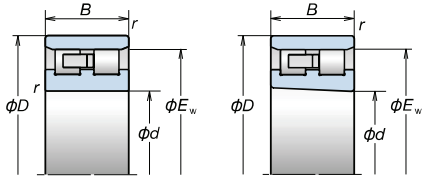
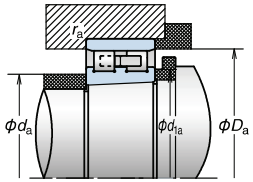
2. Cylindrical Roller Bearings

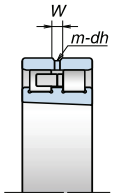
Bore Diameter **25-65** mm

Double-Row Cylindrical Roller Bearings



Cylindrical Bore　　Tapered Bore





E44 Specification

Bearing Numbers (1)(2)	Boundary Dimensions (mm)				Basic Load Ratings (kN)		Ew (mm) (reference)	Mass (kg) (approx.)	Limiting Speeds (3) (min⁻¹)	
	d	D	B	r (min.)	Cr (Dynamic)	Cor (Static)			Grease	Oil
* NN3005MBKR	25	47	16	0.6	25.8	30.0	41.3	0.121	20 900	25 000
* NN3006MBKR	30	55	19	1	31.0	37.0	48.5	0.186	17 700	21 200
* NN3006TBKR	30	55	19	1	31.0	37.0	48.5	0.171	20 000	23 600
* NN3006ZTBKR	30	55	19	1	18.3	18.6	48.5	0.152	21 000	27 900
* NN3007MBKR	35	62	20	1	39.5	50.0	55	0.297	15 500	18 600
* NN3007TBKR	35	62	20	1	39.5	50.0	55	0.227	17 600	20 700
* NN3007ZTBKR	35	62	20	1	23.3	25.0	55	0.198	18 400	24 500
* NN3008MBKR	40	68	21	1	50.0	55.5	61	0.356	13 900	16 700
* NN3008TBKR	40	68	21	1	50.0	55.5	61	0.269	15 800	18 600
* NN3008ZTBKR	40	68	21	1	29.6	27.7	61	0.234	16 600	22 000
* NN3009MBKR	45	75	23	1	59.5	68.5	67.5	0.471	12 500	15 000
* NN3009TBKR	45	75	23	1	57.5	65.5	67.5	0.348	14 200	16 700
* NN3009ZTBKR	45	75	23	1	34.0	32.5	67.5	0.302	14 900	19 800
* NN3010MBKR	50	80	23	1	61.0	72.5	72.5	0.502	11 600	13 900
* NN3010TBKR	50	80	23	1	61.0	72.5	72.5	0.378	13 100	15 400
* NN3010ZTBKR	50	80	23	1	36.5	36.5	72.5	0.328	13 800	18 300
* NN3011MBKR	55	90	26	1.1	79.5	96.5	81	0.748	10 400	12 500
* NN3011TBKR	55	90	26	1.1	79.5	96.5	81	0.562	11 800	13 800
* NN3011ZTBKR	55	90	26	1.1	47.5	48.5	81	0.488	12 400	16 400
* NN3012MBKR	60	95	26	1.1	84.5	106	86.1	0.804	9 700	11 700
* NN3012TBKR	60	95	26	1.1	84.5	106	86.1	0.602	11 000	13 000
* NN3012ZTBKR	60	95	26	1.1	50.0	53.0	86.1	0.522	11 600	15 400
* NN3013MBKR	65	100	26	1.1	88.5	116	91	0.862	9 100	11 000
* NN3013TBKR	65	100	26	1.1	88.5	116	91	0.644	10 400	12 200
* NN3013ZTBKR	65	100	26	1.1	52.5	58.0	91	0.557	10 900	14 500

Abutment and Fillet Dimensions (mm)					Clearances in Bearings with Tapered Bores (μm)						Clearances in Bearings with Cylindrical Bores (μm)		E44 Specification Lubrication Holes Dimensions (mm)		
da (min.)	da1a (min.)	Da (max.)	Da (min.)	ra (max.)	CC9 (4) min.	CC9 (4) max.	CC0 min.	CC0 max.	CC1 min.	CC1 max.	CC1 min.	CC1 max.	Hole Dia. dh	Oil Groove Width W	Number of Holes m
29	29	43	42	0.6	5	10	8	15	10	25	5	15	2	3.5	4
35	36	50	50	1	5	10	8	15	10	25	5	15	2	3.5	4
35	36	50	50	1	5	10	8	15	10	25	5	15	2	3.5	4
35	36	50	50	1	5	10	8	15	10	25	5	15	2	3.5	4
40	41	57	56	1	5	12	8	15	12	25	5	15	2	3.5	4
40	41	57	56	1	5	12	8	15	12	25	5	15	2	3.5	4
40	41	57	56	1	5	12	8	15	12	25	5	15	2	3.5	4
45	46	63	62	1	5	12	8	15	12	25	5	15	2	3.5	4
45	46	63	62	1	5	12	8	15	12	25	5	15	2	3.5	4
45	46	63	62	1	5	12	8	15	12	25	5	15	2	3.5	4
50	51	70	69	1	5	15	10	20	15	30	5	18	2	3.5	4
50	51	70	69	1	5	15	10	20	15	30	5	18	2	3.5	4
50	51	70	69	1	5	15	10	20	15	30	5	18	2	3.5	4
55	56	75	74	1	5	15	10	20	15	30	5	18	2	3.5	4
55	56	75	74	1	5	15	10	20	15	30	5	18	2	3.5	4
55	56	75	74	1	5	15	10	20	15	30	5	18	2	3.5	4
61.5	62	83.5	83	1	5	15	10	20	15	35	5	20	2	3.5	4
61.5	62	83.5	83	1	5	15	10	20	15	35	5	20	2	3.5	4
61.5	62	83.5	83	1	5	15	10	20	15	35	5	20	2	3.5	4
66.5	67	88.5	88	1	5	15	10	20	15	35	5	20	2	3.5	4
66.5	67	88.5	88	1	5	15	10	20	15	35	5	20	2	3.5	4
66.5	67	88.5	88	1	5	15	10	20	15	35	5	20	2	3.5	4
71.5	72	93.5	93	1	5	15	10	20	15	35	5	20	2	3.5	4
71.5	72	93.5	93	1	5	15	10	20	15	35	5	20	2	3.5	4
71.5	72	93.5	93	1	5	15	10	20	15	35	5	20	2	3.5	4

(1) The suffix "K"or "KR" represents bearings with tapered bores (1 : 12). For the cylindrical bore type, eliminate the symbol and leave this symbol blank.
(2) GN gauge is available for the bearings denoted by an asterisk (*). For GN gauge, please refer to Page 180.
(3) For application of limiting speeds, please refer to Page 216.
(4) Clearance CC9 is applicable to cylindrical roller bearings with tapered bores in ISO Tolerance Classes 5 and 4.

