



Spherical Roller Bearings

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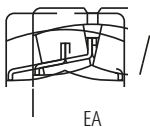
DESIGNS, TYPES AND FEATURES

High load capacity designs EA, C, CD and CA, shown in the figures are available. Types EA, C and CD have pressed steel cages, and type CA has machined brass cage. The EA type bearings listed here are classified as OIDHPS bearings, which offer particularly high load-carrying capacity, high limiting speeds and are highly functional under high-temperature operating conditions of up to 200°C.

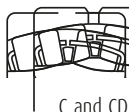
An oil groove and holes are provided in the outer ring to supply lubricant and the bearing numbers are suffixed with E4.

To use bearings with oil grooves and holes, it is recommended to provide an oil groove in the housing bore, since the depth of the groove in the bearing is limited. The number and dimensions of the oil groove and hole.

If bearings with a hole for a locking pin to prevent outer ring rotation are required, please inform OID.



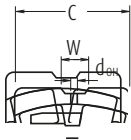
EA



C and CD



CA



Dimensions of Oil Grooves and Holes Units : mm

Nominal Outer Ring Width C		Oil Groove Width W	Hole Diameter d _{OH}
over	incl.		
18	30	5	2.5
30	40	6	3
40	50	7	4
50	65	8	5
65	80	10	6
80	100	12	8
100	120	15	10
120	160	20	12
160	200	25	15
200	250	30	20
250	315	35	20
315	400	40	25
400	—	40	25

Number of Oil Holes

Nominal Outer Ring Diameter D (mm)		Number of Holes
over	incl.	
—	180	4
180	250	6
250	315	6
315	400	6
400	500	6
500	630	8
630	800	8
800	1000	8
1000	1250	8
1250	1600	8
1600	2000	8

TECHNICAL DATA

Free Space of Spherical Roller Bearings

The spherical roller bearing has self-aligning ability and capacity to carry substantially large radial and bi-axial loads. For these reasons, this bearing is used widely in many applications. Application problems include a long span, which causes substantial deflection of the shaft, as well as installation errors and axial misalignment. These bearings may be exposed to a large radial or shock loads.

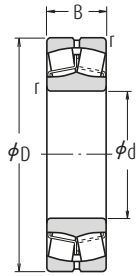
Grease lubrication is common for spherical roller bearings because it simplifies the seal construction around the housing and makes maintenance and inspection easier. In this case, it is important to select a grease appropriate to the operating conditions and to fill the bearing with the proper amount of grease considering the housing internal space.

As a reference, the bearing free space for conventional types plus four other types (EA, C, CD, and CA). Under general operating conditions, it is appropriate to pack a large quantity of grease into the bearing internal space and to pack grease into the housing internal space other than the bearing itself, to the extent of 1/3 to 2/3 that of the free space.

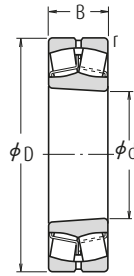
Remarks 22211 to 22226, 22311 to 22324 are EA Type Bearings.
23122 to 23148, 23218 to 23244 are C Type Bearings.
23022 to 23036, 22228 to 22236 are CD Type Bearings.
23038 to 23060, 23152 to 23160, 22238 to 22260,
23248 to 23260, and 22326 to 22360 are CA Type Bearing.

Spherical Roller Bearings

Bore Diameter 20 – 55 mm



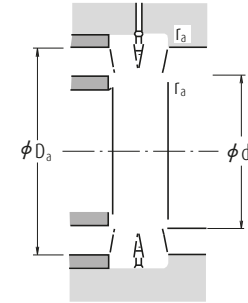
Cylindrical Bore
EA



Tapered Bore
EA



Without an Oil Groove or Holes
CD



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		
							Mechanical	Grease	
20	52	15	1.1	29 300	26 900	10 000	—	6 300	21304CDE4
25	52	18	1.0	37 500	37 000	10 000	—	7 100	22205CE4
	62	17	1.1	43 000	40 500	9 000	—	5 300	21305CDE4
30	62	20	1.0	50 000	50 000	8 500	—	6 000	22206CE4
	72	19	1.1	55 000	54 000	7 500	—	4 500	21306CDE4
35	72	23	1.1	69 000	71 000	7 500	—	5 300	22207CE4
	80	21	1.5	71 500	76 000	7 100	—	4 000	21307CDE4
40	80	23	1.1	113 000	99 000	7 100	12 000	6 700	22208EAE4 [®]
	90	23	1.5	118 000	111 000	6 700	11 000	6 000	21308EAE4 [®]
	90	33	1.5	170 000	153 000	5 600	9 000	5 300	22308EAE4 [®]
	85	23	1.1	118 000	111 000	6 300	11 000	6 000	22209EAE4 [®]
45	100	25	1.5	149 000	144 000	6 000	9 000	5 000	21309EAE4 [®]
	100	36	1.5	207 000	195 000	5 000	8 000	4 500	22309EAE4 [®]
50	90	23	1.1	124 000	119 000	6 000	9 500	5 600	22210EAE4 [®]
	110	27	2.0	178 000	174 000	5 300	8 000	4 500	21310EAE4 [®]
	110	40	2.0	246 000	234 000	4 800	7 100	4 300	22310EAE4 [®]
	100	25	1.5	149 000	144 000	5 300	9 000	5 300	22211EAE4 [®]
55	120	29	2.0	178 000	174 000	5 300	8 000	4 500	21311EAE4 [®]
	120	43	2.0	292 000	292 000	4 300	6 000	3 800	22311EAE4 [®]

Note (1) The suffix K represents bearings with tapered bores (taper 1 : 12).

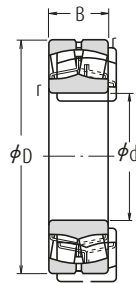
Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
Tapered Bore (1)	d _a min.	d _a max.	D _a max.	r _a min.	r _a max.	e	Y ₂	Y ₃	Y ₀	approx.
21304CDE4	27	28	45	42	1.0	0.31	3.2	2.1	2.1	0.17
22205CKE4	31	31	46	45	1.0	0.35	2.9	1.9	1.9	0.17
21305CDE4	32	34	55	51	1.0	0.29	3.4	2.3	2.3	0.26
22206CKE4	36	37	56	54	1.0	0.33	3.1	2.1	2.0	0.27
21306CDE4	37	40	65	59	1.0	0.28	3.6	2.4	2.3	0.39
22207CKE4	42	43	65	63	1.0	0.32	3.1	2.1	2.0	0.42
21307CDE4	44	47	71	67	1.5	0.28	3.6	2.4	2.4	0.53
22208EAE4*	47	49	73	70	1.0	0.28	3.6	2.4	2.4	0.50
21308EAE4*	49	54	81	75	1.5	0.25	3.9	2.7	2.6	0.73
22308EAE4*	49	52	81	77	1.5	0.35	2.8	1.9	1.9	0.98
22209EAE4*	52	54	78	75	1.0	0.25	3.9	2.7	2.6	0.55
21309EAE4*	54	65	91	89	1.5	0.23	4.3	2.9	2.8	0.96
22309EAE4*	54	59	91	86	1.5	0.34	2.9	2.0	1.9	1.34
22210EAE4*	57	60	83	81	1.0	0.24	4.3	2.9	2.8	0.61
21310EAE4*	60	72	100	98	2.0	0.23	4.4	3.0	2.9	1.21
22310EAE4*	60	64	100	93	2.0	0.35	2.8	1.9	1.9	1.78
22211EAE4*	64	65	91	89	1.5	0.23	4.3	2.9	2.8	0.81
21311EAE4*	65	72	110	98	2.0	0.23	4.4	3.0	2.9	1.58
22311EAE4*	65	73	110	103	2.0	0.34	2.9	2.0	1.9	2.3

Remarks

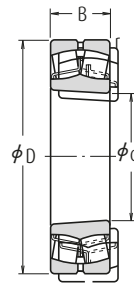
- The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
- When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to 0.10C_r); and Heavy Loads (>0.10C_r).
- For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

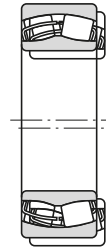
Bore Diameter 60 – 90 mm



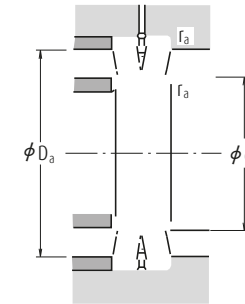
Cylindrical Bore
EA



Tapered Bore
EA



Without an Oil Groove or Holes
CD



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		
							Mechanical	Grease	
60	95	26.0	1.1	98 000	141 000	4 800	—	3 600	23012CE4
	110	28.0	1.5	178 000	174 000	5 300	8 000	4 800	22212EAE4°
	130	31.0	2.1	238 000	244 000	4 800	6 700	3 800	21312EAE4°
	130	46.0	2.1	340 000	340 000	4 000	5 600	3 600	22312EAE4°
65	120	31.0	1.5	221 000	230 000	4 800	7 500	4 300	22213EAE4°
	140	33.0	2.1	264 000	275 000	4 500	6 000	3 600	21313EAE4°
	140	48.0	2.1	375 000	380 000	3 800	5 000	3 200	22313EAE4°
70	125	31.0	1.5	225 000	232 000	4 500	7 100	4 000	22214EAE4°
	150	35.0	2.1	310 000	325 000	4 300	5 600	3 200	21314EAE4°
	150	51.0	2.1	425 000	435 000	3 600	4 800	3 000	22314EAE4°
75	130	31.0	1.5	238 000	244 000	4 300	6 700	4 000	22215EAE4°
	160	37.0	2.1	310 000	325 000	4 000	5 600	3 200	21315EAE4°
	160	55.0	2.1	485 000	505 000	3 400	4 300	2 800	22315EAE4°
80	140	33.0	2.0	264 000	275 000	4 000	6 000	3 600	22216EAE4°
	170	39.0	2.1	355 000	375 000	3 800	4 800	3 000	21316EAE4°
	170	58.0	2.1	540 000	565 000	3 200	3 800	2 600	22316EAE4°
85	150	36.0	2.0	310 000	325 000	4 000	5 600	3 400	22217EAE4°
	180	41.0	3.0	360 000	395 000	3 800	5 000	3 000	21317EAE4°
	180	60.0	3.0	600 000	630 000	3 000	3 400	2 400	22317EAE4°
90	160	40.0	2.0	360 000	395 000	3 800	5 000	3 200	22218EAE4°
	160	52.4	2.0	340 000	490 000	2 800	—	1 800	23218CE4
	190	43.0	3.0	415 000	450 000	3 600	4 500	2 800	21318EAE4°
	190	64.0	3.0	665 000	705 000	2 800	3 000	2 400	22318EAE4°

