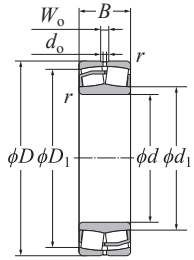
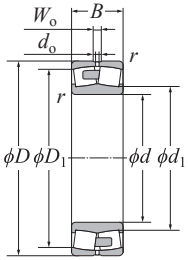
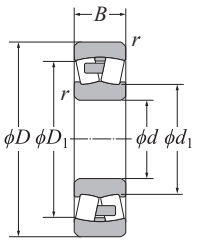


Cylindrical bore [Type EA]



Cylindrical bore [Type EM]



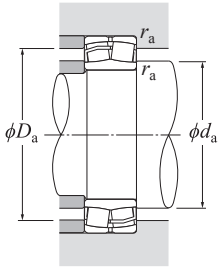
Cylindrical bore [Type 213]

Tapered bore

d 95–130 mm

Boundary dimensions mm					Basic load rating kN		Fatigue load limit kN	Allowable speed min^{-1}		Bearing numbers [1]	
d	D	B	$r_{s\,min}$ [3]	W_o	d_o	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	Cylindrical bore	Tapered bore [2]
95	200	45	3	7	4	375	420	54.0	2 100	2 700	**21319**	**21319K**
	200	67	3	12	6	732	751	43.4	2 300	2 800	***22319EAD1**	***22319EAKD1**
	200	67	3	12	6	732	751	43.4	2 300	2 800	***22319EMD1**	***22319EMKD1**
100	165	52	2	8	4	464	563	30.7	2 400	3 000	***23120EAD1**	***23120EAKD1**
	165	52	2	8	4	480	590	32.1	2 400	3 000	***23120EMD1**	***23120EMKD1**
	180	46	2.1	11	5	472	495	36.9	2 800	3 600	***22220EAD1**	***22220EAKD1**
	180	46	2.1	11	5	472	495	36.9	2 800	3 600	***22220EMD1**	***22220EMKD1**
	180	60.3	2.1	9	4.5	586	661	36.3	2 300	2 900	***23220EMD1**	***23220EMKD1**
	215	47	3	9	5	410	465	42.5	2 000	2 600	**21320**	**21320K**
	215	73	3	13	6	827	844	50.1	2 100	2 600	***22320EAD1**	***22320EAKD1**
	215	73	3	13	6	827	844	50.1	2 100	2 600	***22320EMD1**	***22320EMKD1**
110	170	45	2	8	3.5	417	517	32.1	2 600	3 300	***23022EAD1**	***23022EAKD1**
	170	45	2	8	3.5	417	517	32.1	2 600	3 300	***23022EMD1**	***23022EMKD1**
	180	56	2	9	4	547	669	36.2	2 200	2 800	***23122EAD1**	***23122EAKD1**
	180	56	2	9	4	547	669	36.2	2 200	2 800	***23122EMD1**	***23122EMKD1**
	180	69	2	8	4	622	769	35.7	2 200	2 700	***24122EMD1**	***24122EMK30D1**
	200	53	2.1	12	6	602	643	45.0	2 600	3 300	***22222EAD1**	***22222EAKD1**
	200	53	2.1	12	6	602	643	45.0	2 600	3 300	***22222EMD1**	***22222EMKD1**
	200	69.8	2.1	11	5	752	869	43.9	2 100	2 600	***23222EMD1**	***23222EMKD1**
	240	50	3	9	5	550	615	61.5	1 800	2 300	**21322**	**21322K**
	240	80	3	16	7	975	972	59.0	2 000	2 400	***22322EAD1**	***22322EAKD1**
	240	80	3	16	7	975	972	59.0	2 000	2 400	***22322EMD1**	***22322EMKD1**
120	180	46	2	8	3.5	446	577	35.8	2 400	3 100	***23024EAD1**	***23024EAKD1**
	180	46	2	8	3.5	446	577	35.8	2 400	3 100	***23024EMD1**	***23024EMKD1**
	180	60	2	8	3.5	526	726	34.4	2 100	2 600	***24024EMD1**	***24024EMK30D1**
	200	62	2	10	4.5	663	820	43.4	2 000	2 500	***23124EAD1**	***23124EAKD1**
	200	62	2	10	4.5	663	820	43.4	2 000	2 500	***23124EMD1**	***23124EMKD1**
	200	80	2	10	4.5	756	991	41.3	1 900	2 500	***24124EMD1**	***24124EMK30D1**
	215	58	2.1	12	6	688	753	49.9	2 400	3 000	***22224EAD1**	***22224EAKD1**
	215	58	2.1	12	6	688	753	49.9	2 400	3 000	***22224EMD1**	***22224EMKD1**
	215	76	2.1	11	5	857	998	49.8	1 900	2 400	***23224EMD1**	***23224EMKD1**
	260	86	3	18	8	1 170	1 280	68.4	1 800	2 200	***22324EAD1**	***22324EAKD1**
	260	86	3	18	8	1 170	1 280	68.4	1 800	2 200	***22324EMD1**	***22324EMKD1**
130	200	52	2	9	4	565	721	44.2	2 200	2 900	***23026EAD1**	***23026EAKD1**
	200	52	2	9	4	565	721	44.2	2 200	2 900	***23026EMD1**	***23026EMKD1**

