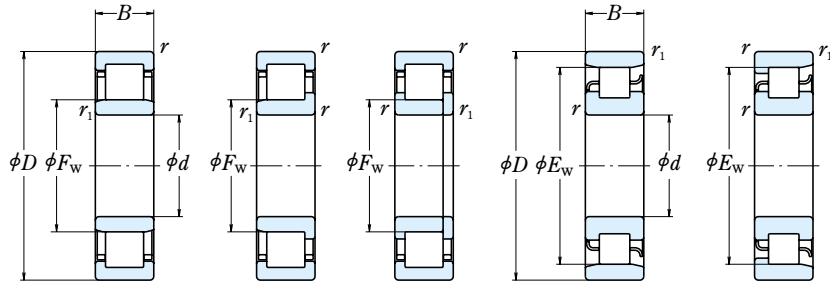
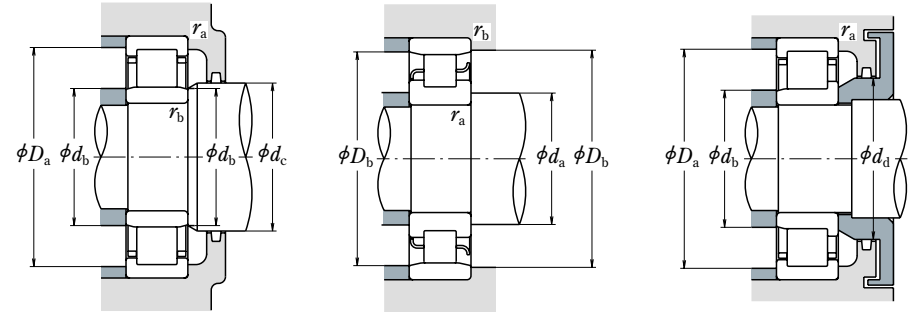


# SINGLE-ROW CYLINDRICAL ROLLER BEARINGS

Bore Diameter 20 – 35 mm



NU NJ NUP N NF



d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
20	47	14	1	0.6	—	40	15 400	12 700	15 000	18 000
	47	14	1	0.6	26.5	—	25 700	22 600	13 000	16 000
	47	18	1	0.6	27	—	20 700	18 400	13 000	16 000
	47	18	1	0.6	26.5	—	30 500	28 300	13 000	16 000
	52	15	1.1	0.6	—	44.5	21 400	17 300	12 000	15 000
	52	15	1.1	0.6	27.5	—	31 500	26 900	12 000	15 000
25	52	21	1.1	0.6	28.5	—	30 500	27 200	11 000	14 000
	52	21	1.1	0.6	27.5	—	42 000	39 000	11 000	14 000
	47	12	0.6	0.3	30.5	—	14 300	13 100	15 000	18 000
	52	15	1	0.6	—	45	17 700	15 700	13 000	16 000
	52	15	1	0.6	31.5	—	29 300	27 700	12 000	14 000
	52	18	1	0.6	31.5	—	35 000	34 500	12 000	14 000
30	62	17	1.1	1.1	—	53	29 300	25 200	10 000	13 000
	62	17	1.1	1.1	34	—	41 500	37 500	10 000	12 000
	62	24	1.1	1.1	34	—	57 000	56 000	9 000	11 000
	80	21	1.5	1.5	38.8	62.8	46 500	40 000	9 000	11 000
	55	13	1	0.6	36.5	48.5	19 700	19 600	12 000	15 000
	62	16	1	0.6	—	53.5	24 900	23 300	11 000	13 000
35	62	16	1	0.6	37.5	—	39 000	37 500	9 500	12 000
	62	20	1	0.6	37.5	—	49 000	50 000	9 500	12 000
	72	19	1.1	1.1	—	62	38 500	35 000	8 500	11 000
	72	19	1.1	1.1	40.5	—	53 000	50 000	8 500	10 000
	72	27	1.1	1.1	40.5	—	74 500	77 500	8 000	9 500
	90	23	1.5	1.5	45	73	62 500	55 000	7 500	9 500
80	62	14	1	0.6	42	55	22 600	23 200	11 000	13 000
	72	17	1.1	0.6	—	61.8	35 500	34 000	9 500	11 000
	72	17	1.1	0.6	44	—	50 500	50 000	8 500	10 000
	72	23	1.1	0.6	44	—	61 500	65 500	8 500	10 000
	80	21	1.5	1.1	—	68.2	49 500	47 000	8 000	9 500
	80	21	1.5	1.1	46.2	—	66 500	65 500	7 500	9 500
100	80	31	1.5	1.1	46.2	—	93 000	101 000	6 700	8 500
	100	25	1.5	1.5	53	83	75 500	69 000	6 700	8 000

