetic oil is used as a base oil, such as diester oil, silicone oil, oil.

b) Thickener

Thickener is an important part of grease, thickener dispersed in the base oil and the form the strcuture of grease, the base oil is adsorbed and fixed in the strcture. The water resistance and heat resistance of grease is mainly determined by the thickener. There are two categories of thickeners for the preparation of greases. Soap-based thickeners (i.e., fatty acid metal salts) and non-soap-based thickeners (hydrocarbons, inorganic and organic).

Soap-based thickener is divided into single soap (such as calcium-based grease, lithium grease), mixed soap (such as sodium calcium grease), composite soap (such as calcium-based composite) three. 90% of the grease is made with soap thickener.

c) Additives

Various additives may be added into lubricants as required. They can extend the life of the oil, reduce gumming and oxidation, retard corrosion, increase abrasion resistance, inhibit adhesion, or increase the grease's ability to attach to moving parts. Some additives can change the physical properties of grease, such as water-resistant viscosity, shear resistance and temperature limits.

d) Consistency

Consistency is an amount that characterizes the degree of hardness of the fat. Sponge oil will be easy to be generated if it is too thick, which increase resistance;grease will be leaked if the it is not consist enough. The consistency level constituted by National Lubricating Grease Institute (NLGI) is commonly used in China and the world, it is divided into nine grades, grade 1, 2, and 3 are widely used as rolling bearing lubricant.

Table 2: Grease consistency and conditions of use, use

Consistency number	0	1	2	3	4
*Consistency (1/10mm)	355~385	310~340	265~295	220~250	175~205
Usage	Concentrated for grease use	Concentrated for grease use	used universally	used universally	for hig temperature
	When easy to be vibrated and wear	when easy to be vibrated and wear in low temperature	for sealed bearing	for sealed bearing	Sealed Grease

Consistency: the standard cone immersed in the grease by the self-weight in the 5S depth (1 / 10mm unit), the greater the value, the softer the grease

e) Mixing of Grease

Grease of different types and brands can not be mixed, if it cannot avoid to mix grease of different types, the grease with the same kind of thickener and oil with similar base must be choosed at least. But due to the different additives, the nature of the grease may also be changed, should be tested in advance

润滑

脂润滑

润滑脂的填充量

润滑脂填充过多，使轴承在运转时产生大量热能并泄漏；油脂过少，使套圈滚道与滚子表面缺乏油膜保护。一般情况下：

当Ng/N<1.25时，润滑脂占轴承内部空间1/3。

当1.25<Ng/N<5时，润滑脂占轴承内部空间1/3~2/3。

Ng：轴承脂润滑的极限转速（r/min）。

N：轴承的实际工作转速（r/min）。

储油室内润滑脂添加1/2空间。

润滑脂的补充

一般，填充一次润滑脂可以长时间不必补充。但是，在有些条件下，由于润滑脂随使用时间的增长，润滑性能就逐渐下降，需要定期补给新润滑脂。补给润滑脂的时间间隔因轴承形式、尺寸、旋转速度、轴承温度及润滑脂种类的不同而不同。轴承温度70℃以下时，补充时间间隔可参照图1。轴承温度超过70℃时，轴承温度每上升14℃，补充时间减半。

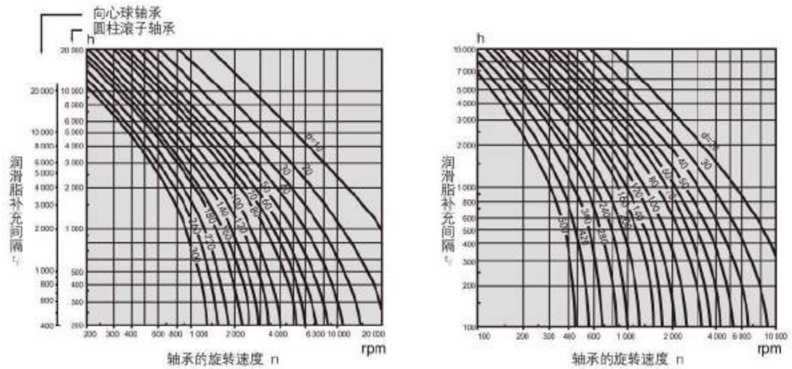


图1

Lubricating

Grease Lubrication

Filling Amount of Grease

Excessive grease: a lot of heat will be generated in bearing operation and be leaked. Too little grease: the ring raceway and roller surface will be lack of oil film protection. In general condition:

When Ng / N <1.25, the grease accounts for 1/3 of bearing internal space.

1.25<When Ng / N <5, the grease accounts for 1/3~2/3 of bearing internal space.

Ng: Limiting speed of bearing with grease lubrication

N: actual working rotation speed of speed(r/min)

Add 1/2 space to the grease in the oil reservoir

Grease Supplement

Generally, it is not necessary to fill grease in long time after adding once. However, the lubrication will be decreased due to the working conditions and time, new grease need to be filled regularly. The time interval for supplying the grease depending on the bearing type, size, rotation speed, bearing temperature and grease type. When the bearing temperature is under 70 ℃, the replenishment interval can be referred to Fig.1. If bearing temperature exceeds 70 ℃, and the bearing temperature is increased every 14 ℃, the supplementary time will be reduced a half.

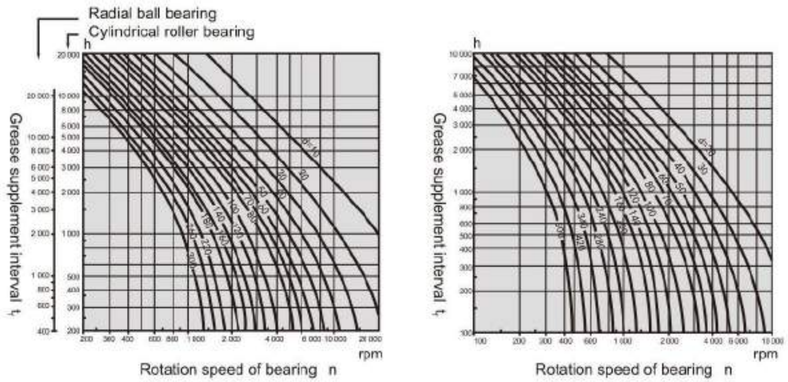


Fig.1

润滑

润滑脂寿命

油润滑

润滑油的选择

用于轴承润滑的润滑油应是高质量的不易氧化的矿物性油。应根据轴承转速、负荷、工作温度和润滑方式来选择合适的润滑油。粘度过低，不能充分形成油膜，是造成非正常磨损、烧结的原因。相反粘度过高，由于粘性阻力造成发热，加大动力损耗。

一般旋转速度越快，越使用低粘度的润滑油。负荷越大、轴承尺寸越大应选择高粘度润滑油。不同类型轴承所采用的润滑油，在其工作温度下应具备表3所示的粘度。

表3：轴承要求的粘度

轴承类型	润滑剂粘度
球轴承	≥13mm/s
滚子轴承、调心滚子轴承	≥20mm/s
推力调心滚子轴承	≥32mm/s

图2是润滑粘度-工作温度对应关系图，用于选择与运转温度相应的润滑油粘度。

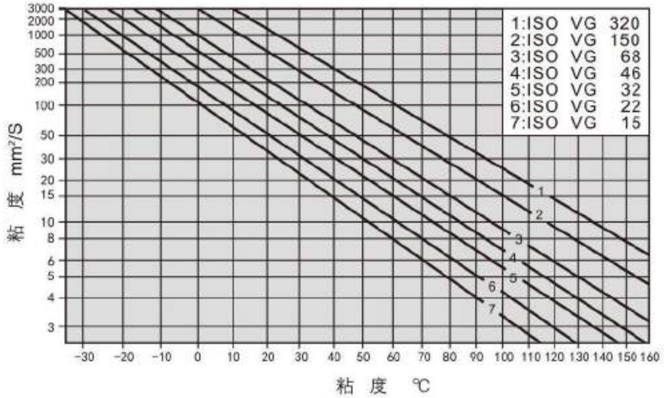


图 2

Lubricating

Life of Grease

Oil Lubrication

Selection of lubricant

Lubricant used for bearings should be high-quality and non-oxidizing mineral oil, it should be chosen based on bearing rotation speed, load, operating temperature and lubrication method. Low viscosity oil can not fully form the oil film, it is the reason caused abnormal wear and sintering. On the contrary, if the viscosity is too high, power loss will be increased due to the heat caused by viscous resistance. The faster the general rotation speed, the lower viscosity of lubricants will be selected. High-viscosity lubricants will be selected for large load and large bearing size. The lubricants used for different bearing type in the working temperature has the viscosity as below.

Table 3: the viscosity of the bearing requirement

Bearing type	Viscosity of lubricant
Ball bearing	≥13mm/s
Roller bearing,spherical roller bearing	≥20mm/s
Thrust spherical roller bearings	≥32mm/s

Fig. 2 is a graph showing the relationship between the lubricating viscosity and the operating temperature, and is used to select the viscosity of the lubricating oil corresponding to the operating temperature.

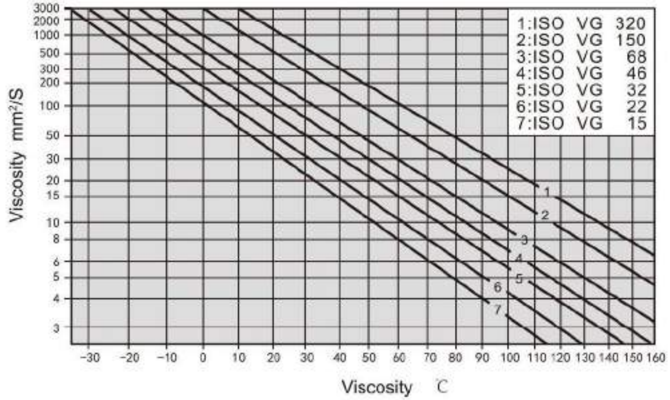


Fig.2

润滑

润滑脂寿命

对于滚动轴承的润滑，在其相应的温度下，务必具备表4所示的粘度。

表4：

运转温度℃	dn−值	润滑油粘度的ISO等级		适用轴承
		普通负荷	重负荷或冲击负荷	
-30 ~ 0	至允许转速	22，32	46	各类轴承
0 ~ 60	至15000	46，68	100	各类轴承
	15000~80000	32，46	68	各类轴承
	80000~150000	22，32	32	推力球轴承除外
	150000~500000	10	22，32	单列向心球轴承，圆柱滚子轴承
60 ~ 100	至15000	150	220	各类轴承
	15000~80000	100	150	各类轴承
	80000~150000	68	100,150	推力球轴承除外
	150000~500000	32	38	单列向心球轴承，圆柱滚子轴承
100 ~ 150	至允许转速	320		各类轴承
0 ~ 60	至允许转速	46，68		调心滚子轴承
60 ~ 100	至允许转速	150		

注：只适用于油浴润滑或循环共有的润滑方式。

润滑油的更换周期

润滑油的更换周期主要取决于运转条件和油量。工作温度不超过50℃，尘埃较少的良好环境下使用时，可以一年更换一次。工作温度在80~100℃时至少要3个月更换一次。工作温度越高，润滑油更换周期越短，运转条件恶劣时，也应增加换油次数。

油润滑方式

润滑油可以用多种方式引入轴承，最通常的方式有：

a) 油浴润滑

油浴润滑是油润滑中最一般的润滑方法，通常油位应不高于最低的滚动体中心，多用于低速或中速时。如果速度很高，油位应控制的较低以减少搅拌发热。

b) 循环供油润滑

循环供油润滑一般用于冷却轴承为目的的场合或供油部分多且集中并需要自动供油时。典型的循环供油系统包括油箱、油泵、管路系统、过滤器等。

c) 油雾润滑

油雾润滑系统多用于高速，连续工作的应用场合。这种系统可以精确控制到达轴承的润滑油的量。通过监视轴承的工作温度来控制该系统。

d) 飞溅润滑

高速运转时，将飞轮一部分浸入油中，通过离心力甩上的油从上部油孔流到轴承上。

Lubricating

Life of Grease

For the lubrication of rolling bearings, the viscosity shown in Table 4 must be provided at the corresponding temperature.

Table 4:

operation temperature	dn-value	ISO level of viscosity		Applicable bearings
		Normal load	Heavy or impacted load	
-30 ~ 0	To allowed rotation speed	22，32	46	All bearings
0 ~ 60	to15000	46，68	100	All bearings
	15000~80000	32，46	68	All bearings
	80000~150000	22，32	32	Thrust ball bearing
	150000~500000	10	22，32	Single-row radial ball bearings, cylindrical roller bearing
60 ~ 100	to15000	150	220	All bearings
	15000~80000	100	150	All bearings
	80000~150000	68	100,150	Thrust ball bearing
	150000~500000	32	38	Single-row radial ball bearings, cylindrical roller bearing
100 ~ 150	To allowed rotation speed	320		All bearings
0 ~ 60	To allowed rotation speed	46，68		Spherical roller bearing
60 ~ 100	To allowed rotation speed	150		

Note: only applicable for oil bath lubrication or sharing circulating lubrication.

Lubricant replacement cycle

Lubricant replacement cycle depends mainly on operating conditions and oil. mass when operating temperature does not exceed 50℃ with less dust in good environment, it can be replaced once a year. If operating temperature is of 80 ~ 100℃ , it should be replaced every 3 months, and the higher the working temperature, the shorter the oil replacement cycle. In poor operation conditions, the cycle will be shortened as well.

Oil lubrication method

Lubricants can be introduced into bearings in many ways, below methods are the most popular:

a) Oil bath lubrication

Oil bath lubrication is the most commom method, usually the oil level is not higer than the lowest rolling body center, and with low or Medium speed. If the speed is high, the oil level should be controlled avoid lower to reduce heating.

b) Circulating oil lubrication

Circulating oil lubrication is generally used for the occasion with the purpose of cooling bearing, or there are many oil supply parts which are concentrated, while automatic oil supply is required. The typical circulating oil system includes fuel tanks, oil pumps, piping systems, filters,etc.

c) Oil mist lubrication

Oil mist lubrication system are used for high-speed, continuous work applications. This system can precisely control the amount of oil to reach the bearing. The system is controlled by monitoring the operating temperature of the bearing.

d) Splash lubrication

Part of the flywheel is immersed in oil with high-speed operation, the oil flows onto the bearing from the oil hold at the top through centrifugal force.

极限转速

极限转速是能够不产生烧结、过热、可持续运转的经验的速度允许值。因此各种轴承的极限转速，因轴承的结构、尺寸、保持架结构、材料、轴承负荷、润滑方式、冷却环境的不同而不同。
轴承尺寸表中标有各种轴承的油润滑与脂润滑的极限转速。该值的基本条件是：

1、采用标准设计，正确安装；
2、润滑和冷却条件正常，且适时的更换与补充；
3、轴承工作游隙正常；
4、轴承在正常使用温度下，承受普通级负荷(P<0.1Cr，Fa<0.3Fr)。

对于超过普通负荷条件使用时，其允许的转速需要乘以图3和图4的修正系数，以修正极限旋转速度。

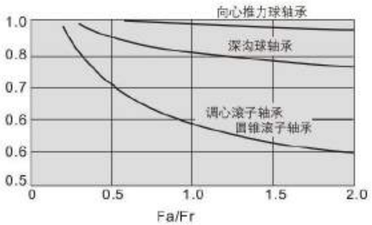


图3：根据轴承负荷修正极限转速

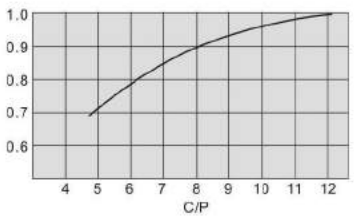


图4：合成负荷下极限转速的修正

如果轴承旋转速度高于极限转速的使用条件，则要考虑使用特殊的保持架，内部游隙及精度。通过采用强制循环供油、喷油或喷雾等特殊润滑方式，实际使用转速可超过轴承尺寸表上的允许转速。

Limit Speed

The limit speed is the allowed speed of sustainable operation without producing sintering, overheating. Therefore, a variety of limit speed are different acoording to the bearing structure, size, cage structure, materials, bearing load, lubrication, cooling environment.
Bearing size table shows a variety of oil lubrication and grease lubrication limit speed. The basic conditions for this value are:

1、standard design, correct installation;
2、Lubrication and cooling conditions are normal, and timely replacement and supplement;
3、operational clearance of bearing is normal
4、Bearings used in normal temperature with ordinary load (P <0.1Cr, Fa <0.3Fr)

For the application of exceeding normal load conditions, the allowed rotation speed must be multiplied by the correction factors shown in Figures 3 and 4 to correct the limit rotation speed.

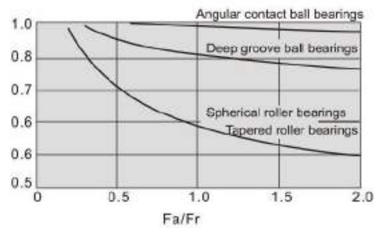


Fig 3: Modification the limit rotation speed according bearing load

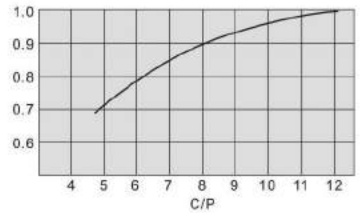


Fig 4: Modification of Limiting Speed under Synthetic Load

If the bearing rotation speed is higher than the limit speed, a special cage need to be considered with internal clearance and accuracy. Through the use of forced circulation oil, fuel injection or spray and other special lubrication, the actual speed can exceed the allowed speed of the bearing size table.

CAT.NO.B2021B-1

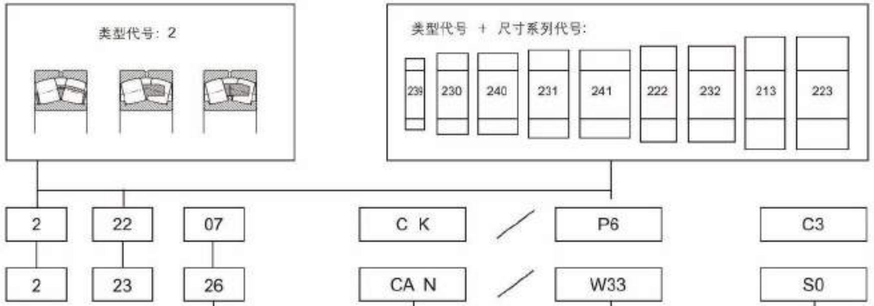
JXN®

调心滚子轴承

Self-Aligning Roller Bearings Catalogue

www.jxn-cn.com

调心滚子轴承代号



内径 （5 x ___ = mm）
5 x 07 =35
5 x 26 = 130

内部结构及保持架材料变化
C： 对称型滚子、钢板冲压保持架
CA： 对称型滚子、整体黄铜保持架
MB： 对称型滚子、分体式黄铜保持架

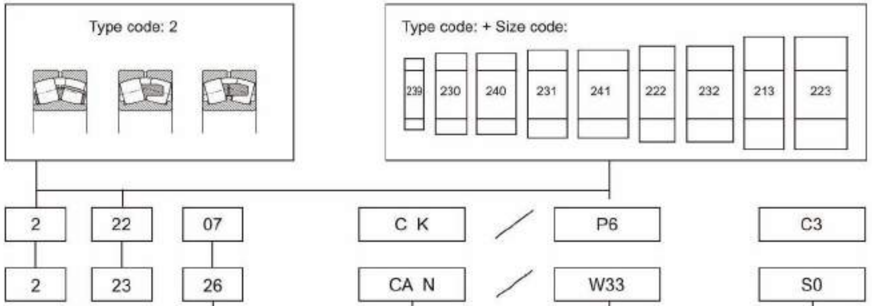
外部形状变化
K： 圆锥孔轴承，锥度为1：12
K30： 圆锥孔轴承，锥度为1：30
N： 外圈上有止动槽

/P0： 公差等级，相当于原代号G级，可省略
/P6： 公差等级，相当于原代号E级
/C0： 基本组游隙，代号可省略
/C2： 小于基本组游隙
/C3： 游隙比C0组大
/C4： 游隙比C3组大
/C5： 游隙比C4组大
/C9X： 特殊游隙
/W33： 轴承外圈上有润滑油槽和三个润滑孔
/S0： 工作温度可达150℃
/S1： 工作温度可达200℃
/S2： 工作温度可达250℃
/S3： 工作温度可达300℃
/S4： 工作温度可达350℃

调心滚子轴承游隙

径向游隙(RIC)是轴承内部的径向间隙， JXN的径向游隙可以允许轴承在紧配合安装和正常运行条件下有足够的内部游隙。
调心滚子轴承如带有锥孔(K)则要求其配合时的过盈量比圆柱孔轴承的更大一点，更大的过盈量则引起RIC的减少，对于锥孔轴承，选择时要考虑到RIC的减少，这很重要。
例：22328CAK/C3轴承(内径为140mm，C3组游隙)是装在锥轴上的，用塞尺测量后，RIC为0.178mm。从表内查得在RIC减少0.064至0.089mm时可达到合适的配合。装配后的游隙(0.178-0.076=0.102mm)，所以锁紧螺母必须旋至RIC达到0.102mm为止。
几种引起RIC减少的因素，内圈压入实心的钢轴上会引起内圈胀大约80%的过盈量。外圈压入钢或铸铁外壳上过盈配合会引起RIC减少约60%的过盈量，对于空心轴或非刚性的材料，RIC减少量请与我公司销售技术人员联系。
JXN轴承除特殊说明外，一般为正常的RIC，RIC代号应加在轴承基本代号后。
在相应的RIC下相邻两列内列出了RIC的最小、最大值。每一单列代表相邻RIC的界限。例如：C5的最小值为C4的最大值，C4的最小值也是C3的最大值等。

Spherical Roller Bearing Code



I.D. （5 x ___ = mm）
5 x 07 = 35
5 x 26 =130

Internal structure and cage material changes
C: Symmetrical roller, steel stamping cage
CA: Symmetrical roller, the overall brass cage
MB: Symmetrical roller, split brass cage

External shape change
K: Tapered bore bearings with taper of 1:12
K30: Tapered bore bearings with taper of 1:30
N: The outer ring has a retaining groove

/P0: Tolerance level, equivalent to the original code G-class, can be omitted
/P6: Tolerance level, equivalent to the original code E-class
/C0: Basic group clearance, code can be omitted
/C2: Less than basic group clearance
/C3: The clearance is larger than the C0 group
/C4: The clearance is larger than the C3 group
/C5: The clearance is larger than the C4 group
/C9X: Special clearance
/W33: The bearing outer ring has a lubricating oil groove and three lubrication holes
/S0: Working temperature up to 150 ℃
/S1: Working temperature up to 200 ℃
/S2: Working temperature up to 250 ℃
/S3: Working temperature up to 300 ℃
/S4: Working temperature up to 350 ℃

Spherical Roller Bearings Clearance

Radial internal Clearance (RIC) is the internal radial clearance of the bearing. The radial clearance of the JXN allows the bearing to have sufficient internal clearance for tight fitting and normal operation.
The amount of interference of spherical roller bearings with a tapered hole (K) is larger than cylindrical bore as required, if the amount of interference is too large, it will cause the reduction of RIC. It is important to consider the reduction in RIC, for the tapered bore bearings.
Example: 22328CAK/C3 bearing (inner diameter of 140mm, C3 group clearance) is mounted on the cone axis. Measured with a feeler gauge, the RIC was 0.178 mm. From the table it is found the appropriate match will be achieved when RIC reduced 0.064 to 0.089mm. The clearance after assembly (0.178-0.076 = 0.102mm), so the lock nut must be rotated until the RIC reaches 0.102mm.
Several factors which will lead RIC to reduce, the inner ring pressed into the solid steel shaft will cause the expansion of the inner ring about 80% of the amount of interference. The interference fit of the outer ring pressed into the steel or cast iron housing will cause the RIC to reduce about 60% of interference. For hollow shafts or non-rigid materials, please contact our technical department for RIC reduction.
Except special instructions, the RIC is generally the normal for JXN bearings, the RIC code should be added after the basic code.
The minimum and maximum RIC values are listed in the adjacent two columns under the corresponding RIC. Each column represents the bounds of adjacent RICs. For example, the minimum value of C5 is the maximum value of C4, and the minimum value of C4 is also the maximum value of C3, etc.

JXN

圆柱孔调心滚子轴承
Cylindrical Bore Spherical Roller Bearings

μm

公称内径 nominal bore diameter d/ mm		2组 group 2		0组 group 0		3组 group 3		4组 group 4		5组 group 5	
超过 exceed	到 to	min	max	min	max	min	max	min	max	min	max
14	18	10	20	20	35	35	45	45	60	60	75
18	24	10	20	20	35	35	45	45	60	60	75
24	30	15	25	25	40	40	55	55	75	75	95
30	40	15	30	30	45	45	60	60	80	80	100
40	50	20	35	35	55	55	75	75	100	100	125
50	65	20	40	40	65	65	90	90	120	120	150
65	80	30	50	50	80	80	110	110	145	145	180
80	100	35	60	60	100	100	135	135	180	180	225
100	120	40	75	75	120	120	160	160	210	210	260
120	140	50	95	95	145	145	190	190	240	240	300
140	160	60	110	110	170	170	220	220	280	280	350
160	180	65	120	120	180	180	240	240	310	310	390
180	200	70	130	130	200	200	260	260	340	340	430
200	225	80	140	140	220	220	290	290	380	380	470
225	250	90	150	150	240	240	320	320	420	420	520
250	280	100	170	170	260	260	350	350	460	460	570
280	315	110	190	190	280	280	370	370	500	500	630
315	355	120	200	200	310	310	410	410	550	550	690
355	400	130	220	220	340	340	450	450	600	600	750
400	450	140	240	240	370	370	500	500	660	660	820
450	500	140	260	260	410	410	550	550	720	720	900
500	560	150	280	280	440	440	600	600	780	780	1000
560	630	170	310	310	480	480	650	650	850	850	1100
630	710	190	350	350	530	530	700	700	920	920	1190
710	800	210	390	390	580	580	770	770	1010	1010	1300
800	900	230	430	430	650	650	860	860	1120	1120	1440
900	1000	260	480	480	710	710	930	930	1220	1220	1570

圆锥孔调心滚子轴承
Cylindrical Bore Spherical Roller Bearings

μm

公称内径 nominal bore diameter d/ mm		2组 group 2		0组 group 0		3组 group 3		4组 group 4		5组 group 5		建议安装中RIC的减少量 recommended reduction of RIC due to installation		建议安装后RIC recom mended RIC after installation
超过 exceed	到 to	min	max	min	max	min	max	min	max	min	max	min	max	min
18	24	15	25	25	35	35	45	45	60	60	75			
24	30	20	30	30	40	40	55	55	75	75	95	15	20	15
30	40	25	35	35	50	50	65	65	85	85	105	20	25	15
40	50	30	45	45	60	60	80	80	100	100	130	25	30	20
50	65	40	55	55	75	75	95	95	120	120	160	30	38	25
65	80	50	70	70	95	95	120	120	150	150	200	38	51	25
80	100	55	80	80	110	110	140	140	180	180	230	46	64	36
100	120	65	100	100	135	135	170	170	220	220	280	51	71	51
120	140	80	120	120	160	160	200	200	260	260	330	64	89	56
140	160	90	130	130	180	180	230	230	300	300	380	76	102	56
160	180	100	140	140	200	200	260	260	340	340	430	76	114	61
180	200	110	160	160	220	220	290	290	370	370	470	89	127	71
200	225	120	180	180	250	250	320	320	410	410	520	102	140	76
225	250	140	200	200	270	270	350	350	450	450	570	114	152	89
250	280	150	220	220	300	300	390	390	490	490	620	114	165	102
280	315	170	240	240	330	330	430	430	540	540	680	127	178	102
315	355	190	270	270	360	360	470	470	590	590	740	140	190	114
355	400	210	300	300	400	400	520	520	650	650	820	152	203	127
400	450	230	330	330	440	440	570	570	720	720	910	165	216	152
450	500	260	370	370	490	490	630	630	790	790	1000	178	229	165
500	560	290	410	410	540	540	680	680	870	870	1100	203	254	178
560	630	320	460	460	600	600	760	760	980	980	1230	229	279	203
630	710	350	510	510	670	670	850	850	1090	1090	1360	254	305	203
710	800	390	570	570	750	750	960	960	1220	1220	1500	279	356	229
800	900	440	640	640	840	840	1070	1070	1370	1370	1690	305	381	252
900	1000	490	710	710	930	930	1190	1190	1520	1520	1860	356	432	279

对中误差

球面滚子轴承可以自动调心，在没有影响轴承性能的情况下，可以允许内圈与外圈之间有一定的角度误差。在一般的负荷和工作条件下(C/P > 10)，如果内圈与外圈之间的角度误差不变，可以应用下表中给出的允许角度误差的参考值。能否完全应用这些参考值，取决于轴承配置的设计和采用的密封件的类型等。

在某些情况下，内圈与外圈之间的角度误差是会改变的，如：

振动筛是属于不平衡转动的工况，因此轴挠曲的角度也在转动，或在造纸机中专门为补偿挠曲的滚筒，其静止轴是弯曲的。(如下图)

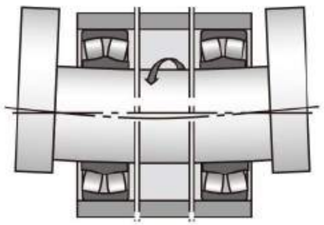
在这些工作条件下，轴承内会产生额外的滑动，考虑到轴承因摩擦而产生的热，内圈与外圈之间的角度误差应小于1度。

密封轴承可以允许轴与轴承座之间的角度误差小于0.5度。在这个参考值之下，对密封圈的功能不会造成损害。

允许角度差

轴承系列 尺寸[1]	允许角度 误差度	轴承系列 尺寸	允许角度 误差度	轴承系列 尺寸	允许角度 误差度
213系列	2	231系列		240系列	2
		尺寸 < 60	2		
222系列		尺寸 > 60	3	241系列	
尺寸 < 52	2			尺寸 < 64	2.5
尺寸 > 52	1.5	232系列		尺寸 > 64	3.5
		尺寸 < 52	2.5		
223系列	3	尺寸 > 52	3.5	248系列	1.5
230系列		238系列	1.5	249系列	2.5
尺寸 < 56	2				
尺寸 > 56	2.5	239系列	1.5		

1) 尺寸是指轴承型号最后的两个数位



轴承负荷承载能力

由于调心滚子轴承独特的内部设计，可以承受径向和轴向的联合载荷，能够承受较大的径向载荷，还能承受双向作用的轴向载荷，但不能承受纯轴向载荷。

配紧定套的调心滚子轴承安装在没有轴肩的光轴上，能承受多大的轴向负荷取决于轴和紧定套之间的摩擦。

The Error of Centration

Spherical roller bearings can be self-aligning, without affecting the performance of the bearing, it is allowed a certain of angular error exists between the inner ring and the outer ring. Under normal load and operating conditions (C/P> 10), if the angular error between the inner ring and the outer ring is constant, the reference value of the permissible angular error given in the table below can be applied. The full application of these reference values depends on the design of the bearing arrangement and the seal type that used.

In some cases, the angular error between the inner ring and the outer ring is changed, such as:

Vibrating screen is the case of unbalanced rotation, so the angle of deflection of the shaft is also rotating, or the drum which is used for compensate the deflection in the paper machine, the stationary shaft is curved.

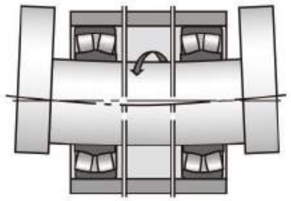
In these working conditions, the bearing will generate additional sliding, considering the heat generated by friction of bearing, the angle error between the inner and outer ring should be less than 1 degree.

The sealed bearing allows the angular error between the shaft and the housing to be less than 0.5 degrees. The seals will not be damaged below this reference value.

Allowed angular error

Bearing series Size[1]	Allowed angular error Degree	Bearing series Size	Allowed angular error Degree	Bearing series Size	Allowed angular error Degree
213 series	2	231 series		240 series	2
		size < 60	2		
222 series		size > 64	3	241 series	
size < 52	2			size < 64	2.5
size > 52	1.5	232 series		size > 64	3.5
		size < 52	2.5		
223 series	3	size > 52	3.5	248 series	1.5
230 series		238 series	1.5	249 series	2.5
size < 56	2				
size > 56	2.5	239 series	1.5		

1) Size refer to the last two digits of the bearing type



Bearing Load Capacity

As the unique internal design of SRB, it bear combined radial and axial load,and larger radial load, as well as the bilateral load, but the pure axial load is excluded.

Spherical roller bearings with adapter sleeves are mounted on the axis without a shoulder, its amount of axial load depends on the friction between the shaft and the adapter sleeve.

最小负荷

为使轴承获得良好运行，调心滚子轴承像所有的球轴承和滚子轴承一样，必须承受一定的最小负荷，尤其是在高速或高加速度，又或在负荷方向快速改变下工作。在这些工况下，滚子和保持架的惯性力以及润滑剂内的摩擦将对轴承的滚动产生不良影响，在滚子和滚道之间可能会产生对轴承具有损害性的滑动运动。

调心滚子轴承所需的最小负荷可用以下公式进行估算：

$$P_{0m}=0.01C_{or}$$

式中

P_{0m}=最小当量静负荷， KN

Cor =基本额定静负荷， KN

在低温状态下启动或润滑剂粘度很高的情况下，可能需要更大的最小负荷，甚至高于P0m=0.01Cor。轴承支撑的重量加上外力，通常已超过所需的最小负荷。若尚未能达到最小负荷，该调心滚子轴承必须施以额外的径向负荷。

径向当量载荷

调心滚子轴承在恒定的径向和轴向载荷作用下的径向当量动载荷为：

$P=F_r+Y_1F_a$ 当$F_a/F_r\le e$

$P=0.67F_r+Y_2F_a$ 当$F_a/F_r>e$

产品表中给出了e、Y_1和Y_2的值

调心滚子轴承的径向当量静载荷为

$P=F_r+Y_0F_a$

产品表中给出了Y_0的值

The Mininum Load

Spherical roller bearings, like all ball bearings and roller bearings, must be designed to bear a minimum load for sound performance, especially at high speed or high acceleration, or rapid changes in load direction. In these conditions, the inertia of the roller and the cage, and the friction in the lubricant will adversely affect the rolling of the bearing, which may cause a damaging sliding motion between the roller and the raceway.

The minimum load of Spherical roller bearings can be estimated with the following formula:

$$P_{0m}=0.01C_{or}$$

In which

P_{0m}=Minimum equivalent static load, KN

Cor =basic rating static load， KN

In case of low temperature start-up or the viscosity of the lubricant is high, a higer minimum load may be required, even higher than P0m = 0.01Cor. The weight of the bearing supported and the external force usually exceeds the required minimum load. If the minimum load has not been reached, the self-aligning roller bearing must be subjected to an additional radial load.

Radial Equivalent Load

The radial equivalent dynamic load of spherical roller bearings in a constant radial and axial load is:

P=Fr+Y1Fa when Fa/Fr≤e

P=0.67Fr+Y2Fa when Fa/Fr>e

Value of e, Y1 and Y2 are listed in product table.

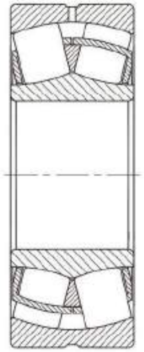
The radial equivalent static load of spherical roller bearings

P=Fr+Y0Fa

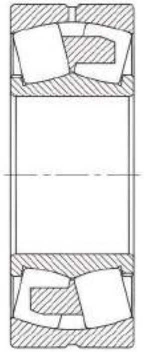
Value of Y0 is listed in product table.

调心滚子轴承的不同设计

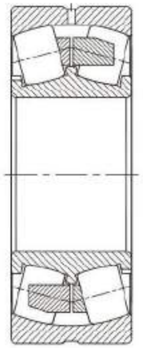
调心滚子轴承由一个带球面滚道的外圈和一个双滚道内圈、一个或两个保持架及一组球面滚子组成。由于外圈球面滚道的中心与轴承中心一致，故具有调心性能，可以自动调整因轴与轴承座之间的角度误差所产生的倾斜或轴的挠曲。其能够承受较大的径向载荷，一定的双向轴向载荷，对于受重载荷或振动的场合特别适用。



C型



CA型



MB型

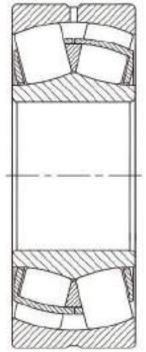
C型轴承内圈两侧无挡边，有两个钢板冲压保持架，两列球面滚子之间有一个活动中挡圈。C型为第二代设计，其特征为采用钢板冲压保持架，加强型对称滚子，经优化设计，具有比传统产品高的额定负荷，应用范围广，使用寿命长。当轴承承受轴向载荷时，其可以调节两列滚子载荷及转速，使其均匀承载，避免应力集中和单列滚子受力。

CA型轴承内圈两侧有挡边，有一个保持架及两列球面滚子。CA型为第二代设计的另一种结构，其特征为采用精密加工的黄铜保持架，加强型对称滚子，额定负荷与C型设计相同，可以与C型设计通用，尤其是大尺寸型号。当轴承承受轴向载荷时，其可以调节两列滚子载荷，使其均匀承载，避免应力集中和单列滚子受力。

MB型轴承为带固定挡边的调心滚子轴承，内圈两侧有挡边，中间有一个固定中档边，有两个保持架，滚子为球面对称滚子。轴承运转时，中挡边虽然不能做轴向移动，但对滚子引导良好。当轴承在承受轴向载荷时不能调节两列滚子载荷，容易单列滚子受力或产生应力集中。该结构虽然有被C、CA型轴承替代的趋势，但在某些特定的应用场合仍有优势，如振动载荷较大的场合。

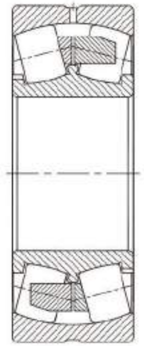
Different Design of Spherical Roller Bearings

Spherical roller bearings consist of an outer ring with spherical roller raceway and a inner ring with a double raceway, one or two cages and a set of spherical rollers. As the raceway center of outer ring is the same with the bearing center of the same bearing, it can be self-aligned, and adjust automatically the tilt or deflection of the shaft, which caused by the angular error between the shaft and housing. It can bear a large radial load with a certain two-way axial load, for heavy load or vibration in particular.



C Type

CA Type

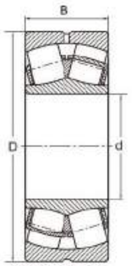


MB Type

There is no rib for both sides of C-type bearings, there are two steel stamping cages, two rows of spherical roller between which there is an active retaining ring. C-type is the design of second generation, characterized by the use of steel stamping cage, reinforced symmetric rollers, its optimal design with higher rated load than traditional products, wider range of applications, and longer life. When the bearing bear the axial load, it can adjust the load and speed of two rows of rollers, which could balance the load, and avoid stress concentration and single-row rollers be forced.

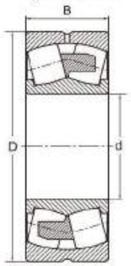
There are ribs on both sides of inner rings for CA-type bearings, a cage and two rows of spherical roller. The CA model is a second generation design which features of applying precision machined brass cage and reinforced symmetrical rollers, with the same rated load as the C type. It is designed for universal use with the C-type design, especially for large sized model. When the bearing is loaded axially, it can adjust the load of two rows of rollers, so as to balance load, to avoid stress concentration and single-row roller force.

MB-type is a spherical roller bering with fixed ribs on boths sides of inner ring. There is a fixed centre rib and two cages in the middle, spherical symmetry rollers. The centre rib cannot move axially but guide roller well in operation. The load of two rows of bearings cannot be adjusted when the bering is in axial load, it is easy to be force by single row bearing or stress concentration.
Although there is a trend that C, CA-type bearing will replace this structure, but it still has advantages in specific applications, such as large vibration load application.



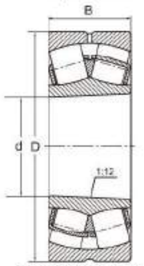
20000 C(W33)

圆柱孔
Cylindrical Bore



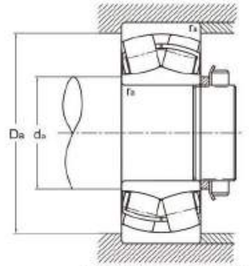
20000 CA(W33)

圆锥孔
Tapered Bore



20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

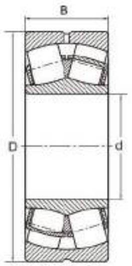


da尺寸应小于内圈外径

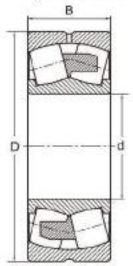
基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
25	52	18	1	45.8	43.5	8300	11000	0.185	30	47	1	0.35	1.92	2.86	1.88	22205CA
	52	18	1	46.7	46.7	8300	11000	0.179	30	47	1	0.35	1.92	2.86	1.88	22205C
	52	18	1	48.3	46.7	8300	11000	0.166	30	47	1	0.35	1.92	2.86	1.88	22205CTN1
30	62	20	1	56.2	55	7100	9100	0.286	36	56	1	0.33	2.03	3.02	1.98	22206CA
	62	20	1	56.2	55	7100	9100	0.287	36	56	1	0.33	2.03	3.02	1.98	22206C
	62	20	1	56.2	55	7100	9100	0.293	36	56	1	0.34	1.98	2.94	1.93	22206MB
	72	19	1.1	60.5	59.1	6500	8000	0.397	37	65	1	0.28	2.37	3.53	2.32	21306CA
35	72	23	1.1	72.8	73.9	6300	7800	0.447	42	65	1	0.33	2.03	3.02	1.98	22207CA
	72	23	1.1	76.5	78.9	6300	7800	0.451	42	65	1	0.32	2.12	3.15	2.07	22207C
	72	23	1.1	72.8	73.8	6300	7800	0.456	42	65	1	0.34	1.99	2.96	1.94	22207MB
	80	21	1.5	76.7	73.1	5800	7100	0.532	42	73	1.5	0.28	2.42	3.6	2.37	21307CA
40	80	23	1.1	85	91	5500	6900	0.536	47	73	1	0.29	2.35	3.5	2.3	22208CA
	80	23	1.1	87.7	90.6	5500	6900	0.556	47	73	1	0.29	2.35	3.5	2.3	22208C
	80	23	1.1	86.5	88.8	5500	6900	0.55	47	73	1	0.3	2.23	3.32	2.18	22208MB
	90	23	1.5	92.1	90.7	5200	6400	0.741	48	82	1.5	0.26	2.6	3.87	2.54	21308CA
	90	23	1.5	92.6	100	5200	6400	0.77	48	82	1.5	0.26	2.6	3.87	2.54	21308C
	90	33	1.5	128	132	5000	6000	1.05	48	82	1.5	0.38	1.76	2.62	1.72	22308CA
	90	33	1.5	128	132	5000	6000	1.06	48	82	1.5	0.38	1.76	2.62	1.72	22308C
45	85	23	1.1	87.4	91.9	5000	6500	0.602	52	78	1	0.27	2.5	3.72	2.44	22209CA
	85	23	1.1	91.6	97.6	5000	6500	0.605	52	78	1	0.27	2.5	3.72	2.44	22209C
	85	23	1.1	87.4	91.9	5000	6500	0.61	52	78	1	0.28	2.37	3.53	2.32	22209MB
	100	25	1.5	112.5	115	4800	5900	0.996	53	92	1.5	0.26	2.57	3.82	2.51	21309CA
	100	25	1.5	110.5	121	4800	5900	1.02	53	92	1.5	0.26	2.64	3.93	2.58	21309C
	100	36	1.5	148	154	4600	5500	1.41	53	92	1.5	0.37	1.83	2.72	1.79	22309CA
	100	36	1.5	148	154	4600	5500	1.43	53	92	1.5	0.37	1.83	2.72	1.79	22309C
50	90	23	1.1	91.3	104	4600	6000	0.641	57	83	1	0.25	2.71	4.04	2.65	22210CA
	90	23	1.1	102	107	4600	6000	0.613	57	83	1	0.25	2.71	4.04	2.65	22210CAE
	90	23	1.1	94.3	104	4600	6000	0.64	57	83	1	0.25	2.71	4.04	2.65	22210C
	90	23	1.1	90.3	97.8	4600	6000	0.65	57	83	1	0.26	2.55	3.8	2.5	22210MB
	110	27	2	124	122	4400	5300	1.28	59	101	2	0.57	2.7	4.02	2.64	21310CA

圆柱孔
Cylindrical Bore

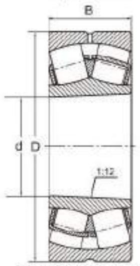
圆锥孔
Tapered Bore



20000 C(W33)

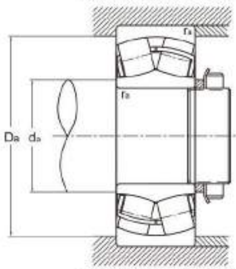


20000 CA(W33)



20000 CK(CAK)(W33)

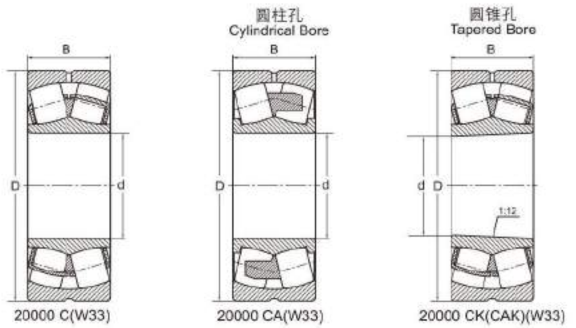
da dimension should be less than OD of inner ring

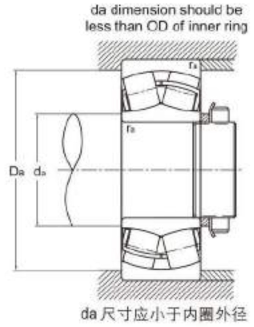


da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	d_a min	D_a max	r_a max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
50	110	27	2	137	152	4400	5300	1.33	59	101	2	0.26	2.64	3.93	2.58	21310CAE
	110	27	2	124	122	4400	5300	1.25	59	101	2	0.25	2.7	4.02	2.64	21310C
	110	40	2	188	192	4200	5000	1.87	59	101	2	0.38	1.79	2.67	1.75	22310CA
	110	40	2	188	192	4200	5000	1.9	59	101	2	0.38	1.79	2.67	1.75	22310C
	110	40	2	188	192	4200	5000	1.87	59	101	2	0.39	1.73	2.58	1.69	22310MB
55	100	25	1.5	115	126	4200	5400	0.855	63	92	1.5	0.25	2.74	4.08	2.68	22211CA
	100	25	1.5	115	126	4200	5400	0.862	63	92	1.5	0.25	2.74	4.08	2.68	22211C
	100	25	1.5	111	119	4200	5400	0.876	63	92	1.5	0.26	2.64	3.93	2.58	22211MB
	120	29	2	151.5	153	4100	5000	1.63	65	110	2	0.25	2.7	4.02	2.64	21311CA
	120	29	2	151.5	153	4100	5000	1.63	65	110	2	0.25	2.7	4.02	2.64	21311C
	120	43	2	224	238	4000	4700	2.42	65	110	2	0.38	1.76	2.62	1.72	22311CA
	120	43	2	224	238	4000	4700	2.45	65	110	2	0.38	1.76	2.62	1.72	22311C
	120	43	2	224	238	4000	4700	2.43	65	110	2	0.38	1.76	2.62	1.72	22311MB
60	110	28	1.5	138	154	4100	5000	1.2	68	102	1.5	0.25	2.71	4.04	2.65	22212CA
	110	28	1.5	147	164	4100	5000	1.16	68	102	1.5	0.24	2.79	4.15	2.73	22212CAE
	110	28	1.5	138	154	4100	5000	1.18	68	102	1.5	0.25	2.71	4.04	2.65	22212C
	110	28	1.5	138	154	4100	5000	1.2	68	102	1.5	0.27	2.51	3.74	2.45	22212MB
	130	31	2.1	173.5	175	3800	4600	1.99	70	120	2	0.26	2.64	3.93	2.58	21312CA
	130	31	2.1	190	223	3800	4600	2.11	70	120	2	0.24	2.87	4.27	2.8	21312CAE
	130	31	2.1	171.5	206	3800	4600	2.12	70	120	2	0.24	2.79	4.15	2.73	21312C
	130	46	2.1	257	273	3700	4400	3	70	120	2	0.38	1.78	2.65	1.74	22312CA
	130	46	2.1	263	306	3700	4400	2.85	70	120	2	0.36	1.88	2.81	1.84	22312C
	130	46	2.1	257	273	3700	4400	3.01	70	120	2	0.38	1.78	2.65	1.74	22312MB
65	120	31	1.5	164	188	3800	4700	1.61	74	111	1.5	0.27	2.49	3.71	2.43	22213CA
	120	31	1.5	175	192	3800	4700	1.52	74	111	1.5	0.25	2.74	4.08	2.68	22213CAE
	120	31	1.5	165	188	3800	4700	1.55	74	111	1.5	0.25	2.69	4	2.63	22213C
	120	31	1.5	164	188	3800	4700	1.63	74	111	1.5	0.27	2.49	3.71	2.43	22213MB
	140	33	2.1	196	197	3500	4300	2.44	76	129	2	0.25	2.69	4	2.63	21313CA
	140	33	2.1	196	197	3500	4300	2.41	76	129	2	0.24	2.84	4.23	2.78	21313C
	140	48	2.1	264	291	3500	4100	3.51	76	129	2	0.35	1.92	2.86	1.88	22313CA

