

SPHERICAL ROLLER BEARINGS



调心滚子轴承



ISO 9001: 2008

CAT.NO.C01-2010

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INTRODUCTION

产品介绍

Spherical roller bearings have two rows of rollers with a common sphered raceway in the outer ring and two inner ring raceways inclined at an angle to the bearing axis. The self-aligning spherical roller bearing can accommodate both radial and thrust loads and is designed to operate even if the shaft and housing become misaligned under load. This type of bearing is the favoured choice when operating conditions include heavy loads plus difficulties in establishing or maintaining shaft alignment relative to the bearing housing.

调心滚子轴承拥有两列球面滚子，外圈有一球面滚道，内圈的两滚道与轴线方向呈一对称夹角。因而，调心滚子轴承除能承受径向负荷外，还能承受一定的任一方向的轴向负荷。在装配过程或工作过程中，如果轴与轴承箱座之间难以保证同心要求或因温差、重载等原因使轴会发生弯曲时，轴承可自动调心补偿。调心滚子轴承是承受重载条件下的理想选择。

Design Features

设计特征



CA These bearings feature a one piece precision- machined brass cage and symmetric rollers. The designs are optimized to offer considerably higher load ratings than conventional designs for a broad range of applications and long service life.

CA型的调心滚子轴承是采用精密加工的黄铜保持架，加强型对称滚子，经优化设计，具有比传统产品高得多的额定负荷，应用广泛，使用寿命长。

CC These bearings feature a two window-type steel cage and symmetrical rollers. There is a flangeless inner ring with a guide ring centred on the inner ring.

CC型的调心滚子轴承是采用两片优质钢版冲压的保持架，对称型滚子，内圈无挡边，有一个内圈引导的活动中挡圈，经优化设计，具备较低摩擦，较高载荷的特征。



MB These bearings feature a two piece precision-machined brass cage being an improvement over the conventional design. These bearings incorporate symmetrical rollers and are equivalent to CC design in load capacity.

MB型设计是另一种改进型优化设计，它有两片精密加工的黄铜保持架，内圈有固定的中挡边，它的负荷能力一般与CC型设计相同，较能适用于负荷方向交变的场合。



TN1 These bearings feature a cage of glass-fibre reinforced polyamide 66 with a flangeless inner ring which results in an increased number of rollers. The cage is centred on the rollers meaning there is no centred guide ring.

TN1型设计是采用更大或更长的对称球面滚子设计，加强尼龙保持架，内圈无固定挡边和活动中挡圈，保持架由滚子引导。这种设计有更强的负荷能力和较低的噪音。

External form change 外部形状变化

K With tapered bore bearing , taper is 1:12

K30 With tapered bore bearing , taper is 1:30

W33 With a lubricating groove and three lubricating holes in the outer ring.

K: 圆锥孔轴承，内孔锥度为1:12

K30: 大锥孔轴承，内孔锥度为1:30

W33: 外环上有润滑油槽和三个均布的润滑油孔。

Tolerances 调心滚子轴承公差

TR spherical roller bearings are manufactured as standard to normal tolerances of the radial bearings.

For example

/P0: Equal to original precision G(omitted in designation)

/P6: Equal to original precision E

调心滚子轴承的公差与普通向心轴承的公差相同（用后缀表示公差及精度等级）

例如：

/P0: 相当于原代号G级，后缀/P0可省略

/P6: 相当于原代号E级

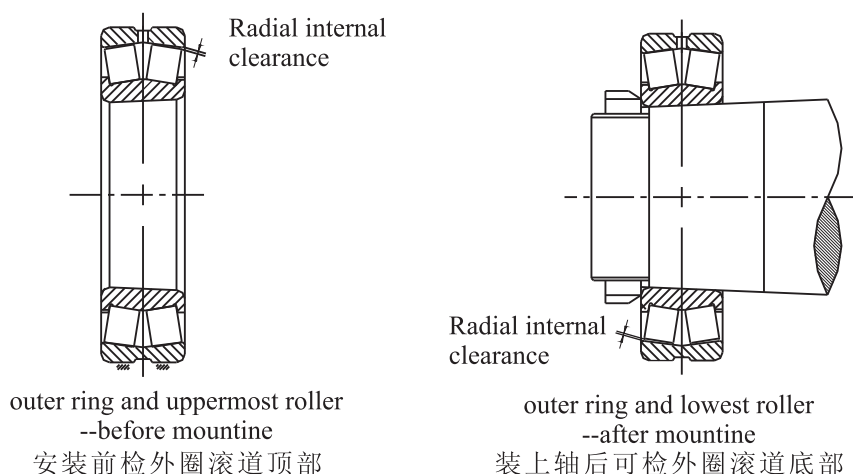
Internal clearance

Spherical roller bearings are produced as standard with normal radial internal clearance and most are also available with a greater C3 clearance. Many bearings can also be supplied with a smaller C2 clearance or the much greater C4 or C5 clearance.(accordance with GB/T4604 equal to ISO5753)

Cylindrical bore in table 1

Tapered bore in table 2

The radial internal clearance of tapered bore bearing is reduced by mounting, so this procedure requires determining the initial radial internal clearance before mounting, and checking the radial internal clearance during mounting until the proper reduction of radial internal clearance has been accomplished.



调心滚子轴承径向游隙

调心滚子轴承径向游隙符合国家标准GB/T4604等效于ISO 5753。

一般情况下都用基本组游隙，也可按客户的要求选用较小的C2组游隙和较大的C3组游隙以及更大的C4、C5组游隙。

圆柱孔调心滚子轴承的径向游隙见表1

圆锥孔的调心滚子轴承的径向游隙见表2

圆锥孔的调心滚子轴承在装上轴后，其径向游隙会有明显的减少，因此，在一般情况下，最好是在与轴固紧后再检查一下其径向游隙，减少后的径向游隙要能满足实际工作状态的需要。

Radial internal clearance of spherical roller bearings with cylindrical bore

圆柱孔的调心滚子轴承径向游隙

Table 1(表 1)

Bore Diameter (轴承公称内径) d Over incl	C2		normal(基本组)		C3		C4		C5	
	min	max	min	max	min	max	min	max	min	max
mm	μm									
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

Radial internal clearance of spherical roller bearings with tapered bore

圆锥孔的调心滚子轴承径向游隙

Table 2(表 2)