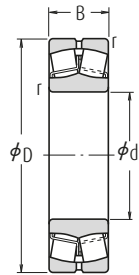
Note (1) The suffix K represents bearings with tapered bores (taper 1 : 12).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (1)	min.	max.	min.	max.	max.	e				approx.
23012CKE4	67	68	88	85	1	0.26	3.9	2.6	2.5	0.68
22212EAE4*	69	72	101	98	1.5	0.23	4.4	3.0	2.9	1.1
21312EAE4*	72	87	118	117	2	0.22	4.5	3.0	3.0	1.98
22312EAE4*	72	79	118	111	2	0.34	3.0	2.0	1.9	2.89
22213EAE4*	74	80	111	107	1.5	0.24	4.2	2.8	2.7	1.51
21313EAE4*	77	94	128	126	2	0.22	4.6	3.1	3.0	2.45
22313EAE4*	77	84	128	119	2	0.33	3.0	2.0	2.0	3.52
22214EAE4*	79	84	116	111	1.5	0.23	4.3	2.9	2.8	1.58
21314EAE4*	82	101	138	135	2	0.22	4.6	3.1	3.0	3.0
22314EAE4*	82	91	138	129	2	0.33	3.0	2.0	2.0	4.28
22215EAE4*	84	87	121	117	1.5	0.22	4.5	3.0	3.0	1.64
21315EAE4*	87	101	148	134	2	0.22	4.6	3.1	3.0	3.64
22315EAE4*	87	97	148	137	2	0.33	3.0	2.0	2.0	5.26
22216EAE4*	90	94	130	126	2	0.22	4.6	3.1	3.0	2.01
21316EAE4*	92	109	158	146	2	0.23	4.4	3.0	2.9	4.32
22316EAE4*	92	103	158	145	2	0.33	3.0	2.0	2.0	6.23
22217EAE4*	95	101	140	135	2	0.22	4.6	3.1	3.0	2.54
21317EAE4*	99	108	166	142	2.5	0.24	4.3	2.9	2.8	5.2
22317EAE4*	99	110	166	155	2.5	0.33	3.1	2.1	2.0	7.23
22218EAE4*	100	108	150	142	2	0.24	4.3	2.9	2.8	3.3
23218CKE4	100	105	150	138	2	0.32	3.2	2.1	2.1	4.51
21318EAE4*	104	115	176	152	2.5	0.24	4.3	2.9	2.8	6.1
22318EAE4*	104	115	176	163	2.5	0.33	3.1	2.1	2.0	8.56

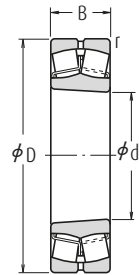
- Remarks**
- The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
 - When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to $0.10C_r$); and Heavy Loads ($> 0.10C_r$).
 - For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

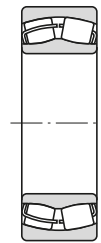
Bore Diameter 95 – 110 mm



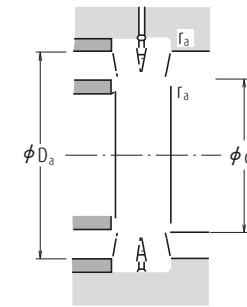
Cylindrical Bore
EA



Tapered Bore
EA



Without an Oil Groove or Holes
CD



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing	
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds			Cylindrical Bore
							Mechanical	Grease		
95	170	43.0	2.1	415 000	450 000	3 800	4 500	3 000	22219EAE4*	
	170	55.6	2.1	370 000	525 000	2 600	—	1 700	23219CAME4	
	200	45.0	3.0	430 000	435 000	3 600	—	1 500	21319CAME4*	
	200	45.0	3.0	430 000	435 000	3 600	—	1 500	21319CE4	
	200	67.0	3.0	735 000	780 000	2 600	3 000	2 200	22319EAE4*	
100	150	37.0	1.5	212 000	335 000	3 200	—	2 200	23020CDE4	
	150	50.0	1.5	276 000	470 000	2 800	—	1 800	24020CE4	
	165	52.0	2.0	345 000	530 000	2 800	—	1 700	23120CE4	
	165	65.0	2.0	345 000	535 000	2 400	—	1 700	24120CAME4	
	180	46.0	2.1	455 000	490 000	3 600	4 300	2 800	22220EAE4*	
	180	60.3	2.1	525 000	605 000	2 800	3 800	1 600	23220CAME4*	
	180	60.3	2.1	525 000	605 000	2 800	—	1 600	23220CE4	
	215	47.0	3.0	495 000	485 000	3 400	4 500	1 400	21320CAME4*	
	215	47.0	3.0	495 000	485 000	3 400	—	1 400	21320CE4	
	215	73.0	3.0	750 000	785 000	2 600	3 400	1 700	22320CAME4(2)*	
110	170	45.0	2.0	293 000	465 000	3 200	—	2 000	23022CDE4	
	170	60.0	2.0	380 000	645 000	2 800	—	1 600	24022CE4	
	180	56.0	2.0	480 000	630 000	3 200	4 000	1 600	23122CAME4*	
	180	56.0	2.0	480 000	630 000	3 200	—	1 600	23122CE4	
	180	69.0	2.0	575 000	750 000	2 200	3 400	1 600	24122CAME4*	
	180	69.0	2.0	575 000	750 000	2 200	—	1 600	24122CE4	
	200	53.0	2.1	605 000	645 000	3 400	3 400	2 600	22222EAE4*	
	200	69.8	2.1	645 000	760 000	2 600	3 400	1 500	23222CAME4*	
	200	69.8	2.1	645 000	760 000	2 200	—	1 500	23222CE4	
	240	50.0	3.0	450 000	545 000	3 000	—	1 300	21322CAE4	
	240	50.0	3.0	565 000	545 000	3 000	4 300	1 300	21322CAME4*	
	240	80.0	3.0	1 030 000	1 120 000	2 200	—	1 500	22322EAE4*	
	240	80.0	3.0	925 000	980 000	2 200	3 000	1 500	22322CAME4(3)*	

Notes

- (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).
- (2) EA is also available. Load rating of EA is around 10% higher than CAM's, please consult OID.

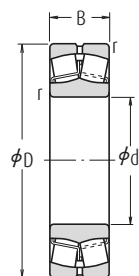
Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (1)	min.	max.	max.	min.	max.	e				approx.
22219EAE4*	107	115	158	152	2	0.24	4.3	2.9	2.8	4.04
23219CAME4	107	—	158	146	2	0.32	3.1	2.1	2.0	5.33
21319CAME4*	109	127	186	172	2.5	0.22	4.6	3.1	3.0	6.92
21319CE4	109	127	186	172	2.5	0.22	4.6	3.1	3.0	6.92
22319EAE4*	109	121	186	172	2.5	0.33	3.1	2.1	2.0	9.91
23020CDE4	109	112	141	136	1.5	0.22	4.6	3.1	3.0	2.31
24020CK30E4	109	110	141	132	1.5	0.30	3.4	2.3	2.2	3.08
23120CE4	110	113	155	144	2	0.30	3.4	2.3	2.2	4.38
24120CAMK30E4	110	—	155	143	2	0.35	2.9	1.9	1.9	5.42
22220EAE4*	112	119	168	160	2	0.24	4.3	2.9	2.8	4.84
23220CAME4*	112	118	168	155	2	0.32	3.2	2.1	2.1	6.6
23220CE4	112	118	168	155	2	0.32	3.2	2.1	2.1	6.6
21320CAME4*	114	133	201	184	2.5	0.21	4.7	3.2	3.1	8.46
21320CE4	114	133	201	184	2.5	0.21	4.7	3.2	3.1	8.46
22320CAME4(1)*	114	130	201	184	2.5	0.33	3.0	2.0	2.0	12.7
23022CDE4	120	124	160	153	2	0.24	4.2	2.8	2.8	3.76
24022CK30E4	120	121	160	148	2	0.32	3.1	2.1	2.1	4.96
23122CAME4*	120	127	170	158	2	0.28	3.5	2.4	2.3	5.7
23122CE4	120	127	170	158	2	0.29	3.6	2.4	2.3	5.8
24122CAMK30E4*	120	123	170	154	2	0.36	2.8	1.9	1.8	6.84
24122CK30E4	120	123	170	154	2	0.37	2.9	1.9	1.8	6.85
22222EAE4*	122	129	188	178	2	0.25	4.0	2.7	2.6	6.99
23222CAME4*	122	130	188	170	2	0.34	3.0	2.0	1.9	9.54
23222CE4	122	130	188	170	2	0.35	3.1	2.1	1.10	9.55
21322CAE4	124	—	226	206	2.5	0.22	4.6	3.1	3.0	11.2
23222CAME4*	124	—	226	206	2.5	0.22	4.6	3.1	3.0	11.2
22322EAE4*	124	145	226	206	2.5	0.33	3.1	2.1	2.0	17.6
22322CAME4(1)*	124	145	226	206	2.5	0.33	3.1	2.1	2.0	17.6

Remarks

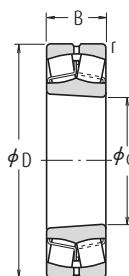
- The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
- When making a selection of the recommended fit (Tolerance of Shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to 0.10C_r); and Heavy Loads ($>0.10C_r$).
- For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