JXN



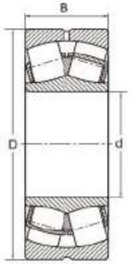


基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y1	Y2	Y0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
65	140	48	2.1	280	313	3500	4100	3.8	76	129	2	0.35	1.92	2.86	1.88	22313C
	140	48	2.1	303	343	3500	4100	3.8	76	129	2	0.35	1.92	2.86	1.88	22313CC
	140	48	2.1	264	291	3500	4100	3.66	76	129	2	0.36	1.85	2.76	1.81	22313MB
70	125	31	1.5	168	193	3600	4400	1.68	79	116	1.5	0.24	2.83	4.21	2.77	22214CA
	125	31	1.5	191	215	3600	4400	1.61	79	116	1.5	0.24	2.87	4.27	2.8	22214CAE
	125	31	1.5	175	204	3600	4400	1.67	79	116	1.5	0.24	2.83	4.21	2.77	22214C
	125	31	1.5	168	193	3600	4400	1.64	79	116	1.5	0.26	2.62	3.9	2.56	22214MB
	150	35	2.1	217	223	3300	4100	2.98	81	139	2	0.25	2.74	4.08	2.68	21314CA
	150	35	2.1	220	269	3300	4100	3.19	81	139	2	0.24	2.84	4.23	2.78	21314C
	150	51	2.1	316	362	3200	3800	4.34	81	139	2	0.35	1.95	2.91	1.91	22314CA
	150	51	2.1	316	362	3200	3800	4.43	81	139	2	0.35	1.95	2.91	1.91	22314C
	150	51	2.1	316	361	3200	3800	4.48	81	139	2	0.36	1.87	2.79	1.83	22314MB
75	115	40	1.1	184	288	3400	4200	1.5	83	105	1.5	0.32	2.12	3.15	2.07	24015CC
	130	31	1.5	175	205	3300	4100	1.71	84	121	1.5	0.22	3.01	4.48	2.94	22215CA
	130	31	1.5	195	225	3300	4100	1.7	84	121	1.5	0.22	3.04	4.53	2.97	22215CAE
	130	31	1.5	182	215	3300	4100	1.77	84	121	1.5	0.22	3.01	4.48	2.94	22215C
	130	31	1.5	175	204	3300	4100	1.77	84	121	1.5	0.25	2.74	4.08	2.68	22215MB
	160	37	2.1	262	270	3200	3900	3.59	87	148	2	0.24	2.84	4.23	2.78	21315CA
	160	37	2.1	262	270	3200	3900	3.57	87	148	2	0.24	2.84	4.23	2.78	21315C
	160	55	2.1	369	437	3100	3600	5.5	87	148	2	0.36	1.87	2.79	1.83	22315CA
	160	55	2.1	367	427	3100	3600	5.69	87	148	2	0.35	1.95	2.9	1.91	22315C
	160	55	2.1	369	437	3100	3600	5.54	87	148	2	0.36	1.87	2.79	1.83	22315MB
80	140	33	2	189	225	3200	4000	2.13	90	130	2	0.22	3.01	4.48	2.94	22216CA
	140	33	2	218	250	3200	4000	2.08	90	130	2	0.22	3.07	4.57	3.0	22216CAE
	140	33	2	197	237	3200	4000	2.2	90	130	2	0.22	3.01	4.48	2.94	22216C
	140	33	2	200	249	3200	4000	2.2	90	130	2	0.22	3.07	4.57	3	22216CC
	140	33	2	189	225	3200	4000	2.26	90	130	2	0.24	2.76	4.11	2.7	22216MB
	170	39	2.1	286	306	3100	3700	4.29	92	158	2	0.24	2.84	4.23	2.78	21316CA
	170	39	2.1	286	306	3100	3700	4.25	92	158	2	0.24	2.84	4.23	2.78	21316C
	170	58	2.1	416	496	3000	3400	6.54	92	158	2	0.36	1.87	2.79	1.83	22316CA

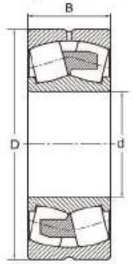
JXN®

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



20000 C(W33)



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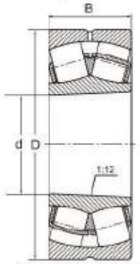
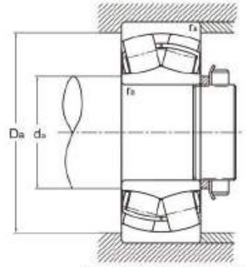


20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

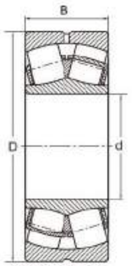


da 尺寸应小于内圈外径

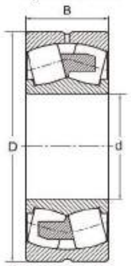
基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y1	Y2	Y0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
80	170	58	2.1	417	497	3000	3400	6.58	92	158	2	0.34	1.97	2.93	1.92	22316C
	170	58	2.1	416	496	3000	3400	6.59	92	158	2	0.36	1.87	2.79	1.83	22316MB
85	150	36	2	235	277	3200	3800	2.73	95	140	2	0.23	2.95	4.4	2.89	22217CA
	150	36	2	235	277	3200	3800	2.73	95	140	2	0.23	2.95	4.4	2.89	22217C
	150	36	2	235	277	3200	3800	2.76	95	140	2	0.23	2.95	4.4	2.89	22217MB
	180	41	3	309	385	2900	3500	5.35	97	168	2.5	0.24	2.9	4.31	2.83	21317CA
	180	41	3	325	401	2900	3500	5.31	97	168	2.5	0.23	2.92	4.35	2.86	21317C
	180	60	3	453	539	2700	3200	7.47	97	168	2.5	0.34	2.01	3	1.97	22317CA
	180	60	3	453	539	2700	3200	7.3	97	168	2.5	0.34	2.01	3	1.97	22317C
	180	60	3	452	538	2700	3200	7.6	97	168	2.5	0.35	1.91	2.85	1.87	22317MB
90	140	50	1.5	241	386	2700	3200	2.89	99	131	1.5	0.32	2.09	3.11	2.04	24018CA
	140	50	1.5	241	386	2700	3200	2.89	99	131	1.5	0.32	2.09	3.11	2.04	24018C
	150	60	2	343	524	2300	2700	4.25	100	140	2	0.39	1.72	2.56	1.68	24118CA
	150	60	2	343	524	2300	2700	4.16	100	140	2	0.39	1.72	2.56	1.68	24118C
	160	40	2	274	332	3200	3900	3.44	101	149	2	0.23	2.9	4.31	2.83	22218CA
	160	40	2	293	360	3200	3900	3.4	101	149	2	0.24	2.84	4.23	2.78	22218CAE
	160	40	2	274	332	3200	3900	3.42	101	149	2	0.23	2.9	4.31	2.83	22218C
	160	40	2	273	332	3200	3900	3.63	101	149	2	0.25	2.67	3.97	2.61	22218MB
	160	52.4	2	332	453	2300	2700	4.64	101	149	2	0.33	2.07	3.09	2.03	23218CA
	160	52.4	2	332	453	2300	2700	4.53	101	149	2	0.33	2.07	3.09	2.03	23218C
	190	43	3	337	387	2800	3300	6.05	103	177	2.5	0.24	2.84	4.23	2.78	21318CA
	190	64	3	497	600	2600	3100	8.83	103	177	2.5	0.35	1.92	2.86	1.88	22318CA
	190	64	3	497	600	2600	3100	9.02	103	177	2.5	0.35	1.92	2.86	1.88	22318C
	190	64	3	520	645	2600	3100	9.02	103	177	2.5	0.34	1.96	2.92	1.92	22318CC
	190	64	3	530	652	2600	3100	9.02	103	177	2.5	0.33	2.03	3.02	1.98	22318E1
	190	64	3	497	600	2600	3100	9	103	177	2.5	0.35	1.92	2.86	1.88	22318MB
95	170	43	2.1	287	359	2900	3500	4.32	106	159	2.1	0.26	2.64	3.93	2.58	22219CA
	170	43	2.1	299	380	2900	3500	4.28	106	159	2.1	0.24	2.8	4.17	2.74	22219C
	170	43	2.1	287	359	2900	3500	4.29	106	159	2.1	0.26	2.64	3.93	2.58	22219MB
	200	45	3	369	444	2700	3200	7.09	109	186	2.5	0.23	2.9	4.31	2.83	21319CA

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



20000 C(W33)



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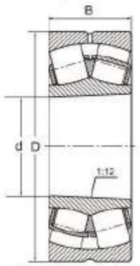
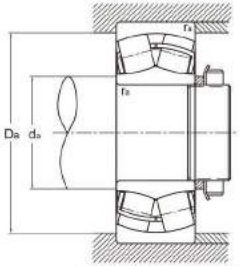


20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

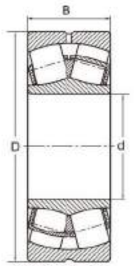


da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
95	200	45	3	370	488	2700	3200	7.27	109	186	2.5	0.23	2.95	4.4	2.89	21319C
	200	67	3	543	657	2300	2800	10.4	108	187	2.5	0.35	1.92	2.86	1.88	22319CA
	200	67	3	543	657	2300	2800	10.4	108	187	2.5	0.35	1.92	2.86	1.88	22319C
	200	67	3	570	710	2300	2800	10.4	108	187	2.5	0.34	1.96	2.92	1.92	22319CC
	200	67	3	543	657	2300	2800	10.4	108	187	2.5	0.35	1.92	2.86	1.88	22319MB
100	140	30	1.1	182	278	2600	3500	1.39	108	132	1	0.2	3.45	5.13	3.37	23920CA
	150	50	1.5	255	425	2400	2900	3.2	109	141	1.5	0.3	2.23	3.32	2.18	24020CA
	150	50	1.5	255	425	2400	2900	3.07	109	141	1.5	0.3	2.23	3.32	2.18	24020C
	165	65	2	409	632	2000	2300	5.54	111	154	2	0.38	1.77	2.64	1.73	24120CA
	165	65	2	442	680	2000	2300	5.5	111	154	2	0.37	1.8	2.69	1.76	24120CC
	165	52	2	343	490	2400	2900	4.41	111	154	2	0.31	2.21	3.29	2.16	23120CA
	165	52	2	343	490	2400	2900	4.48	111	154	2	0.31	2.21	3.29	2.16	23120C
	180	46	2.1	335	424	2800	3400	5.06	112	168	2	0.24	2.84	4.23	2.78	22220CA
	180	46	2.1	335	424	2800	3400	5.2	112	168	2	0.24	2.84	4.23	2.78	22220C
	180	46	2.1	334	423	2800	3400	5.3	112	168	2	0.26	2.55	3.8	2.5	22220MB
	180	60.3	2.1	426	589	2100	2400	6.76	112	168	2	0.33	2.03	3.02	1.98	23220CA
	180	60.3	2.1	426	589	2100	2400	6.71	112	168	2	0.33	2.03	3.02	1.98	23220C
	180	60.3	2.1	459	627	2100	2400	6.71	112	168	2	0.33	2.07	3.09	2.03	23220CC
	215	47	3	402	446	2500	3100	8.44	114	201	2.5	0.22	3.04	4.53	2.97	21320CA
	215	47	3	407	556	2500	3100	8.99	114	201	2.5	0.22	3.01	4.48	2.94	21320C
	215	73	3	645	799	2300	2600	13.1	114	201	2.5	0.35	1.91	2.85	1.87	22320CA
	215	73	3	636	782	2300	2600	13.4	114	201	2.5	0.36	1.89	2.81	1.84	22320C
	215	73	3	661	839	2300	2600	13.4	114	201	2.5	0.35	1.92	2.86	1.88	22320CC
	215	73	3	645	799	2300	2600	13.4	114	201	2.5	0.35	1.91	2.85	1.87	22320MB
110	150	30	1.1	191	303	2500	3300	1.5	118	142	1	0.18	3.73	5.56	3.65	23922CA
	170	45	2	317	483	2600	3200	3.76	120	160	2	0.25	2.67	3.97	2.61	23022CA
	170	45	2	318	484	2600	3200	3.75	120	160	2	0.24	2.76	4.11	2.7	23022C
	170	45	2	317	483	2600	3200	3.84	120	160	2	0.25	2.67	3.97	2.61	23022MB
	170	60	2	309	506	2300	2600	5.12	120	160	2	0.32	2.12	3.15	2.07	24022CA
	170	60	2	310	508	2300	2600	4.96	120	160	2	0.29	2.32	3.45	2.26	24022C

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



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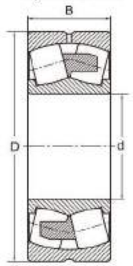

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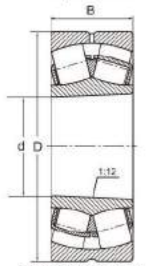
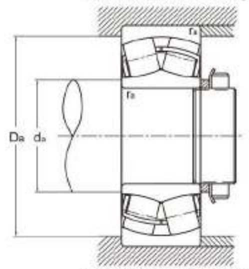


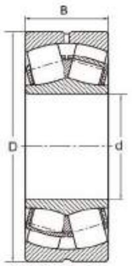
20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring



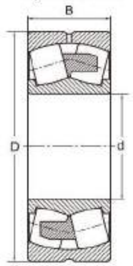
da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
110	180	56	2	402	596	2300	2600	5.68	121	169	2	0.29	2.32	3.45	2.26	23122CA
	180	56	2	402	596	2300	2600	5.82	121	169	2	0.29	2.32	3.45	2.26	23122C
	180	69	2	486	758	1700	2000	6.94	121	169	2	0.37	1.84	2.74	1.8	24122CA
	180	69	2	500	758	1700	2000	7.09	121	169	2	0.35	1.92	2.86	1.88	24122C
	200	53	2.1	436	574	2600	3200	7.69	123	187	2	0.26	2.55	3.8	2.5	22222CA
	200	53	2.1	436	574	2600	3200	7.34	123	187	2	0.25	2.67	3.97	2.61	22222C
	200	53	2.1	436	574	2600	3200	7.65	123	187	2	0.27	2.51	3.74	2.45	22222MB
	200	69.8	2.1	556	786	1800	2100	9.73	123	187	2	0.34	2	2.97	1.95	23222CA
	200	69.8	2.1	556	786	1800	2100	9.82	123	187	2	0.34	2	2.97	1.95	23222C
	240	50	3	496	611	2300	2900	11.8	124	226	2.5	0.22	3.14	4.67	3.07	21322CA
	240	80	3	762	916	2000	2300	17.8	125	225	2.5	0.35	1.95	2.9	1.91	22322CA
	240	80	3	762	916	2000	2300	18.1	125	225	2.5	0.35	1.95	2.9	1.91	22322C
	240	80	3	810	991	2000	2300	18.1	125	225	2.5	0.34	1.98	2.94	1.93	22322CC
	240	80	3	762	915	2000	2300	18.5	125	225	2.5	0.35	1.91	2.85	1.87	22322MB
120	165	34	1.1	238	383	2300	3100	2.12	129	156	1	0.19	3.62	5.39	3.54	23924CA
	180	46	2	331	514	2400	3000	4.06	131	169	2	0.24	2.79	4.15	2.73	23024CA
	180	46	2	345	515	2400	3000	4.18	131	169	2	0.23	2.92	4.35	2.86	23024C
	180	46	2	343	536	2400	3000	4.18	131	169	2	0.23	2.95	4.4	2.89	23024CC
	180	46	2	345	514	2400	3000	4.16	131	169	2	0.24	2.79	4.15	2.73	23024MB
	180	60	2	406	673	2000	2400	5.38	131	169	2	0.31	2.18	3.24	2.13	24024CA
	180	60	2	406	674	2000	2400	5.6	131	169	2	0.31	2.21	3.29	2.16	24024C
	200	62	2	469	681	2000	2300	7.81	132	188	2	0.29	2.35	3.5	2.3	23124CA
	200	62	2	486	715	2000	2300	8.16	132	188	2	0.29	2.35	3.5	2.3	23124C
	200	80	2	588	910	1500	1800	10.1	132	188	2	0.39	1.74	2.59	1.7	24124CA
	200	80	2	610	956	1500	1800	10.05	132	188	2	0.39	1.74	2.59	1.7	24124C
	215	58	2.1	513	666	2300	2900	9.02	133	202	2	0.27	2.49	3.71	2.43	22224CA
	215	58	2.1	513	666	2300	2900	8.94	133	202	2	0.27	2.49	3.71	2.43	22224C
	215	58	2.1	513	666	2300	2900	9.3	133	202	2	0.27	2.49	3.71	2.43	22224MB
	215	76	2.1	623	904	1600	1900	12.19	133	202	2	0.34	1.98	2.94	1.93	23224CA
	215	76	2.1	623	904	1600	1900	12.1	133	202	2	0.34	1.98	2.94	1.93	23224C



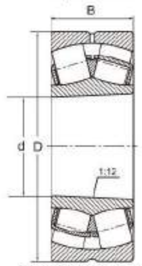
20000 C(W33)

圆柱孔
Cylindrical Bore



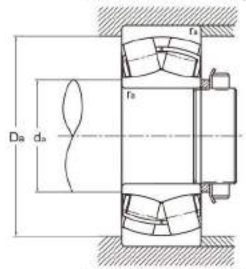
20000 CA(W33)

圆锥孔
Tapered Bore



20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

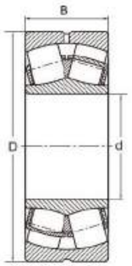


da尺寸应小于内圈外径

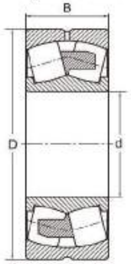
基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
120	215	76	2.1	671	993	1600	1900	12.1	133	202	2	0.34	1.96	2.92	1.92	23224CC
	260	86	3	892	1129	1700	2000	23.5	136	244	2.5	0.34	1.96	2.92	1.92	22324CA
	260	86	3	892	1129	1700	2000	21.7	136	244	2.5	0.34	1.96	2.92	1.92	22324C
	260	86	3	935	1210	1700	2000	21.7	136	244	2.5	0.34	2	2.98	1.96	22324CC
	260	86	3	892	1129	1700	2000	23.3	136	244	2.5	0.34	1.96	2.92	1.92	22324MB
130	180	37	1.5	284	455	2200	2900	2.76	140	170	1.5	0.19	3.61	5.38	3.53	23926CA
	200	52	2	419	687	2300	2800	5.96	142	188	2	0.25	2.71	4.04	2.65	23026CA
	200	52	2	419	654	2300	2800	6.02	142	188	2	0.24	2.84	4.23	2.78	23026C
	200	52	2	419	654	2300	2800	6.11	142	188	2	0.25	2.71	4.04	2.65	23026MB
	200	69	2	509	841	1800	2200	7.9	142	188	2	0.33	2.07	3.09	2.03	24026CA
	200	69	2	510	842	1800	2200	7.76	142	188	2	0.31	2.15	3.2	2.1	24026C
	210	64	2	539	798	1800	2200	8.76	142	198	2	0.28	2.4	3.58	2.35	23126CA
	210	64	2	551	825	1800	2200	8.59	142	198	2	0.28	2.4	3.58	2.35	23126C
	210	80	2	628	1020	1400	1600	10.8	142	198	2	0.36	1.87	2.79	1.83	24126CA
	210	80	2	628	1020	1400	1600	10.5	142	198	2	0.36	1.87	2.79	1.83	24126C
	230	64	3	609	804	2200	2600	11.2	144	216	2.5	0.28	2.43	3.61	2.37	22226CA
	230	64	3	609	804	2200	2600	11.2	144	216	2.5	0.28	2.43	3.61	2.37	22226C
	230	64	3	609	804	2200	2600	11.5	144	216	2.5	0.28	2.43	3.61	2.37	22226MB
	230	80	3	705	1020	1500	1700	14.6	144	216	2.5	0.34	1.99	2.96	1.94	23226CA
	230	80	3	705	1020	1500	1700	14.3	144	216	2.5	0.34	1.99	2.96	1.94	23226C
	230	80	3	779	1180	1500	1700	14.3	144	216	2.5	0.34	2	2.98	1.96	23226CC
	280	93	4	1029	1320	1600	1800	28.3	147	263	3	0.35	1.95	2.9	1.91	22326CA
	280	93	4	1029	1320	1600	1800	29.1	147	263	3	0.35	1.95	2.9	1.91	22326C
	280	93	4	1083	1430	1600	1800	29.1	147	263	3	0.34	1.98	2.94	1.93	22326CC
	280	93	4	1029	1320	1600	1800	28.9	147	263	3	0.35	1.95	2.9	1.91	22326MB
140	190	37	1.5	295	490	2100	2700	2.95	150	180	1.5	0.18	3.85	5.73	3.76	23928CA
	210	53	2	437	689	2100	2500	6.38	152	198	2	0.24	2.81	4.19	2.75	23028CA
	210	53	2	450	717	2100	2500	6.43	152	198	2	0.23	2.92	4.35	2.86	23028C
	210	53	2	437	689	2100	2500	6.59	152	198	2	0.24	2.81	4.19	2.75	23028MB
	210	69	2	521	865	1600	1900	8.36	152	198	2	0.31	2.21	3.29	2.16	24028CA

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



20000 C(W33)



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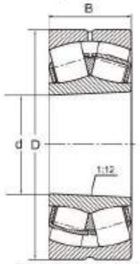
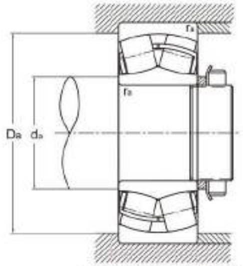


20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

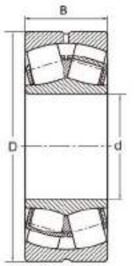


da尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
140	210	69	2	537	901	1600	1900	8.17	152	198	2	0.31	2.21	3.29	2.16	24028C
	225	68	2.1	574	876	1600	1900	10.4	153	212	2	0.28	2.39	3.56	2.34	23128CA
	225	68	2.1	574	876	1600	1900	10.4	153	212	2	0.28	2.39	3.56	2.34	23128C
	225	85	2.1	667	1100	1200	1400	13.1	153	212	2	0.35	1.94	2.88	1.89	24128CA
	225	85	2.1	668	1100	1200	1400	13.1	153	212	2	0.34	1.99	2.96	1.94	24128C
	250	68	3	690	920	2000	2300	14.1	155	235	2.5	0.27	2.49	3.71	2.43	22228CA
	250	68	3	690	920	2000	2300	14.3	155	235	2.5	0.27	2.49	3.71	2.43	22228C
	250	68	3	690	920	2000	2300	14.7	155	235	2.5	0.27	2.49	3.71	2.43	22228MB
	250	88	3	861	1230	1400	1500	18.6	155	235	2.5	0.35	1.92	2.85	1.87	23228CA
	250	88	3	861	1230	1400	1500	18.6	155	235	2.5	0.35	1.92	2.85	1.87	23228C
	250	88	3	874	1340	1400	1500	18.6	155	235	2.5	0.34	1.99	2.97	1.95	23228CC
	300	102	4	1200	1550	1400	1600	35.4	158	282	3	0.35	1.91	2.85	1.87	22328CA
	300	102	4	1200	1550	1400	1600	36.7	158	282	3	0.35	1.91	2.85	1.87	22328C
	300	102	4	1262	1670	1400	1600	36.7	158	282	3	0.35	1.95	2.9	1.91	22328CC
	300	102	4	1200	1550	1400	1600	36.2	158	282	3	0.35	1.91	2.85	1.87	22328MB
	300	118	4	1330	1790	1000	1400	41.5	158	282	3	0.41	1.63	2.43	1.6	23328CA
150	210	45	2	338	569	2000	2500	4.88	161	199	2	0.2	3.38	5.03	3.3	23930CA
	225	56	2.1	491	789	1900	2300	7.76	162	213	2	0.24	2.84	4.23	2.78	23030CA
	225	56	2.1	491	790	1900	2300	7.77	162	213	2	0.22	3.01	4.48	2.94	23030C
	225	56	2.1	491	789	1900	2300	7.94	162	213	2	0.24	2.84	4.23	2.78	23030MB
	225	75	2.1	593	1010	1500	1800	10.4	162	213	2	0.32	2.12	3.15	2.07	24030CA
	225	75	2.1	611	1050	1500	1800	10.2	162	213	2	0.32	2.12	3.15	2.07	24030C
	250	80	2.1	753	1150	1400	1700	16.2	164	236	2	0.31	2.16	3.22	2.12	23130CA
	250	80	2.1	753	1150	1400	1700	15.9	164	236	2	0.31	2.16	3.22	2.12	23130C
	250	80	2.1	753	1150	1400	1700	16.2	164	236	2	0.32	2.13	3.17	2.08	23130MB
	250	100	2.1	937	1520	1100	1200	19.7	164	236	2	0.39	1.74	2.59	1.7	24130CA
	250	100	2.1	940	1520	1100	1200	19.6	164	236	2	0.37	1.8	2.69	1.76	24130C
	270	73	3	789	1060	1800	2200	18.2	165	255	2.5	0.27	2.49	3.71	2.43	22230CA
	270	73	3	789	1060	1800	2200	18.6	165	255	2.5	0.26	2.55	3.8	2.5	22230C
	270	73	3	789	1060	1800	2200	18.6	165	255	2.5	0.27	2.49	3.71	2.43	22230MB

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



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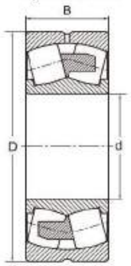

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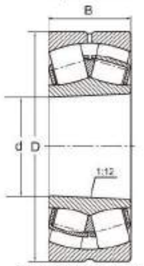
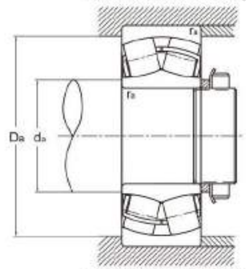


20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring



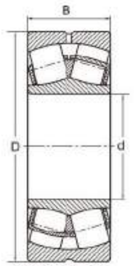
da尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
	270	96	3	973	1450	1300	1400	24	165	255	2.5	0.36	1.87	2.79	1.83	23230CA
	270	96	3	973	1450	1300	1400	24.2	165	255	2.5	0.36	1.87	2.79	1.83	23230C
	270	96	3	1020	1630	1300	1400	24.2	165	255	2.5	0.34	1.98	2.95	1.93	23230CC
150	320	108	4	1340	1750	1400	1500	43.7	168	302	3	0.35	1.92	2.86	1.88	22330CA
	320	108	4	1340	1750	1400	1500	43.8	168	302	3	0.35	1.92	2.86	1.88	22330C
	320	108	4	1420	1900	1400	1500	43.8	168	302	3	0.34	1.96	2.92	1.92	22330CC
	320	108	4	1340	1750	1400	1500	44	168	302	3	0.35	1.92	2.86	1.88	22330MB
	220	45	2	362	634	1900	2300	5.09	171	209	2	0.18	3.66	5.46	3.58	23932CA
	240	60	2.1	566	917	1800	2200	9.49	173	227	2	0.24	2.84	4.23	2.78	23032CA
	240	60	2.1	566	917	1800	2200	9.51	173	227	2	0.23	2.92	4.35	2.86	23032C
	240	60	2.1	566	917	1800	2200	9.7	173	227	2	0.24	2.84	4.23	2.78	23032MB
	240	80	2.1	689	1180	1400	1600	12.6	173	227	2	0.32	2.12	3.15	2.07	24032CA
	240	80	2.1	711	1230	1400	1600	12.5	173	227	2	0.3	2.26	3.37	2.21	24032C
	240	80	2.1	738	1290	1400	1600	12.5	173	227	2	0.3	2.25	3.34	2.2	24032CC
	270	86	2.1	885	1370	1400	1500	20.8	175	255	2	0.31	2.16	3.22	2.12	23132CA
	270	86	2.1	885	1370	1400	1500	20.4	175	255	2	0.31	2.16	3.22	2.12	23132C
160	270	86	2.1	884	1370	1400	1500	20.7	175	255	2	0.31	2.15	3.2	2.1	23132MB
	270	109	2.1	1100	1810	1000	1100	25.6	175	255	2	0.39	1.71	2.54	1.67	24132CA
	270	109	2.1	1100	1810	1000	1100	25.3	175	255	2	0.39	1.71	2.54	1.67	24132C
	290	80	3	925	1220	1700	2000	22.5	176	274	2.5	0.28	2.43	3.61	2.37	22232CA
	290	80	3	925	1220	1700	2000	22.9	176	274	2.5	0.28	2.43	3.61	2.37	22232C
	290	80	3	925	1220	1700	2000	23.5	176	274	2.5	0.28	2.43	3.61	2.37	22232MB
	290	104	3	1100	1670	1100	1300	30.6	176	274	2.5	0.36	1.87	2.79	1.83	23232CA
	290	104	3	1100	1670	1100	1300	30.5	176	274	2.5	0.36	1.87	2.79	1.83	23232C
	290	104	3	1150	1870	1100	1300	30.5	176	274	2.5	0.35	1.92	2.86	1.88	23232CC
	340	114	4	1420	1860	1200	1400	51.9	179	321	3	0.35	1.91	2.85	1.87	22332CA
	340	114	4	1420	1860	1200	1400	51.7	179	321	3	0.35	1.91	2.85	1.87	22332C
	340	114	4	1420	1860	1200	1400	52.2	179	321	3	0.35	1.91	2.85	1.87	22332MB
170	230	45	2	377	660	1700	2100	5.29	181	219	2	0.18	3.85	5.73	3.76	23934CA
	260	67	2.1	686	1110	1600	2000	12.9	184	246	2	0.25	2.74	4.08	2.68	23034CA

JXN®

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



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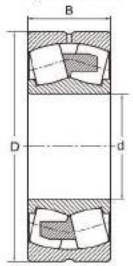

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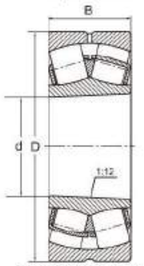
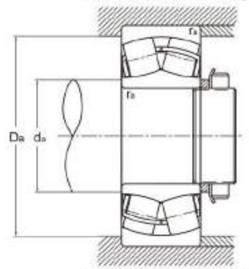


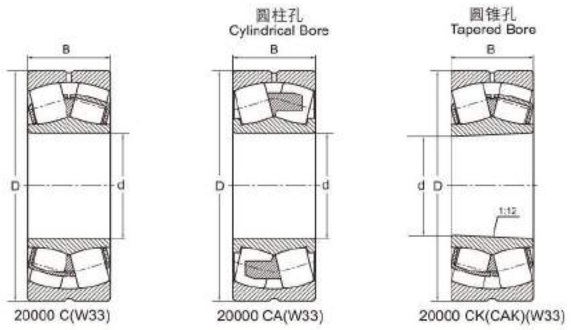
20000 CK(CAK)(W33)

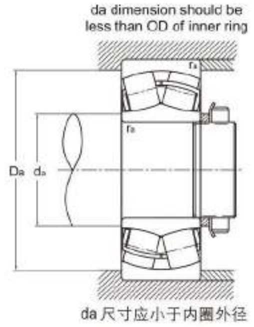
da dimension should be less than OD of inner ring



da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y1	Y2	Y0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
170	260	67	2.1	687	1110	1600	2000	12.9	184	246	2	0.24	2.84	4.23	2.78	23034C
	260	67	2.1	686	1110	1600	2000	13.2	184	246	2	0.25	2.74	4.08	2.68	23034MB
	260	90	2.1	842	1470	1400	1500	17.4	184	246	2	0.33	2.07	3.09	2.03	24034CA
	260	90	2.1	842	1470	1400	1500	17	184	246	2	0.33	2.07	3.09	2.03	24034C
	260	90	2.1	892	1580	1400	1500	17	184	246	2	0.32	2.13	3.17	2.08	24034CC
	280	88	2.1	933	1490	1300	1400	22.2	185	265	2	0.31	2.21	3.29	2.16	23134CA
	280	88	2.1	988	1610	1300	1400	21.7	185	265	2	0.3	2.12	3.15	2.07	23134CC
	280	109	2.1	1140	1870	900	1000	26.9	185	265	2	0.37	1.83	2.72	1.79	24134CA
	280	109	2.1	1140	1870	900	1000	26.2	185	265	2	0.38	1.79	2.67	1.75	24134C
	280	109	2.1	1176	1940	900	1000	26.2	185	265	2	0.37	1.8	2.69	1.76	24134CC
	310	86	4	1030	1380	1500	1800	29.2	187	293	3	0.28	2.41	3.59	2.35	22234CA
	310	86	4	1030	1380	1500	1800	28.2	187	293	3	0.28	2.41	3.59	2.35	22234C
	310	86	4	1035	1480	1500	1800	28.2	187	293	3	0.27	2.49	3.71	2.43	22234CC
	310	86	4	1030	1380	1500	1800	29.1	187	293	3	0.28	2.41	3.59	2.35	22234MB
	310	110	4	1290	1970	1000	1100	37	187	293	3	0.34	1.99	2.96	1.94	23234CA
	310	110	4	1290	1970	1000	1100	37	187	293	3	0.34	1.99	2.96	1.94	23234C
	310	110	4	1330	2110	1000	1100	37	187	293	3	0.34	1.98	2.94	1.93	23234CC
	360	120	4	1580	2090	1100	1300	61.1	190	340	3	0.35	1.91	2.85	1.87	22334CA
	360	120	4	1580	2090	1100	1300	60.2	190	340	3	0.35	1.91	2.85	1.87	22334C
	360	120	4	1720	2345	1100	1300	60.2	190	340	3	0.34	1.96	2.92	1.92	22334CC
	360	120	4	1580	2090	1100	1300	61.4	190	340	3	0.35	1.91	2.85	1.87	22334MB
180	250	52	2	470	849	1600	2000	7.99	192	238	2	0.19	3.5	5.21	3.42	23936CA
	280	74	2.1	739	1170	1500	1800	16.8	195	265	2	0.24	2.76	4.11	2.7	23036CA
	280	74	2.1	739	1170	1500	1800	16.9	195	265	2	0.24	2.76	4.11	2.7	23036C
	280	74	2.1	738	1170	1500	1800	17.3	195	265	2	0.26	2.55	3.8	2.5	23036MB
	280	100	2.1	985	1710	1200	1400	22.9	195	265	2	0.34	1.99	2.96	1.94	24036CA
	280	100	2.1	985	1710	1200	1400	22.7	195	265	2	0.34	1.99	2.96	1.94	24036C
	280	100	2.1	1060	1860	1200	1400	22.7	195	265	2	0.33	2.06	3.06	2.01	24036CC
	300	96	3	1050	1650	1200	1400	27.4	196	284	2.5	0.32	2.13	3.17	2.08	23136CA
	300	96	3	1050	1650	1200	1400	27.4	196	284	2.5	0.32	2.13	3.17	2.08	23136C

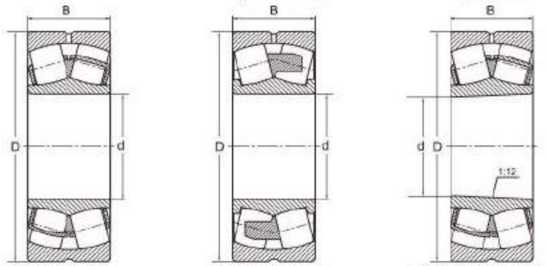




基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
180	300	96	3	1050	1650	1200	1400	27.9	196	284	2.5	0.32	2.13	3.17	2.08	23136MB
	300	118	3	1300	2180	800	930	33.5	196	284	2.5	0.38	1.77	2.64	1.73	24136CA
	300	118	3	1300	2180	800	930	33.1	196	284	2.5	0.38	1.77	2.64	1.73	24136C
	320	86	4	1090	1490	1400	1700	30	197	303	3	0.27	2.51	3.74	2.45	22236CA
	320	86	4	1090	1490	1400	1700	29.5	197	303	3	0.27	2.51	3.74	2.45	22236C
	320	86	4	1090	1490	1400	1700	30.3	197	303	3	0.27	2.51	3.74	2.45	22236MB
	320	112	4	1340	2050	1000	1100	39.5	197	303	3	0.35	1.94	2.88	1.89	23236CA
	320	112	4	1340	2050	1000	1100	39.1	197	303	3	0.35	1.94	2.88	1.89	23236C
	320	112	4	1420	2290	1000	1100	39.1	197	303	3	0.34	1.98	2.94	1.93	23236CC
	380	126	4	1725	2290	1100	1200	71.4	201	359	3	0.35	1.92	2.86	1.88	22336CA
	380	126	4	1725	2290	1100	1200	70.4	201	359	3	0.35	1.92	2.86	1.88	22336C
	380	126	4	1900	2590	1100	1200	70.4	201	359	3	0.34	1.98	2.94	1.93	22336CC
	380	126	4	1725	2290	1100	1200	71.8	201	359	3	0.35	1.92	2.86	1.88	22336MB
190	260	52	2	490	871	1500	1900	8.25	202	248	2	0.19	3.62	5.39	3.54	23938CA
	290	75	2.1	822	1360	1400	1700	18	205	275	2	0.24	2.76	4.11	2.7	23038CA
	290	75	2.1	822	1370	1400	1700	17.8	205	275	2	0.24	2.81	4.19	2.75	23038C
	290	75	2.1	822	1360	1400	1700	18.3	205	275	2	0.24	2.76	4.11	2.7	23038MB
	290	100	2.1	826	1440	1100	1300	24.2	205	275	2	0.31	2.18	3.24	2.13	24038CA
	290	100	2.1	1070	1920	1100	1300	23.74	205	275	2	0.31	2.15	3.2	2.1	24038CC
	320	104	3	1230	1960	1100	1300	35	207	303	2.5	0.32	2.12	3.15	2.07	23138CA
	320	104	3	1230	1960	1100	1300	34.3	207	303	2.5	0.32	2.12	3.15	2.07	23138C
	320	104	3	1310	2120	1100	1300	34.3	207	303	2.5	0.31	2.2	3.27	2.15	23138CC
	320	104	3	1230	1960	1100	1300	34.9	207	303	2.5	0.32	2.12	3.15	2.07	23138MB
	320	128	3	1410	2358	730	870	42.1	207	303	2.5	0.37	1.82	2.71	1.78	24138CA
	320	128	3	1555	2640	730	870	41.8	207	303	2.5	0.38	1.79	2.67	1.75	24138CC
	340	92	4	1210	1700	1400	1600	37.3	208	322	3	0.27	2.49	3.71	2.43	22238CA
	340	92	4	1210	1700	1400	1600	35.9	208	322	3	0.27	2.49	3.71	2.43	22238C
	340	92	4	1220	1830	1400	1600	35.9	208	322	3	0.26	2.55	3.8	2.5	22238CC
	340	92	4	1210	1700	1400	1600	37.4	208	322	3	0.27	2.49	3.71	2.43	22238MB
	340	120	4	1490	2340	890	1000	47.6	208	322	3	0.33	2.03	3.03	1.99	23238CA

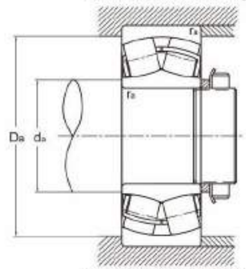
圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



20000 C(W33)　　20000 CA(W33)　　20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring



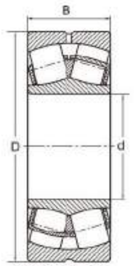
da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
190	340	120	4	1490	2340	890	1000	47.4	208	322	3	0.35	1.95	2.9	1.91	23238C
	340	120	4	1640	2590	890	1000	47.4	208	322	3	0.34	1.99	2.96	1.94	23238CC
	400	132	5	1900	2540	1000	1200	82.7	211	379	4	0.35	1.94	2.88	1.89	22338CA
	400	132	5	1900	2540	1000	1200	81.1	211	379	4	0.35	1.94	2.88	1.89	22338C
	400	132	5	1900	2540	1000	1200	82.8	211	379	4	0.35	1.94	2.88	1.89	22338MB
200	280	60	2.1	608	1130	1400	1800	11.8	213	267	2	0.2	3.42	5.09	3.34	23940CA
	310	82	2.1	912	1470	1400	1600	22.7	216	294	2	0.24	2.76	4.11	2.7	23040CA
	310	82	2.1	912	1470	1400	1600	22.8	216	294	2	0.24	2.76	4.11	2.7	23040C
	310	82	2.1	910	1470	1400	1600	23.3	216	294	2	0.26	2.55	3.8	2.5	23040MB
	310	109	2.1	1230	2170	1000	1200	30.6	216	294	2	0.33	2.03	3.02	1.98	24040CA
	310	109	2.1	1230	2170	1000	1200	31.4	216	294	2	0.33	2.03	3.02	1.98	24040C
	310	109	2.1	1300	2330	1000	1200	31.4	216	294	2	0.33	2.07	3.09	2.03	24040CC
	340	112	3	1440	2310	1100	1300	43.1	218	322	2.5	0.32	2.09	3.11	2.04	23140CA
	340	112	3	1440	2320	1100	1300	42.5	218	322	2.5	0.31	2.21	3.29	2.16	23140C
	340	112	3	1500	2520	1100	1300	42.5	218	322	2.5	0.31	2.16	3.22	2.12	23140CC
	340	140	3	1670	2790	710	830	52	218	322	2.5	0.4	1.68	2.5	1.64	24140CA
	340	140	3	1670	2790	710	830	51.3	218	322	2.5	0.4	1.68	2.5	1.64	24140C
	360	98	4	1360	1910	1400	1500	43.2	219	341	3	0.27	2.47	3.67	2.41	22240CA
	360	98	4	1360	1910	1400	1500	43.2	219	341	3	0.27	2.47	3.67	2.41	22240C
	360	98	4	1460	2080	1400	1500	43.2	219	341	3	0.26	2.55	3.8	2.5	22240CC
	360	98	4	1360	1910	1400	1500	44.5	219	341	3	0.27	2.47	3.67	2.41	22240MB
	360	128	4	1660	2620	830	970	57.8	219	341	3	0.36	1.9	2.83	1.86	23240CA
	360	128	4	1660	2620	830	970	57.2	219	341	3	0.36	1.9	2.83	1.86	23240C
	360	128	4	1700	2870	830	970	57.2	219	341	3	0.35	1.95	2.9	1.91	23240CC
	360	128	4	1660	2620	830	970	57.4	219	341	3	0.36	1.9	2.83	1.86	23240MB
	420	138	5	2090	2800	900	1100	95.2	222	398	4	0.35	1.95	2.9	1.91	22340CA
	420	138	5	2090	2800	900	1100	93	222	398	4	0.35	1.95	2.9	1.91	22340C
	420	138	5	2090	2800	900	1100	94.7	222	398	4	0.35	1.95	2.9	1.91	22340MB
220	300	60	2.1	608	1120	1300	1600	12.99	234	286	2	0.19	3.58	5.33	3.5	23944CA
	340	90	3	1080	1790	1300	1500	30	237	323	2.5	0.24	2.79	4.15	2.73	23044CA

JXN®

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



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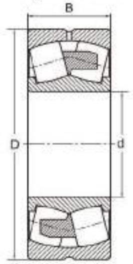
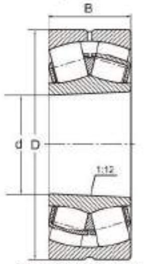
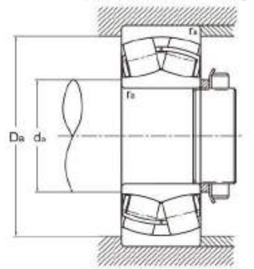


20000 CA(W33)



20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

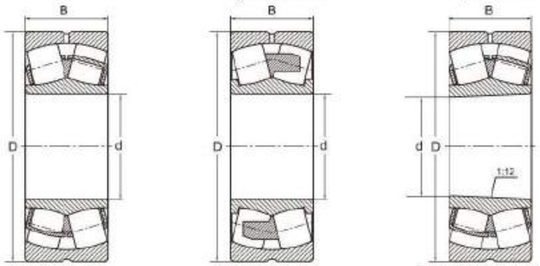


da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
	340	90	3	1120	1870	1300	1500	30.2	237	323	2.5	0.24	2.79	4.15	2.73	23044C
	340	90	3	1190	2050	1300	1500	30.2	237	323	2.5	0.24	2.79	4.15	2.73	23044CC
	340	90	3	1070	1790	1300	1500	30.7	237	323	2.5	0.26	2.6	3.87	2.54	23044MB
	340	118	3	1440	2550	900	1100	39.7	237	323	2.5	0.33	2.07	3.09	2.03	24044CA
	340	118	3	1530	2700	900	1100	38.87	237	323	2.5	0.32	2.12	3.15	2.07	24044CC
	370	120	4	1580	2570	900	1100	54.1	239	351	3	0.31	2.21	3.29	2.16	23144CA
	370	120	4	1580	2570	900	1100	53.2	239	351	3	0.31	2.21	3.29	2.16	23144C
	370	120	4	1670	2910	900	1100	53.2	239	351	3	0.31	2.21	3.29	2.16	23144CC
	370	120	4	1580	2560	900	1100	53.8	239	351	3	0.32	2.09	3.11	2.04	23144MB
220	370	150	4	1970	3390	650	750	65.7	239	351	3	0.39	1.71	2.54	1.67	24144CA
	370	150	4	1970	3400	650	750	65.3	239	351	3	0.38	1.77	2.64	1.73	24144C
	400	108	4	1640	2260	1200	1400	59.6	240	380	3	0.26	2.55	3.8	2.5	22244CA
	400	108	4	1640	2260	1200	1400	59.1	240	380	3	0.26	2.55	3.8	2.5	22244C
	400	108	4	1640	2260	1200	1400	59.8	240	380	3	0.26	2.55	3.8	2.5	22244MB
	400	144	4	2070	3273	750	880	82.2	240	380	3	0.36	1.87	2.79	1.83	23244CA
	400	144	4	2070	3273	750	880	82.2	240	380	3	0.36	1.87	2.79	1.83	23244C
	400	144	4	2170	3730	750	880	82.2	240	380	3	0.35	1.94	2.88	1.89	23244CC
	460	145	5	2410	3250	850	1000	117	243	437	4	0.33	2.03	3.02	1.98	22344CA
	460	145	5	2410	3250	850	1000	116.9	243	437	4	0.33	2.03	3.02	1.98	22344C
	460	145	5	2410	3250	850	1000	118.8	243	437	4	0.33	2.03	3.02	1.98	22344MB
	320	60	2.1	648	1200	1200	1500	13.1	254	306	2	0.17	4	5.96	3.91	23948CA
	360	92	3	1190	2080	1200	1400	33.2	257	343	2.5	0.24	2.81	4.19	2.75	23048CA
	360	92	3	1190	2080	1200	1400	32.7	257	343	2.5	0.24	2.81	4.19	2.75	23048C
	360	92	3	1190	2080	1200	1400	33.7	257	343	2.5	0.25	2.74	4.08	2.68	23048MB
240	360	118	3	1470	2680	850	1000	42.5	257	343	2.5	0.31	2.21	3.29	2.16	24048CA
	360	118	3	1470	2680	850	1000	41.1	257	343	2.5	0.31	2.21	3.29	2.16	24048C
	360	118	3	1600	2960	850	1000	41.1	257	343	2.5	0.3	2.28	3.39	2.23	24048CC
	400	128	4	1770	3060	820	930	66.3	259	381	3	0.32	2.13	3.17	2.08	23148CA
	400	128	4	1770	3060	820	930	64.8	259	381	3	0.32	2.13	3.17	2.08	23148C
	400	128	4	1920	3470	820	930	64.8	259	381	3	0.3	2.25	3.34	2.2	23148CC

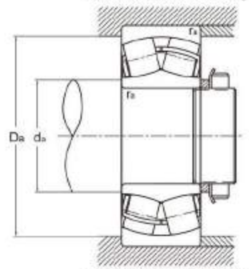
圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



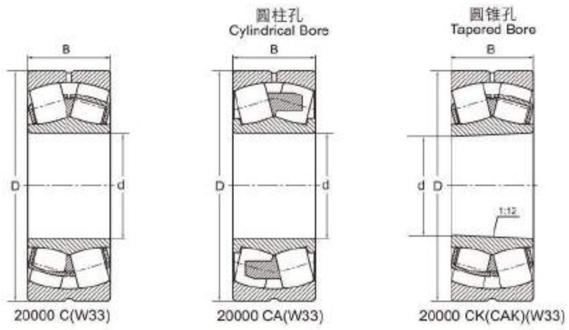
20000 C(W33) 20000 CA(W33) 20000 CK(CAK)(W33)