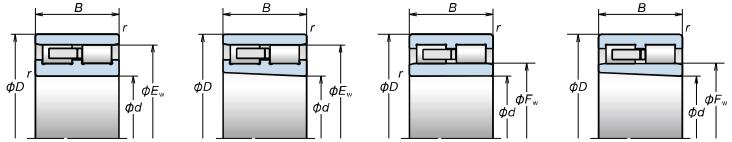
For additional information:

- Dynamic equivalent load ····· P191
- Static equivalent load ····· P198
- Nozzle Position ····· P240
- Recommended Grease Quantities ·· P257

2. Cylindrical Roller Bearings

Bore Diameter **70-105** mm

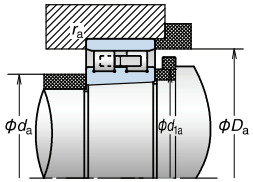
Double-Row Cylindrical Roller Bearings

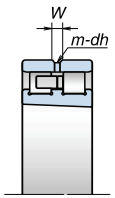


NN Cylindrical Bore | NN Tapered Bore | NNU Cylindrical Bore | NNU Tapered Bore

Bearing Numbers (1)(4)	Boundary Dimensions (mm)				Basic Load Ratings (kN)		E_w (F_w in case of NNU type) (mm) (reference)	Mass (kg) (approx.)	Limiting Speeds (3) (min^{-1})	
	d	*D*	*B*	*r* (min.)	C_r (Dynamic)	C_{or} (Static)			Grease	Oil
* **NN3014MBKR**	**70**	**110**	**30**	1.1	112	148	100	1.23	8 000	10 000
* **NN3014TBKR**	**70**	**110**	**30**	1.1	112	148	100	0.925	9 500	11 200
* **NN3014ZTBKR**	**70**	**110**	**30**	1.1	66.5	74.0	100	0.809	9 900	13 200
* **NN3015MBKR**	**75**	**115**	**30**	1.1	111	149	105	1.28	7 900	9 500
* **NN3015TBKR**	**75**	**115**	**30**	1.1	111	149	105	0.964	9 000	10 600
* **NN3015ZTBKR**	**75**	**115**	**30**	1.1	66.0	74.5	105	0.848	9 400	12 500
* **NN3016MBKR**	**80**	**125**	**34**	1.1	137	186	113	1.77	7 400	8 800
* **NN3016TBKR**	**80**	**125**	**34**	1.1	137	186	113	1.35	8 300	9 800
* **NN3016ZTBKR**	**80**	**125**	**34**	1.1	81.5	93.0	113	1.19	8 800	11 700
* **NN3017MBKR**	**85**	**130**	**34**	1.1	144	201	118	1.87	7 000	8 400
* **NN3017TBKR**	**85**	**130**	**34**	1.1	144	201	118	1.42	8 000	9 400
* **NN3017ZTBKR**	**85**	**130**	**34**	1.1	85.5	101	118	1.25	8 400	11 100
* **NN3018MBKR**	**90**	**140**	**37**	1.5	164	228	127	2.38	6 600	7 900
* **NN3018TBKR**	**90**	**140**	**37**	1.5	164	228	127	1.82	7 400	8 700
* **NN3018ZTBKR**	**90**	**140**	**37**	1.5	97.5	114	127	1.61	7 800	10 300
* **NN3019MBKR**	**95**	**145**	**37**	1.5	173	246	132	2.51	6 300	7 500
* **NN3019TBKR**	**95**	**145**	**37**	1.5	173	246	132	1.91	7 100	8 400
* **NN3019ZTBKR**	**95**	**145**	**37**	1.5	103	123	132	1.68	7 500	9 900
NN3920MBKR	**100**	**140**	**30**	1.1	122	182	130	1.32	6 300	7 500
NN4920MBKR	**100**	**140**	**40**	1.1	178	295	130	1.76	6 300	7 500
NNU4920MBKR	**100**	**140**	**40**	1.1	178	295	112	1.75	6 300	7 500
* **NN3020MBKR**	**100**	**150**	**37**	1.5	180	265	137	2.63	6 000	7 200
* **NN3020TBKR**	**100**	**150**	**37**	1.5	180	265	137	2.00	6 800	8 000
* **NN3020ZTBKR**	**100**	**150**	**37**	1.5	107	133	137	1.76	7 200	9 500
NN3921MBKR	**105**	**145**	**30**	1.1	127	194	135	1.50	6 000	7 200
NN4921MBKR	**105**	**145**	**40**	1.1	185	315	135	1.91	6 000	7 200
NNU4921MBKR	**105**	**145**	**40**	1.1	185	315	117	1.83	6 000	7 200
* **NN3021MBKR**	**105**	**160**	**41**	2	228	320	146	3.40	5 700	6 800
* **NN3021TBKR**	**105**	**160**	**41**	2	228	320	146	2.52	6 500	7 600
* **NN3021ZTBKR**	**105**	**160**	**41**	2	135	161	146	2.17	6 800	9 000

(1) The suffix "K"or "KR" represents bearings with tapered bores (1 : 12). For the cylindrical bore type, eliminate the symbol and leave this symbol blank.
(2) GN gauge is available for the bearings denoted by an asterisk (*). For GN gauge, please refer to Page 180.
(3) For application of limiting speeds, please refer to Page 216.
(4) Clearance CC9 is applicable to cylindrical roller bearings with tapered bores in ISO Tolerance Classes 5 and 4.