Bore Diameter 120 – 130 mm



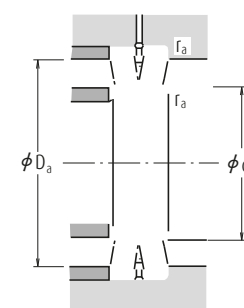
Cylindrical Bore
EA



Tapered Bore
EA



Without an Oil Groove or Holes
CD



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		Cylindrical Bore
							Mechanical	Grease	
120	180	46.0	2.0	395 000	525 000	3 200	4 500	1 800	23024CAME4 *
	180	46.0	2.0	395 000	525 000	3 200	—	1 800	23024CDE4
	180	60.0	2.0	480 000	680 000	2 600	3 600	1 500	24024CAME4 *
	180	60.0	2.0	480 000	680 000	2 600	—	1 500	24024CE4
	200	62.0	2.0	580 000	720 000	2 800	3 600	1 400	23124CAME4 *
	200	62.0	2.0	580 000	720 000	2 800	—	1 400	23124CE4
	200	80.0	2.0	695 000	905 000	2 000	3 000	1 400	24124CAME4 *
	200	80.0	2.0	695 000	905 000	2 000	—	1 400	24124CE4
	215	58.0	2.1	685 000	765 000	3 200	3 000	2 400	22224EAE4 *
	215	76.0	2.1	790 000	970 000	2 200	3 000	1 300	23224CAME4 *
130	215	76.0	2.1	790 000	970 000	2 000	—	1 300	23224CE4
	260	86.0	3.0	1 190 000	1 320 000	—	—	—	22324EAE4*
	260	86.0	3.0	1 060 000	1 120 000	1 900	2 800	1 400	22324CAME4(2) *
	200	52.0	2.0	500 000	655 000	3 000	3 800	1 700	23026CAME4 *
	200	52.0	2.0	500 000	655 000	3 000	—	1 700	23026CDE4
	200	69.0	2.0	620 000	865 000	2 200	3 200	1 400	24026CAME4 *
	200	69.0	2.0	620 000	865 000	2 200	—	1 400	24026CE4
	210	64.0	2.0	630 000	825 000	2 200	3 400	1 300	23126CAME4 *
	210	64.0	2.0	630 000	825 000	2 600	—	1 300	23126CE4
	210	80.0	2.0	735 000	1 010 000	1 800	2 800	1 300	24126CAME4 *
130	210	80.0	2.0	735 000	1 010 000	1 800	—	1 300	24126CE4
	230	64.0	3.0	820 000	940 000	2 800	2 600	2 200	22226EAE4 *
	230	80.0	3.0	875 000	1 080 000	2 000	2 800	1 200	23226CAME4 *
	230	80.0	3.0	875 000	1 080 000	2 000	—	1 200	23226CE4
	280	93.0	4.0	1 240 000	1 350 000	1 800	2 600	1 300	22326CAME4 *
	280	93.0	4.0	1 240 000	1 350 000	1 800	—	1 300	22326CE4
	280	93.0	4.0	1 240 000	1 350 000	1 800	—	1 300	22326CE4
	280	93.0	4.0	1 240 000	1 350 000	1 800	—	1 300	22326CE4

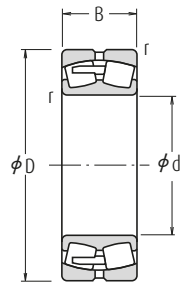
- Notes**
- (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).
 - (2) EA is also available. Load rating of EA is around 10% higher than CAM's, please consult OID.

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
Tapered Bore (1)	d _a min.	d _a max.	D _a max.	r _a min.	r _a max.	e	Y ₂	Y ₃	Y ₀	approx.
23024CAMKE4 *	130	134	170	163	2	0.22	4.5	3.0	2.9	4.11
23024CDKE4	130	134	170	163	2	0.22	4.5	3.0	2.9	4.11
24024CAMK30E4 *	130	131	170	158	2	0.32	3.2	2.1	2.1	5.33
24024CK30E4	130	131	170	158	2	0.32	3.2	2.1	2.1	5.33
23124CAMKE4 *	130	138	190	175	2	0.29	3.5	2.4	2.3	7.85
23124CKE4	130	138	190	175	2	0.29	3.5	2.4	2.3	7.85
24124CAMK30E4 *	130	136	190	171	2	0.37	2.7	1.8	1.8	10
24124CK30E4	130	136	190	171	2	0.37	2.7	1.8	1.8	10
22224EAE4 *	132	142	203	190	2	0.25	3.9	2.7	2.6	8.8
23224CAMKE4 *	132	140	203	182	2	0.34	2.9	2.0	1.9	12.1
23224CKE4	132	140	203	182	2	0.34	2.9	2.0	1.9	12.1
22324EAE4 *	134	157	246	222	2.5	0.32	3.1	2.1	2.0	22.2
22324CAMKE4(2) *	134	157	246	222	2.5	0.32	3.1	2.1	2.0	22.2
23026CAMKE4 *	140	147	190	180	2	0.23	4.3	2.9	2.8	5.98
23026CDKE4	140	147	190	180	2	0.23	4.3	2.9	2.8	5.98
24026CAMK30E4 *	140	143	190	175	2	0.31	3.2	2.2	2.1	7.84
24026CK30E4	140	143	190	175	2	0.31	3.2	2.2	2.1	7.84
23126CAMKE4 *	140	149	200	184	2	0.28	3.6	2.4	2.4	8.69
23126CKE4	140	149	200	184	2	0.28	3.6	2.4	2.4	8.69
24126CAMK30E4 *	140	146	200	180	2	0.35	2.9	1.9	1.9	10.7
24126CK30E4	140	146	200	180	2	0.35	2.9	1.9	1.9	10.7
22226EAE4 *	144	152	216	204	2.5	0.26	3.8	2.6	2.5	11
23226CAMKE4 *	144	150	216	196	2.5	0.34	2.9	2.0	1.9	14.3
23226CKE4	144	150	216	196	2.5	0.34	2.9	2.0	1.9	14.3
22326CAMKE4 *	148	166	262	236	3	0.34	2.9	2.0	1.9	28.1
22326CKE4	148	166	262	236	3	0.34	2.9	2.0	1.9	28.1

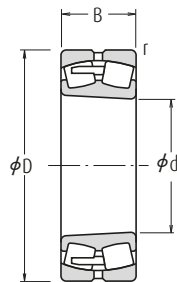
- Remarks**
1. The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
 2. When making a selection of the recommended fit (Tolerance of Shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to $0.10C_r$); and Heavy Loads ($>0.10C_r$).
 3. For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

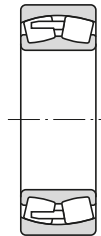
Bore Diameter 140 – 150 mm



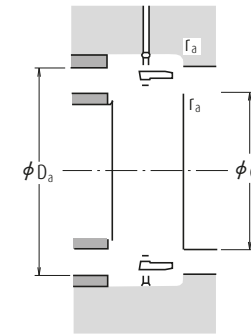
Cylindrical Bore
CA



Tapered Bore
CA



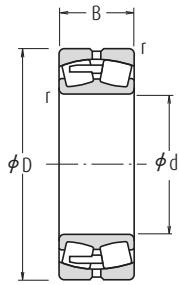
Without an Oil Groove or Holes
CA



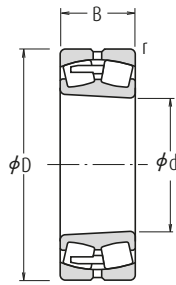
140	210	53	2	525 000	715 000	2 800	3 800	1 600	23028CAME4 *
	210	53	2	420 000	715 000	2 800	—	1 600	23028CDE4
	210	69	2	635 000	905 000	2 200	3 000	1 300	24028CAME4 *
	210	69	2	525 000	945 000	2 200	—	1 300	24028CE4
	225	68	2.1	725 000	945 000	2 400	3 200	1 200	23128CAME4 *
	225	68	2.1	580 000	945 000	2 400	—	1 200	23128CE4
	225	85	2.1	835 000	1 160 000	1 600	2 600	1 200	24128CAME4 *
	225	85	2.1	670 000	1 160 000	1 600	—	1 200	24128CE4
	250	68	3	835 000	945 000	2 600	3 200	1 400	22228CAME4 *
	250	68	3	645 000	930 000	2 600	—	1 400	22228CDE4
	250	88	3	1 040 000	1 300 000	1 800	2 600	1 100	23228CAME4 *
	250	88	3	835 000	1 300 000	1 800	—	1 100	23228CE4
	300	102	4	1 450 000	1 590 000	1 700	2 400	1 200	22328CAME4 *
	300	102	4	1 160 000	1 590 000	1 700	—	1 200	22328CE4
150	225	56	2.1	590 000	815 000	2 600	3 600	1 400	23030CAME4 *
	225	56	2.1	470 000	815 000	2 600	—	1 400	23030CDE4
	225	75	2.1	740 000	1 090 000	1 900	3 000	1 200	24030CAME4 *
	225	75	2.1	590 000	1 090 000	1 900	—	1 200	24030CE4
	250	80	2.1	905 000	1 180 000	2 200	2 800	1 100	23130CAME4 *
	250	80	2.1	725 000	1 180 000	2 200	—	1 100	23130CE4
	250	100	2.1	1 070 000	1 450 000	1 400	2 400	1 100	24130CAME4 *
	250	100	2.1	890 000	1 530 000	1 400	—	1 100	24130CE4
	270	73	3	955 000	1 120 000	2 400	3 000	1 300	22230CAME4 *
	270	73	3	765 000	1 120 000	2 400	—	1 300	22230CDE4
	270	96	3	1 220 000	1 560 000	1 700	2 400	1 100	23230CAME4 *
	270	96	3	975 000	1 560 000	1 700	—	1 100	23230CE4
	320	108	4	1 530 000	1 690 000	1 600	2 200	1 100	22230CAME4 *