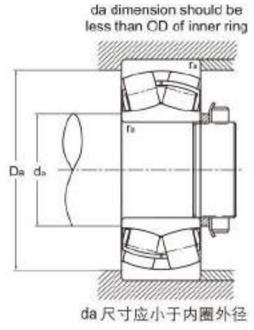
da dimension should be less than OD of inner ring



da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
240	400	160	4	2220	3880	550	700	81.5	259	381	3	0.39	1.74	2.59	1.7	24148CA
	440	120	4	2070	2870	990	1200	80.7	258	422	3	0.28	2.4	3.6	2.4	22248CA
	440	120	4	2080	3100	990	1200	83.1	258	422	3	0.26	2.55	3.8	2.5	22248C
	440	120	4	2070	2870	990	1200	80.7	258	422	3	0.28	2.4	3.6	2.4	22248MB
	440	160	4	2580	4110	650	800	111	262	418	3	0.37	1.84	2.74	1.8	23248CA
	440	160	4	2580	4110	650	800	110	262	418	3	0.37	1.84	2.74	1.8	23248MB
	500	155	5	2830	3850	740	940	147	265	475	4	0.33	2.07	3.09	2.03	22348CA
260	360	75	2.1	1020	1810	1100	1400	22.8	276	344	2	0.19	3.56	5.3	3.48	23952CA
	400	104	4	1490	2520	990	1200	47.5	278	382	3	0.25	2.69	4	2.63	23052CA
	400	104	4	1520	2740	990	1200	48.7	278	382	3	0.23	2.9	4.32	2.83	23052C
	400	104	4	1550	2790	990	1200	48.7	278	382	3	0.24	2.84	4.23	2.78	23052CC
	400	104	4	1490	2520	990	1200	48.7	278	382	3	0.25	2.69	4	2.63	23052MB
	400	140	4	1740	3340	740	840	66	278	382	3	0.33	2.07	3.09	2.03	24052CA
	440	140	4	1950	3750	740	840	64.4	278	382	3	0.33	2.06	3.06	2.01	24052C
	440	144	4	2250	3660	750	850	91.7	281	419	3	0.32	2.12	3.15	2.07	23152CA
	440	144	4	2250	3660	750	850	90	281	419	3	0.32	2.12	3.15	2.07	23152C
	440	180	4	2790	4940	490	640	113	281	419	3	0.4	1.7	2.53	1.66	24152CA
	480	130	5	2350	3350	900	1100	107	282	458	4	0.27	2.5	3.7	2.4	22252CA
	480	130	5	2350	3350	900	1100	103	282	458	4	0.27	2.47	3.67	2.41	22252C
	480	130	5	2400	3630	900	1100	103	282	458	4	0.27	2.53	3.77	2.47	22252CC
	480	130	5	2350	3350	900	1100	105.5	282	458	4	0.27	2.5	3.7	2.4	22252MB
	480	174	5	2900	4600	590	740	142	283	457	4	0.37	1.84	2.74	1.8	23252CA
	540	165	6	3140	4330	660	870	182	286	514	5	0.32	2.1	3.13	2.06	22352CA
	540	165	6	3140	4330	660	870	183	286	514	5	0.32	2.1	3.13	2.06	22352MB
280	380	75	2.1	1060	1950	990	1300	24.6	296	364	2	0.18	3.8	5.66	3.72	23956CA
	420	106	4	1600	2860	990	1200	51.9	299	401	3	0.23	2.92	4.35	2.86	23056CA
	420	106	4	1600	2860	990	1200	51.9	299	401	3	0.23	2.92	4.35	2.86	23056C
	420	106	4	1660	3140	990	1200	51.7	299	401	3	0.23	2.95	4.4	2.89	23056CC
	420	140	4	2040	3940	680	770	69	299	401	3	0.31	2.16	3.22	2.12	24056CA
	420	140	4	1960	3720	680	770	67.7	299	401	3	0.31	2.16	3.22	2.12	24056C

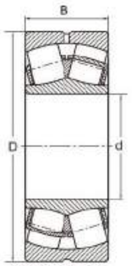




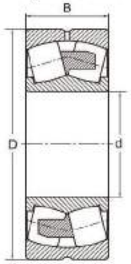
基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
280	420	140	4	1985	3817	680	770	67.7	299	401	3	0.31	2.18	3.24	2.13	24056CC
	460	146	5	2360	4090	690	800	99.1	301	439	4	0.3	2.25	3.34	2.2	23156CA
	460	146	5	2360	4090	690	800	98.2	301	439	4	0.3	2.25	3.34	2.2	23156C
	460	180	5	2880	5220	460	600	120	301	439	4	0.38	1.77	2.64	1.73	24156CA
	460	180	5	2880	5220	460	600	120.1	301	439	4	0.38	1.77	2.64	1.73	24156MB
	500	130	5	2440	3590	850	1100	109	303	477	4	0.26	2.6	3.87	2.54	22256CA
	500	130	5	2440	3590	850	1100	111.5	303	477	4	0.26	2.6	3.87	2.54	22256MB
	500	176	5	3050	4980	530	700	152	303	477	4	0.35	1.91	2.85	1.87	23256CA
	580	175	6	3610	5020	600	810	222	307	553	5	0.32	2.13	3.17	2.08	22356CA
	580	175	6	3610	5020	600	810	223.8	307	553	5	0.32	2.13	3.17	2.08	22356MB
300	420	90	3	1290	2460	880	1200	38.8	318	402	2.5	0.19	3.5	5.21	3.42	23960CA
	460	118	4	2000	3440	870	1200	71.2	320	440	3	0.24	2.76	4.11	2.7	23060CA
	460	118	4	2000	3440	870	1200	70.4	320	440	3	0.24	2.76	4.11	2.7	23060C
	460	118	4	2020	3700	870	1200	70.4	320	440	3	0.24	2.87	4.27	2.8	23060CC
	460	160	4	2470	4950	600	680	98.3	320	440	3	0.33	2.06	3.07	2.02	24060CA
	460	160	4	2680	5320	600	680	98.3	320	440	3	0.32	2.1	3.13	2.05	24060CC
	500	160	5	2890	4720	610	740	127	323	477	4	0.31	2.16	3.22	2.12	23160CA
	500	160	5	2820	4960	610	740	127.5	323	477	4	0.3	2.25	3.34	2.2	23160C
	500	160	5	3010	5320	610	740	127.5	323	477	4	0.3	2.23	3.32	2.18	23160CC
	500	200	5	3220	5740	420	560	158	323	477	4	0.39	1.73	2.58	1.69	24160CA
	540	140	5	2790	3980	770	1000	135	325	515	4	0.26	2.6	3.87	2.54	22260CA
	540	140	5	2790	3980	770	1000	139	325	515	4	0.26	2.6	3.87	2.54	22260MB
	540	192	5	3600	5930	490	650	195	325	515	4	0.36	1.9	2.83	1.86	23260CA
	620	185	7.5	4160	5870	540	590	270	350	572	6	0.3	2.25	3.34	2.2	22360CA
320	440	90	3	1325	2560	830	1100	40.9	338	422	2.5	0.18	3.66	5.46	3.58	23964CA
	480	121	4	2060	3780	790	900	77.6	338	462	3	0.23	2.95	4.4	2.89	23064CA
	480	121	4	2180	4200	790	900	77.4	338	462	3	0.23	2.96	4.41	2.9	23064CC
	480	160	4	2590	5060	570	640	103	341	459	3	0.31	2.16	3.22	2.12	24064CA
	480	160	4	2580	5200	570	640	103.6	341	459	3	0.3	2.27	3.38	2.22	24064C
	480	160	4	2663	5260	570	640	103.6	341	459	3	0.31	2.21	3.29	2.16	24064CC

圆柱孔
Cylindrical Bore

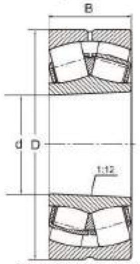
圆锥孔
Tapered Bore



20000 C(W33)

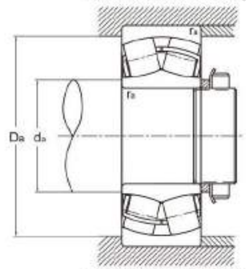


20000 CA(W33)



20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring

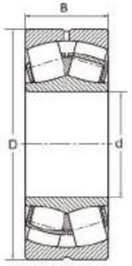


da尺寸应小于内圈外径

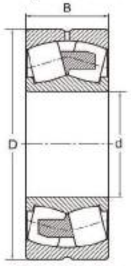
基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
320	540	176	5	3310	5700	560	690	168	344	516	4	0.32	2.12	3.15	2.07	23164CA
	540	176	5	3280	5700	560	690	164	344	516	4	0.31	2.18	3.24	2.13	23164C
	540	218	5	3810	6910	390	520	206	344	516	4	0.39	1.71	2.54	1.67	24164CA
	580	150	5	3160	4580	700	940	169	346	554	4	0.26	2.6	3.87	2.54	22264CA
	580	208	5	4080	6670	450	610	243	346	554	4	0.36	1.87	2.79	1.83	23264CA
	670	200	7.5	4820	6640	500	540	340	342	478	6	0.3	2.23	3.32	2.18	22364CA
340	460	90	3	1350	2610	800	1050	42.9	354	446	2.5	0.18	3.8	5.66	3.72	23968CA
	520	133	5	2390	4300	720	840	103	362	498	4	0.24	2.84	4.23	2.78	23068CA
	520	133	5	2390	4300	720	840	102	362	498	4	0.24	2.84	4.23	2.78	23068C
	520	133	5	2550	4890	720	840	103	362	498	4	0.23	2.9	4.31	2.83	23068CC
	520	180	5	3120	6080	510	580	140	362	498	4	0.33	2.07	3.09	2.03	24068CA
	520	180	5	3376	6820	510	580	140	362	498	4	0.32	2.11	3.13	2.06	24068CC
	580	190	5	3800	6440	510	650	210	365	555	4	0.32	2.09	3.11	2.04	23168CA
	580	190	5	3830	6710	510	650	211	365	555	4	0.31	2.15	3.2	2.1	23168C
	580	243	5	4510	8150	360	480	265	365	555	4	0.41	1.66	2.47	1.62	24168CA
	620	165	6	3800	5660	660	880	217	367	593	5	0.26	2.62	3.9	2.56	22268CA
	620	224	6	4730	7820	430	570	300	367	593	5	0.36	1.86	2.77	1.82	23268CA
	710	212	7.5	5310	7340	460	500	403	368	682	6	0.3	2.23	3.32	2.18	22368CA
360	480	90	3	1420	2780	760	1000	44.6	378	462	2.5	0.17	4	5.96	3.91	23972CA
	540	134	5	2510	4670	690	810	109	382	518	4	0.23	3	4.47	2.93	23072CA
	540	134	5	2530	5050	690	810	109	382	518	4	0.23	2.98	4.44	2.92	23072C
	540	180	5	3290	6610	490	550	147	382	518	4	0.31	2.16	3.22	2.12	24072CA
	540	180	5	3492	7140	490	550	147	382	518	4	0.31	2.2	3.28	2.15	24072CC
	600	192	5	3970	6910	480	620	222	386	574	4	0.31	2.16	3.22	2.12	23172CA
	600	192	5	3970	6910	480	620	220	386	574	4	0.31	2.16	3.22	2.12	23172C
	600	243	5	4660	8630	350	460	277	386	574	4	0.39	1.73	2.58	1.69	24172CA
	650	170	6	4120	6160	630	840	244	388	622	5	0.25	2.67	3.97	2.61	22272CA
	650	232	6	5220	8750	400	540	342	388	622	5	0.35	1.95	2.9	1.91	23272CA
	750	224	7.5	6000	8680	420	480	484	388	718	6	0.3	2.23	3.32	2.18	22372CA
380	520	106	4	1880	3610	710	940	66	400	500	3	0.18	3.66	5.46	3.58	23976CA

圆柱孔
Cylindrical Bore

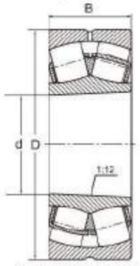
圆锥孔
Tapered Bore



20000 C(W33)

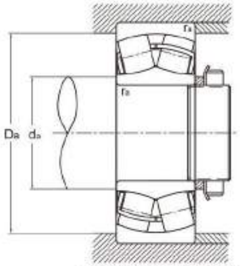


20000 CA(W33)



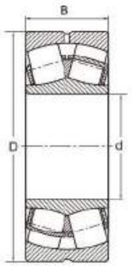
20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring



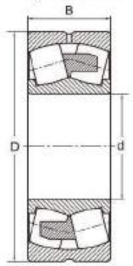
da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
380	560	135	5	2570	4790	640	750	114	402	538	4	0.22	3.01	4.48	2.94	23076CA
	560	180	5	3370	6900	460	530	155	402	538	4	0.3	2.26	3.37	2.21	24076CA
	560	180	5	3580	6900	460	530	155	402	538	4	0.29	2.33	3.47	2.28	24076CC
	620	194	5	4140	7390	460	600	234	406	594	4	0.3	2.25	3.34	2.2	23176CA
	620	194	5	3980	7080	460	600	232	406	594	4	0.3	2.28	3.39	2.23	23176C
	620	243	5	4820	9110	340	430	291	402	598	4	0.38	1.79	2.67	1.75	24176CA
	680	175	6	4280	6380	600	800	271	409	651	5	0.25	2.69	4	2.63	22276CA
	680	240	6	5670	9530	390	520	381	409	651	5	0.34	1.98	2.94	1.93	23276CA
	780	230	7.5	6310	9190	400	450	530	412	748	6	0.3	2.26	3.37	2.21	22376CA
400	540	106	4	1910	3750	680	900	68.4	420	520	3	0.18	3.85	5.73	3.76	23980CA
	600	148	5	3000	5540	590	690	148	424	576	4	0.23	2.92	4.35	2.86	23080CA
	600	200	5	3980	7960	410	500	201	424	576	4	0.31	2.16	3.22	2.12	24080CA
	650	200	6	4450	7970	430	570	263	427	623	5	0.3	2.26	3.37	2.21	23180CA
	650	250	6	5170	9780	320	400	328	428	692	5	0.37	1.83	2.72	1.79	24180CA
	720	185	6	4850	7270	570	750	324	430	690	5	0.25	2.69	4	2.63	22280CA
	720	256	6	6480	11000	340	520	463	428	692	5	0.37	1.81	2.69	1.77	23280CA
	820	243	7.5	6940	10200	370	450	616	436	784	6	0.3	2.26	3.37	2.21	22380CA
420	560	106	4	1990	4010	650	860	72	440	540	3	0.17	4	5.96	3.91	23984CA
	620	150	5	3270	5940	560	670	153	444	596	4	0.22	3.01	4.48	2.94	23084CA
	620	200	5	4030	8210	400	480	208	442	598	4	0.3	2.26	3.37	2.21	24084CA
	700	224	6	5410	9630	400	450	355	448	672	5	0.31	2.2	3.27	2.15	23184CA
	700	280	6	6300	11800	300	380	437	448	672	5	0.39	1.75	2.61	1.71	24184CA
	760	195	7.5	5320	8080	540	710	382	451	729	6	0.25	2.69	4	2.63	22284CA
	760	272	7.5	7070	12100	320	400	546	456	724	6	0.35	1.94	2.88	1.89	23284CA
440	600	118	4	2350	4550	610	810	95.9	462	578	3	0.18	3.8	5.66	3.72	23988CA
	650	157	6	3490	6390	530	640	176	465	625	5	0.22	3.01	4.48	2.94	23088CA
	650	212	6	4400	9100	370	450	242	468	622	5	0.3	2.23	3.32	2.18	24088CA
	720	226	6	5500	9770	370	430	367	468	692	5	0.3	2.23	3.32	2.18	23188CA
	720	280	6	6450	12500	280	360	456	468	692	5	0.37	1.82	2.7	1.78	24188CA
	790	200	7.5	5700	8670	520	690	419	472	758	6	0.25	2.74	4.08	2.68	22288CA



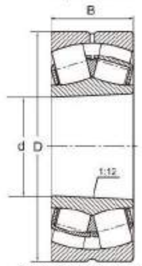
20000 C(W33)

圆柱孔
Cylindrical Bore



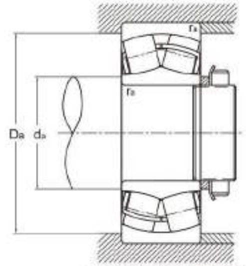
20000 CA(W33)

圆锥孔
Tapered Bore



20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring



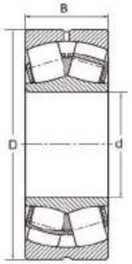
da 尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	d_a min	D_a max	r_a max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
440	790	280	7.5	7490	12900	300	400	604	476	754	6	0.34	1.96	2.92	1.92	23288CA
	620	118	4	2390	4720	590	780	99.4	482	598	3	0.17	3.95	5.88	3.86	23992CA
	680	163	6	3790	6950	500	610	201	488	652	5	0.22	3.01	4.48	2.94	23092CA
460	680	218	6	4770	9840	350	430	273	488	652	5	0.3	2.26	3.37	2.21	24092CA
	760	240	7.5	6010	10800	350	400	439	496	724	6	0.31	2.2	3.27	2.15	23192CA
	760	300	7.5	7010	13100	260	340	538	496	728	6	0.37	1.8	2.7	1.8	24192CA
	830	296	7.5	8280	14400	290	440	708	496	794	6	0.35	1.95	2.9	1.91	23292CA
	650	128	5	2680	5390	560	750	121	503	627	4	0.18	3.8	5.66	3.72	23996CA
	700	165	6	3940	7380	480	550	211	508	672	5	0.22	3.07	4.57	3	23096CA
480	700	218	6	4960	10200	330	430	282	508	672	5	0.29	2.35	3.5	2.3	24096CA
	790	248	7.5	6470	11700	320	380	488	516	754	6	0.31	2.21	3.29	2.16	23196CA
	790	308	7.5	7520	14600	260	340	567	516	754	6	0.39	1.7	2.6	1.7	24196CA
	870	310	7.5	8150	15200	260	340	853	516	834	6	0.35	1.9	2.9	1.8	23296CA
	670	128	5	2740	5580	540	720	125	523	647	4	0.17	3.95	5.88	3.86	239/500CA
	720	167	6	4080	7830	460	520	221	522	648	5	0.22	3.14	4.67	3.07	230/500CA
500	720	218	6	5070	10600	320	410	292	528	692	5	0.28	2.43	3.61	2.37	240/500CA
	830	264	7.5	7210	13400	300	360	570	536	794	6	0.31	2.2	3.2	2.1	231/500CA
	830	325	7.5	8300	15100	250	320	704	563	755	6	0.37	1.8	2.7	1.8	241/500CA
	920	336	7.5	9950	18600	280	360	985	536	884	6	0.35	1.9	2.9	1.8	232/500CA
	710	136	5	3070	6320	510	680	149	554	686	4	0.17	3.95	5.88	3.86	239/530CA
530	780	185	6	4580	8470	410	480	294	558	752	5	0.22	3.04	4.53	2.97	230/530CA
	780	250	6	6200	12400	310	380	403	583	725	5	0.28	2.4	3.5	2.3	240/530CA
	750	140	5	3360	6890	480	650	171	585	725	4	0.17	4.05	6.04	3.96	239/560CA
	820	195	6	4690	10020	390	440	365	583	797	5	0.23	2.9	4.4	2.8	230/560CA
560	820	258	6	6650	13500	290	360	456	617	761	5	0.28	2.4	3.6	2.4	240/560CA
	920	280	7.5	8410	16000	260	320	756	592	888	6	0.3	2.3	3.4	2.2	231/560CA
	920	355	7.5	9940	19500	190	260	953	592	888	6	0.37	1.8	2.7	1.8	241/560CA
	800	150	5	3770	7980	450	600	207	626	774	4	0.17	4.05	6.04	3.96	239/600CA
600	870	200	6	5060	11000	360	410	394	623	847	5	0.22	3	4.5	2.9	230/600CA
	870	272	6	7350	15200	270	340	531	658	811	5	0.28	2.4	3.6	2.4	240/600CA

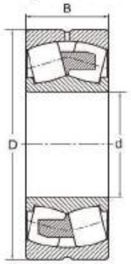
JXN®

圆柱孔
Cylindrical Bore

圆锥孔
Tapered Bore



20000 C(W33)



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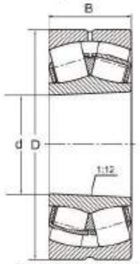
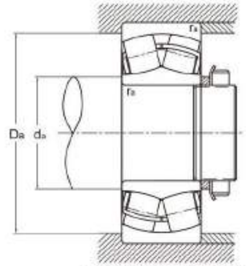


20000 CK(CAK)(W33)

da dimension should be less than OD of inner ring



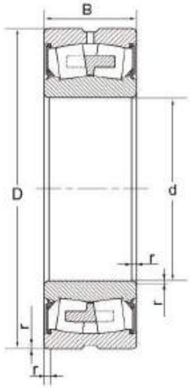
da尺寸应小于内圈外径

基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	e	Y1	Y2	Y0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm					
600	980	375	7.5	10940	21300	180	240	1140	632	948	6	0.37	1.8	2.7	1.8	241/600CA
	850	165	6	4650	9900	440	550	264	684	804	5	0.17	4	6	3.9	239/630CA
630	920	212	7.5	5640	12200	330	380	509	658	892	6	0.23	2.9	4.4	2.8	230/630CA
	920	290	7.5	5640	12200	250	320	642	691	856	6	0.28	2.4	3.6	2.4	240/630CA
670	900	170	6	4350	9840	350	410	317	693	877	5	0.18	3.8	5.6	3.7	239/670CA
	980	230	7.5	6570	13700	300	340	655	698	952	6	0.23	2.9	4.4	2.8	230/670CA
	950	180	6	4510	10900	330	380	387	732	927	5	0.18	3.8	5.6	3.7	239/710CA
710	1030	236	7.5	6870	15130	280	320	742	738	1002	6	0.23	2.9	4.4	2.8	230/710CA
	1150	438	9.5	14410	29940	150	190	1802	750	1110	8	0.38	1.7	2.6	1.7	241/710CA
	1090	250	7.5	8300	17600	260	300	855	778	1062	6	0.22	3	4.5	2.9	230/750CA
	1090	335	7.5	9830	22300	190	240	1060	782	1058	6	0.28	2.4	3.6	2.5	240/750CA
750	1220	475	9.5	17050	36000	130	170	2440	791	1179	8	0.36	1.87	2.79	1.83	241/750CA
	1360	475	15	20410	38000	190	260	3060	797	1313	12	0.34	1.99	2.96	1.94	232/750CA
800	1150	258	7.5	9080	20000	230	270	986	828	1122	6	0.21	3.2	4.8	3.1	230/800CA
	1150	345	7.5	10520	25700	170	220	1246	828	1122	6	0.29	2.4	3.5	3.3	240/800CA
	1120	200	6	6420	15800	260	300	531	873	1097	5	0.16	4.2	6.2	4.1	239/850CA
850	1220	272	7.5	9520	21100	230	250	1069	878	1192	6	0.21	3.2	4.8	3.1	230/850CA
	1220	365	7.5	10520	26000	160	200	1398	878	1192	6	0.28	2.4	3.6	2.5	240/850CA
	1500	515	15	23000	41500	170	220	3880	990	1347	11	0.33	2.1	3.1	2	232/850CA
900	1580	515	15	24400	44100	160	200	4280	1056	1423	11	0.32	2.1	3.1	2.1	232/9000CA

密封调心滚子轴承

部分JXN调心滚子轴承有提供带密封圈的设计，轴承两侧带有接触式密封圈。密封圈是由带钢骨架的抗油和耐磨的橡胶制成。目前JXN提供两种橡胶材料：丁腈橡胶（NBR）和氟橡胶（FPM）。

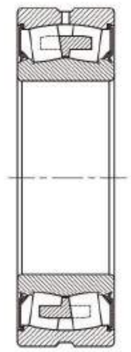
氟橡胶在300℃高温下会散发出有毒气体，因此选用该材料时需谨慎。
安装密封轴承前绝不可清洗或加热超过80℃。
在密封轴承补充润滑脂时，需要慢慢的将润滑脂注入外圈的润滑孔，并一边转动轴承，使新的润滑脂能够均匀的分布在轴承内。此外应避免施加过大的压力，以防损坏密封圈。



Sealed Spherical Roller Bearings

Part of JXN spherical roller bearings are provided with a seal design, there are contact seal rings on both sides. The seals are made of oil-resistant and wear-resistant rubber with a steel frame. JXN currently offers two rubber materials: nitrile rubber (NBR) and fluorine rubber (FPM).

It should be carefull if choosing fluorine rubber, which will emit toxic gases at high temperature 300 ℃.
It is not allowed to clean or warming over 80℃ before installing the sealed bearing.
when supplementing grease for sealed bearing, it should be poured slowing into the lubrication hole of outer ring, meanwhile turning the bearings, to ensure the new grease can be evenly distributed in the bearing. And excessive pressure should be avoided to prevent damage to the seals.



基本尺寸 Basic dimension				基本额定载荷 Basic rating load		极限转速 Limited rotation speed	重量 Weight	安装尺寸 Installation dimension			计算系数 Caculation factor				轴承代号 Bearing code
d	D	B	rmin	Cr	Cor	脂 Grease	Wt ≈	d_a min	D_a max	r_a max	e	Y_1	Y_2	Y_0	新代号 New code
mm	mm	mm	mm	kN	kN	r/min	kg	mm	mm	mm					
50	90	28	1.1	98.6	107	1700	0.672	57	83	1	0.25	2.71	4.04	2.65	EXB22210CAE-2RS
60	110	34	1.5	142	164	1400	1.34	68	102	1.5	0.24	2.79	4.15	2.73	EXB22212CAE-2RS
	130	53	2.1	248	273	1000	3.35	72	118	2.1	0.38	1.78	2.65	1.74	EXB22312CAE-2RS
65	120	38	1.5	169	192	1300	1.77	74	111	1.5	0.25	2.74	4.08	2.68	EXB22213CAE-2RS
	140	56	2.1	264	291	900	3.97	77	128	2.1	0.35	1.92	2.86	1.88	EXB22313CA-2RS
70	125	38	1.5	185.5	215	1200	1.85	79	116	1.5	0.24	2.87	4.27	2.8	EXB22214CAE-2RS
	150	51	2.1	261	286	800	4.22	81	139	2	0.31	2.21	3.29	2.16	EXB21314CAE-2RS
75	130	38	1.5	190	236	1100	1.92	84	121	1.5	0.22	3.04	4.53	2.97	EXB22215CAE-2RS
80	140	40	2	184	225	1000	2.43	90	130	2	0.22	3.01	4.48	2.94	EXB22216CA-2RS
	170	67	2.1	413	496	750	7.19	92	158	2.1	0.36	1.87	2.79	1.83	EXB22316CA-2RS
85	150	44	2	227	277	990	3.11	95	140	2	0.23	2.95	4.4	2.89	EXB22217CA-2RS
90	160	48	2	284	360	900	3.9	101	149	2	0.24	2.84	4.23	2.78	EXB22218CAE-2RS
100	150	50	1.5	255	401	720	3.01	109	141	1.5	0.27	2.47	3.67	2.41	24020CA-2RS
	165	52	2	305	448	770	4.23	110	155	2	0.27	2.49	3.71	2.43	23120CA-2RS
	180	60.3	2.1	418	566	630	6.53	114	168	2	0.29	2.33	3.47	2.28	23220CAE-2RS
	180	55	2.1	352	452	810	5.8	112	168	2.1	0.25	2.69	4	2.63	EXB22220CA-2RS
	165	59	2	343	490	770	4.82	110	155	2	0.31	2.21	3.29	2.16	EXB23120CA-2RS
110	170	45	2	288	427	810	3.48	120	160	2	0.22	3.1	4.62	3.03	23022CA-2RS
	200	63	2.1	436	574	720	8.33	123	187	2.1	0.26	2.55	3.8	2.5	EXB22222CA-2RS
120	180	46	2	310	464	760	3.9	131	169	2	0.21	3.2	4.77	3.13	23024CA-2RS
	180	60	2	390	643	600	5.21	131	169	2	0.27	2.37	3.53	2.32	24024CA-2RS
	200	62	2	445	632	670	7.56	132	188	2	0.26	2.6	3.87	2.54	23124CA-2RS
	200	80	2	580	898	510	10.07	130	190	2	0.36	1.9	2.83	1.86	24124CA-2RS
	215	69	2.1	543	715	680	10.36	132	203	2.1	0.28	2.43	3.61	2.37	EXB22224CA-2RS
130	210	64	2	507	755	550	8.45	140	200	2	0.26	2.55	3.8	2.5	23126CAE-2RS
	210	80	2	619	976	480	10.62	140	200	2	0.34	1.99	2.96	1.94	24126CA-2RS
	230	75	3	643	860	630	12.7	144	216	3	0.28	2.37	3.53	2.32	EXB22226CA-2RS
140	225	68	2.1	570	842	550	9.36	153	212	2	0.26	2.62	3.9	2.56	23128CA-2RS
150	250	80	2.1	715	1080	500	15.65	162	238	2.1	0.28	2.37	3.53	2.32	23130CA-2RS
160	240	80	2.1	656	1130	400	12.61	173	227	2	0.3	2.28	3.39	2.23	24032CA-2RS

JXN®

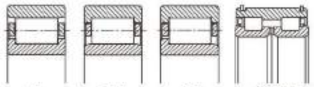
CAT.NO.B2021C-1

圆柱滚子轴承

Cylindrical Roller Bearings Catalogue

www.jxn-cn.com

类型代号：



内径：(5 x ___ = mm)
5 x 12= 60
5 x 20= 100
5 x 36= 180

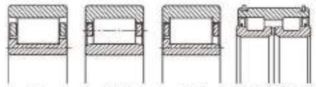
N	23	12	M		
NU	0	20	L1	/	C4
NJ	3	36	E		

尺寸系列代号
1 0：例 N 1000
(0) 2：例 N 200
2 2：例 N 2200
(0) 3：例 N 300
2 3：例 N 2300
(0) 4：例 N 400

内部结构及保持架材料改变
E: 支柱铆钉保持架
M: 黄铜保持架
L: 铝合金保持架
Q: 青铜保持架
ME: 实体拉削保持架
EM: 平挡圈组合保持架

C0, C2, C3, C4, C5 游隙代号
P0, P6, P5, P4, P2 公差等级代号的含义与深沟球轴承相同
S0, S1, S2, S3, S4 的工作温度的含义与调心滚子轴承相同

Type code:



I.D. (5 x ___= mm)
5 x 12= 60
5 x 20 =100
5 x 36 = 180

N	23	12	M		
NU	0	20	L1	/	C4
NJ	3	36	E		

Size Designation:
1 0 : N 1000
(0) 2 : N 200
2 2 : N 2200
(0) 3 : N 300
2 3 : N 2300
(0) 4 : N 400

Internal Structure And Retainer Material Modification
E: strut rivet cage
M: brass cage
L: aluminum alloy cage
Q: bronze cage
ME: solid broaching cage
EM: loose rib cage

C0, C2, C3, C4, C5 clearance codes
P0, P6, P5, P4, P2 means the same grade of tolerance as deep groove ball bearings
S0, S1, S2, S3, S4 means the same working temperature of Spherical Roller Bearings

最小负荷

为使轴承获得良好运行，单列圆柱滚子轴承像所有的球轴承和滚子轴承一样，必须承受一定的最小负荷，尤其是在高速或高加速度，又或在负荷方向快速改变下工作。在这些工况下，滚子和保持架的惯性力以及润滑剂内的摩擦将对轴承的滚动产生不良影响，在滚子和滚道之间可能会产生对轴承具有损害性的滑动运动。
单列圆柱滚子轴承所需的最小负荷可用以下公式估算：

带保持架轴承：Frm=0.02Cr
满装滚子轴承：Frm=0.04Cr

式中
Frm=最小径向负荷，KN
Cr：额定动载荷
在低温状态下启动或润滑剂粘度很高的情况下，可能需要更大的最小负荷。轴承支承的重量，加上外力，通常已超过所需的最小负荷。若尚未能达到最小负荷，该轴承必须施以额外的径向负荷。

圆柱滚子轴承最大允许轴向载荷

NUP、NJ以及NU或带有止推环的NJ设计的公制系列圆柱滚子轴承，它们在承受径向载荷的同时也能够传递轴向载荷。所允许最大的0.1轴向载荷比Fa/Cr很大程度上取决于轴承所在处的径向载荷大小、工作转速、所使用润滑剂的种类、工作温度和热传递条件。在轴承位置处取得热平衡作为确定所允许的轴向载荷的根据。

下面列线图是基于下列工作条件来确定最大允许轴向载荷Faz；
轴向载荷为恒定方向和恒定大小。
径向载荷比Fr/Cr≤0.2。
轴向载荷与径向载荷比Fa/Fr＜0.4。
在环境温度20°C下轴承工作温度为80°C。
润滑油为ISO VG 100，采用油浴或循环油润滑方式。

作为替代方案，轴承可以使用油脂润滑，该油脂使用上述指定的基油和粘度。尽管可以预料较纯径向载荷情况时径向圆柱滚子轴承的润滑周期会有一定缩短，但使用EP添加剂仍然十分必要。

The Mininum Load

Like all ball bearings and roller bearings, single row cylindrical roller bearings must bear a minimum load for sound operation, especially at high speeds or high accelerations, or in rapid changes of load directions. In these conditions, the inertia of the roller and the cage and the friction of lubricant will affect the rolling of the bearing adversely, which may cause a damaging sliding motion between the roller and the raceway.
The required minimum load for a single row cylindrical roller bearing can be estimated by followed formula:

Bearing with cage: Frm=0.02Cr
Bearing filling with rollers: Frm=0.04Cr

in which
Frm=min. radial load, KN
Cr: dynamic load rating
In case of low temperature start-up or the viscosity of the lubricant is high, a larger minimum load may be required. Usually the bearing supported weight and external force, is exceed the minimum required load. If the minimum load has not been reached, the bearing must be subjected to an additional radial load.

The Max. Axial Load of Cylindrical Roller Bearings

The metric series of cylindrical roller bearings, as NUP, NJ and NU or NJ design with a thrust ring, bear the axial load while transmitting axial load. The allowed maximum 0.1 axial load ratio Fa / Cr mainly depends on the radial load at the bearing, the operating speed, the type of lubricant, the operating temperature, and the heat transfer conditions. The heat balance is taken at the bearing position as a basis for determining the allowed axial load.

The maximum allowed axial load Faz shows in followed nomogram is based on the following working conditions .
The axial load is constant in direction and size.
The radial load ratio Fr/Cr≤0.2.
The axial load and radial load ratio Fa/Fr <0.4.
The bearing operating temperature is 80°C at temperature of 20°C.
The lubricant is ISO VG 100, using oil bath or circulating oil lubrication methods.

As an alternative, the bearings may be lubricated by grease which using above specified base oils and viscosities. Although it is expected that the lubrication cycle of radial cylindrical roller bearings will be shortened in the case of pure radial loads, the use of EP additives is still necessary.

列线图使用举例

从列线图的下部，确定轴承的内圈内径和尺寸系列的交叉点。在上部，作为工作速度n的一个函数可以找到允许的轴向载荷比Faz/Cr。

对于径向圆柱滚子轴承NU2207ME.

Cr=60KN　d=35mm　N=2000RPM　Fr=10KN

从列线图看

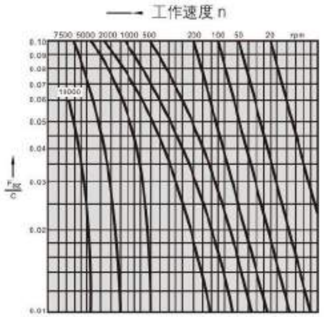
Faz/Cr=0.06　则Faz=0.06*60

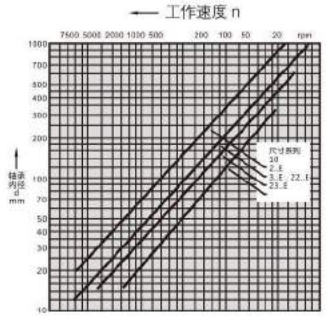
计算得到允许轴向载荷Faz为3.6KN

应注意，如果使用了额定运动粘度低于ISO VG 100的油，则该列线图方法所确定的轴向载荷将不能完全的被使用。经严格的测试，以改善轴承疲劳寿命而著称的添加剂在这里也可被用来增加轴向载荷的承受能力。

更高的轴向载荷

可以考虑使用比由列线图方法确定更大的轴向载荷，只要它们是间歇地施加。在轴承上，同样轴承应使用循环油润滑来冷却。如果由于内部摩擦和更高的轴向载荷，工作温度超过80℃，必须使用粘性更高的油。





当量动负荷

对于承受动负荷的圆柱滚子轴承，当用作浮动端轴承时

P=Fr

如果轴承的内外圈都带挡边，并用作一个方向或两个方向的轴向定位，可使用下公式

P=Fr　当Fa/Fr≤e

P=0.92Fr+Yfa　当Fa/Fr>e

式中

e=极限值

=10、2、3和4系列轴承为0.2

=其它系列轴承为0.3

y=轴向负荷系数

=10、2、3和4系列轴承为0.6

=其它系列轴承为0.4

Example of Nomogram

From the lower part of the nomogram, to find the intersection of the bearing inner diameter and the dimension series. In the upper part, the allowed axial load ratio Faz / Cr can be found as a function of the operating speed n.

For radial cylindrical roller bearing NU2207ME

Cr=60KN　d=35mm　N=2000RPM　Fr=10KN

See from nomogram:

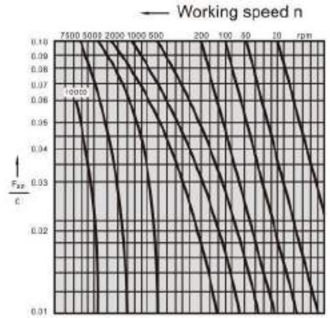
Faz/Cr=0.06　Faz=0.06*60

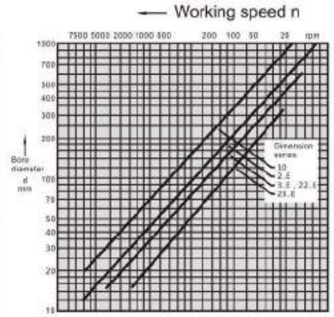
the allowed axial load could be caculated as Faz is 3.6KN

It should be noted that if using the oil which rated kinematic viscosity is less than ISO VG 100 , the axial load determined by the nomogram method cannot be fully used. The additives could be used to increase the bearing ability of axial load, which is well known as extending the bearing fatigue life after tested.

Larger Axial Load

The larger axial loads can be determined by the nomogram as long as they are intermittently applied. The bearings should be cooled with circulating oil lubrication. If the operating temperature exceeds 80°C due to internal friction and a higher axial load, a higher viscosity oil must be used.





Equivalent Dynamic Load

When the bearing is used as floating end bearings which bear the the dynamic load of cylindrical roller bearings

P=Fr

If the bearing inner and outer rings have ribs and are used as axial orientation of one or two directions ribs, the following formula can be used.

P=Fr　when Fa/Fr≤e

P=0.92Fr+Yfa　when Fa/Fr>e

in which

e = limited value

=10, 2, 3, and 4 series of bearings are 0.2

=other series of bearings are 0.3

y =axial load factor

=10, 2, 3, and 4 series of bearings are 0.6

=other series of bearings are 0.4

当量动负荷

由于承受轴向负荷的圆柱滚子轴承，必须要同时承受径向负荷才可达到理想的运行效果，但轴向负荷与径向负荷的比Fa/Fr不可大于0.5。

当量静负荷

对于承受静负荷的圆柱滚子轴承

P0=Fr

圆柱滚子轴承游隙

μm

公称内径		2组		0组		3组		4组		5组	
超过	到	min	max	min	max	min	max	min	max	min	max
-	10	0	25	20	45	35	60	50	75	-	-
10	24	0	25	20	45	35	60	50	75	65	90
24	30	0	25	20	45	35	60	50	75	70	95
30	40	5	30	25	50	45	70	60	85	80	105
40	50	5	35	30	60	50	80	70	100	95	125
50	65	10	40	40	70	60	90	80	110	110	140
65	80	10	45	40	75	65	100	90	125	130	165
80	100	15	50	50	85	75	110	105	140	155	190
100	120	15	55	50	90	85	125	125	165	180	220
120	140	15	60	60	105	100	145	145	190	200	245
140	160	20	70	70	120	115	165	165	215	225	275
160	180	25	75	75	125	120	170	170	220	250	300
180	200	35	90	90	145	140	195	195	250	275	330
200	225	45	105	105	165	160	220	220	280	305	365
225	250	45	110	110	175	170	235	235	300	330	395
250	280	55	125	125	195	190	260	260	330	370	440
280	315	55	130	130	205	200	275	275	350	410	485
315	355	65	145	145	225	225	305	305	385	455	535
355	400	100	190	190	280	280	370	370	460	510	600
400	450	110	210	210	310	310	410	410	510	565	665
450	500	110	220	220	330	330	440	440	550	625	735

Equivalent Dynamic Load

Due to the cylindrical roller bearings whic bear axial load, must also bear the radial load and achieve the desired operating results, but the ratio of axial load vs radial load Fa/Fr can not be larger than 0.5.

Equivalent static load

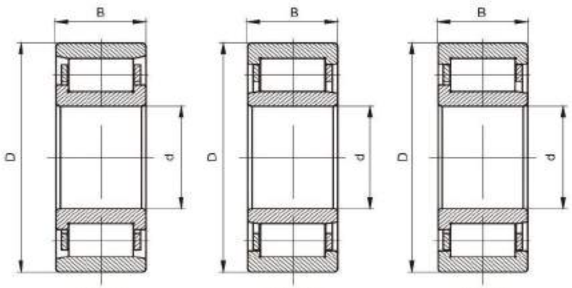
For cylindrical roller bearing which bear static load

P0=Fr

Cylindrical roller bearings clearance

μm

nominal bore diameter d/ mm		group 2		group 0		group 3		group 4		group 5	
exceed	to	min	max	min	max	min	max	min	max	min	max
-	10	0	25	20	45	35	60	50	75	-	-
10	24	0	25	20	45	35	60	50	75	65	90
24	30	0	25	20	45	35	60	50	75	70	95
30	40	5	30	25	50	45	70	60	85	80	105
40	50	5	35	30	60	50	80	70	100	95	125
50	65	10	40	40	70	60	90	80	110	110	140
65	80	10	45	40	75	65	100	90	125	130	165
80	100	15	50	50	85	75	110	105	140	155	190
100	120	15	55	50	90	85	125	125	165	180	220
120	140	15	60	60	105	100	145	145	190	200	245
140	160	20	70	70	120	115	165	165	215	225	275
160	180	25	75	75	125	120	170	170	220	250	300
180	200	35	90	90	145	140	195	195	250	275	330
200	225	45	105	105	165	160	220	220	280	305	365
225	250	45	110	110	175	170	235	235	300	330	395
250	280	55	125	125	195	190	260	260	330	370	440
280	315	55	130	130	205	200	275	275	350	410	485
315	355	65	145	145	225	225	305	305	385	455	535
355	400	100	190	190	280	280	370	370	460	510	600
400	450	110	210	210	310	310	410	410	510	565	665
450	500	110	220	220	330	330	440	440	550	625	735



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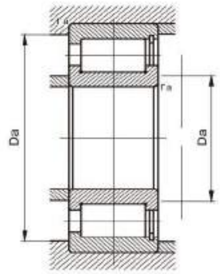
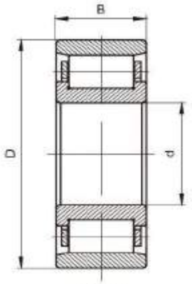


基本尺寸 Basic dimension					基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code		
d	D	B	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max			
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm	NU	NJ	N
17	40	12	0.6	0.3	18	15.1	15000	18000	0.066	19	36	0.6	NU203	NJ203	N203
20	47	14	1.0	0.6	25.1	22	14000	17000	0.114	25	42	1.0	NU204	NJ204	N204
	47	18	1.0	0.6	29.7	27.5	13000	16000	0.145	25	42	1.0	NU2204	NJ2204	N2204
	52	15	1.1	0.6	30.8	26	12000	15000	0.152	26.5	45.5	1.0	NU304	NJ304	N304
	52	21	1.1	0.6	41.3	38	11000	14000	0.212	26.5	45.5	1.0	NU2304	NJ2304	N2304
25	52	15	1.0	0.6	28.6	27	13000	15000	0.136	30	47	1.0	NU205	NJ205	N205
	52	18	1.0	0.6	34.1	34	12000	14000	0.163	30	47	1.0	NU2205	NJ2205	N2205
	62	17	1.1	1.1	40.2	36.5	10000	13000	0.246	31.5	55.5	1.0	NU305	NJ305	N305
	62	24	1.1	1.1	56.1	55	9000	12000	0.347	31.5	55.5	1.0	NU2305	NJ2305	N2305
30	62	16	1.0	0.6	38	36.5	11000	13000	0.208	35	57	1.0	NU206	NJ206	N206
	62	20	1.0	0.6	48.4	49	10000	12000	0.262	35	57	1.0	NU2206	NJ2206	N2206
	72	19	1.1	1.1	51.2	48	9000	11000	0.368	36.5	65.5	1.0	NU306	NJ306	N306
	72	27	1.1	1.1	73.7	75	8000	10000	0.526	36.5	65.5	1.0	NU2306	NJ2306	N2306
35	72	17	1.1	0.6	48.45	48	9500	11000	0.305	41.5	65.5	1.0	NU207	NJ207	N207
	72	23	1.1	0.6	59.4	63	8500	10000	0.403	41.5	65.5	1.0	NU2207	NJ2207	N2207
	80	21	1.5	1.1	64.4	60	8000	9500	0.479	43	72	1.5	NU307	NJ307	N307
	80	31	1.5	1.1	91.3	98	7000	8500	0.723	43	72	1.5	NU2307	NJ2307	N2307
40	80	18	1.1	1.1	53.9	53	8500	10000	0.383	46.5	73.5	1.0	NU208	NJ208	N208
	80	23	1.1	1.1	70.4	75	7500	9000	0.494	46.5	73.5	1.0	NU2208	NJ2208	N2208
	90	23	1.5	1.5	80.9	78	7200	8500	0.631	48	82	1.5	NU308	NJ308	N308
	90	33	1.5	1.5	112	120	6300	7500	0.951	48	82	1.5	NU2308	NJ2308	N2308
45	85	19	1.1	1.1	60.5	64	7500	9000	0.44	51.5	78.5	1.0	NU209	NJ209	N209
	85	23	1.1	1.1	73.7	81.5	7100	8500	0.534	51.5	78.5	1.0	NU2209	NJ2209	N2209
	100	25	1.5	1.5	99	100	6300	7600	0.909	53	92	1.5	NU309	NJ309	N309
	100	36	1.5	1.5	138	153	5600	6700	1.31	53	92	1.5	NU2309	NJ2309	N2309
50	90	20	1.1	1.1	63	69.2	7100	8500	0.5	57	83	1.0	NU210	NJ210	N210



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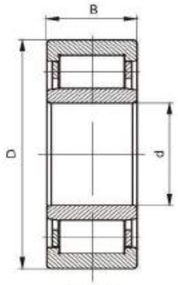

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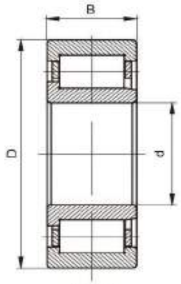

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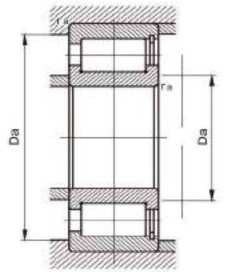
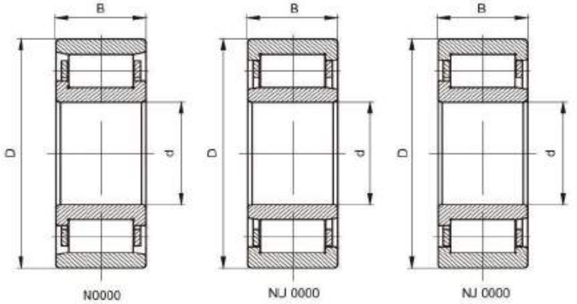
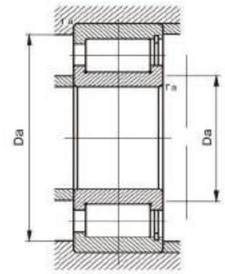
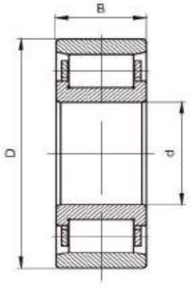


基本尺寸 Basic dimension					基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight			安装尺寸 Installation dimension			轴承代号 Bearing code		
d	D	B	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈			da min	Da max	ra max			
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg			mm	mm	mm	NU	NJ	N
50	90	23	1.1	1.1	77	88.8	6300	8000	0.59			57	83	1.0	NU2210	NJ2210	N2210
	110	27	2.0	2.0	108	112	5500	7000	1.2			58	102	2.0	NU310	NJ310	N310
	110	40	2.0	2.0	159	177	5300	6300	1.97			58	102	2.0	NU2310	NJ2310	N2310
	130	31	2.1	2.1	129	124	5100	6000	2.02			61	119	2.0	NU410	NJ410	N410
55	100	21	1.5	1.1	83	95.2	6300	7500	0.68			62	93	1.5	NU211	NJ211	N211
	100	25	1.5	1.1	97	118	5900	7100	0.81			62	93	1.5	NU2211	NJ2211	N2211
	120	29	2.0	2.0	139	144	5000	6300	1.53			64	111	2.0	NU311	NJ311	N311
	120	43	2.0	2.0	198	228	4800	5800	2.28			64	111	2.0	NU2311	NJ2311	N2311
60	110	22	1.5	1.5	96.4	106	6000	7000	0.93			68	102	1.5	NU212	NJ212	N212
	110	28	1.5	1.5	125	153	5300	6300	1.26			68	102	1.5	NU2212	NJ2212	N2212
	130	31	2.1	2.1	153	162	4800	5600	2			69	121	2.0	NU312	NJ312	N312
	130	46	2.1	2.1	221	252	4500	5500	2.86			69	121	2.0	NU2312	NJ2312	N2312
	150	35	2.1	2.1	167	168	4300	5300	2.98			71	139	2.0	NU412	NJ412	N412
65	120	23	1.5	1.5	104	118	5300	6500	1.08			73	112	1.5	NU213	NJ213	N213
	120	31	1.5	1.5	145	180	4900	6000	1.48			73	112	1.5	NU2213	NJ2213	N2213
	120	31	1.5	1.5	151	184	4800	6000	1.54			73	112	1.5	NU2213ME	NJ2213ME	N2213ME
	140	33	2.1	2.1	181	196	4300	5300	2.49			74	131	2.0	NU313	NJ313	N313
	140	33	2.1	2.1	191	196	4300	5300	2.46			74	131	2.0	NU313ME	NJ313ME	N313ME
	140	48	2.1	2.1	243	290	4000	5000	3.09			74	131	2.0	NU2313	NJ2313	N2313
	160	37	2.1	2.1	182	186	4000	4800	3.6			76	149	2.0	NU413	NJ413	N413
70	125	24	1.5	1.5	117	131	4900	6300	1.315			78	117	1.5	NU214	NJ214	N214
	125	24	1.5	1.5	124	137	5000	6300	1.35			78	117	1.5	NU214ME	NJ214ME	N214ME
	125	31	1.5	1.5	153	193	4500	5500	1.63			78	117	1.5	NU2214	NJ2214	N2214
	150	35	2.1	2.1	207	226	4000	5000	3.293			80	140	2.0	NU314	NJ314	N314
	150	35	2.1	2.1	219	243	4000	5000	3.23			80	140	2.0	NU314ME	NJ314ME	N314ME
	150	51	2.1	2.1	268	320	3800	4800	4.1			80	140	2.0	NU2314	NJ2314	N2314





