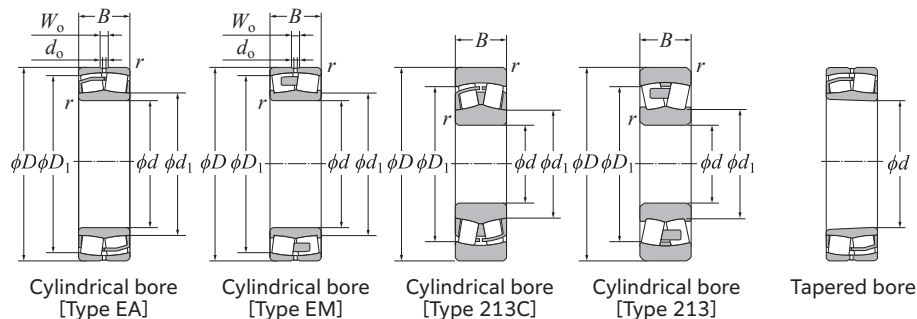


Spherical Roller Bearings

NTN



d 25–60 mm

Boundary dimensions					Basic load rating		Fatigue load limit	Allowable speed		Bearing numbers ^{1) 4)}		
mm					dynamic	static	kN	min ⁻¹				
d	D	B	r _{s min} ³⁾	W ₀	d ₀	C _r	C _{0r}	C _u	Grease lubrication	Oil lubrication	Cylindrical bore	Tapered bore ²⁾
25	52	18	1	3	1.5	57.3	46.1	3.23	10 400	13 000	*22205EAW33	*22205EAKW33
	52	18	1	3	1.5	57.3	46.1	3.23	10 400	13 000	*22205EMW33	*22205EMKW33
30	62	20	1	4	2	75.7	64.5	4.58	8 800	11 000	*22206EAW33	*22206EAKW33
	62	20	1	4	2	75.7	64.5	4.58	8 800	11 000	*22206EMW33	*22206EMKW33
35	72	23	1.1	5	2	100	92.0	6.11	7 500	9 400	*22207EAW33	*22207EAKW33
	72	23	1.1	5	2	100	92.0	6.11	7 500	9 400	*22207EMW33	*22207EMKW33
40	80	23	1.1	5	2.5	116	105	7.78	6 800	8 500	*22208EAD1	*22208EAKD1
	80	23	1.1	5	2.5	110	98.0	7.29	6 800	8 500	*22208EMD1	*22208EMKD1
	90	23	1.5	6	3	98.0	90.0	12.6	4 900	6 400	21308C	21308CK
	90	33	1.5	6	3	169	152	9.36	5 400	6 600	*22308EAD1	*22308EAKD1
	90	33	1.5	6	3	169	152	9.36	5 400	6 600	*22308EMD1	*22308EMKD1
45	85	23	1.1	6	2.5	121	113	8.76	6 100	7 700	*22209EAD1	*22209EAKD1
	85	23	1.1	6	2.5	116	106	8.24	6 100	7 700	*22209EMD1	*22209EMKD1
	100	25	1.5	6	3	114	106	14.1	4 400	5 700	21309C	21309CK
	100	36	1.5	6	3	206	187	11.8	4 600	5 700	*22309EAD1	*22309EAKD1
	100	36	1.5	6	3	206	187	11.8	4 600	5 700	*22309EMD1	*22309EMKD1
50	90	23	1.1	6	2.5	130	124	10.1	5 700	7 200	*22210EAD1	*22210EAKD1
	90	23	1.1	6	2.5	125	117	9.54	5 700	7 200	*22210EMD1	*22210EMKD1
	110	27	2	6	3	131	127	13.7	4 000	5 200	21310C	21310CK
	110	40	2	7	3.5	250	232	14.0	4 300	5 300	*22310EAD1	*22310EAKD1
55	100	25	1.5	6	3	155	148	12.6	5 300	6 700	*22211EAD1	*22211EAKD1
	100	25	1.5	6	3	148	140	11.9	5 300	6 700	*22211EMD1	*22211EMKD1
	120	29	2	6	3	161	163	16.1	3 700	4 800	21311C	21311CK
	120	43	2	8	3.5	296	274	17.4	3 900	4 800	*22311EAD1	*22311EAKD1
	120	43	2	8	3.5	296	274	17.4	3 900	4 800	*22311EMD1	*22311EMKD1
60	110	28	1.5	7	3	187	181	15.4	4 800	6 000	*22212EAD1	*22212EAKD1
	110	28	1.5	7	3	179	171	14.6	4 800	6 000	*22212EMD1	*22212EMKD1
	130	31	2.1	7	4	186	191	28.2	3 400	4 400	21312C	21312CK
	130	46	2.1	9	4	340	319	20.3	3 600	4 600	*22312EAD1	*22312EAKD1
	130	46	2.1	9	4	340	319	20.3	3 600	4 600	*22312EMD1	*22312EMKD1