Spherical Roller Bearings

Bore Diameter 160 – 170 mm



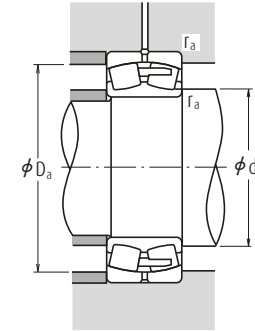
Cylindrical Bore
CA



Tapered Bore
CA



Without an Oil Groove and Holes
CA



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		
							Mechanical	Grease	
160	220	45	2	450 000	675 000	3 000	3 200	1 400	23932CAME4 *
	220	45	2	360 000	675 000	3 000	—	1 400	23932CAE4
	240	60	2.1	675 000	955 000	2 400	3 200	1 300	23032CAME4 *
	240	60	2.1	540 000	955 000	2 400	—	1 300	23032CDE4
	240	80	2.1	845 000	1 260 000	1 800	2 800	1 100	24032CAME4 *
	240	80	2.1	680 000	1 260 000	1 800	—	1 100	24032CE4
	270	86	2.1	1 070 000	1 400 000	2 000	2 600	1 000	23132CAME4 *
	270	86	2.1	855 000	1 400 000	2 000	—	1 000	23132CE4
	270	109	2.1	1 240 000	1 670 000	1 300	2 200	1 000	24132CAME4 *
	270	109	2.1	1 040 000	1 760 000	1 300	—	1 000	24132CE4
	290	80	3	1 140 000	1 320 000	2 200	2 800	1 200	22232CAME4 *
	290	80	3	910 000	1 320 000	2 200	—	1 200	22232CDE4
	290	104	3	1 370 000	1 770 000	1 500	2 200	1 000	23232CAME4 *
	290	104	3	1 100 000	1 770 000	1 500	—	1 000	23232CE4
	340	114	4	1 700 000	1 900 000	1 400	2 200	1 100	22332CAME4 *
170	230	45	2	450 000	680 000	3 000	3 600	1 400	23934CAME4 *
	260	67	2.1	795 000	1 090 000	2 200	3 000	1 200	23034CAME4 *
	260	67	2.1	640 000	1 090 000	2 200	—	1 200	23034CDE4
	260	90	2.1	1 030 000	1 520 000	1 600	2 400	1 000	24034CAME4 *
	260	90	2.1	825 000	1 520 000	1 600	—	1 000	24034CE4
	280	88	2.1	1 180 000	1 570 000	1 800	2 600	1 000	23134CAME4 *
	280	88	2.1	940 000	1 570 000	1 800	—	1 000	23134CE4
	280	109	2.1	1 280 000	1 770 000	1 200	2 200	1 000	24134CAME4 *
	280	109	2.1	1 080 000	1 860 000	1 200	—	1 000	24134CE4
	310	86	4	1 240 000	1 500 000	2 000	2 600	1 100	22234CAME4 *
	310	86	4	990 000	1 500 000	2 000	—	1 100	22234CDE4
	310	110	4	1 500 000	1 910 000	1 400	2 200	900	23234CAME4 *
	310	110	4	1 200 000	1 910 000	1 400	—	900	23234CE4
	360	120	4	1 970 000	2 110 000	1 300	2 000	1 000	22334CAME4 *

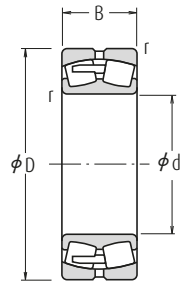
Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (1)	min.	max.	max.	min.	max.	e				approx.
23932CAME4 *	170	—	210	203	2	0.18	5.6	3.8	3.7	4.97
23932CAE4	170	—	210	203	2	0.18	5.6	3.8	3.7	4.97
23032CAME4 *	172	179	228	216	2	0.22	4.5	3.0	2.9	9.66
23032CDE4	172	179	228	216	2	0.22	4.5	3.0	2.9	9.66
24032CAMK30E4 *	172	177	228	212	2	0.30	3.4	2.3	2.2	12.7
24032CK30E4	172	177	228	212	2	0.30	3.4	2.3	2.2	12.7
23132CAME4 *	172	185	258	234	2	0.30	3.4	2.3	2.2	20.3
23132CKE4	172	185	258	234	2	0.30	3.4	2.3	2.2	20.3
24132CAMK30E4 *	172	179	258	229	2	0.39	2.6	1.7	1.7	25.4
24132CK30E4	172	179	258	229	2	0.39	2.6	1.7	1.7	25.4
22232CAME4 *	174	190	276	255	2.5	0.26	3.8	2.6	2.5	23.1
22232CDE4	174	190	276	255	2.5	0.26	3.8	2.6	2.5	23.1
23232CAME4 *	174	189	276	245	2.5	0.34	2.9	2.0	1.9	30.5
23232CKE4	174	189	276	245	2.5	0.34	2.9	2.0	1.9	30.5
22332CAME4 *	178	—	322	287	3	0.35	2.9	1.9	1.9	49.3
23934CAME4 *	180	—	220	213	2	0.17	5.8	3.9	3.8	5.38
23034CAME4 *	182	191	248	233	2	0.23	4.3	2.9	2.8	13
23034CDE4	182	191	248	233	2	0.23	4.3	2.9	2.8	13
24034CAMK30E4 *	182	188	248	228	2	0.31	3.2	2.2	2.1	17.3
24034CK30E4	182	188	248	228	2	0.31	3.2	2.2	2.1	17.3
23134CAME4 *	182	194	268	245	2	0.29	3.5	2.3	2.3	21.8
23134CKE4	182	194	268	245	2	0.29	3.5	2.3	2.3	21.8
24134CAMK30E4 *	182	190	268	239	2	0.37	2.7	1.8	1.8	26.6
24134CK30E4	182	190	268	239	2	0.37	2.7	1.8	1.8	26.6
22234CAME4 *	188	206	292	270	3	0.26	3.8	2.6	2.5	28.8
22234CDE4	188	206	292	270	3	0.26	3.8	2.6	2.5	28.8
23234CAME4 *	188	201	292	261	3	0.34	2.9	2.0	1.9	36.4
23234CKE4	188	201	292	261	3	0.34	2.9	2.0	1.9	36.4
22334CAME4 *	188	—	342	304	3	0.35	2.9	1.9	1.9	57.9

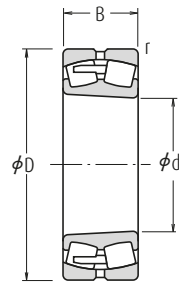
- Remarks**
- The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
 - When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to $0.10C_r$); and Heavy Loads ($> 0.10C_r$).
 - For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

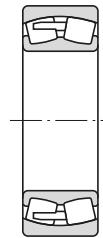
Bore Diameter 180 – 190 mm



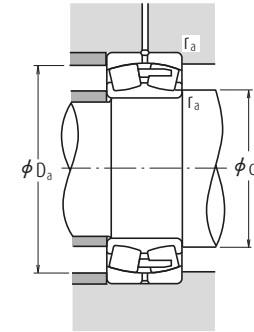
Cylindrical Bore
CA



Tapered Bore
CA



Without an Oil Groove and Holes
CA



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		
							Mechanical	Grease	
180	250	52	2	470 000	890 000	2 600	—	1 200	23936CAE4
	250	52	2	590 000	890 000	2 600	3 000	1 200	23936CAME4 *
	280	74	2.1	935 000	1 270 000	2 000	2 800	1 200	23036CAME4 *
	280	74	2.1	750 000	1 270 000	2 000	—	1 200	23036CE4
	280	100	2.1	1 210 000	1 750 000	1 500	2 200	950	24036CAME4 *
	280	100	2.1	965 000	1 750 000	1 500	—	950	24036CE4
	300	96	3	1 320 000	1 760 000	1 700	2 200	900	23136CAME4 *
	300	96	3	1 050 000	1 760 000	1 700	—	900	23136CE4
	300	118	3	1 490 000	2 040 000	1 100	2 000	900	24136CAME4 *
	300	118	3	1 190 000	2 040 000	1 100	—	900	24136CE4
	320	86	4	1 280 000	1 540 000	2 000	2 600	1 100	22236CAME4 *
	320	86	4	1 020 000	1 540 000	2 000	—	1 100	22236CE4
	320	112	4	1 620 000	2 110 000	1 300	2 000	850	23236CAME4 *
	320	112	4	1 300 000	2 110 000	1 300	—	850	23236CE4
	380	126	4	2 170 000	2 340 000	1 200	2 000	950	22336CAME4 *
190	260	52	2	575 000	875 000	2 600	3 000	1 200	23938CAE4 *
	290	75	2.1	970 000	1 350 000	2 000	2 600	1 100	23038CAME4 *
	290	100	2.1	1 220 000	1 840 000	1 400	2 200	900	24038CAME4 *
	290	100	2.1	975 000	1 840 000	1 400	—	900	24038CE4
	320	104	3	1 480 000	2 020 000	1 600	2 200	850	23138CAME4 *
	320	104	3	1 190 000	2 020 000	1 600	—	850	23138CE4
	320	128	3	1 710 000	2 330 000	1 000	1 900	850	24138CAME4 *
	320	128	3	1 370 000	2 330 000	1 000	—	850	24138CE4
	340	92	4	1 420 000	1 730 000	1 800	2 400	1 000	22238CAME4 *
	340	120	4	1 800 000	2 350 000	1 200	1 900	800	23238CAME4 *
	340	120	4	1 440 000	2 350 000	1 200	—	800	23238CE4
	400	132	5	2 370 000	2 590 000	1 200	1 900	900	22338CAME4 *

Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

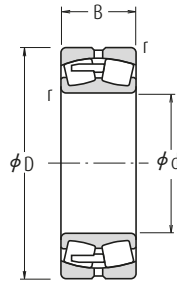
Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (1)	min.	max.	max.	min.	max.	e				approx.
23936CAE4	190	—	240	230	2	0.18	5.5	3.7	3.6	7.64
23936CAMKE4 *	190	—	240	230	2	0.18	5.5	3.7	3.6	7.64
23036CAMKE4 *	192	202	268	249	2	0.24	4.2	2.8	2.8	17.1
23036CDE4	192	202	268	249	2	0.24	4.2	2.8	2.8	17.1
24036CAMK30E4 *	192	200	268	245	2	0.32	3.1	2.1	2.0	22.7
24036CK30E4	192	200	268	245	2	0.32	3.1	2.1	2.0	22.7
23136CAMKE4 *	194	206	286	260	2.5	0.30	3.4	2.3	2.2	27.5
23136CCE4	194	206	286	260	2.5	0.30	3.4	2.3	2.2	27.5
24136CAMK30E4 *	194	202	286	255	2.5	0.37	2.7	1.8	1.8	33.1
24136CK30E4	194	202	286	255	2.5	0.37	2.7	1.8	1.8	33.1
22236CAMKE4 *	198	212	302	278	3	0.26	3.9	2.6	2.6	30.2
22236CDE4	198	212	302	278	3	0.26	3.9	2.6	2.6	30.2
23236CAMKE4 *	198	211	302	274	3	0.33	3.0	2.0	2.0	38.9
23236CCE4	198	211	302	274	3	0.33	3.0	2.0	2.0	38.9
22336CAMKE4 *	198	—	362	322	3	0.34	2.9	2.0	1.9	67
23938CAMKE4 *	200	—	250	240	2	0.18	5.7	3.8	3.7	8.03
23038CAMKE4 *	202	—	278	261	2	0.24	4.2	2.8	2.8	17.6
24038CAMK30E4 *	202	210	278	253	2	0.31	3.2	2.2	2.1	24
24038CK30E4	202	210	278	253	2	0.31	3.2	2.2	2.1	24
23138CAMKE4 *	204	219	306	276	2.5	0.31	3.3	2.2	2.2	34.5
23138CCE4	204	219	306	276	2.5	0.31	3.3	2.2	2.2	34.5
24138CAMK30E4 *	204	211	306	269	2.5	0.40	2.5	1.7	1.6	41.5
24138CK30E4	204	211	306	269	2.5	0.40	2.5	1.7	1.6	41.5
22238CAMKE4 *	208	—	322	296	3	0.26	3.8	2.6	2.5	35.5
23238CAMKE4 *	208	222	322	288	3	0.35	2.9	1.9	1.9	47.6
23238CCE4	208	222	322	288	3	0.35	2.9	1.9	1.9	47.6
22338CAMKE4 *	212	—	378	338	4	0.34	2.9	2.0	1.9	77.6