Bore Diameter (轴承公称内径) d Over incl	C2		normal(基本组)		C3		C4		C5	
	min	max	min	max	min	max	min	max	min	max
mm	μm									
18 24	15	25	25	35	35	45	45	60	60	75
24 30	20	30	30	40	40	55	55	75	75	95
30 40	25	35	35	50	50	65	65	85	85	105
40 50	30	45	45	60	60	80	80	100	100	130
50 65	40	55	55	75	75	95	95	120	120	160
65 80	50	70	70	95	95	120	120	150	150	200
80 100	55	80	80	110	110	140	140	180	180	230
100 120	65	100	100	135	135	170	170	220	220	280
120 140	80	120	120	160	160	200	200	260	260	330
140 160	90	130	130	180	180	230	230	300	300	380

Misalignment 允许倾斜角

The design of spherical roller bearings is such that they are inherently self-aligning ,i.e. angular misalignment between the outer and inner rings can be accommodated without any effect on bearing performance. Under normal loads and operating conditions ($c/p > 10$), and when misalignment is constant in position with respect to the outer ring , the guideline values for permissible misalignment given in table 3 apply.

调心滚子轴承有可调心的功能，在正常的载荷（ $C/P > 10$ ）工作环境下，内圈与外圈的最大允许倾斜角 α 见表3

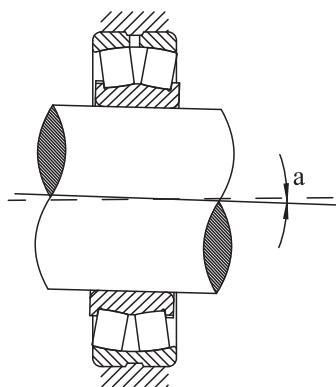


Table 3 (表 3)

Bearing series 轴承系列	Permissible Angular Misalignment (degrees) 允许倾斜角 α
	max
Series 23000	1.5°
Series 23100	1.5°
Series 22200	1.5°
Series 23200	2.5°
Series 22300	2.0°

Equivalent dynamic bearing load

For dynamically loaded spherical roller bearings

$$P = Fr + Y_1 Fa \quad \text{when } Fa / Fr \leq e$$

$$P = 0.67Fr + Y_2 Fa \quad \text{when } Fa / Fr > e$$

The values of the calculation factors e , Y_1 and Y_2 will be found in the product tables.

径向当量动载荷

$$P = Fr + Y_1 Fa \quad \text{当 } Fa / Fr \leq e$$

$$P = 0.67Fr + Y_2 Fa \quad \text{当 } Fa / Fr > e$$

计算系数 e 、 Y_1 、 Y_2 参见轴承尺寸表。

Equivalent static bearing load

For statically loaded spherical roller bearings

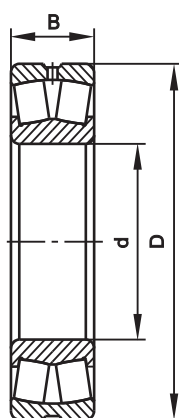
$$P_0 = Fr + Y_0 Fa$$

The values of the calculation factors Y_0 will be found in the product tables.

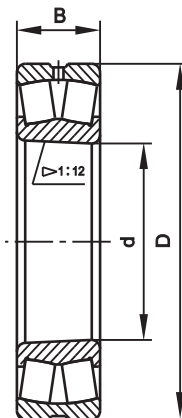
径向当量静载荷

$$P_0 = Fr + Y_0 Fa$$

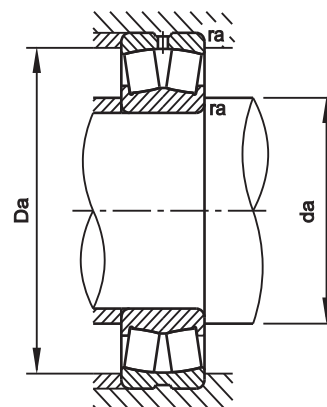
计算系数 Y_0 参见轴承尺寸表。



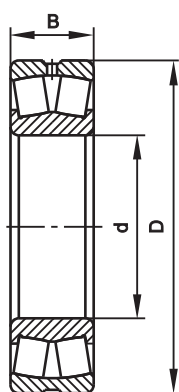
20000CA/W33



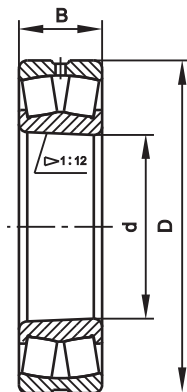
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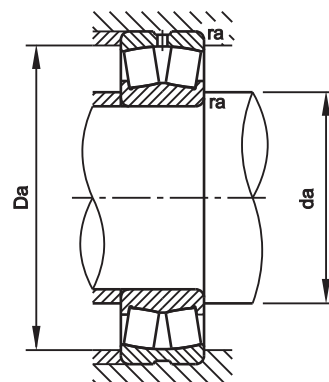
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d	D	B	Grease	Oil	da	Da	ra	Cr	Cor	e	Y1	Y2	Y0
	mm	mm	mm	r/min	r/min	min	max	max	kN	kN				
22205CA/W33 22205CAK/W33	25	52	18	8000	10000	30	46	1	35.8	36.8	0.35	1.9	2.9	1.9
22206CA/W33 22206CAK/W33	30	62	20	6700	8500	36	56	1	50.5	55.0	0.32	2.1	3.1	2.1
22207CA/W33 22207CAK/W33	35	72	23	5600	7000	42	65	1	68.5	79.0	0.32	2.1	3.2	2.1
22208CA/W33 22208CAK/W33	40	80	23	5000	6300	47	73	1	77.0	88.5	0.28	2.4	3.6	2.4
22308CA/W33 22308CAK/W33		90	33	4500	6000	49	81	1.5	120	138	0.38	1.8	2.7	1.8
22209CA/W33 22209CAK/W33	45	85	23	4500	6000	52	78	1	80.5	95.2	0.26	2.6	3.8	2.5
22309CA/W33 22309CAK/W33		100	36	4000	5300	54	91	1.5	142	170	0.37	1.8	2.7	1.8
22210CA/W33 22210CAK/W33	50	90	23	4300	5300	57	83	1	83.8	102	0.24	2.8	4.1	2.7
22310CA/W33 22310CAK/W33		110	40	3800	4800	60	100	2	178	212	0.37	1.8	2.7	1.8
22211CA/W33 22211CAK/W33	55	100	25	3800	5000	64	91	1.5	102	125	0.24	2.8	4.2	2.8
22311CA/W33 22311CAK/W33		120	43	3400	4300	65	110	2	210	252	0.36	1.9	8	1.8
22212CA/W33 22212CAK/W33	60	110	28	3600	4500	69	101	1.5	122	155	0.24	2.8	4.1	2.7
22312CA/W33 22312CAK/W33		130	46	3200	4000	72	118	2.1	242	292	0.36	1.9	2.8	1.8