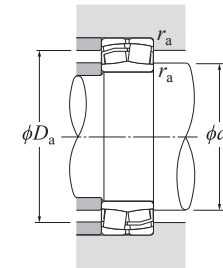
1) Bearing numbers with "K" are ULTAGE™ series and have outer ring oil inlets and oil grooves as standard.

2) "K" indicates bearings having a tapered bore with a taper ratio of 1:12. 3) Smallest allowable dimension for chamfer dimension r.

4) "W33" indicates manufacturing in Europe and have three oil inlets.

Spherical Roller Bearings

NTN



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
30	30	46	46	1	0.34	2.00	2.98	1.96	0.173	0.169
30	30	46	46	1	0.34	2.00	2.98	1.96	0.174	0.171
37	36	56	55	1	0.31	2.15	3.20	2.10	0.278	0.272
37	36	56	55	1	0.31	2.15	3.20	2.10	0.281	0.275
45	42	65	63	1.1	0.31	2.21	3.29	2.16	0.438	0.43
45	42	65	63	1.1	0.31	2.21	3.29	2.16	0.442	0.433
50	47	73	71	1.1	0.27	2.47	3.67	2.41	0.528	0.518
50	47	73	71	1.1	0.27	2.47	3.67	2.41	0.529	0.519
52	48.5	81.5	76	1.5	0.26	2.55	3.80	2.50	0.705	0.694
52	49	81	78	1.5	0.36	1.87	2.79	1.83	1.02	1
52	49	81	78	1.5	0.36	1.87	2.79	1.83	1.03	1.01
54	52	78	76	1.1	0.26	2.64	3.93	2.58	0.572	0.561
54	52	78	76	1.1	0.26	2.64	3.93	2.58	0.577	0.566
58	53.5	91.5	85	1.5	0.26	2.60	3.87	2.54	0.927	0.912
58	54	91	87	1.5	0.36	1.90	2.83	1.86	1.37	1.34
58	54	91	87	1.5	0.36	1.90	2.83	1.86	1.38	1.35
59	57	83	81	1.1	0.24	2.84	4.23	2.78	0.614	0.602
59	57	83	81	1.1	0.24	2.84	4.23	2.78	0.616	0.604
65	60	100	93	2	0.26	2.64	3.93	2.58	1.21	1.19
63	61	99	95	2	0.36	1.87	2.79	1.83	1.82	1.79
63	61	99	95	2	0.36	1.87	2.79	1.83	1.84	1.8
66	64	91	90	1.5	0.23	2.95	4.40	2.89	0.83	0.814
66	64	91	90	1.5	0.23	2.95	4.40	2.89	0.827	0.811
73	65	110	102	2	0.25	2.69	4.00	2.63	1.71	1.69
68	66	109	104	2	0.36	1.87	2.79	1.83	2.31	2.26
68	66	109	104	2	0.36	1.87	2.79	1.83	2.34	2.29
71	69	101	99	1.5	0.24	2.84	4.23	2.78	1.14	1.12
71	69	101	99	1.5	0.24	2.84	4.23	2.78	1.15	1.13
78	72	118	109	2	0.25	2.69	4.00	2.63	2.1	2.07
75	72	118	113	2.1	0.35	1.95	2.90	1.91	2.86	2.8
75	72	118	113	2.1	0.35	1.95	2.90	1.91	2.91	2.85

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: 21311D1