E44 Specification

Abutment and Fillet Dimensions (mm)					Clearances in Bearings with Tapered Bores (μm)						Clearances in Bearings with Cylindrical Bores (μm)		E44 Specification Lubrication Holes Dimensions (mm)		
d_a	d_{1a}	D_a		r_a	CC9 (4)		CC0		CC1		CC1		Hole Dia.	Oil Groove Width	Number of Holes
(min.)	(min.)	(max.)	(min.)	(max.)	min.	max.	min.	max.	min.	max.	min.	max.	dh	W	m
76.5	77	103.5	102	1	10	20	15	30	20	40	10	25	2	3.5	4
76.5	77	103.5	102	1	10	20	15	30	20	40	10	25	2	3.5	4
76.5	77	103.5	102	1	10	20	15	30	20	40	10	25	2	3.5	4
81.5	82	108.5	107	1	10	20	15	30	20	40	10	25	2	3.5	4
81.5	82	108.5	107	1	10	20	15	30	20	40	10	25	2	3.5	4
81.5	82	108.5	107	1	10	20	15	30	20	40	10	25	2	3.5	4
86.5	87	118.5	115	1	10	20	15	30	20	40	10	25	2.5	5	4
86.5	87	118.5	115	1	10	20	15	30	20	40	10	25	2.5	5	4
86.5	87	118.5	115	1	10	20	15	30	20	40	10	25	2.5	5	4
91.5	92	123.5	120	1	10	25	20	35	25	45	10	30	2.5	5	4
91.5	92	123.5	120	1	10	25	20	35	25	45	10	30	2.5	5	4
91.5	92	123.5	120	1	10	25	20	35	25	45	10	30	2.5	5	4
98	99	132	129	1.5	10	25	20	35	25	45	10	30	2.5	5	4
98	99	132	129	1.5	10	25	20	35	25	45	10	30	2.5	5	4
98	99	132	129	1.5	10	25	20	35	25	45	10	30	2.5	5	4
103	104	137	134	1.5	10	25	20	35	25	45	10	30	2.5	5	4
103	104	137	134	1.5	10	25	20	35	25	45	10	30	2.5	5	4
103	104	137	134	1.5	10	25	20	35	25	45	10	30	2.5	5	4
106.5	108	133.5	132	1	10	25	20	35	25	45	10	30	2	3.5	4
106.5	108	133.5	132	1	10	25	20	35	25	45	10	30	2.5	5	4
106.5	108	133.5	–	1	10	25	20	35	25	45	10	30	2.5	5	4
108	109	142	139	1.5	10	25	20	35	25	45	10	30	2.5	5	4
108	109	142	139	1.5	10	25	20	35	25	45	10	30	2.5	5	4
108	109	142	139	1.5	10	25	20	35	25	45	10	30	2.5	5	4
111.5	113	138.5	137	1	10	25	20	35	25	50	10	30	2	3.5	4
111.5	113	138.5	137	1	10	25	20	35	25	50	10	30	2.5	5	4
111.5	113	138.5	–	1	10	25	20	35	25	50	10	30	2.5	5	4
114	115	151	148	2	10	25	20	35	25	50	10	30	3	6	4
114	115	151	148	2	10	25	20	35	25	50	10	30	3	6	4
114	115	151	148	2	10	25	20	35	25	50	10	30	3	6	4

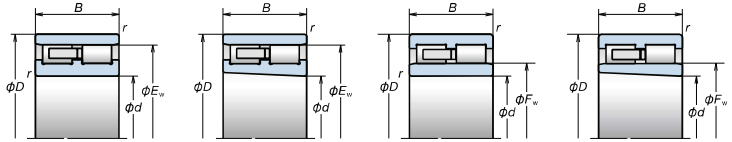
For additional information:

- Dynamic equivalent load ····· P191
- Static equivalent load ····· P198
- Nozzle Position ····· P240
- Recommended Grease Quantities ·· P257