Bearing Numbers <sup>(2)</sup>	Abutment and Fillet Dimensions (mm)							Mass (kg) approx.								
	NU	NJ	NUP	N	NF	d <sub>a</sub> <sup>(4)</sup> min.	d <sub>b</sub> min.		d <sub>b</sub> <sup>(5)</sup> max.	d <sub>c</sub> min.	d <sub>d</sub> min.	D <sub>a</sub> <sup>(4)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.
<b>N 204</b>	—	—	—	<b>N</b>	<b>NF</b>	25	—	—	—	—	—	43	42	1	0.6	0.107
<b>NU 204 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	25	24	25	29	32	42	—	—	1	0.6	0.107
<b>NU2204</b>	<b>NU</b>	<b>NJ</b>	—	—	—	25	24	25	29	32	42	—	—	1	0.6	0.144
<b>NU2204 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	25	24	25	29	32	42	—	—	1	0.6	0.138
<b>N 304</b>	—	—	—	<b>N</b>	<b>NF</b>	26.5	—	—	—	—	—	48	46	1	0.6	0.148
<b>NU 304 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	26.5	24	26	30	33	45.5	—	—	1	0.6	0.145
<b>NU2304</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	26.5	24	27	30	33	45.5	—	—	1	0.6	0.217
<b>NU2304 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	26.5	24	26	30	33	45.5	—	—	1	0.6	0.209
<b>NU1005</b>	<b>NU</b>	—	—	—	—	—	27	30	32	—	43	—	—	0.6	0.3	0.094
<b>N 205</b>	—	—	—	<b>N</b>	<b>NF</b>	30	—	—	—	—	—	48	46	1	0.6	0.135
<b>NU 205 EW</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	30	29	30	34	37	47	—	—	1	0.6	0.136
<b>NU2205 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	30	29	30	34	37	47	—	—	1	0.6	0.16
<b>N 305</b>	—	—	—	<b>N</b>	<b>NF</b>	31.5	—	—	—	—	—	55.5	50	1	1	0.233
<b>NU 305 EW</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	31.5	31.5	32	37	40	55.5	—	—	1	1	0.269
<b>NU2305 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	31.5	31.5	32	37	40	55.5	—	—	1	1	0.338
<b>NU 405</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	<b>NF</b>	33	33	37	41	46	72	72	64	1.5	1.5	0.57
<b>NU1006</b>	<b>NU</b>	—	—	<b>N</b>	—	35	34	36	38	—	50	51	49	1	0.5	0.136
<b>N 206</b>	—	—	—	<b>N</b>	<b>NF</b>	35	—	—	—	—	—	58	56	1	0.6	0.208
<b>NU 206 EW</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	35	34	36	40	44	57	—	—	1	0.6	0.205
<b>NU2206 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	35	34	36	40	44	57	—	—	1	0.6	0.255
<b>N 306</b>	—	—	—	<b>N</b>	<b>NF</b>	36.5	—	—	—	—	—	65.5	64	1	1	0.353
<b>NU 306 EW</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	36.5	36.5	39	44	48	65.5	—	—	1	1	0.409
<b>NU2306 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	36.5	36.5	39	44	48	65.5	—	—	1	1	0.518
<b>NU 406</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	<b>NF</b>	38	38	43	47	52	82	82	75	1.5	1.5	0.758
<b>NU1007</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	—	40	39	41	44	—	57	58	56	1	0.5	0.18
<b>N 207</b>	—	—	—	<b>N</b>	<b>NF</b>	41.5	—	—	—	—	—	68	64	1	0.6	0.301
<b>NU 207 EW</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	41.5	39	42	46	50	65.5	—	—	1	0.6	0.304
<b>NU2207 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	41.5	39	42	46	50	65.5	—	—	1	0.6	0.40
<b>N 307</b>	—	—	—	<b>N</b>	<b>NF</b>	43	—	—	—	—	—	73.5	70	1.5	1	0.476
<b>NU 307 EW</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	41.5	41.5	44	48	53	72	—	—	1.5	1	0.545
<b>NU2307 ET</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	43	41.5	44	48	53	72	—	—	1.5	1	0.711
<b>NU 407</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	<b>NF</b>	43	43	51	55	61	92	92	85	1.5	1.5	1.01

