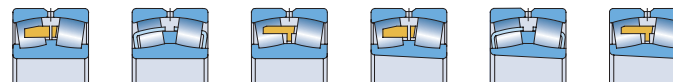




Spherical roller bearings

Spherical roller bearings.....419



Spherical roller bearings

Spherical roller bearings have the inner ring or double raceways, the outer ring of one spherical raceway and two row barrel rollers. The center of the spherical outer ring raceway and the center of the bearing is the same (see fig. 1.), but the center line of the crossed inner ring raceways has an angle to the bearing center line, which can allow the bearing misalignment or the shaft–alignment without the influence from the housing misalignment or the shaft deflection. They can accommodate not only radial loads but also axial loads in two directions, suitable for those vibration and impact loaded applications.

HRB Spherical roller bearings can accommodate much heavy loads because they have a great number of long symmetrical rollers of large diameter. The modified form and excellent surface condition of the double raceways ensure these bearings of C and CA designs to have the lowest friction. Compared with conventional spherical roller bearings, these bearings are good at reducing operating temperature, enhancing heavily axial load carrying capacity or high speed ability.

HRB Spherical roller bearings are made with a cylindrical or tapered bore, for example, 240 and 241 series bearings with tapered bore of taper 1:30 (suffix k30), other ones with tapered bore of taper 1:12 (suffix k).

Design

C and EC designs

Such bearings of C and EC designs have symmetrical rollers retained by pressed steel cages which are ridged by the inner ring. The EC design bearings are accompanied with enhanced rollers which improve load carrying capacity. The refined surface roughness of rollers and raceways improves roller guidance and reduces internal friction.

CA and ECA designs

Bearings of CA and ECA designs have symmetrical rollers and retaining ribs on the inner ring. One guide ring is placed between the two rows of rollers, centered by the inner ring. A machined solid cage of brass or steel is mated.

The CA and ECA bearings have the same refined surface roughness as that of the C design, but the ECA design bearings have enhanced rollers so as to increase load carrying capability.

Annular groove and lubricating holes

In order to facilitate lubrication, HRB basic design spherical roller bearings have one annular groove and three lubricating holes in the outer ring, except C design bearings of outside diameters less than 150mm or 180mm (subject to individual series respectively) and all 213 series bearings. C, CA, CE and ECA design bearings with suffix W33 have annular groove and lubricating holes in the outside ring.

Dimensions

The boundary dimensions of the bearings conform to ISO15–1981.

Angular misalignment

The unique design enables **HRB** spherical roller bearings to have an inherent self-aligning function which can compensate for angular misalignment of the inner and outer rings, values for allowable angular misalignment are given in the table when the inner ring is rotated under normal loads and working conditions.

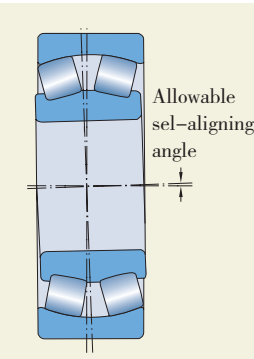


Fig 1

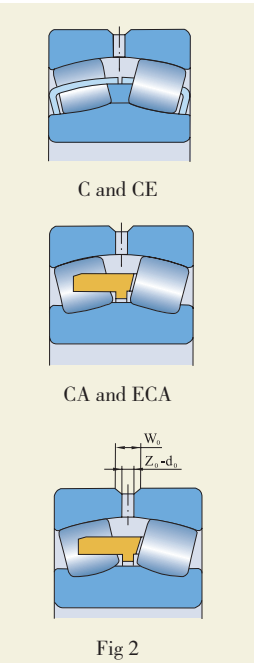


Fig 2

Tolerances

HRB Spherical roller bearings with cylindrical bore or tapered bore have normal tolerance, listed in the tolerance table in page 85.

Table 1

Bearings		Allowable angular misalignment
—		degree
Series	213	1
Series	222	1.5
Series	223	2
Series	230	1.5
Series	231	1.5
Series	232	2.5
Series	239	1.5
Series	240	2
Series	241	2.5

Internal clearance

HRB Spherical roller bearings have normal radial internal clearance. Most of them are supplied with C3 radial internal clearance, and someones with C4 radial internal clearance. Some sizes of bearings are supplied with C2 radial internal clearance less than normal clearance. Values for various groups of clearance are shown in the tables on pages 67 ~68, in conformity with ISO5753. These values are valid for bearings having zero measuring load prior to mounting.

Heat treatment

HRB basic design spherical roller bearings are heat-treated in particular, so that they can work at operating temperatures upto +200℃, without any dimension change.

Minimum rolling bearing load

In order to attain to satisfactory running of bearings, including spherical roller bearings, there must be minimum required loads acting on them, or else during high speed running the mass forces of the balls and cage(s) and the inadequate lubricant resistance may generate a harmful sliding between the balls and raceways, easy to lead to bearing damage. The minimum required load is estimated from the following equation:

$$F_m = 0.02C_r$$

where

F_m : minimum radial load, N

C_r : basic dynamic load rating, N

In general, the bearing supporting weight adding the external forces always goes beyond the minimum required load. If not, an additional load has to be exerted, for example, increasing belt tension.

Equivalent dynamic bearing load

$$P = F_r + Y_1 F_a, \quad \text{for } F_a/F_r \leq e$$

$$P = 0.67 F_r + Y_2 F_a, \quad \text{for } F_a/F_r > e$$

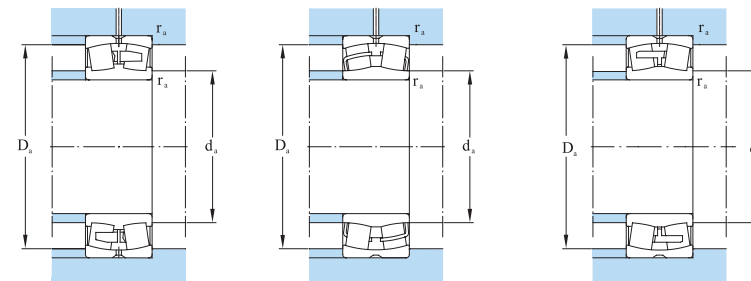
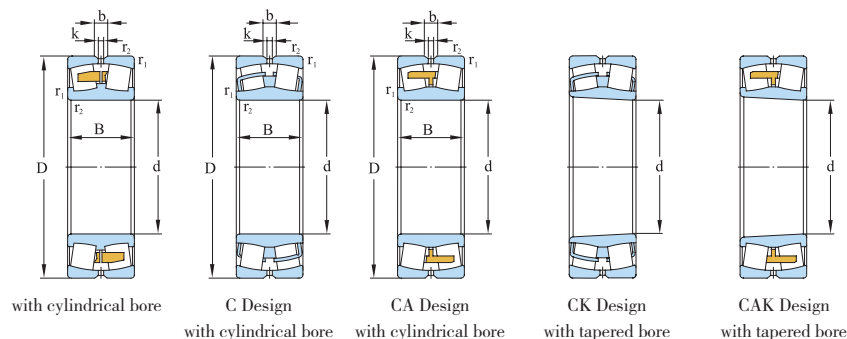
Calculation factors e , Y_1 and Y_2 can be obtained from relevant bearing tables.

Equivalent static bearing load

$$P_0 = F_r + Y_0 F_a$$

Calculation factors Y_0 can be obtained from relevant bearing tables.

Spherical roller bearings



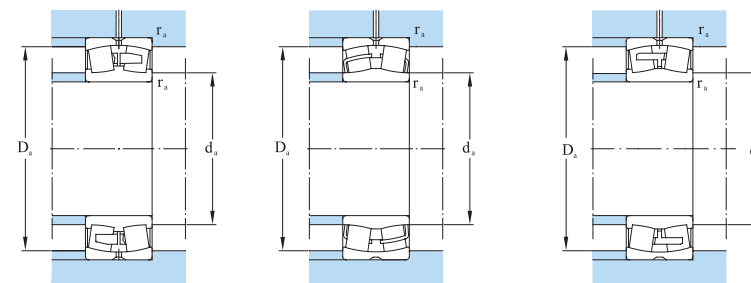
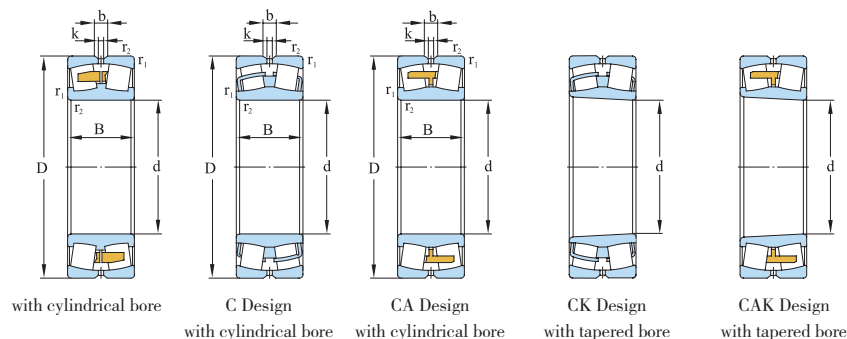
Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22205C	22205CK	25	52	18			1
22205CA	22205CAK		52	18			1
21305C	21305CK		62	17			1.1
22206C	22206CA	30	62	20			1
22206CA	22206CAK		62	20			1
21306C	21306CK		72	19			1.1
22207C	22207CK	35	72	23			1.1
22207CA	22207CAK		72	23			1.1
21307C	21307CK		80	21			1.5
22208C	22208CK	40	80	23			1.1
22208CA	22208CAK		80	23			1.1
21308C	21308CK		90	23			1.5
22308C	22308CK	45	90	33			1.5
22308CA	22308CAK		90	33			1.5
22209C	22209CK		85	23			1.1
22209CA	22209CAK	50	85	23			1.1
21309C	21309CK		100	25			1.5
22309C	22309CK		100	36			1.5
22309CA	22309CAK	55	100	36			1.5
22210C	22210CK		90	23			1.1
22210CA	22210CAK		90	23			1.1
22210CA/W33		50	90	23	5.5	2	1.1
21310C	21310CK		110	27			2
22310	22310CK		110	40			2
22310C	22310CK	55	110	40			2
22310CA	22310CAK		110	40			2
22310CA/W33	22310CAK/W33		110	40	5.5	2.5	2
22211C	22211CK	55	100	25			1.5
22211CA	22211CAK		100	25			1.5
22211CA/W33	22211CAK/W33		100	25	5.5	2	1.5
21311C	21311CK	55	120	29			2
22311	22311K		120	43			2

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
35.7	35.7	8500	11000	31	46	1	0.18
43.1	44	8500	11000	31	46	1	0.18
41.4	41.5	6700	8500	32	55	1	0.25
48.9	52	7500	9500	36	56	1	0.28
48.9	52	7500	9500	36	56	1	0.32
55.2	61	6000	7500	37	65	1	0.38
67.3	73.5	6300	8000	42	65	1	0.43
67.3	73.5	6300	8000	42	65	1	0.46
65.6	72	5300	5700	44	71	1.5	0.51
73.6	81.5	6000	7500	47	73	1	0.52
73.6	81.5	6000	7500	47	73	1	0.54
82.8	98	4500	5600	49	81	1.5	0.71
115	112	4500	5600	49	81	1.5	1
115	112	4500	5600	49	81	1.5	1.01
77.1	88	5300	6700	52	78	1	0.56
77.1	88	5300	6700	52	78	1	0.629
101	114	4300	5300	54	91	1.5	0.95
138	160	3800	4800	54	91	1.5	1.35
138	160	3800	4800	54	91	1.5	1.52
84.5	100	5000	6300	57	83	1	0.6
84.5	100	5000	6300	57	83	1	0.63
84.5	100	5000	6300	57	83	1	0.63
120	140	3600	4800	60	100	2	1.2
157	258	3400	4300	60	100	2	2.1
176	200	3400	4300	60	100	2	1.85
176	200	3400	4300	60	100	2	2.17
176	200	3400	4300	60	100	2	2.17
99.5	118	4500	5600	64	91	1.5	0.82
99.5	118	4500	5600	64	91	1.5	0.887
99.5	118	4500	5600	64	91	1.5	0.879
138	163	3400	4300	65	110	2	1.6
175	230	2300	4000	65	110	2	1.6



Harbin Bearing
Group Corporation

Spherical roller bearings

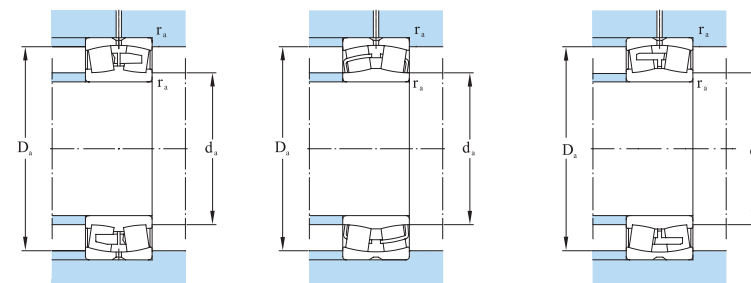
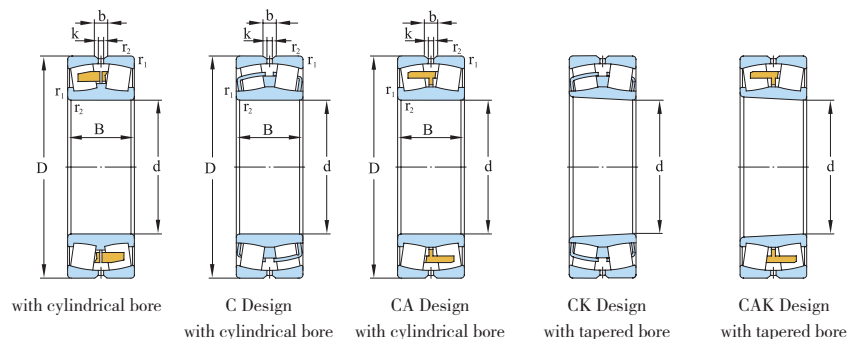