基本尺寸 Basic dimension					基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code		
d	D	B	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max			
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm	NU	NJ	N
70	150	51	2.1	2.1	284	320	3800	4800	4.261	80	140	2.0	NU2314ME	NJ2314ME	N2314ME
	180	42	3.0	3.0	299	309	3600	4300	5.92	83	167	2.5	NU414	NJ414	N414
75	130	25	1.5	1.5	128	149	4700	5900	1.32	83	122	1.5	NU215	NJ215	N215
	130	25	1.5	1.5	135	156	4600	5900	1.63	83	122	1.5	NU215ME	NJ215ME	N215ME
	130	31	1.5	1.5	159	208	4300	5300	1.64	83	122	1.5	NU2215	NJ2215	N2215
	160	37	2.1	2.1	243	267	3800	4800	4	85	150	2.0	NU315	NJ315	N315
	160	55	2.1	2.1	323	400	3500	4300	5.75	85	150	2.0	NU2315	NJ2315	N2315
	190	45	3.0	3.0	300	326	3400	4000	7.37	85	180	2.5	NU415	NJ415	N415
80	140	26	2.0	2.0	136	166	4500	5500	1.76	89	131	2.0	NU216	NJ216	N216
	140	33	2.0	2.0	181	234	4000	5000	2.24	89	131	2.0	NU2216	NJ2216	N2216
	170	39	2.1	2.1	262	292	3500	4300	4.45	91	159	2.0	NU316	NJ316	N316
	170	39	2.1	2.1	277	314	3500	4300	4.05	91	159	2.0	NU316ME	NJ316ME	N316ME
	170	58	2.1	2.1	353	418	3200	4000	6.65	91	159	2.0	NU2316	NJ2316	N2316
	170	58	2.1	2.1	374	432	3200	4000	6.88	91	159	2.0	NU2316ME	NJ2316ME	N2316ME
	200	48	3.0	3.0	323	348	3200	3800	8.28	92	188	2.5	NU416	NJ416	N416
85	150	28	2.0	2.0	162	190	4300	5000	2.38	94	141	2.0	NU217	NJ217	N217
	150	28	2.0	2.0	171	200	4300	5000	2.25	94	141	2.0	NU217ME	NJ217ME	N217ME
	150	36	2.0	2.0	213	272	3700	4500	2.58	94	141	2.0	NU2217	NJ2217	N2217
	180	41	3.0	3.0	298	319	3300	4000	5.29	96	169	2.5	NU317	NJ317	N317
	180	41	3.0	3.0	306	335	3300	4000	5.4	96	169	2.5	NU317ME	NJ317ME	N317ME
	180	60	3.0	3.0	387	490	3000	3800	7.5	96	169	2.5	NU2317	NJ2317	N2317
	180	60	3.0	3.0	410	496	3000	3800	7.79	96	169	2.5	NU2317ME	NJ2317ME	N2317ME
90	160	30	2.0	2.0	179	212	4000	4600	2.65	100	150	2.0	NU218	NJ218	N218
	160	30	2.0	2.0	188	212	4000	4600	2.49	100	150	2.0	NU218ME	NJ218ME	N218ME
	160	40	2.0	2.0	242	313	3500	4300	3.6	100	150	2.0	NU2218	NJ2218	N2218
	190	43	3.0	3.0	320	360	3100	3800	7.32	102	178	2.5	NU318	NJ318	N318



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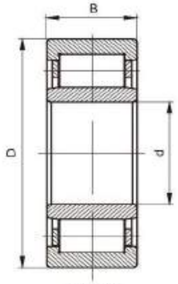

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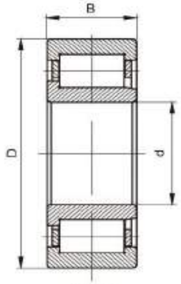

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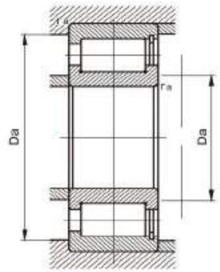
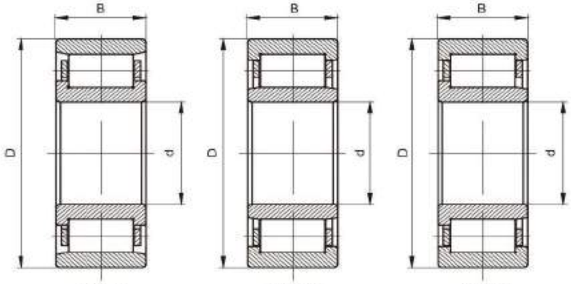


基本尺寸 Basic dimension					基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code		
d	D	B	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max			
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm	NU	NJ	N
90	190	64	3.0	3.0	425	513	2800	3600	8.4	102	178	2.5	NU2318	NJ2318	N2318
95	170	32	2.1	2.1	217	262	3800	4400	2.96	105	160	2.0	NU219	NJ219	N219
	170	43	2.1	2.1	277	368	3300	4000	3.97	105	160	2.0	NU2219	NJ2219	N2219
	200	45	3.0	3.0	338	392	3000	3600	6.52	107	188	2.5	NU319	NJ319	N319
	200	67	3.0	3.0	464	589	2600	3400	10.35	107	188	2.5	NU2319	NJ2319	N2319
	200	67	3.0	3.0	477	589	2600	3400	10.3	107	188	2.5	NU2319ME	NJ2319ME	N2319ME
100	150	24	1.5	1.1	103	143	4300	5300	1.53	108	142	1.5	NU1020	NJ1020	N1020
	180	34	2.1	2.1	250	317	3600	4200	3.9	111	169	2.0	NU220	NJ220	N220
	180	34	2.1	2.1	257	317	3600	4200	3.99	111	169	2.0	NU220ME	NJ220ME	N220ME
	180	46	2.1	2.1	337	450	3100	3800	5.24	111	169	2.0	NU2220	NJ2220	N2220
	215	47	3.0	3.0	389	439	2800	3400	8.58	113	202	2.5	NU320	NJ320	N320
	215	47	3.0	3.0	412	473	2800	3400	8.68	113	202	2.5	NU320ME	NJ320ME	N320ME
	215	73	3.0	3.0	612	788	2400	3100	13.62	113	202	2.5	NU2320	NJ2320	N2320
	215	73	3.0	3.0	612	788	2400	3100	13.6	113	202	2.5	NU2320ME	NJ2320ME	N2320ME
105	190	36	2.1	2.1	266	318	3400	4000	4.59	116	179	2.0	NU221	NJ221	N221
	225	49	3.0	3.0	425	475	2600	3200	9.2	118	212	2.5	NU321	NJ321	N321
110	170	28	2.0	1.1	130	175	3800	4500	2.3	119	161	2.0	NU1022	NJ1022	N1022
	200	38	2.1	2.1	285	365	3200	3800	5.76	121	189	2.0	NU222	NJ222	N222
	200	53	2.1	2.1	387	523	2900	3500	7.5	121	189	2.0	NU2222	NJ2222	N2222
	240	50	3.0	3.0	462	541	2600	3200	11	124	226	2.5	NU322	NJ322	N322
	240	50	3.0	3.0	477	541	2600	3200	11.9	124	226	2.5	NU322ME	NJ322ME	N322ME
	240	80	3.0	3.0	685	897	2200	2800	18.6	124	226	2.5	NU2322	NJ2322	N2322
120	180	28	2.0	1.1	150	211	3400	4300	2.535	129	171	2.0	NU1024	NJ1024	N1024
	215	40	2.1	2.1	332	430	3000	3500	6.65	132	203	2.0	NU224	NJ224	N224
	215	40	2.1	2.1	351	430	3000	3500	6.23	132	203	2.0	NU224ME	NJ224ME	N224ME
	215	58	2.1	2.1	460	632	2700	3300	9.66	132	203	2.0	NU2224	NJ2224	N2224



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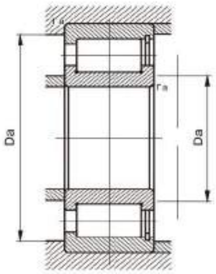
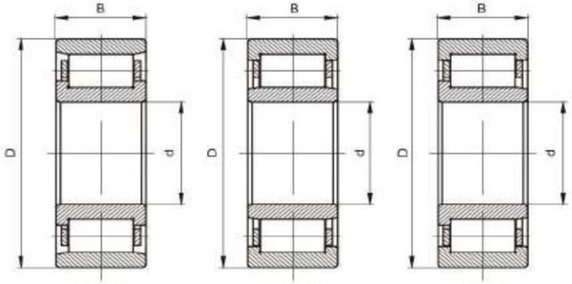


基本尺寸 Basic dimension					基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code		
d	D	B	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max			
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm	NU	NJ	N
120	260	55	3.0	3.0	550	656	2400	3000	14.9	134	246	2.5	NU324	NJ324	N324
	260	55	3.0	3.0	550	656	2400	3000	14.9	134	246	2.5	NU324ME	NJ324ME	N324ME
	260	86	3.0	3.0	799	1040	2000	2600	24.9	134	246	2.5	NU2324	NJ2324	N2324
	260	86	3.0	3.0	824	1040	2000	2600	24.9	134	246	2.5	NU2324ME	NJ2324ME	N2324ME
	310	72	5.0	5.0	686	789	2000	2400	31	134	296	4.0	NU424	NJ424	N424
	310	72	5.0	5.0	686	789	2000	2400	30.4	134	296	4.0	NU424ME	NJ424ME	N424ME
130	200	33	2.0	1.1	168	231	3200	3800	4.28	140	190	2.0	NU1026	NJ1026	N1026
	230	40	3.0	3.0	368	461	2800	3200	7.4	142	218	2.5	NU226	NJ226	N226
	230	64	3.0	3.0	519	700	2500	3100	12.5	142	218	2.5	NU2226	NJ2226	
	280	58	4.0	4.0	612	713	2200	2800	17.66	142	268	3.0	NU326	NJ326	N326
	280	93	4.0	4.0	901	1250	1900	2500	29.9	142	268	3.0	NU2326	NJ2326	N2326
	280	93	4.0	4.0	954	1250	1900	2500	28.8	142	268	3.0	NU2326ME	NJ2326ME	N2326ME
140	210	33	2.0	1.1	178	253	3000	3600	4.21	151	199	2.0	NU1028	NJ1028	N1028
	250	42	3.0	3.0	383	517	2500	3000	9.54	153	237	2.5	NU228	NJ228	N228
	250	68	3.0	3.0	617	873	2300	2900	15.5	153	237	2.5	NU2228	NJ2228	N2228
	250	68	3.0	3.0	644	925	2300	2900	15.4	153	237	2.5	NU2228ME	NJ2228ME	N2228ME
	300	62	4.0	4.0	677	818	2000	2500	22.14	153	287	3.0	NU328	NJ328	N328
	300	102	4.0	4.0	1020	1359	1800	2300	36.55	156	284	3.0	NU2328	NJ2328	
	300	102	4.0	4.0	1080	1359	1800	2300	36.1	156	284	3.0	NU2328ME	NJ2328ME	
150	225	35	2.1	1.5	223	333	2800	3400	4.77	161	214	2.0	NU1030	NJ1030	N1030
	270	45	3.0	3.0	434	570	2200	2800	11	164	256	2.5	NU230	NJ230	N230
	270	73	3.0	3.0	625	884	2100	2600	17	164	256	2.5	NU2230	NJ2230	
	320	65	4.0	4.0	765	965	1800	2200	26.3	176	290	3.0	NU330		
	320	108	4.0	4.0	1165	1600	1700	2100	43.76	176	290	3.0	NU2330	NJ2330	
160	240	38	2.1	1.5	264	392	2600	3200	5.8	172	228	2.0	NU1032	NJ1032	N1032
	290	48	3.0	3.0	509	673	2100	2600	14.3	175	275	2.5	NU232	NJ232	N232



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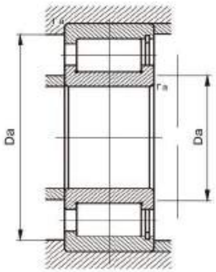


基本尺寸 Basic dimension					基本额定载荷 Basic rating load		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code		
d	D	B	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max			
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm	NU	NJ	N
160	290	80	3.0	3.0	791	1150	1900	2400	23.5	175	275	2.5	NU2232	NJ2232	
	340	68	4.0	4.0	850	1026	1700	2000	32	177	323	3.0	NU332	NJ332	N332
	340	114	4.0	4.0	1063	1644	1600	1900	51	177	323	3.0	NU2332	NJ2332	
	340	114	4.0	4.0	1310	1820	1600	1900	51.9	177	323	3.0	NU2332ME	NJ2332ME	
170	260	42	2.1	2.1	276	390	2400	2800	7.8	182	248	2.0	NU1034	NJ1034	N1034
	310	52	4.0	4.0	591	775	2000	2400	18	185	295	3.0	NU234	NJ234	N234
	310	86	4.0	4.0	901	1273	1800	2200	27	185	295	3.0	NU2234	NJ2234	
	360	72	4.0	4.0	810	1121	1600	1900	38	188	342	3.0	NU334	NJ334	N334
	360	120	4.0	4.0	1233	1938	1500	1800	63	186	344	3.0	NU2334	NJ2334	
180	280	46	2.1	2.1	336	475	2200	2600	10.5	202	269	2.0	NU1036	NJ1036	N1036
	320	52	4.0	4.0	612	822	1900	2200	19.8	196	304	3.0	NU236	NJ236	N236
	320	86	4.0	4.0	935	1359	1700	2100	29	196	304	3.0	NU2236	NJ2236	
	380	75	4.0	4.0	913	1290	1500	1800	42.5	196	364	3.0	NU336	NJ336	N336
	380	126	4.0	4.0	1400	2240	1400	1700	73	196	364	3.0	NU2336	NJ2336	N2336
190	290	46	2.1	2.1	347	505	2000	2400	10.8	203	277	2.0	NU1038	NJ1038	N1038
	340	55	4.0	4.0	693	965	1800	2100	23.5	206	324	3.0	NU238	NJ238	N238
	340	92	4.0	4.0	1037	1520	1600	2000	34	206	324	3.0	NU2238	NJ2238	
	400	78	5.0	5.0	1140	1500	1400	1700	50	210	380	4.0	NU338	NJ338	N338
	400	132	5.0	5.0	1830	2550	1300	1600	82.5	210	380	4.0	NU2338	NJ2338	
200	310	51	2.1	2.1	471	707	1800	2200	15	214	296	2.0	NU1040	NJ1040	N1040
	360	58	4.0	4.0	748	1007	1700	2000	26	217	343	3.0	NU240	NJ240	N240
	360	98	4.0	4.0	1165	1710	1500	1900	42	217	343	3.0	NU2240	NJ2240	
	420	138	5.0	5.0	1683	2800	1200	1500	94.5	220	400	4.0	NU2340	NJ2340	N2340
	420	165	5.0	5.0	1950	3540	1200	1500	118	220	400	4.0	NU3340		
220	340	56	3.0	3.0	500	750	1700	2000	18.3	235	325	2.5	NU1044	NJ1044	N1044
	400	65	4.0	4.0	760	1220	1600	1900	37.6	236	384	3.0	NU244	NJ244	N244
240	360	56	3.0	3.0	525	815	1500	1800	19.8	255	345	2.5	NU1048	NJ1048	N1048
260	400	65	4.0	4.0	640	980	1400	1700	29.2	277	383	3.0	NU1052	NJ1052	N1052
	400	82	4.0	4.0	985	1880	1300	1700	40.4	276	384	3.0	NU2052		
280	420	65	4.0	4.0	640	1140	1400	1700	32.2	296	404	3.0	NU1056	NJ1056	

双列满装圆柱滚子结构命名

表1 外连接结构命名规则

代表型号	代号	描 述
SL04-5024NR	NR	防尘盖+止动槽+止动环
R代表止动环	NR	符合NTN标准的止动环
	NR1	符合WRE标准的止动环
	NR3	符合DIN471标准的止动环
SL04-5015SNR	SNR	密封圈（组件）+止动槽+止动环
SL04-5024NSNR	NSNR	密封圈（聚氨酯）+止动槽+止动环
SL04-5024NSNR/W33	/W33	外圈3个油孔均布
SL02-4848/W34	/W34	外圈4个油孔均布
D代表表面处理	/D1	表示表面磷化处理（可省略不写）
	/D2	表示非磷化(不做任何表面处理，显示轴承本色)
	/D3	表示表面发黑处理
SL04-5015N2R	N2R	止动环间距不同
SL04-5020SNR/W33NTC	NTC	注脂量为轴承有效空间的100%

注：1、轴承型号后置代号中只能有一个"/"，具体如上表所示。

表2 内连接结构命名规则

代表型号	代号	描 述
SL04-5022PP	PP	内圈为整体剖分式，连接扣连接，聚氨酯密封圈
内连接结构，R代表止动环	PP/R	符合NTN标准的止动环
	PP/R1	符合WRE标准的止动环
	PP/R3	符合DIN471标准的止动环
D代表表面处理	/D1	表示表面发黑处理（可省略不写）
	/D2	表示非磷化(不做任何表面处理，显示轴承本色)
	/D3	表示表面磷化处理（可省略不写）

注：1、轴承型号后置代号中只能有一个"/"，具体如上表所示。

Nomenclature of Double Row Full Complement Cylindrical Roller Structures

Table 1 Outside joint structure naming rules

Representative models	Code	Description
SL04-5024NR	NR	Dust cover + snap groove + snap ring
R represent snap ring	NR	NTN-compliant snap rings
	NR1	WRE-compliant snap rings
	NR3	DIN471-compliant snap rings
SL04-5015SNR	SNR	Seals (components) + snap groove + snap ring
SL04-5024NSNR	NSNR	Seals(polyurethane) + stop groove + stop ring
SL04-5024NSNR/W33	/W33	even distribution 3 oil holes of outer ring
SL02-4848/W34	/W34	even distribution 4 oil holes of outer ring
D represent surface treatment	/D1	Surface phosphating treatment (can be omitted without writing)
	/D2	Non-phosphate (without any surface treatment, showing the nature color of bearing)
	/D3	Indicates a surface blackening treatment
SL04-5015N2R	N2R	Different distance between snap rings
SL04-5020SNR/W33NTC	NTC	Grease is filled 100% of bearing space

Note: 1, the post code of bearing model can only have a"/", as shown in the table above.

Table 2 Inner join structure naming convention

Representative models	Code	Description
SL04-5022PP	PP	The inner ring is of overall split, connecting by buckle connection, polyurethane seals
An internal connecting structure, and R represent snap ring	PP/R	NTN-compliant snap rings
	PP/R1	WRE-compliant snap rings
	PP/R3	DIN471-compliant snap rings
D represent surface treatment	/D1	Indicates a surface blackening treatment(can be omitted without writing)
	/D2	non-phosphate (without any surface treatment, showing the nature color of bearing)
	/D3	Surface phosphating treatment (can be omitted without writing)

Note: 1, the post code of bearing model can only have a"/", as shown in the table above.

游隙

1、 SL_NR，SL_SNR，SL_NSNR（SL01，SL02，SL04）轴承的径向游隙值见下表

公称内径		CN		C3		C4	
超过	到	最小	最大	最小	最大	最小	最大
30	50	20	75	40	95	55	110
50	80	30	90	55	115	75	135
80	120	35	105	80	150	105	175
120	180	60	150	110	200	150	240
180	250	90	190	155	255	205	305
250	315	110	225	195	310	255	370
315	400	140	265	245	370	320	445
400	500	180	320	300	440	395	535

2、SL04_PP轴承径向游隙

公称内径		CN		C3		C4		C5	
超过	到	最小	最大	最小	最大	最小	最大	最小	最大
30	40	25	50	45	70	60	85	80	105
40	50	30	60	50	80	70	100	95	125
50	65	40	70	60	90	80	110	110	140
65	80	40	75	65	100	90	125	130	165
80	100	50	85	75	110	105	140	155	190
100	120	50	90	85	125	125	165	180	220
120	140	60	105	100	145	145	190	200	245
140	160	70	120	115	165	165	215	225	275
160	180	75	125	120	170	170	220	250	300
180	200	90	145	140	195	195	250	275	330
200	225	105	165	160	220	220	280	305	365
225	250	110	175	170	235	235	300	330	395
250	280	125	195	190	260	260	330	370	440
280	315	130	205	200	275	275	350	410	485
315	355	145	225	225	305	305	385	455	535
355	400	190	280	280	370	370	460	510	600

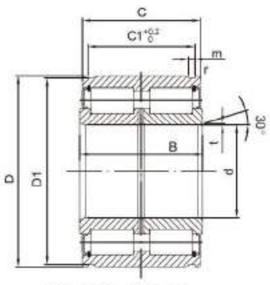
Clearance

Radial clearance value of SL_NR，SL_SNR，SL_NSNR（SL01，SL02，SL04）is in table 1

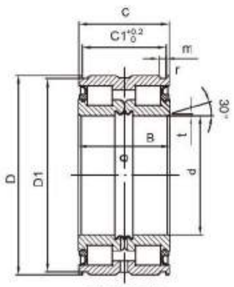
Nominal bore diameter d（mm）		CN		C3		C4	
Exceed	To	min.	max.	min.	max.	min.	max.
30	50	20	75	40	95	55	110
50	80	30	90	55	115	75	135
80	120	35	105	80	150	105	175
120	180	60	150	110	200	150	240
180	250	90	190	155	255	205	305
250	315	110	225	195	310	255	370
315	400	140	265	245	370	320	445
400	500	180	320	300	440	395	535

2、Radial clearance of SL04_PP bearing

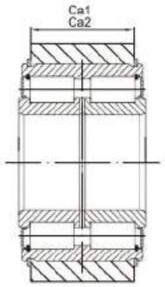
Nominal bore diameter d（mm）		CN		C3		C4		C5	
Exceed	To	min.	max.	min.	max.	min.	max.	min.	max.
30	40	25	50	45	70	60	85	80	105
40	50	30	60	50	80	70	100	95	125
50	65	40	70	60	90	80	110	110	140
65	80	40	75	65	100	90	125	130	165
80	100	50	85	75	110	105	140	155	190
100	120	50	90	85	125	125	165	180	220
120	140	60	105	100	145	145	190	200	245
140	160	70	120	115	165	165	215	225	275
160	180	75	125	120	170	170	220	250	300
180	200	90	145	140	195	195	250	275	330
200	225	105	165	160	220	220	280	305	365
225	250	110	175	170	235	235	300	330	395
250	280	125	195	190	260	260	330	370	440
280	315	130	205	200	275	275	350	410	485
315	355	145	225	225	305	305	385	455	535
355	400	190	280	280	370	370	460	510	600



SL04-50..NR(NSNR,SNR)



SL04-50..PP

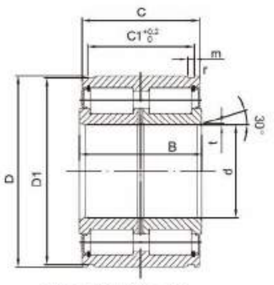


装配尺寸

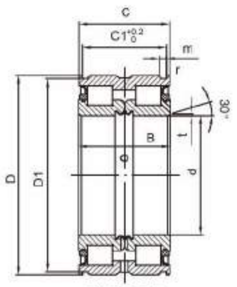
基本尺寸 Basic dimension							基本额定载荷 Basic rating load				安装尺寸 Installation dimension		极限转速 Limiting Speeds	重量 Weight	止动环 Retaining rings		轴承代号 Bearing code
d	D	B	C	t	r	m	Cr	Cor			Ca1-0.2①	Ca2-0.2②	脂 Grease	Wt ≈			
mm	mm	mm	mm	mm	mm	mm	kN	kN			mm	mm	r/min	kg	WRE	DIN471	N
40	68	38	37	0.8	1	2.7	74	106			28	27	2500	0.559	WRE68	68X2.5	SL04-5008
	68	38	37	0.8	0.6	2.7	74	106			28	27	2500	0.559	WRE68	68X2.5	SL04-5008PP-2NR
45	75	40	39	0.8	1	2.7	89.5	133			30	29	2200	0.704	WRE75	75X2.5	SL04-5009
	75	40	39	0.8	0.6	2.7	89.5	133			30	29	2200	0.704	WRE75	75X2.5	SL04-5009PP-2NR
50	80	40	39	0.8	1	2.7	93.9	145			30	29	2000	0.772	WRE80	80X2.5	SL04-5010
	80	40	39	0.8	0.6	2.7	93.9	145			30	29	2000	0.772	WRE80	80X2.5	SL04-5010PP-2NR
55	90	46	45	1	1	3.2	120	196			35	34	1800	1.19	WRE90	90X3	SL04-5011
	90	46	45	1	0.6	3.2	120	196			35	34	1800	1.19	WRE90	90X3	SL04-5011PP-2NR
60	95	46	45	1	1	3.2	131	208			35	34	1700	1.23	WRE95	95X3	SL04-5012
	95	46	45	1	0.6	3.2	131	208			35	34	1700	1.23	WRE95	95X3	SL04-5012PP-2NR
65	100	46	45	1	1	3.2	139	220			35	34	1500	1.31	WRE100	100X3	SL04-5013
	100	46	45	1	0.6	3.2	139	220			35	34	1500	1.31	WRE100	100X3	SL04-5013PP-2NR
70	110	54	53	1	1	4.2	171	285			43	40	1400	1.92	WRE110	110X4	SL04-5014
	110	54	53	1	0.6	4.2	171	285			43	40	1400	1.92	WRE110	110X4	SL04-5014PP-2NR
75	115	54	53	1	1	4.2	179	307			43	40	1300	2.01	WRE115	115X4	SL04-5015
	115	54	53	1	0.6	4.2	179	307			43	40	1300	2.01	WRE115	115X4	SL04-5015PP-2NR
80	125	60	59	1.5	1	4.2	217	376			49	46	1300	2.74	WRE125	125X4	SL04-5016
	125	60	59	1.5	0.6	4.2	217	376			49	46	1300	2.74	WRE125	125X4	SL04-5016PP-2NR
85	130	60	59	1.5	1	4.2	233	394			49	46	1200	2.88	WRE130	130X4	SL04-5017
	130	60	59	1.5	0.6	4.2	233	394			49	46	1200	2.88	WRE130	130X4	SL04-5017PP-2NR
90	140	67	66	1.5	1	4.2	293	501			54	51	1100	3.76	WRE140	140X4	SL04-5018
	140	67	66	1.5	0.6	4.2	293	501			54	51	1100	3.56	WRE140	140X4	SL04-5018PP-2NR
95	145	67	66	1.5	1	4.2	283	497			54	51	1100	3.92	WRE145	145X4	SL04-5019
	145	67	66	1.5	0.6	4.2	283	497			54	51	1100	3.6	WRE145	145X4	SL04-5019PP-2NR

注：①WRE止动环和TWB轻型制动环; ②止动环，符合DIN471

Note: ①WRE snap ring and TWB light brake ring; ②Snap ring comply with DIN471



SL04-50..NR(NSNR,SNR)



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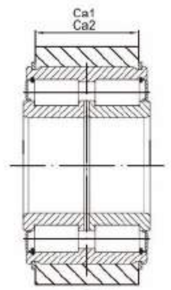


装配尺寸

基本尺寸 Basic dimension							基本额定载荷 Basic rating load		安装尺寸 Installation dimension		极限转速 Limiting Speeds	重量 Weight	止动环 Retaining rings		轴承代号 Bearing code
d	D	B	C	t	r	m	Cr	Cor	Ca1-0.2①	Ca2-0.2②	脂 Grease	Wt ≈			
mm	mm	mm	mm	mm	mm	mm	kN	kN	mm	mm	r/min	kg	WRE	DIN471	N
100	150	67	66	1.5	1	4.2	289	517	54	51	1000	4.12	WRE150	150X4	SL04-5020
	150	67	66	1.5	0.6	4.2	289	517	54	51	1000	4.12	WRE150	150X4	SL04-5020PP-2NR
110	170	80	79	1.8	1.5	4.2	390	711	65	62	910	6.59	WRE170	170X4	SL04-5022
	170	80	79	1.8	0.6	4.2	390	711	65	62	910	6.62	WRE170	170X4	SL04-5022PP-2NR
120	180	80	79	1.8	1.5	4.2	406	765	65	63	830	7.01	WRE180	180X4	SL04-5024
	180	80	79	1.8	0.6	4.2	406	765	65	63	830	6.83	WRE180	180X4	SL04-5024PP-2NR
130	200	95	94	1.8	1.5	4.2	540	1010	77	75	770	10.6	WRE200	200X4	SL04-5026
	200	95	94	1.8	0.6	4.2	540	1010	77	75	770	10.39	WRE200	200X4	SL04-5026PP-2NR
140	210	95	94	1.8	1.5	5.2	569	1090	77	73	710	11.3	WRE210	210X5	SL04-5028
	210	95	94	1.8	0.6	5.2	569	1090	77	73	710	11.3	WRE210	210X5	SL04-5028PP-2NR
150	225	100	99	2	1.5	5.2	634	1240	81	77	670	13.8	WRE225	225X5	SL04-5030
	225	100	99	2	0.6	5.2	634	1240	81	77	670	13.8	WRE225	225X5	SL04-5030PP-2NR
160	240	109	108	2	2	5.2	748	1460	89	85	630	17.1	WRE240	240X5	SL04-5032
	240	109	108	2	0.6	5.2	748	1460	89	85	630	16.59	WRE240	240X5	SL04-5032PP-2NR
170	260	122	121	2	2	5.2	909	1830	99	97	590	23.4	WRE260	260X5	SL04-5034
	260	122	121	2	0.6	5.2	909	1830	99	97	590	23.4	WRE260	260X5	SL04-5034PP-2NR
180	280	136	135	2	2	5.2	1130	2300	110	108	560	31.4	WRE280	280X5	SL04-5036
	280	136	135	2	0.6	5.2	1130	2300	110	108	560	31.4	WRE280	280X5	SL04-5036PP-2NR
190	290	136	135	2	2	5.2	1180	2450	110	108	530	32.85	WRE290	290X5	SL04-5038
	290	136	135	2	0.6	5.2	1180	2450	110	108	530	32.85	WRE290	290X5	SL04-5038PP-2NR
200	310	150	149	2	2	6.3	1340	2760	120	116	500	43.4	WRE310	310X6	SL04-5040
	310	150	149	2	0.6	6.3	1340	2760	120	116	500	43.4	WRE310	310X6	SL04-5040PP-2NR
220	340	160	159	2.5	2	6.3	1610	3370	130	126	450	54.9	WRE340	340X6	SL04-5044
	340	160	159	2.5	1	6.3	1610	3370	130	126	450	54.9	WRE340	340X6	SL04-5044PP-2NR
240	360	160	159	2.5	2	6.3	1640	3530	130	126	420	57.6	WRE360	360X6	SL04-5048
	360	160	159	2.5	1	6.3	1640	3530	130	126	420	57.6	WRE360	360X6	SL04-5048PP-2NR

注：①WRE止动环和TWB轻型制动环; ②止动环，符合DIN471

Note: ①WRE snap ring and TWB light brake ring; ②Snap ring comply with DIN471

CAT.NO.B2021B-1

JXN®

圆锥滚子轴承

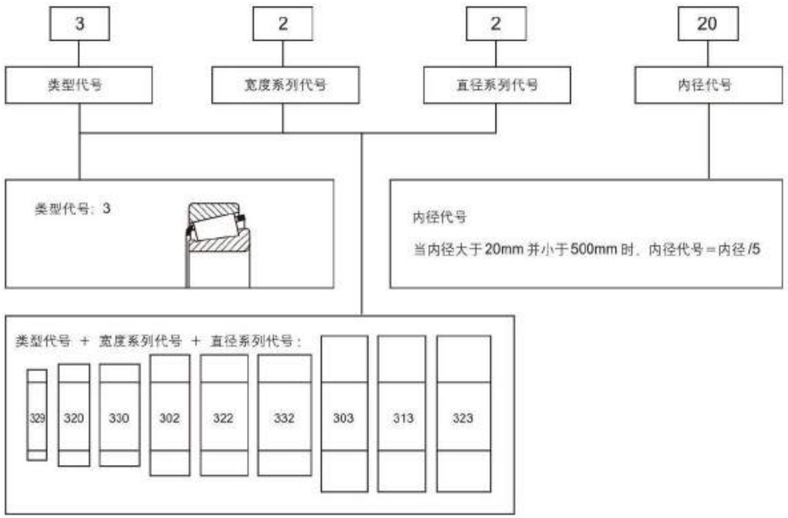
Tapered Roller Bearings Catalogue

圆锥滚子轴承一般是分离型设计，轴承的内、外圈均具有锥形滚道，通常内圈、滚子、保持架组成内圈组件与外圈合套。圆锥滚子轴承的内圈、外圈滚道母线及滚子中心线与轴承的轴线相交于一点。圆锥滚子轴承的特殊结构使其能够承受联合负荷。
单列圆锥滚子轴承可以承受径向负荷和单一方向的轴向负荷。其轴向负荷能力取决于轴承的接触角大小，接触角越大，轴向承载能力越高。

轴承代号

圆锥滚子轴承编号采用以3为开头数字的5位数编号表示。编号共包含四部分：类型代号、宽度系列代号、直径系列代号和轴承内径代号。

轴承代号

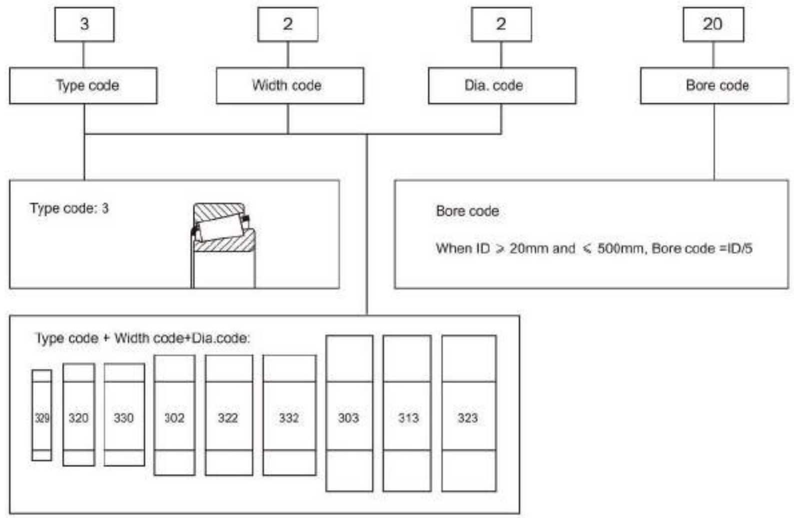


Tapered roller bearing is generally designed as separable bearing. There are tapered raceways in both inner ring . The inner subunit which comlined with outer ring usually includes rollers. cage and inner ring. For tapered roller bearing, the raceway line of inner ring and outer ring, roller centerline and the axis of bearing intersect at one point. The special structure of tapered roller bearing helps the bearing to afford combined load.
Single-row tapered roller bearing can bear radial load and a single direction axial load. The axial load capacity depends on the size of the contact angle of the bearing. larger contact angle, higher axial loading capacity.

Bearing Code

The tapered roller bearing number is indicated by a 5-digit numbers starting with 3. The number consists of four parts: type code, width series code, diameter series code and bearing diameter code.

Bearing Code



最小负荷

与球轴承和滚子轴承一样，为防止圆锥轴承在高速运转时因滚子和保持架的惯性力以及润滑剂在内的摩擦对轴承的滚动产生不良影响，在滚子和滚道间产生对轴承有害的滑动位移，轴承必须承受一定的最小径向负荷，其值按下式估算：

$$Frm=0.02Cr$$

式中：

Frm——最小径向负荷；KN

Cr ——轴承基本额定动负荷；KN

当量动负荷

圆锥滚子轴承在不变的径向和轴向负荷作用下，当量负荷按下式计算：

当量动负荷

P=Fr　　当Fa/Fr≤e时

P=0.4Fr+YFa　　当Fa/Fr＞e时

当量静负荷

P0=0.5Fr+Y0Fa

当P0＜Fr，取P0=Fr

式中：

e、Y、Y0——轴向动负荷系数，数值可从产品表中查询

Fr——径向负荷

Fa——轴向负荷

Min. Load

The same with ball bearing and roller bearings, the bearings must be subjected to a certain minimum radial load in order to prevent the adverse displacement betweeen rollers and raceway due to centrifugal force during high speed operation. the adverse displacement is caused by the inertia of ball and the friction in the lubricant. the value could be estimated through below formula:

$$Frm=0.02Cr$$

in which:

Frm——min. radial load；KN

Cr ——basic rating dynamic load；KN basil dynamil load rating

Equivilant Dynamic Load Offords

When tapered roller bearing works under the constant radial and axial load, the equivalent load is caculated according to the following formula:"

Equivilant dynamic load

P=Fr　　whenFa/Fr≤e

P=0.4Fr+YFa　　when Fa/Fr＞e

Equivilant static load

P0=0.5Fr+Y0Fa

when P0＜Fr, P0=Fr

In which:

e, Y, Y0——Axial dynamic load factor, values can be found in the product table

Fr—— radial load

Fa—— axial load

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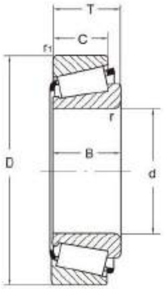
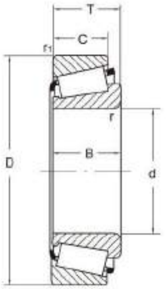


基本尺寸 Basic dimension d mm	D mm	B mm	C mm	T mm	rmin mm	r1min mm	基本额定载荷 Basic load rating Cr kN	Cor kN	极限转速 Limiting Speeds 脂 Grease r/min	油 Oil r/min	重量 Weight Wt ≈ kg	计算系数 Caculation factor e	Y	Y_0	轴承代号 Bearing code 新代号 New code
17	40	12	11	13.25	1	1	19.7	21.9	9500	13000	0.075	0.35	1.7	0.9	30203
	40	16	14	17.3	1	1	35.3	36.3	9500	13000	0.1	0.31	1.9	1.1	32203
	47	14	12	15.25	1	1	28.3	27.2	8500	12000	0.13	0.29	2.1	1.2	30303
	47	19	16	20.3	1	1	40	33.5	8500	11000	0.18	0.29	2.1	1.2	32303
20	47	14	12	15.25	1	1	26.9	30.6	8000	11000	0.123	0.35	1.7	0.9	30204
	47	14	12	15.25	1	1	24.3	28.6	6700	9000	0.12	0.55	1.1	0.6	30204BE
	47	18	15	19.25	1	1	34.4	41.3	8000	11000	0.159	0.33	1.8	1	32204
	52	15	13	16.25	1.5	1.5	33.1	33.2	7500	10000	0.17	0.3	2	1.1	30304
	52	21	18	22.3	1.5	1.5	42.7	46.3	8000	11000	0.24	0.3	2	1.1	32304
25	47	15	11.5	15	0.6	0.6	25.1	33.5	8000	11000	0.126	0.43	1.4	0.77	32005
	52	15	13	16.25	1	1	32.1	39.3	7500	11000	0.15	0.37	1.6	0.88	30205
	52	18	16	19.25	1	1	38.9	48.5	7000	10000	0.184	0.36	1.7	0.92	32205
	52	22	18	22	1	1	47.5	56.5	7500	10000	0.22	0.35	1.7	0.94	33205
	62	17	13	18.25	1.5	1.5	48	47	6300	8500	0.25	0.3	2	1.1	30305
	62	17	13	18.25	1.5	1.5	42.2	43.8	5600	8000	0.26	0.83	0.73	0.4	31305
	62	24	20	25.25	1.5	1.5	63	66	6300	8500	0.422	0.3	2	1.1	32305
30	47	12	9	12	0.3	0.3	17.6	24.4	7500	10000	0.074	0.32	1.9	1	32906
	55	17	13	17	1	1	35.7	46.7	6700	9000	0.175	0.43	1.4	0.77	32006
	55	20	16	20	1	1	42	54	6700	9000	0.208	0.29	2.1	1.1	33006
	62	16	14	17.25	1	1	41.2	50.5	6300	8500	0.227	0.37	1.6	0.88	30206
	62	20	17	21.25	1	1	48.3	61.9	6300	8500	0.288	0.37	1.6	0.88	32206
	62	25	19.5	25	1	1	70.5	75	6000	8000	0.343	0.34	1.8	0.97	33206
	72	19	16	20.75	1.5	1.5	61.5	63	5600	7500	0.39	0.32	1.9	1.1	30306
	72	19	14	20.75	1.5	1.5	53.2	57.3	5000	6700	0.38	0.83	0.73	0.4	31306
	72	27	23	28.75	1.5	1.5	77	84	5600	7500	0.554	0.32	1.9	1.1	32306



基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
	55	14	11.5	14	0.6	0.6	27.4	39	6300	8500	0.123	0.29	2.1	1.1	32907
	62	18	14	18	1	1	41	58.2	6000	8000	0.221	0.45	1.3	0.73	32007
	62	21	17	21	1	1	49	65	5600	8000	0.267	0.31	2	1.1	33007
	72	17	15	18.25	1.5	1.5	51.6	63.5	5300	7000	0.325	0.37	1.6	0.88	30207
35	72	23	19	24.25	1.5	1.5	67.2	89.5	5300	7000	0.44	0.37	1.6	0.88	32207
	72	28	22	28	1.5	1.5	87.5	106	5300	7000	0.519	0.35	1.7	0.93	33207
	80	21	18	22.75	2	1.5	68.5	65	5000	6700	0.515	0.32	1.9	1.1	30307
	80	21	15	22.75	2	1.5	68	76	4500	6000	0.515	0.83	0.73	0.4	31307
	80	31	25	32.75	2	1.5	90.5	94	5000	6700	0.755	0.32	1.9	1.1	32307
	62	15	12	15	0.6	0.6	34	47	5600	7500	0.16	0.29	2.1	1.1	32908
	68	19	14.5	19	1	1	46.4	69.5	5300	7000	0.268	0.38	1.6	0.87	32008
	68	22	18	22	1	1	59	81.5	5300	7100	0.32	0.28	2.1	1.2	33008
	80	18	16	19.75	1.5	1.5	59.6	73.4	4800	6300	0.411	0.37	1.6	0.88	30208
40	80	23	19	24.75	1.5	1.5	73.9	96.6	4800	6300	0.519	0.55	1.1	0.6	32208
	80	32	25	32	1.5	1.5	113	126	4800	6300	0.701	0.36	1.7	0.92	33208
	90	23	20	25.25	2	1.5	95.5	102	4500	6000	0.734	0.35	1.7	0.96	30308
	90	23	17	25.25	2	1.5	71.5	77	4000	5300	0.731	0.83	0.73	0.4	31308
	90	33	27	35.25	2	1.5	117	140	4300	6000	1.08	0.35	1.7	0.96	32308
	68	15	12	15	0.6	0.6	34.5	50.5	5000	6700	0.187	0.32	1.9	1	32909
	75	20	15.5	20	1	1	56.3	91	4800	6300	0.338	0.39	1.5	0.84	32009
	75	24	19	24	1	1	69	99	4800	6300	0.414	0.29	2	1.1	33009
45	85	19	16	20.75	1.5	1.5	64.3	83	4500	6000	0.467	0.41	1.5	0.81	30209
	85	23	19	24.75	1.5	1.5	79.7	109.3	4500	6000	0.576	0.41	1.5	0.81	32209
	85	23	19	24.75	1.5	1.5	83	104	4500	6000	0.569	0.59	1	0.56	32209JR
	85	32	25	32	1.5	1.5	115	150	4300	6000	0.789	0.39	1.6	0.86	33209

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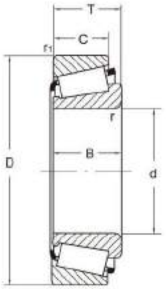
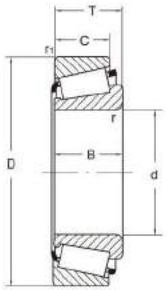
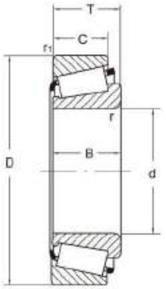


基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
45	100	25	22	27.25	2	1.5	103	107	4000	5300	0.987	0.35	1.7	0.96	30309
	100	25	18	27.25	2	1.5	99.9	113	3600	4800	0.977	0.83	0.73	0.4	31309
	100	36	30	38.25	2	1.5	153	174	3800	5300	1.44	0.35	1.7	0.96	32309
47	100	43	37	43	1.5	1	145	205	5300	6700	1.661	0.3	1.9	1.1	306/47
50	72	15	12	15	0.6	0.6	36	54	4500	6300	0.193	0.34	1.8	0.97	32910
	80	20	15.5	20	1	1	56.3	91	4500	6000	0.375	0.42	1.4	0.78	32010
	80	24	19	24	1	1	70.5	104	4300	6000	0.452	0.32	1.9	1	33010
	90	20	17	21.75	1.5	1.5	72	96.4	4300	5600	0.526	0.42	1.4	0.79	30210
	90	23	19	24.75	1.5	1.5	84.7	118.9	4300	5600	0.627	0.42	1.4	0.79	32210
	90	32	24.5	32	1.5	1.5	119	160	4000	5300	1.17	0.41	1.5	0.8	33210
	110	27	23	29.25	2.5	2.5	132	150	3600	4800	1.26	0.35	1.7	0.96	30310
	110	27	19	29.25	2.5	2	110	124	3200	4300	1.25	0.83	0.73	0.4	31310
	110	40	33	42.25	2.5	2	173	214	3600	4800	1.26	0.35	1.7	0.96	32310
55	80	17	14	17	1	1	45.5	74.5	4300	5600	0.282	0.31	1.9	1.1	32911
	90	23	17.5	23	1.5	1.5	73.8	118.9	4000	5300	0.552	0.41	1.5	0.81	32011
	90	27	21	27	1.5	1.5	91.5	138	3800	5300	0.657	0.31	1.9	1.1	33011
	100	21	18	22.75	2	1.5	90.8	107	3800	5000	0.687	0.41	1.5	0.81	30211
	100	25	21	26.75	2	1.5	108	134	3800	5000	0.839	0.41	1.5	0.81	32211
	100	35	27	35	2	1.5	143	196	3600	5000	1.17	0.4	1.5	0.8	33211
	120	29	25	31.5	2.5	2	153	178	3200	4300	1.65	0.35	1.7	0.96	30311
	120	29	21	31.5	2.5	2	136	157	2800	3800	1.78	0.83	0.73	0.4	31311
	120	43	35	45.5	2.5	2	218	280	3200	4200	2.43	0.35	1.7	0.96	32311
60	85	17	14	17	1	1	49	84.5	3800	5300	0.306	0.33	1.8	1	32912
	95	23	17.5	23	1.5	1.5	79.2	118	3800	5000	0.589	0.43	1.4	0.77	32012
	95	27	21	27	1.5	1.5	96	150	3600	5000	0.713	0.33	1.8	1	33012



基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
60	110	22	19	23.75	2	1.5	98	129.4	3400	4500	0.888	0.41	1.5	0.81	30212
	110	28	24	29.75	2	1.5	126.1	179	3400	4500	1.148	0.41	1.5	0.81	32212
	130	31	26	33.5	3	2.5	163	185	3000	4000	1.96	0.35	1.7	0.96	30312
	130	31	22	33.5	3	2.5	138	155	2600	3700	1.92	0.83	0.73	0.4	31312
	130	46	37	48.5	3	2.5	229	289	3000	4000	2.9	0.35	1.7	0.96	32312
65	90	17	14	17	1	1	49	86.5	3600	5000	0.323	0.35	1.7	0.93	32913
	100	23	17.5	23	1.5	1.5	81.2	124	3400	4500	0.626	0.41	1.5	0.81	32013
	100	27	21	27	1.5	1.5	97.5	156	3400	4500	0.76	0.35	1.7	0.95	33013
	120	23	20	24.75	2	1.5	121	145	3000	4000	1.118	0.41	1.5	0.81	30213
	120	31	27	32.75	2	1.5	151.8	219	3000	4000	1.525	0.41	1.5	0.81	32213
	120	41	32	41	2	1.5	183	280	3000	4000	2.02	0.39	1.5	0.85	33213
	140	33	28	36	3	2.5	188	216	2600	3600	2.49	0.35	1.7	0.96	30313
	140	33	23	36	3	2.5	171	198	2400	3400	2.46	0.83	0.73	0.4	31313
	140	48	39	51	3	2.5	264	335	2800	3800	3.68	0.35	1.7	0.96	32313
70	100	20	16	20	1	1	70	113	3200	4500	0.49	0.32	1.9	1.1	32914
	110	25	19	25	1.5	1.5	92.5	154.8	3200	4300	0.853	0.43	1.4	0.76	32014
	110	31	25.5	31	1.5	1.5	127	204	3000	4300	1.11	0.28	2.1	1.2	33014
	125	24	21	26.25	2	1.5	124	170.7	3000	4000	1.238	0.42	1.4	0.79	30214
	125	31	27	33.25	2	1.5	158.4	234.3	2800	3800	1.62	0.42	1.4	0.79	32214
	150	35	30	38	3	2.5	223	262	2400	3400	3.08	0.35	1.7	0.96	30314
	150	35	25	38	3	2.5	192	226	2400	3200	2.87	0.83	0.73	0.4	31314
	150	51	42	54	3	2.5	305	390	2600	3400	4.38	0.35	1.7	0.96	32314
75	105	20	16	20	1	1	72.5	120	3200	4300	0.53	0.33	1.8	0.99	32915
	115	25	19	25	1.5	1.5	97	167.5	3000	4000	0.913	0.46	1.3	0.72	32015
	115	31	25.5	31	1.5	1.5	133	220	3000	4000	1.18	0.3	2	1.1	33015