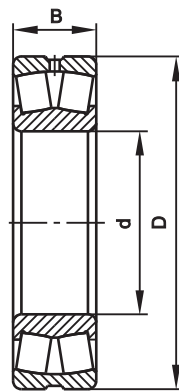
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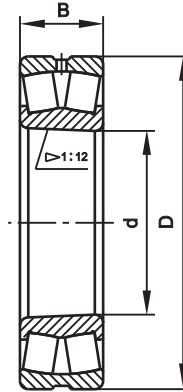
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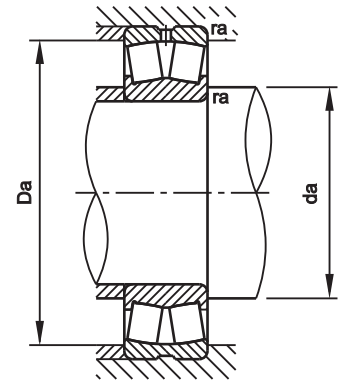
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22213CA/W33 22213CAK/W33	65	120	31	3200	4000	74	111	1.5	160	195	0.25	2.7	4.1	2.7
22313CA/W33 22313CAK/W33		140	48	3000	3800	77	128	2.1	265	320	0.35	1.9	2.9	1.9
22214CA/W33 22214CAK/W33	70	125	31	3000	3800	79	116	1.5	150	195	0.24	2.9	4.3	2.8
22314CA/W33 22314CAK/W33		150	51	2800	3400	82	138	2.1	312	395	0.34	2.0	2.9	1.9
22215CA/W33 22215CAK/W33	75	130	31	3000	3800	84	121	1.5	162	215	0.22	3.0	4.5	2.9
22315CA/W33 22315CAK/W33		160	55	2600	3200	87	148	2.1	348	448	0.35	2.0	2.9	1.9
22216CA/W33 22216CAK/W33	80	140	33	2800	3400	90	130	2	175	235	0.22	3.0	4.5	3.0
22316CA/W33 22316CAK/W33		170	58	2400	3000	92	158	2.1	392	508	0.34	2.0	2.9	1.9
22217CA/W33 22217CAK/W33	85	150	36	2600	3200	95	140	2	212	282	0.23	3.0	4.4	2.9
222317CA/W33 222317CAK/W33		180	60	2200	2800	99	166	2.5	430	555	0.34	2.0	3.0	2.0
22218CA/W33 22218CAK/W33	90	160	40	2400	3000	100	150	2	250	338	0.24	2.9	4.3	2.8
23218CA/W33 23218CAK/W33			52.4	1800	2400	100	150	2	330	482	0.31	2.2	3.2	2.1
22318CA/W33 22318CAK/W33		190	64	2200	2600	104	176	2.5	482	640	0.34	2.0	3.0	2.0



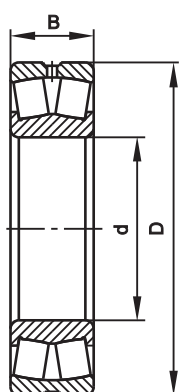
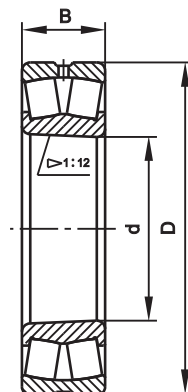
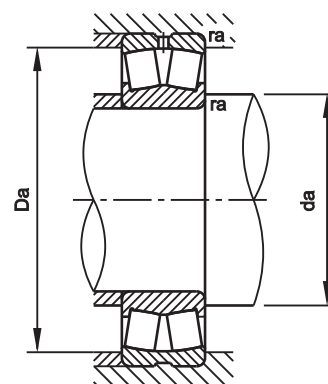
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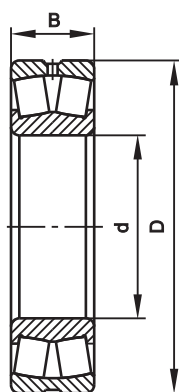
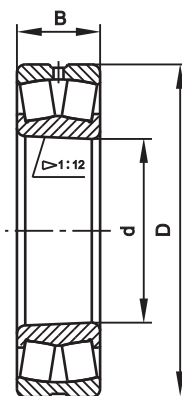
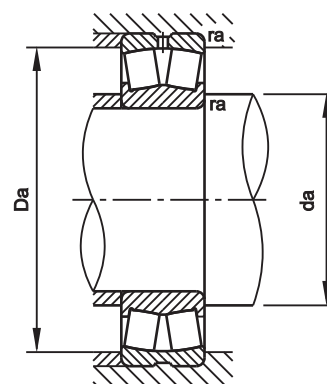
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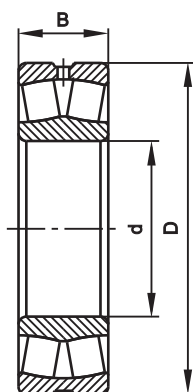
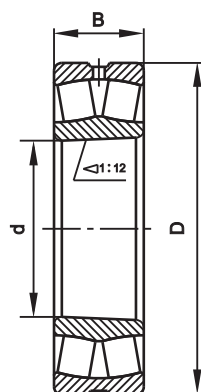
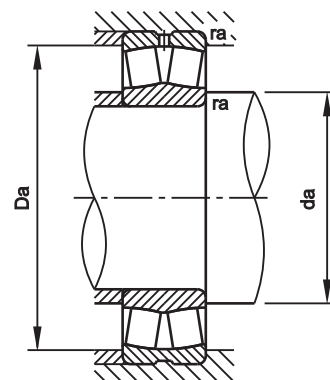
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22219CA/W33 22219CAK/W33	95	170	43	2200	2800	107	158	2.1	282	390	0.24	2.8	4.2	2.7
22319CA/W33 22319CAK/W33		200	67	2000	2600	109	186	2.5	530	705	0.34	2.0	3.0	2.0
23120CA/W33 23120CAK/W33	100	165	52	1700	2200	110	155	2	322	510	0.29	2.3	3.5	2.3
22220CA/W33 22220CAK/W33		180	46	2200	2600	112	168	2.1	315	435	0.24	2.8	4.1	2.7
23220CA/W33 23220CAK/W33			60.3	1600	2200	112	168	2.1	420	630	0.32	2.1	3.2	2.1
22320CA/W33 22320CAK/W33		215	73	1900	2400	114	201	2.5	618	832	0.34	2.0	2.9	1.9
23022CA/W33 23022CAK/W33	110	170	45	2000	2400	120	160	2	272	452	0.24	2.8	4.2	2.8
23122CA/W33 23122CAK/W33		180	56	1600	2000	120	170	2	378	602	0.29	2.4	3.5	2.3
22222CA/W33 22222CAK/W33		200	53	1900	2400	122	188	2.1	410	588	0.25	2.7	4.0	2.6
23222CA/W33 23222CAK/W33			69.8	1500	1900	122	188	2.1	520	800	0.34	2.0	3.0	2.0
22322CA/W33 22322CAK/W33		240	80	1700	2200	124	226	2.5	715	968	0.34	2.0	3.0	2.0
23024CA/W33 23024CAK/W33	120	180	46	1800	2200	130	170	2	300	500	0.23	2.9	4.4	2.9
23124CA/W33 23124CAK/W33		200	62	1400	1800	130	190	2	450	722	0.29	2.4	3.5	2.3