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22311/W33	22311CK	55	120	43	5.5	2.5	2
22311C	22311CK		120	43			2
22311CA	22311CAK		120	43			2
22311CA/W33	22311CAK/W33		120	43	5.5	2.5	2
22311CA/YB2			120	43			2
22311CAF3			120	43			2
22212C	22212CK	60	110	28			1.5
22212CA	22212CAK		110	28			1.5
22212CA/W33	22212CAK/W33		110	28	5.5	2	1.5
21312C	21312CK		130	31			2.1
22312	22312K		130	46			2.1
22312C	22312CK		130	46			2.1
22312CA	22312CAK		130	46			2.1
22312CA/W33			130	46	5.5	3	2.1
22312CA/YB2			130	46			2.1
22312CAF3			130	46			2.1
22213C	22213CK	65	120	31			1.5
22213CA	22213CAK		120	31			1.5
22213CA/W33	22213CAK/W33		120	31	5.5	2.5	1.5
21313C	21313CK		140	33			2.1
21313CA	21313CAKF3		140	33			2.1
22313	22313K		140	48			2.1
22313C	22313CK		140	48			2.1
22313C/YB2			140	48			2.1
22313CA	22313CAK		140	48			2.1
22313CA/W33	22313CAK/W33		140	48	5.5	3	2.1
22214C	22214CK	70	125	31			1.5
22214CA	22214CAK		125	31			1.5
22214CA/W33			125	31	6	2.5	1.5
21314C	21314CK		150	35			2.1
22314	22314K		150	51			2.1
22314C/W33	22314CK/W33		150	51	8.3	4.5	2.1

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
175	230	2300	4000	65	110	2	1.6
199	232	2300	4000	65	110	2	2.35
199	232	2300	4000	65	110	2	2.6
175	230	2300	4000	65	110	2	2.42
175	230	2300	4000	65	110	2	2.6
175	230	2300	4000	65	110	2	2.6
122	146	4000	5000	69	101	1.5	1.1
122	146	4000	5000	69	101	1.5	1.01
122	146	4000	5000	69	101	1.5	0.982
161	200	3000	3800	72	118	2	1.95
212	284	3000	3800	72	118	2	1.95
235	280	3000	3800	72	118	2	2.95
235	280	3000	3800	72	118	2	3.33
235	280	3000	3800	72	118	2	3.33
235	280	3000	3800	72	118	2	3.33
148	183	3800	4800	74	111	1.5	1.45
148	183	3800	4800	74	111	1.5	1.56
148	183	3800	4800	74	111	1.5	1.56
184	240	2800	3600	77	128	2	2.45
184	240	2800	3600	77	128	2	2.58
253	300	2600	3400	77	128	2	4.97
253	300	2600	3400	77	128	2	3.55
253	300	2600	3400	77	128	2	4.97
253	300	2600	3400	77	128	2	4.92
253	300	2600	3400	77	128	2	4.9
148	186	3600	4500	79	116	1.5	1.55
148	186	3600	4500	79	116	1.5	1.83
148	186	3600	4500	79	116	1.5	1.83
207	260	2600	3400	82	138	2	3
311	380	2400	3200	82	138	2	4.48
311	380	2400	3200	82	138	2	4.3



Spherical roller bearings

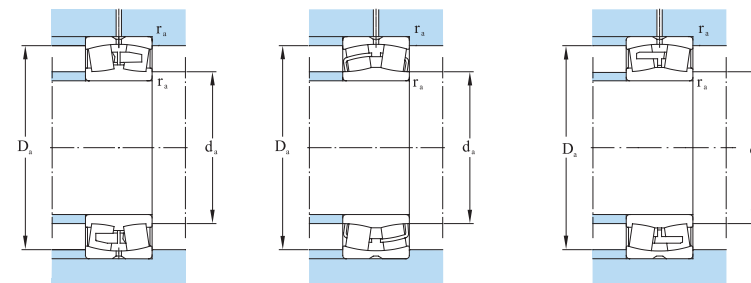
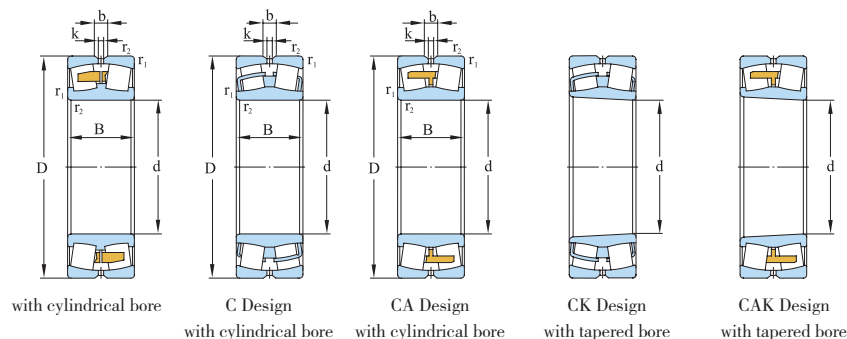


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22314CA	22314CAK	70	150	51			2.1
22314CA/W33	22314CAK/W33		150	51	8.3	4.5	2.1
22314CAF3	22314CAF3		150	51			2.1
22215C	22215CK	75	130	31			1.5
22215CA	22215CAK		130	31			1.5
22215CA/W33			130	31	5.5	2.5	1.5
21315C	21315CK		160	37			2.1
21315CA	21315CAK		160	37			2.1
22315	22315K/W33		160	55	8.3	4.5	2.1
22315/W33			160	55	8.3	4.5	2.1
22315C/W33	22315CK/W33		160	55	8.3	4.5	2.1
22315CA	22315CAK		160	55			2.1
22315CA/W33	22315CAK/W33		160	55	8.3	4.5	2.1
22315CAF3			160	55			2.1
22315CAF3/W33			160	55	8.3	4.5	2.1
22216	22216K	80	140	33			2
22216C	22216CK		140	33			2
22216CA	22216CAK		140	33			2
21316C	21316CK		170	39			2.1
21316CA	21316CAK		170	39			2.1
22316	22316K		170	39			2.1
22316C/W33	22316CK/W33		170	58	8.3	4.5	2.1
22316CA	22316CAK		170	58			2.1
22316CA/W33	22316CAK/W33		170	58	8.3	4.5	2.1
22316CA/HAC9W33YA8			170	58	8.3	4.5	2.1
22316CAF3			170	58			2.1
22217/W33		85	150	36	8.3	4.5	2
22217C/W33	22217CK/W33		150	36	8.3	4.5	2
22217CA/W33	22217CAK/W33		150	36	8.3	4.5	2
21317C	21317CK		180	41			3
21317CA	21317CAK		180	41			3
21317C/W33	21317CAK/W33		180	41	8.3	4.5	3

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
311	380	2400	3200	82	138	2	4.3
311	380	2400	3200	82	138	2	5.23
311	380	2400	3200	82	138	2	5.23
158	208	3400	4300	84	121	1.5	1.65
158	208	3400	4300	84	121	1.5	1.71
158	208	3400	4300	84	121	1.5	1.71
235	300	2400	3200	87	148	2	3.55
235	300	2400	3200	87	148	2	5.44
345	430	2200	3000	87	148	2	5.56
345	430	2200	3000	87	148	2	5.56
345	430	2200	3000	87	148	2	5.25
345	430	2200	3000	87	148	2	5.44
345	430	2200	3000	87	148	2	5.4
345	430	2200	3000	87	148	2	5.32
176	228	3200	4000	90	130	2	2.1
176	228	3200	4000	90	130	2	2.05
176	228	3200	4000	90	130	2	2.03
258	335	2200	3000	92	158	2	4.2
258	335	2200	3000	92	158	2	4.48
258	335	2200	3000	92	158	2	6.79
374	455	2000	2800	92	158	2	6.2
374	455	2000	2800	92	158	2	7.47
374	455	2000	2800	92	158	2	7.47
374	455	2000	2800	92	158	2	7.36
374	455	2000	2800	92	158	2	7.34
210	270	3000	3800	95	140	2	2.73
210	270	3000	3800	95	140	2	2.55
210	270	3000	3800	95	140	2	2.69
293	375	2000	2800	99	166	2.5	5
293	375	2000	2800	99	166	2.5	5.3
293	375	2000	2800	99	166	2.5	5.3



Spherical roller bearings



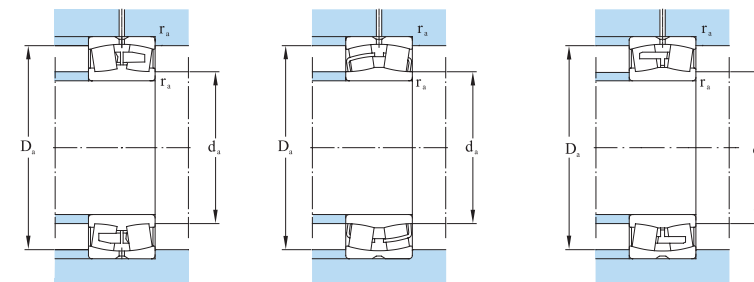
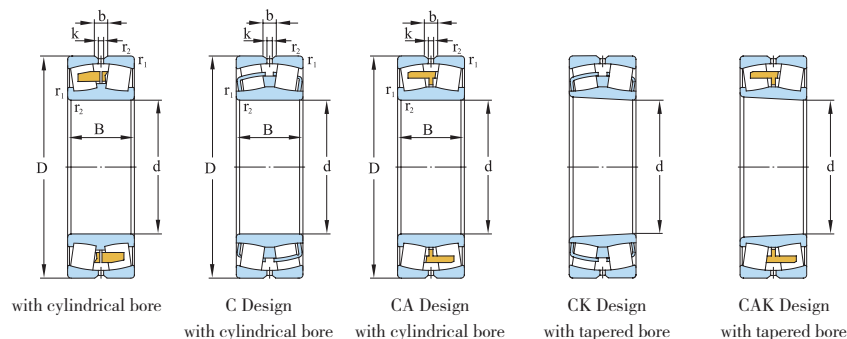
Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22317		85	180	60			3
22317/W33			180	60	8.3	4.5	3
22317C/W33	22317CK/W33		180	60	8.3	4.5	3
22317CA/W33	22317CAK/W33		180	60	8.3	4.5	3
22317CAF3			180	60			3
22218		90	160	40			2
22218CA	22218CAK		160	40			2
2218CAF3			160	40			2
22218C/W33	22218CK/W33		160	40	8.3	4.5	2
22218CA/W33	22218CAK/W33		160	40	8.3	4.5	2
23218			160	52.4			2
23218C/W33	23218CK/W33		160	52.4	5.5	3	2
23218CA	23218CAK		160	52.4			2
23218CA/HAC9S0W24			160	52.4			2
23218CA/W33	23218CAK/W33		160	52.4	5.5	3	2
21318C	21318CK		190	43			3
21318CA	21318CAK		190	43			3
22318	22318K		190	64			3
22318C/W33	22318CK/W33		190	64	8.3	4.5	3
22318CA	22318CAK	95	190	64			3
22318C/W33	22318CAK/W33		190	64	8.3	4.5	3
22318CAF3	22318CAKF3		190	64			3
22219			170	43			2.1
22219C/W33	22219CK/W33		170	43	8.3	4.5	2.1
22219CA	22219CAK		170	43			2.1
22219CA/W33	22219CAK/W33		170	43	8.3	4.5	2.1
21319C	21319CK		200	45			3
21319CA	21319CAK		200	45			3
22319			200	67			3
22319/W33			200	67	8.3	4.5	3
	22319CK		200	67			3
22319C/W33	22319CK/W33		200	67	8.3	4.5	3

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
420	520	1900	2600	99	166	2.5	8
420	520	1900	2600	99	166	2.5	8
420	520	1900	2600	99	166	2.5	7.25
420	520	1900	2600	99	166	2.5	8.19
420	520	1900	2600	99	166	2.5	8.12
253	340	2600	3400	100	150	2	3.4
253	340	2600	3400	100	150	2	3.4
253	340	2600	3400	100	150	2	3.38
253	340	2600	3400	100	150	2	3.4
253	340	2600	3400	100	150	2	3.4
311	440	1900	2600	100	150	2	4.66
311	440	1900	2600	100	150	2	4.6
311	440	1900	2600	100	150	2	4.82
311	440	1900	2600	100	150	2	4.72
311	440	1900	2600	100	150	2	4.82
322	425	1900	2600	104	176	2.5	5.8
322	425	1900	2600	104	176	2.5	6.15
477	610	1800	2400	104	176	2.5	8.6
477	610	1800	2400	104	176	2.5	8.6
477	610	1800	2400	104	176	2.5	11.5
477	610	1800	2400	104	176	2.5	11.5
477	610	1800	2400	104	176	2.5	11.2
282	375	2400	3200	107	158	2	4.27
282	375	2400	3200	107	158	2	4
282	375	2400	3200	107	158	2	4.68
282	375	2400	3200	107	158	2	4.68
351	480	1800	2400	109	186	2.5	7.15
351	480	1800	2400	109	186	2.5	7.49
518	670	1800	2400	109	186	2.5	10.6
518	670	1800	2400	109	186	2.5	10.6
518	670	1800	2400	109	186	2.5	10.4
518	670	1800	2400	109	186	2.5	10