Remarks

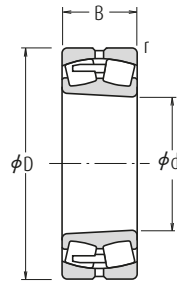
- The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
- When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to $0.10C_r$); and Heavy Loads ($>0.10C_r$).
- For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

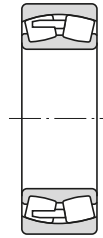
Bore Diameter 200 – 220 mm



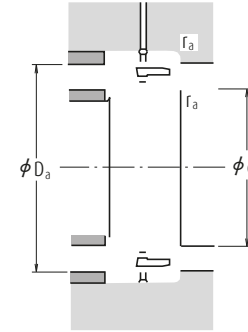
Cylindrical Bore
CA



Tapered Bore
CA



Without an Oil Groove and Holes
CA



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		
							Mechanical	Grease	
200	280	60	2.1	570 000	1 060 000	—	—	—	23940CAE4
	280	60	2.1	710 000	1 060 000	2 400	2 600	1 100	23940CAME4 *
	310	82	2.1	1 180 000	1 700 000	1 800	2 400	1 000	23040CAME4 *
	310	109	2.1	1 420 000	2 120 000	1 300	2 000	850	24040CAME4 *
	310	109	2.1	1 140 000	2 120 000	1 300	—	850	24040CE4
	340	112	3	1 700 000	2 330 000	1 500	2 000	800	23140CAME4 *
	340	112	3	1 360 000	2 330 000	1 500	—	800	23140CE4
	340	140	3	1 960 000	2 660 000	950	1 800	800	24140CAME4 *
	340	140	3	1 570 000	2 670 000	950	—	800	24140CE4
	360	98	4	1 620 000	2 010 000	1 700	2 200	950	22240CAME4 *
	360	128	4	2 070 000	2 750 000	1 100	1 800	750	23240CAME4 *
	360	128	4	1 660 000	2 750 000	1 100	—	750	23240CE4
	420	138	5	2 500 000	2 990 000	1 000	1 700	850	22340CAME4 *
	220	300	60	2.1	785 000	1 240 000	2 200	2 600	1 000
340		90	3	1 360 000	1 980 000	1 600	2 200	950	23044CAME4 *
340		118	3	1 640 000	2 490 000	1 200	1 900	750	24044CAME4 *
340		118	3	1 360 000	2 600 000	1 200	—	750	24044CE4
370		120	4	1 960 000	2 710 000	1 300	1 800	710	23144CAME4 *
370		120	4	1 570 000	2 710 000	1 300	—	710	23144CE4
370		150	4	2 250 000	3 200 000	850	1 600	710	24144CAME4 *
370		150	4	1 800 000	3 200 000	850	—	710	24144CE4
400		108	4	1 960 000	2 430 000	1 500	2 000	850	22244CAME4 *
400		144	4	2 520 000	3 400 000	1 000	1 600	670	23244CAME4 *
400		144	4	2 020 000	3 400 000	850	—	670	23244CE4
460	145	5	2 940 000	3 400 000	950	1 600	750	22344CAME4 *	

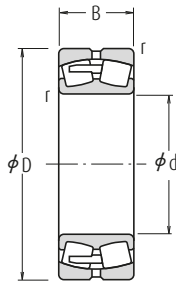
Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
Tapered Bore (1)	d _a min.	d _a max.	D _a max.	d _a min.	r _a max.	e	Y ₂	Y ₃	Y ₀	approx.
23940CAE4	212	—	268	258	2	0.20	5.1	3.4	3.3	11
23940CAME4 *	212	—	268	258	2	0.20	5.1	3.4	3.3	11
23040CAME4 *	212	—	268	279	2	0.25	4.0	2.7	2.6	22.6
24040CAMK30E4 *	212	223	298	271	2	0.32	3.1	2.1	2.0	30.4
24040CK30E4	212	223	298	271	2	0.32	3.1	2.1	2.0	30.4
23140CAME4 *	214	232	326	293	2.5	0.31	3.2	2.2	2.1	42.7
23140CKE4	214	232	326	293	2.5	0.31	3.2	2.2	2.1	42.7
24140CAMK30E4 *	214	226	326	290	2.5	0.39	2.6	1.8	1.7	51.3
24140CK30E4	214	226	326	290	2.5	0.39	2.6	1.8	1.7	51.3
22240CAME4 *	218	—	342	315	3	0.26	3.8	2.6	2.5	42.6
23240CAME4 *	218	237	342	307	3	0.34	2.9	2.0	1.9	57.1
23240CKE4	222	237	342	307	3	0.34	2.9	2.0	1.9	57.1
22340CAME4 *	232	—	398	352	4	0.34	2.9	2.0	1.9	92.6
23944CAME4 *	234	—	288	278	2	0.18	5.7	3.8	3.7	12.2
23044CAME4 *	234	—	326	302	2.5	0.24	4.1	2.8	2.7	29.7
24044CAMK30E4 *	234	244	326	296	2.5	0.31	3.2	2.1	2.1	40.5
24044CK30E4	238	244	326	296	2.5	0.31	3.2	2.1	2.1	40.5
23144CAME4 *	238	254	352	320	3	0.30	3.3	2.2	2.2	53
23144CKE4	238	254	352	320	3	0.30	3.3	2.2	2.2	53
24144CAMK30E4 *	238	248	352	313	3	0.39	2.6	1.7	1.7	66.7
24144CK30E4	238	248	352	313	3	0.39	2.6	1.7	1.7	66.7
22244CAME4 *	238	—	382	348	3	0.27	3.7	2.5	2.4	59
23244CAME4 *	238	260	382	337	3	0.35	2.9	1.9	1.9	80.4
23244CKE4	238	260	382	337	3	0.35	2.9	1.9	1.9	80.4
22344CAME4 *	242	—	438	391	4	0.33	3.0	2.0	2.0	116

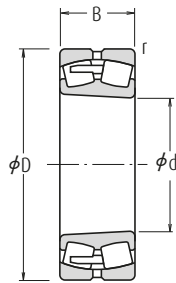
Remarks 1. The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
2. When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to 0.10C_r); and Heavy Loads (>0.10C_r).
3. For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

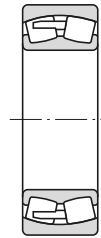
Bore Diameter 240 – 280 mm



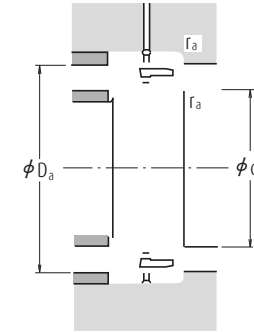
Cylindrical Bore
CA



Tapered Bore
CA



Without an Oil Groove and Holes
CA



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		Cylindrical Bore
							Mechanical	Grease	
240	320	60	2.1	635 000	1 300 000	1 900	2 600	950	23948CAE4
	320	60	2.1	795 000	1 300 000	1 900	2 600	950	23948CAME4*
	360	92	3	1 450 000	2 140 000	1 500	2 200	850	23048CAME4*
	360	118	3	1 730 000	2 730 000	1 100	1 800	710	24048CAME4*
	360	118	3	1 390 000	2 730 000	1 100	—	710	24048CE4
	400	128	4	2 230 000	3 100 000	1 200	1 700	670	23148CAME4*
	400	128	4	1 790 000	3 100 000	1 200	—	670	23148CE4
	400	160	4	2 660 000	3 800 000	750	1 500	670	24148CAME4*
	400	160	4	2 130 000	3 800 000	750	—	670	24148CE4
	440	120	4	2 340 000	2 890 000	1 400	1 800	750	22248CAME4*
440	160	4	3 050 000	4 050 000	850	1 500	630	23248CAME4*	
500	155	5	3 250 000	3 800 000	850	1 500	670	22348CAME4*	
260	360	75	2.1	1 170 000	1 870 000	1 800	2 200	850	23952CAME4*
	400	104	4	1 780 000	2 580 000	1 300	1 900	800	23052CAME4*
	400	140	4	2 270 000	3 500 000	950	1 600	630	24052CAME4*
	440	144	4	2 700 000	3 750 000	1 100	1 500	600	23152CAME4*
	440	180	4	3 200 000	4 700 000	630	1 300	600	24152CAME4*
	480	130	5	2 720 000	3 400 000	1 200	1 700	670	22252CAME4*
	480	174	5	3 400 000	4 550 000	800	1 400	560	23252CAME4*
	540	165	6	3 900 000	4 600 000	750	1 400	630	22352CAME4*
280	380	75	2.1	1 160 000	1 950 000	1 600	2 000	800	23956CAME4*
	420	106	4	1 930 000	2 950 000	1 200	1 800	710	23056CAME4*
	420	140	4	2 350 000	3 800 000	850	1 500	600	24056CAME4*
	460	146	5	2 790 000	4 000 000	1 000	1 500	560	23156CAME4*
	460	180	5	3 300 000	5 000 000	600	1 300	560	24156CAME4*
	500	130	5	2 850 000	3 650 000	1 100	1 600	630	22256CAME4*
	500	176	5	3 600 000	4 900 000	750	1 300	530	23256CAME4*
	580	175	6	4 350 000	5 150 000	710	1 300	560	22356CAME4*