20000CA/W33

20000CAK/W33


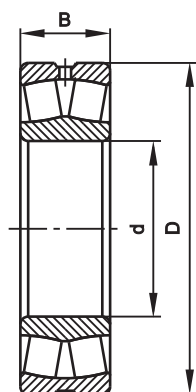
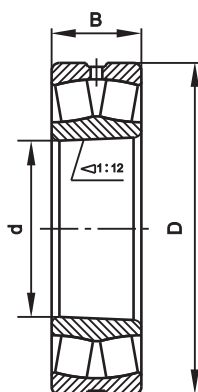
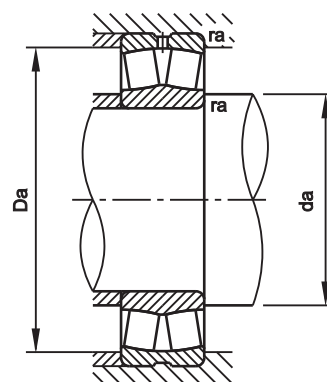
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22224CA/W33 22224CAK/W33	120	215	58	1700	2200	132	203	2.1	480	690	0.26	2.6	3.9	2.6
23224CA/W33 23224CAK/W33			76	1300	1700	132	203	2.1	610	955	0.34	2.0	3.0	2.0
22324CA/W33 22324CAK/W33		260	86	1500	1900	134	246	2.5	845	1160	0.34	2.0	3.0	2.0
23026CA/W33 23026CAK/W33	130	200	52	1700	2000	140	190	2	375	630	0.23	2.9	4.3	2.8
23126CA/W33 23126CAK/W33		210	64	1300	1700	140	200	2	482	802	0.28	2.4	3.6	2.4
22226CA/W33 22226CAK/W33		230	64	1600	2000	144	216	2.5	562	832	0.26	2.6	3.8	2.5
23226CA/W33 23226CAK/W33			80	1200	1600	144	216	2.5	678	1080	0.33	2.0	3.0	2.0
22326CA/W33 22326CAK/W33		280	93	1400	1800	148	262	3	965	1340	0.34	2.0	3.0	2.0
23028CA/W33 23028CAK/W33	140	210	53	1600	1900	150	200	2	395	680	0.22	3.0	4.5	2.9
23128CA/W33 23128CAK/W33		225	68	1200	1600	152	213	2.1	538	905	0.28	2.4	3.6	2.4
22228CA/W33 22228CAK/W33		250	68	1400	1700	154	236	2.5	640	955	0.26	2.6	3.9	2.6
23228CA/W33 23228CAK/W33			88	1100	1500	154	236	2.5	812	1300	0.34	2.0	3.0	2.0
22328CA/W33 22328CAK/W33		300	102	1300	1700	158	282	3	1130	1610	0.34	2.0	2.9	1.9


20000CA/W33

20000CAK/W33


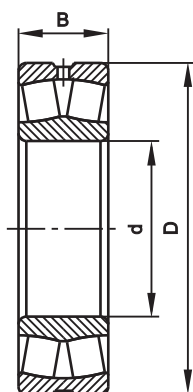
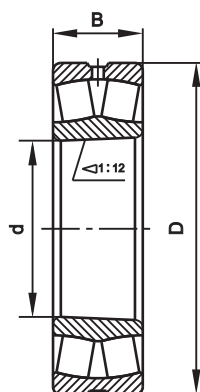
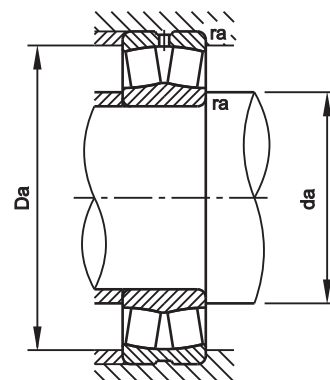
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
23030CA/W33 23030CAK/W33	150	225	56	1400	1800	162	213	2.1	432	750	0.22	3.0	4.5	3.0
23130CA/W33 23130CAK/W33		250	80	1100	1400	162	238	2.1	738	1250	0.30	2.3	3.4	2.2
22230CA/W33 22230CAK/W33		270	73	1300	1600	164	256	2.5	750	1130	0.26	2.6	3.9	2.6
23230CA/W33 23230CAK/W33			96	1100	1400	164	256	2.5	948	1540	0.34	2.0	3.0	1.9
23032CA/W33 23032CAK/W33	160	240	60	1300	1700	172	228	2.1	508	890	0.22	3.0	4.5	3.0
23132CA/W33 23132CAK/W33		270	86	1000	1300	172	258	2.1	845	1440	0.30	2.3	3.4	2.2
22232CA/W33 22232CAK/W33		290	80	1200	1500	174	276	2.5	848	1290	0.26	2.6	3.8	2.5
23232CA/W33 23232CAK/W33			104	1100	1400	174	276	2.5	1090	1780	0.34	2.0	2.9	1.9
22234CA/W33 22234CAK/W33	170	310	86	1100	1400	188	292	3	974	1501	0.26	2.6	3.8	2.5
23034CA/W33 23034CAK/W33		260	67	1200	1600	182	292	3	974	1501	0.26	2.6	3.8	2.5
22236CA/W33 22236CAK/W33	180	320	86	1100	1300	198	302	3	1006	1592	0.25	2.7	3.9	2.6
23036CA/W33 23036CAK/W33		280	74	1200	1400	192	268	2.1	717	1305	0.24	2.8	4.2	2.8
23038CA/W33 23038CAK/W33	190	990	75	1100	1400	202	278	2.1	756	1376	0.23	2.9	4.3	2.8