Harbin Bearing
Group Corporation

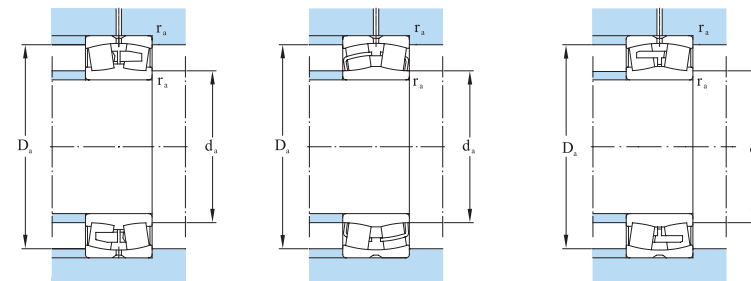
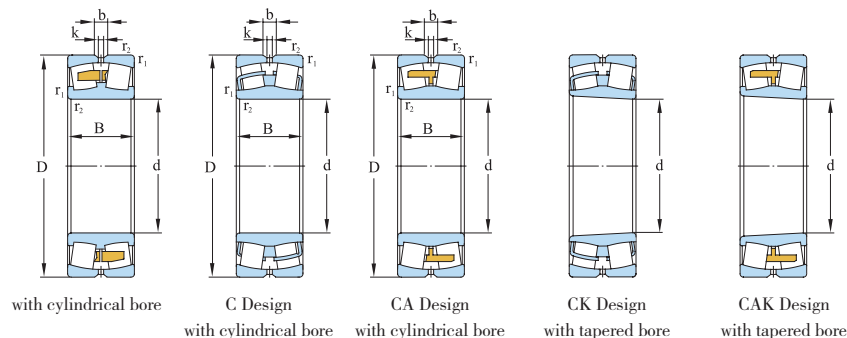
Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22319CA		95	200	67			3
22319CA/W33	22319CAK/W33		200	67	8.3	4.5	3
23020C/W33	23020CK/W33		150	37	5.5	3	1.5
23020CA			150	37			1.5
23020CA/W33	23020CAK/W33		150	37	5.5	3	1.5
23120C/W33	23120CK/W33		165	52	5.5	3	2
23120CA			165	52			2
23120CA/W33	23120CAK/W33		165	52	5.5	3	2
22220			180	46			2.1
22220C/W33	22220CK/W33		180	46	8.3	4.5	2.1
22220CA	22220CAK	100	180	46			2.1
22220CA/W33	22220CAK/W33		180	46	8.3	4.5	2.1
22220CAF3	22220CAKF3		180	46			2.1
23220C/W33	23220CK/W33		180	60.3	9.5	4	2.1
23220CA	23220CAKF3/W33		180	60.3	9.5	4	2.1
23220CA/W33	23220CAK/W33		180	60.3	9.5	4	2.1
21320C	21320CK		215	47			3
21320CA	21320CAK		215	47			3
22320	22320CK		215	73			3
22320C/W33	22320CK/W33		215	73	11.1	6	3
22320CA	22320CAK	105	215	73			3
22320CA/W33	22320CAK/W33		215	73	11.1	6	3
22320CAF3	22320CAKF3		215	73			3
23121CA	23121CAK		175	56			2
23121CAL			175	56			2
23022C	23022CK		170	45			2
23022CA	23022CAK		170	45			2
23022CA/W33			170	45	7.5	3	2
23022CAF3			170	45			2
23022CAF3/W33			170	45	7.5	3	2
23122C/W33	23122CK/W33	110	180	56	5.5	3	2
23122CAF3			180	56			2

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
518	670	1800	2400	109	186	2.5	10.5
518	670	1800	2400	109	186	2.5	10.5
215	400	2400	3200	110	140	2	2.51
215	400	2400	3200	110	140	2	2.51
215	400	2400	3200	110	140	2	2.51
322	490	2000	2800	110	155	2	4.4
322	490	2000	2800	110	155	2	4.42
322	490	2000	2800	110	155	2	4.42
311	415	2200	3000	112	168	2	5.37
311	415	2200	3000	112	168	2	4.85
311	415	2200	3000	112	168	2	5.18
311	415	2200	3000	112	168	2	5.18
311	415	2200	3000	112	168	2	5.1
414	600	1700	2200	112	168	2	6.7
414	600	1700	2200	112	168	2	6.58
414	600	1700	2200	112	168	2	6.58
385	530	1700	2200	114	201	2.5	8.8
385	530	1700	2200	114	201	2.5	9
610	800	1700	2200	114	201	2.5	13.8
610	800	1700	2200	114	201	2.5	13
610	800	1700	2200	114	201	2.5	13
610	800	1700	2200	114	201	2.5	13.8
610	800	1700	2200	114	201	2.5	13.4
365	550	1900	2700	115	165	2	5.48
365	550	1900	2700	115	165	2	5.48
267	440	2200	3000	120	160	2	3.75
267	440	2200	3000	120	160	2	3.54
267	440	2200	3000	120	160	2	3.54
267	440	2200	3000	120	160	2	3.54
267	440	2200	3000	120	160	2	3.5
374	585	1900	2600	120	170	2	5.55
374	585	1900	2600	120	170	2	5.73

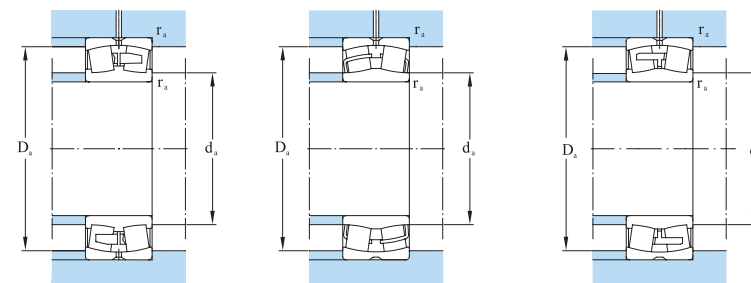
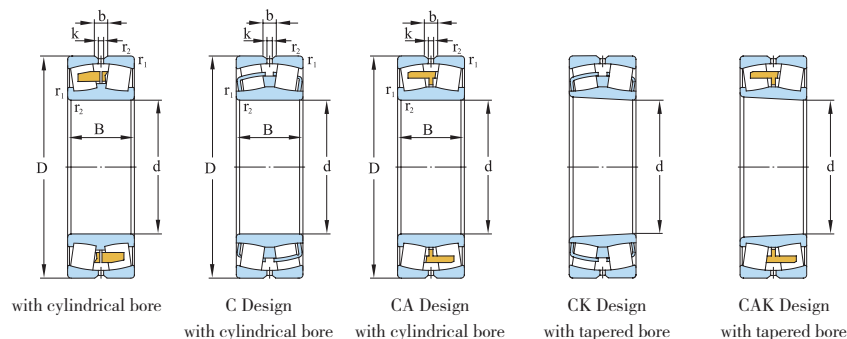
Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23122CA		110	180	56			2
23122CA/W33	23122CAK/W33		180	56	5.5	3	2
24122/W33			180	69	5.5	3	2
24122C/W33	24122CK30/W33		180	69	5.5	3	2
24122CA			180	69			2
24122CA/W33	24122CAK30/W33		180	69	5.5	3	2
22222			200	53			2.1
22222/W33			200	53	8.3	4.5	2.1
	22222CK		200	53			2.1
22222C/W33	22222CK/W33		200	53	8.3	4.5	2.1
22222CA			200	53			2.1
22222CAF3			200	53			2.1
22222CA/W33	22222CAK/W33		200	53	8.3	4.5	2.1
23222C/W33	23222CK/W33		200	69.8	5.5	3	2.1
23222CA/W33	23222CAK/W33		200	69.8	5.5	3	2.1
23222CA			200	69.8			2.1
23222CAF3			200	69.8			2.1
23222CAF3/W33			200	69.8	5.5	3	2.1
21322C	21322CK	120	240	50			3
21322CA	21322CAK		240	50			3
22322	22322CK		240	80			3
22322C/W33	22322CK/W33		240	80	13.9	7.5	3
22322CA	22322CAK		240	80			3
22322CA/W33	22322CAK/W33		240	80	13.9	7.5	3
22322CAF3	22322CAKF3		240	80			3
23024	23024K		180	46			2
23024C/W33	23024CK/W33		180	46	5.5	3	2
	23024CK		180	46			2
23024CA	23024CAK		180	46			2
23024CA/W33	23024CAK/W33		180	46	5.5	3	2
24024C/W33	24024CK30/W33		180	60	5.5	3	2
24024CA			180	60			2

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
374	585	1900	2600	120	170	2	5.73
374	585	1900	2600	120	170	2	5.73
460	750	1000	1400	120	170	2	6.9
460	750	1000	1400	120	170	2	6.85
460	750	1000	1400	120	170	2	6.92
460	750	1000	1400	120	170	2	6.92
408	560	2000	2800	122	188	2	7
408	560	2000	2800	122	188	2	7.43
408	560	2000	2800	122	188	2	7.43
408	560	2000	2800	122	188	2	7
408	560	2000	2800	122	188	2	7.43
408	560	2000	2800	122	188	2	7.43
408	560	2000	2800	122	188	2	7.43
408	560	2000	2800	122	188	2	7.43
518	765	1600	2000	122	188	2	9.7
518	765	1600	2000	122	188	2	10.1
518	765	1600	2000	122	188	2	10.1
518	765	1600	2000	122	188	2	10.1
460	630	1600	2000	124	226	2.5	12
460	630	1600	2000	124	226	2.5	13
725	965	1600	2000	124	226	2.5	18.9
725	965	1600	2000	124	226	2.5	18
725	965	1600	2000	124	226	2.5	18.9
725	965	1600	2000	124	226	2.5	18.9
725	965	1600	2000	124	226	2.5	18.9
305	510	2000	2800	130	170	2	4.19
305	510	2000	2800	130	170	2	4.2
305	510	2000	2800	130	170	2	4.2
305	510	2000	2800	130	170	2	4.44
305	510	2000	2800	130	170	2	4.44
374	670	1600	2000	130	170	2	5.4
374	670	1600	2000	130	170	2	5.83

Spherical roller bearings

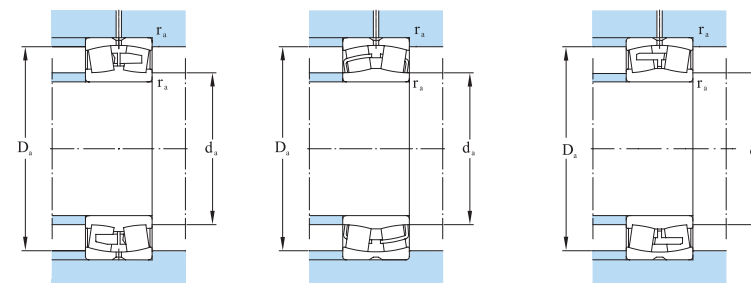
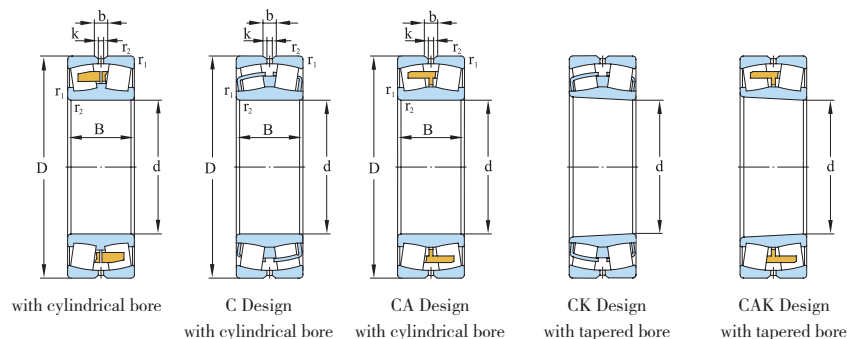


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
24024CA/W33	24024CAK30/W33	120	180	60	5.5	3	2
23124C/W33	23124CK/W33		200	62	5.5	3	2
24124C/W33	24124CK30/W33		200	80	5.5	3	2
24124CA			200	80			2
24124CA/W33	24124CAK30/W33		200	80	5.5	3	2
24124CAF3			200	80			2
22224	22224K		215	58			2.1
22224C/W33	22224CK/W33		215	58	11.1	6	2.1
22224CA	22224CAK		215	58			2.1
22224CAF3	22224CAKF3		215	58			2.1
	22224CAKF3/W33		215	58	11.1	6	2.1
23026C/W33	23026CK/W33	130	200	52	5.5	3	2
23026CA	23026CAK		200	52			2
23026CA/W33	23026CAK/W33		200	52	5.5	3	2
23026CAF3	23026CAKF3		200	52			2
23026CAF3/W33	23026CAKF3/W33		200	52	5.5	3	2
24026C/W33	24026CK30/W33		200	69	5.5	3	2
24026CA/W33	24026CAK30/W33		210	69	5.5	3	2
23126C/W33	23126CK/W33		210	64	8.3	4.5	2
23126CA	23126CAKF3/W33		210	64	8.3	4.5	2
23126CA/W33	23126CAK/W33		210	64	8.3	4.5	2
24126C/W33	24126CK30/W33		210	80	8.3	4.5	2
24126CA/W33	24126CAK30/W33		210	80	8.3	4.5	3
22226/W33			230	64	11.1	6	3
22226C/W33	22226CK/W33		230	64	11.1	6	3
22226CA	22226CAK		230	64			3
22226CA/W33	22226CAK/W33		230	64	11.1	6	3
	22226CAKF3		230	64			3
23226C/W33	23226CK/W33		230	80	8.3	4.5	3
23226CA	23226CAK		230	80			3
23226CA/W33			230	80	8.3	4.5	3
23226CAF3	23226CAKF3		230	80			3