2. Cylindrical Roller Bearings

Bore Diameter 110–160 mm

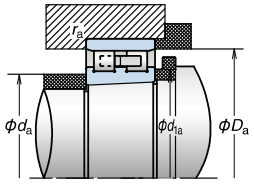
Double-Row Cylindrical Roller Bearings

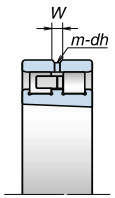


NN Cylindrical Bore | NN Tapered Bore | NNU Cylindrical Bore | NNU Tapered Bore

Bearing Numbers (1)(2)	Boundary Dimensions (mm)				Basic Load Ratings (kN)		E_w (F_w in case of NNU type) (mm) (reference)	Mass (kg) (approx.)	Limiting Speeds (3) (min^{-1})	
	d	*D*	*B*	*r* (min.)	C_r (Dynamic)	C_{or} (Static)			Grease	Oil
NN3922MBKR	**110**	**150**	**30**	1.1	131	207	140	1.44	5 800	7 000
NN4922MBKR	**110**	**150**	**40**	1.1	192	335	140	1.92	5 800	7 000
NNU4922MBKR	**110**	**150**	**40**	1.1	192	335	122	1.90	5 800	7 000
* **NN3022MBKR**	**110**	**170**	**45**	2	263	375	155	4.35	5 400	6 500
* **NN3022TBKR**	**110**	**170**	**45**	2	263	375	155	3.21	6 100	7 200
* **NN3022ZTBKR**	**110**	**170**	**45**	2	156	188	155	2.78	6 400	8 500
NN3924MBKR	**120**	**165**	**34**	1.1	158	251	153.5	2.02	5 300	6 400
NN4924MBKR	**120**	**165**	**45**	1.1	211	360	153.5	2.62	5 300	6 400
NNU4924MBKR	**120**	**165**	**45**	1.1	211	360	133.5	2.59	5 300	6 400
* **NN3024MBKR**	**120**	**180**	**46**	2	275	405	165	4.72	5 000	6 000
* **NN3024TBKR**	**120**	**180**	**46**	2	275	405	165	3.50	5 700	6 700
* **NN3024ZTBKR**	**120**	**180**	**46**	2	164	203	165	3.03	6 000	7 900
NN3926MBKR	**130**	**180**	**37**	1.5	199	325	167	2.64	4 900	5 900
NN4926MBKR	**130**	**180**	**50**	1.5	315	545	168	3.51	4 900	5 900
NNU4926MBKR	**130**	**180**	**50**	1.5	315	545	144	3.48	4 900	5 900
* **NN3026MBKR**	**130**	**200**	**52**	2	325	475	182	5.53	4 600	5 500
* **NN3026TBKR**	**130**	**200**	**52**	2	325	475	182	5.10	5 200	6 100
* **NN3026ZTBKR**	**130**	**200**	**52**	2	195	238	182	4.46	5 500	7 200
NN3928MBKR	**140**	**190**	**37**	1.5	232	375	178	2.79	4 600	5 500
NN4928MBKR	**140**	**190**	**50**	1.5	325	585	178	3.73	4 600	5 500
NNU4928MBKR	**140**	**190**	**50**	1.5	325	585	154	3.70	4 600	5 500
* **NN3028MBKR**	**140**	**210**	**53**	2	345	515	192	5.95	4 300	5 200
* **NN3028TBKR**	**140**	**210**	**53**	2	345	515	192	5.51	4 900	5 700
* **NN3028ZTBKR**	**140**	**210**	**53**	2	204	258	192	4.81	5 200	6 800
NN3930MBKR	**150**	**210**	**45**	2	300	490	195	4.47	4 200	5 000
NN4930MBKR	**150**	**210**	**60**	2	405	715	195	5.79	4 200	5 000
NNU4930MBKR	**150**	**210**	**60**	2	405	715	167	5.85	4 200	5 000
* **NN3030MBKR**	**150**	**225**	**56**	2.1	385	585	206	7.29	4 000	4 800
* **NN3030TBKR**	**150**	**225**	**56**	2.1	385	585	206	6.70	4 500	5 300
* **NN3030ZTBKR**	**150**	**225**	**56**	2.1	229	294	206	5.87	4 800	6 300
NN3932MBKR	**160**	**220**	**45**	2	310	520	205	4.72	4 000	4 800
NN4932MBKR	**160**	**220**	**60**	2	420	760	205	6.19	4 000	4 800
NNU4932MBKR	**160**	**220**	**60**	2	420	760	177	6.18	4 000	4 800
* **NN3032MBKR**	**160**	**240**	**60**	2.1	430	660	219	8.83	3 800	4 500
* **NN3032TBKR**	**160**	**240**	**60**	2.1	430	660	219	8.18	4 300	5 000
* **NN3032ZTBKR**	**160**	**240**	**60**	2.1	255	330	219	7.20	4 500	6 000

(1) The suffix "K"or "KR" represents bearings with tapered bores (1 : 12). For the cylindrical bore type, eliminate the symbol and leave this symbol blank.
(2) GN gauge is available for the bearings denoted by an asterisk (*). For GN gauge, please refer to Page 180.
(3) For application of limiting speeds, please refer to Page 216.
(4) Clearance CC9 is applicable to cylindrical roller bearings with tapered bores in ISO Tolerance Classes 5 and 4.





E44 Specification

Abutment and Fillet Dimensions (mm)					Clearances in Bearings with Tapered Bores (μm)						Clearances in Bearings with Cylindrical Bores (μm)		E44 Specification Lubrication Holes Dimensions (mm)		
d_a	d_{1a}	D_a		r_a	CC9 (4)		CC0		CC1		CC1		Hole Dia.	Oil Groove Width	Number of Holes
(min.)	(min.)	(max.)	(min.)	(max.)	min.	max.	min.	max.	min.	max.	min.	max.	dh	W	m
116.5	118	143.5	142	1	10	25	20	35	25	50	10	30	2	3.5	4
116.5	118	143.5	142	1	10	25	20	35	25	50	10	30	2.5	5	4
116.5	118	143.5	–	1	10	25	20	35	25	50	10	30	2.5	5	4
119	121	161	157	2	10	25	20	35	25	50	10	30	3	6	4
119	121	161	157	2	10	25	20	35	25	50	10	30	3	6	4
119	121	161	157	2	10	25	20	35	25	50	10	30	3	6	4
126.5	128	158.5	156	1	10	25	20	35	25	50	10	30	2.5	5	4
126.5	128	158.5	156	1	10	25	20	35	25	50	10	30	3	6	4
126.5	128	158.5	–	1	10	25	20	35	25	50	10	30	3	6	4
129	131	171	167	2	10	25	20	35	25	50	10	30	3	6	4
129	131	171	167	2	10	25	20	35	25	50	10	30	3	6	4
129	131	171	167	2	10	25	20	35	25	50	10	30	3	6	4
138	140	172	169	1.5	15	30	25	40	30	60	10	35	2.5	5	4
138	140	172	170	1.5	15	30	25	40	30	60	10	35	3	6	4
138	140	172	–	1.5	15	30	25	40	30	60	10	35	3	6	4
139	141	191	185	2	15	30	25	40	30	60	10	35	4	8	4
139	141	191	185	2	15	30	25	40	30	60	10	35	4	8	4
139	141	191	185	2	15	30	25	40	30	60	10	35	4	8	4
148	150	182	180	1.5	15	30	25	40	30	60	10	35	2.5	5	4
148	150	182	180	1.5	15	30	25	40	30	60	10	35	3	6	4
148	150	182	–	1.5	15	30	25	40	30	60	10	35	3	6	4
149	151	201	195	2	15	30	25	40	30	60	10	35	4	8	4
149	151	201	195	2	15	30	25	40	30	60	10	35	4	8	4
149	151	201	195	2	15	30	25	40	30	60	10	35	4	8	4
159	162	201	197	2	15	35	30	50	35	65	10	35	3	6	4
159	162	201	197	2	15	35	30	50	35	65	10	35	4	8	4
159	162	201	–	2	15	35	30	50	35	65	10	35	4	8	4
161	162	214	209	2	15	35	30	50	35	65	10	35	4	8	4
161	162	214	209	2	15	35	30	50	35	65	10	35	4	8	4
161	162	214	209	2	15	35	30	50	35	65	10	35	4	8	4
169	172	211	207	2	15	35	30	50	35	65	10	35	3	6	4
169	172	211	207	2	15	35	30	50	35	65	10	35	4	8	4
169	172	211	–	2	15	35	30	50	35	65	10	35	4	8	4
171	172	229	222	2	15	35	30	50	35	65	10	35	4	8	4
171	172	229	222	2	15	35	30	50	35	65	10	35	4	8	4
171	172	229	222	2	15	35	30	50	35	65	10	35	4	8	4