基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
75	130	25	22	27.25	2	1.5	129.8	182.2	2800	3800	1.332	0.44	1.4	0.76	30215
	130	31	27	33.25	2	1.5	160.3	239.1	2800	3800	1.709	0.44	1.4	0.76	32215
	130	41	31	41	2	1.5	190.9	315.2	2800	3800	2.215	0.43	1.4	0.77	33215
	135	45	36.5	44.5	2	2	218	346.8	3000	3800	2.69	0.28	2.2	1.2	30615
	160	37	31	40	3	2.5	259	285	2300	3200	3.71	0.35	1.7	0.96	30315
	160	37	26	40	3	2.5	229	276	2200	3200	3.4	0.83	0.73	0.4	31315
	160	55	45	58	3	2.5	345	455	2400	3200	5.35	0.35	1.7	0.96	32315
80	110	20	16	20	1	1	75	128	3000	4000	0.56	0.35	1.7	0.94	32916
	125	29	22	29	1.5	1.5	127	217.6	2700	3600	1.271	0.42	1.4	0.78	32016
	125	36	29.5	36	1.5	1.5	172	282	2800	3600	1.66	0.28	2.2	1.2	33016
	140	26	22	28.25	2.5	2	150.5	209.7	2500	3400	1.637	0.42	1.4	0.79	30216
	140	33	28	35.25	2.5	2	198	263	2500	3400	2.19	0.42	1.4	0.79	32216
	140	45	36.5	45	2.5	2	213.9	345.1	2900	3600	2.761	0.28	2.2	1.2	30616
	140	46	35	46	2.5	2	256	385	2600	3400	2.93	0.43	1.4	0.78	33216
	170	39	33	42.5	3	2.5	273	320	2200	3000	4.32	0.35	1.7	0.96	30316
	170	39	27	42.5	3	2.5	235	283	2000	2800	4.07	0.83	0.73	0.4	31316
	170	58	48	61.5	3	2.5	390	510	2200	3000	6.43	0.35	1.7	0.96	32316
85	120	23	18	23	1.5	1.5	93.5	157	2800	3800	0.8	0.33	1.8	1	32917
	130	29	22	29	1.5	1.5	129.8	226.4	2600	3600	1.33	0.44	1.4	0.75	32017
	130	36	29.5	36	1.5	1.5	180	305	2600	3600	1.75	0.29	2.1	1.1	33017
	150	28	24	30.5	2.5	2	169.3	238.2	2400	3200	2.04	0.42	1.4	0.79	30217
	150	36	30	38.5	2.5	2	230	315	2200	3200	2.7	0.42	1.4	0.79	32217
	150	49	37	49	2.5	2	281	415	2400	3200	3.57	0.42	1.4	0.79	33217
	180	41	34	44.5	4	3	299	355	1900	2800	5.39	0.35	1.7	0.96	30317
	180	41	28	44.5	4	3	261	315	1900	2600	4.88	0.83	0.73	0.4	31317

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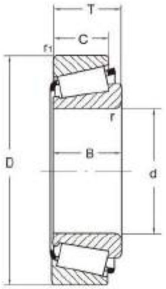
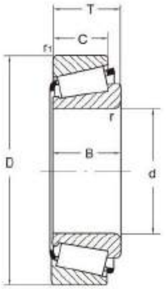


基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y_0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
85	180	60	49	63.5	4	3	410	535	2000	2800	7.31	0.35	1.7	0.96	32317
90	125	23	18	23	1.5	1.5	97	167	2600	3600	0.838	0.34	1.8	0.96	32918
	140	32	24	32	2	1.5	153	265.5	2400	3200	1.718	0.42	1.4	0.78	32018
	140	39	32.5	39	2	1.5	220	360	2400	3200	2.21	0.27	2.2	1.2	33018
	160	30	26	32.5	2.5	2	188.6	267.2	2200	3000	2.473	0.42	1.4	0.79	30218
	160	40	34	42.5	2.5	2	274	280	2200	3000	3.61	0.42	1.4	0.79	32218
	190	43	36	46.5	4	3	335	410	1800	2600	5.76	0.35	1.7	0.96	30318
	190	43	30	46.5	4	3	264	315	1800	2400	5.52	0.83	0.73	0.4	31318
	190	64	53	67.5	4	3	450	590	2000	2600	8.6	0.35	1.7	0.96	32318
95	130	23	18	23	1.5	1.5	98	172	2400	3400	0.877	0.36	1.7	0.92	32919
	145	32	24	32	2	1.5	156.5	276.3	2300	3200	1.78	0.44	1.4	0.75	32019
	145	39	32.5	39	2	1.5	231	389.9	2400	3200	2.26	0.28	2.2	1.2	33019
	170	32	27	34.5	3	2.5	213.7	306.6	2200	2800	2.999	0.42	1.4	0.79	30219
	170	43	37	45.5	3	2.5	298	415	2200	2800	4.34	0.42	1.4	0.79	32219
	200	45	38	49.5	4	3	365	445	1800	2600	6.91	0.35	1.7	0.96	30319
	200	45	32	49.5	4	3	310	375	1700	2400	6.64	0.83	0.73	0.4	31319
	200	67	55	71.5	4	3	525	710	1900	2600	10.4	0.35	1.7	0.96	32319
100	140	25	20	25	1.5	1.5	117	205	2200	3200	1.18	0.33	1.8	1	32920
	150	32	24	32	2	1.5	159.5	286.9	2200	3000	1.882	0.46	1.3	0.72	32020
	150	39	32.5	39	2	1.5	229.2	391.2	2200	3000	2.4	0.29	2.1	1.2	33020
	180	34	29	37	3	2.5	238	344.8	1900	2800	3.688	0.42	1.4	0.79	30220
	180	46	39	49	3	2.5	345	490	1900	2600	5.31	0.42	1.4	0.79	32220
	180	63	48	63	3	2.5	410	635	2000	2600	6.76	0.4	1.5	0.82	33220
	215	47	39	51.5	4	3	405	495	1700	2400	8.09	0.35	1.7	0.96	30320
	215	51	35	56.5	4	3	385	505	1500	2200	9.02	0.83	0.73	0.4	31320



基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y_0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
100	215	73	60	77.5	4	3	565	755	1700	2400	12.7	0.35	1.7	0.96	32320
	145	25	20	25	1.5	1.5	119	212	2200	3000	1.23	0.34	1.8	0.96	32921
	160	35	26	35	2.5	2	176.8	312.1	1900	2800	2.377	0.44	1.4	0.74	32021
	160	43	34	43	2.5	2	256	435	2000	2800	3.03	0.28	2.1	1.2	33021
	190	36	30	39	3	2.5	269.3	395.8	1800	2600	4.393	0.42	1.4	0.79	30221
105	190	50	43	53	3	2.5	385	555	1800	2600	6.34	0.42	1.4	0.79	32221
	225	49	41	53.5	4	3	430	530	1600	2200	9.38	0.35	1.7	0.96	30321
	225	53	36	58	4	3	415	540	1500	2000	10	0.83	0.73	0.4	31321
	225	77	63	81.5	4	3	670	925	1700	2200	14.9	0.35	1.7	0.96	32321
	150	25	20	25	1.5	1.5	123	224	2200	2800	1.29	0.36	1.7	0.93	32922
	170	38	29	38	2.5	2	213	379.1	1900	2600	2.985	0.43	1.4	0.77	32022
	200	38	32	41	3	2.5	297.3	440.7	1700	2400	5.222	0.42	1.4	0.79	30222
110	200	53	46	56	3	2.5	465	695	1700	2400	7.62	0.42	1.4	0.79	32222
	240	50	42	54.5	4	3	470	580	1600	2200	11.1	0.35	1.7	0.96	30322
	240	57	38	63	4	3	470	605	1400	1900	12.3	0.83	0.73	0.4	31322
	240	80	65	84.5	4	3	675	910	1500	2000	17.1	0.35	1.7	0.96	32322
	165	29	23	29	1.5	1.5	161	291	1900	2600	1.8	0.35	1.7	0.95	32924
	180	38	29	38	2.5	2	216.1	394.7	1700	2400	3.171	0.46	1.3	0.72	32024
	180	48	38	48	2.5	2	300	540	1800	2600	4.2	0.31	2	1.1	33024
120	215	40	34	43.5	3	2.5	320.8	483.4	1600	2200	6.195	0.44	1.4	0.76	30224
	215	58	50	61.5	3	2.5	480	720	1600	2200	9.6	0.44	1.4	0.76	32224
	260	55	46	59.5	4	3	565	710	1500	2000	14.2	0.35	1.7	0.96	30324
	260	62	42	68	4	3	560	730	1300	1800	15.6	0.83	0.73	0.4	31324
	260	86	69	90.5	4	3	770	1060	1400	1900	21.8	0.35	1.7	0.96	32324
130	180	32	25	32	2	1.5	192	346	1800	2400	2.25	0.36	1.7	0.92	32926

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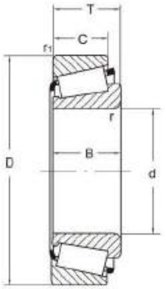
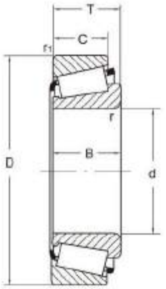
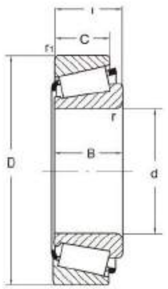


基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
130	200	45	34	45	2.5	2	287.2	527.9	1600	2200	4.87	0.43	1.4	0.76	32026
	200	55	43	55	2.5	2	395	715	1700	2200	6.25	0.34	1.8	0.97	33026
	230	64	54	67.75	4	3	555	845	1500	2000	11.8	0.44	1.4	0.76	32226
	280	58	49	63.75	5	4	645	815	1300	1800	17.4	0.36	1.7	0.92	30326
	280	66	44	72	5	4	625	820	1200	1700	18.8	0.83	0.73	0.4	31326
	280	93	78	98.75	4	4	830	1150	1300	1800	26.6	0.36	1.7	0.92	32326
140	190	32	25	32	2	1.5	206	390	1600	2200	2.55	0.36	1.7	0.92	32928
	210	45	34	45	2.5	2	292.4	549.3	1600	2200	5.14	0.46	1.3	0.72	32028
	210	56	44	56	2.5	2	410	770	1600	2200	6.74	0.36	1.7	0.92	33028
	250	68	58	71.75	4	3	650	1000	1400	1900	14.7	0.44	1.4	0.76	32228
	300	62	53	67.75	5	4	740	945	1200	1700	21.2	0.35	1.7	0.96	30328
	300	70	47	77	5	4	695	955	1100	1500	28.5	0.83	0.73	0.4	31328
	300	102	85	107.75	4	4	985	1440	1200	1600	33.9	0.37	1.6	0.88	32328
150	210	38	30	38	2.5	2	261	510.4	1500	2000	3.8	0.33	1.8	1	32930
	225	48	36	48	3	2.5	343	619	1400	2000	6.47	0.46	1.3	0.72	32030
	225	59	46	59	3	2.5	435	805	1400	2000	8.07	0.36	1.7	0.9	33030
	270	45	38	49	4	3	451.2	645.9	1300	1800	11.2	0.44	1.4	0.76	30230
	270	73	60	77	4	3	735	1140	1200	1700	18.4	0.44	1.4	0.76	32230
	320	65	55	72	5	4	815	1050	1100	1600	25.5	0.36	1.7	0.92	30330
	320	75	50	82	5	4	790	1100	1000	1400	28.5	0.83	0.73	0.4	31330
	320	108	90	114	4	4	1120	1700	1100	1500	41.4	0.37	1.6	0.88	32330
160	220	38	30	38	2.5	2	262.8	525.4	1400	1900	4.3	0.35	1.7	0.95	32932
	240	51	38	51	3	2.5	376	686	1300	1800	7.69	0.46	1.3	0.72	32032
	290	48	40	52	4	3	511.8	738.8	1200	1600	13.7	0.44	1.4	0.76	30232
	290	80	67	84	4	3	925	1490	1100	1600	23.3	0.44	1.4	0.76	32232



基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y_0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
160	340	68	58	75	5	4	915	1180	1000	1500	29.5	0.35	1.7	0.96	30332
	340	114	95	121	4	4	1210	1770	1000	1400	48.3	0.37	1.6	0.88	32332
170	230	38	30	38	2.5	2	280	560	1400	1900	4.51	0.38	1.6	0.86	32934
	260	57	43	57	3	2.5	520	870	1200	1700	10.6	0.44	1.35	0.74	32034
	310	52	43	57	5	4	562.6	746.1	1100	1500	17.1	0.44	1.4	0.76	30234
	310	86	71	91	5	4	1010	1630	1100	1500	30	0.44	1.4	0.76	32234
	360	120	100	127	4	4	1370	2050	1000	1300	57	0.37	1.6	0.88	32334
180	250	45	34	45	2.5	2	341.4	707	1300	1700	6.56	0.48	1.3	0.69	32936
	280	64	48	64	3	2.5	640.6	1151.3	1200	1600	14.3	0.42	1.42	0.78	32036
	320	52	43	57	5	4	610	911.9	1100	1400	17.8	0.45	1.3	0.73	30236
	320	86	71	91	5	4	1020	1670	1000	1400	32.3	0.45	1.3	0.73	32236
	380	75	64	83	4	4	1086.8	1497.8	900	1300	39.3	0.36	1.7	0.92	30336
	380	126	106	134	4	4	1520	2290	950	1300	66.8	0.37	1.6	0.88	32336
190	260	45	34	45	2.5	2	359.2	741.3	1200	1600	6.83	0.48	1.3	0.69	32938
	290	64	48	64	3	2.5	660	1200	1100	1500	14.9	0.44	1.36	0.75	32038
	340	55	46	60	5	4	696.5	1028.8	1000	1300	21.4	0.44	1.4	0.76	30238
	340	92	75	97	5	4	1100	1080	950	1300	36.1	0.44	1.4	0.76	32238
	400	132	109	140	6	5	1660	2580	850	1200	78.9	0.37	1.6	0.88	32338
200	280	51	39	51	3	2.5	459.9	946.1	1100	1500	9.26	0.39	1.5	0.84	32940
	310	70	53	70	3	2.5	748	1370	1000	1400	18.9	0.43	1.39	0.77	32040
	360	58	48	64	5	4	765.2	1137	950	1300	25.1	0.44	1.4	0.76	30240
	360	98	82	104	5	4	1350	2144	900	1300	42.6	0.41	1.5	0.81	32240
	420	138	115	146	6	5	1820	2870	800	1100	90.9	0.37	1.6	0.88	32340
220	300	51	39	51	3	2.5	471.2	978.2	1000	1400	10.3	0.43	1.4	0.78	32944
	340	76	57	76	4	3	897	1660	950	1300	74.4	0.43	1.39	0.77	32044



基本尺寸 Basic dimension							基本额定载荷 Basic load rating		极限转速 Limiting Speeds		重量 Weight	计算系数 Caculation factor			轴承代号 Bearing code
d	D	B	C	T	rmin	r1min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	e	Y	Y_0	新代号 New code
mm	mm	mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg				
220	400	65	54	72	5	4	990	1400	900	1200	33.6	0.4	1.5	0.82	30244
	400	108	90	114	5	4	1630	2780	850	1100	57.4	0.4	1.5	0.82	32244
	460	145	122	154	6	5	2020	3200	750	1000	114	0.37	1.6	0.88	32344
240	320	51	39	51	3	2.5	519.6	1064.7	950	1300	11.1	0.46	1.3	0.72	32948
	360	76	57	76	4	3	935	1800	850	1200	26.2	0.46	1.3	0.72	32048
	440	72	60	79	5	4	990	1400	750	1000	45.2	0.44	1.4	0.74	30248
	440	120	100	127	5	4	1920	3270	750	1000	78	0.4	1.5	0.82	32248
260	360	63.5	48	63.5	3	2.5	687.3	1469.8	850	1100	18.6	0.41	1.5	0.81	32952
	400	87	65	87	5	4	1170	2200	800	1100	38.5	0.43	1.38	0.76	32052
	480	80	67	89	6	5	1190	1700	670	900	60.7	0.44	1.4	0.74	30252
	480	130	106	137	6	5	1900	3300	670	950	103	0.45	1.3	0.73	32252
	540	102	85	113	6	6	2120	3050	630	850	114	0.36	1.7	0.92	30352
	540	165	136	176	6	6	2910	4800	630	850	188	0.37	1.6	0.88	32352
280	380	63.5	48	63.5	3	2.5	746.4	1578.6	800	1100	20	0.43	1.4	0.76	32956
	420	87	65	87	5	4	1210	2360	710	1000	40.6	0.46	1.31	0.72	32056
	500	80	67	89	6	5	1240	1900	630	850	66.3	0.44	1.4	0.74	30256
	500	130	106	137	6	5	1950	3450	630	850	109	0.47	1.3	0.7	32256
	580	175	145	187	6	6	3300	5400	560	800	224	0.37	1.6	0.89	32356
300	420	76	57	76	4	3	1019.2	2199.7	710	950	30.5	0.39	1.52	0.84	32960
	460	100	74	100	5	4	1540	3000	670	900	56.6	0.43	1.38	0.76	32060
	540	85	71	96	5	5	1440	2100	600	800	80.6	0.44	1.4	0.74	30260
	540	140	115	149	5	5	2600	4960	600	800	132	0.46	1.3	0.72	32260
320	440	76	57	76	4	3	1045.7	2317.2	670	900	32	0.42	1.4	0.79	32964
	480	100	74	100	5	4	1540	3100	630	850	60	0.46	1.31	0.72	32064
340	460	76	57	76	4	3	1050.1	2376.5	630	850	33.6	0.44	1.4	0.75	32968
360	480	76	57	76	4	3	1056.5	2432.8	600	800	35.8	0.46	1.3	0.72	32972

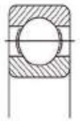
JXN®

深沟球轴承样本册

CAT. NO. B2021A-1

www.jxn-cn.com

类型代号: 6



内径: (5 x ____ = mm)

5 x 22 = 110

5 x 08 = 40

6	2	22	—	2RS	/	HT
6	0	08	—	Z N	/	P5

尺寸系列代号:

(1) 0: 宽度系列号 1 省略，相当于原代号 100

(0) 2: 宽度系列号 0 省略，相当于原代号 200

(0) 3: 宽度系列号 0 省略，相当于原代号 300

(0) 4: 宽度系列号 0 省略，相当于原代号 400

-RS: 一面带接触式橡胶密封圈

-2RS: 两面带接触式橡胶密封圈

-Z: 一面带防尘盖

-ZZ: 两面带防尘盖

N: 外圈上有止动槽

M: 实体黄铜保持架

油脂代号：

(1)HT: -20℃~120℃

(2)HTA: -30℃~150℃

(3)HTW: -40℃~180℃

轴承公差等级

/P0: 尺寸和运行精度符合 ISO 公差 0 级标准

/P6: 尺寸和运行精度符合 ISO 公差 6 级标准

/P5: 尺寸和运行精度符合 ISO 公差 5 级标准

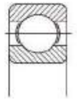
/P4: 尺寸和运行精度符合 ISO 公差 4 级标准

/P2: 尺寸和运行精度符合 ISO 公差 2 级标准

C0, C2, C3, C4, C5 游隙代号

S0, S1, S2, S3, S4 的工作温度的含义与调心滚子轴承相同

Type code:6



I.D. (5 x ___ = mm)

5 x 22 = 110

5 x 08 = 40

6	2	22	—	2RS	/	HT
6	0	08	—	Z N	/	P5

Dimension Designation:

(1) 0: Width series number 1 is omitted which equals original code 100

(0) 2: Width series number 0 is omitted which equals original code 200

(0) 3: Width series number 0 is omitted which equals original code 300

(0) 4: Width series number 0 is omitted which equals original code 400

-RS: One side contact type rubber seal

-2RS: Two sides contact type rubber seal

-Z: One side with dustproof cover

-ZZ: Two sides with dustproof cover

N: Snap ring groove on the outer ring

M: Solid brass retainer

Grease code

(1)HT:-20℃~120℃

(2)HTA:-30℃~150℃

(3)HTW:-40℃~180℃

Tolerance Grade

/P0: Dimensional and running accuracy conform to ISO tolerance class 0

/P6: Dimensional and running accuracy conform to ISO tolerance class 6

/P5: Dimensional and running accuracy conform to ISO tolerance class 5

/P4: Dimensional and running accuracy conform to ISO tolerance class 4

/P2: Dimensional and running accuracy conform to ISO tolerance class 2

C0, C2, C3, C4, C5 clearance codes

S0, S1, S2, S3, S4 means the same working temperature as that of Spherical Roller Bearings

深沟球轴承径向游隙

在球轴承的制造过程中，球和内、外圈之间是按一定的游隙来进行组合的。这个性能有助于减少轴承内、外圈装配时对轴承运动的影响。
游隙还可以用来补偿轴承、轴及外壳热膨胀的影响，也可用于使轴承装配后产生一个接触角。
可采用专用仪器测量轴承的径向和轴向游隙。
径向测量更富有参考价值，因为它与轴及外壳直接相关。

径向游隙

向心球轴承的径向游隙就是外圈滚道直径减去内圈滚道直径再减两倍的球直径。
径向游隙的测量在机械上如图1所示，水平推动外圈，当钢球正确在滚道中到位后，外圈的总移动量就是径向游隙，可以在不同的圆周位置测几个点以得到一个平均读数。

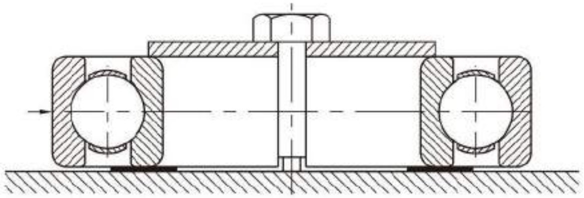


图1

Radial Clearance of Deep Grooue Ball Bearing

In the manufacturing process of ball bearing, the ball and the inner and outer ring are combined by a certain clearance, which helps to reduce the impact on the bearing movement when assemble inner and outer rings.
Clearance can also be used to compensate the impact cause by thermal expansion of shaft, bearing and housing,which also be used to produce a contact angle after bearing assembly.
Special instruments can be used to measure the radial and axial bearing clearance.
Radial measurement is more valuable because it is directly related to the shaft and housing.

Radial Clearance

The radial clearance of radial ball bearing is caculated as the diameter of the outer ring raceway minus the diameter of the inner ring raceway, and minus 2 times of ball diameter.
Measurement of radial clearance on the machinery is shown in the figure, pushing outer ring horizontally, when the ball is in place in the right track, the total movement of the outer ring is the radial clearance, you can get an average value after several measurments around the circumference.

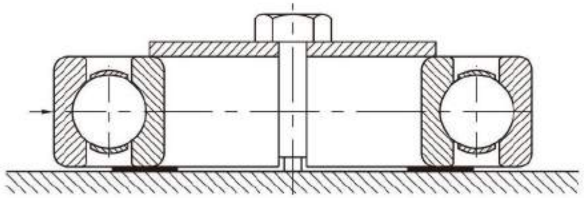


Figure1

深沟球轴承

μm

公称内径		2组		0组		3组		4组		5组	
超过	到	min	max	min	max	min	max	min	max	min	max
2.5	6	0	7	2	13	8	23	-	-	-	-
6	10	0	7	2	13	8	23	14	29	20	37
10	18	0	9	3	18	11	25	18	33	25	45
18	24	0	10	5	20	13	28	20	36	28	48
24	30	1	11	5	20	13	28	23	41	30	53
30	40	1	11	6	20	15	33	28	46	40	64
40	50	1	11	6	23	18	36	30	51	45	73
50	65	1	15	8	28	23	43	38	61	55	90
65	80	1	15	10	30	25	51	46	71	65	105
80	100	1	18	12	36	30	58	53	84	75	120
100	120	2	20	15	41	36	66	61	97	90	140
120	140	2	23	18	48	41	81	71	114	105	160
140	160	2	23	18	53	46	91	81	130	120	180
160	180	2	25	20	61	53	102	91	147	135	200
180	200	2	30	25	71	63	117	107	163	150	230
200	225	2	35	25	85	75	140	125	195	175	265
225	250	2	40	30	95	85	160	145	225	206	300
250	280	2	45	35	105	90	170	155	245	225	340
280	315	2	55	40	115	100	190	175	270	245	370
315	355	3	60	45	125	110	210	195	300	275	410
355	400	3	70	55	145	130	240	225	340	315	460
400	450	3	80	60	170	150	270	250	380	350	510
450	500	3	90	70	190	170	300	280	420	390	570
500	560	10	100	80	210	190	330	310	470	440	630
560	630	10	110	90	230	210	360	340	520	490	690
630	710	20	130	110	260	240	400	380	570	540	760
710	800	20	140	120	290	270	450	430	630	600	840
800	900	20	160	140	320	300	500	480	700	670	940
900	1000	20	170	150	350	330	550	530	770	740	1040
1000	1120	20	180	160	380	360	600	580	850	820	1150
1120	1250	20	190	170	410	390	650	630	920	890	1260

Deep groove bearings

μm

nominal bore diameter d/ mm		group 2		group 0		group 3		group 4		group 5	
exceed	to	min	max	min	max	min	max	min	max	min	max
2.5	6	0	7	2	13	8	23	-	-	-	-
6	10	0	7	2	13	8	23	14	29	20	37
10	18	0	9	3	18	11	25	18	33	25	45
18	24	0	10	5	20	13	28	20	36	28	48
24	30	1	11	5	20	13	28	23	41	30	53
30	40	1	11	6	20	15	33	28	46	40	64
40	50	1	11	6	23	18	36	30	51	45	73
50	65	1	15	8	28	23	43	38	61	55	90
65	80	1	15	10	30	25	51	46	71	65	105
80	100	1	18	12	36	30	58	53	84	75	120
100	120	2	20	15	41	36	66	61	97	90	140
120	140	2	23	18	48	41	81	71	114	105	160
140	160	2	23	18	53	46	91	81	130	120	180
160	180	2	25	20	61	53	102	91	147	135	200
180	200	2	30	25	71	63	117	107	163	150	230
200	225	2	35	25	85	75	140	125	195	175	265
225	250	2	40	30	95	85	160	145	225	206	300
250	280	2	45	35	105	90	170	155	245	225	340
280	315	2	55	40	115	100	190	175	270	245	370
315	355	3	60	45	125	110	210	195	300	275	410
355	400	3	70	55	145	130	240	225	340	315	460
400	450	3	80	60	170	150	270	250	380	350	510
450	500	3	90	70	190	170	300	280	420	390	570
500	560	10	100	80	210	190	330	310	470	440	630
560	630	10	110	90	230	210	360	340	520	490	690
630	710	20	130	110	260	240	400	380	570	540	760
710	800	20	140	120	290	270	450	430	630	600	840
800	900	20	160	140	320	300	500	480	700	670	940
900	1000	20	170	150	350	330	550	530	770	740	1040
1000	1120	20	180	160	380	360	600	580	850	820	1150
1120	1250	20	190	170	410	390	650	630	920	890	1260

最小负荷

为使轴承获得良好运行，深沟球轴承像所有的球轴承和滚子轴承一样，必须承受一定的最小负荷，尤其是在高速、高加速度或者在负荷方向快速改变下工作。在这些工况下，球和保持架的惯性力以及润滑剂内的摩擦将对轴承的滚动产生不良影响，在球和滚道之间可能会产生对轴承具有损害性的滑动运动。

深沟球轴承所需的最小负荷可用以下公式估算：

$$F_{rm}=Kr(\frac{Vn}{1000})^{2/3}(\frac{dm}{100})^{2}$$

式中

Frm=最小径向负荷，KN

Kr=最小负荷系数(见产品表)

v=润滑油在工作温度下的粘度，mm^2/s

n=转速，r/min

dm=轴承平均直径

=0.5(d+D),mm

在低温状态下启动或润滑剂粘度很高的情况下，可能需要更大的最小负荷。轴承支承的重量，加上外力，通常已超过所需的最小负荷。若尚未能达到最小负荷，该轴承必须施以额外的径向负荷。在深沟球轴承的应用中，一般可以通过调整内外圈的相对位置或使用弹簧来施加轴向预紧。

轴向负荷承载能力

如果深沟球轴承要承受纯轴向负荷，一般情况下不得超过0.5C0r。小轴承(内径约小于12mm)和轻型系列的轴承(直径系列8、9、0和1)不得承受超过相当于0.25C0r的轴向负荷。过大的轴向负荷可能会大幅降低轴承的工作寿命。

当量动负荷

对于承受动态负荷的单列深沟球轴承

P=Fr　　当Fa/Fr≤e

P=XFr+YFa　　当Fa/Fr＞e

系数e、X和Y取决于foFa/Cor的关系，其中fo为计算系数(见产品表)，Fa为轴向负荷，Cor为额定静负荷。此外，这些系数还受到径向游隙大小的影响；增加径向游隙可承受更大的轴向负荷。对于使用一般公差配合安装的轴承(根据轴径的大小，轴公差为j5至n6，轴承座孔公差为J7)，e、X和Y的值列在表1中，如果因预计游隙在运行中将会减少而选择了大于普通组的游隙，应使用“普通组游隙”下一列的值。

当量静负荷

对于承受静态负荷的单列深沟球轴承

Po=0.6Fr+0.5Fa

如果Po＜Fr，应使用Po=Fr。

Mininum Load

Deep groove ball bearing, like all ball bearings and roller bearings, must bear a minimum load for sound performance, especially at high speed or high acceleration, or rapid changes in load direction. In these conditions, the inertia of the ball and the cage, and the friction in the lubricant will adversely affect the rolling of the bearing, which may cause a damaging sliding motion between the roller and the raceway.

The minimum load required for deep groove ball bearing can be caculated by following formula:

$$F_{rm}=Kr(\frac{Vn}{1000})^{2/3}(\frac{dm}{100})^{2}$$

in which

Frm=min. radial load，KN

Kr=min. load factor (see product table)

v =The viscosity of the lubricant at the operating temperature, mm^2/s

n =rotation speed, r/min

dm=mean diameter of bearing

=0.5（d+D）,mm

In case of low temperature start-up or high lubricant viscosity, a larger minimum load may be required. Usually the bearing supported weight and external force, which exceed the minimum required load. If the minimum load has not been reached, the bearing must be subjected to an additional radial load. For deep groove ball bearing applications, axial preloads can be applied by spring or adjusting the relative position of the inner and outer rings.

Axial Coad Capacity

For deep groove bearing, the pure axial load generally can't exceed 0.5Cor. Small sized bearings (internal diameter is less than 12 mm) and light series bearings (diameter series 8, 9, 0 and 1) shall not be subjected to axial load more than 0.25 Cor. Excessive axial load may reduce bearing life obviously.

Equivilant dynamic load

For single-row deep groove ball bearing which is subjected to dynamic loads

P=Fr　　when Fa/Fr≤e

P=XFr+Yfa　　whenFa/Fr＞e

The coefficients e, X, and Y depend on the relationship of fo, Fa / Cor, in which the fo is the calculation factor (see product table), Fa is the axial load and Cor is the static load rating.

In addition, these coefficients are also affected by the value of radial clearance; bearing higher axial load by increasing the radial clearance. For bearings that assembled with general tolerance(shaft tolerances is fromj5 to n6, and bearing housing bore tolerances is J7 depending on shaft diameter), the values for e, X, and Y are listed in Table 1, if it is estimated that the clearance will be reduced in operation, and choose larger clearance than general value, then the value of "general group clearance" should be used.

Equivilant static load

For single row deep groove ball bearing which bear static load

Po=0.6Fr+0.5Fa

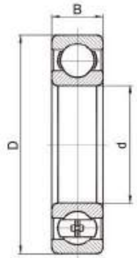
If Po＜Fr, Po=Fr

表1 用于单列深沟球轴承的计算系数

foFa/Cor	普通组游隙			C3游隙			C4游隙		
	e	x	y	e	x	y	e	x	y
0.172	0.19	0.56	2.3	0.29	0.46	1.88	0.38	0.44	1.47
0.345	0.22	0.56	1.99	0.32	0.46	1.71	0.4	0.44	1.4
0.689	0.26	0.56	1.71	0.36	0.46	1.52	0.43	0.44	1.3
1.03	0.28	0.56	1.55	0.38	0.46	1.41	0.46	0.44	1.23
1.38	0.3	0.56	1.45	0.4	0.46	1.34	0.47	0.44	1.19
2.07	0.34	0.56	1.31	0.44	0.46	1.23	0.5	0.44	1.12
3.45	0.38	0.56	1.15	0.49	0.46	1.1	0.55	0.44	1.02
5.17	0.42	0.56	1.04	0.54	0.46	1.01	0.56	0.44	1
6.89	0.44	0.56	1	0.54	0.46	1	0.56	0.44	1

Table 1 Calculated coefficients for single row deep groove ball bearings

foFa/Cor	Clearance of general group			C3 clearance			C4 clearance		
	e	x	y	e	x	y	e	x	y
0.172	0.19	0.56	2.3	0.29	0.46	1.88	0.38	0.44	1.47
0.345	0.22	0.56	1.99	0.32	0.46	1.71	0.4	0.44	1.4
0.689	0.26	0.56	1.71	0.36	0.46	1.52	0.43	0.44	1.3
1.03	0.28	0.56	1.55	0.38	0.46	1.41	0.46	0.44	1.23
1.38	0.3	0.56	1.45	0.4	0.46	1.34	0.47	0.44	1.19
2.07	0.34	0.56	1.31	0.44	0.46	1.23	0.5	0.44	1.12
3.45	0.38	0.56	1.15	0.49	0.46	1.1	0.55	0.44	1.02
5.17	0.42	0.56	1.04	0.54	0.46	1.01	0.56	0.44	1
6.89	0.44	0.56	1	0.54	0.46	1	0.56	0.44	1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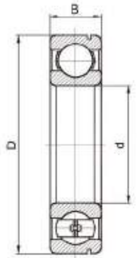
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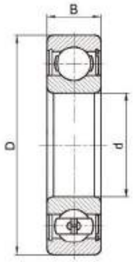
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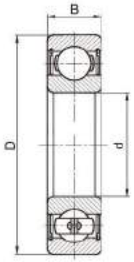
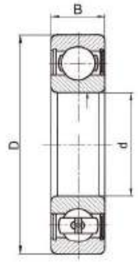
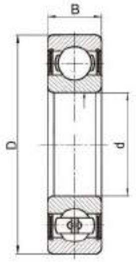
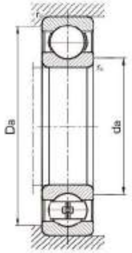
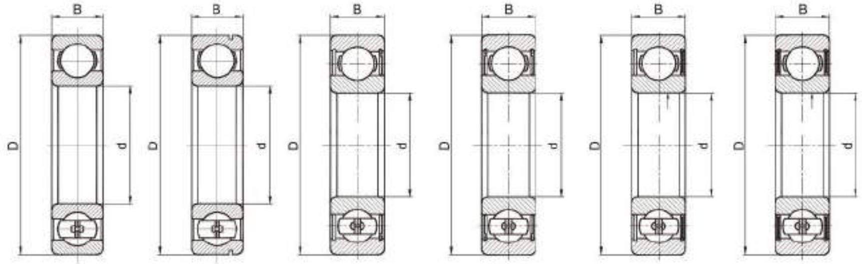

6000 2Z


6000 RS(RZ)


6000 2RS(2RZ)



主要尺寸 (mm)				基本额定负荷 (kN)		疲劳极限负荷 (kN)	系数	极限转速 (min^{-1}) 脂润滑		油润滑	公称型号		安装相关尺寸 (mm)				(参考) 质量 (kg)
d	D	B	r (最小)	C_r	C_{0r}	C_u	f_0	(Z, ZZ)	(RS, 2RS)	(Z)	带防尘盖	带接触式密封圈	d_a (最小)	d_a (最大)	D_a (最大)	r_a (最大)	开放型
10	19	5	0.3	2.15	0.84	0.030	14.8	37 000	22 000	43 000	**6800 ZZ**	**6800 2RS**	12	12	17	0.3	0.005
	22	6	0.3	3.35	1.25	0.070	14.0	34 000	21 000	41 000	**6900 ZZ**	**6900 2RS**	12	12.5	20	0.3	0.010
	26	8	0.3	5.70	1.95	0.100	12.3	31 000	19 000	36 000	**6000 ZZ**	**6000 2RS**	12	13	24	0.3	0.019
	30	9	0.6	6.40	2.40	0.120	13.2	24 000	16 000	29 000	**6200 ZZ**	**6200 2RS**	14	15	26	0.6	0.032
	35	11	0.6	10.1	3.45	0.270	11.2	22 000	16 000	27 000	**6300 ZZ**	**6300 2RS**	14	16	31	0.6	0.053
12	21	5	0.3	2.40	1.05	0.040	15.3	33 000	20 000	39 000	**6801 ZZ**	**6801 2RS**	14	14	19	0.3	0.006
	24	6	0.3	3.60	1.45	0.080	14.5	31 000	18 000	36 000	**6901 ZZ**	**6901 2RS**	14	14	22	0.3	0.011
	28	8	0.3	6.40	2.40	0.120	13.2	27 000	17 000	32 000	**6001 ZZ**	**6001 2RS**	14	15	26	0.3	0.022
	32	10	0.6	8.50	3.05	0.240	12.3	22 000	15 000	27 000	**6201 ZZ**	**6201 2RS**	16	16.5	28	0.6	0.037
	37	12	1	12.1	4.20	0.420	11.1	20 000	15 000	25 000	**6301 ZZ**	**6301 2RS**	17	17.5	32	1	0.060
15	24	5	0.3	2.60	1.25	0.050	15.8	28 000	16 000	33 000	**6802 ZZ**	**6802 2RS**	17	17	22	0.3	0.007
	28	7	0.3	5.40	2.25	0.120	14.3	26 000	15 000	30 000	**6902 ZZ**	**6902 2RS**	17	18	26	0.3	0.017
	32	9	0.3	7.00	2.85	0.150	13.9	23 000	14 000	27 000	**6002 ZZ**	**6002 2RS**	17	18.5	30	0.3	0.030
	35	11	0.6	9.55	3.75	0.290	13.2	20 000	13 000	24 000	**6202 ZZ**	**6202 2RS**	19	19.5	31	0.6	0.045
	42	13	1	14.3	5.45	0.460	12.3	17 000	12 000	20 000	**6302 ZZ**	**6302 2RS**	20	21.5	37	1	0.082
17	26	5	0.3	3.30	1.55	0.060	15.7	26 000	14 000	30 000	**6803 ZZ**	**6803 2RS**	19	19	24	0.3	0.008
	30	7	0.3	5.75	2.55	0.130	14.7	23 000	13 000	28 000	**6903 ZZ**	**6903 2RS**	19	19.5	28	0.3	0.018
	35	10	0.3	7.50	3.25	0.170	14.4	21 000	12 000	25 000	**6003 ZZ**	**6003 2RS**	19	21	33	0.3	0.039
	40	12	0.6	12.0	4.80	0.370	13.2	17 000	12 000	21 000	**6203 ZZ**	**6203 2RS**	21	22	36	0.6	0.065
	47	14	1	17.0	6.65	0.550	12.4	15 000	10 000	18 000	**6303 ZZ**	**6303 2RS**	22	24.3	42	1	0.115
20	32	7	0.3	5.00	2.45	0.100	15.5	21 000	12 000	25 000	**6804 ZZ**	**6804 2RS**	22	22.5	30	0.3	0.018
	37	9	0.3	7.95	3.70	0.190	14.7	19 000	11 000	23 000	**6904 ZZ**	**6904 2RS**	22	23.5	35	0.3	0.036
	42	12	0.6	11.7	5.05	0.350	13.9	17 000	10 000	21 000	**6004 ZZ**	**6004 2RS**	24	25	38	0.6	0.069
	47	14	1	16.0	6.65	0.510	13.2	15 000	9 700	17 000	**6204 ZZ**	**6204 2RS**	25	26.5	42	1	0.106
	52	15	1.1	19.9	7.85	0.660	12.3	14 000	9 500	17 000	**6304 ZZ**	**6304 2RS**	26.5	27	45.5	1	0.144
22	44	12	0.6	11.7	5.15	0.350	14.1	17 000	9 900	20 000	**60/22 ZZ**	**60/22 2RS**	26	26.5	40	0.6	0.073
	50	14	1	16.0	6.65	0.510	13.2	15 000	9 700	17 000	**62/22 ZZ**	**62/22 2RS**	27	27	45	1	0.118



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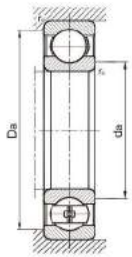

主要尺寸 (mm)				基本额定负荷 (kN)		疲劳极限负荷 (kN)	系数	极限转速 (min^{-1}) 脂润滑		油润滑	公称型号		安装相关尺寸 (mm)				(参考) 质量
d	D	B	r (最小)	C_r	C_{0r}	C_u	f_0	(Z, ZZ)	(RS, 2RS)	(Z)	带防尘盖	带接触式密封圈	d_a (最小)	d_a (最大)	D_a (最大)	r_a (最大)	(kg) 开放型
22	56	16	1.1	23.1	9.40	0.770	12.6	13 000	8 600	15 000	**63/22 ZZ**	**63/22 2RS**	28.5	29	49.5	1	0.201
25	37	7	0.3	5.40	2.95	0.120	16.0	18 000	10 000	21 000	**6805 ZZ**	**6805 2RS**	27	27.5	35	0.3	0.022
	42	9	0.3	8.75	4.55	0.230	15.4	16 000	9 300	19 000	**6905 ZZ**	**6905 2RS**	27	29	40	0.3	0.041
	47	12	0.6	12.6	5.85	0.380	14.5	15 000	9 000	18 000	**6005 ZZ**	**6005 2RS**	29	29.5	43	0.6	0.080
	52	15	1	17.5	7.85	0.550	13.9	13 000	8 400	15 000	**6205 ZZ**	**6205 2RS**	30	31.5	47	1	0.128
	62	17	1.1	25.7	11.3	0.860	13.2	11 000	7 500	13 000	**6305 ZZ**	**6305 2RS**	31.5	34	55.5	1	0.232
28	52	12	0.6	15.6	7.40	0.480	14.5	14 000	8 100	16 000	**60/28 ZZ**	**60/28 2RS**	32	33	48	0.6	0.097
	58	16	1	22.4	9.75	0.720	13.4	12 000	7 600	14 000	**62/28 ZZ**	**62/28 2RS**	33	35	53	1	0.173
	68	18	1.1	29.4	13.1	0.990	13.3	10 000	6 900	12 000	**63/28 ZZ**	**63/28 2RS**	34.5	37.5	61.5	1	0.328
30	42	7	0.3	5.65	3.40	0.140	16.4	15 000	8 600	18 000	**6806 ZZ**	**6806 2RS**	32	32.5	40	0.3	0.026
	47	9	0.3	9.05	5.00	0.260	15.8	14 000	8 200	17 000	**6906 ZZ**	**6906 2RS**	32	33	45	0.3	0.045
	55	13	1	16.5	8.25	0.530	14.7	13 000	7 500	15 000	**6006 ZZ**	**6006 2RS**	35	36	50	1	0.116
	62	16	1	24.3	11.3	0.800	13.9	11 000	7 000	13 000	**6206 ZZ**	**6206 2RS**	35	37.5	57	1	0.199
	72	19	1.1	33.3	15.0	1.15	13.3	9 600	6 400	12 000	**6306 ZZ**	**6306 2RS**	36.5	40	65.5	1	0.346
32	58	13	1	18.8	9.15	0.600	14.5	12 000	7 200	14 000	**60/32 ZZ**	**60/32 2RS**	37	38	53	1	0.127
	65	17	1	29.4	13.1	0.990	13.3	10 000	6 900	12 000	**62/32 ZZ**	**62/32 2RS**	37	38.5	60	1	0.228
	75	20	1.1	37.6	16.2	1.30	12.7	9 300	6 400	11 000	**63/32 ZZ**	**63/32 2RS**	38.5	41	68.5	1	0.437
35	47	7	0.3	5.95	3.85	0.160	16.5	13 000	7 400	16 000	**6807 ZZ**	**6807 2RS**	37	37.5	45	0.3	0.030
	55	10	0.6	13.6	7.75	0.440	15.7	12 000	6 800	14 000	**6907 ZZ**	**6907 2RS**	39	40	51	0.6	0.073
	62	14	1	19.9	10.3	0.640	14.9	11 000	6 500	13 000	**6007 ZZ**	**6007 2RS**	40	42	58	1	0.155
	72	17	1.1	32.1	15.4	1.10	13.9	9 200	6 000	11 000	**6207 ZZ**	**6207 2RS**	41.5	43.5	65.5	1	0.288
	80	21	1.5	41.7	19.3	1.45	13.2	8 500	5 700	10 000	**6307 ZZ**	**6307 2RS**	43	46	72	1.5	0.457
40	52	7	0.3	6.15	4.20	0.180	16.3	12 000	6 700	14 000	**6808 ZZ**	**6808 2RS**	42	42	50	0.3	0.033
	62	12	0.6	17.1	9.95	0.570	15.6	11 000	6 100	13 000	**6908 ZZ**	**6908 2RS**	44	44.5	58	0.6	0.112
	68	15	1	20.9	11.5	0.690	15.2	10 000	5 800	12 000	**6008 ZZ**	**6008 2RS**	45	46.5	63	1	0.192
	80	18	1.1	36.4	17.8	1.25	14.0	8 300	5 400	10 000	**6208 ZZ**	**6208 2RS**	46.5	49	73.5	1	0.366
	90	23	1.5	50.9	24.0	1.85	13.2	7 700	5 100	9 200	**6308 ZZ**	**6308 2RS**	48	51.5	82	1.5	0.633

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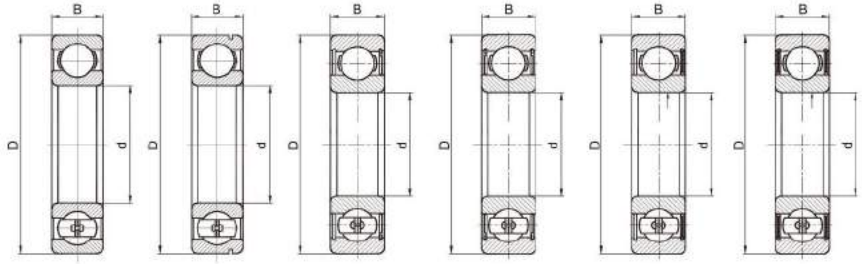

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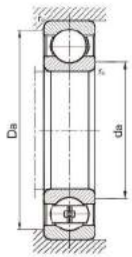

主要尺寸 (mm)				基本额定负荷 (kN)		疲劳极限负荷 (kN)	系数	极限转速 (min^{-1}) 脂润滑		油润滑	公称型号		安装相关尺寸 (mm)				(参考) 质量 (kg)
d	D	B	r (最小)	C_r	C_{0r}	C_u	f_0	(Z, ZZ)	(RS, 2RS)	(Z)	带防尘盖	带接触式密封圈	d_a (最小)	d_a (最大)	D_a (最大)	r_a (最大)	开放型
45	58	7	0.3	7.75	5.40	0.230	16.3	11 000	5 900	13 000	**6809 ZZ**	**6809 2RS**	47	47	56	0.3	0.040
	68	12	0.6	17.7	10.9	0.600	15.9	9 700	5 500	11 000	**6909 ZZ**	**6909 2RS**	49	50	64	0.6	0.132
	75	16	1	26.2	15.1	0.900	15.3	9 200	5 300	11 000	**6009 ZZ**	**6009 2RS**	50	51.5	70	1	0.245
	85	19	1.1	40.9	20.3	1.40	14.0	7 700	5 100	9 200	**6209 ZZ**	**6209 2RS**	51.5	53.5	78.5	1	0.407
	100	25	1.5	61.1	29.5	2.25	13.3	6 800	4 500	8 100	**6309 ZZ**	**6309 2RS**	53	59.5	92	1.5	0.833
50	65	7	0.3	8.20	6.10	0.260	16.1	9 600	5 200	11 000	**6810 ZZ**	**6810 2RS**	52	53	63	0.3	0.052
	72	12	0.6	18.2	11.7	0.640	16.1	9 000	5 000	11 000	**6910 ZZ**	—	54	55.5	68	0.6	0.133
	80	16	1	27.3	16.6	0.960	15.6	8 400	4 800	9 900	**6010 ZZ**	**6010 2RS**	55	57	75	1	0.261
	90	20	1.1	43.9	23.3	1.55	14.4	7 100	4 600	8 500	**6210 ZZ**	**6210 2RS**	56.5	59	83.5	1	0.463
	110	27	2	77.5	38.3	2.90	13.2	6 100	4 100	7 300	**6310 ZZ**	**6310 2RS**	59	66.5	101	2	1.07
55	72	9	0.3	11.0	8.10	0.420	16.2	8 700	—	10 000	**6811 ZZ**	—	57	58.5	70	0.3	0.083
	80	13	1	20.8	14.1	0.760	16.2	8 100	4 500	9 600	**6911 ZZ**	**6911 2RS**	60	60.5	75	1	0.185
	90	18	1.1	35.3	21.2	1.25	15.3	7 600	4 300	8 900	**6011 ZZ**	**6011 2RS**	61.5	62	83.5	1	0.385
	100	21	1.5	54.2	29.4	1.95	14.4	6 300	4 100	7 600	**6211 ZZ**	**6211 2RS**	63	66	92	1.5	0.607
	120	29	2	89.5	45.0	3.45	13.2	5 600	3 700	6 700	**6311 ZZ**	**6311 2RS**	64	74.5	111	2	1.37
60	78	10	0.3	14.3	10.6	0.550	16.3	8 000	—	9 400	**6812 ZZ**	—	62	63	76	0.3	0.104
	85	13	1	25.2	17.3	0.940	16.2	7 500	—	8 900	**6912 ZZ**	—	65	66	80	1	0.192
	95	18	1.1	36.8	23.2	1.35	15.6	7 100	4 000	8 400	**6012 ZZ**	**6012 2RS**	66.5	68.5	88.5	1	0.415
	110	22	1.5	65.6	36.2	2.40	14.4	5 700	3 700	6 900	**6212 ZZ**	**6212 2RS**	68	72.5	102	1.5	0.783
	130	31	2.1	102	52.2	3.95	13.2	5 200	3 500	6 200	**6312 ZZ**	**6312 2RS**	71	80	119	2	1.70
65	85	10	0.6	14.9	11.5	0.590	16.2	7 300	—	8 600	**6813 ZZ**	—	69	69	81	0.6	0.126
	90	13	1	21.7	16.1	0.830	16.6	7 100	3 900	8 400	**6913 ZZ**	**6913 2RS**	70	71	85	1	0.211
	100	18	1.1	38.1	25.2	1.40	15.8	6 600	3 700	7 800	**6013 ZZ**	**6013 2RS**	71.5	74.5	93.5	1	0.435
	120	23	1.5	71.5	40.1	2.65	14.4	5 400	3 500	6 400	**6213 ZZ**	**6213 2RS**	73	79	112	1.5	0.990
	140	33	2.1	116	59.9	4.50	13.2	4 800	3 200	5 800	**6313 ZZ**	**6313 2RS**	76	86	129	2	2.08
70	90	10	0.6	15.1	11.9	0.620	16.1	6 800	—	8 100	**6814 ZZ**	—	74	74	86	0.6	0.134
	100	16	1	29.7	21.2	1.10	16.3	6 400	3 600	7 600	**6914 ZZ**	**6914 2RS**	75	76.5	95	1	0.342