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
374	670	1600	2000	130	170	2	5.83
449	695	1800	2400	130	190	2	7.8
575	950	900	1200	130	190	2	10
575	950	900	1200	130	190	2	10.6
575	950	900	1200	130	190	2	10.6
575	950	900	1200	130	190	2	10.6
466	670	1900	2600	132	203	2	8.7
466	670	1900	2600	132	203	2	8.7
466	670	1900	2600	132	203	2	9.76
466	670	1900	2600	132	203	2	9.68
466	670	1900	2600	132	203	2	9.68
374	610	1900	2600	140	190	2	6.1
374	610	1900	2600	140	190	2	7.04
374	610	1900	2600	140	190	2	7.04
374	610	1900	2600	140	190	2	6.75
374	610	1900	2600	140	190	2	6.75
477	815	1500	1900	140	190	2	7.95
477	815	1500	1900	140	190	2	8.28
489	780	1700	2200	140	200	2	8.55
489	780	1700	2200	140	200	2	10.7
489	780	1700	2200	140	200	2	10.7
587	1000	900	1200	140	200	2	11
587	1000	900	1200	140	200	2	12
546	800	1800	2400	144	216	2.5	11
546	800	1800	2400	144	216	2.5	11
546	800	1800	2400	144	216	2.5	12.4
546	800	1800	2400	144	216	2.5	12.4
546	800	1800	2400	144	216	2.5	12.4
690	1060	1300	1700	144	216	2.5	14
690	1060	1300	1700	144	216	2.5	14
690	1060	1300	1700	144	216	2.5	14



Spherical roller bearings

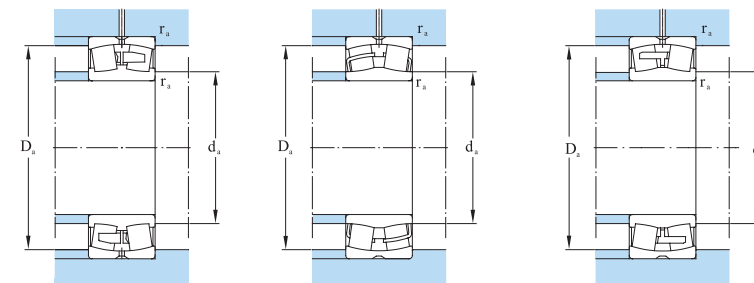
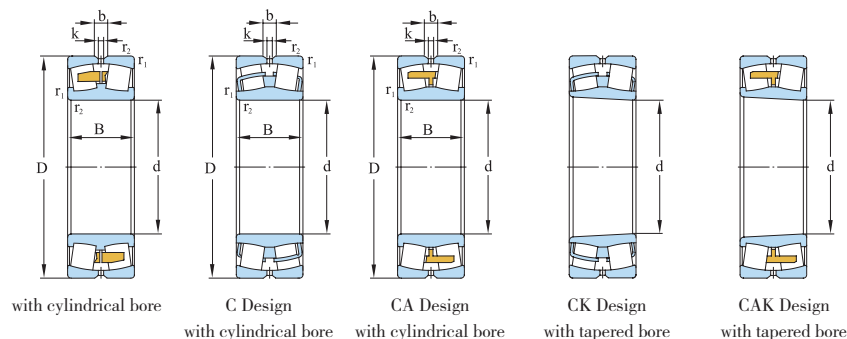


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2min}
with cylindrical bore	with tapered bore	mm					
23226CAF3/W33		130	230	80	12	5	3
23226CAF3/HAC9SOW20X			230	80			3
22326C/W33	22326CK/W33		230	93	16.7	9	4
22326CA	22326CAK		230	93			4
22326CAF3			230	93			4
22326CAF3/W33			230	93	16.7	9	4
22326CA/W33	22326CAK/W33		230	93	16.7	9	4
22326CAQ1/HA			230	93			4
23028C/W33	23028CK/W33	140	210	53	8.3	4.5	2
23028CA	23028CAK		210	53			2
23028CAF3	23028CAKF3		210	53			2
23028CA/W33	23028CAK/W33		210	53	8.3	4.5	2
24028C/W33	24028CK30/W33		210	69	5.5	3	2
24028CA/W33	24028CAK30/W33		210	69	5.5	3	2
23128C/W33	23128CK/W33		225	68	8.3	4.5	2.1
23128CA			225	68			2.1
23128CA/W33	23128CAK/W33		225	68	8.3	4.5	2.1
24128C/W33	24128CK/W33		225	85	8.3	4.5	2.1
24128CA	24128CAK30/W33		225	85	8.3	4.5	2.1
24128CAF3			225	85			2.1
24128CA/W33	24128CAK/W33		225	85	8.3	4.5	2.1
22228C/W33	22228CK/W33		250	68	11.1	6	3
22228CA	22228CAK		250	68			3
22228CA/W33	22228CAK/W33		250	68	11.1	6	3
22228CAF3			250	68			3
22228CAF3/W33	22228CAKF3/W33		250	68	11.1	6	3
23228C/W33	23228CK/W33		250	88	11.1	6	3
23228CA/W33	23228CAK/W33		250	88	11.1	6	3
23228CAF3/W33			250	88	11.1	6	3
22328			300	102			3.7
22328C/W33	22328CK/W33		300	102	16.7	9	4
22328CA	22328CAK		300	102			4

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
690	1060	1300	1700	144	216	2.5	14
690	1060	1300	1700	144	216	2.5	14
978	1320	1300	1700	148	262	3	28.5
978	1320	1300	1700	148	262	3	28.5
978	1320	1300	1700	148	262	3	28.5
978	1320	1300	1700	148	262	3	28.5
978	1320	1300	1700	148	262	3	18.3
978	1320	1300	1700	148	262	3	18.3
397	680	1800	2400	150	200	2	6.55
397	680	1800	2400	150	200	2	6.55
397	680	1800	2400	150	200	2	6.55
397	680	1800	2400	150	200	2	6.7
495	900	1400	1800	150	200	2	8.45
495	900	1400	1800	150	200	2	8.65
546	900	1600	2000	152	213	2	10.5
546	900	1600	2000	152	213	2	10.9
546	900	1600	2000	152	213	2	10.9
673	1160	850	1100	152	213	2	13
673	1160	850	1100	152	213	2	13.5
673	1160	850	1100	152	213	2	13.5
610	900	1700	2200	154	236	2.5	14
610	900	1700	2200	154	236	2.5	16.2
610	900	1700	2200	154	236	2.5	16.2
610	900	1700	2200	154	236	2.5	15.6
610	900	1700	2200	154	236	2.5	15.6
799	1250	1200	1600	154	236	2.5	18.5
799	1250	1200	1600	154	236	2.5	19.7
799	1250	1200	1600	154	236	2.5	19.3
1130	1560	1100	1500	158	282	3	
1130	1560	1100	1500	158	282	3	34.5
1130	1560	1100	1500	158	282	3	36.2



Spherical roller bearings

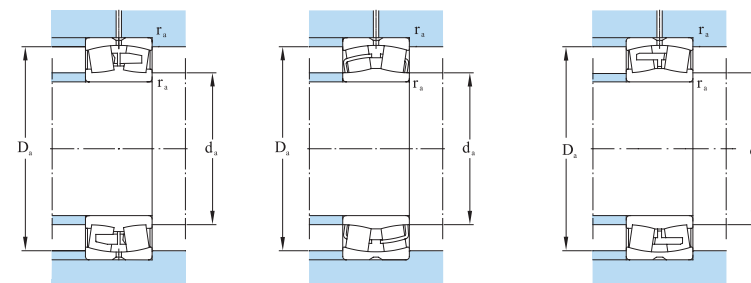
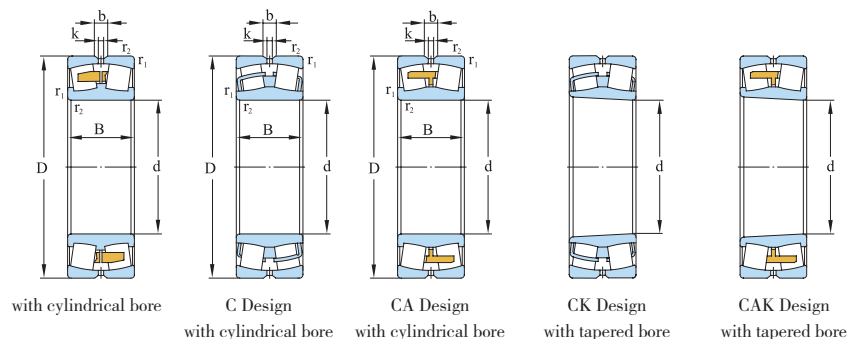


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22328CA/W33	22328CAK/W33	140	300	102	16.7	9	4
22328CAF3			300	102			4
22328CAQ1/HA			300	102			4
23030	23030K	150	225	56			2.1
23030C/W33	23030CK/W33		225	56	8.3	4.5	2.1
23030CA			225	56			2.1
23030CAF3			225	56			2.1
23030CA/W33	23030CAK/W33		225	56	8.3	4.5	2.1
24030C/W33	24030CK30/W33		225	75	5.5	3	2.1
24030CA/W33	24030CAK30/W33		225	75	5.5	3	2.1
23130/W33			250	80	11.1	6	2.1
23130C/W33	23130CK/W33		250	80	11.1	6	2.1
23130CA	23130CAK		250	80			2.1
23130CA/W33	23130CAK/W33		250	80	11.1	6	2.1
23130CAF3			250	80			2.1
23130CAF3/W33	23130CAKF3/W33		250	80	11.1	6	2.1
24130C/W33	24130CK30/W33		250	100	8.3	4.5	2.1
24130CA/W33	24130CAK30/W33		250	100	8.3	4.5	2.1
22230/W33			270	73	13.9	7.5	3
22230C/W33	22230CK/W33		270	73	13.9	7.5	3
22230CA	22230CAK		270	73			3
22230CAF3			270	73			3
22230CA/W33	22230CAK/W33		270	73	13.9	7.5	3
23230			270	96			3
23230C/W33	23230CK/W33		270	96	11.1	6	3
23230CA			270	96			3
23230CA/W33	23230CAK/W33		270	96	11.1	6	3
22330C/W33	22330CK/W33		320	108	16.7	9	4
22330CA	22330CAK		320	108			4
22330CA/W33	22330CAK/W33		320	108	16.7	9	4
	22330CAKF3		320	108			4
23032	23032K	160	240	60			2.1

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
1130	1560	1100	1500	158	282	3	36.2
1130	1560	1100	1500	158	282	3	36.2
1130	1560	1100	1500	158	282	3	36.2
437	750	1700	2200	162	213	2	7.44
437	750	1700	2200	162	213	2	7.95
437	750	1700	2200	162	213	2	8.01
437	750	1700	2200	162	213	2	8.01
437	750	1700	2200	162	213	2	8.01
564	1040	1300	1700	162	213	2	10.5
564	1040	1300	1700	162	213	2	9.39
725	1200	1400	1800	162	238	2	16
725	1200	1400	1800	162	238	2	16
725	1200	1400	1800	162	238	2	16.5
725	1200	1400	1800	162	238	2	16.5
725	1200	1400	1800	162	238	2	16.5
725	1200	1400	1800	162	238	2	16.5
897	1530	800	1000	162	238	2	19.5
897	1530	800	1000	162	238	2	21
736	1080	1600	2000	164	256	2.5	18
736	1080	1600	2000	164	256	2.5	18
736	1080	1600	2000	164	256	2.5	18
736	1080	1600	2000	164	256	2.5	18.7
937	1460	1100	1500	164	256	2.5	24
937	1460	1100	1500	164	256	2.5	24
937	1460	1100	1500	164	256	2.5	24
937	1460	1100	1500	164	256	2.5	26.6
1270	1760	1000	1400	168	302	3	41.5
1270	1760	1000	1400	168	302	3	42.7
1270	1760	1000	1400	168	302	3	42.7
1270	1760	1000	1400	168	302	3	42.7
506	880	1700	2200	172	228	2	8.86



Spherical roller bearings

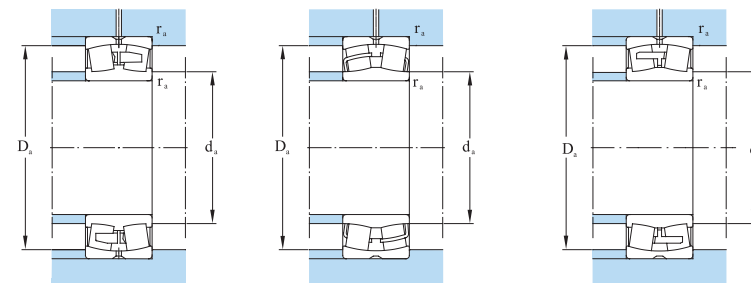
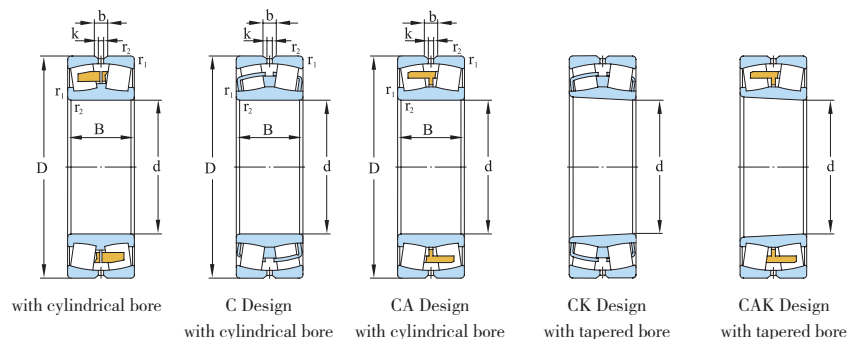