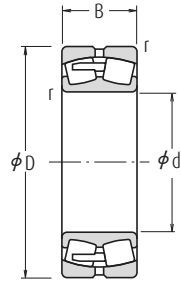
Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
Tapered Bore (1)	d _a min.	d _a max.	D _a min.	D _a max.	r _a max.	e	Y ₂	Y ₃	Y ₀	approx.
23948CAE4	252	—	308	298	2	0.17	6.0	4.0	3.9	13.3
23948CAMKE4*	253	—	308	298	2	0.18	6.1	4.1	3.10	13.4
23048CAMKE4*	254	—	346	324	2.5	0.24	4.2	2.8	2.7	32.6
24048CAMK30E4*	254	265	346	317	2.5	0.29	3.4	2.3	2.2	43.4
24048CK30E4	254	265	346	317	2.5	0.29	3.4	2.3	2.2	43.4
23148CAMKE4*	258	275	382	347	3	0.30	3.3	2.2	2.2	66.9
23148CKE4	258	275	382	347	3	0.30	3.3	2.2	2.2	66.9
24148CAMK30E4*	258	268	382	341	3	0.38	2.7	1.8	1.8	79.5
24148CK30E4	258	268	382	341	3	0.38	2.7	1.8	1.8	79.5
22248CAMKE4*	258	—	422	383	3	0.27	3.7	2.5	2.4	80.2
23248CAMKE4*	258	—	422	372	3	0.37	2.7	1.8	1.8	106
22348CAMKE4*	262	—	478	423	4	0.32	3.2	2.1	2.1	147
23952CAMKE4*	272	—	348	333	2	0.19	5.4	3.6	3.5	23
23052CAMKE4*	278	—	382	356	3	0.25	4.1	2.7	2.7	46.6
24052CAMK30E4*	278	—	382	348	3	0.32	3.1	2.1	2.1	62.6
23152CAMKE4*	278	—	422	380	3	0.32	3.2	2.1	2.1	88.2
24152CAMK30E4*	278	—	422	371	3	0.39	2.6	1.7	1.7	109
22252CAMKE4*	282	—	458	418	4	0.27	3.7	2.5	2.5	104
23252CAMKE4*	282	—	458	406	4	0.37	2.7	1.8	1.8	137
22352CAMKE4*	288	—	512	462	5	0.32	3.2	2.1	2.1	180
23956CAMKE4*	292	—	368	351	2	0.18	5.7	3.9	3.8	24.5
23056CAMKE4*	298	—	402	377	3	0.24	4.2	2.8	2.7	50.5
24056CAMK30E4*	298	—	402	369	3	0.31	3.3	2.2	2.2	66.4
23156CAMKE4*	302	—	438	400	4	0.30	3.3	2.2	2.2	94.3
24156CAMK30E4*	302	—	438	392	4	0.37	2.7	1.8	1.8	115
22256CAMKE4*	302	—	478	439	4	0.25	4.0	2.7	2.6	110
23256CAMKE4*	302	—	478	425	4	0.35	2.9	1.9	1.9	147
22356CAMKE4*	308	—	552	496	5	0.31	3.2	2.1	2.1	221

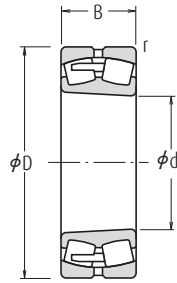
Remarks 1. The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
2. When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to $0.10C_r$); and Heavy Loads ($>0.10C_r$).
3. For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

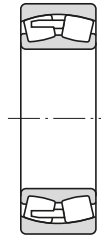
Bore Diameter 300 – 380 mm



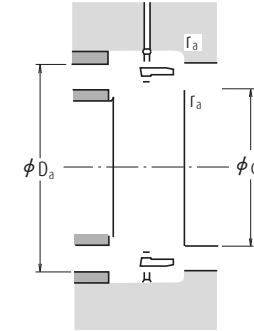
Cylindrical Bore
CA



Tapered Bore
CA



Without an Oil Groove and Holes
CA



Bore Diameter (mm)	Outer Diameter (mm)	Width (mm)	Number of Rollers	Roller Diameter (mm)	Roller Width (mm)	Roller Length (mm)	Roller Height (mm)	Roller Weight (kg)	Roller Material
300	420	90	3	1 540 000	2 490 000	1 500	1 800	710	23960CAME4*
	460	118	4	2 400 000	3 700 000	1 100	1 600	670	23060CAME4*
	460	160	4	2 890 000	4 600 000	800	1 400	530	24060CAME4*
	500	160	5	3 350 000	4 800 000	900	1 400	500	23160CAME4*
	500	200	5	3 900 000	5 800 000	530	1 200	500	24160CAME4*
	540	140	5	3 250 000	4 250 000	1 000	1 500	600	22260CAME4*
	540	192	5	4 250 000	5 900 000	670	1 200	480	23260CAME4*
320	440	90	3	1 620 000	2 750 000	1 400	1 700	670	23964CAME4*
	480	121	4	2 450 000	3 850 000	1 000	1 600	630	23064CAME4*
	480	160	4	3 050 000	5 050 000	710	1 300	500	24064CAME4*
	540	176	5	3 850 000	5 500 000	800	1 300	480	23164CAME4*
	540	218	5	4 400 000	6 650 000	500	1 100	480	24164CAME4*
	580	150	5	3 750 000	4 850 000	950	1 400	530	22264CAME4*
	580	208	5	4 850 000	6 900 000	600	1 100	450	23264CAME4*
340	460	90	3	1 670 000	2 840 000	1 300	1 700	630	23968CAME4*
	520	133	5	2 850 000	4 400 000	950	1 500	560	23068CAME4*
	520	180	5	3 650 000	6 050 000	670	1 200	480	24068CAME4*
	580	190	5	4 500 000	6 600 000	710	1 200	430	23168CAME4*
	580	243	5	5 300 000	7 900 000	450	1 000	430	24168CAME4*
	620	224	6	4 400 000	7 800 000	480	—	400	23268CAME4
360	480	90	3	1 730 000	3 050 000	1 200	1 700	600	23972CAME4*
	540	134	5	2 990 000	4 700 000	900	1 400	530	23072CAME4*
	540	180	5	3 650 000	6 100 000	630	1 200	450	24072CAME4*
	600	192	5	4 800 000	7 100 000	670	1 100	400	23172CAME4*
	600	243	5	5 250 000	8 000 000	430	1 000	400	24172CAME4*
	600	232	6	4 800 000	8 550 000	450	—	380	23272CAME4
380	520	106	4	2 340 000	4 100 000	1 100	1 500	530	23976CAME4*
	560	135	5	3 150 000	5 100 000	850	1 400	530	23076CAME4*
	560	180	5	3 850 000	6 600 000	600	1 200	430	24076CAME4*
	620	194	5	4 000 000	7 600 000	530	—	400	23176CAME4
	620	243	5	4 350 000	8 450 000	360	—	400	24176CAME4
	680	240	6	5 150 000	9 200 000	430	—	360	23276CAME4

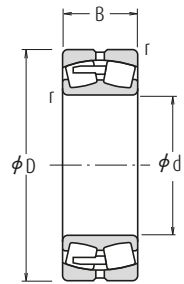
Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors				Mass (kg)
Tapered Bore (1°)	d _a		D _a		r _a	e	Y ₂	Y ₃	Y ₀	approx.	
	min.	max.	max.	min.	max.						
23960CAMKE4*	314		406	386	2.5	0.19	5.2	3.5	3.4	38.2	
23060CAMKE4*	318		442	413	3	0.24	4.2	2.8	2.7	70.5	
24060CAMK30E4*	318		442	400	3	0.32	3.1	2.1	2.0	93.6	
23160CAMKE4*	322		478	433	4	0.31	3.3	2.2	2.2	125	
24160CAMK30E4*	322		478	423	4	0.38	2.6	1.8	1.7	152	
22260CAMKE4*	322		518	473	4	0.25	4.0	2.7	2.6	139	
23260CAMKE4*	322		518	458	4	0.35	2.9	1.9	1.9	189	
23964CAMKE4*	334		426	406	2.5	0.18	5.5	3.7	3.6	40.6	
23064CAMKE4*	338		462	432	3	0.24	4.2	2.8	2.8	75.6	
24064CAMK30E4*	338		462	422	3	0.31	3.3	2.2	2.2	99.7	
23164CAMKE4*	342		518	466	4	0.31	3.2	2.1	2.1	162	
24164CAMK30E4*	342		518	456	4	0.39	2.6	1.7	1.7	196	
22264CAMKE4*	342		558	508	4	0.26	3.9	2.6	2.6	174	
23264CAMKE4*	342		558	488	4	0.36	2.8	1.9	1.8	239	
23968CAMKE4*	354		446	427	2.5	0.18	5.7	3.8	3.7	42.4	
23068CAMKE4*	362		498	465	4	0.24	4.2	2.8	2.8	101	
24068CAMK30E4*	362		498	454	4	0.32	3.2	2.1	2.1	135	
23168CAMKE4*	362		558	499	4	0.31	3.2	2.1	2.1	206	
24168CAMK30E4*	362		558	489	4	0.40	2.5	1.7	1.7	257	
23268CAMKE4	368		592	521	5	0.36	2.8	1.9	1.8	295	
23972CAMKE4*	374		466	447	2.5	0.17	6.0	4.1	4.0	44.7	
23072CAMKE4*	382		518	485	4	0.24	4.2	2.8	2.8	106	
24072CAMK30E4*	382		518	476	4	0.32	3.2	2.1	2.1	139	
23172CAMKE4*	382		578	520	4	0.31	3.2	2.2	2.1	217	
24172CAMK30E4*	382		578	507	4	0.40	2.5	1.7	1.7	264	
23272CAMKE4	388		622	549	5	0.36	2.8	1.9	1.8	342	
23976CAMKE4*	398		502	482	3	0.18	5.5	3.7	3.6	65.4	
23076CAMKE4*	402		538	506	4	0.22	4.5	3.0	3.0	113	
24076CAMK30E4*	402		538	496	4	0.29	3.4	2.3	2.3	148	
23176CAMKE4	402		598	540	4	0.30	3.3	2.2	2.2	229	
24176CAMK30E4	402		598	529	4	0.38	2.6	1.8	1.7	275	
23276CAMKE4	408		652	578	5	0.35	2.9	1.9	1.9	372	

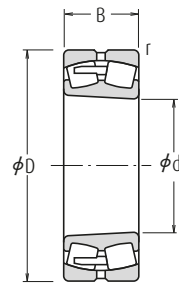
Remarks 1. The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
2. When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_i$); Normal Loads (0.05 to $0.10C_i$); and Heavy Loads ($> 0.10C_i$).
3. For the dimensions of adapters and withdrawal sleeves