20000CC/W33

20000CCK/W33


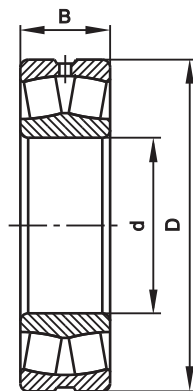
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22205CC/W33 22205CCK/W33	25	52	18	8000	10000	30	46	1	35.8	36.8	0.35	1.9	2.9	1.9
22206CC/W33 22206CCK/W33	30	62	20	6700	8500	36	56	1	50.5	55.0	0.32	2.1	3.1	2.1
22207CC/W33 22207CCK/W33	35	72	23	5600	7000	42	65	1	68.5	79.0	0.32	2.1	3.2	2.1
22208CC/W33 22208CCK/W33	40	80	23	5000	6300	47	73	1	77.0	88.5	0.28	2.4	3.6	2.4
22308CC/W33 22308CCK/W33		90	33	4500	6000	49	81	1.5	120	138	0.38	1.8	2.7	1.8
22209CC/W33 22209CCK/W33	45	85	23	4500	6000	52	78	1	80.5	95.2	0.26	2.6	3.8	2.5
22309CC/W33 22309CCK/W33		100	36	4000	5300	54	91	1.5	142	170	0.37	1.8	2.7	1.8
22210CC/W33 22210CCK/W33	50	90	23	4300	5300	57	83	1	83.8	102	0.24	2.8	4.1	2.7
22310CC/W33 22310CCK/W33		110	40	3800	4800	60	100	2	178	212	0.37	1.8	2.7	1.8
22211CC/W33 22211CCK/W33	55	100	25	3800	5000	64	91	1.5	102	125	0.24	2.8	4.2	2.8
22311CC/W33 22311CCK/W33		120	43	3400	4300	65	110	2	210	252	0.36	1.9	2.8	1.8
22212CC/W33 22212CCK/W33	60	110	28	3600	4500	69	101	1.5	122	155	0.24	2.8	4.1	2.7
22312CC/W33 22312CCK/W33		130	46	3200	4000	72	118	2.1	242	292	0.36	1.9	2.8	1.8


20000CC/W33

20000CCK/W33


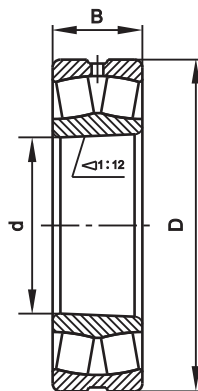
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22213CC/W33 22213CCK/W33	65	120	31	3200	4000	74	111	1.5	150	195	0.25	2.7	4.0	2.6
22213CC/W33 22213CCK/W33		140	48	3000	3800	77	128	2.1	265	320	0.35	1.9	2.9	1.9
22214CC/W33 22214CCK/W33	70	125	31	3000	3800	79	116	1.5	150	195	0.24	2.9	4.3	2.8
22214CC/W33 22214CCK/W33		150	51	2800	3400	82	138	2.1	312	395	0.34	2.0	2.9	1.9
22215CC/W33 22215CCK/W33	75	130	31	3000	3800	84	121	1.5	162	215	0.22	3.0	4.5	2.9
22215CC/W33 22215CCK/W33		160	55	2600	3200	87	148	2.1	348	448	0.35	2.0	2.9	1.9
22216CC/W33 22216CCK/W33	80	140	33	2800	3400	90	130	2	175	235	0.22	3.0	4.5	3.0
22216CC/W33 22216CCK/W33		170	58	2400	3000	92	158	2.1	392	508	0.34	2.0	2.9	1.9
22217CC/W33 22217CCK/W33	85	150	36	2600	3200	95	140	2	212	282	0.23	3.0	4.4	2.9
22217CC/W33 22217CCK/W33		180	60	2200	2800	99	166	2.5	430	555	0.34	2.0	3.0	2.0
22218CC/W33 22218CCK/W33	90	160	40	2400	3000	100	150	2	250	338	0.24	2.9	4.3	2.8
23218CC/W33 23218CCK/W33			52.4	1800	2400	100	150	2	330	482	0.31	2.2	3.2	2.1
22218CC/W33 22218CCK/W33		190	64	2200	2600	104	176	2.5	482	640	0.34	2.0	3.0	2.0


20000CC/W33

20000CCK/W33


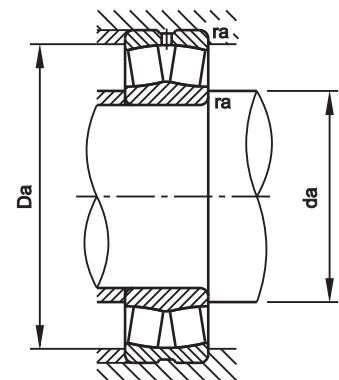
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22219CC/W33 22219CCK/W33	95	170	43	2200	2800	107	158	2.1	282	390	0.24	2.8	4.2	2.7
22319CC/W33 22319CCK/W33		200	67	2000	2600	109	186	2.5	530	705	0.34	2.0	3.0	2.0
23120CC/W33 23120CCK/W33	100	165	52	1700	2200	110	155	2	322	510	0.29	2.3	3.5	2.3
22220CC/W33 22220CCK/W33		180	46	2200	2600	112	168	2.1	315	435	0.24	2.8	4.1	2.7
23220CC/W33 23220CCK/W33			60.3	1600	2200	112	168	2.1	420	630	0.32	2.1	3.2	2.1
22320CC/W33 22320CCK/W33		215	73	1900	2400	114	201	2.5	618	832	0.34	2.0	2.9	1.9
23022CC/W33 23022CCK/W33	110	170	45	2000	2400	120	160	2	272	452	0.24	2.8	4.2	2.8
23122CC/W33 23122CCK/W33		180	56	1600	2000	120	170	2	378	602	0.29	2.4	3.5	2.3
22222CC/W33 22222CCK/W33		200	53	1900	2400	122	188	2.1	410	588	0.25	2.7	4.0	2.6
23222CC/W33 23222CCK/W33			69.8	1500	1900	122	188	2.1	520	800	0.34	2.0	3.0	2.0
22322CC/W33 22322CCK/W33		240	80	1700	2200	124	226	2.5	715	968	0.34	2.0	3.0	2.0
23024CC/W33 23024CCK/W33		180	46	1800	2200	130	170	2	300	500	0.23	2.9	4.4	2.9
23124CC/W33 23124CCK/W33	120	200	62	1400	1800	130	190	2	450	722	0.29	2.4	3.5	2.3