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23032C/W33	23032CK/W33	160	240	60	11.1	6	2.1
23032CA			240	60			2.1
23032CA/W33	23032CAK/W33		240	60	11.1	6	2.1
23032CAF3			240	60			2.1
24032C/W33	24032CK30/W33		240	80	8.3	4.5	2.1
24032CA/W33	24032CAK30/W33		240	80	8.3	4.5	2.1
24032CAF3/W33	24032CAK30F3		240	80	8.3	4.5	2.1
	24032CAK30/W33		240	80	8.3	4.5	2.1
23132C/W33	23132CK/W33		270	86	13.9	7.5	2.1
23132CA	23132CAK		270	86			2.1
23132CA/W33	23132CAK/W33		270	86	13.9	7.5	2.1
23132CAF3			270	86			2.1
24132C/W33	24132CK30/W33		270	109	8.3	4.5	2.1
24132CA/W33	24132CAK30/W33		270	109	8.3	4.5	2.1
24132CA/W33X			270	109	8.3	4.5	2.1
24132CA/HAC9SOW20X			270	109			2.1
22232C/W33	22232CK/W33		290	80	13.9	7.5	3
22232CA	22232CAK		290	80			3
22232CA/W33	22231CAK/W33		290	80	13.9	7.5	3
22232CAF3			290	80			3
23232			290	104			3
23232/W33			290	104	13.9	7.5	3
23232C/W33	23232CK/W33		290	104	13.9	7.5	3
23232CA	23232CAK		290	104			3
23232CA/W33	23232CAK/W33		290	104	13.9	7.5	3
22332			340	114			4
22332C/W33	22332CK/W33		340	114	16.7	9	4
22332CA	22332CAK		340	114			4
22332CA/W33	22332CAK/W33		340	114	16.7	9	4
22332CAF3			340	114			4
22332CAF3/W33	22332CAKF3/W33		340	114	16.7	9	4
23034	23034K	170	260	67			2.1

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
506	880	1700	2200	172	228	2	9.7
506	880	1700	2200	172	228	2	10
506	880	1700	2200	172	228	2	10
506	880	1700	2200	172	228	2	9.97
656	1200	1100	1500	172	228	2	13
656	1200	1100	1500	172	228	2	13.2
656	1200	1100	1500	172	228	2	13.2
656	1200	1100	1500	172	228	2	13.2
845	1370	1300	1700	172	258	2	20.5
845	1370	1300	1700	172	258	2	21.9
845	1370	1300	1700	172	258	2	21.9
845	1370	1300	1700	172	258	2	21.9
1040	1760	700	900	172	258	2	25
1040	1760	700	900	172	258	2	24.6
1040	1760	700	900	172	258	2	24.6
1040	1760	700	900	172	258	2	24.6
863	1290	1500	1900	174	276	2.5	22.5
863	1290	1500	1900	174	276	2.5	24.6
863	1290	1500	1900	174	276	2.5	24.6
863	1290	1500	1900	174	276	2.5	24.6
1070	1660	1000	1400	174	276	2.5	30
1070	1660	1000	1400	174	276	2.5	30.2
1070	1660	1000	1400	174	276	2.5	30
1070	1660	1000	1400	174	276	2.5	30.2
1070	1660	1000	1400	174	276	2.5	30.2
1380	1960	950	1300	178	322	3	50
1380	1960	950	1300	178	322	3	50
1380	1960	950	1300	178	322	3	50
1380	1960	950	1300	178	322	3	52.8
1380	1960	950	1300	178	322	3	52.5
1380	1960	950	1300	178	322	3	52.5
621	1060	1600	2000	182	248	2	13



Spherical roller bearings



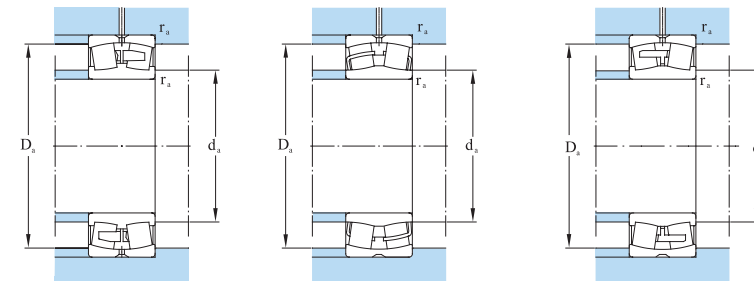
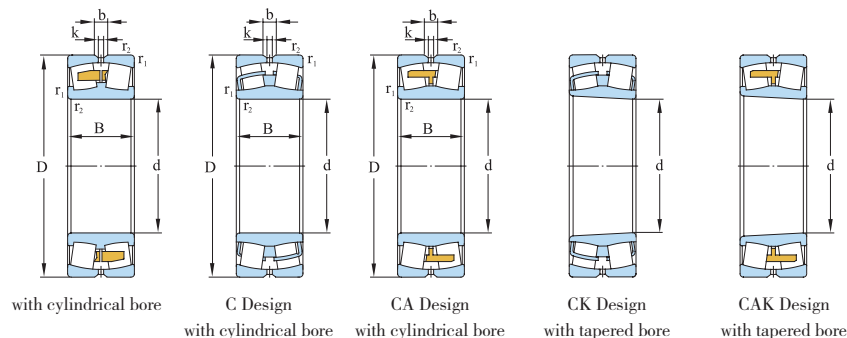
Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2min}
with cylindrical bore	with tapered bore	mm					
23034C/W33	23034CK/W33	170	260	67	11.1	6	2.1
23034CA	23034CAK		260	67			2.1
23034CA/W33	23034CAK/W33		260	67	11.1	6	2.1
23034CAF3			260	67			2.1
24034C/W33	24034CK30/W33		260	90	8.3	4.5	2.1
24034CA/W33	24034CAK30/W33		260	90	8.3	4.5	2.1
23134C/W33	23134CK/W33		280	88	13.9	7.5	2.1
23134CA	23134CAK		280	88			2.1
23134CA/W33	23134CAK/W33		280	88	13.9	7.5	2.1
	23134CAKF3		280	88			2.1
24134CA/HCW33YA2			280	109	8.3	5	2.1
24134C/W33	24134CK30/W33		280	109	8.3	4.5	2.1
24134CA/W33	24134CAK30/W33		280	109	8.3	4.5	2.1
22234C/W33	22234CK/33		310	86	16.7	9	4
22234CA	22234CAK		310	86			4
22234CA/W33	22234CAK/W33		310	86	16.7	9	4
23234C/W33	23234CK/W33		310	110	13.9	7.5	4
23234CA			310	110			4
23234CAF3/W33			310	110	13.9	7.5	4
23234CA/W33	23234CAK/W33		310	110	13.9	7.5	4
22334C/YA7			360	120			4
22334C/W33	22334CK/W33		360	120	16.7	9	4
22334CA			360	120			4
22334CA/W33	22334CAK/W33		360	120	16.7	9	4
23936C/W33	23936CK/W33	180	250	52	5.5	3	2
23936CA/W33	23936CAK/W33		250	52	5.5	3	2
23936CAF3/W33			250	52	5.5	3	2
23036C/W33	23036CK/W33		280	74	13.9	7.5	2.1
23036CA			280	74			2.1
23036CAF3			280	74			2.1
23036CA/W33	23036CAK/W33		280	74	13.9	7.5	2.1
24036C/W33	24036CK30/W33		280	100	8.3	4.5	2.1

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
621	1060	1600	2000	182	248	2	13
621	1060	1600	2000	182	248	2	13
621	1060	1600	2000	182	248	2	14.1
621	1060	1600	2000	182	248	2	13
799	1460	1000	1400	182	248	2	17.5
799	1460	1000	1400	182	248	2	17.8
897	1500	1200	1600	182	268	2	21.5
897	1500	1200	1600	182	268	2	26.1
897	1500	1200	1600	182	268	2	26.1
897	1500	1200	1600	182	268	2	24.6
1070	1860	670	850	182	268	2	26.5
1070	1860	670	850	182	268	2	26.5
1070	1860	670	850	182	268	2	24.8
978	1460	1300	1700	188	292	3	28.5
978	1460	1300	1700	188	292	3	28.6
978	1460	1300	1700	188	292	3	28.6
1220	1930	950	1300	188	292	3	36.5
1220	1930	950	1300	188	292	3	38
1220	1930	950	1300	188	292	3	38
1220	1930	950	1300	188	292	3	38
1540	2160	950	1300	188	342	3	59.7
1540	2160	950	1300	188	342	3	58.5
1540	2160	950	1300	188	342	3	62.6
1540	2160	950	1300	188	342	3	62.6
431	830	1700	2200	190	240	2	8.2
431	830	1700	2200	190	240	2	9.17
431	830	1700	2200	190	240	2	9.17
725	1250	1400	1800	192	268	2	17
725	1250	1400	1800	192	268	2	17
725	1250	1400	1800	192	268	2	17
725	1250	1400	1800	192	268	2	17.7
937	1730	950	1300	192	268	2	23



Harbin Bearing
Group Corporation

Spherical roller bearings

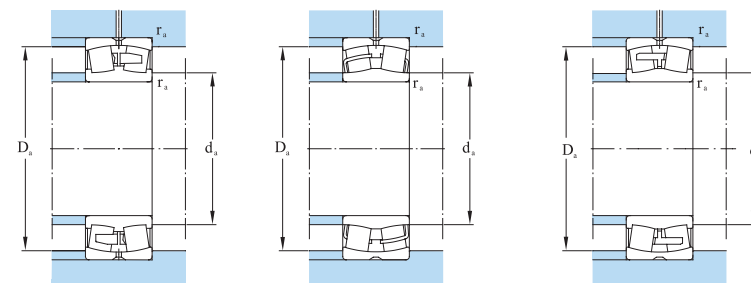
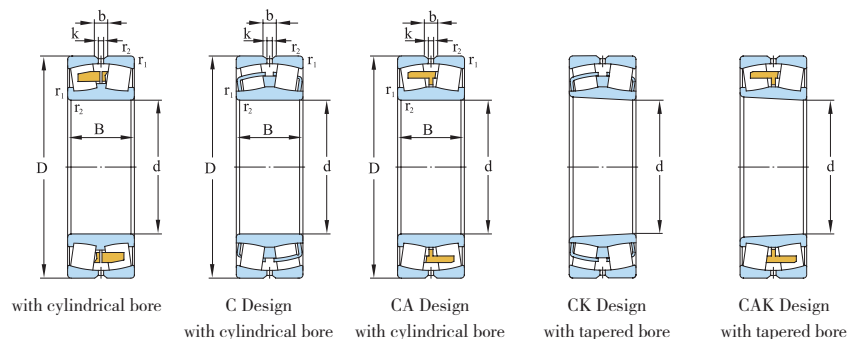


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
24036CA		180	280	100			2.1
24036CA/W33	24036CAK30/W33		280	100	8.3	4.5	2.1
24036CAF3/W33	24036CAK30F3/W33		280	100	8.3	4.5	2.1
23136C/W33	23136CK/W33		300	96	13.9	7.5	3
23136CA	23136CAK		300	96			3
23136CA/W33	23136CAK/W33		300	96	13.9	7.5	3
23136CAF3			300	96			3
24136C/W33	24136CK30/W33		300	118	11.1	6	3
24136CA			300	118			3
24136CA/W33	24136CAK30/W33		300	118	11.1	6	3
24136CAQ1			300	118			3
22236C/W33	22236CK/W33		320	86	16.7	9	4
22236CA	22236CAK		320	86			4
22236CA/W33	22236CAK/W33		320	86	16.7	9	4
22236CAF3	22236CAKF3		320	86			4
22236CAQ1			320	86			4
23236C/W33	23236CK/W33		320	112	13.9	7.5	4
23236CA	23236CAK/W33		320	112	13.9	7.5	4
23236CA/HCW33			320	112	13.9	7.5	4
23236CA/HCW33YA2			320	112	13.9	7.5	4
23236CAF3	23236CAKF3/W33		320	112	13.9	7.5	4
23236CAF3/W33			320	112	13.9	7.5	4
23236CA/W33	23236CAK/W33		320	112	13.9	7.5	4
22336C/W33	22336CK/W33		380	126	22.3	12	4
22336CA	22336CAK		380	126			4
22336CA/W33	22336CAK/W33		380	126	22.3	12	4
22336CAF3/W33			380	126	22.3	12	4
23938C/W33	23938CK/W33	190	260	52	5.5	3	2
23938CA/W33	23938CAK/W33		260	52	5.5	3	2
23038			290	75			2.1
23038C/W33	23038CK/W33		290	75	13.9	7.5	2.1
23038CA/W33	23038CAK/W33		290	75	13.9	7.5	2.1

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
937	1730	950	1300	192	268	2	26.6
937	1730	950	1300	192	268	2	26.6
937	1730	950	1300	192	268	2	26.6
1050	1760	1100	1500	194	286	2.5	27.5
1050	1760	1100	1500	194	286	2.5	27.1
1050	1760	1100	1500	194	286	2.5	27.1
1050	1760	1100	1500	194	286	2.5	27.1
1220	2160	630	800	194	286	2.5	33.5
1220	2160	630	800	194	286	2.5	33
1220	2160	630	800	194	286	2.5	33
1220	2160	630	800	194	286	2.5	33
1010	1560	1300	1700	198	302	3	29.5
1010	1560	1300	1700	198	302	3	29.4
1010	1560	1300	1700	198	302	3	29.4
1010	1560	1300	1700	198	302	3	29.4
1010	1560	1300	1700	198	302	3	29.4
1290	2120	900	1200	198	302	3	39
1290	2120	900	1200	198	302	3	29.4
1290	2120	900	1200	198	302	3	29.4
1290	2120	900	1200	198	302	3	29.4
1290	2120	900	1200	198	302	3	38.7
1730	2450	900	1200	198	362	3	69
1730	2450	900	1200	198	362	3	72
1730	2450	900	1200	198	362	3	72
1730	2450	900	1200	198	362	3	72
414	800	1700	2200	200	250	2	8.4
414	800	1700	2200	200	250	2	9.2
753	1340	1300	1700	202	278	2	18
753	1340	1300	1700	202	278	2	18
753	1340	1300	1700	202	278	2	17.3