1) Bearing numbers with "*" are **ULTAGE™ series** and have outer ring oil inlets and oil grooves as standard. 2) Bearings appended with "**K**" have a tapered bore ratio of 1:12; bearings appended with "**K30**" have a tapered bore ratio of 1:30. 3) Smallest allowable dimension for chamfer dimension r.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Installation-related dimensions mm					Constant	Axial load factors			Mass (approx.) kg	
d_1	d_a Min.	D_a Max.	D_1	r_{as} Max.	e	Y_1	Y_2	Y_0	Cylindrical bore	Tapered bore
127	109	186	171	2.5	0.23	3.01	4.48	2.94	7.1	7
120	109	186	174	3	0.32	2.09	3.11	2.04	9.91	9.71
120	109	186	174	3	0.32	2.09	3.11	2.04	10	9.82
114	111	154	147	2	0.28	2.39	3.56	2.34	4.37	4.24
114	111	154	147	2	0.28	2.39	3.56	2.34	4.45	4.32
118	112	168	161	2.1	0.24	2.84	4.23	2.78	4.9	4.8
118	112	168	161	2.1	0.24	2.84	4.23	2.78	5.02	4.93
118	112	168	159	2.1	0.31	2.18	3.24	2.13	6.51	6.33
133	114	201	179	2.5	0.22	3.01	4.48	2.94	8.89	8.78
127	114	201	187	3	0.34	1.98	2.94	1.93	12.6	12.3
127	114	201	187	3	0.34	1.98	2.94	1.93	12.9	12.7
123	119	161	155	2	0.23	2.95	4.40	2.89	3.66	3.55
123	119	161	155	2	0.23	2.95	4.40	2.89	3.66	3.55
125	121	169	161	2	0.28	2.43	3.61	2.37	5.66	5.49
125	121	169	161	2	0.28	2.43	3.61	2.37	5.53	5.36
121	121	169	158	2	0.36	1.90	2.83	1.86	6.75	6.65
130	122	188	179	2.1	0.25	2.69	4.00	2.63	7.1	6.95
130	122	188	179	2.1	0.25	2.69	4.00	2.63	7.3	7.15
130	122	188	176	2.1	0.32	2.12	3.15	2.07	9.41	9.14
146	124	226	203	2.5	0.21	3.20	4.77	3.13	11.2	11.1
139	124	226	209	3	0.32	2.09	3.11	2.04	17	16.6
139	124	226	209	3	0.32	2.09	3.11	2.04	17.4	17.1
134	129	171	165	2	0.22	3.14	4.67	3.07	4.02	3.9
134	129	171	165	2	0.22	3.14	4.67	3.07	4.02	3.9
132	129	171	161	2	0.29	2.32	3.45	2.26	5.28	5.21
138	131	189	179	2	0.28	2.43	3.61	2.37	7.72	7.49
138	131	189	179	2	0.28	2.43	3.61	2.37	7.77	7.54
136	131	189	173	2	0.37	1.84	2.74	1.80	10	9.87
141	132	203	193	2.1	0.25	2.74	4.08	2.68	8.88	8.68
141	132	203	193	2.1	0.25	2.74	4.08	2.68	9.01	8.82
139	132	203	190	2.1	0.32	2.09	3.11	2.04	11.7	11.3
156	134	246	225	3	0.32	2.09	3.11	2.04	22.3	21.9
156	134	246	225	3	0.32	2.09	3.11	2.04	22.7	22.2
145	139	191	183	2	0.22	3.01	4.48	2.94	5.88	5.71
145	139	191	183	2	0.22	3.01	4.48	2.94	5.9	5.73

Note: For the bearings other than **ULTAGE™ series**, outer rings with oil inlets and oil grooves can also be made based on your request. In this case, supplementary suffix "**D1**" is added after a bearing number. **Example: 21322D1**