Spherical Roller Bearings

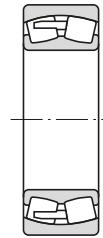
Bore Diameter 400 – 460 mm



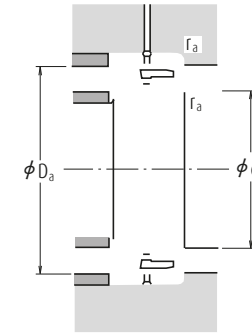
Cylindrical Bore
CA



Tapered Bore
CA



Without an Oil Groove and Holes
CA



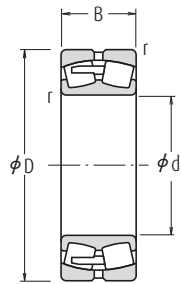
Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
Tapered Bore (1)	d _a		D _a		r _a	e	Y ₂	Y ₃	Y ₀	approx.
	min.	max.	max.	min.	max.					
23980CAMKE4*	418		522	501	3	0.18	5.7	3.9	3.8	69.1
23080CAMKE4*	422		578	540	4	0.23	4.4	3.0	2.9	146
24080CAMK30E4*	422		578	527	4	0.31	3.3	2.2	2.2	193
23180CAMKE4	428		622	569	5	0.29	3.4	2.3	2.3	257
24180CAMK30E4	428		622	551	5	0.37	2.7	1.8	1.8	316
23280CAMKE4	428		692	610	5	0.36	2.8	1.9	1.9	449
23984CAMKE4*	438		542	521	3	0.17	6.0	4.0	3.9	71.6
23084CAMKE4	442		598	562	4	0.23	4.3	2.9	2.8	151
24084CAMK30E4	442		598	549	4	0.31	3.2	2.2	2.1	199
23184CAMKE4	448		672	607	5	0.31	3.3	2.2	2.2	341
24184CAMK30E4	448		672	598	5	0.38	2.6	1.8	1.7	421
23284CAMKE4	456		724	644	6	0.35	2.9	1.9	1.9	534
23988CAMKE4	458		582	555	3	0.18	5.7	3.9	3.8	96.3
23088CAMKE4	468		622	587	5	0.23	4.3	2.9	2.8	173
24088CAMK30E4	468		622	576	5	0.31	3.2	2.1	2.1	237
23188CAMKE4	468		692	627	5	0.3	3.3	2.2	2.2	360
24188CAMK30E4	468		692	617	5	0.37	2.7	1.8	1.8	433
23288CAMKE4	476		754	669	6	0.35	2.9	1.9	1.9	594
23992CAMKE4	478		602	575	3	0.17	5.9	4.0	3.9	100
23092CAMKE4	488		652	615	5	0.22	4.6	3.1	3.0	201
24092CAMK30E4	488		652	604	5	0.29	3.4	2.3	2.3	266
23192CAMKE4	496		724	661	6	0.31	3.3	2.2	2.2	423
24192CAMK30E4	496		724	646	6	0.39	2.6	1.7	1.7	512
23292CAMKE4	496		794	702	6	0.36	2.8	1.9	1.8	691

- Remarks**
- The bearings denoted by an asterisk (*) are OIDHPS bearings and an oil groove and holes are standard for them.
 - When making a selection of the recommended fit (Tolerance of shaft), in case of OIDHPS bearings, the conditions are different.
The segmentations are: Light Loads ($\leq 0.05C_r$); Normal Loads (0.05 to $0.10C_r$); and Heavy Loads ($> 0.10C_r$).
 - For the dimensions of adapters and withdrawal sleeves

Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

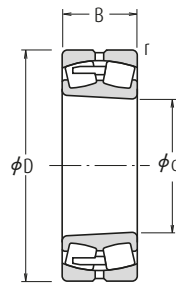
Spherical Roller Bearings

Bore Diameter 480 – 560 mm



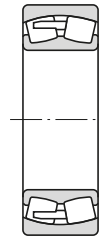
Cylindrical Bore

CA



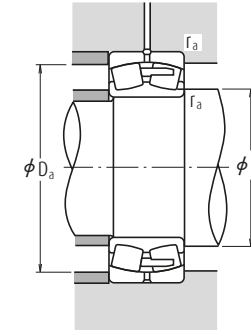
Tapered Bore

CA



Without an Oil Groove and Holes

CA



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		Cylindrical Bore
							Mechanical	Grease	
480	650	128	5	2 580 000	5 850 000	560	—	400	23996CAME4
	700	165	6	3 800 000	7 950 000	560	—	400	23096CAME4
	700	218	6	4 600 000	10 200 000	400	—	320	24096CAME4
	790	248	7.5	6 050 000	11 700 000	400	—	300	23196CAME4
	790	308	7.5	7 150 000	14 600 000	240	—	300	24196CAME4
500	870	310	7.5	7 850 000	14 400 000	300	—	260	23296CAME4
	670	128	5	2 460 000	5 550 000	560	—	400	239/500CAME4
	720	167	6	3 750 000	8 100 000	530	—	380	230/500CAME4
	720	218	6	4 450 000	9 900 000	400	—	300	240/500CAME4
	830	264	7.5	6 850 000	13 400 000	360	—	280	231/500CAME4
530	830	325	7.5	8 000 000	16 000 000	220	—	280	241/500CAME4
	920	336	7.5	9 000 000	16 600 000	280	—	260	232/500CAME4
	710	136	5	2 930 000	6 800 000	500	—	360	239/530CAME4
	780	185	6	4 440 000	9 200 000	500	—	340	230/530CAME4
	780	250	6	5 400 000	11 800 000	360	—	280	240/530CAME4
560	870	272	7.5	7 150 000	14 100 000	340	—	260	231/530CAME4
	870	335	7.5	8 500 000	17 500 000	200	—	260	241/530CAME4
	980	355	9.5	10 100 000	18 800 000	260	—	240	232/530CAME4
	750	140	5	3 100 000	7 250 000	480	—	340	239/560CAME4
	820	195	6	5 000 000	10 700 000	450	—	320	230/560CAME4
560	820	258	6	5 950 000	13 300 000	340	—	260	240/560CAME4
	920	280	7.5	7 850 000	15 500 000	320	—	240	231/560CAME4
	920	355	7.5	9 400 000	19 600 000	190	—	240	241/560CAME4
	1 030	365	9.5	10 900 000	20 500 000	240	—	220	232/560CAME4

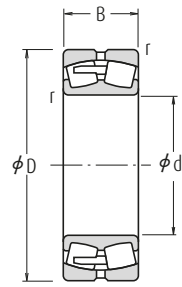
Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (°)	min.	max.	max.	min.	max.	e				
23996CAMKE4	502		628	602	4	0.18	5.7	3.8	3.7	121
23096CAMKE4	508		672	633	5	0.22	4.6	3.1	3.0	211
24096CAMK30E4	508		672	625	5	0.30	3.4	2.3	2.2	270
23196CAMKE4	516		754	688	6	0.31	3.3	2.2	2.2	475
24196CAMK30E4	516		754	670	6	0.39	2.6	1.7	1.7	567
23296CAMKE4	516		834	733	6	0.36	2.8	1.9	1.8	795
239/500CAMKE4	522		648	622	4	0.17	6.0	4.0	3.9	124
230/500CAMKE4	528		692	655	5	0.21	4.8	3.2	3.1	220
240/500CAMK30E4	528		692	643	5	0.30	3.4	2.3	2.2	276
231/500CAMKE4	536		794	720	6	0.31	3.2	2.2	2.1	567
241/500CAMK30E4	536		794	703	6	0.39	2.6	1.7	1.7	666
232/500CAMKE4	536		884	773	6	0.38	2.7	1.8	1.8	969
239/530CAMKE4	552		688	659	4	0.17	6.0	4.0	3.9	149
230/530CAMKE4	558		752	706	5	0.22	4.6	3.1	3.0	298
240/530CAMK30E4	558		752	690	5	0.31	3.3	2.2	2.2	390
231/530CAMKE4	566		834	758	6	0.30	3.3	2.2	2.2	628
241/530CAMK30E4	566		834	740	6	0.38	2.6	1.8	1.7	773
232/530CAMKE4	574		936	824	8	0.38	2.7	1.8	1.7	1 170
239/560CAMKE4	582		728	697	4	0.16	6.1	4.1	4.0	172
230/560CAMKE4	588		792	742	5	0.22	4.5	3.0	2.9	344
240/560CAMK30E4	588		792	729	5	0.30	3.3	2.2	2.2	440
231/560CAMKE4	596		884	804	6	0.30	3.4	2.3	2.2	727
241/560CAMK30E4	596		884	782	6	0.39	2.6	1.8	1.7	886
232/560CAMKE4	604		986	870	8	0.36	2.8	1.9	1.8	1 320

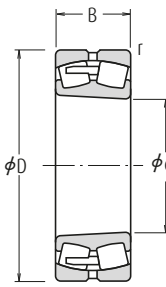
Remark For the dimensions of adapters (d=470 mm) and withdrawal sleeves

Spherical Roller Bearings

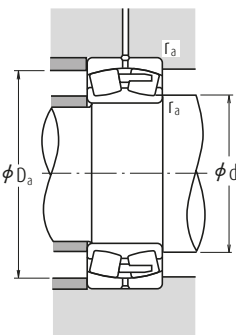
Bore Diameter 600 – 750 mm



Cylindrical Bore
CA



Tapered Bore
CA



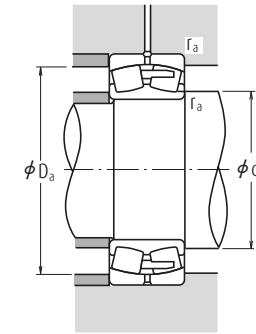
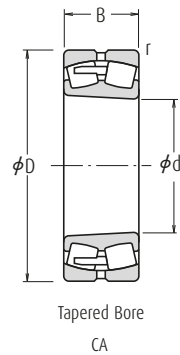
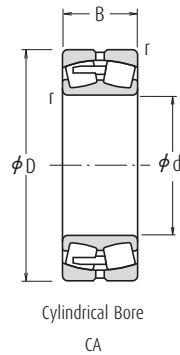
Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		Cylindrical Bore
							Mechanical	Grease	
600	800	150	5	3 450 000	8 100 000	450	—	320	239/600CAME4
	870	200	6	5 450 000	12 200 000	400	—	300	230/600CAME4
	870	272	6	6 600 000	15 100 000	300	—	240	240/600CAME4
	980	300	7.5	8 750 000	17 500 000	280	—	220	231/600CAME4
	980	375	7.5	10 400 000	21 900 000	170	—	220	241/600CAME4
630	1 090	388	9.5	12 700 000	24 900 000	200	—	200	232/600CAME4
	850	165	6	4 000 000	9 350 000	400	—	300	239/630CAME4
	920	212	7.5	5 900 000	12 700 000	400	—	280	230/630CAME4
	920	290	7.5	7 550 000	17 700 000	280	—	220	240/630CAME4
	1 030	315	7.5	9 600 000	19 400 000	260	—	200	231/630CAME4
	1 030	400	7.5	11 300 000	23 900 000	160	—	200	241/630CAME4
	1 150	412	12	13 400 000	25 600 000	200	—	180	232/630CAME4
	900	170	6	4 350 000	10 300 000	380	—	260	239/670CAME4
	980	230	7.5	6 850 000	15 000 000	360	—	240	230/670CAME4
	980	308	7.5	8 450 000	19 500 000	260	—	200	240/670CAME4
	1 090	336	7.5	10 600 000	21 600 000	240	—	190	231/670CAME4
	1 090	412	7.5	12 400 000	26 500 000	150	—	190	241/670CAME4
	1 220	438	12	14 900 000	28 700 000	180	—	170	232/670CAME4
	950	180	6	4 800 000	11 700 000	360	—	240	239/710CAME4
	1 030	236	7.5	7 100 000	15 800 000	340	—	240	230/710CAME4
	1 030	315	7.5	8 850 000	20 700 000	240	—	190	240/710CAME4
	1 150	438	9.5	13 900 000	30 500 000	130	—	170	241/710CAME4
	1 280	450	12	15 700 000	30 500 000	170	—	160	232/710CAME4
	1 000	185	6	5 250 000	12 800 000	320	—	220	239/750CAME4
	1 090	250	7.5	7 750 000	17 200 000	320	—	220	230/750CAME4
	1 090	335	7.5	10 100 000	24 000 000	220	—	180	240/750CAME4
	1 360	475	15	17 700 000	35 500 000	150	—	140	232/750CAME4

Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (1')	min.	max.	max.	min.	max.	e				
239/600CAMKE4	622		778	745	4	0.17	5.9	3.9	3.9	205
230/600CAMKE4	628		842	794	5	0.21	4.8	3.3	3.2	389
240/600CAMK30E4	628		842	772	5	0.30	3.3	2.2	2.2	529
231/600CAMKE4	636		944	856	6	0.30	3.4	2.3	2.2	898
241/600CAMK30E4	636		944	836	6	0.39	2.6	1.8	1.7	1 050
232/600CAMKE4	644		1 046	923	8	0.36	2.8	1.9	1.8	1 590
239/630CAMKE4	658		822	786	5	0.18	5.6	3.8	3.7	259
230/630CAMKE4	666		884	835	6	0.22	4.7	3.1	3.1	468
240/630CAMK30E4	666		884	815	6	0.30	3.3	2.2	2.2	637
231/630CAMKE4	666		994	900	6	0.30	3.4	2.3	2.2	1 040
241/630CAMK30E4	666		994	876	6	0.38	2.7	1.8	1.7	1 250
232/630CAMKE4	684		1 096	970	10	0.36	2.8	1.9	1.8	1 850
239/670CAMKE4	698		872	836	5	0.17	5.8	3.9	3.8	300
230/670CAMKE4	706		944	891	6	0.22	4.7	3.1	3.1	571
240/670CAMK30E4	706		944	868	6	0.30	3.3	2.2	2.2	773
231/670CAMKE4	706		1 054	952	6	0.30	3.3	2.2	2.2	1 230
241/670CAMK30E4	706		1 054	934	6	0.37	2.7	1.8	1.8	1 440
232/670CAMKE4	724		1 166	1 024	10	0.37	2.7	1.8	1.8	2 210
239/710CAMKE4	738		922	883	5	0.17	5.8	3.9	3.8	352
230/710CAMKE4	746		994	936	6	0.22	4.6	3.1	3.0	647
240/710CAMK30E4	746		994	916	6	0.29	3.4	2.3	2.2	861
241/710CAMK30E4	754		1 106	981	8	0.38	2.6	1.8	1.7	1 730
232/710CAMKE4	764		1 226	1 080	10	0.36	2.8	1.9	1.8	2 470
239/750CAMKE4	778		972	931	5	0.17	6.0	4.1	4.0	398
230/750CAMKE4	786		1 054	990	6	0.22	4.6	3.1	3.0	768
240/750CAMK30E4	786		1 054	969	6	0.29	3.4	2.3	2.2	1 030
232/750CAMKE4	814		1 296	1 148	12	0.36	2.8	1.9	1.8	2 980

Spherical Roller Bearings

Bore Diameter 800 – 1400 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Thermal Reference Speed	Speeds (min ⁻¹)		Bearing
d	D	B	r min.	C _r	C _{0r}		Limiting Speeds		
							Mechanical	Grease	
800	1 060	195	6	5 600 000	13 700 000	300	—	220	239/800CAME4
	1 150	258	7.5	8 350 000	19 100 000	300	—	200	230/800CAME4
	1 150	345	7.5	10 900 000	26 300 000	200	—	160	240/800CAME4
	1 280	375	9.5	13 800 000	29 200 000	190	—	150	231/800CAME4
	1 420	488	15	20 300 000	41 000 000	130	—	130	232/800CAME4
850	1 120	200	6	6 100 000	15 200 000	280	—	190	239/850CAME4
	1 220	272	7.5	9 300 000	21 400 000	280	—	180	230/850CAME4
	1 220	365	7.5	11 600 000	28 300 000	190	—	150	240/850CAME4
	1 500	515	15	22 300 000	45 500 000	120	—	120	232/850CAME4
	1 180	206	6	6 660 000	16 700 000	260	—	180	239/900CAME4
900	1 280	280	7.5	9 850 000	22 800 000	260	—	160	230/900CAME4
	1 280	375	7.5	12 800 000	31 500 000	170	—	140	240/900CAME4
	1 580	515	15	23 400 000	47 500 000	120	—	110	232/900CAME4
	1 250	224	7.5	7 600 000	19 900 000	240	—	160	239/950CAME4
	1 360	300	7.5	11 300 000	26 500 000	240	—	150	230/950CAME4
950	1 360	412	7.5	14 500 000	36 500 000	160	—	120	240/950CAME4
	1 660	530	15	24 700 000	50 500 000	110	—	100	232/950CAME4
	1 320	236	7.5	8 200 000	21 700 000	220	—	150	239/1000CAME4
	1 420	308	7.5	11 900 000	28 100 000	220	—	140	230/1000CAME4
	1 420	412	7.5	15 300 000	38 500 000	150	—	110	240/1000CAME4
1 060	1 400	250	7.5	9 300 000	24 400 000	200	—	130	239/1060CAME4
	1 500	325	9.5	13 000 000	31 500 000	200	—	120	230/1060CAME4
	1 500	438	9.5	16 800 000	43 000 000	140	—	100	240/1060CAME4
1 120	1 580	345	9.5	15 400 000	38 000 000	180	—	110	230/1120CAME4
	1 580	462	9.5	18 700 000	49 500 000	120	—	95	240/1120CAME4
	1 660	475	9.5	20 200 000	52 500 000	120	—	85	240/1180CAME4
1 250	1 750	500	9.5	21 000 000	59 500 000	110	—	75	240/1250CAME4
1 320	1 850	530	12	22 600 000	63 500 000	100	—	67	240/1320CAME4
1 400	1 950	545	12	24 500 000	65 000 000	95	—	60	240/1400CAME4

Numbers	Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)
	d _a		D _a		r _a		Y ₂	Y ₃	Y ₀	
Tapered Bore (1)	min.	max.	min.	max.	max.	e				approx.
239/800CAMKE4	828	1 032	987	5	0.17	6.0	4.0	3.9		462
230/800CAMKE4	836	1 114	1 045	6	0.21	4.7	3.2	3.1		870
240/800CAMK30E4	836	1 114	1 029	6	0.27	3.7	2.5	2.5		1 130
231/800CAMKE4	844	1 236	1 127	8	0.28	3.6	2.4	2.3		1 870
232/800CAMKE4	864	1 356	1 208	12	0.35	2.8	1.9	1.9		3 250
239/850CAMKE4	878	1 092	1 046	5	0.16	6.2	4.2	4.1		523
230/850CAMKE4	886	1 184	1 109	6	0.21	4.8	3.2	3.1		1 020
240/850CAMK30E4	886	1 184	1 093	6	0.28	3.6	2.4	2.4		1 350
232/850CAMKE4	914	1 436	1 274	12	0.35	2.8	1.9	1.9		3 890
239/900CAMKE4	928	1 152	1 103	5	0.16	6.4	4.3	4.2		591
230/900CAMKE4	936	1 244	1 169	6	0.20	4.9	3.3	3.2		1 160
240/900CAMK30E4	936	1 244	1 147	6	0.28	3.6	2.4	2.4		1 520
232/900CAMKE4	964	1 516	1 354	12	0.33	3.0	2.0	2.0		4 300
239/950CAMKE4	986	1 214	1 169	6	0.16	6.3	4.2	4.1		732
230/950CAMKE4	986	1 324	1 241	6	0.21	4.8	3.2	3.2		1 400
240/950CAMK30E4	986	1 324	1 219	6	0.28	3.6	2.4	2.3		1 880
232/950CAMKE4	1 014	1 596	1 428	12	0.32	3.1	2.1	2.1		4 800
239/1000CAMKE4	1 036	1 284	1 229	6	0.16	6.4	4.3	4.2		881
230/1000CAMKE4	1 036	1 384	1 298	6	0.20	4.9	3.3	3.2		1 560
240/1000CAMK30E4	1 036	1 384	1 275	6	0.27	3.7	2.5	2.4		2 010
239/1060CAMKE4	1 096	1 384	1 302	6	0.16	6.1	4.1	4.0		1 030
230/1060CAMKE4	1 104	1 456	1 368	8	0.21	4.9	3.3	3.2		1 790
240/1060CAMK30E4	1 104	1 456	1 346	8	0.28	3.6	2.4	2.4		2 410
230/1120CAMKE4	1 164	1 536	1 444	8	0.20	5.0	3.4	3.3		2 120
240/1120CAMK30E4	1 164	1 536	1 421	8	0.27	3.7	2.5	2.5		2 790
240/1180CAMK30E4	1 224	1 616	1 494	8	0.27	3.7	2.5	2.4		3 180
240/1250CAMK30E4	1 294	1 706	1 579	8	0.25	4.0	2.7	2.6		3 700
240/1320CAMK30E4	1 374	1 796	1 656	10	0.26	3.9	2.6	2.6		4 400
240/1400CAMK30E4	1 454	1 896	1 767	10	0.25	4.0	2.7	2.6		4 900

Note (1) The suffix K or K30 represents bearings with tapered bores (taper 1 : 12 or 1 : 30).