Spherical roller bearings

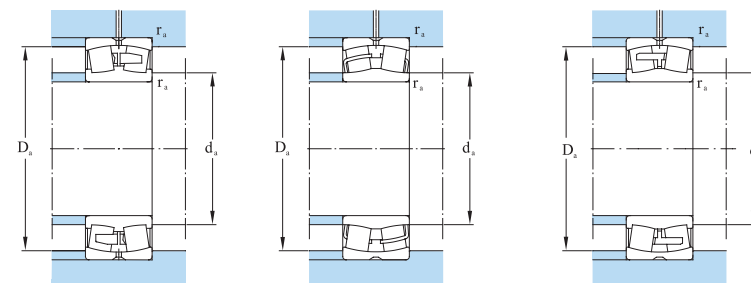
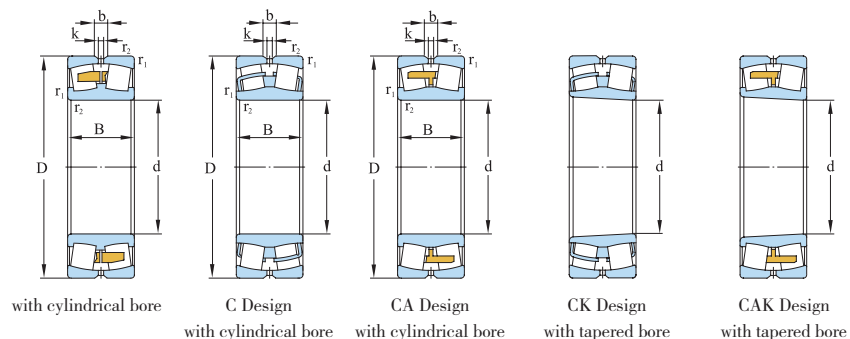


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23038CAF3		190	290	75			2.1
24038C/W33	24038CK30/W33		290	100	8.3	4.5	2.1
24038CA			290	100			2.1
24038CA/W33	24038CAK30/W33		290	100	8.3	4.5	2.1
24038CAF3			290	100			2.1
23138C/W33	23138CK/W33		320	104	13.9	7.5	3
23138CA			320	104			3
23138CA/W33	23138CAK/W33		320	104	13.9	7.5	3
24138C/W33	24138CK30/W33		320	128	11.1	6	3
24138CA			320	128			3
24138CA/W33	24138CAK30/W33		320	128	11.1	6	3
24138CAF3	24138CAKF3		320	128	11.1	6	3
22238			340	92			4
22238/W33			340	92	16.7	9	4
22238C/W33	22238CK/W33		340	92	16.7	9	4
22238CA/W33	22238CAK/W33		340	92	16.7	9	4
	22238CAK		340	92			4
22238CAF3	22238CAKF3		340	120			4
23238C/W33	23238CK/W33		340	120	16.7	9	4
23238CA			340	120			4
23238CA/W33	23238CAK/W33		340	120	16.7	9	4
22338			400	132			5
22338C/W33	22338CK/W33		400	132	22.3	12	5
22338CA			400	132			5
22338CA/W33	22338CAK/W33		400	132	22.3	12	5
22338CAF3			400	132			5
23940C/W33	23940CK/W33	200	280	60	8.3	4.5	2.1
23940CA/W33	23940CAK/W33		280	60	8.3	4.5	2.1
23940CAF3/W33			280	60	8.3	4.5	2.1
23040C/W33	23040CK/W33		310	82	13.9	7.5	2.1
23040CA	23040CAK		310	82			2.1
23040CA/W33	23040CAK/W33		310	82	13.9	7.5	2.1

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
753	1340	1300	1700	202	278	2	18
978	1800	950	1300	202	278	2	24
978	1800	950	1300	202	278	2	22.9
978	1800	950	1300	202	278	2	22.9
978	1800	950	1300	202	278	2	22.9
1200	2080	1000	1400	204	306	2.5	34.5
1200	2080	1000	1400	204	306	2.5	34.3
1200	2080	1000	1400	204	306	2.5	34.3
1400	2500	600	750	204	306	2.5	42
1400	2500	600	750	204	306	2.5	41.9
1400	2500	600	750	204	306	2.5	41.9
1400	2500	600	750	204	306	2.5	41.9
1110	1700	1200	1600	208	322	3	37.4
1110	1700	1200	1600	208	322	3	37.4
1110	1700	1200	1600	208	322	3	36.5
1110	1700	1200	1600	208	322	3	37.4
1110	1700	1200	1600	208	322	3	37.4
1460	2400	850	1100	208	322	3	47.5
1460	2400	850	1100	208	322	3	47.5
1460	2400	850	1100	208	322	3	44.8
1460	2400	850	1100	208	322	3	44.8
1870	2650	850	1100	212	378	4	80.8
1870	2650	850	1100	212	378	4	80
1870	2650	850	1100	212	378	4	82.2
1870	2650	850	1100	212	378	4	82.2
1870	2650	850	1100	212	378	4	82.2
546	1040	1600	2000	212	268	2	11.5
546	1040	1600	2000	212	268	2	12.1
546	1040	1600	2000	212	268	2	12.1
880	1530	1200	1600	212	298	2	23
880	1530	1200	1600	212	298	2	22.6
880	1530	1200	1600	212	298	2	22.6



Spherical roller bearings

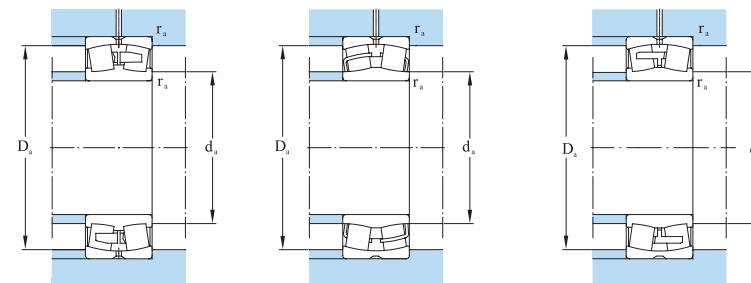
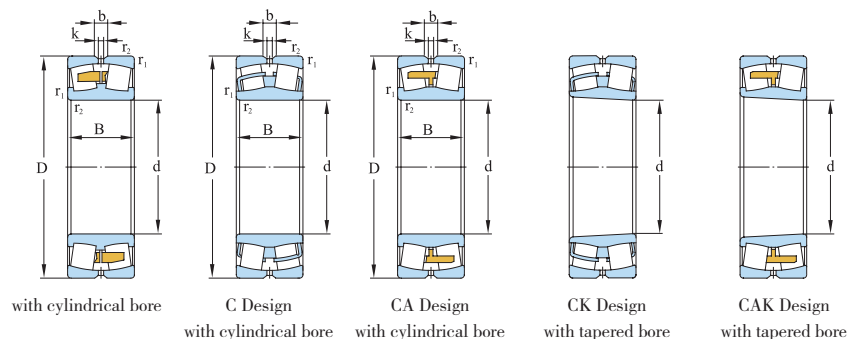


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
24040C/W33	24040CK30/W33	200	310	109	11.1	6	2.1
24040CA/W33	24040CAK30/W33		310	109	11.1	6	2.1
23140C/W33	23140CK/W33		340	112	16.7	9	3
23140CA	23140CAK		340	112			3
23140CA/W33	23140CAK/W33		340	112	16.7	9	3
24140C/W33	24140CK30/W33		340	140	11.1	6	3
24140CA/W33	24140CAK30/W33		340	140	11.1	6	3
22240			360	98			4
22240C/W33	22240CK/W33		360	98	16.7	9	4
22240CA	22240CAK		360	98			4
22240CA/W33	22240CAK/W33		360	98	16.7	9	4
22240CAF3	22240CAKF3		360	98			4
23240C/W33	23240CK/W33		360	128	16.7	9	4
23240CA/W33	23240CAK/W33		360	128	16.7	9	4
	23240CAK		360	128			4
22340C/W33	22340CK/W33		420	138	22.3	12	5
22340CA	22340CAK		420	138			5
22340CA/W33	22340CAK/W33		420	138	22.3	12	5
22340CAF3			420	138			5
23340CAF3			420	165			5
23044CA/YA2		219.5	340	90			3
23944C/W33	23944CK/W33	220	300	60	8.3	4.5	2.1
23944CA/W33	23944CAK/W33		300	60	8.3	4.5	2.1
23044C/W33	23044CK/W33		340	90	13.9	7.5	3
23044CA	23044CAK		340	90			3
23044CA/W33	23044CAK/W33		340	90	13.9	7.5	3
	23044CAKF3		340	90			3
24044C/W33	24044CK30/W33		340	118	11.1	6	3
24044CA/W33	24044CAK30/W33		340	118	11.1	6	3
24044CAF3			340	118			3
24044CAF3/W33			340	118	11.1	6	3
24044CAF3/W33X			340	118	11.1	6	3

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN			r/min	mm			kg
1130	2120	900	1200	212	298	2	30.5
1130	2120	900	1200	212	298	2	31.3
1380	2360	950	1300	214	326	2.5	42.5
1380	2360	950	1300	214	326	2.5	43.8
1380	2360	950	1300	214	326	2.5	43.8
1580	2600	560	700	214	326	2.5	52
1580	2600	560	700	214	326	2.5	52.1
1270	1930	1100	1500	281	342	3	43.5
1270	1930	1100	1500	281	342	3	43.5
1270	1930	1100	1500	281	342	3	44.7
1270	1930	1100	1500	281	342	3	44.7
1270	1930	1100	1500	281	342	3	44.7
1610	2700	850	1100	281	342	3	57
1610	2700	850	1100	281	342	3	53.4
1610	2700	850	1100	281	342	3	53.4
2020	2900	850	1100	222	398	4	92.5
2020	2900	850	1100	222	398	4	97
2020	2900	850	1100	222	398	4	97
2020	2900	850	1100	222	398	4	97
2020	3500	750	950	222	398	4	97
935	1900	1100	1500	234	326	2.5	31.5
546	1080	1500	1900	232	288	2	13
546	1080	1500	1900	232	288	2	13
1050	1860	1100	1500	234	326	2.5	30.5
1050	1860	1100	1500	234	326	2.5	31.6
1050	1860	1100	1500	234	326	2.5	31.6
1050	1860	1100	1500	234	326	2.5	31.6
1360	2600	850	1100	234	326	2.5	39.5
1360	2600	850	1100	234	326	2.5	39.1
1360	2600	850	1100	234	326	2.5	39.1
1360	2600	850	1100	234	326	2.5	39.1
1360	2600	850	1100	234	326	2.5	39.1



Spherical roller bearings



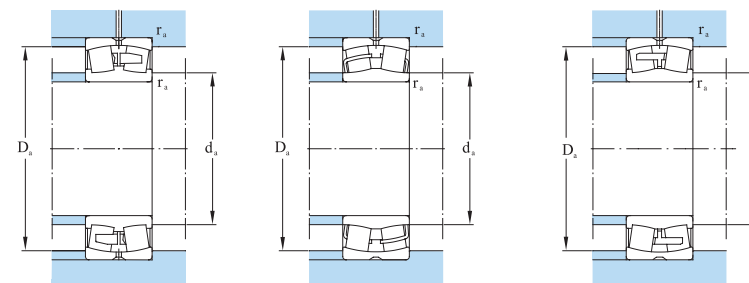
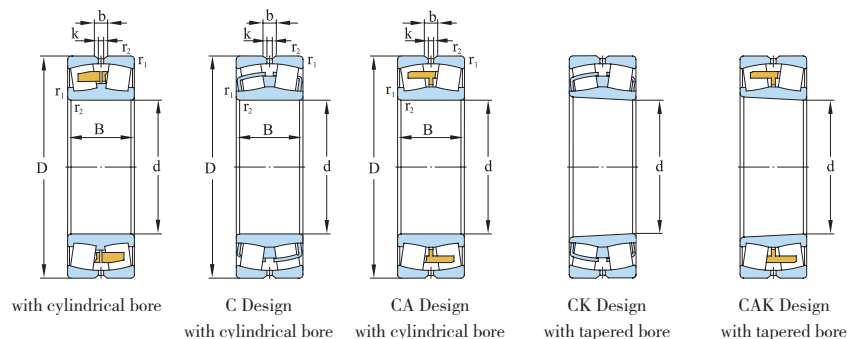
Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23144C/W33	23144CK/W33	220	370	120	16.7	9	4
23144CA	23144CAK		370	120			4
23144CA/W33	23144CAK/W33		370	120	16.7	9	4
23144CAF3/W33	23144CAKF3/W33		370	120	16.7	9	4
24144C/W33	24144CK30/W33		370	150	11.1	6	4
24144CA/W33	24144CAK30/W33		370	150	11.1	6	4
22244C/W33	22244CK/W33		400	108	16.7	9	4
22244CA	22244CAK		400	108			4
22244CA/W33X			400	108	16.7	9	4
22244CAF3			400	108			4
22244CA/W33	22244CAK/W33		400	108	16.7	9	4
22344C/W33	22344CK/W33		460	145	22.3	12	5
22344CA/W33	22344CAK/W33		460	145	22.3	12	5
23244CA/W33	23244CAK/W33		400	144	16.7	12	4
23948C/W33	23948CK/W33	240	320	60	8.3	4.5	2.1
23948CA/W33	23948CAK/W33		320	60	8.3	4.5	2.1
23948CAF3			320	60			2.1
23948CAF3/W33			320	60	8.3	4.5	2.1
23048C/W33	23048CK/W33		360	92	13.9	7.5	3
23048CA	23048CAK		360	92			3
23048CA/W33	23048CAK/W33		360	92	13.9	7.5	3
23048CAQ1			360	92			3
24048C/W33	24048CK30/W33		360	118	11.1	6	3
24048CA	24048CAK30		360	118			3
24048CA/W33X			360	118	11.1	6	3
24048CA/W33	24048CAK30/W33		360	118	11.1	6	3
23148C/W33	23148CK/W33		400	128	16.7	9	4
23148CA			400	128			4
23148CA/W33	23148CAK/W33		400	128	16.7	9	4
24148C/W33	24148CK30/W33		400	160	11.1	6	4
24148CA	24148CAK30F3/W33		400	160	11.1	6	4
24148CA/W33	24148CAK30/W33		400	160	11.1	6	4