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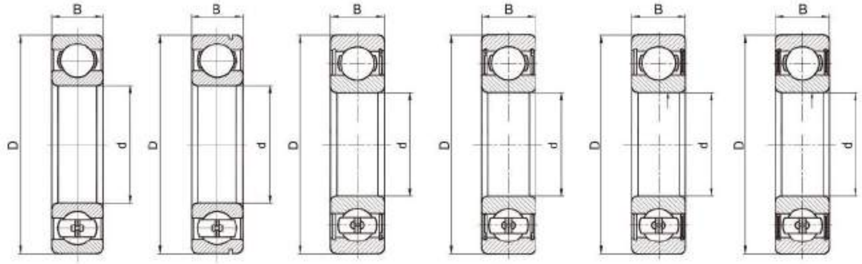
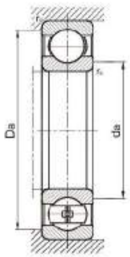
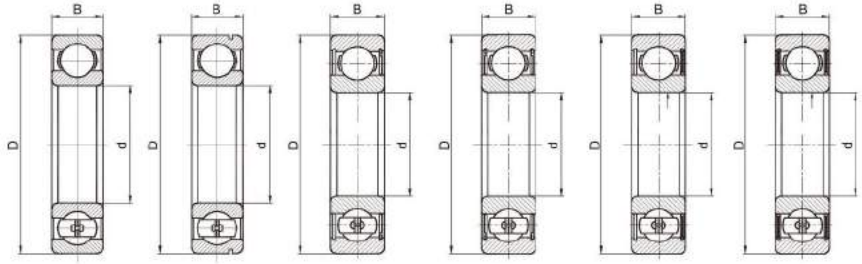


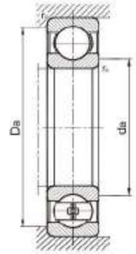
6000　6000 N　6000 Z　6000 2Z　6000 RS(RZ)　6000 2RS(2RZ)



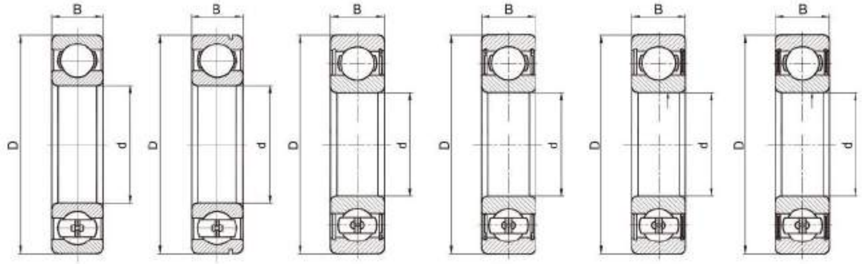
主要尺寸 (mm) *d*	*D*	*B*	*r* (最小)	基本额定负荷 (kN) C_r	C_{0r}	疲劳极限负荷 (kN) C_u	系数 f_0	极限转速 (min^{-1}) 脂润滑 (Z, ZZ)	脂润滑 (RS, 2RS)	油润滑 (Z)	公称型号 带防尘盖	带接触式密封圈	安装相关尺寸 (mm) d_a (最小)	d_a (最大)	D_a (最大)	r_a (最大)	(参考) 质量 (kg) 开放型
70	110	20	1.1	47.6	30.9	1.80	15.6	6 100	3 500	7 200	**6014 ZZ**	**6014 2RS**	76.5	79.5	103.5	1	0.602
	125	24	1.5	77.8	44.1	2.90	14.5	5 100	3 300	6 100	**6214 ZZ**	**6214 2RS**	78	84	117	1.5	1.07
	150	35	2.1	130	68.2	4.95	13.2	4 500	3 000	5 400	**6314 ZZ**	**6314 2RS**	81	92	139	2	2.52
75	95	10	0.6	15.7	12.9	0.660	16.0	6 400	—	7 600	**6815 ZZ**	—	79	79	91	0.6	0.142
	105	16	1	30.5	22.6	1.20	16.5	6 100	—	7 200	**6915 ZZ**	—	80	82.5	100	1	0.363
	115	20	1.1	49.4	33.5	1.90	15.8	5 700	3 300	6 800	**6015 ZZ**	**6015 2RS**	81.5	84.5	108.5	1	0.638
	130	25	1.5	84.3	48.3	3.10	14.5	4 800	3 100	5 800	**6215 ZZ**	**6215 2RS**	83	88.5	122	1.5	1.18
	160	37	2.1	142	77.2	5.40	13.2	4 200	2 800	5 000	**6315 ZZ**	**6315 2RS**	86	97.5	149	2	3.02
80	100	10	0.6	15.9	13.3	0.690	16.0	6 100	—	7 200	**6816 ZZ**	—	84	84	96	0.6	0.150
	110	16	1	31.2	24.0	1.25	16.6	5 700	3 200	6 800	**6916 ZZ**	**6916 2RS**	85	86.5	105	1	0.382
	125	22	1.1	59.5	39.8	2.25	15.6	5 300	3 100	6 300	**6016 ZZ**	**6016 2RS**	86.5	90	118.5	1	0.850
	140	26	2	90.9	53.0	3.25	14.6	4 500	2 900	5 400	**6216 ZZ**	**6216 2RS**	89	93	131	2	1.40
	170	39	2.1	154	86.7	5.85	13.3	3 900	2 700	4 700	**6316 ZZ**	**6316 2RS**	91	105	159	2	3.59
85	110	13	1	23.4	19.0	0.980	16.2	5 600	—	6 600	**6817 ZZ**	—	90	90.5	105	1	0.266
	120	18	1.1	39.9	29.6	1.55	16.4	5 300	3 000	6 300	**6917 ZZ**	**6917 2RS**	91.5	92.5	113.5	1	0.535
	130	22	1.1	61.8	43.1	2.35	15.8	5 000	2 900	5 900	**6017 ZZ**	**6017 2RS**	91.5	96.5	123.5	1	0.890
	150	28	2	105	61.9	3.70	14.5	4 200	2 700	5 000	**6217 ZZ**	**6217 2RS**	94	102	141	2	1.79
	180	41	3	166	96.8	6.35	13.3	3 700	2 500	4 400	**6317 ZZ**	**6317 2RS**	98	111	167	2.5	4.23
90	115	13	1	23.8	19.7	1.00	16.1	5 300	—	6 300	**6818 ZZ**	—	95	95.5	110	1	0.279
	125	18	1.1	41.0	31.6	1.60	16.5	5 100	2 800	6 000	**6918 ZZ**	**6918 2RS**	96.5	97.5	118.5	1	0.565
	140	24	1.5	72.8	49.7	2.65	15.6	4 700	2 700	5 600	**6018 ZZ**	**6018 2RS**	98	100.5	132	1.5	1.16
	160	30	2	120	71.5	4.20	14.5	3 900	2 600	4 700	**6218 ZZ**	**6218 2RS**	99	108.5	151	2	2.15
	190	43	3	178	107	8.80	13.3	3 500	2 400	4 200	**6318 ZZ**	**6318 2RS**	103	118	177	2.5	4.91
95	130	18	1.1	42.1	33.5	1.65	16.6	4 800	2 700	5 700	**6919 ZZ**	**6919 2RS**	101.5	102	123.5	1	0.705
	145	24	1.5	75.5	53.9	2.75	15.8	4 400	2 500	5 200	**6019 ZZ**	**6019 2RS**	103	107.5	137	1.5	1.21
	170	32	2.1	136	81.9	4.65	14.4	3 700	2 400	4 400	**6219 ZZ**	**6219 2RS**	106	113	159	2	2.62
	200	45	3	191	119	9.45	13.3	3 300	2 200	4 000	**6319 ZZ**	**6319 2RS**	108	122	187	2.5	5.67



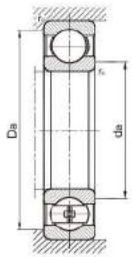
6000 6000 N 6000 Z 6000 2Z 6000 RS(RZ) 6000 2RS(2RZ)



主要尺寸 (mm)				基本额定负荷 (kN)		疲劳极限负荷 (kN)	系数	极限转速 (min^{-1}) 脂润滑		油润滑	公称型号		安装相关尺寸 (mm)				(参考) 质量 (kg)
d	D	B	r (最小)	C_r	C_{0r}	C_u	f_0	(Z, ZZ)	(RS, 2RS)	(Z)	带防尘盖	带接触式密封圈	d_a (最小)	d_a (最大)	D_a (最大)	r_a (最大)	开放型
100	125	13	1	24.5	21.2	1.05	16.0	4 800	—	5 700	**6820 ZZ**	—	105	105.5	120	1	0.309
	140	20	1.1	51.5	39.6	1.90	16.2	4 500	—	5 300	**6920-1 ZZ**	—	106.5	110.5	133.5	1	0.960
	150	24	1.5	75.2	54.2	2.70	15.9	4 300	2 500	5 100	**6020 ZZ**	**6020 2RS**	108	112	142	1.5	1.25
	180	34	2.1	153	93.1	5.15	14.4	3 500	2 300	4 200	**6220 ZZ**	**6220 2RS**	111	122	169	2	3.14
	215	47	3	216	141	10.9	13.2	3 000	2 100	3 600	**6320 ZZ**	**6320 2RS**	113	131	202	2.5	7.00
105	145	20	1.1	53.0	42.1	1.95	16.4	4 300	2 400	5 100	**6921-1 ZZ**	**6921-1 2RS**	111.5	115	138.5	1	1.00
	160	26	2	90.4	65.8	3.20	15.8	4 000	2 300	4 700	**6021 ZZ**	**6021 2RS**	114	119	151	2	1.59
	190	36	2.1	166	105	5.70	14.4	3 300	2 200	3 900	**6221 ZZ**	**6221 2RS**	116	127	179	2	3.70
	225	49	3	230	153	11.7	13.2	2 900	2 000	3 500	**6321 ZZ**	**6321 2RS**	118	136	212	2.5	8.05
110	140	16	1	35.1	30.7	1.40	16.1	4 300	—	5 100	**6822 ZZ**	—	115	116.5	135	1	0.606
	150	20	1.1	59.9	47.8	2.20	16.4	4 100	—	4 900	**6922 ZZ**	—	116.5	119.5	143.5	1	1.04
	170	28	2	103	73.0	3.55	15.6	3 800	2 200	4 500	**6022 ZZ**	**6022 2RS**	119	123	161	2	1.96
	200	38	2.1	180	117	6.20	14.4	3 100	2 000	3 700	**6222 ZZ**	**6222 2RS**	121	136.5	189	2	4.36
	240	50	3	257	180	13.3	13.2	2 700	1 900	3 200	**6322 ZZ**	**6322 2RS**	123	149	227	2.5	9.54
120	150	16	1	36.2	33.0	1.45	16.0	4 000	—	4 700	**6824 ZZ**	—	125	128.5	145	1	0.655
	165	22	1.1	71.6	56.9	2.50	16.4	3 800	—	4 400	**6924 ZZ**	—	126.5	131.5	158.5	1	1.41
	180	28	2	106	79.3	3.60	15.9	3 600	2 100	4 200	**6024 ZZ**	**6024 2RS**	129	136	171	2	2.07
	215	40	2.1	194	131	6.65	14.4	2 900	1 900	3 400	**6224 ZZ**	**6224 2RS**	131	144	204	2	5.15
	260	55	3	258	185	12.6	13.5	2 500	—	3 000	**6324 ZZ**	—	133	158	247	2.5	12.5
130	165	18	1.1	46.1	41.2	1.75	16.1	3 600	—	4 300	**6826 ZZ**	—	136.5	139.5	158.5	1	0.939
	180	24	1.5	81.5	67.4	2.85	16.3	3 400	—	4 100	**6926-1 ZZ**	—	138	144	172	1.5	1.86
	200	33	2	133	101	4.45	15.8	3 200	1 900	3 800	**6026 ZZ**	**6026 2RS**	139	146.5	191	2	3.16
	230	40	3	209	146	9.15	14.5	2 700	1 800	3 200	**6226 ZZ**	**6226 2RS**	143	157	217	2.5	5.82
	280	58	4	287	214	14.1	13.6	2 300	—	2 700	**6326 ZZ**	—	146	171	264	3	15.1
140	175	18	1.1	47.8	44.4	1.85	16.0	3 400	—	4 000	**6828 ZZ**	—	146.5	148	168.5	1	1.00
	190	24	1.5	83.3	71.6	2.90	16.5	3 200	—	3 800	**6928-1 ZZ**	—	148	153	182	1.5	1.98
	210	33	2	137	109	4.55	15.9	3 000	1 800	3 600	**6028 ZZ**	**6028 2RS**	149	158.5	201	2	3.55



6000　6000 N　6000 Z　6000 2Z　6000 RS(RZ)　6000 2RS(2RZ)



主要尺寸 (mm)				基本额定负荷 (kN)		疲劳极限负荷 (kN)	系数	极限转速 (min^{-1})			公称型号		安装相关尺寸 (mm)				(参考) 质量
								脂润滑		油润滑							
d	D	B	r (最小)	C_r	C_{0r}	C_u	f_0	(Z, ZZ)	(RS, 2RS)	(Z)	带防尘盖	带接触式密封圈	d_a (最小)	d_a (最大)	D_a (最大)	r_a (最大)	(kg) 开放型
140	250	42	3	208	150	8.65	14.8	2 400	1 600	2 900	**6228 ZZ**	**6228 2RS**	153	169	237	2.5	7.45
	300	62	4	316	246	15.6	13.6	2 100	—	2 500	**6328 ZZ**	—	156	184	284	3	19.4
150	210	28	2	117	94.3	3.75	16.2	2 900	1 700	3 400	**6930 ZZ**	**6930 2RS**	159	165.5	201	2	3.05
	225	35	2.1	157	126	5.10	16.0	2 800	1 600	3 300	**6030 ZZ**	**6030 2RS**	161	168.5	214	2	4.22
	270	45	3	220	168	9.05	15.1	2 200	—	2 700	**6230 ZZ**	—	163	183.5	257	2.5	9.41
160	200	20	1.1	60.5	56.9	2.20	16.1	2 900	—	3 400	**6832 ZZ**	—	166.5	168.5	193.5	1	1.45
	240	38	2.1	171	135	5.30	15.9	2 600	1 500	3 000	**6032 ZZ**	**6032 2RS**	171	178.5	229	2	5.22
	290	48	3	231	186	9.45	15.4	2 100	—	2 500	**6232 ZZ**	—	173	198	277	2.5	14.3
170	215	22	1.1	74.8	70.5	2.60	16.1	2 700	—	3 200	**6834 ZZ**	—	176.5	182.5	208.5	1	1.90
	260	42	2.1	201	161	6.20	15.8	2 400	—	2 800	**6034 ZZ**	—	181	194	249	2	6.80
	310	52	4	265	223	11.1	15.3	1 900	—	2 300	**6234 ZZ**	—	186	210.5	294	3	17.5
180	225	22	1.1	75.8	73.1	2.65	16.1	2 600	—	3 000	**6836 ZZ**	—	186.5	189.5	218.5	1	2.00
	280	46	2.1	227	194	7.15	15.8	2 200	—	2 600	**6036 ZZ**	—	191	209.5	269	2	10.3
	320	52	4	264	226	10.8	15.1	1 800	—	2 200	**6236-1 ZZ**	—	196	220.5	304	3	18.3
190	240	24	1.5	91.4	88.1	3.10	16.1	2 400	—	2 800	**6838 ZZ**	—	198	202	232	1.5	2.60
	290	46	2.1	235	201	7.35	15.8	2 100	—	2 500	**6038 ZZ**	—	201	215	279	2	10.8
200	310	51	2.1	272	243	11.3	15.6	1 900	—	2 300	**6040 ZZ**	—	211	228	299	2	14.0
	360	58	4	314	293	13.1	15.2	1 600	—	1 900	**6240-1 ZZ**	—	216	250	344	3	28.2
220	340	56	3	294	271	12.0	15.6	1 700	—	2 000	**6044 ZZ**	—	233	251	327	2.5	18.3

Angular Contact Ball Bearings

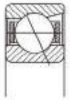
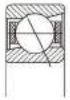
角接触球轴承

CAT.NO.B2021A-2

JXN®

www.jxn-cn.com

类型代号: 7

内径: (5 x ____ ____ = mm)
5 x 10= 50
5 x 22 = 110
5 x 12= 60

7	0	10	C	/	P5
7	2	22	AC		
7	3	12	B M	/	P6 DT

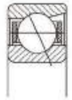
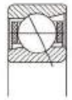
尺寸系列代号:
(1) 0: 宽度系列号 1 省略，相当于原代号 100
(0) 2: 宽度系列号 0 省略，相当于原代号 200
(0) 3: 宽度系列号 0 省略，相当于原代号 300
(0) 4: 宽度系列号 0 省略，相当于原代号 400

内部结构或保持架材料改变
C: 轴承公称接触角 α =15°
AC: 轴承公称接触角 α =25°
B: 轴承公称接触角 α =40°
M: 实体黄铜保持架

配置组中轴承排列
/DB: 成对轴承背对背安装
/DF: 成对轴承面对面安装
/DT: 成对轴承串联安装

P0, P6, P5, P4, P2 公差等级代号的含义与深沟球轴承相同

Type code:7

I.D. (5 x ____ ____ = mm)
5 x 10 = 50
5 x 22 = 110
5 x 12 = 60

7	0	10	C	/	P5
7	2	22	AC		
7	3	12	B M	/	P6 DT

Dimension Designation:
(1) 0: Width series number 1 is omitted which equals original code 100
(0) 2: Width series number 0 is omitted which equals original code 200
(0) 3: Width series number 0 is omitted which equals original code 300
(0) 4: Width series number 0 is omitted which equals original code 400

Internal Structure and Cage Material Modification
C: nominal contact angle α =15°
AC:nominal contact angle α =25°
B: nominal contact angle α =40°
M: solid brass cage

Mounting
/DB: mount in duplex, back to back
/DF: mount in duplex, face to face
/DT: mount in duplex, tandem

P0, P6, P5, P4, P2 means the same precision grade as Deep Groove Ball Bearings

最小负荷

为使轴承获得良好运行，角接触球轴承像所有的球轴承和滚子轴承一样，必须承受一定的最小负荷，尤其是在高速或高加速度，又或在负荷方向快速改变下工作。在这些工况下，球和保持架的惯性力以及润滑剂内的摩擦将对轴承的滚动产生不良影响，在球和滚道之间可能会产生对轴承具有损害性的滑动运动。

单个轴承和串联配对轴承所需的最小负荷可用以下公式估算

角接触球轴承所需的最小负荷可用以下公式估算：

$$Fam=Ka\frac{Cor}{1000}\left(\frac{ndm}{100000}\right)^2$$

对于背对背或面对面配对的轴承

$$Frm=Kr\left(\frac{vn}{1000}\right)^{2/3}\left(\frac{ndm}{100}\right)^2$$

表1 最小负荷系数

轴承系数	最小负荷	系数
	Ka	Kr
—	—	
72BE	1.4	0.095
72B	1.2	0.08
73BE	1.6	0.1
73B	1.4	0.09

式中：

Fam = 最小轴向负荷，KN

Frm = 最小径向负荷，KN

Cor = 单个轴承或配对轴承的基本额定静载荷，KN（见产品表）

Ka = 最小轴向负荷系数，根据表1

Kr = 最小径向负荷系数，根据表1

V = 润滑油在工作温度下的粘度，mm^2/s

n = 转速，r/min

dm = 轴承平均直径

= 0.5（d+D），mm

在低温状态下启动或润滑剂粘度很高的情况下，可能需要更大的最小负荷。轴承支承的重量，加上外力，通常已超过所需的最小负荷。若尚未能达到最小负荷，该轴承必须施以额外的径向负荷。单个轴承或串联配对的轴承，一般可以通过调整内外圈的相对位置或使用弹簧来施加轴向预紧。

Mininum Load

Angular contact ball bearings, like all ball bearings and roller bearings, must be designed to bear a minimum load for sound performance, especially at high speed or high acceleration, or rapid changes in load direction. In these conditions, the inertia of the roller and the cage, and the friction in the lubricant will adversely affect the rolling of the bearing, which may cause a damaging sliding motion between the roller and the raceway.

The minimum load required for single bearing and series matched bearing can be caculated by the following formula

The min. load required by angular contact balls bearings can be estimated by followed formula

$$Fam=Ka\frac{Cor}{1000}\left(\frac{ndm}{100000}\right)^2$$

for back to back or face to face matched bearing

$$Frm=Kr\left(\frac{vn}{1000}\right)^{2/3}\left(\frac{ndm}{100}\right)^2$$

Table 1 min. load factor

Bearing factor	Min. load	Factor
	Ka	Kr
—	—	
72BE	1.4	0.095
72B	1.2	0.08
73BE	1.6	0.1
73B	1.4	0.09

in which:

Fam = min. axial load, KN

Frm = min.radial load, KN

Cor = Basic static load rating for single bearing or matched bearing, KN (see product table)

Ka = min. axial load factor, according to Table 1

Kr = min. radial load factor, according to table 1

V = Viscosity of lubricating oil at operating temperature, mm^2/s

n = rotation speed, r/min

dm = mean diameter of bearing

= 0.5 (d+D), mm

In case of low temperature start-up or high lubricant viscosity, a higer minimum load may be required. The weight of the bearing supported and the external force usually exceeds the required minimum load. If the minimum load has not been reached, the bearing must be subjected to an additional radial load.For single or series matched bearing, the axial preload can be applied by spring or adjusting the relative position of the inner and outer rings.

当量动负荷

对于单个轴承或串联配对的轴承

P=Fr 当Fa/Fr≤1.14

P=0.35Fr+0.57Fa 当Fa/Fr＞1.14

在确定轴向负荷Fa时，应参考“确定单个或串联配对轴承所承受的轴向负荷”一节。

对于背对背或面对面配对的轴承

P=Fr+0.55Fa 当Fa/Fr≤1.14

P=0.57Fr+0.93Fa 当Fa/Fr＞1.14

Fr和Fa为作用在配对轴承上的负荷。

当量静负荷

对于单个轴承或串联配对的轴承

Po=0.5Fr+0.26Fa

如果Po＜Fr，应使用Po=Fr。

在确定轴向负荷Fa时，应参考“确定单个或串联配对轴承所承受的轴向负荷”一节。

对于背对背或面对面配对的轴承

Po=Fr+0.52Fa

Fr和Fa为作用在配对轴承上的负荷。

确定单个或串联配对轴承所承受的轴向负荷

当径向负荷作用在单个轴承或串联配对的角接触球轴承时，负荷是沿着钢球和滚道接触点的连线从一个滚道传递到另一个滚道，因而导致内部轴向负荷。在计算轴承配置中包括两个单个轴承和/或串联配对轴承的当量负荷时，此内部轴向负荷必需考虑。

对于各种轴承配置和不同负荷承受的情况，其公式可参见表2。但仅适用于在轴承彼此相对调整的零间隙，且无预紧的情况。在所示的轴承配置中，径向负荷FrA作用在轴承A和径向负荷FrB作用在轴承B上。即使FrA和FrB作用在与图中所示相反的方向时，也应取其正值。径向负荷作用在轴承的负荷中心。

Equivilant Dynamic Load

For single or tandem matched bearing

P=Fr whenFa/Fr≤1.14

P=0.35Fr+0.57Fa whenFa/Fr＞1.14

When determining the axial load Fa, refer to the section of axial load for single or tandem matched bearing.

For back to back or face to face matched bearing

P=Fr+0.55Fa Fa/Fr≤1.14

P=0.57Fr+0.93Fa Fa/Fr＞1.14

Fr and F are the loads acting on the matchel bearing.

Equivilant Static Load

For single or tandem matched bearing

Po=0.5Fr+0.26Fa

If Po＜Fr, Po=Fr

When determining the axial load Fa, refer to the section of axial load for single or tandem matched bearing

For back to back or face to face matched bearing

Po=Fr+0.52Fa

Fr and F are the loads matchecl on the mating bearing.

Axial Load for Single or Tandem Matched Bearing

When rodial load acts on a single bearing or tandem matched bearing, the load is transferred from one raceway to another through the connetion of contact points between ball and raceway.

For a variety of bearing aggrements and different loads, the formula can be seen in Table 2. But only applies to the zero clearance of the bearing relative to each other, and no preload situation. In the bearing arrangements, radial load FrA acts on bearing A, and radial load FrB acts on bearing B. Even if FrA and FrB act on the opposite direction shown in the picture, the value should be positive. The radial load acts on the load center of the bearing .

变量R

表2中的变量R已将轴承内部的接触情况考虑在内。R值是Ka/Cr的函数，参见图1。Ka为作用在轴或轴承座上的外部轴向负荷，Cr为轴承的基本额定动负荷，必须足以承受外部轴向负荷。如果Ka=0，应使用R=1。

轴向负荷的计算—轴承配置中包含两个单列B或BE设计角接触轴承和/或串联配对轴承

表2

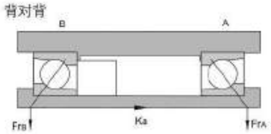
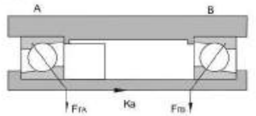
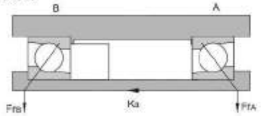
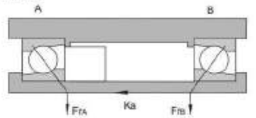
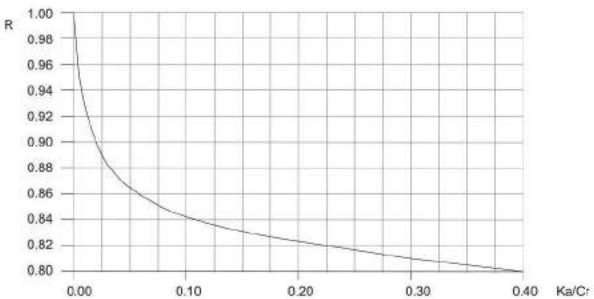
轴承配置	负荷情况	轴向力
背对背 	情况1a FrA≥FrB Ka≥0	FaA=RFrA FaB= FaA+Ka
	情况1b FrA < FrB Ka≥R(FrB- FrA)	FaA=RFrA FaB= FaA+Ka
面对面 	情况1c FrA < FrB Ka < R(FrB- FrA)	FaA=FaB-Ka FaB=R FrB
背对背 	情况2a FrA≤FrB Ka≥0	FaA=FaB+Ka FaB=R FrB
	情况2b FrA > FrB Ka≥R(FrA- FrB)	FaA=FaB+Ka FaB=R FrB
面对面 	情况2c FrA > FrB Ka < R(FrA- FrB)	FaA= R FrA FaB= FaA-Ka

图1



The Ariable R

The variable R in Table 2 has been considered the bearing inside contaction. The R value is a function of Ka / Cr, see Fig1. Ka is the external axial load acting on the shaft or housing, Cr is the basic dynamic load rating of the bearing and must be strong enough to bear the external axial load. If Ka = 0, R = 1.

Calculation of axial load - The bearing arrangement contains two single row B or BE type Angular contact bearing and / or series matched bearings.

Table 2

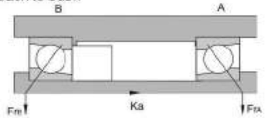
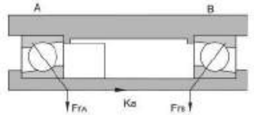
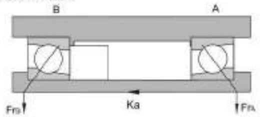
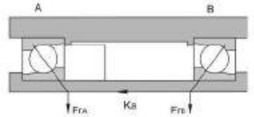
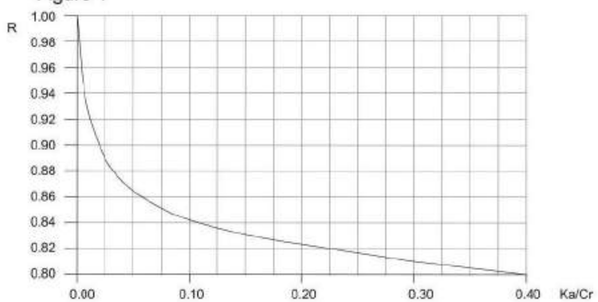
Bearing aggrement	Loading	Axial coad
Back to back 	Situation 1a FrA≥FrB Ka≥0	FaA=RFrA FaB= FaA+Ka
	Situation 1b FrA<FrB Ka≥R(FrB- FrA)	FaA=RFrA FaB= FaA+Ka
Face to face 	Situation 1c FrA<FrB Ka<R(FrB- FrA)	FaA=FaB-Ka FaB=R FrB
Back to back 	Situation 2a FrA≤FrB Ka≥0	FaA=FaB+Ka FaB=R FrB
	Situation 2b FrA>FrB Ka≥R(FrA- FrB)	FaA=FaB+Ka FaB=R FrB
Face to face 	Situation 2c FrA>FrB Ka<R(FrA- FrB)	FaA= R FrA FaB= FaA-Ka

Figure 1



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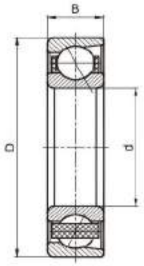

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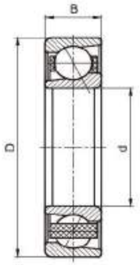
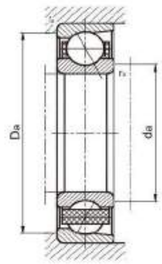
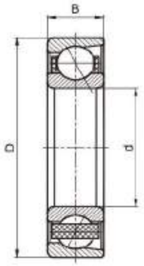


7000 B



基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
10	26	8	0.3	0.15	4.9	2.1	40000	56000	0.019	13	23	0.3	7000C
	26	8	0.3	0.15	4.7	2.1	34000	48000	0.019	13	23	0.3	7000AC
	30	9	0.6	0.3	5.8	2.9	36000	50000	0.032	14	26	0.6	7200C
	30	9	0.6	0.3	5.5	2.8	27000	32000	0.032	14	26	0.6	7200AC
	30	9	0.6	0.3	5.3	2.7	19000	27000	0.03	14	26	0.6	7200B
12	28	8	0.3	0.15	5.4	2.6	36000	50000	0.021	16	24	0.3	7001C
	28	8	0.3	0.15	5.1	2.4	30000	43000	0.021	16	24	0.3	7001AC
	32	10	0.6	0.3	7.9	3.8	32000	45000	0.037	16	28	0.6	7201C
	32	10	0.6	0.3	7.6	3.6	23000	27000	0.037	16	28	0.6	7201AC
	32	10	0.6	0.3	6.9	3.2	18000	24000	0.036	16	28	0.6	7201B
	37	12	1	0.6	11.3	6.58	29000	41000	0.068	16	33	1	7301C
	37	12	1	0.6	10.8	6.17	22000	26000	0.068	16	33	1	7301AC
	37	12	1	0.6	10.6	5	17000	22000	0.073	16	33	1	7301B
15	32	9	0.3	0.15	6.2	3.3	30000	43000	0.03	19	28	0.3	7002C
	32	9	0.3	0.15	5.9	3.2	26000	36000	0.03	19	28	0.3	7002AC
	35	11	0.6	0.3	9.2	4.9	28000	40000	0.045	19	31	0.6	7202C
	35	11	0.6	0.3	8.9	4.8	20000	23000	0.045	19	31	0.6	7202AC
	35	11	0.6	0.3	7.9	4.2	16000	21000	0.045	19	31	0.6	7202B
	42	13	1	0.6	13.9	7.34	26000	35000	0.083	20	37	1	7302C
	42	13	1	0.6	13.3	6.89	19000	22000	0.083	20	37	1	7302AC
	42	13	1	0.6	13	6.7	14000	19000	0.087	20	37	1	7302B
17	35	10	0.3	0.15	6.6	3.6	28000	38000	0.04	21	31	0.3	7003C
	35	10	0.3	0.15	6.3	3.6	24000	33000	0.04	21	31	0.3	7003AC
	40	12	0.6	0.3	10.8	5.8	25000	34000	0.062	22	35	0.6	7203C
	40	12	0.6	0.3	10.4	5.6	18000	20000	0.062	22	35	0.6	7203AC
	40	12	0.6	0.6	9.9	5.5	14000	19000	0.065	22	35	0.6	7203B



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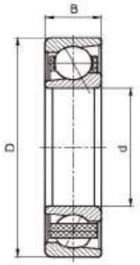

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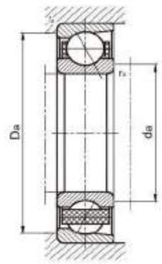
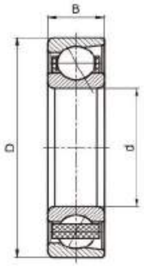


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	d_a min	D_a max	r_a max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
17	47	14	1	0.6	15.7	8.2	23000	31000	0.16	22	42	1	7303C
	47	14	1	0.6	15	7.7	17000	19000	0.16	22	42	1	7303AC
	47	14	1	0.6	14.1	8.1	13000	17000	0.16	22	42	1	7303B
20	42	12	0.6	0.3	10.5	6.02	23000	32000	0.067	25	37	0.6	7004C
	42	12	0.6	0.3	10	5.77	20000	28000	0.067	25	37	0.6	7004AC
	42	12	0.6	0.3	8.85	5.11	15000	18000	0.077	25	37	0.6	7004B
	47	14	1	0.3	14.6	8.2	21000	30000	0.1	25	42	1	7204C
	47	14	1	0.3	14	7.88	14000	17000	0.1	25	42	1	7204AC
	47	14	1	0.6	12.5	7.03	13000	15000	0.117	25	42	1	7204B
	52	15	1.1	0.6	18.5	9.99	20000	28000	0.141	26	46	1	7304C
	52	15	1.1	0.6	17.9	9.65	13000	16000	0.141	26	46	1	7304AC
	52	15	1.1	0.6	16.2	8.72	12000	14000	0.163	26	46	1	7304B
25	47	12	0.6	0.3	11.7	7.45	19000	27000	0.078	30	42	0.6	7005C
	47	12	0.6	0.3	11.1	7.11	16000	23000	0.078	30	42	0.6	7005AC
	47	12	0.6	0.3	9.72	6.25	13000	16000	0.089	30	42	0.6	7005B
	52	15	1	0.3	16.6	10.3	19000	25000	0.12	30	47	1	7205C
	52	15	1	0.3	15.9	9.84	12000	15000	0.12	30	47	1	7205AC
	52	15	1	0.6	14	8.72	11000	14000	0.146	30	47	1	7205B
	62	17	1.1	0.6	27.9	16.2	17000	23000	0.226	31	56	1	7305C
	62	17	1.1	0.6	27	15.7	11000	13000	0.226	31	56	1	7305AC
	62	17	1.1	0.6	24.4	14.1	10000	12000	0.258	31	56	1	7305B
30	55	13	1	0.3	15.1	10.3	17000	23000	0.113	35	50	1	7006C
	55	13	1	0.3	14.4	9.83	13000	20000	0.113	35	50	1	7006AC
	55	13	1	0.3	12.5	8.62	11000	14000	0.13	35	50	1	7006B
	62	16	1	0.3	23	14.7	16000	21000	0.198	36	56	1	7206C
	62	16	1	0.3	22.1	14.1	10000	13000	0.198	36	56	1	7206AC



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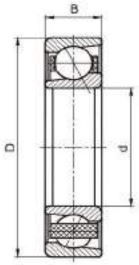

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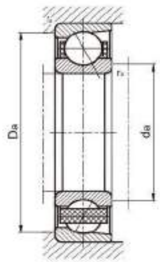

基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
30	62	16	1	0.6	19.5	12.5	9000	11700	0.222	36	56	1	7206B
	72	19	1.1	0.6	34.1	21.4	14000	20000	0.347	37	65	1	7306C
	72	19	1.1	0.6	32.8	20.6	9200	11000	0.346	37	65	1	7306AC
	72	19	1.1	0.6	29.3	18.4	8300	9900	0.391	37	65	1	7306B
35	62	14	1	0.3	19.4	13.9	15000	19000	0.15	41	56	1	7007C
	62	14	1	0.3	18.5	13.2	12400	18000	0.15	41	56	1	7007AC
	62	14	1	0.3	16.1	11.6	10000	12000	0.173	41	56	1	7007B
	72	17	1.1	0.3	30.4	20	13000	18000	0.284	42	65	1	7207C
	72	17	1.1	0.3	29.1	19.2	8800	11000	0.284	42	65	1	7207AC
	72	17	1.1	0.6	25.7	17	7900	9900	0.318	42	65	1	7207B
	80	21	1.5	1	40.4	26	12400	17000	0.455	42	73	1.5	7307C
	80	21	1.5	1	38.8	25	8200	10000	0.454	42	73	1.5	7307AC
	80	21	1.5	1	34.6	22.3	7400	9000	0.515	42	73	1.5	7307B
40	68	15	1	0.3	20.9	16.1	13000	18000	0.189	46	62	1	7008C
	68	15	1	0.3	19.8	15.4	11400	16000	0.189	46	62	1	7008AC
	68	15	1	0.3	17.1	13.4	8600	10800	0.215	46	62	1	7008B
	80	18	1.1	0.6	38.5	26.8	12000	17000	0.366	47	73	1	7208C
	80	18	1.1	0.6	36.8	25.6	7800	9700	0.365	47	73	1	7208AC
	80	18	1.1	0.6	32.5	22.7	7000	8700	0.406	47	73	1	7208B
	90	23	1.5	1	52.3	35.5	11400	15000	0.641	48	82	1.5	7308C
	90	23	1.5	1	50.3	34.1	7200	8900	0.641	48	82	1.5	7308AC
	90	23	1.5	1	44.7	30.5	6500	8000	0.717	48	82	1.5	7308B
45	75	16	1	0.3	25.9	20.4	12000	17000	0.237	51	69	1	7009C
	75	16	1	0.3	24.5	19.4	10500	14000	0.237	51	69	1	7009AC
	75	16	1	0.3	21.2	16.9	7800	9900	0.271	51	69	1	7009B
	85	19	1.1	0.6	40.5	29.5	11000	15000	0.418	52	78	1	7209C

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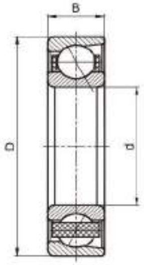

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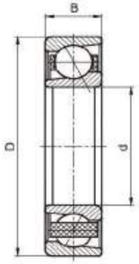

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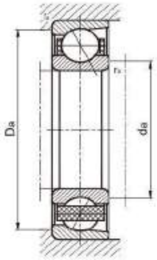

基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
45	85	19	1.1	0.6	38.6	28.2	7200	8900	0.418	52	78	1	7209AC
	85	19	1.1	0.6	33.9	24.9	6500	8000	0.467	52	78	1	7209B
	100	25	1.5	1	64.1	43.2	10500	13000	0.826	53	92	1.5	7309C
	100	25	1.5	1	61.7	41.6	6500	8000	0.825	53	92	1.5	7309AC
	100	25	1.5	1	55	37.2	5900	7200	0.936	53	92	1.5	7309B
50	80	16	1	0.3	28.6	22.9	11000	15000	0.25	56	74	1	7010C
	80	16	1	0.3	27.1	21.8	9400	13000	0.249	56	74	1	7010AC
	80	16	1	0.3	23.4	19	7200	8700	0.288	56	74	1	7010B
	90	20	1.1	0.6	42.8	31.8	10000	14000	0.462	57	83	1	7210C
	90	20	1.1	0.6	40.8	30.4	6700	8300	0.461	57	83	1	7210AC
	90	20	1.1	0.6	35.7	26.7	6000	7500	0.521	57	83	1	7210B
	110	27	2	1	74.9	51.2	9100	12400	1.09	59	101	2	7310C
	110	27	2	1	72.1	49.3	5900	7300	1.09	59	101	2	7310AC
	110	27	2	1	64.4	44.1	5300	6600	1.22	59	101	2	7310B
55	90	18	1.1	0.6	37.2	30.4	9900	13000	0.4	62	83	1	7011C
	90	18	1.1	0.6	35.2	28.9	8400	11400	0.4	62	83	1	7011AC
	90	18	1.1	0.6	30.5	25.2	6500	7800	0.427	62	83	1	7011B
	100	21	1.5	0.6	52.9	40.1	9000	12000	0.609	63	92	1.5	7211C
	100	21	1.5	0.6	50.5	38.3	6100	7500	0.609	63	92	1.5	7211AC
	100	21	1.5	1	44.2	33.7	5500	6800	0.682	63	92	1.5	7211B
	120	29	2	1	91.9	66.1	8400	11400	1.4	65	110	2	7311C
	120	29	2	1	88.4	63.6	5400	6600	1.4	65	110	2	7311AC
	120	29	2	1	78.7	56.8	4900	5900	1.56	65	110	2	7311B
60	95	18	1.1	0.6	39	33.2	9000	12000	0.389	67	88	1	7012C
	95	18	1.1	0.6	37	31.6	7900	11000	0.389	67	88	1	7012AC
	95	18	1.1	0.6	32	27.5	6000	7300	0.457	67	88	1	7012B

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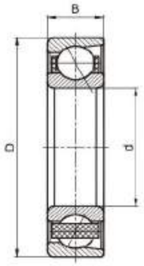

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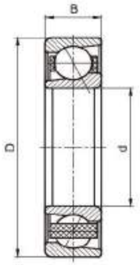

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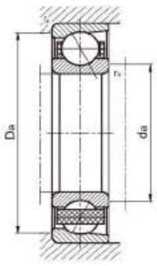
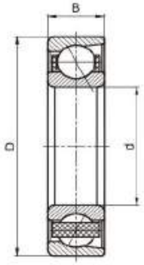


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
60	110	22	1.5	0.6	61	48.4	8500	11000	0.805	68	102	1.5	7212C
	110	22	1.5	0.6	58.2	46.2	5500	6800	0.804	68	102	1.5	7212AC
	110	22	1.5	1	50.8	40.6	5000	6100	0.891	68	102	1.5	7212B
	130	31	2.1	1.1	99.1	70.2	7700	10500	1.72	70	120	2	7312C
	130	31	2.1	1.1	95.3	67.5	4900	6100	1.72	70	120	2	7312AC
	130	31	2.1	1.1	84.9	60.3	4400	5500	1.94	70	120	2	7312B
65	100	18	1.1	0.6	40.1	35.5	9000	11000	0.412	72	93	1	7013C
	100	18	1.1	0.6	38	33.7	7400	10500	0.412	72	93	1	7013AC
	100	18	1.1	0.6	32.7	29.3	5700	6800	0.485	72	93	1	7013B
	120	23	1.5	0.6	73.1	58.9	8100	10800	1.01	74	111	1.5	7213C
	120	23	1.5	0.6	69.7	56.2	5100	6300	1.01	74	111	1.5	7213AC
	120	23	1.5	1	60.9	49.4	4600	5700	1.11	74	111	1.5	7213B
	140	33	2.1	1.1	112	80.8	7100	9500	2.12	76	129	2	7313C
	140	33	2.1	1.1	108	77.7	4600	5700	2.11	76	129	2	7313AC
	140	33	2.1	1.1	96.1	69.4	4100	5100	2.38	76	129	2	7313B
70	110	20	1.1	0.6	48.3	43.4	8100	10000	0.585	78	102	1	7014C
	110	20	1.1	0.6	45.7	41.3	6700	9500	0.584	78	102	1	7014AC
	110	20	1.1	0.6	39.4	35.9	5200	6300	0.682	78	102	1	7014B
	125	24	1.5	0.6	76.1	64	7600	9900	1.11	79	116	1.5	7214C
	125	24	1.5	0.6	72.4	61	4800	5900	1.11	79	116	1.5	7214AC
	125	24	1.5	1	63	53.5	4300	5300	1.22	79	116	1.5	7214B
	150	35	2.1	1.1	134	101	6700	9000	2.56	81	139	2	7314C
	150	35	2.1	1.1	129	96.7	4300	5300	2.56	81	139	2	7314AC
	150	35	2.1	1.1	114	86.3	3900	4800	2.93	81	139	2	7314B
75	115	20	1.1	0.6	49.6	46.2	7600	10000	0.617	83	107	1	7015C
	115	20	1.1	0.6	46.9	43.9	6400	9000	0.617	83	107	1	7015AC



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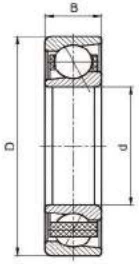

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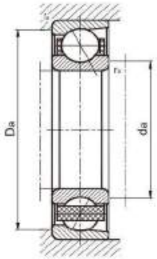
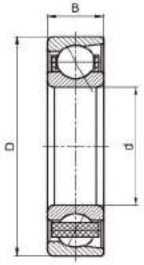
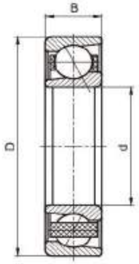


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
	115	20	1.1	0.6	40.3	38.1	5000	5900	0.719	83	107	1	7015B
	130	25	1.5	0.6	82.7	70.3	7200	9900	1.18	84	121	1.5	7215C
	130	25	1.5	0.6	78.7	67.1	4600	5700	1.18	84	121	1.5	7215AC
75	130	25	1.5	1	68.4	58.8	4100	5100	1.32	84	121	1.5	7215B
	160	37	2.1	1.1	146	114	6200	8500	3.09	87	148	2	7315C
	160	37	2.1	1.1	140	109	4000	4900	3.09	87	148	2	7315AC
	160	37	2.1	1.1	124	97.6	3600	4400	3.54	87	148	2	7315B
	125	22	1.1	0.6	60.5	58.3	7200	10000	0.854	88	117	1	7016C
	125	22	1.1	0.6	57.3	55.4	6000	8400	0.853	88	117	1	7016AC
	125	22	1.1	0.6	49.2	48.1	4600	5500	0.973	88	117	1	7016B
	140	26	1.5	1	96.9	82.9	6700	9000	1.43	90	130	2	7216C
80	140	26	1.5	1	92.3	79.1	4300	5300	1.43	90	130	2	7216AC
	140	26	1.5	1	80.5	69.5	3900	4800	1.62	90	130	2	7216B
	170	39	2.1	1.1	158	128	5800	8000	3.65	92	158	2	7316C
	170	39	2.1	1.1	152	123	3800	4600	3.64	92	158	2	7316AC
	170	39	2.1	1.1	135	110	3400	4100	4.21	92	158	2	7316B
	130	22	1.1	0.6	60.2	58.7	6700	9000	0.878	94	121	1	7017C
	130	22	1.1	0.6	56.9	55.7	5700	8000	0.877	94	121	1	7017AC
	130	22	1.1	0.6	48.9	48.2	4300	5300	1.02	94	121	1	7017B
	150	28	2	1	95.3	79.3	6000	8500	1.74	95	140	2	7217C
85	150	28	2	1	90.7	75.6	4000	4900	1.74	95	140	2	7217AC
	150	28	2	1	78.9	66.3	3600	4400	2.02	95	140	2	7217B
	180	41	3	1.1	170	143	5500	7500	4.29	97	168	2.5	7317C
	180	41	3	1.1	164	137	3500	4400	4.28	97	168	2.5	7317AC
	180	41	3	1.1	145	122	3200	4000	4.93	97	168	2.5	7317B
90	140	24	1.5	0.6	74	72.7	6300	8500	1.15	99	131	1.5	7018C

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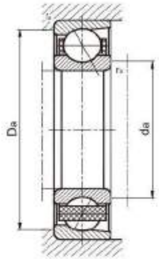
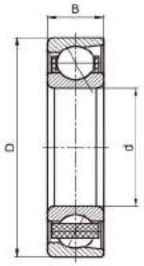


