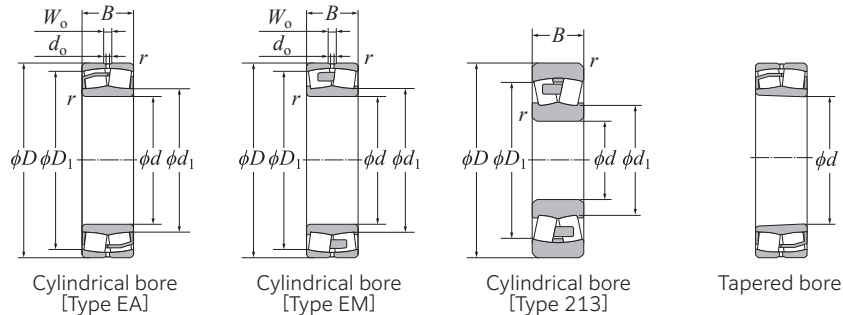


Spherical Roller Bearings

NTN



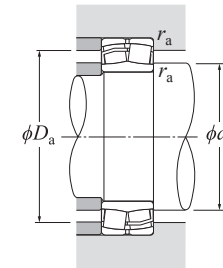
d 65–95 mm

Boundary dimensions					Basic load rating		Fatigue load limit	Allowable speed		Bearing numbers ¹⁾	
mm					dynamic	static	kN	min ⁻¹		Cylindrical bore	Tapered bore ²⁾
d	D	B	r _{s min} ³⁾	W ₀	d ₀	C _r	C _{0r}	Grease lubrication	Oil lubrication		
65	120	31	1.5	8	3.5	226	224	18.2	4 400	5 500	*22213EAD1 *22213EAKD1
	120	31	1.5	8	3.5	217	212	17.2	4 400	5 500	*22213EMD1 *22213EMKD1
	140	33	2.1	7	4	216	228	31.0	3 100	4 000	21313 21313K
	140	48	2.1	9	4	369	343	23.4	3 300	4 100	*22313EAD1 *22313EAKD1
	140	48	2.1	9	4	369	343	23.4	3 300	4 100	*22313EMD1 *22313EMKD1
70	125	31	1.5	7	3.5	235	240	20.1	4 100	5 200	*22214EAD1 *22214EAKD1
	125	31	1.5	7	3.5	235	240	20.1	4 100	5 200	*22214EMD1 *22214EMKD1
	150	35	2.1	7	4	245	262	33.5	2 900	3 800	21314 21314K
	150	51	2.1	10	5	420	396	26.0	3 000	3 800	*22314EAD1 *22314EAKD1
	150	51	2.1	10	5	420	396	26.0	3 000	3 800	*22314EMD1 *22314EMKD1
75	130	31	1.5	7	3.5	244	249	21.1	4 000	5 000	*22215EAD1 *22215EAKD1
	130	31	1.5	7	3.5	244	249	21.1	4 000	5 000	*22215EMD1 *22215EMKD1
	160	37	2.1	7	4	266	287	27.5	2 700	3 500	21315 21315K
	160	55	2.1	10	5	491	467	29.8	2 900	3 600	*22315EAD1 *22315EAKD1
	160	55	2.1	10	5	491	467	29.8	2 900	3 600	*22315EMD1 *22315EMKD1
80	140	33	2	8	3.5	278	287	24.0	3 700	4 600	*22216EAD1 *22216EAKD1
	140	33	2	8	3.5	267	272	22.8	3 700	4 600	*22216EMD1 *22216EMKD1
	170	39	2.1	7	4	289	315	30.5	2 500	3 300	21316 21316K
	170	58	2.1	10	5	541	522	32.5	2 700	3 400	*22316EAD1 *22316EAKD1
	170	58	2.1	10	5	541	522	32.5	2 700	3 400	*22316EMD1 *22316EMKD1
85	150	36	2	8	3.5	324	330	27.1	3 400	4 300	*22217EAD1 *22217EAKD1
	150	36	2	8	3.5	324	330	27.1	3 400	4 300	*22217EMD1 *22217EMKD1
	180	41	3	7	4	320	355	45.0	2 400	3 100	21317 21317K
	180	60	3	11	5	599	604	36.4	2 600	3 200	*22317EAD1 *22317EAKD1
	180	60	3	11	5	599	604	36.4	2 600	3 200	*22317EMD1 *22317EMKD1
90	160	40	2	10	4.5	384	398	30.2	3 200	4 000	*22218EAD1 *22218EAKD1
	160	40	2	10	4.5	384	398	30.2	3 200	4 000	*22218EMD1 *22218EMKD1
	160	52.4	2	9	4	467	513	30.0	2 600	3 200	*23218EMD1 *23218EMKD1
	190	43	3	7	4	355	400	50.5	2 300	3 000	21318 21318K
	190	64	3	12	5	668	652	40.0	2 500	3 000	*22318EAD1 *22318EAKD1
	190	64	3	12	5	668	652	40.0	2 500	3 000	*22318EMD1 *22318EMKD1
95	170	43	2.1	10	4.5	416	417	33.4	3 000	3 800	*22219EAD1 *22219EAKD1
	170	43	2.1	10	4.5	416	417	33.4	3 000	3 800	*22219EMD1 *22219EMKD1