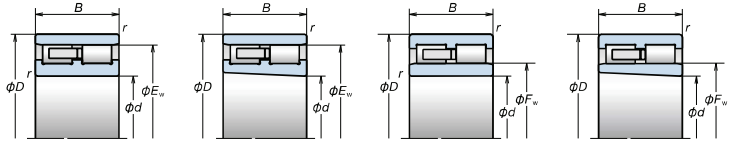
For additional information:

- Dynamic equivalent load ····· P191
- Static equivalent load ····· P198
- Nozzle Position ····· P240
- Recommended Grease Quantities ·· P257

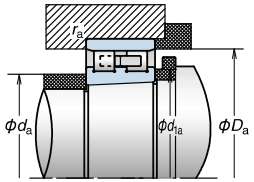
2. Cylindrical Roller Bearings

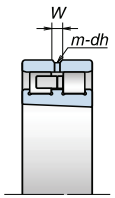
Bore Diameter **170-260** mm

Double-Row Cylindrical Roller Bearings



NN Cylindrical Bore | NN Tapered Bore | NNU Cylindrical Bore | NNU Tapered Bore





E44 Specification

Bearing Numbers (1)	Boundary Dimensions (mm)				Basic Load Ratings (kN)		E_w (F_w in case of NNU type) (mm) (reference)	Mass (kg) (approx.)	Limiting Speeds (2) (min^{-1})	
	d	*D*	*B*	*r* (min.)	C_r (Dynamic)	C_{or} (Static)			Grease	Oil
NN3934MBKR	**170**	**230**	**45**	2	320	550	215	5.01	3 800	4 500
NN4934MBKR	**170**	**230**	**60**	2	435	805	215	6.42	3 800	4 500
NNU4934MBKR	**170**	**230**	**60**	2	435	805	187	6.50	3 800	4 500
NN3034MBKR	**170**	**260**	**67**	2.1	520	805	236	12.1	3 500	4 200
NN3936MBKR	**180**	**250**	**52**	2	390	655	232	7.20	3 500	4 200
NN4936MBKR	**180**	**250**	**69**	2	550	1 020	232	9.47	3 500	4 200
NNU4936MBKR	**180**	**250**	**69**	2	550	1 020	200	9.55	3 500	4 200
NN3036MBKR	**180**	**280**	**74**	2.1	650	995	255	15.7	3 300	4 000
NN3938MBKR	**190**	**260**	**52**	2	395	680	243.5	7.57	3 400	4 000
NN4938MBKR	**190**	**260**	**69**	2	555	1 060	243.5	9.72	3 400	4 000
NNU4938MBKR	**190**	**260**	**69**	2	555	1 060	211.5	9.91	3 400	4 000
NN3038MBKR	**190**	**290**	**75**	2.1	685	1 080	265	16.7	3 200	3 800
NN3940MBKR	**200**	**280**	**60**	2.1	480	815	259	10.6	3 200	3 800
NN4940MBKR	**200**	**280**	**80**	2.1	655	1 220	259	14.0	3 200	3 800
NNU4940MBKR	**200**	**280**	**80**	2.1	655	1 220	223	14.0	3 200	3 800
NN3040MBKR	**200**	**310**	**82**	2.1	750	1 170	282	21.3	3 000	3 600
NN3944MBKR	**220**	**300**	**60**	2.1	505	895	279	11.5	2 500	3 100
NN4944MBKR	**220**	**300**	**80**	2.1	690	1 330	279	15.1	2 500	3 100
NNU4944MBK	**220**	**300**	**80**	2.1	690	1 330	243	15.2	2 500	3 100
NN3044MBKR	**220**	**340**	**90**	3	940	1 480	310	27.7	2 400	2 900
NN3948MBKR	**240**	**320**	**60**	2.1	525	975	300	12.3	2 400	2 900
NN4948MBKR	**240**	**320**	**80**	2.1	720	1 450	300	17.8	2 400	2 900
NNU4948MBKR	**240**	**320**	**80**	2.1	720	1 450	263	16.2	2 400	2 900
NN3048MBKR	**240**	**360**	**92**	3	980	1 600	330	30.4	2 200	2 700
NN3952MBKR	**260**	**360**	**75**	2.1	775	1 380	335	21.4	2 100	2 600
NN4952KR	**260**	**360**	**100**	2.1	1 070	2 100	335	28.4	2 100	2 600
NNU4952KR	**260**	**360**	**100**	2.1	1 070	2 100	289	28.3	2 100	2 600
NN3052KR	**260**	**400**	**104**	4	1 030	1 920	364	44.7	2 000	2 500