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
90	140	24	1.5	0.6	70.1	69	5300	7500	1.15	99	131	1.5	7018AC
	140	24	1.5	0.6	60.3	60	4100	5000	1.33	99	131	1.5	7018B
	160	30	2	1	123	105	5600	8100	2.18	101	149	2	7218C
	160	30	2	1	117	100	3800	4600	2.18	101	149	2	7218AC
	160	30	2	1	102	88.2	3400	4100	2.49	101	149	2	7218B
	190	43	3	1.1	183	158	5200	7100	5.02	103	177	2.5	7318C
	190	43	3	1.1	176	152	3400	4100	5.02	103	177	2.5	7318AC
	190	43	3	1.1	156	136	3100	3700	5.76	103	177	2.5	7318B
95	145	24	1.5	0.6	75.8	76.8	6000	8100	1.2	104	136	1.5	7019C
	145	24	1.5	0.6	71.7	72.9	5000	7100	1.2	104	136	1.5	7019AC
	145	24	1.5	0.6	61.6	63	3900	4800	1.39	104	136	1.5	7019B
	170	32	2.1	1.1	139	120	5400	7600	2.64	106	159	2	7219C
	170	32	2.1	1.1	132	115	3500	4400	2.64	106	159	2	7219AC
	170	32	2.1	1.1	116	101	3200	4000	3.01	106	159	2	7219B
	200	45	3	1.1	196	175	4900	6700	5.78	108	187	2.5	7319C
	200	45	3	1.1	188	168	3200	3900	5.77	108	187	2.5	7319AC
	200	45	3	1.1	167	150	2900	3500	6.63	108	187	2.5	7319B
100	150	24	1.5	0.6	70.7	70.3	5600	8100	1.22	109	141	1.5	7020C
	150	24	1.5	0.6	66.8	66.7	4800	6800	1.21	109	141	1.5	7020AC
	150	24	1.5	0.6	57.4	57.4	3800	4500	1.43	109	141	1.5	7020B
	180	34	2.1	1.1	145	130	5000	7200	3.22	112	168	2	7220C
	180	34	2.1	1.1	138	124	3400	4100	3.22	112	168	2	7220AC
	180	34	2.1	1.1	120	109	3100	3700	3.67	112	168	2	7220B
	215	47	3	1.1	210	190	4700	6400	7.02	114	201	2.5	7320C
	215	47	3	1.1	202	183	3000	3700	7.01	114	201	2.5	7320AC
	215	47	3	1.1	179	163	2700	3300	8.05	114	201	2.5	7320B



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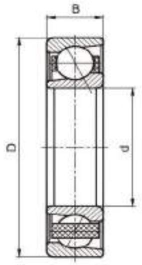

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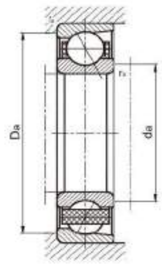
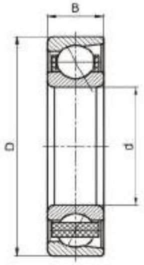


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	d_a min	D_a max	r_a max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
105	160	26	2	1	85	89.7	5400	7600	1.59	115	150	2	7021C
	160	26	2	1	80.3	85.1	4600	6500	1.59	115	150	2	7021AC
	160	26	2	1	68.9	73.2	3500	4300	1.84	115	150	2	7021B
	190	36	2.1	1.1	170	154	4700	6700	3.78	117	178	2	7221C
	190	36	2.1	1.1	162	147	3200	3900	3.78	117	178	2	7221AC
	190	36	2.1	1.1	142	129	2900	3500	4.3	117	178	2	7221B
	225	49	3	1.1	236	226	4400	6000	8.18	120	210	2.5	7321C
	225	49	3	1.1	227	218	2800	3500	8.17	120	210	2.5	7321AC
	225	49	3	1.1	202	194	2500	3200	9.26	120	210	2.5	7321B
110	170	28	2	1	104	107	5000	7200	1.97	120	160	2	7022C
	170	28	2	1	98.5	101	4400	6100	1.97	120	160	2	7022AC
	170	28	2	1	84.7	88	3300	4100	2.26	120	160	2	7022B
	200	38	2.1	1.1	184	172	4500	6300	4.46	123	187	2	7222C
	200	38	2.1	1.1	176	164	3000	3700	4.46	123	187	2	7222AC
	200	38	2.1	1.1	154	145	2700	3300	5.05	123	187	2	7222B
	240	50	3	1.1	248	241	4200	5700	9.55	125	225	2.5	7322C
	240	50	3	1.1	239	232	2700	3300	9.54	125	225	2.5	7322AC
	240	50	3	1.1	213	208	2400	3000	10.8	125	225	2.5	7322B
120	180	28	2	1	106	113	4800	6700	2.09	131	169	2	7024C
	180	28	2	1	101	107	4100	5700	2.09	131	169	2	7024AC
	180	28	2	1	86.4	92.5	3200	3800	2.43	131	169	2	7024B
	215	40	2.1	1.1	198	193	4400	6100	5.33	133	202	2	7224C
	215	40	2.1	1.1	189	184	2800	3500	5.32	133	202	2	7224AC
	215	40	2.1	1.1	165	162	2500	3200	6.07	133	202	2	7224B
	260	55	3	1.1	279	289	3800	5200	12.5	136	244	2.5	7324C
	260	55	3	1.1	268	278	2500	3100	12.5	136	244	2.5	7324AC
	260	55	3	1.1	238	247	2300	2800	14.1	136	244	2.5	7324B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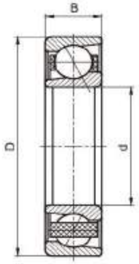
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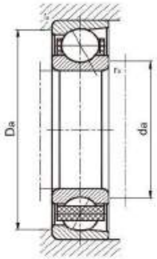
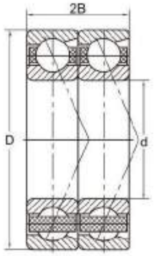


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension			轴承代号 Bearing code
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	ra max	新代号 New code
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	
130	200	33	2	1	133	144	4300	6100	3.23	142	188	2	7026C
	200	33	2	1	126	137	3700	5200	3.23	142	188	2	7026AC
	200	33	2	1	108	118	2900	3400	3.72	142	188	2	7026B
	230	40	3	1.1	206	210	4100	5700	6.14	144	216	2.5	7226C
	230	40	3	1.1	197	200	2600	3200	6.14	144	216	2.5	7226AC
	230	40	3	1.1	171	175	2300	2900	6.94	144	216	2.5	7226B
	280	58	4	1.5	294	315	3500	4800	15.2	147	263	3	7326C
	280	58	4	1.5	282	303	2300	2800	15.2	147	263	3	7326AC
	280	58	4	1.5	250	269	2100	2500	17.2	147	263	3	7326B
140	210	33	2	1	136	152	4100	5700	3.45	152	198	2	7028C
	210	33	2	1	128	144	3500	4900	3.45	152	198	2	7028AC
	210	33	2	1	110	124	2700	3200	3.95	152	198	2	7028B
	250	42	3	1.1	231	249	3800	5200	8.1	155	235	2.5	7228C
	250	42	3	1.1	219	237	2400	3000	8.09	155	235	2.5	7228AC
	250	42	3	1.1	190	208	2200	2700	8.82	155	235	2.5	7228B
	300	62	4	1.5	349	397	3300	4600	18.6	158	282	3	7328C
	300	62	4	1.5	336	382	2100	2600	18.6	158	282	3	7328AC
	300	62	4	1.5	298	341	1900	2300	20.8	158	282	3	7328B
150	225	35	2.1	1	168	182	3800	5300	4.11	162	213	2	7030C
	225	35	2.1	1	159	173	3200	4600	4.11	162	213	2	7030AC
	225	35	2.1	1	136	150	2500	3100	4.69	162	213	2	7030B
	270	45	3	1.1	247	213	3500	4800	8.12	164	256	2.5	7230C
	270	45	3	1.1	236	200	2200	2800	8.12	164	256	2.5	7230AC
	270	45	3	1.1	225	254	1700	2400	11.2	164	256	2.5	7230B
	320	65	4	1.5	368	432	3100	4300	26	168	302	3	7330C
	320	65	4	1.5	353	416	1600	2200	26	168	302	3	7330AC
	320	65	4	1.5	313	370	1500	2100	26.7	168	302	3	7330B



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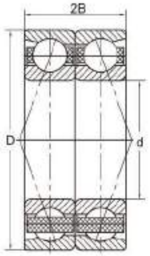

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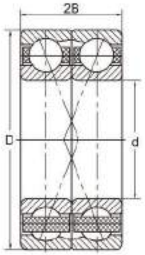

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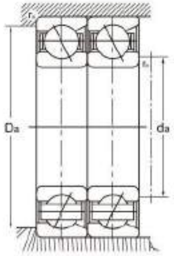

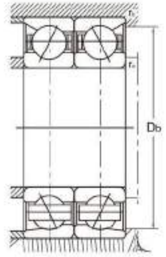

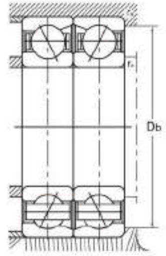

基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm			
	42	12	0.6	0.3	17.1	12	18000	27000	0.134	25	37	40	0.6	0.3	7004C /DT	7004C /DB	7004C /DF
	42	12	0.6	0.3	16.3	11.5	14000	16000	0.134	25	37	40	0.6	0.3	7004AC /DT	7004AC /DB	7004AC /DF
	42	12	0.6	0.3	14.4	10.2	12000	14000	0.154	25	37	40	0.6	0.3	7004B /DT	7004B /DB	7004B /DF
	47	14	1	0.3	23.7	16.4	17000	23000	0.2	25	42	45	1	0.3	7204C /DT	7204C /DB	7204C /DF
20	47	14	1	0.3	22.8	15.8	12000	15000	0.2	25	42	45	1	0.3	7204AC /DT	7204AC /DB	7204AC /DF
	47	14	1	0.6	20.3	14.1	11000	12000	0.234	25	42	45	1	0.6	7204B /DT	7204B /DB	7204B /DF
	52	15	1.1	0.6	30.1	20	12000	18000	0.282	26	46	50	1.1	0.6	7304C /DT	7304C /DB	7304C /DF
	52	15	1.1	0.6	29.1	19.3	11000	13000	0.282	26	46	50	1.1	0.6	7304AC /DT	7304AC /DB	7304AC /DF
	52	15	1.1	0.6	26.3	17.4	10000	11000	0.326	26	46	50	1.1	0.6	7304B /DT	7304B /DB	7304B /DF
	47	12	0.6	0.3	19	14.9	16000	23000	0.156	30	42	45	0.6	0.15	7005C /DT	7005C /DB	7005C /DF
	47	12	0.6	0.3	18	14.2	11000	14000	0.156	30	42	45	0.6	0.15	7005AC /DT	7005AC /DB	7005AC /DF
	47	12	0.6	0.3	15.8	12.5	10000	13000	0.178	30	42	45	0.6	0.15	7005B /DT	7005B /DB	7005B /DF
	52	15	1	0.3	27	20.6	15000	21000	0.24	30	47	50	1	0.3	7205C /DT	7205C /DB	7205C /DF
25	52	15	1	0.3	25.8	19.7	10000	13000	0.24	30	47	50	1	0.3	7205AC /DT	7205AC /DB	7205AC /DF
	52	15	1	0.6	22.8	17.4	9000	11000	0.292	30	47	50	1	0.6	7205B /DT	7205B /DB	7205B /DF
	62	17	1.1	0.6	45.3	32.4	10000	16000	0.452	31	56	60	1.1	0.6	7305C /DT	7305C /DB	7305C /DF
	62	17	1.1	0.6	43.9	31.4	9000	11000	0.452	31	56	60	1.1	0.6	7305AC /DT	7305AC /DB	7305AC /DF
	62	17	1.1	0.6	39.7	28.2	8000	10000	0.516	31	56	60	1.1	0.6	7305B /DT	7305B /DB	7305B /DF
	55	13	1	0.3	24.5	20.6	13000	19000	0.226	35	50	53	1	0.3	7006C /DT	7006C /DB	7006C /DF
	55	13	1	0.3	23.4	19.7	10000	12000	0.226	35	50	53	1	0.3	7006AC /DT	7006AC /DB	7006AC /DF
	55	13	1	0.3	20.3	17.2	9000	11000	0.26	35	50	53	1	0.3	7006B /DT	7006B /DB	7006B /DF
30	62	16	1	0.3	37.4	29.4	12000	18000	0.396	36	56	60	1	0.3	7206C /DT	7206C /DB	7206C /DF
	62	16	1	0.3	35.9	28.2	8000	11000	0.396	36	56	60	1	0.3	7206AC /DT	7206AC /DB	7206AC /DF
	62	16	1	0.6	31.7	25	7200	9400	0.444	36	56	60	1	0.6	7206B /DT	7206B /DB	7206B /DF
	72	19	1.1	0.6	55.4	42.8	9000	13000	0.694	37	65	69	1.1	0.6	7306C /DT	7306C /DB	7306C /DF
	72	19	1.1	0.6	53.3	41.2	7400	8800	0.692	37	65	69	1.1	0.6	7306AC /DT	7306AC /DB	7306AC /DF

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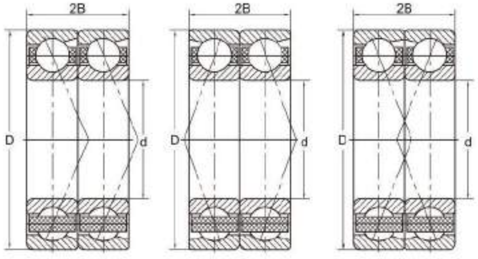
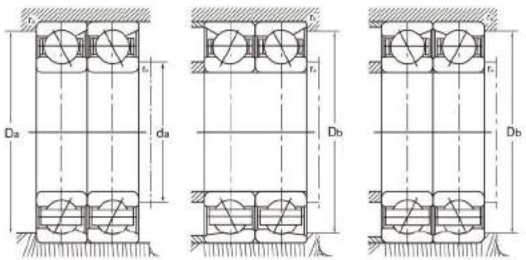
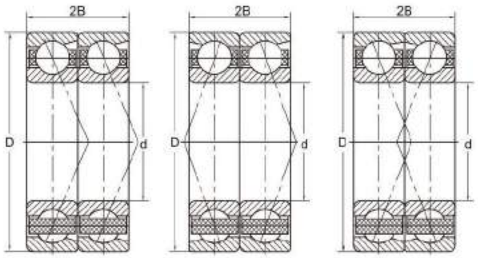




基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm			
30	72	19	1.1	0.6	47.6	36.8	6600	7900	0.782	37	65	69	1.1	0.6	7306B /DT	7306B /DB	7306 B /DF
	62	14	1	0.3	31.5	27.8	12000	17000	0.300	41	56	60	1	0.3	7007C /DT	7007C /DB	7007 C /DF
	62	14	1	0.3	30.1	26.4	8800	10000	0.300	41	56	60	1	0.3	7007AC /DT	7007AC /DB	7007 AC /DF
	62	14	1	0.3	26.2	23.2	8000	9500	0.346	41	56	60	1	0.3	7007B /DT	7007B /DB	7007 B /DF
	72	17	1.1	0.3	49.4	40	10000	15000	0.568	42	65	69	1.1	0.3	7207C /DT	7207C /DB	7207 C /DF
35	72	17	1.1	0.3	47.3	38.4	7000	9500	0.568	42	65	69	1.1	0.3	7207AC /DT	7207AC /DB	7207 AC /DF
	72	17	1.1	0.6	41.8	34	6300	7900	0.636	42	65	69	1.1	0.6	7207B /DT	7207B /DB	7207 B /DF
	80	21	1.5	1	65.7	52	8100	11000	0.910	42	73	77	1.5	0.6	7307C /DT	7307C /DB	7307 C /DF
	80	21	1.5	1	63.1	50	6600	8000	0.908	42	73	77	1.5	0.6	7307AC /DT	7307AC /DB	7307 AC /DF
	80	21	1.5	1	56.2	44.6	5900	7200	1.030	42	73	77	1.5	0.6	7307B /DT	7307B /DB	7307 B /DF
	68	15	1	0.3	34	32.2	11000	15000	0.378	46	62	66	1	0.3	7008C /DT	7008C /DB	7008 C /DF
	68	15	1	0.3	32.2	30.8	7700	10000	0.378	46	62	66	1	0.3	7008AC /DT	7008AC /DB	7008 AC /DF
	68	15	1	0.3	27.8	26.8	6900	8600	0.430	46	62	66	1	0.3	7008B /DT	7008B /DB	7008 B /DF
	80	18	1.1	0.3	62.6	53.6	9900	13000	0.732	47	73	77	1.1	0.3	7208C /DT	7208C /DB	7208 C /DF
40	80	18	1.1	0.3	59.8	51.2	6200	8500	0.730	47	73	77	1.1	0.3	7208AC /DT	7208AC /DB	7208 AC /DF
	80	18	1.1	0.6	52.8	45.4	5600	7000	0.812	47	73	77	1.1	0.6	7208B /DT	7208B /DB	7208 B /DF
	90	23	1.5	1	85	71	7200	10000	1.282	48	82	87	1.5	0.6	7308C /DT	7308C /DB	7308 C /DF
	90	23	1.5	1	81.7	68.2	5800	7100	1.282	48	82	87	1.5	0.6	7308AC /DT	7308AC /DB	7308 AC /DF
	90	23	1.5	1	72.6	61	5200	5600	1.434	48	82	87	1.5	0.6	7308B /DT	7308B /DB	7308 B /DF
	75	16	1	0.3	42.1	40.8	10000	13000	0.474	51	69	73	1	0.3	7009C /DT	7009C /DB	7009 C /DF
	75	16	1	0.3	39.8	38.8	7000	8800	0.474	51	69	73	1	0.3	7009AC /DT	7009AC /DB	7009 AC /DF
	75	16	1	0.3	34.5	33.8	6200	7900	0.542	51	69	73	1	0.3	7009B /DT	7009B /DB	7009 B /DF
45	85	19	1.1	0.6	65.8	59	9000	12000	0.836	52	78	82	1.1	0.6	7209C /DT	7209C /DB	7209 C /DF
	85	19	1.1	0.6	62.7	56.4	5800	7500	0.836	52	78	82	1.1	0.6	7209AC /DT	7209AC /DB	7209 AC /DF
	85	19	1.1	0.6	55.1	49.8	5200	6400	0.934	52	78	82	1.1	0.6	7209B /DT	7209B /DB	7209 B /DF
	100	25	1.5	1	104	86.4	6300	9000	1.652	53	92	97	1.5	0.6	7309C /DT	7309C /DB	7309 C /DF



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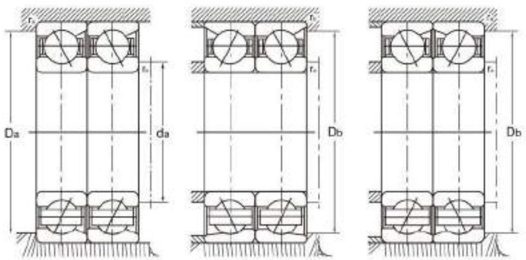
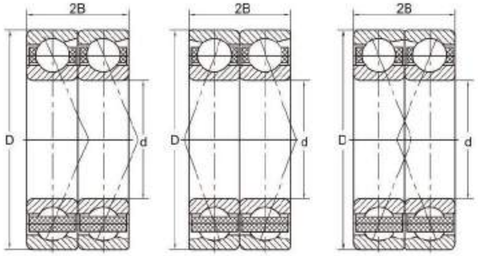


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm			
45	100	25	1.5	1	100	83.2	5200	6500	1.65	53	92	97	1.5	0.6	7309 AC /DT	7309 AC /DB	7309 AC /DF
	100	25	1.5	1	89.4	74.4	4700	5800	1.872	53	92	97	1.5	0.6	7309 B /DT	7309 B /DB	7309 B /DF
50	80	16	1	0.3	46.5	45.8	9000	12000	0.5	56	74	77	1	0.3	7010 C /DT	7010 C /DB	7010 C /DF
	80	16	1	0.3	44	43.6	6400	7800	0.498	56	74	77	1	0.3	7010 AC /DT	7010 AC /DB	7010 AC /DF
	80	16	1	0.3	38	38	5800	7000	0.576	56	74	77	1	0.3	7010 B /DT	7010 B /DB	7010 B /DF
	90	20	1.1	0.6	69.6	63.6	8500	11000	0.924	57	83	87	1.1	0.6	7210 C /DT	7210 C /DB	7210 C /DF
	90	20	1.1	0.6	66.3	60.8	5400	7100	0.922	57	83	87	1.1	0.6	7210 AC /DT	7210 AC /DB	7210 AC /DF
	90	20	1.1	0.6	58	53.4	4800	6000	1.042	57	83	87	1.1	0.6	7210 B /DT	7210 B /DB	7210 B /DF
	110	27	2	1	121	102	5400	8100	2.18	59	101	106	2	1	7310 C /DT	7310 C /DB	7310 C /DF
	110	27	2	1	117	98.6	4700	5800	2.18	59	101	106	2	1	7310 AC /DT	7310 AC /DB	7310 AC /DF
	110	27	2	1	104	88.2	4400	5300	2.44	59	101	106	2	1	7310 B /DT	7310 B /DB	7310 B /DF
55	90	18	1.1	0.6	60.5	60.8	8100	11000	0.8	62	83	87	1.1	0.6	7011 C /DT	7011 C /DB	7011 C /DF
	90	18	1.1	0.6	57.2	57.8	5800	7000	0.8	62	83	87	1.1	0.6	7011 AC /DT	7011 AC /DB	7011 AC /DF
	90	18	1.1	0.6	49.6	50.4	5200	6200	0.854	62	83	87	1.1	0.6	7011 B /DT	7011 B /DB	7011 B /DF
	100	21	1.5	0.6	86	80.2	7600	10000	1.218	63	92	97	1.5	0.6	7211 C /DT	7211 C /DB	7211 C /DF
	100	21	1.5	0.6	82.1	76.6	4900	6300	1.218	63	92	97	1.5	0.6	7211 AC /DT	7211 AC /DB	7211 AC /DF
	100	21	1.5	1	71.8	67.4	4400	5400	1.364	63	92	97	1.5	1	7211 B /DT	7211 B /DB	7211 B /DF
	120	29	2	1	149	132	4500	7200	2.8	65	110	116	2	1	7311 C /DT	7311 C /DB	7311 C /DF
	120	29	2	1	144	127	4300	5300	2.8	65	110	116	2	1	7311 AC /DT	7311 AC /DB	7311 AC /DF
	120	29	2	1	128	114	3900	4700	3.12	65	110	116	2	1	7311 B /DT	7311 B /DB	7311 B /DF
60	95	18	1.1	0.6	63	66	7600	11000	0.778	67	88	92	1.1	0.6	7012 C /DT	7012 C /DB	7012 C /DF
	95	18	1.1	0.6	60	63	5400	6500	0.778	67	88	92	1.1	0.6	7012 AC /DT	7012 AC /DB	7012 AC /DF
	95	18	1.1	0.6	52	55	4800	5800	0.914	67	88	92	1.1	0.6	7012 B /DT	7012 B /DB	7012 B /DF
	110	22	1.5	0.6	99	97	6700	9500	1.61	68	102	107	1.5	0.6	7212 C /DT	7212 C /DB	7212 C /DF
	110	22	1.5	0.6	95	92	4400	6000	1.608	68	102	107	1.5	0.6	7212 AC /DT	7212 AC /DB	7212 AC /DF
	110	22	1.5	1	83	81	4000	4900	1.782	68	102	107	1.5	1	7212 B /DT	7212 B /DB	7212 B /DF



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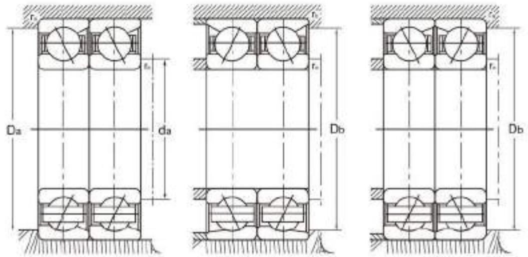
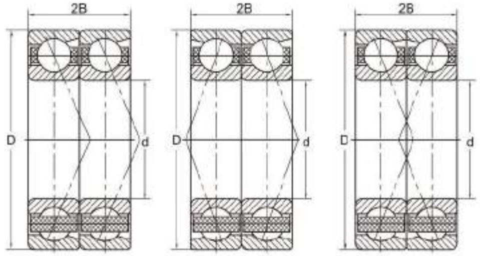
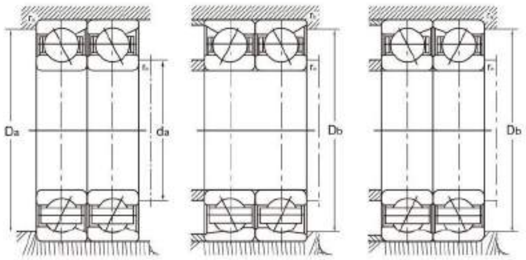


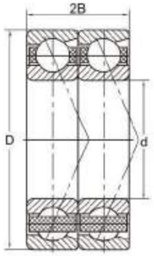
基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight		安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈		da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg		mm	mm	mm	mm	mm			
	130	31	2.1	1.1	161	140	4000	6700	3.44		70	120	126	2.1	1	7312C /DT	7312C /DB	7312 C /DF
60	130	31	2.1	1.1	155	135	3900	4900	3.44		70	120	126	2.1	1	7312AC /DT	7312AC /DB	7312 AC /DF
	130	31	2.1	1.1	138	121	3500	4400	3.88		70	120	126	2.1	1	7312B /DT	7312B /DB	7312 B /DF
	100	18	1.1	0.6	65	71	7200	10000	0.824		72	93	97	1.1	0.6	7013C /DT	7013C /DB	7013 C /DF
	100	18	1.1	0.6	62	67	5000	6100	0.824		72	93	97	1.1	0.6	7013AC /DT	7013AC /DB	7013 AC /DF
	100	18	1.1	0.6	53	59	4600	5400	0.97		72	93	97	1.1	0.6	7013B /DT	7013B /DB	7013 B /DF
	120	23	1.5	0.6	119	118	6300	8500	2.02		74	111	116	1.5	0.6	7213C /DT	7213C /DB	7213 C /DF
65	120	23	1.5	0.6	113	112	4100	5300	2.02		74	111	116	1.5	0.6	7213AC /DT	7213AC /DB	7213 AC /DF
	120	23	1.5	1	99	99	3700	4600	2.22		74	111	116	1.5	1	7213B /DT	7213B /DB	7213 B /DF
	140	33	2.1	1.1	182	162	3800	6300	4.24		76	129	136	2.1	1	7313C /DT	7313C /DB	7313 C /DF
	140	33	2.1	1.1	176	155	3700	4600	4.22		76	129	136	2.1	1	7313AC /DT	7313AC /DB	7313 AC /DF
	140	33	2.1	1.1	156	139	3300	4100	4.76		76	129	136	2.1	1	7313B /DT	7313B /DB	7313 B /DF
	110	20	1.1	0.6	78	87	6300	9000	1.17		78	102	107	1.1	0.6	7014C /DT	7014C /DB	7014 C /DF
	110	20	1.1	0.6	74	83	4600	5600	1.168		78	102	107	1.1	0.6	7014AC /DT	7014AC /DB	7014 AC /DF
	110	20	1.1	0.6	64	72	4200	5000	1.364		78	102	107	1.1	0.6	7014B /DT	7014B /DB	7014 B /DF
	125	24	1.5	0.6	124	128	6000	8100	2.22		79	116	121	1.5	0.6	7214C /DT	7214C /DB	7214 C /DF
70	125	24	1.5	0.6	118	122	3800	5000	2.22		79	116	121	1.5	0.6	7214AC /DT	7214AC /DB	7214 AC /DF
	125	24	1.5	1	102	107	3400	4200	2.44		79	116	121	1.5	1	7214B /DT	7214B /DB	7214 B /DF
	150	35	2.1	1.1	218	202	3600	5800	5.12		81	139	146	2.1	1	7314C /DT	7314C /DB	7314 C /DF
	150	35	2.1	1.1	210	193	3400	4200	5.12		81	139	146	2.1	1	7314AC /DT	7314AC /DB	7314 AC /DF
	150	35	2.1	1.1	185	173	3100	3800	5.86		81	139	146	2.1	1	7314B /DT	7314B /DB	7314 B /DF
	115	20	1.1	0.6	81	92	6000	8500	1.234		83	107	112	1.1	0.6	7015C /DT	7015C /DB	7015 C /DF
	115	20	1.1	0.6	76	88	4400	5300	1.234		83	107	112	1.1	0.6	7015AC /DT	7015AC /DB	7015 AC /DF
75	115	20	1.1	0.6	65	76	4000	4700	1.438		83	107	112	1.1	0.6	7015B /DT	7015B /DB	7015 B /DF
	130	25	1.5	0.6	134	141	5600	8100	2.36		84	121	126	1.5	0.6	7215C /DT	7215C /DB	7215 C /DF
	130	25	1.5	0.6	128	134	3700	4800	2.36		84	121	126	1.5	0.6	7215AC /DT	7215AC /DB	7215 AC /DF



7000..DT　7000..DB　7000..DF



基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code					
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem		背对背 Back to back		面对面 Face to face	
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm						
75	130	25	1.5	1	111	118	3300	4100	2.64	84	121	126	1.5	1	7215 B	/DT	7215B	/DB	7215 B	/DF
	160	37	2.1	1.1	237	228	3400	5400	6.18	87	148	155	2.1	1	7315 C	/DT	7315C	/DB	7315 C	/DF
	160	37	2.1	1.1	228	218	3200	3900	6.18	87	148	155	2.1	1	7315 AC	/DT	7315AC	/DB	7315 AC	/DF
	160	37	2.1	1.1	202	195	2900	3500	7.08	87	148	155	2.1	1	7315 B	/DT	7315B	/DB	7315 B	/DF
80	125	22	1.1	0.6	98	117	5600	8100	1.708	88	117	122	1.1	0.6	7016 C	/DT	7016C	/DB	7016 C	/DF
	125	22	1.1	0.6	93	111	4100	4900	1.706	88	117	122	1.1	0.6	7016 AC	/DT	7016AC	/DB	7016 AC	/DF
	125	22	1.1	0.6	80	96	3700	4400	1.946	88	117	122	1.1	0.6	7016 B	/DT	7016B	/DB	7016 B	/DF
	140	26	2	1	157	166	5400	7200	2.86	90	130	136	2	1	7216 C	/DT	7216C	/DB	7216 C	/DF
	140	26	2	1	150	158	3400	4500	2.86	90	130	136	2	1	7216 AC	/DT	7216AC	/DB	7216 AC	/DF
	140	26	2	1	131	139	3100	3800	3.24	90	130	136	2	1	7216 B	/DT	7216B	/DB	7216 B	/DF
	170	39	2.1	1.1	257	256	3100	5100	7.3	92	158	165	2.1	1	7316 C	/DT	7316C	/DB	7316 C	/DF
	170	39	2.1	1.1	247	246	3000	3700	7.28	92	158	165	2.1	1	7316 AC	/DT	7316AC	/DB	7316 AC	/DF
	170	39	2.1	1.1	219	220	2700	3300	8.42	92	158	165	2.1	1	7316 B	/DT	7316B	/DB	7316 B	/DF
85	130	22	1.1	0.6	98	117	5400	7600	1.756	94	121	127	1.1	0.6	7017 C	/DT	7017C	/DB	7017 C	/DF
	130	22	1.1	0.6	92	111	3800	4700	1.754	94	121	127	1.1	0.6	7017 AC	/DT	7017AC	/DB	7017 AC	/DF
	130	22	1.1	0.6	79	96	3400	4200	2.04	94	121	127	1.1	0.6	7017 B	/DT	7017B	/DB	7017 B	/DF
	150	28	2	1	155	159	5000	6700	3.48	95	140	146	2	1	7217 C	/DT	7217C	/DB	7217 C	/DF
	150	28	2	1	147	151	3200	4300	3.48	95	140	146	2	1	7217 AC	/DT	7217AC	/DB	7217 AC	/DF
	150	28	2	1	128	133	2900	3500	4.04	95	140	146	2	1	7217 B	/DT	7217B	/DB	7217 B	/DF
	180	41	3	1.1	276	286	2900	4600	8.58	97	168	175	3	1	7317 C	/DT	7317C	/DB	7317 C	/DF
	180	41	3	1.1	267	274	2800	3500	8.56	97	168	175	3	1	7317 AC	/DT	7317AC	/DB	7317 AC	/DF
	180	41	3	1.1	236	244	2600	3200	9.86	97	168	175	3	1	7317 B	/DT	7317B	/DB	7317 B	/DF
90	140	24	1.5	0.6	120	145	5000	7200	2.3	99	131	136	1.5	0.6	7018 C	/DT	7018C	/DB	7018 C	/DF
	140	24	1.5	0.6	114	138	3600	4400	2.3	99	131	136	1.5	0.6	7018 AC	/DT	7018AC	/DB	7018 AC	/DF
	140	24	1.5	0.6	98	120	3300	4000	2.66	99	131	136	1.5	0.6	7018 B	/DT	7018B	/DB	7018 B	/DF
	160	30	2	1	200	210	4700	6300	4.36	101	149	156	2	1	7218 C	/DT	7218C	/DB	7218 C	/DF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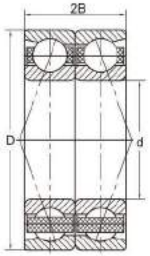
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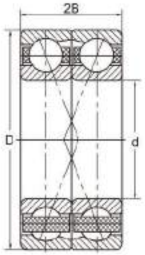
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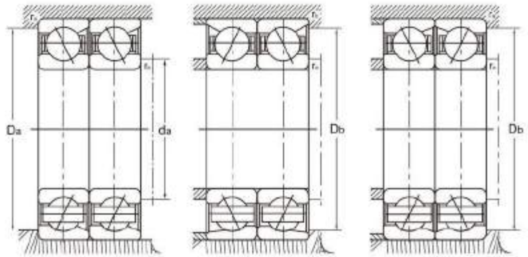

基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r min	r1 min	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	mm	mm	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm			
90	160	30	2	1	190	200	3000	4000	4.36	101	149	156	2	1	7218AC /DT	7218AC /DB	7218AC /DF
	160	30	2	1	166	176	2700	3300	4.98	101	149	156	2	1	7218B /DT	7218B /DB	7218B /DF
	190	43	3	1.1	297	316	2700	4300	10.04	103	177	185	3	1.1	7318C /DT	7318C /DB	7318C /DF
	190	43	3	1.1	286	304	2700	3300	10.04	103	177	185	3	1.1	7318AC /DT	7318AC /DB	7318AC /DF
	190	43	3	1.1	254	272	2500	3000	11.52	103	177	185	3	1.1	7318B /DT	7318B /DB	7318B /DF
95	145	24	1.5	0.6	123	154	4700	6700	2.4	104	136	141	1.5	0.6	7019C /DT	7019C /DB	7019C /DF
	145	24	1.5	0.6	117	146	3400	4200	2.4	104	136	141	1.5	0.6	7019AC /DT	7019AC /DB	7019AC /DF
	145	24	1.5	0.6	100	126	3100	3800	2.78	104	136	141	1.5	0.6	7019B /DT	7019B /DB	7019B /DF
	170	32	2.1	1.1	226	240	4300	6000	5.28	106	159	165	2.1	1.1	7219C /DT	7219C /DB	7219C /DF
	170	32	2.1	1.1	215	230	2800	3600	5.28	106	159	165	2.1	1.1	7219AC /DT	7219AC /DB	7219AC /DF
	170	32	2.1	1.1	189	202	2600	3200	6.02	106	159	165	2.1	1.1	7219B /DT	7219B /DB	7219B /DF
	200	45	3	1.1	319	350	2600	4000	11.56	108	187	195	3	1.1	7319C /DT	7319C /DB	7319C /DF
	200	45	3	1.1	306	336	2600	3100	11.54	108	187	195	3	1.1	7319AC /DT	7319AC /DB	7319AC /DF
	200	45	3	1.1	271	300	2300	2800	13.26	108	187	195	3	1.1	7319B /DT	7319B /DB	7319B /DF
100	150	24	1.5	0.6	115	141	4700	6300	2.44	109	141	146	1.5	0.6	7020C /DT	7020C /DB	7020C /DF
	150	24	1.5	0.6	109	133	3300	4000	2.42	109	141	146	1.5	0.6	7020AC /DT	7020AC /DB	7020AC /DF
	150	24	1.5	0.6	93	115	3000	3600	2.86	109	141	146	1.5	0.6	7020B /DT	7020B /DB	7020B /DF
	180	34	2.1	1.1	236	260	4000	5600	6.44	112	168	175	2.1	1	7220C /DT	7220C /DB	7220C /DF
	180	34	2.1	1.1	224	248	2700	3400	6.44	112	168	175	2.1	1	7220AC /DT	7220AC /DB	7220AC /DF
	180	34	2.1	1.1	195	218	2500	3000	7.34	112	168	175	2.1	1	7220B /DT	7220B /DB	7220B /DF
	215	47	3	1.1	341	380	2500	3800	14.04	114	201	209	3	1	7320C /DT	7320C /DB	7320C /DF
	215	47	3	1.1	328	366	2400	3000	14.02	114	201	209	3	1	7320AC /DT	7320AC /DB	7320AC /DF
	215	47	3	1.1	291	326	2200	2700	16.1	114	201	209	3	1	7320B /DT	7320B /DB	7320B /DF
105	160	26	2	1	138	179	4300	6000	3.18	115	150	156	2	1	7021C /DT	7021C /DB	7021C /DF
	160	26	2	1	130	170	3200	3800	3.18	115	150	156	2	1	7021AC /DT	7021AC /DB	7021AC /DF
	160	26	2	1	112	146	2700	3400	3.68	115	150	156	2	1	7021B /DT	7021B /DB	7021B /DF

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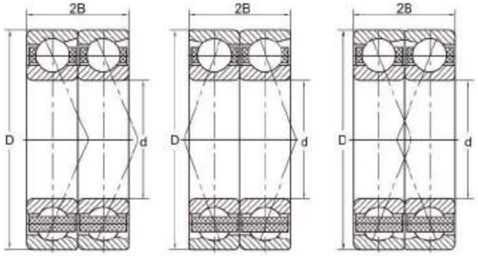

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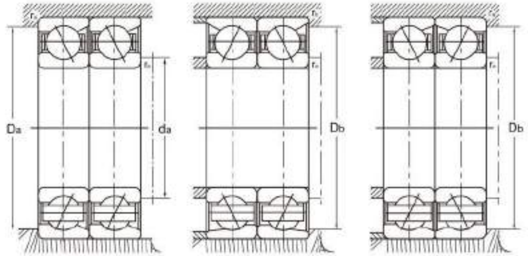
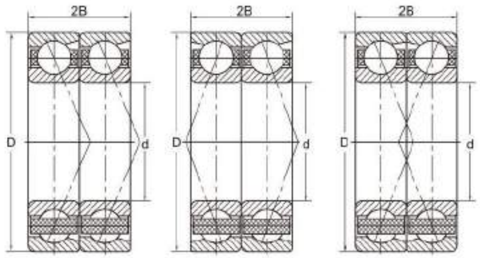


基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm			
105	190	36	2.1	1.1	276	308	3800	5400	7.56	117	178	185	2.1	1	7221C /DT	7221C /DB	7221C /DF
	190	36	2.1	1.1	263	294	2600	3300	7.56	117	178	185	2.1	1	7221AC /DT	7221AC /DB	7221AC /DF
	190	36	2.1	1.1	231	258	2300	2800	8.6	117	178	185	2.1	1	7221B /DT	7221B /DB	7221B /DF
	225	49	3	1.1	384	452	2400	3700	16.36	120	210	219	3	1	7321C /DT	7321C /DB	7321C /DF
	225	49	3	1.1	369	436	2200	2800	16.34	120	210	219	3	1	7321AC /DT	7321AC /DB	7321AC /DF
	225	49	3	1.1	328	388	2000	2600	18.52	120	210	219	3	1	7321B /DT	7321B /DB	7321B /DF
110	170	28	2	1	169	214	4000	5600	3.94	120	160	166	2	1	7022C /DT	7022C /DB	7022C /DF
	170	28	2	1	160	202	3100	3600	3.94	120	160	166	2	1	7022AC /DT	7022AC /DB	7022AC /DF
	170	28	2	1	138	176	2600	3300	4.52	120	160	166	2	1	7022B /DT	7022B /DB	7022B /DF
	200	38	2.1	1.1	299	344	3600	5000	8.92	123	187	195	2.1	1	7222C /DT	7222C /DB	7222C /DF
	200	38	2.1	1.1	286	328	2400	3100	8.92	123	187	195	2.1	1	7222AC /DT	7222AC /DB	7222AC /DF
	200	38	2.1	1.1	250	290	2200	2700	10.1	123	187	195	2.1	1	7222B /DT	7222B /DB	7222B /DF
	240	50	3	1.1	403	482	2300	3600	19.1	125	225	234	3	1	7322C /DT	7322C /DB	7322C /DF
	240	50	3	1.1	388	464	2200	2600	19.08	125	225	234	3	1	7322AC /DT	7322AC /DB	7322AC /DF
	240	50	3	1.1	346	416	1900	2400	21.6	125	225	234	3	1	7322B /DT	7322B /DB	7322B /DF
120	180	28	2	1	172	226	3800	5400	4.18	131	169	176	2	1	7024C /DT	7024C /DB	7024C /DF
	180	28	2	1	164	214	3000	3400	4.18	131	169	176	2	1	7024AC /DT	7024AC /DB	7024AC /DF
	180	28	2	1	140	185	2600	3000	4.86	131	169	176	2	1	7024B /DT	7024B /DB	7024B /DF
	215	40	2.1	1.1	322	386	3400	4600	10.66	133	202	210	2.1	1	7224C /DT	7224C /DB	7224C /DF
	215	40	2.1	1.1	307	368	2200	2800	10.64	133	202	210	2.1	1	7224AC /DT	7224AC /DB	7224AC /DF
	215	40	2.1	1.1	268	324	2000	2600	12.14	133	202	210	2.1	1	7224B /DT	7224B /DB	7224B /DF
	260	55	3	1.1	453	578	2100	3400	25	136	244	254	3	1	7324C /DT	7324C /DB	7324C /DF
	260	55	3	1.1	436	556	2000	2500	25	136	244	254	3	1	7324AC /DT	7324AC /DB	7324AC /DF
	260	55	3	1.1	387	494	1800	2200	28.2	136	244	254	3	1	7324B /DT	7324B /DB	7324B /DF
130	200	33	2	1	216	288	3600	4900	6.46	142	188	195	2	1	7026C /DT	7026C /DB	7026C /DF
	200	33	2	1	205	274	2800	3300	6.46	142	188	195	2	1	7026AC /DT	7026AC /DB	7026AC /DF



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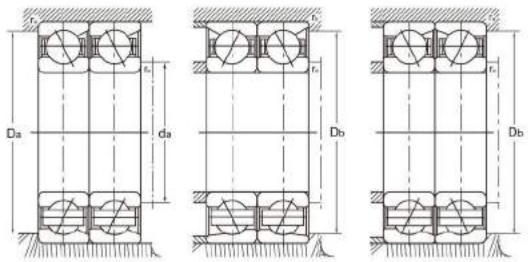


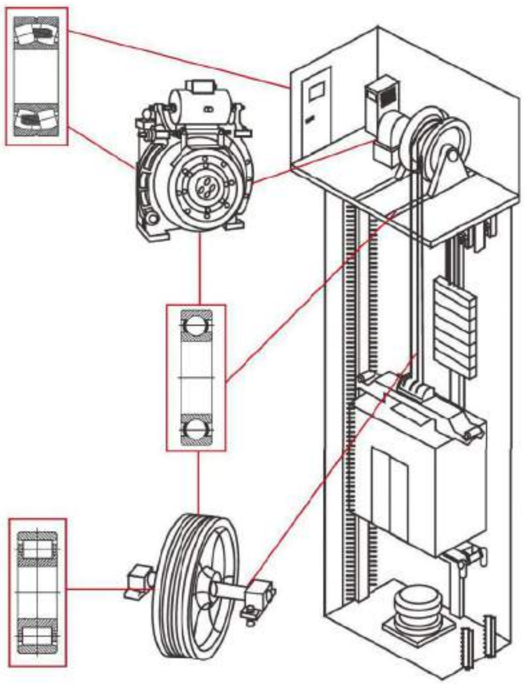
基本尺寸 Basic dimension					基本额定载荷 Basic load rating		极限转速 Limited rotation speed		重量 Weight	安装尺寸 Installation dimension					轴承代号 Bearing code		
d	D	B	r	r1	Cr	Cor	脂 Grease	油 Oil	Wt ≈	da min	Da max	Db max	ra max	rb max	串联 Tandem	背对背 Back to back	面对面 Face to face
mm	mm	mm	min	min	kN	kN	r/min	r/min	kg	mm	mm	mm	mm	mm			
	200	33	2	1	176	236	2300	2700	7.44	142	188	195	2	1	7026B /DT	7026B /DB	7026B /DF
	230	40	3	1.1	335	420	3200	4300	12.28	144	216	224	3	1	7226C /DT	7226C /DB	7226C /DF
	230	40	3	1.1	320	400	2100	2600	12.28	144	216	224	3	1	7226AC /DT	7226AC /DB	7226AC /DF
130	230	40	3	1.1	278	350	1900	2400	13.88	144	216	224	3	1	7226B /DT	7226B /DB	7226B /DF
	280	58	4	1.5	478	630	2000	3200	30.4	147	263	273	4	1.5	7326C /DT	7326C /DB	7326C /DF
	280	58	4	1.5	458	606	1800	2300	30.4	147	263	273	4	1.5	7326AC /DT	7326AC /DB	7326AC /DF
	280	58	4	1.5	406	538	1700	2000	34.4	147	263	273	4	1.5	7326B /DT	7326B /DB	7326B /DF
	210	33	2	1	221	304	3600	4600	6.9	152	198	205	2	1	7028C /DT	7028C /DB	7028C /DF
	210	33	2	1	208	288	2600	3200	6.9	152	198	205	2	1	7028AC /DT	7028AC /DB	7028AC /DF
	210	33	2	1	179	248	2200	2600	7.9	152	198	205	2	1	7028B /DT	7028B /DB	7028B /DF
	250	42	3	1.1	375	498	3100	4100	16.2	155	235	244	3	1	7228C /DT	7228C /DB	7228C /DF
140	250	42	3	1.1	356	474	1900	2400	16.18	155	235	244	3	1	7228AC /DT	7228AC /DB	7228AC /DF
	250	42	3	1.1	309	416	1800	2200	17.64	155	235	244	3	1	7228B /DT	7228B /DB	7228B /DF
	300	62	4	1.5	567	794	1900	3100	37.2	158	282	293	4	1.5	7328C /DT	7328C /DB	7328C /DF
	300	62	4	1.5	546	764	1700	2100	37.2	158	282	293	4	1.5	7328AC /DT	7328AC /DB	7328AC /DF
	300	62	4	1.5	484	682	1500	1900	41.6	158	282	293	4	1.5	7328B /DT	7328B /DB	7328B /DF
	225	35	2.1	1	273	364	2800	3700	8.22	162	213	220	2.1	1	7030C /DT	7030C /DB	7030C /DF
	225	35	2.1	1	258	346	2400	3000	8.22	162	213	220	2.1	1	7030AC /DT	7030AC /DB	7030AC /DF
	225	35	2.1	1	221	300	2000	2500	9.38	162	213	220	2.1	1	7030B /DT	7030B /DB	7030B /DF
	270	45	3	1.1	429	582	3000	4000	8.12	164	256	263	2.5	1	7230C /DT	7230C /DB	7230C /DF
150	270	45	3	1.1	409	564	1800	2500	8.12	164	256	263	2.5	1	7230AC /DT	7230AC /DB	7230AC /DF
	270	45	3	1.1	356	494	1700	2000	11.2	164	256	263	2.5	1	7230B /DT	7230B /DB	7230B /DF
	320	65	4	1.5	596	864	1800	2700	26	168	302	311	3	1.5	7330C /DT	7330C /DB	7330C /DF
	320	65	4	1.5	571	832	1600	2000	26	168	302	311	3	1.5	7330AC /DT	7330AC /DB	7330AC /DF
	320	65	4	1.5	507	740	1500	1800	26.7	168	302	311	3	1.5	7330B /DT	7330B /DB	7330B /DF

电梯和扶梯应用

电梯行业对轴承性能有较高要求，主要体现在高速、平稳、静音表现。中国是全球电梯行业最大的制造国和消费市场，全球大部分的知名电梯企业在中国都设有工厂，作为电梯行业首批实现进口替代的轴承供应商，为大部分龙头企业连续配套十多年，占据行业领先份额。

Elevator & Escalator Applications

The elevator industry has higher requirements for bearing performance, which is mainly focus on high-speed, smooth and noise performance. China is the largest manufacturing country and consumer market in the world's elevator industry, and most of the world's famous elevator companies have factories in China. As one of the first bearing suppliers to realize import substitution in the elevator industry, JXN already has been supporting most of the leading enterprises in these industries for more than ten years, and has always occupied the leading share in this market.