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

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Dynamic equivalent radial load
 $P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y ₁	0.67	Y ₂

Static equivalent radial load

$$P_{0r} = F_r + Y_0 F_a$$

For values of e, Y₁, Y₂ and Y₀ see the table below.

Installation-related dimensions					Constant	Axial load factors			Mass (approx.)	
d ₁	d _a Min.	mm D _a Max.	D ₁	r _{as} Max.	e	Y ₁	Y ₂	Y ₀	Cylindrical bore kg	Tapered bore
78	74	111	107	1.5	0.24	2.79	4.15	2.73	1.52	1.49
78	74	111	107	1.5	0.24	2.79	4.15	2.73	1.53	1.5
85	77	128	119	2	0.25	2.69	4.00	2.63	2.55	2.51
81	77	128	122	2.1	0.33	2.06	3.06	2.01	3.48	3.41
81	77	128	122	2.1	0.33	2.06	3.06	2.01	3.5	3.43
84	79	116	113	1.5	0.22	3.01	4.48	2.94	1.61	1.58
84	79	116	113	1.5	0.22	3.01	4.48	2.94	1.64	1.6
91	82	138	126	2	0.25	2.69	4.00	2.63	3.18	3.14
85	82	138	131	2.1	0.34	2.00	2.98	1.96	4.25	4.16
85	82	138	131	2.1	0.34	2.00	2.98	1.96	4.31	4.22
88	84	121	118	1.5	0.22	3.14	4.67	3.07	1.67	1.64
88	84	121	118	1.5	0.22	3.14	4.67	3.07	1.71	1.67
99	87	148	136	2	0.24	2.84	4.23	2.78	3.81	3.76
91	87	148	139	2.1	0.34	2.00	2.98	1.96	5.18	5.07
91	87	148	139	2.1	0.34	2.00	2.98	1.96	5.27	5.16
94	91	129	127	2	0.22	3.14	4.67	3.07	2.09	2.05
94	91	129	127	2	0.22	3.14	4.67	3.07	2.11	2.07
105	92	158	144	2	0.23	2.95	4.40	2.89	4.53	4.47
98	92	158	148	2.1	0.34	2.00	2.98	1.96	6.12	5.99
98	92	158	148	2.1	0.34	2.00	2.98	1.96	6.28	6.15
100	96	139	137	2	0.22	3.07	4.57	3.00	2.59	2.54
100	96	139	137	2	0.22	3.07	4.57	3.00	2.67	2.62
111	99	166	152	2.5	0.25	2.69	4.00	2.63	5.35	5.28
107	99	166	157	3	0.32	2.09	3.11	2.04	7.18	7.04
107	99	166	157	3	0.32	2.09	3.11	2.04	7.29	7.15
105	101	149	144	2	0.23	2.90	4.31	2.83	3.34	3.27
105	101	149	144	2	0.23	2.90	4.31	2.83	3.43	3.37
104	101	149	141	2	0.30	2.25	3.34	2.20	4.43	4.31
119	104	176	162	2.5	0.24	2.84	4.23	2.78	6.3	6.21
110	104	176	166	3	0.33	2.06	3.06	2.01	8.42	8.25
110	104	176	166	3	0.33	2.06	3.06	2.01	8.53	8.35
110	107	158	153	2.1	0.23	2.95	4.40	2.89	3.98	3.9
110	107	158	153	2.1	0.23	2.95	4.40	2.89	4.06	3.98

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: 21317D1