Abutment and Fillet Dimensions (mm)					Clearances in Bearings with Tapered Bores (μm)						Clearances in Bearings with Cylindrical Bores (μm)		E44 Specification Lubrication Holes Dimensions (mm)		
d_a	d_{1a}	D_a		r_a	CC9 (3)		CC0		CC1		CC1		Hole Dia.	Oil Groove Width	Number of Holes
(min.)	(min.)	(max.)	(min.)	(max.)	min.	max.	min.	max.	min.	max.	min.	max.	dh	W	m
179	182	221	217	2	15	35	30	50	35	75	10	40	3	6	4
179	182	221	217	2	15	35	30	50	35	75	10	40	4	8	4
179	182	221	–	2	15	35	30	50	35	75	10	40	4	8	4
181	183	249	239	2	15	35	30	50	35	75	10	40	5	9	4
189	193	241	234	2	15	35	30	50	35	75	10	40	4	8	4
189	193	241	234	2	15	35	30	50	35	75	10	40	5	9	4
189	193	241	–	2	15	35	30	50	35	75	10	40	5	9	4
191	193	269	258	2	15	35	30	50	35	75	10	40	5	9	4
199	203	251	246	2	20	40	30	50	40	80	15	45	4	8	4
199	203	251	246	2	20	40	30	50	40	80	15	45	5	9	4
199	203	251	–	2	20	40	30	50	40	80	15	45	5	9	4
201	203	279	268	2	20	40	30	50	40	80	15	45	5	9	4
211	214	269	261	2	20	40	30	50	40	80	15	45	4	8	4
211	214	269	261	2	20	40	30	50	40	80	15	45	5	9	4
211	214	269	–	2	20	40	30	50	40	80	15	45	5	9	4
211	214	299	285	2	20	40	30	50	40	80	15	45	6	12	4
231	234	289	281	2	20	45	35	60	45	90	15	50	4	8	4
231	234	289	281	2	20	45	35	60	45	90	15	50	5	9	4
231	234	289	–	2	20	45	35	60	45	90	15	50	5	9	4
233	236	327	313	2.5	20	45	35	60	45	90	15	50	6	12	4
251	254	309	302	2	25	50	40	65	50	100	15	50	4	8	4
251	254	309	302	2	25	50	40	65	50	100	15	50	5	9	4
251	254	309	–	2	25	50	40	65	50	100	15	50	5	9	4
253	256	347	334	2.5	25	50	40	65	50	100	15	50	6	12	4
271	275	349	338	2	25	55	40	70	55	110	20	55	5	9	4
271	275	349	338	2	25	55	40	70	55	110	20	55	6	12	4
271	275	349	–	2	25	55	40	70	55	110	20	55	6	12	4
276	278	384	368	3	25	55	40	70	55	110	20	55	6	12	4

(1) The suffix "K"or "KR" represents bearings with tapered bores (1 : 12). For the cylindrical bore type, eliminate the symbol and leave this symbol blank.
(2) For application of limiting speeds, please refer to Page 216.
(3) Clearance CC9 is applicable to cylindrical roller bearings with tapered bores in ISO Tolerance Classes 5 and 4.

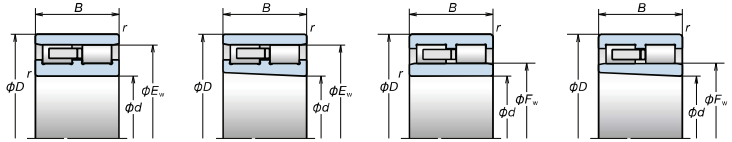
For additional information:

- Dynamic equivalent load ····· P191
- Static equivalent load ····· P198
- Nozzle Position ····· P240
- Recommended Grease Quantities ·· P257

2. Cylindrical Roller Bearings

Bore Diameter **280-420** mm

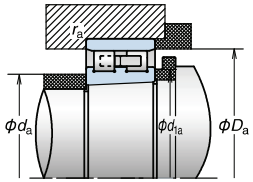
Double-Row Cylindrical Roller Bearings

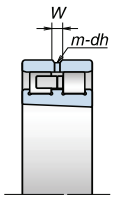


NN Cylindrical Bore | NN Tapered Bore | NNU Cylindrical Bore | NNU Tapered Bore

Bearing Numbers (1)	Boundary Dimensions (mm)				Basic Load Ratings (kN)		E_w (F_w in case of NNU type) (mm) (reference)	Mass (kg) (approx.)	Limiting Speeds (2) (min^{-1})	
	d	*D*	*B*	*r* (min.)	C_r (Dynamic)	C_{or} (Static)			Grease	Oil
NN3956MBKR	**280**	**380**	**75**	2.1	695	1 460	355	22.8	2 000	2 500
NN4956KR	**280**	**380**	**100**	2.1	960	2 230	355	30.1	2 000	2 500
NNU4956KR	**280**	**380**	**100**	2.1	960	2 230	309	33.1	2 000	2 500
NN3056KR	**280**	**420**	**106**	4	1 080	2 080	384	47.7	1 900	2 300
NN3960KR	**300**	**420**	**90**	3	855	1 800	388	36.2	1 800	2 300
NN4960KR	**300**	**420**	**118**	3	1 230	2 870	388	47.6	1 800	2 300
NNU4960KR	**300**	**420**	**118**	3	1 230	2 870	336	47.6	1 800	2 300
NN3060KR	**300**	**460**	**118**	4	1 290	2 460	418	66.5	1 800	2 100
NN3964KR	**320**	**440**	**90**	3	880	1 910	408	38.2	1 800	2 100
NN4964KR	**320**	**440**	**118**	3	1 260	3 050	408	50.3	1 800	2 100
NNU4964KR	**320**	**440**	**118**	3	1 260	3 050	356	50.3	1 800	2 100
NN3064KR	**320**	**480**	**121**	4	1 350	2 670	438	71.8	1 700	2 000
NN4968KR	**340**	**460**	**118**	3	1 350	3 400	428	52.6	1 700	2 000
NNU4968KR	**340**	**460**	**118**	3	1 350	3 400	376	52.9	1 700	2 000
NN3068KR	**340**	**520**	**133**	5	1 670	3 300	473	95.6	1 600	1 900
NN3972KR	**360**	**480**	**90**	3	930	2 130	448	42.1	1 600	1 900
NN4972KR	**360**	**480**	**118**	3	1 390	3 550	448	55.1	1 600	1 900
NNU4972KR	**360**	**480**	**118**	3	1 390	3 550	396	55.2	1 600	1 900
NN3072KR	**360**	**540**	**134**	5	1 700	3 450	493	99.7	1 500	1 800
NN3976KR	**380**	**520**	**106**	4	1 250	2 730	484	63.5	1 500	1 800
NN4976KR	**380**	**520**	**140**	4	1 880	4 600	485	81.3	1 500	1 800
NNU4976KR	**380**	**520**	**140**	4	1 880	4 600	421	88.8	1 500	1 800
NN3076KR	**380**	**560**	**135**	5	1 770	3 700	513	113	1 400	1 700
NN4980KR	**400**	**540**	**140**	4	1 940	4 900	505	84.1	1 400	1 700
NNU4980KR	**400**	**540**	**140**	4	1 940	4 900	441	85.1	1 400	1 700
NN3080KR	**400**	**600**	**148**	5	2 090	4 300	548	138	1 300	1 600
NN4984K	**420**	**560**	**140**	4	2 000	5 150	525	87.9	1 200	1 500
NNU4984K	**420**	**560**	**140**	4	2 000	5 150	461	88.4	1 200	1 500
NN3084K	**420**	**620**	**150**	5	2 130	4 450	568	145	1 100	1 400