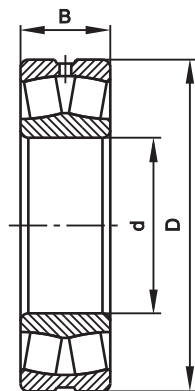
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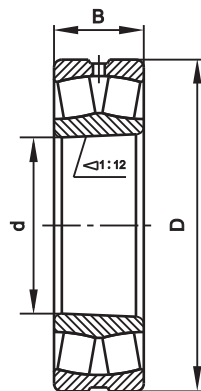
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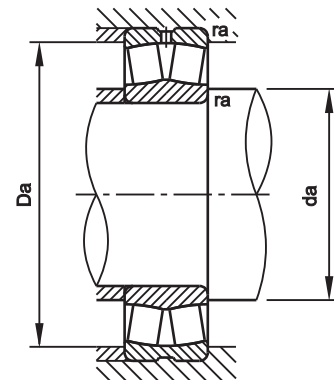
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22224CC/W33 22224CCK/W33	120	215	58	1700	2200	132	203	2.1	480	690	0.26	2.6	3.9	2.6
23224CC/W33 23224CCK/W33			76	1300	1700	132	203	2.1	610	955	0.34	2.0	3.0	2.0
22324CC/W33 22324CCK/W33		260	86	1500	1900	134	246	2.5	845	1160	0.34	2.0	3.0	2.0
23026CC/W33 23026CCK/W33	130	200	52	1700	2000	140	190	2	375	630	0.23	2.9	4.3	2.8
23126CC/W33 23126CCK/W33		210	64	1300	1700	140	200	2	482	802	0.28	2.4	3.6	2.4
22226CC/W33 22226CCK/W33		230	64	1600	2000	144	216	2.5	562	832	0.26	2.6	3.8	2.5
23226CC/W33 23226CCK/W33			80	1200	1600	144	216	2.5	678	1080	0.33	2.0	3.0	2.0
22326CC/W33 22326CCK/W33		280	93	1400	1800	148	262	3	965	1340	0.34	2.0	3.0	2.0
23028CC/W33 23028CCK/W33	140	210	53	1600	1900	150	200	2	395	680	0.22	3.0	4.5	2.9
23128CC/W33 23128CCK/W33		225	68	1200	1600	152	213	2.1	538	905	0.28	2.4	3.6	2.4
22228CC/W33 22228CCK/W33		250	68	1400	1700	154	236	2.5	640	955	0.26	2.6	3.9	2.6
23228CC/W33 23228CCK/W33			88	1100	1500	154	236	2.5	812	1300	0.34	2.0	3.0	2.0
22328CC/W33 22328CCK/W33		300	102	1300	1700	158	282	3	1130	1610	0.34	2.0	2.9	1.9



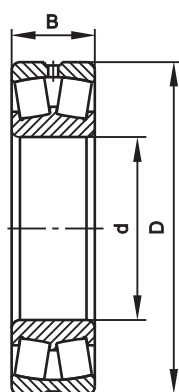
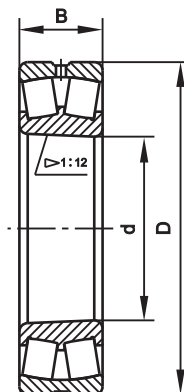
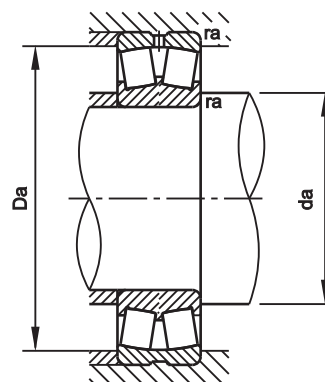
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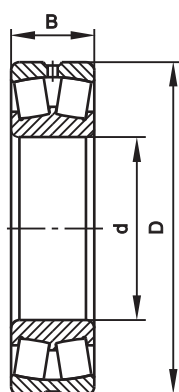
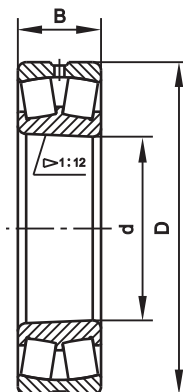
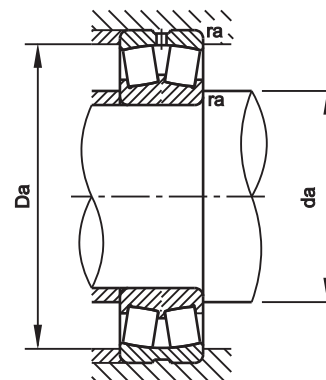
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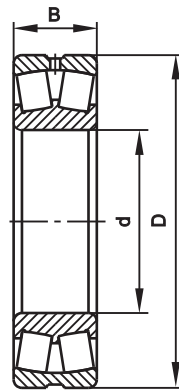
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
23030CC/W33 23030CCK/W33	150	225	56	1400	1800	162	213	2.1	432	750	0.22	3.0	4.5	3.0
23130CC/W33 23130CCK/W33		250	80	1100	1400	162	238	2.1	738	1250	0.30	2.3	3.4	2.2
22230CC/W33 22230CCK/W33		270	73	1300	1600	164	256	2.5	750	1130	0.26	2.6	3.9	2.6
23230CC/W33 23230CCK/W33			96	1100	1400	164	256	2.5	948	1540	0.34	2.0	3.0	1.9
23032CC/W33 23032CCK/W33	160	240	60	1300	1700	172	228	2.1	508	890	0.22	3.0	4.5	3.0
23132CC/W33 23132CCK/W33		270	86	1000	1300	172	258	2.1	845	1440	0.30	2.3	3.4	2.2
22232CC/W33 22232CCK/W33		290	80	1200	1500	174	276	2.5	848	1290	0.26	2.6	3.8	2.5
23232CC/W33 23232CCK/W33			104	1100	1400	174	276	2.5	1090	1780	0.34	2.0	2.9	1.9