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
1580	2750	900	1200	238	352	3	53
1580	2750	900	1200	238	352	3	53.1
1580	2750	900	1200	238	352	3	53.1
1580	2750	900	1200	238	352	3	54.6
1840	3350	500	630	238	382	3	65
1840	3350	500	630	238	382	3	
1520	2360	950	1300	238	382	3	60.5
1520	2360	950	1300	238	382	3	60.5
1520	2360	950	1300	238	382	3	60.5
1520	2360	950	1300	238	382	3	60.5
1520	2360	950	1300	238	382	3	63.5
2350	3450	750	950	242	438	4	120
2350	3450	750	950	242	438	4	123
1720	3200	750	950	238	382	3	77.3
564	1160	1300	1700	252	308	2	14
564	1160	1300	1700	252	308	2	15
564	1160	1300	1700	252	308	2	15
1130	2080	1000	1400	245	346	2.5	33.5
1130	2080	1000	1400	245	346	2.5	34.2
1130	2080	1000	1400	245	346	2.5	34.2
1130	2080	1000	1400	245	346	2.5	34.2
1380	2700	800	1000	245	346	2.5	42.5
1380	2700	800	1000	245	346	2.5	46.5
1380	2700	800	1000	245	346	2.5	46.5
1380	2700	800	1000	245	346	2.5	46.5
1790	3200	850	1100	258	382	3	65.5
1790	3200	850	1100	258	382	3	68.2
1790	3200	850	1100	258	382	3	68.2
2100	3900	480	600	258	382	3	80.5
2100	3900	480	600	258	382	3	79
2100	3900	480	600	258	382	3	79



Harbin Bearing
Group Corporation

Spherical roller bearings

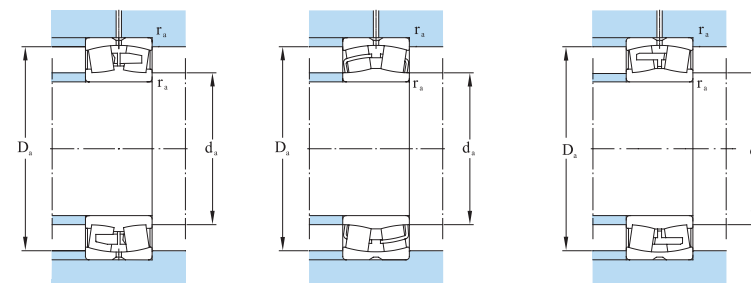
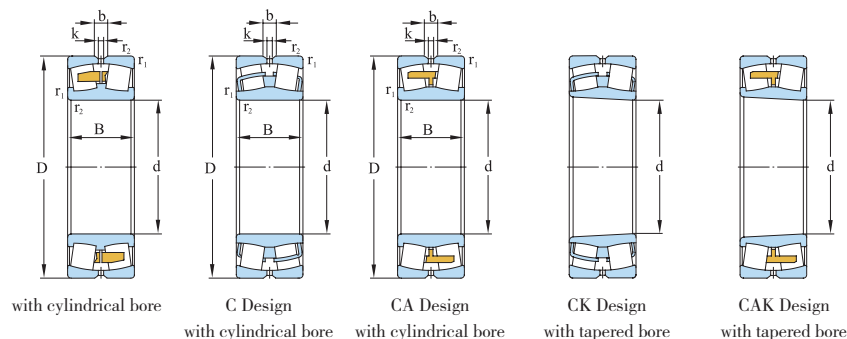


Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22248C/W33	22248CK/W33	240	440	120	22.3	12	4
22248CA/W33	22248CAK/W33		440	120	22.3	12	4
22248CAF3/C9W33			440	120	22.3	12	4
22248CAF3/W33			440	120	22.3	12	4
23248C/W33	23248CK/W33		440	160	22.3	12	4
23248CA/W33	23248CAK/W33		440	160	22.3	12	4
23248CAF3			440	160			4
23048CAQ1/YA2			360	92			3
23952C/W33	23952CK/W33	241	360	75	8.3	4.5	2.1
23952CA		260	360	75			2.1
23952CA/W33	23952CAK/W33		360	75	8.3	4.5	2.1
23052C/W33	23052CK/W33		400	104	16.7	9	4
23052CA	23052CAK		400	104	16.7	9	4
23052CA/W33	23052CAK/W33		400	104			4
23052CAF3			400	104	11.1	6	4
24052C/W33	24052CK/W33		400	104	11.1	6	4
24052CA/W33	24052CAK/W33		400	104			4
24052CAF3			400	104			4
24052CAF3/W33			400	104	11.1	6	4
	24052CAK30/W33		400	104	11.1	6	4
23152C/W33	23152CK/W33		440	144	16.7	9	4
23152CA	23152CAK		440	144			4
23152CA/W33	23152CAK/W33		440	144	16.7	9	4
	24152CK30/W33		440	144	16.7	9	4
24152C/W33		280	440	180	13.9	7.5	4
24152CA	24152CAK		440	180			4
24152CA/W33	24152CAK/W33		440	180	13.9	7.5	4
24152CAF3/W33			440	180	13.9	7.5	4
22252CA			480	130			5
22252CA/W33			480	130			5
23252CA/W33	23252CAK/W33		480	174	22.3	8	5
23252CAF3/W33	23252CAK3/W33		480	174	22.3	8	5

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
1910	3000	900	1200	258	422	3	83
1910	3000	900	1200	258	422	3	83
1910	3000	900	1200	258	422	3	83
1910	3000	900	1200	258	422	3	83
2530	4300	670	850	258	422	3	83
2530	4300	670	850	258	422	3	83
2530	4300	670	850	258	422	3	83
985	2090	1000	1400	254	346	2.5	34
880	1800	1100	1500	272	348	2	24
880	1800	1100	1500	272	348	2	21.6
880	1800	1100	1500	272	348	2	21.6
1400	2550	900	1200	278	382	3	48.5
1400	2550	900	1200	278	382	3	49.8
1400	2550	900	1200	278	382	3	49.8
1400	2550	900	1200	278	382	3	49.8
1760	3450	700	900	278	382	3	64.5
1760	3450	700	900	278	382	3	66.7
1760	3450	700	900	278	382	3	66.7
1760	3450	700	900	278	382	3	66.7
1760	3450	700	900	278	382	3	66.7
2220	3900	800	1000	278	422	3	90.5
2220	3900	800	1000	278	422	3	88.9
2220	3900	800	1000	278	422	3	88.9
2220	3900	800	1000	278	422	3	88.9
2620	4800	430	530	278	422	3	110
2620	4800	430	530	278	422	3	115
2620	4800	430	530	278	422	3	115
2620	4800	430	530	278	422	3	115
2280	3600	850	1100	282	458	4	106
2280	3600	850	1100	282	458	4	106
2800	4750	630	800	282	458	4	145
2800	4750	630	800	282	458	4	145



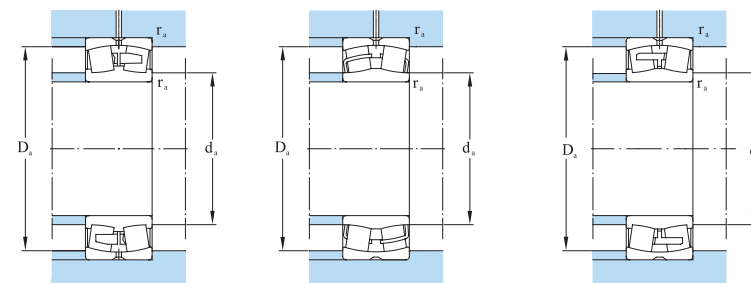
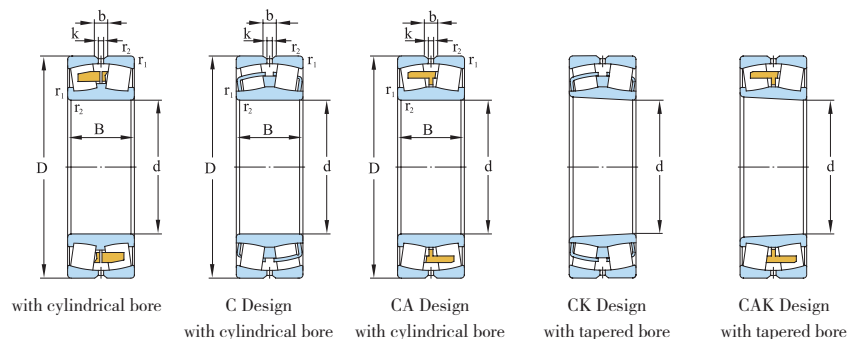
Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
22352CAF3/W33	22352CAKF3/W33	260	540	165	22.3	8	6
23956C/W33	23956CK/W33		380	75	11.1	6	2.1
23956CA/W33	23956CAK/W33		380	75	11.1	6	2.1
23956CAQ1/W33			380	75	11.1	6	2.1
23056C/W33	23056CK/W33		420	106	16.7	9	4
23056CA	23056CAK		420	106			4
23056CA/W33	23056CAK/W33		420	106	16.7	9	4
24056C/W33	24056CK30/W33		420	140	11.1	6	4
24056CA/W33	24056CAK30/W33		420	140	11.1	6	4
24056CAF3			420	140			4
24056CAF3/W33	24056CAK30F3/W33		420	140	11.1	6	4
23156CA	23156CAK		460	146			5
23156CA/W33	23156CAK/W33		460	146	16.7	8	5
23156CAF3	23156CAKF3		460	146			5
23156X2CA			460	146			5
24156CA			460	180			5
24156CA/W33			460	180	13.9	8	5
24156CA/HCW33			460	180	13.9	8	5
22256CA/W33	22256CAK/W33	280	500	130	22.3	8	5
22256CAF3			500	130			5
23256CA			500	176			5
23256CAF3			500	176			5
23256CAF3/W33			500	176	22.3	8	5
23256CA/W33			580	175	22.3	8	6
23960C/W33	23960CK/W33		420	90	11.1	6	3
23960CA/W33	23960CAK/W33		420	90	11.1	7	3
23060CAF3/W33			460	118	13.7	7	4
	23060CAK		460	118			4
	23060CAK/W33		460	118	16.7	7	4
24060CA			460	160			4
24060CA/W33			460	160	13.9	7	4
23160CA			500	160			5

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
3000	4700	630	800	288	512	5	184
845	1760	1000	1400	292	368	2	26
845	1760	1000	1400	292	368	2	25.7
845	1760	1000	1400	292	368	2	25.7
1520	2850	850	1100	298	402	3	52.5
1520	2850	850	1100	298	402	3	56.8
1520	2850	850	1100	298	402	3	56.8
1870	3800	670	850	298	402	3	68.5
1870	3800	670	850	298	402	3	69.2
1870	3800	670	850	298	402	3	69.2
1870	3800	670	850	298	402	3	69.2
1990	4150	750	950	302	438	4	104
1990	4150	750	950	302	438	4	101
1990	4150	750	950	302	438	4	103
1990	4150	750	950	302	438	4	87
2220	4750	400	500	302	438	4	119
2220	4750	400	500	302	438	4	119
2220	4750	400	500	302	438	4	119
1990	3600	800	1000	302	478	4	118
1990	3600	800	1000	302	478	4	118
2580	5100	600	750	302	478	4	147
2580	5100	600	750	302	478	4	146
2580	5100	600	750	302	478	4	146
3200	5700	600	750	308	552	5	221
1200	2500	950	1300	314	406	2.5	40.5
1200	2500	950	1300	314	406	2.5	40.1
1610	3450	800	1000	318	422	3	74.9
1610	3450	800	1000	318	422	3	73.6
1610	3450	800	1000	318	422	3	73.6
2020	2700	600	750	318	422	3	99
2020	2700	600	750	318	422	3	99
2310	4750	670	850	322	478	4	126

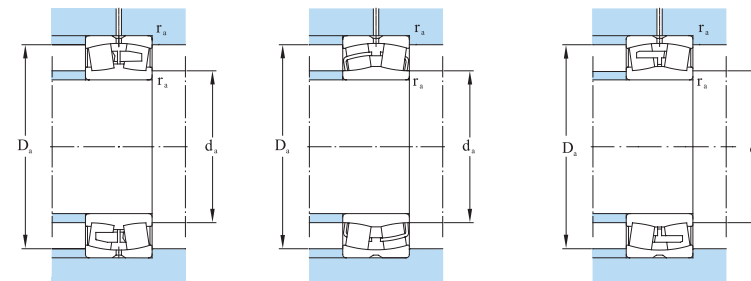
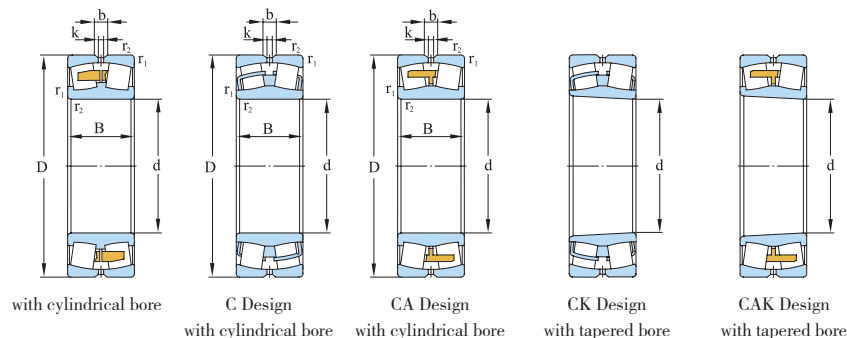
Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23160CAF3	23160CAKF3	300	500	160			5
23160CAF3/C9W33			500	160	16.7	9	5
23160CA/W33	23160CAK/W33		500	160	16.7	9	5
22260CA			540	140			5
22260CAF3	22260CAKF3		540	140			5
23260CAF1	26260CAKF1/W33		540	192	22	10	5
23064CAF3/W33	23064CAKF3/W33	320	480	121	16.7	8	4
24064CAF3			480	160			4
24064CAF3/W33			480	160	22	8	4
23164CA			540	176			5
23164CA/W33			540	176	22.3	8	5
	23164CAK		540	176			5
	23164CAK/W33		540	176	22.3	8	5
22264CA	22264CAK		580	150			5
22264CA/W33			580	208	24	10	5
23264CAF3/W33			580	208	24	10	5
23264CAF3	23264CAKF3/W33	340	580	208	24	10	5
23968CAF3/W33			460	90	15	6	3
23068CA			520	133			5
23068CA/W33			520	133	22.3	8	5
23068CAF3			520	133			5
23068CAF3/W33			520	133	22.3	8	5
	23068CAKF3		520	133			5
	23068CAKF3/W33		520	133	22.3	8	5
24068CA/W33			520	180	16.7	8	5
24068CAF1/W33			520	180	16.7	8	5
	24068CAK30F1	360	520	180			5
23168CA/W33			580	190	22.3	8	5
23168CAF3/W33	23168CAKF3/W33		580	190	22.3	8	5
	24168CAK30/W33		580	234	22.3	10	5
23972CA			480	90			3
23072CA			540	134			5