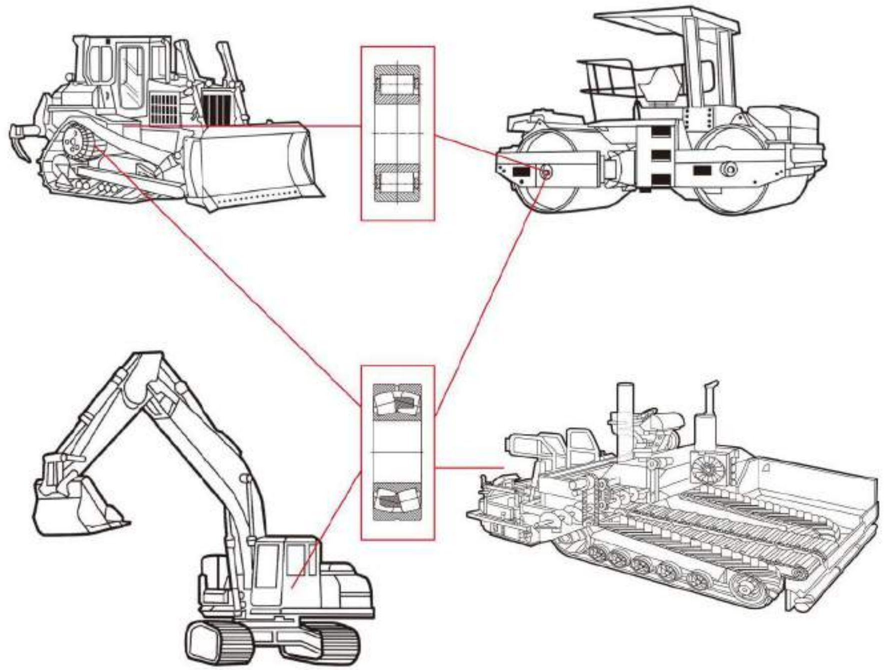


工程机械应用

工程机械主要应用于交通运输建设和工业民用建筑等，设备种类包括挖掘、起重、压实、桩工、路面施工、混凝土机械等。针对不同设备的应用特点，JXN®开发了各系列的专用产品，载荷能力更强且组装调整时间更少，保证了客户设备在恶劣的环境下能够安全、可靠地连续工作。例如专用于振动压路机的JXN® MEQ系列产品，能有效应对因激振力大、振动频率高、连续作业而导致的轴承发热、烧伤问题，因可靠性、长寿命赢得客户认可，几十年始终是多家知名工程机械企业的优先选择。

Construction Machinery Applications

Construction machinery is mainly used in transportation, construction, industrial and civil construction etc. The types of equipment include excavator, crane, road roller, piling machinery, pavement construction machinery, concrete machinery etc. According to the application characteristics of different equipment, JXN has developed a series of special products, with stronger load capacity and less time for assembly and adjustment, to ensure that customers' equipment can continuously work with safety and reliability under harsh environment. For example, JXN®MEQ series products, specially designed for vibrating road roller, can effectively deal with bearing heating and burning problems caused by high vibrating force, high vibrating frequency and continuous operation. It has been recognized by customers for its reliability and long life, and has been the preferred brand of many well-known construction machinery enterprises for decades.

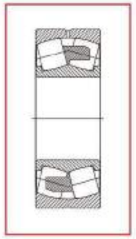


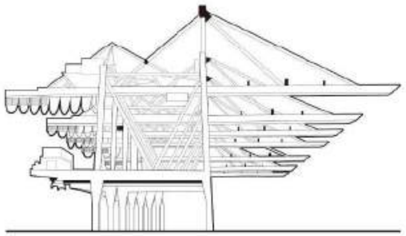
起重运输机械应用

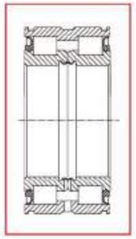
起重运输机械常处于间歇性运动，反复处于启动、制动、正反向运转的工作状态；运行速度虽然不高，但经常承受重载；大部分长期在粉尘或海水腐蚀等恶劣环境下连续工作。 JXN 全系列产品在国内外客户端有几十年的成功配套经验，应用于齿轮箱、行走机构、提升机构、变幅机构、回转机构等场合，具有高承载、易维护、长寿命等特点，保证客户设备高效、连续、可靠运行。

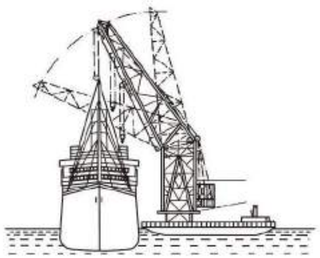
Hoist & Crane Applications

Hoist machinery is often in intermittent motion, working state is repeatedly in the starting, braking, forward and backward running; Although the speed is not high, but often bear heavy load; Most of them long time work continuously under harsh environment such as dust or seawater corrosion. The whole series of JXN products have decades of successful supporting experience in domestic and foreign customers. They are used in gearbox, running mechanism, lifting mechanism, luffing mechanism and swing mechanism etc. They have the characteristics of high bearing capacity, easy maintenance, long life etc, to ensure the efficient, continuous and reliable operation of client equipment.







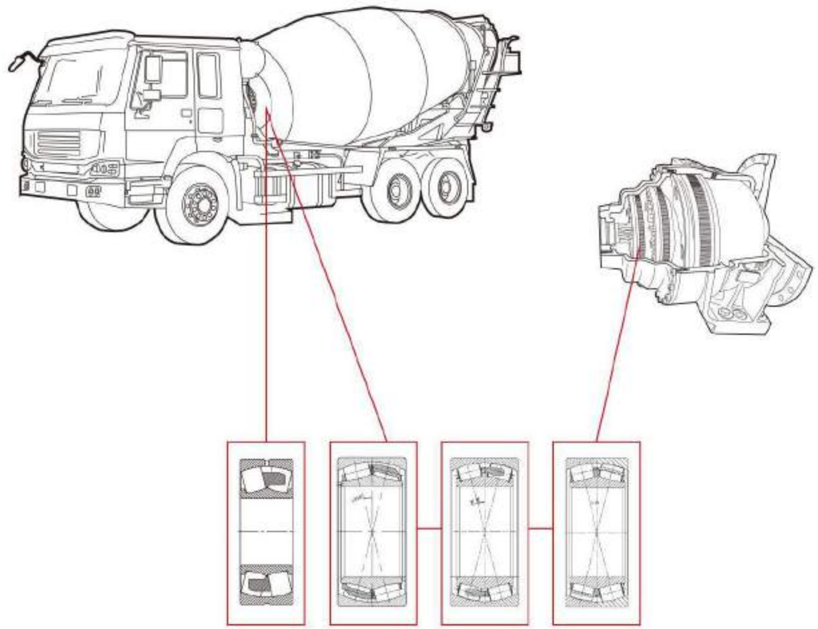


混凝土搅拌车应用

混凝土搅拌车专用减速机不同于传统减速机，其结构设计和工艺加工都十分特殊，要求轴承不仅适应低速重载、偏载、冲击载荷的恶劣工况；还要在法兰盘联接传递大摆角变差时，仍保持平稳、可靠、低噪音运行。

Concrete Mixing Truck Applications

The concrete mixing truck uses a special reducer, which is different from the traditional reducer. Its structural design and manufacturing process are very special, so Bearing is required to adapt to the bad working conditions of low speed, heavy load, partial load and impact load. Especially even when the flange connection transfer large swing Angle variation still need keep stable, reliable, low noise operation.



冶金行业应用

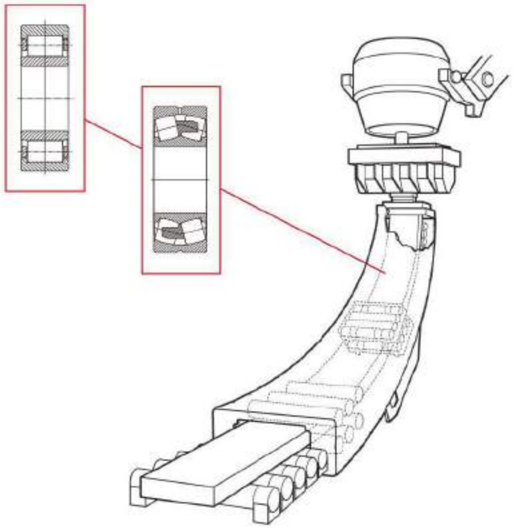
冶金生产设备通常在高温、高压、重负荷、多粉尘的恶劣条件下连续作业，对设备性能有极高要求。JXN®高品质轴承有助于客户设备的稳定运行。

JXN®产品主要应用于连铸机、热轧前后及加热炉的输送辊道等。我们的连铸机系列产品应用于结晶器振动装置、扇形段及冷却段输送辊道，已在国内外多家钢厂的新生产线上成功运行；同时，作为钢铁企业日常维修部件的可靠供应商，我们的产品也广泛应用于冶金齿轮箱、风机、振动筛、输送机等设备。

Primary Metal Applications

Working environment of the equipments that used at Metallurgical industry need continuous operation in the harsh conditions that under high temperature, high pressure, heavy load and heavy dust, so they have high requirements for equipment performance.

JXN® high quality bearing contribute stable operation of customer equipment. Main applications for JXN® bearing used on continuous casting machine, input and output conveyors for hot rolling mill and heating furnace etc. Our products applied on continuous casting machine including mould oscillation device, conveying roller of sector section and cooling section, and already have been successfully put into normal operation in many new production lines of steel mills at home and abroad. At the same time, as a reliable supplier for daily maintenance in iron and steel enterprises, our products are also widely used in equipment such as gear box, Blower & fan, oscillating screen, conveyor etc. in metallurgical industry.

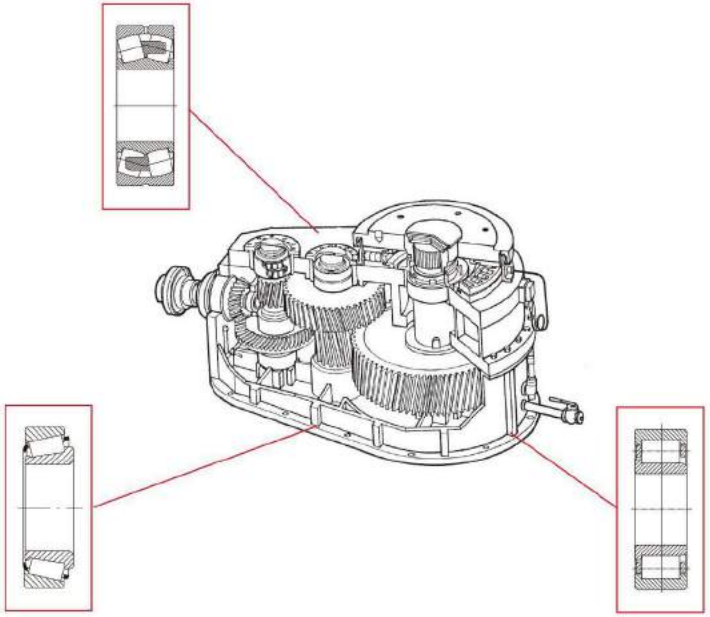


齿轮箱应用

齿轮箱的主要功能是变速，改变扭矩，一般不间断连续运行。要求轴承具有高可靠性、长寿命、低噪音。针对齿轮箱行业的应用特点，JXN®选用更加纯净的轴承钢，通过提高轴承加工精度等措施开发出多个系列齿轮箱轴承，以更优性价比为客户降低成本、提高效率。

Gearbox Applications

The main function of gearbox is to change speed, change torque, and generally run continuously without interruption. The bearings are required to have high reliability, long life and low noise. According to the application characteristics of the gearbox industry, JXN develops several series of gearbox bearings through selecting more pure bearing steel and improving the bearing manufacturing precision, to help customer to reduce the cost and improve the efficiency with these high cost performance bearings.

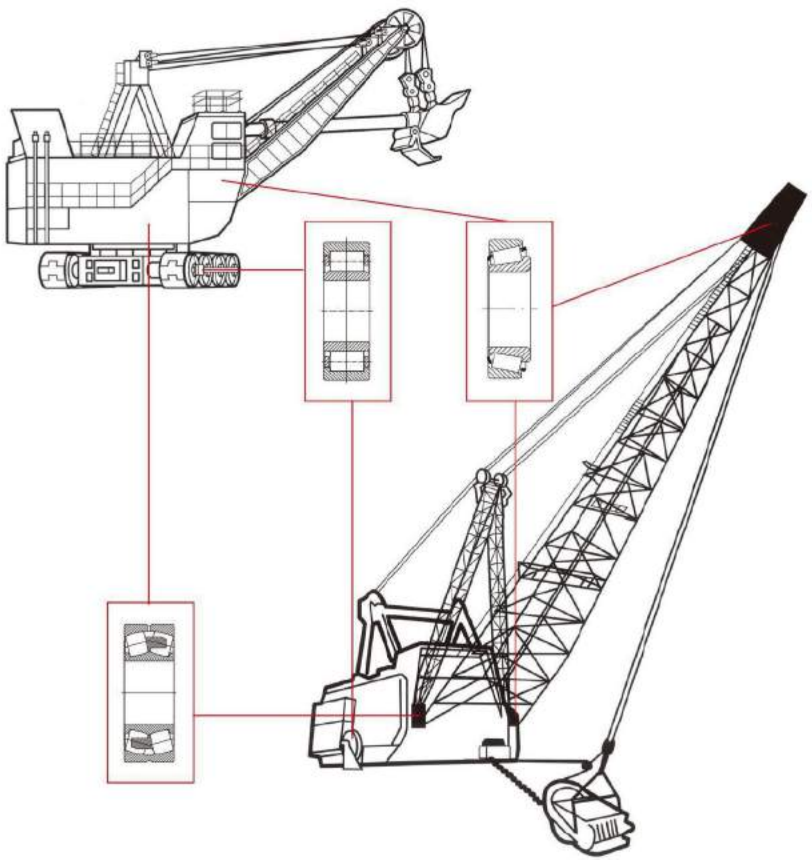


采矿业应用

采矿设备通常在粉尘、泥水等恶劣环境下运行，需承受低速重载、冲击、振动等极端应用工况，其严酷的作业环境对设备的可靠运行是极大的挑战。 JXN 更具耐用性、可靠性的矿机专用系列产品在业内已有二十多年的成功配套经验，有效保证了客户设备的持续稳定运行，减少非计划停机，为客户提升了效益。

Mining Applications

Mining equipment usually operates under harsh environments such as dust and muddy water condition, and needs to bear extreme application conditions such as low speed and heavy load, impact and vibration. Its harsh operating environment causes a great challenge to the reliable operation of the equipment. JXN has more than 20 years of successful experience with providing more durable and reliable series bearings for mining industry, effectively ensure the continuous and stable operation of customer equipment, reduce unplanned machine downtime, and improve the benefits for customers.

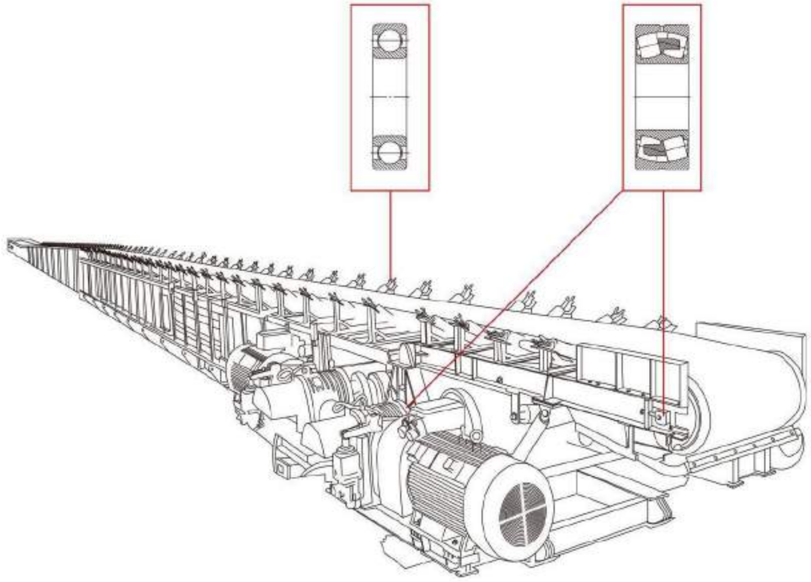


煤矿机械应用

煤矿机械的特点是结构紧凑，安全可靠性好，设备成套使用，生产效率高。要求轴承在重负荷、高冲击、高污染条件下安全可靠运行。 JXN 根据该行业特点开发了多品种专用轴承。采用特殊轴承钢，独特的产品设计，特殊的热处理，满足在高污染、冲击负荷条件下长寿命的要求。

Coal Mine Machinery Applications

Coal mine machinery is characterized by compact structure, good safety and reliability, complete use of equipment and high manufacturing efficiency. The bearings are required to operate safely and reliably under heavy load, high impact and high pollution conditions. According to the characteristics of the industry, JXN developed a variety of special bearings with special bearing steel, unique product design and special heat treatment, to meet the bearing long life requirement under the conditions of high pollution and impact load.

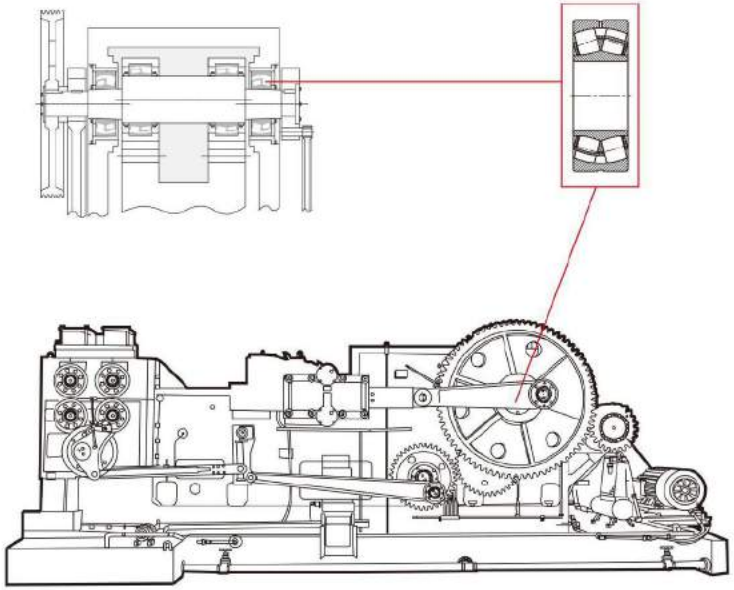


冷镦机应用

冷镦机行业轴承工况恶劣，循环冲击载荷大，润滑条件差，杂质多易磨损。因为突发性维修成本高，客户对轴承耐磨性、可靠性及寿命有着更高的要求。 JXN冷镦机专用系列轴承选用优质原材料和特殊定制保持架，优化结构设计，采用专有热处理工艺，轴承具有高承载、耐磨损、抗冲击、长寿命的特性，是替代进口的理想选择。

Cold Heading Machinery Applications

In cold heading machine industry, bearing working condition is bad, the cycle impact load is heavy, the lubrication condition is poor, there are many impurities produced during operation, and the bearing is easy to wear. Because of the high cost of emergency maintenance, customers have higher requirements for bearing wear resistance, reliability and working life. JXN special series bearings for cold heading machine industry are selected from high quality raw materials, special customized retainers, optimized bearing design, and adopted special heat treatment process. The JXN bearings have the characteristics of high load, wear resistance, impact resistance and long life, so they are the best choice for import substitution.

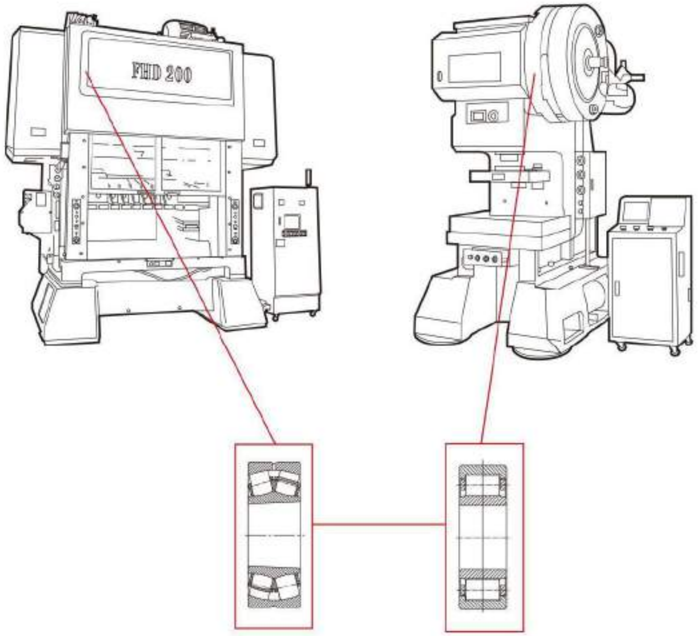


高速冲床应用

JXN高速冲床专用系列轴承，通过选用优质钢材和高强度保持架，设计上优化结构，工艺上提高加工精度，采用专有热处理工艺，制造出抗冲击、耐磨损、高转速、低振动的高速冲床专用轴承，实现轴承的长寿命、高可靠和节能化。

High Speed Press Applications

JXN special series bearings for high-speed press industry, through choosing the high quality steel and high strength cage, optimizing the structure design, improving manufacturing precision, adopting special heat treatment process, to produce special high speed press bearing with shock resistance, wear resistance, high speed, low vibration, and realize long life, high reliability and energy saving for bearing.

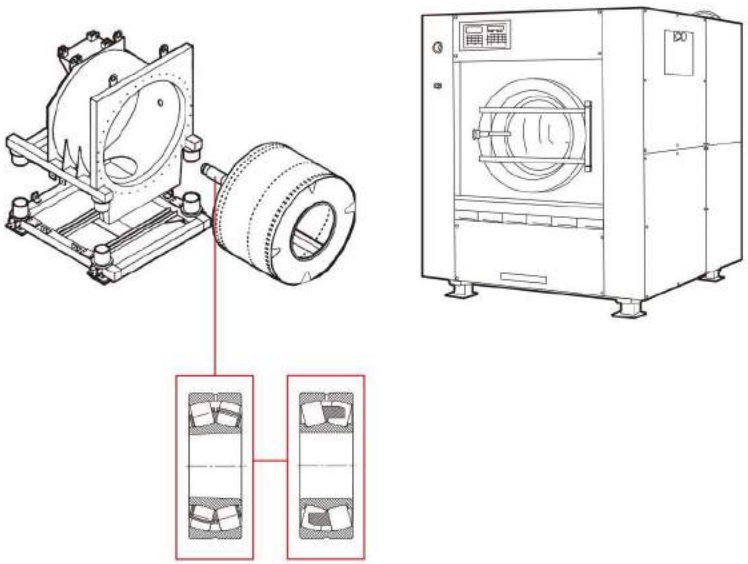


洗涤机械应用

为更好满足洗涤机械在高转速、高温升的条件下平稳运行的应用要求，JXN 改进工艺标准，为行业提供了更高精度的专用轴承系列，既满足洗涤机械较高承载与高速运转要求，运行更安静平稳，又能有效减缓运转时产生的发热，提高使用寿命。

Laundry Machinery Applications

To better meet the laundry machine smoothly running requirement under the condition of high speed, high temperature rising, J X N improve manufacturing process standards, provides a series of special bearing with higher precision for this industry. Not only meet the requirement for higher load and high speed, running smoothly and quietly of washing machine, but also effectively reduce heat generating when machine operate and increase machine service life.

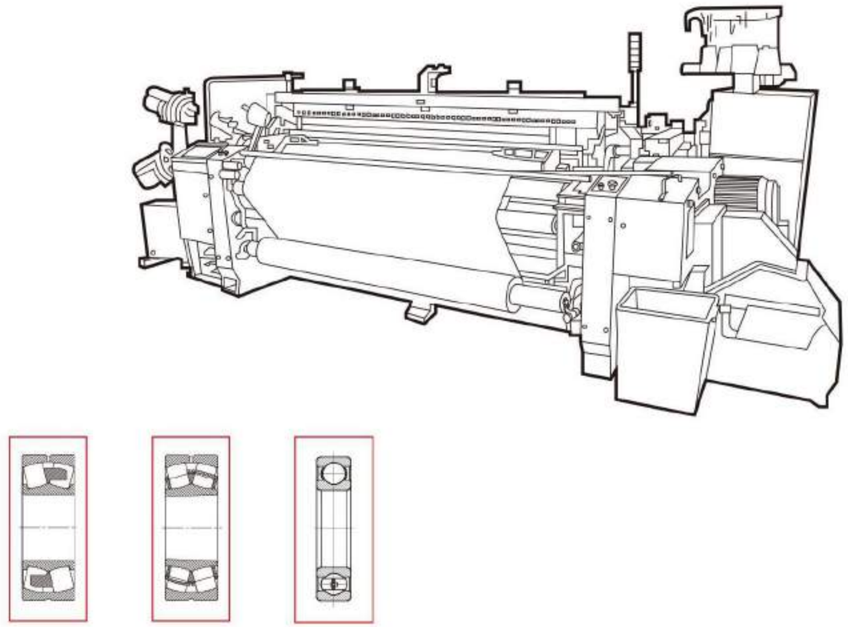


纺织机械应用

随着纺织机械不断向轻型化、多功能、高速化方向发展，对配套轴承的结构、性能、可靠性提出了更高的要求。 JXN 全系列产品在纺机领域得到广泛应用，以高转速、低振动、低噪音、长寿命赢得客户的长期信赖。

Textile Machinery Applications

With the development of textile machinery towards light, multi-function and high-speed, higher requirements have been put forward for the structure, performance and reliability of supporting bearings. The whole series of JXN product are widely used and win the long-term trust of customers in the field of textile machine, with high speed, low vibration, low noise, and long life.

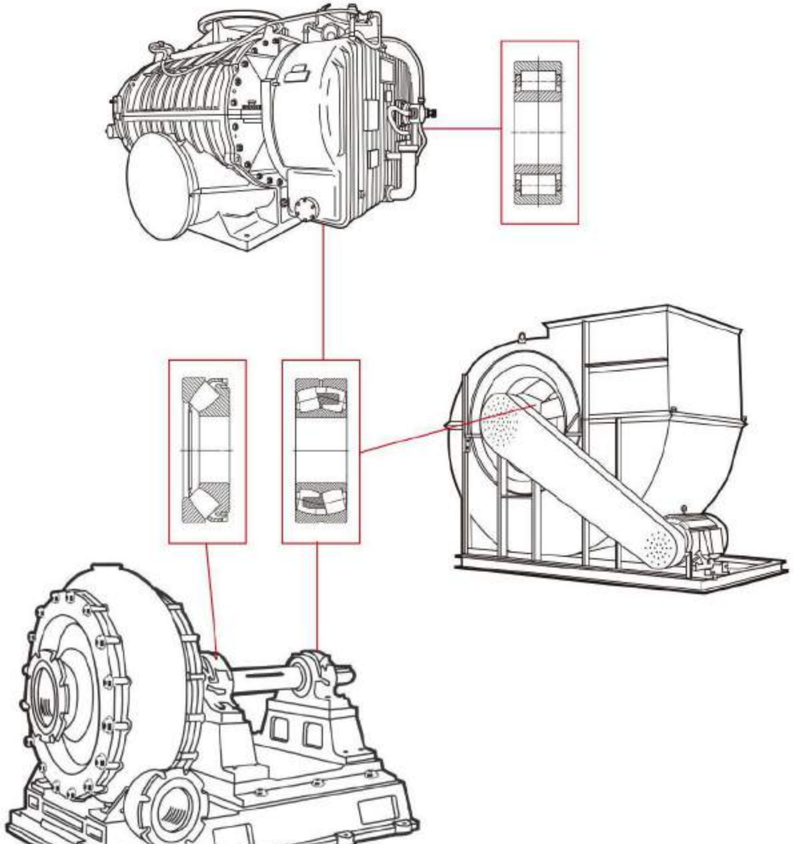


风机应用

风机是用于压缩气体或输送气体的机械，一般用于通风、排尘或冷却。风机行业对轴承的性能需求参差不齐，JXN 立足于较高端的风机应用，建立了低噪音、高稳定、长寿命的市场口碑。几十年如一日，以优质、稳定的产品，为客户有效解决连续、高速运行导致的轴承高损耗，以及轴承易发热、噪音大的问题。

Blower & Fan Applications

Blower & fan is machinery used to compressing gas or conveying gas, generally used for ventilating, dust exhausting or cooling. The fan industry has uneven performance requirements for bearings. JXN is based on higher-end fan applications and already has established a product reputation of low noise, high stability and long life. For decades, the company has been providing high-quality and stable products to customers, effectively solve high bearing loss issues caused by continuous and high-speed operation, as well as bearing heating and noise issues.

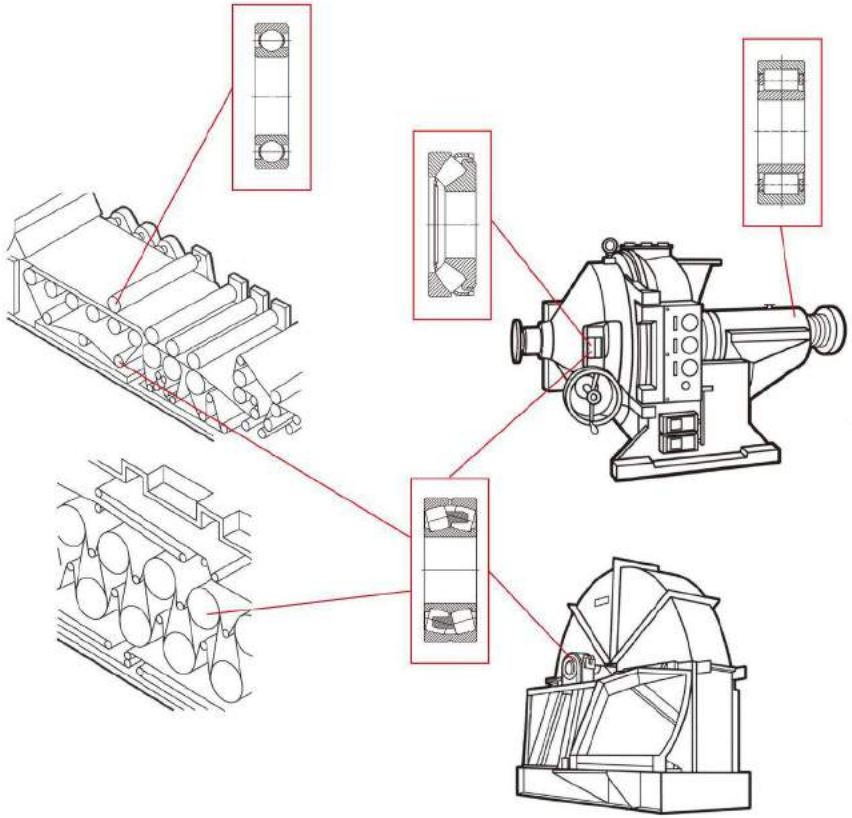


造纸机械应用

造纸设备类型繁多，运行环境千差万别，具有重载、高速、有冲击载荷、温度高、湿度大的特点。JXN全系列产品能满足造纸设备不同部位的应用需求，有效应对重载、高温、高速的应用环境，确保设备长期、可靠运行，是多家知名造纸机械企业的可靠合作伙伴。

Paper Machinery Applications

There are many types of papermaking equipment, and the operating environment varies from place to place. It has the characteristics of heavy load, high speed, impact load, high temperature and high humidity. The whole series of JXN products can meet the application requirements of different parts of paper making equipment, effectively deal with the application environment of heavy load, high temperature and high speed, and ensure the long-term and reliable operation of the equipment. Now TWB is the reliable partner of many well-known papermaking machinery enterprises.

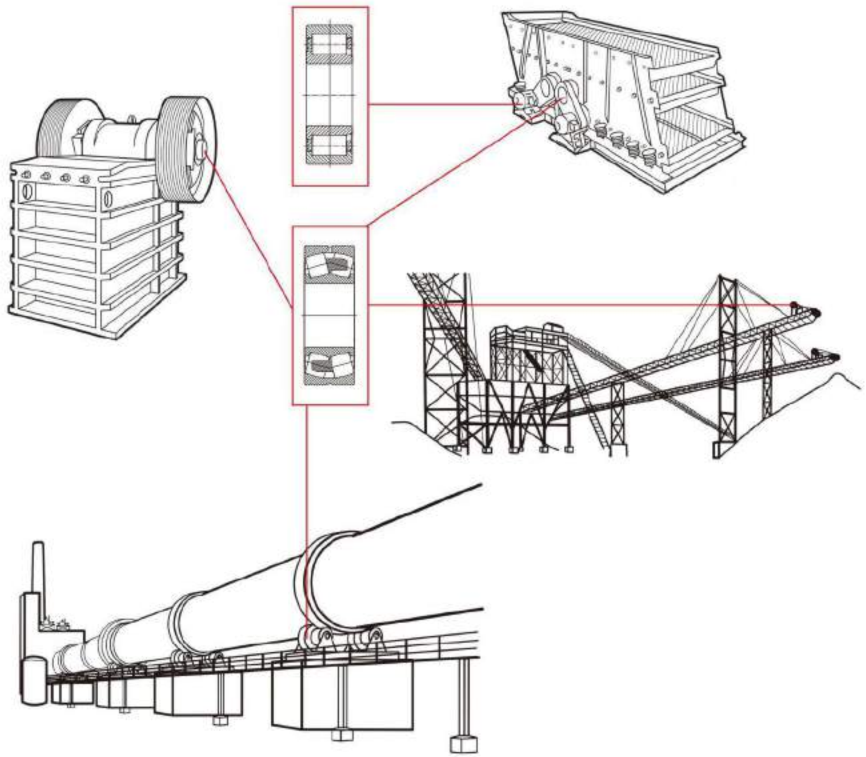


水泥行业应用

水泥生产主要包括矿石采集及破碎、生料制备与预均化、煅烧、熟料粉磨等工序，生产设备类别复杂、运行环境恶劣、运作连续、可靠性要求高。JXN全系列轴承满足水泥行业需求，具备高性能、高可靠、长寿命的特性，帮助客户提高设备连续运行的可靠性，减少用户维护和修理的成本。

Cement Industry Applications

The main processes for Cement production include ore collection and crushing, raw meal preparation and pre-homogenization, calcination, clinker grinding etc. The categories of production equipment have complex, poor operating environment, continuous operation and high reliability requirements. The full range of JXN bearings meet the needs of the cement industry, with high performance, high reliability, long life characteristics, to help customers improve the reliability of continuous operation of equipment, reduce maintenance and repair costs.



JXN 服务理念：为客户创造价值

除了轴承本身的品质保证外，轴承的正确选型，以及安装、使用和维护对轴承的表现有至关重要的影响。JXN轴承品质稳定可靠，JXN工程技术队伍的服务将保证您在使用轴承时运转无忧。

JXN 可以为您提供的技术服务包括:

- 替代进口轴承应用评估
- 轴承选型最优方案评估
- 轴承应用整体解决方案，降低维护成本
- 轴承失效分析和解决方案
- 轴承安装、调试、使用、维护的现场指导与培训

JXN Service Concept: Create Value for Customer

Besides the quality, exact arrangement, fixing, usage and maintenance of the bearings will also give key influence to their performance.The quality of JXN bearings is steady and reliable; the service provided by JXN technical team ensures the bearings trustworthy.

The Technical Service Provided by JXN Includes:

- The evaluation of application in replacing imported bearing
- The evaluation of optimized solution for bearing selection
- Integrated solution of bearing application, save maintainence cost
- Analysis and solution to bearing failure
- On-site guidance and training in bearing fixing, adjustment, usage and maintenance

转换表
Elevator & Escalator Applications

英寸至毫米 Inches to Millimeters

inches	英寸	0	1	2	3	4	5	6	7	8
0	0.0000	0.000	25.400	50.800	76.200	101.600	127.000	152.400	177.800	203.200
1/16	0.0625	1.588	26.988	52.388	77.788	103.188	128.588	153.988	179.388	204.788
1/8	0.1250	3.175	28.575	53.975	79.375	104.775	130.175	155.575	180.975	206.375
3/16	0.1875	4.762	30.162	55.562	80.962	106.362	131.762	157.162	182.562	207.962
1/4	0.2500	6.350	31.750	57.150	82.500	107.950	133.350	158.750	184.150	209.550
5/16	0.3125	7.938	33.338	58.738	84.138	109.538	134.938	160.338	185.735	211.138
3/8	0.3750	9.525	34.925	60.325	85.725	111.125	136.525	161.925	187.325	212.725
7/16	0.4375	11.112	36.512	61.912	87.312	112.712	138.112	163.512	188.912	214.312
1/2	0.5000	12.700	38.100	63.500	88.900	114.300	139.700	165.100	190.500	215.900
9/16	0.5625	14.288	39.688	65.088	90.488	115.888	141.288	166.688	192.088	217.488
5/8	0.6250	15.875	41.275	66.675	92.075	117.475	142.875	168.275	193.675	219.075
11/16	0.6875	17.462	42.862	68.262	93.662	119.062	144.462	169.862	195.262	220.662
3/4	0.7500	19.050	44.450	69.850	95.250	120.650	146.050	171.450	196.850	222.250
13/16	0.8125	20.638	46.038	71.438	96.838	122.238	147.638	173.038	198.438	223.838
7/8	0.8750	22.225	47.625	73.025	98.425	123.825	149.225	174.625	200.025	225.425
15/16	0.9375	23.812	49.212	74.612	100.012	125.412	150.812	176.212	201.612	227.012

inches	英寸	9	10	11	12	13	14	15
0	0.0000	228.600	254.000	279.400	304.800	330.200	355.600	381.000
1/16	0.0625	230.188	255.588	280.988	306.388	331.788	357.188	382.588
1/8	0.1250	231.775	257.175	282.575	307.975	333.375	358.775	384.175
3/16	0.1875	233.362	258.762	284.162	309.562	334.962	360.362	385.762
1/4	0.2500	234.950	260.350	285.750	311.150	336.550	361.950	387.350
5/16	0.3125	236.538	261.938	287.338	312.738	338.138	363.538	388.938
3/8	0.3750	238.125	263.525	288.925	314.325	339.725	365.125	390.525
7/16	0.4375	239.712	265.112	290.512	315.912	314.312	366.712	392.112
1/2	0.5000	241.300	266.700	292.100	317.500	342.900	368.300	393.700
9/16	0.5625	242.888	268.288	293.688	319.088	344.488	369.888	395.288
5/8	0.6250	244.475	269.875	295.275	320.675	346.075	371.475	396.875
11/16	0.6875	246.062	271.462	296.862	322.262	347.662	373.062	398.462
3/4	0.7500	247.650	273.050	298.450	323.850	349.250	374.650	400.050
13/16	0.8125	249.238	274.638	300.038	325.438	350.838	376.238	401.638
7/8	0.8750	250.825	276.225	301.625	327.025	352.425	377.825	403.225
15/16	0.9375	252.412	277.812	303.212	328.612	354.012	379.412	404.812

Norm No.350 英国标准 }
Norm No.B48.1 美国标准 } 1 英寸=25.400 毫米

德国标准 4890,1 毫米 = $\frac{1}{25.4}$ 英寸

B.S.I.Norm No.350 }
A.S.A.Norm No.B48.1 } 1 inch=25.400mm(exact)

DIN 4890,1mm= $\frac{1}{25.4}$ inches

Units 单位

inches		10
0	–	254
1	25.4	279.4
2	50.8	304.8
3	76.2	330.2
4	101.6	355.6
5	127	381
6	152.4	406.4
7	177.8	431.8
8	203.2	457.2
9	228.6	482.6

分数 Fractions

1/10"		1/100"		1/1000"		1/10000"	
inches	mm	inches	mm	inches	mm	inches	mm
0.1	2.54	0.01	0.254	0.001	0.0254	0.0001	0.00254
0.2	5.08	0.02	0.508	0.002	0.0508	0.0002	0.00508
0.3	7.62	0.03	0.762	0.003	0.0762	0.0003	0.00762
0.4	10.16	0.04	1.016	0.004	0.1016	0.0004	0.01016
0.5	12.70	0.05	1.270	0.005	0.1270	0.0005	0.01270
0.6	15.24	0.06	1.524	0.006	0.1524	0.0006	0.01524
0.7	17.78	0.07	1.778	0.007	0.1778	0.0007	0.01778
0.8	20.32	0.08	2.032	0.008	0.2032	0.0008	0.02032
0.9	22.86	0.09	2.286	0.009	0.2286	0.0009	0.02286

毫米至英寸 Millimeters to Inches

mm		10	20	30	40	50	60	70	80	90
0	–	0.39370	0.78740	1.18110	1.57480	1.96850	2.36220	2.75591	3.14961	3.54331
1	0.03937	0.43307	0.82677	1.22047	1.61417	2.00787	2.40157	2.79528	3.18898	3.58268
2	0.07874	0.47244	0.86614	1.25984	1.65354	2.04724	2.44094	2.83465	3.22835	3.62205
3	0.11811	0.51181	0.90551	1.29921	1.69291	2.08661	2.48031	2.87402	3.26772	3.66142
4	0.15748	0.55118	0.94488	1.33858	1.73228	2.12598	2.51969	2.91339	3.30709	3.70079
5	0.19685	0.59055	0.98425	1.37795	1.77165	2.16535	2.55906	2.95276	3.34646	3.74016
6	0.23622	0.62992	1.02362	1.41732	1.71102	2.20472	2.59843	2.99213	3.38583	3.77953
7	0.27559	0.66929	1.06299	1.45669	1.85039	2.24409	2.63780	3.03150	3.42520	3.81890
8	0.31496	0.70866	1.10236	1.49606	1.88976	2.28346	2.67717	3.07087	3.46457	3.85827
9	0.35433	0.74803	1.14173	1.53543	1.92913	2.32283	2.71654	3.11024	3.50394	3.89764

mm		100	200	300
0	–	3.93701	7.87402	11.81100
10	0.39370	4.33071	8.26772	12.20470
20	0.78740	4.72441	8.66142	12.59840
30	1.18110	5.11811	9.05512	12.99210
40	1.57480	5.51181	9.44882	13.38580
50	1.96850	5.90551	9.84252	13.77950
60	2.36220	6.29921	10.23620	14.17320
70	2.75591	6.69291	10.62990	14.56690
80	3.14961	7.08661	11.02360	14.96060
90	3.54331	7.48031	11.41730	15.35430

分数 Fractions

1/10mm		1/100mm		1/1000mm	
mm	inches	mm	inches	mm	inches
0.1	0.00394	0.01	0.00039	0.001	0.000039
0.2	0.00787	0.02	0.00079	0.002	0.000079
0.3	0.01181	0.03	0.00118	0.003	0.000118
0.4	0.01575	0.04	0.00157	0.004	0.000157
0.5	0.01969	0.05	0.00197	0.005	0.000197
0.6	0.02362	0.06	0.00236	0.006	0.000236
0.7	0.02756	0.07	0.00276	0.007	0.000276
0.8	0.03150	0.08	0.00315	0.008	0.000315
0.9	0.03543	0.09	0.00354	0.009	0.000354

依据洛氏硬度测试值转换成的其它硬度规范的对应值
Approx. Hardness Conversion Numbers for Steel, Based on Rockwell C

Rockwell C-Scale Hardness Number 洛氏C硬度值	HV Diamond Pyramid Hardness Number Vickers 金钢钻压头的维氏硬度值	Brinell Hardness Number 10mm ball 3000 kg load 布氏硬度（10毫米钢球，3000公斤负荷）			Rockwell Hardness Number 洛氏硬度			Rockwell Superficial Hardness Number Superficial Brale Penetrator 洛氏表面硬度			Shore Scleroscope Hardness Number 肖氏硬度	Tensile Strength (aprox.) 1000 psi 抗拉强度（近似值）1000磅/寸²	Rockwell C-Scale Hardness Number 洛氏C硬度值
		Standard Ball 标准钢球	Hultgren Ball 赫氏球	Tungsten Carbide Ball 硬质合金球	A-Scale 60 kg load Brale Penetrator A-刻度 60公斤负荷 布氏压头	B-Scale 100 kg load 1/16" Dia Ball B-刻度 100公斤负荷 1/16"直径钢球	D-Scale 100 kg Brale Penetrator D-刻度 100公斤负荷 布氏压头	15-N Scale 15 kg load 15-N刻度 15公斤负荷	30-N Scale 30 kg load 30-N刻度 30公斤负荷	45-N Scale 45 kg load 45-N刻度 45公斤负荷			
68	940	–	–	–	85.6	–	76.9	93.2	84.4	75.4	97	–	68
67	900	–	–	–	85	–	76.1	92.9	83.6	74.2	95	–	67
66	865	–	–	–	84.5	–	75.4	92.5	82.8	73.3	92	–	66
65	832	–	–	739	83.9	–	74.5	92.2	81.9	72	91	–	65
64	800	–	–	722	83.4	–	73.8	91.8	81.1	71	88	–	64
63	772	–	–	705	82.8	–	73	91.4	80.1	69.9	87	–	63
62	746	–	–	688	82.3	–	72.2	91.1	79.3	68.8	85	–	62
61	720	–	–	670	81.8	–	71.5	90.7	78.4	67.7	83	–	61
60	697	–	613	654	81.2	–	70.7	90.2	77.5	66.6	81	–	60
59	674	–	599	634	80.7	–	69.9	89.8	76.6	65.5	80	326	59
58	653	–	587	615	80.1	–	69.2	89.3	75.7	64.3	78	315	58
57	633	–	575	595	79.6	–	68.5	88.9	74.8	63.2	76	305	57
56	613	–	561	577	79	–	67.7	88.3	73.9	62	75	295	56
55	595	–	546	560	78.5	–	66.9	87.9	73	60.9	74	287	55
54	577	–	534	543	78	–	66.1	87.4	72	59.8	72	278	54
53	560	–	519	525	77.4	–	65.4	86.9	71.2	58.6	71	269	53
52	544	500	508	512	76.8	–	64.6	86.4	70.2	57.4	69	262	52
51	528	487	494	496	76.3	–	63.8	85.9	69.4	56.1	68	253	51
50	513	475	481	481	75.9	–	63.1	85.5	68.5	55	67	245	50
49	498	464	469	469	75.2	–	62.1	85	67.6	53.8	66	239	49
48	484	451	455	455	74.7	–	61.4	84.5	66.7	52.5	64	232	48
47	471	442	443	443	74.1	–	60.8	83.9	65.8	51.4	63	225	47
46	458	432	432	432	73.6	–	60	83.5	64.8	50.3	62	219	46
45	446	421	421	421	73.1	–	59.2	83	64	49	60	212	45
44	434	409	409	409	72.5	–	58.5	82.5	63.1	47.8	58	206	44
43	423	400	400	400	72	–	57.7	82	62.2	46.7	57	201	43
42	412	390	390	390	71.5	–	56.9	81.5	61.3	45.5	56	196	42
41	402	381	381	381	70.9	–	56.2	80.9	60.4	44.3	55	191	41
40	392	371	371	371	70.4	–	55.4	80.4	59.5	43.1	54	186	40
39	382	362	362	362	69.9	–	54.6	79.9	58.6	41.9	52	181	39
38	372	353	353	353	69.4	–	53.8	79.4	57.7	40.8	51	176	38
37	363	344	344	344	68.9	–	53.1	78.8	56.8	39.6	50	172	37
36	354	336	336	336	68.4	(109)	52.3	78.3	55.9	38.4	49	168	36

美国材料学会提供数据 ※ Source ASTM

依据洛氏硬度测试值转换成的其它硬度规范的对应值
Approx. Hardness Conversion Numbers for Steel, Based on Rockwell C

Rockwell C-Scale Hardness Number 洛氏C 硬度值	HV Diamond Pyramid Hardness Number Vickers 金钢钻压头的维氏硬度值	Brinell Hardness Number 10mm ball 3000 kg load 布氏硬度（10毫米钢球，3000公斤负荷）			Rockwell Hardness Number 洛氏硬度			Rockwell Superficial Hardness Number Superficial Brale Penetrator 洛氏表面硬度			Shore Scleroscope Hardness Number 肖氏硬度	Tensile Strength (aprox.) 1000 psi 抗拉强度（近似值）1000磅/寸²	Rockwell C-Scale Hardness Number 洛氏C 硬度值
		Standard Ball 标准钢球	Hultgren Ball 赫氏球	Tungsten Carbide Ball 硬质合金球	A-Scale 60 kg load Brale Penetrator A-刻度 60公斤负荷 布氏压头	B-Scale 100 kg load 1/16" Dia Ball B-刻度 100公斤负荷 1/16" 直径钢球	D-Scale 100 kg Brale Penetrator D-刻度 100公斤负荷 布氏压头	15-N Scale 15 kg load 15-N刻度 15公斤负荷	30-N Scale 30 kg load 30-N刻度 30公斤负荷	45-N Scale 45 kg load 45-N刻度 45公斤负荷			
35	345	327	327	327	67.9	(108.5)	51.5	77.7	55	37.2	48	163	35
34	336	319	319	319	67.4	(108)	50.8	77.2	54.2	36.1	47	159	34
33	327	311	311	311	66.8	(107.5)	50	76.6	53.3	34.9	46	154	33
32	318	301	301	301	66.3	(107)	49.2	76.1	52.1	33.7	44	150	32
31	310	294	294	294	65.8	(106)	48.4	75.6	51.3	32.5	43	146	31
30	302	286	286	286	65.3	(105.5)	47.7	75	50.4	31.3	42	142	30
29	294	279	279	279	64.7	(104.5)	47	74.5	49.5	30.1	41	138	29
28	286	271	271	271	64.3	(104)	46.1	73.9	48.6	28.9	41	134	28
27	279	264	264	264	63.8	(103)	45.2	73.3	47.7	27.8	40	131	27
26	272	258	258	258	63.3	(102.5)	44.6	72.8	46.8	26.7	38	127	26
25	266	253	253	253	62.8	(101.5)	43.8	72.2	45.9	25.5	38	124	25
24	260	247	247	247	62.4	(101)	43.1	71.6	45	24.3	37	121	24
23	254	243	243	243	62	100	42.1	71	44	23.1	36	118	23
22	248	237	237	237	61.5	99	41.6	70.5	43.2	22	35	115	22
21	243	231	231	231	61	98.5	40.9	69.9	42.3	20.7	35	113	21
20	238	226	226	226	60.5	97.8	40.1	69.4	41.5	19.6	34	110	20

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