20000MB/W33

20000MBK/W33


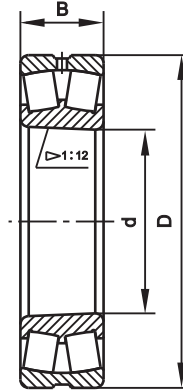
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
22206MB/W33 22206MBK/W33	30	62	20	6700	8500	36	56	1	50.5	55.0	0.32	2.1	3.1	2.1
22207MB/W33 22207MBK/W33	35	72	23	5600	7000	42	65	1	68.5	79.0	0.32	2.1	3.2	2.1
22208MB/W33 22208MBK/W33	40	80	23	5000	6300	47	73	1	77.0	88.5	0.28	2.4	3.6	2.4
22308MB/W33 22308MBK/W33		90	33	4500	6000	49	81	1.5	120	138	0.38	1.8	2.7	1.8
22209MB/W33 22209MBK/W33	45	85	23	4500	6000	52	78	1	80.5	95.2	0.26	2.6	3.8	2.5
22309MB/W33 22309MBK/W33		100	36	4000	5300	54	91	1.5	142	170	0.37	1.8	2.7	1.8
22210MB/W33 22210MBK/W33	50	90	23	4300	5300	57	83	1	83.8	102	0.24	2.8	4.1	2.7
22310MB/W33 22310MBK/W33		110	40	3800	4800	60	100	2	178	212	0.37	1.8	2.7	1.8
22211MB/W33 22211MBK/W33	55	100	25	3800	5000	64	91	1.5	102	125	0.24	2.8	4.2	2.8
22311MB/W33 22311MBK/W33		120	43	3400	4300	65	110	2	210	252	0.36	1.9	2.8	1.8
22212MB/W33 22212MBK/W33	60	110	28	3600	4500	69	101	1.5	122	155	0.24	2.8	4.1	2.7
22312MB/W33 22312MBKW33		130	46	3200	4000	72	118	2.1	242	292	0.36	1.9	2.8	1.8
22213MB/W33 22213MBKW33	65	120	31	3200	4000	74	111	1.5	150	195	0.25	2.7	4.0	2.6
22313MB/W33 22313MBK/W33		140	48	3000	3800	77	128	2.1	265	320	0.35	1.9	2.9	1.9


20000MB/W33

20000MBK/W33


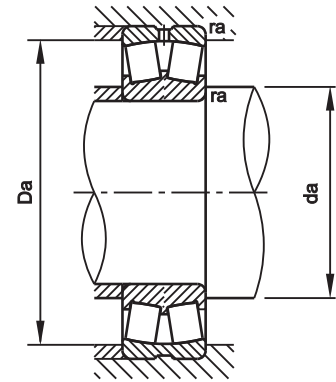
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y ₁	Y ₂	Y ₀
22214MB/W33 22214MBK/W33	70	125	31	3000	3800	79	116	1.5	150	195	0.24	2.9	4.3	2.8
22314MB/W33 22314MBK/W33		150	51	2800	3400	82	138	2.1	312	395	0.34	2.0	2.9	1.9
22215MB/W33 22215MBK/W33	75	130	31	3000	3800	84	121	1.5	162	215	0.22	3.0	4.5	2.9
22315MB/W33 22315MBK/W33		160	55	2600	3200	87	148	2.1	348	448	0.35	2.0	2.9	1.9
22216MB/W33 22216MBK/W33	80	140	33	2800	3400	90	130	2	175	235	0.22	3.0	4.5	3.0
22316MB/W33 22316MBK/W33		170	58	2400	3000	92	158	2.1	392	508	0.34	2.0	2.9	1.9
22217MB/W33 22217MBK/W33	85	150	36	2600	3200	95	140	2	212	282	0.23	3.0	4.4	2.9
22317MB/W33 22317MBK/W33		180	60	2200	2800	99	166	2.5	430	555	0.34	2.0	3.0	2.0
22218MB/W33 22218MBK/W33	90	160	40	2400	3000	100	150	2	250	338	0.24	2.9	4.3	2.8
23218MB/W33 23218MBK/W33			52.4	1800	2400	100	150	2	330	482	0.31	2.2	3.2	2.1
22318MB/W33 22318MBK/W33		190	64	2200	2600	104	176	2.5	482	640	0.34	2.0	3.0	2.0
22219MB/W33 22219MBK/W33	95	170	43	2200	2800	107	158	2.1	282	390	0.24	2.8	4.2	2.7
22319MB/W33 22319MBK/W33		200	67	2000	2600	109	186	2.5	530	705	0.34	2.0	3.0	2.0



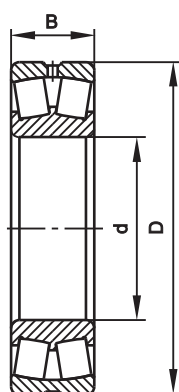
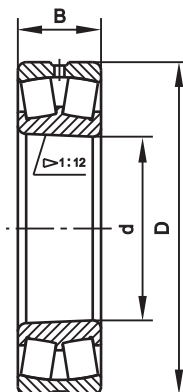
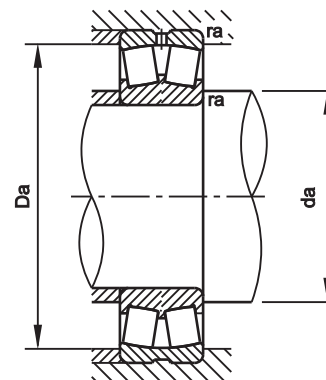
20000MB/W33