(1) The suffix "K"or "KR" represents bearings with tapered bores (1 : 12). For the cylindrical bore type, eliminate the symbol and leave this symbol blank.
(2) For application of limiting speeds, please refer to Page 216.
(3) Clearance CC9 is applicable to cylindrical roller bearings with tapered bores in ISO Tolerance Classes 5 and 4.





E44 Specification

Abutment and Fillet Dimensions (mm)					Clearances in Bearings with Tapered Bores (μm)						Clearances in Bearings with Cylindrical Bores (μm)		E44 Specification Lubrication Holes Dimensions (mm)		
d_a	d_{1a}	D_a		r_a	CC9 (3)		CC0		CC1		CC1		Hole Dia.	Oil Groove Width	Number of Holes
(min.)	(min.)	(max.)	(min.)	(max.)	min.	max.	min.	max.	min.	max.	min.	max.	dh	W	m
291	295	369	358	2	25	55	40	70	55	110	20	55	5	9	4
291	295	369	358	2	25	55	40	70	55	110	20	55	6	12	4
291	295	369	–	2	25	55	40	70	55	110	20	55	6	12	4
296	298	404	388	3	25	55	40	70	55	110	20	55	6	12	4
313	318	407	391	2.5	30	60	45	75	60	120	20	60	6	12	4
313	318	407	391	2.5	30	60	45	75	60	120	20	60	6	12	4
313	318	407	–	2.5	30	60	45	75	60	120	20	60	6	12	4
316	319	444	422	3	30	60	45	75	60	120	20	60	6	12	4
333	338	427	411	2.5	30	65	45	80	65	135	20	65	6	12	4
333	338	427	411	2.5	30	65	45	80	65	135	20	65	6	12	4
333	338	427	–	2.5	30	65	45	80	65	135	20	65	6	12	4
336	340	464	442	3	30	65	45	80	65	135	20	65	8	15	4
353	363	447	431	2.5	30	65	45	80	65	135	20	65	6	12	4
353	363	447	–	2.5	30	65	45	80	65	135	20	65	6	12	4
360	365	500	477	4	30	65	45	80	65	135	20	65	8	15	4
373	381	467	451	2.5	35	75	50	90	75	150	25	75	6	12	4
373	383	467	451	2.5	35	75	50	90	75	150	25	75	6	12	4
373	383	467	–	2.5	35	75	50	90	75	150	25	75	6	12	4
380	385	520	497	4	35	75	50	90	75	150	25	75	8	15	4
396	405	504	487	3	35	75	50	90	75	150	25	75	6	12	4
396	408	504	488	3	35	75	50	90	75	150	25	75	8	15	4
396	408	504	–	3	35	75	50	90	75	150	25	75	8	15	4
400	411	540	518	4	35	75	50	90	75	150	25	75	8	15	4
416	428	524	508	3	35	75	50	90	75	150	25	75	8	15	4
416	428	524	–	3	35	75	50	90	75	150	25	75	8	15	4
420	432	580	553	4	35	75	50	90	75	150	25	75	8	15	4
436	448	544	528	3	40	85	60	105	85	170	25	85	8	15	4
436	448	544	–	3	40	85	60	105	85	170	25	85	8	15	4
440	453	600	573	4	40	85	60	105	85	170	25	85	8	15	4

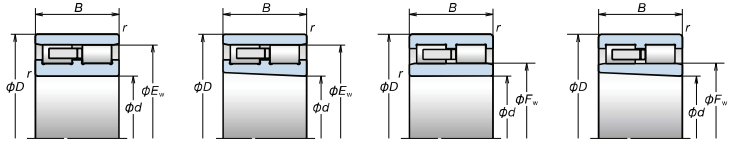
For additional information:

- Dynamic equivalent load ····· P191
- Static equivalent load ····· P198
- Nozzle Position ····· P240
- Recommended Grease Quantities ·· P257