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
2310	4750	670	850	322	478	4	125
2310	4750	670	850	322	478	4	125
2310	4750	670	850	322	478	4	125
2310	4300	750	950	322	478	4	138
2310	4300	750	950	322	478	4	138
3300	5600	530	670	322	518	4	192
1930	2200	800	1000	338	462	3	84.7
2480	5100	560	700	338	462	3	106
2480	5100	560	700	338	462	3	106
3150	3200	630	800	342	518	4	200
3150	3200	630	800	342	518	4	200
3150	3200	630	800	342	518	4	195
3150	3200	630	800	342	518	4	195
2490	4550	670	850	342	558	4	175
3900	6800	500	630	342	558	4	253
3900	6800	500	630	342	558	4	253
3900	6800	500	630	342	558	4	252
1200	2700	900	1200	354	446	2.5	45.6
1980	4400	700	900	362	498	4	115
1980	4400	700	900	362	498	4	115
1980	4400	700	900	362	498	4	114
1980	4400	700	900	362	498	4	114
1980	4400	700	900	362	498	4	111
1980	4400	700	900	362	498	4	111
2460	5700	530	670	362	498	4	137
2460	5700	530	670	362	498	4	137
2460	5700	530	670	362	498	4	134
3050	6300	600	750	362	558	4	211
3050	6300	600	750	362	558	4	211
3700	7950	320	400	362	558	4	256
1290	2820	850	1100	374	466	2.5	46.6
2280	4800	670	850	382	518	4	126

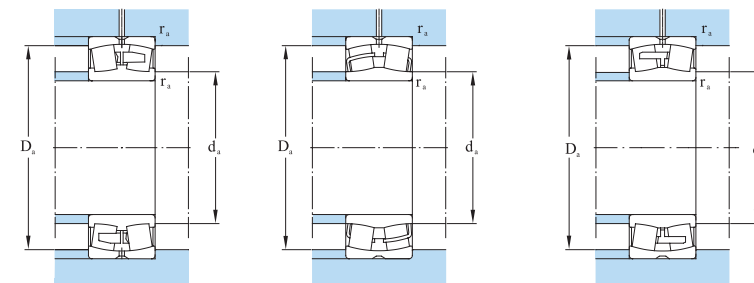
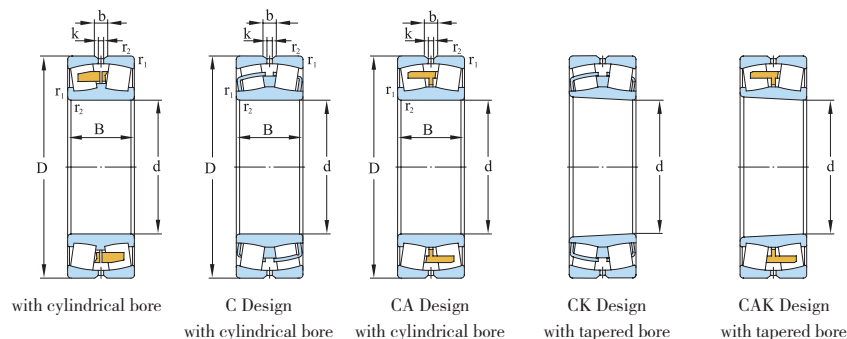
Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23072CA/W33		360	540	134	22.3	8	5
23072CAF3			540	134			5
23072CAF3/W33	23072CAKF3/W33		540	134	22.3	8	5
23172CA			600	192			5
24172CA			600	243	20	12	5
24172CA/W33			600	243			5
24172CAF1			600	243	20	12	5
24172CAF1/W33			600	243	20	12	5
	24172CAK30/W33		600	243	20	12	5
	22372CAKF3/W33		650	232	22.3	10	6
22372CAF3	22372CAKF3/W33	380	750	224			7.5
	22372CAKF3/W33		750	224			7.5
23976CAKF1/W33			520	106	15	10	4
23076CA	23076CAKF3		560	135			5
	24076CAK30F1/W33		560	180	22	10	5
	23176CAK		620	194			5
23176CAF3/W33	23176CAKF3/W33		620	194	22	8	5
23176CAF3/HAW33			620	194	22	8	5
23980CAF1/W33		400	540	106	15	10	4
23080CA			600	148			5
23080CAF3	23080CAKF3		600	148			5
23080CAF3/W33			600	148	22	12	5
24080CAF3			600	200			5
24080CAF3/W33			600	200	22	12	5
23180CA			650	200			6
23180CA/W33			650	200	22.3	8	6
23080CAF3			650	200			6
23180CAF3/W33	23180CAKF3/W33		650	200	22.3	8	6
23180X3CA/W33			670	216	22.3	8	6
23280CA/W33			720	256	22	10	6
23280CAF3/W33			720	256	22	10	6
23084CA		420	620	150			5

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
2280	4800	670	850	382	518	4	126
2280	4800	670	850	382	518	4	126
2280	4800	670	850	382	518	4	126
3250	6850	560	700	382	578	4	255
5600	8400	300	380	382	578	4	270
5600	8400	300	380	382	578	4	270
5600	8400	300	380	382	578	4	269
5600	8400	300	380	382	578	4	269
5600	8400	300	380	382	578	4	270
4650	8300	400	500	388	622	5	330
4900	8600	400	500	392	720	6	466
4900	8600	400	500	392	720	6	460
1730	3800	800	1000	398	502	3	69.5
2480	5000	630	800	402	538	4	130
3150	6900	480	600	402	538	4	153
3400	7350	400	500	402	598	4	244
3400	7350	400	500	402	598	4	244
3400	7350	400	500	402	598	4	244
2540	3900	750	950	418	522	3	72.4
1730	3900	600	750	422	578	4	161
1730	3900	600	750	422	578	4	161
1730	3900	600	750	422	578	4	161
3600	7800	450	560	422	578	4	202
3600	7800	450	560	422	578	4	202
4100	7650	380	480	428	622	5	275
4100	7650	380	480	428	622	5	275
4100	7650	380	480	428	622	5	273
4100	7650	380	480	428	622	5	264
4000	8550	380	480	428	622	5	293
6150	11300	340	430	428	622	5	353
6150	11300	340	430	428	622	5	353
2700	6400	450	560	442	598	4	149

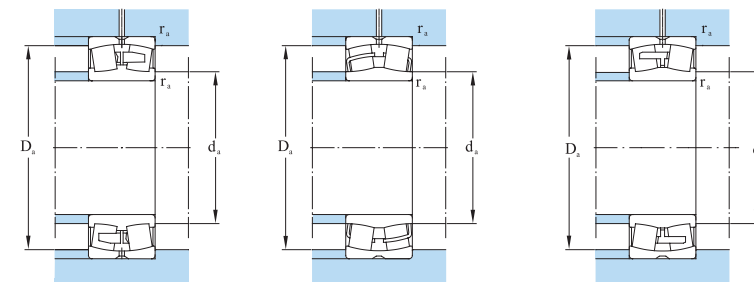
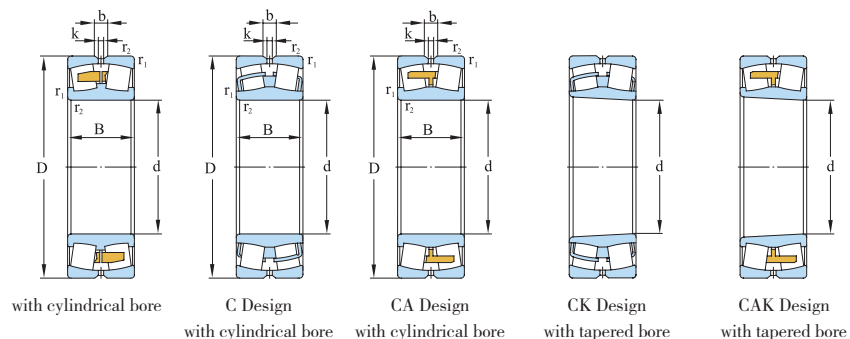
Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
23084CAF3	23084CAKF3	420	620	150			5
23084CAF3/W33			620	150	22	8	5
24084CA/W33			620	200	22.3	12	5
24084CAF3/W33			620	200	22.3	12	5
	24084CAK30F3/W33X		620	200	22.3	12	5
23184CAF3	23184CAK	440	700	224			6
23284CA/W33	23284CAK/W33		760	272	22	12	7.5
23284CAF3/C9W33			760	272	22	12	7.5
23088CAF3	23088CAKF3		650	157			6
23088CAF3/W33			650	157	22.3	8	6
23188CA		460	720	226			6
23092CAF3/W33	23092CAKF3		680	163	23.5	12	6
24092CAF3/W33			680	218	24	12	6
23192CAF3	23192CAKF3/W33		760	240	22	8	7.5
24192CA/W33			760	300	22.3	8	7.5
	23292CAKF3/W33	480	830	296	22.3	10	7.5
23896CA			600	90			3
23996CAF1/W33			650	128	16.7	10	5
23196CAF1/W33	23196CAKF1/W33		790	248	22	12	7.5
	23196CAKF3		870	310			7.5
239/500CAF1		500	670	128			5
230/500CAF3/HA/W33X			720	167	22.3	8	6
232/500CAF3/W33			920	336	22.3	12	7.5
230/530CA		530	780	185			6
230/530CA/W33X			780	185	24	12	6
230/530CAF3			780	185			6
230/530CAF3/W33			780	185	24	12	6
239/560CAF1		560	750	140			5
230/560CA	230/560CAK		820	195			6
230/560CAF3/W33			820	195	22.3	9	6
231/560CA/W33	231/560CAK/W33		920	280	22.3	12	7.5
231/560CAF3/W33	231/560CAKF3/W33		920	280	22.3	12	7.5

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
2700	6400	450	560	442	598	4	149
2700	6400	450	560	442	598	4	149
3350	8450	380	480	422	598	4	202
3350	8450	380	480	422	598	4	202
3350	8450	380	480	442	598	4	197
4250	9200	360	450	448	672	5	353
5610	11900	320	400	456	724	6	550
5610	11900	320	400	456	724	6	549
2780	6500	430	530	468	622	5	185
2780	6500	430	530	468	622	5	179
4500	10000	340	430	468	692	5	378
3450	6950	400	500	488	652	5	226
4200	9100	340	430	488	652	5	304
5500	10000	320	400	496	724	6	457
6100	14400	160	200	496	724	6	457
7350	13500	300	380	496	794	6	698
1290	4000	450	600	500	581	3	60.4
2150	5750	400	500	502	628	4	125
6100	12000	300	380	516	754	6	516
6750	15200	260	340	516	834	6	853
2530	6000	400	500	522	648	4	120
3150	7650	380	480	528	692	5	228
8600	18600	280	360	536	884	6	985
3900	9650	340	430	558	752	5	339
3900	9650	340	430	558	752	5	339
3900	9650	340	430	558	752	5	335
3900	9650	340	430	558	752	5	335
3050	7200	340	430	582	728	4	177
4300	10500	320	410	588	792	5	363
4300	10500	320	410	588	792	5	360
6900	15700	240	320	596	884	6	756
6900	15700	240	320	596	884	6	754

Spherical roller bearings



Designations		Boundary dimensions					
		d	D	B	b	k	r _{1,2} min
with cylindrical bore	with tapered bore	mm					
230/600CAF3	230/600CAKF3	600	870	200			6
230/600CAF3/W33			870	200	22.3	9	6
241/600CA			980	375			7.5
230/630CAF3		630	920	212			7.5
230/670CAF3		670	980	230			7.5
230/750CA		750	1090	250			7.5
230/750CAF3			1090	250			7.5
240/800CAF1			1150	345			7.5
230/850CAF1	230/850CAKF1	850	1220	272			7.5
230/850CAF1/W33			1220	365	22.3	12	7.5
240/850CAF1			1220	365			7.5
	239/1180CAK	1180	1540	272			7.5
	239/1180CAKF1/W33		1540	272	24	12	7.5
230/1180CAF1/W33X			1660	355	24	12	9.5

Basic load ratings		Limiting speeds		Abutment and fillet dimensions			Mass
Cr	Cor	grease	oil	d _a min	D _a max	r _a max	
kN		r/min		mm			kg
4700	11600	300	380	628	842	5	442
4700	11600	300	380	628	842	5	430
8800	21600	100	150	636	944	6	1140
5150	12800	260	340	666	884	6	471
5730	14200	240	320	706	944	6	601
7000	17900	200	280	786	1054	6	789
7000	17900	200	280	786	1054	6	789
10300	24600	170	220	836	1114	6	1092
8450	22500	180	240	886	1184	6	1074
10400	29700	160	200	866	1184	6	1410
10400	29700	160	200	866	1184	6	1410
9350	29600	110	150	1216	1536	8	1350
9350	29600	110	150	1216	1536	8	1350
9350	29600	110	150	1240	1600	6	2460