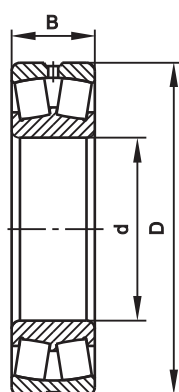
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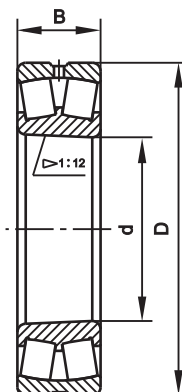
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
23120MB/W33 23120MBK/W33	100	165	52	1700	2200	110	155	2	322	510	0.29	2.3	3.5	2.3
22220MB/W33 22220MBK/W33		180	46	2200	2600	112	168	2.1	315	435	0.24	2.8	4.1	2.7
23220MB/W33 23220MBK/W33			60.3	1600	2200	112	168	2.1	420	630	0.32	2.1	3.2	2.1
22320MB/W33 22320MBK/W33		215	73	1900	2400	114	201	2.5	618	832	0.34	2.0	2.9	1.9
23022MB/W33 23022MBK/W33	110	170	45	2000	2400	120	160	2	272	452	0.24	2.8	4.2	2.8
23122MB/W33 23122MBK/W33		180	56	1600	2000	120	170	2	378	602	0.29	2.4	3.5	2.3
22222MB/W33 22222MBK/W33		200	53	1900	2400	122	188	2.1	410	588	0.25	2.7	4.0	2.6
23222MB/W33 23222MBK/W33			69.8	1500	1900	122	188	2.1	520	800	0.34	2.0	3.0	2.0
22322MB/W33 22322MBK/W33		240	80	1700	2200	124	226	2.5	715	968	0.34	2.0	3.0	2.0
23024MB/W33 23024MBK/W33	120	180	46	1800	2200	130	170	2	300	500	0.23	2.9	4.4	2.9
23124MB/W33 23124MBK/W33		200	62	1400	1800	130	190	2	450	722	0.29	2.4	3.5	2.3
22224MB/W33 22224MBK/W33		215	58	1700	2200	132	203	2.1	480	690	0.26	2.6	3.9	2.6
23224MB/W33 23224MBK/W33			76	1300	1700	132	203	2.1	610	955	0.34	2.0	3.0	2.0
22324MB/W33 22324MBK/W33		260	86	1500	1900	134	246	2.5	845	1160	0.34	2.0	3.0	2.0


20000MB/W33

20000MBK/W33


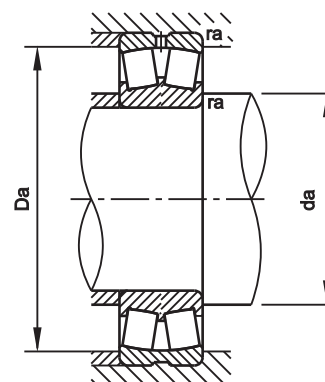
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
23026MB/W33 23026MBK/W33	130	200	52	1700	2000	140	190	2	375	630	0.23	2.9	4.3	2.8
23126MB/W33 23126MBK/W33		210	64	1300	1700	140	200	2	482	802	0.28	2.4	3.6	2.4
22226MB/W33 22226MBK/W33		230	64	1600	2000	144	216	2.5	562	832	0.26	2.6	3.8	2.5
23226MB/W33 23226MBK/W33			80	1200	1600	144	216	2.5	678	1080	0.33	2.0	3.0	2.0
22326MB/W33 22326MBK/W33		280	93	1400	1800	148	262	3	965	1340	0.34	2.0	3.0	2.0
23028MB/W33 23028MBK/W33	140	210	53	1600	1900	150	200	2	395	680	0.22	3.0	4.5	2.9
23128MB/W33 23128MBK/W33		225	68	1200	1600	152	213	2.1	538	905	0.28	2.4	3.6	2.4
22228MB/W33 22228MBK/W33		250	68	1400	1700	154	236	2.5	640	955	0.26	2.6	3.9	2.6
23228MB/W33 23228MBK/W33			88	1100	1500	154	236	2.5	812	1300	0.34	2.0	3.0	2.0
22328MB/W33 22328MBK/W33		300	102	1300	1700	158	282	3	1130	1610	0.34	2.0	2.9	1.9
23030MB/W33 23030MBK/W33	150	225	56	1400	1800	162	213	2.1	432	750	0.22	3.0	4.5	3.0
23130MB/W33 23130MBK/W33		250	80	1100	1400	162	238	2.1	738	1250	0.30	2.3	3.4	2.2
22230MB/W33 22230MBK/W33		270	73	1300	1600	164	256	2.5	750	1130	0.26	2.6	3.9	2.6



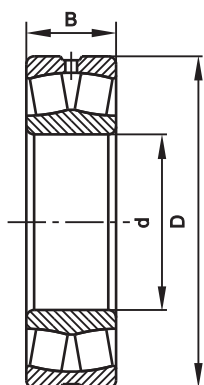
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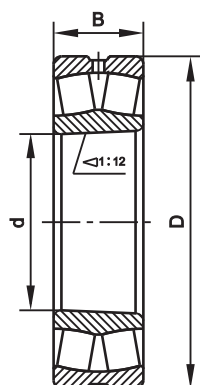
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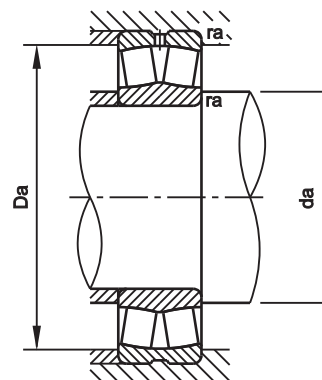
Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d mm	D mm	B mm	Grease r/min	Oil r/min	da min	Da max	ra max	Cr kN	Cor kN	e	Y1	Y2	Y0
23230MB/W33 23230MBK/W33	160	270	96	1100	1400	164	256	2.5	948	1540	0.34	2.0	3.0	1.9
23032MB/W33 23032MBK/W33		240	60	1300	1700	172	228	2.1	508	890	0.22	3.0	4.5	3.0
23132MB /W33 23132MBK/W33		270	86	1000	1300	172	258	2.1	845	1440	0.30	2.3	3.4	2.2
22232MB/W33 22232MBK/W33		290	80	1200	1500	174	276	2.5	848	1290	0.26	2.6	3.8	2.5
23232MB/W33 23232MBK/W33			104	1100	1400	174	276	2.5	1090	1780	0.34	2.0	2.9	1.9



22200TN1/W33



22200TN1K/W33



Bearing Number 轴承代号	Principal Dimensions 基本尺寸			Limiting Speed 极限转速		Shoulder Dia. 安装尺寸			Basic Load Ratings 基本额定负荷		Calculation Factor 计算系数			
	d	D	B	Grease	Oil	da	Da	ra	Cr	Cor	e	Y1	Y2	Y0
	mm	mm	mm	r/min	r/min	min	max	max	kN	kN				
22208TN1/W33 22208TN1K/W33	40	80	23	5000	6300	47	73	1	90.0	96.5	0.28	2.4	3.6	2.4
22215TN1/W33 22215TN1K/W33	75	130	31	3000	3800	84	121	1.5	212	240	0.22	3.0	4.5	2.9
22226TN1/W33 22226TN1K/W33	130	230	64	1600	2000	144	216	2.5	735	930	0.26	2.6	3.8	2.5