2. Cylindrical Roller Bearings

Bore Diameter **440-800** mm

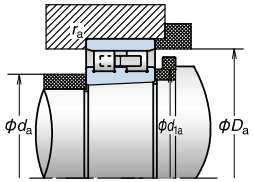
Double-Row Cylindrical Roller Bearings

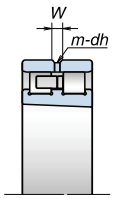


NN Cylindrical Bore | NN Tapered Bore | NNU Cylindrical Bore | NNU Tapered Bore

Bearing Numbers (1)	Boundary Dimensions (mm)				Basic Load Ratings (kN)		Ew (Fw in case of NNU type) (mm) (reference)	Mass (kg) (approx.)	Limiting Speeds (2) (min⁻¹)	
	d	D	B	r (min.)	Cr (Dynamic)	Cor (Static)			Grease	Oil
NN4988K	**440**	**600**	**160**	4	2 370	6 000	559	123	1 100	1 400
NNU4988K	**440**	**600**	**160**	4	2 370	6 000	487	123	1 100	1 400
NN3088K	**440**	**650**	**157**	6	2 360	4 900	596	166	1 100	1 300
NN3992K	**460**	**620**	**118**	4	1 610	3 700	578	94.5	1 100	1 300
NN4992K	**460**	**620**	**160**	4	2 400	6 200	579	127	1 100	1 300
NNU4992K	**460**	**620**	**160**	4	2 400	6 200	507	128	1 100	1 300
NN3092K	**460**	**680**	**163**	6	2 550	5 350	623	189	1 000	1 300
NN4996K	**480**	**650**	**170**	5	2 690	7 000	607	151	1 000	1 300
NNU4996K	**480**	**650**	**170**	5	2 690	7 000	531	150	1 000	1 300
NN3096K	**480**	**700**	**165**	6	2 600	5 550	643	211	1 000	1 200
NN49/500K	**500**	**670**	**170**	5	2 720	7 200	627	155	1 000	1 200
NNU49/500K	**500**	**670**	**170**	5	2 720	7 200	551	157	1 000	1 200
NN30/500K	**500**	**720**	**167**	6	2 580	5 600	663	205	900	1 200
NN39/530K	**530**	**710**	**136**	5	2 040	4 900	663	139	900	1 200
NN49/530K	**530**	**710**	**180**	5	3 050	8 150	664	185	900	1 200
NNU49/530K	**530**	**710**	**180**	5	3 050	8 150	584	186	900	1 200
NN30/530K	**530**	**780**	**185**	6	3 200	6 900	715	280	900	1 100
NN49/560K	**560**	**750**	**190**	5	3 250	8 700	701	218	900	1 100
NNU49/560K	**560**	**750**	**190**	5	3 250	8 700	617	230	900	1 100
NN49/600K	**600**	**800**	**200**	5	3 850	10 500	749	273	800	1 000
NNU49/600K	**600**	**800**	**200**	5	3 850	10 500	659	284	800	1 000
NN49/630K	**630**	**850**	**218**	6	4 200	11 400	793	328	800	1 000
NNU49/630K	**630**	**850**	**218**	6	4 200	11 400	697	328	800	1 000
NN49/670K	**670**	**900**	**230**	6	4 150	11 500	838	419	700	900
NNU49/670K	**670**	**900**	**230**	6	4 150	11 500	742	381	700	900
NNU49/710BK	**710**	**950**	**243**	6	4 450	12 600	775	472	700	900
NNU49/750K	**750**	**1 000**	**250**	6	5 500	15 900	826	530	700	800
NNU49/800K	**800**	**1 060**	**258**	6	5 700	16 500	879	573	600	800

(1) The suffix "K"or "KR" represents bearings with tapered bores (1 : 12). For the cylindrical bore type, eliminate the symbol and leave this symbol blank.
(2) For application of limiting speeds, please refer to Page 216.
(3) Clearance CC9 is applicable to cylindrical roller bearings with tapered bores in ISO Tolerance Classes 5 and 4.





E44 Specification

Abutment and Fillet Dimensions (mm)					Clearances in Bearings with Tapered Bores (μm)						Clearances in Bearings with Cylindrical Bores (μm)		E44 Specification Lubrication Holes Dimensions (mm)		
da (min.)	dia (min.)	Da (max.)	Da (min.)	ra (max.)	CC9 (3) min.	CC9 (3) max.	CC0 min.	CC0 max.	CC1 min.	CC1 max.	CC1 min.	CC1 max.	Hole Dia. dh	Oil Groove Width W	Number of Holes m
456	469	584	562	3	40	85	60	105	85	170	25	85	8	15	4
456	469	584	–	3	40	85	60	105	85	170	25	85	8	15	4
466	479	624	601	5	40	85	60	105	85	170	25	85	8	15	4
476	486	604	581	3	45	95	70	120	95	190	25	95	6	12	4
476	489	604	582	3	45	95	70	120	95	190	25	95	8	15	4
476	489	604	–	3	45	95	70	120	95	190	25	95	8	15	4
486	500	654	628	5	45	95	70	120	95	190	25	95	10	18	4
500	514	630	610	4	45	95	70	120	95	190	25	95	10	18	4
500	514	630	–	4	45	95	70	120	95	190	25	95	10	18	4
506	520	674	648	5	45	95	70	120	95	190	25	95	10	18	4
520	534	650	630	4	45	95	70	120	95	190	25	95	10	18	4
520	534	650	–	4	45	95	70	120	95	190	25	95	10	18	4
526	540	694	668	5	45	95	70	120	95	190	25	95	10	18	4
550	561	690	668	4	50	105	80	135	105	210	30	105	8	15	4
550	565	690	667	4	50	105	80	135	105	210	30	105	10	18	4
550	565	690	–	4	50	105	80	135	105	210	30	105	10	18	4
556	571	754	720	5	50	105	80	135	105	210	30	105	10	18	4
580	596	730	704	4	50	105	80	135	105	210	30	105	10	18	4
580	596	730	–	4	50	105	80	135	105	210	30	105	10	18	4
620	637	780	752	4	55	115	85	145	115	230	30	115	10	18	4
620	637	780	–	4	55	115	85	145	115	230	30	115	10	18	4
656	674	824	796	5	55	115	85	145	115	230	30	115	12	20	4
656	674	824	–	5	55	115	85	145	115	230	30	115	12	20	4
696	715	874	841	5	60	130	90	160	130	260	30	130	12	20	4
696	715	874	–	5	60	130	90	160	130	260	30	130	12	20	4
736	756	924	–	5	60	130	90	160	130	260	30	130	12	20	4
776	797	974	–	5	70	150	110	190	145	290	35	145	12	20	4
826	848	1 034	–	5	70	150	110	190	145	290	35	145	12	20	4

For additional information:

- Dynamic equivalent load ····· P191
- Static equivalent load ····· P198
- Nozzle Position ····· P240
- Recommended Grease Quantities ·· P257