**Notes** <sup>(1)</sup> The limiting speeds listed above apply to bearings with machined cages (No suffix). For bearings with pressed cages, reduce the limiting speed by 20%. (Not applicable to bearing numbers with an EM, EW, or ET suffix.)

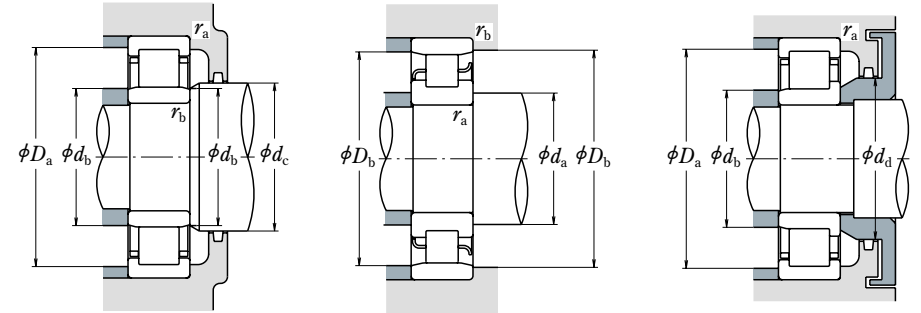
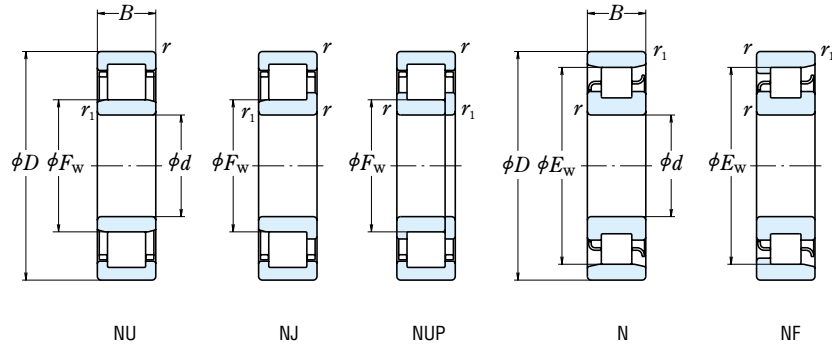
<sup>(2)</sup> The bearings with suffix ET have polyamide cage. The maximum operating temperature should be less than 120 °C.

**Notes** <sup>(3)</sup> When L-shaped thrust collars (See section for L-Shaped Thrust Collars starting on page B100) are used, the bearings become the NH type.

<sup>(4)</sup> If axial loads are applied, increase  $d_a$  and reduce  $D_a$  from the values listed above.

<sup>(5)</sup>  $d_b$  (max.) are values for adjusting rings for NU, NJ Types.

Bore Diameter 40 – 55 mm



d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
40	68	15	1	0.6	47	61	27 300	29 000	10 000	12 000
	80	18	1.1	1.1	—	70	43 500	43 000	8 500	10 000
	80	18	1.1	1.1	49.5	—	55 500	55 500	7 500	9 000
	80	23	1.1	1.1	49.5	—	72 500	77 500	7 500	9 000
	90	23	1.5	1.5	—	77.5	58 500	57 000	6 700	8 500
45	90	23	1.5	1.5	52	—	83 000	81 500	6 700	8 000
	90	33	1.5	1.5	52	—	114 000	122 000	6 000	7 500
	110	27	2	2	58	92	95 500	89 000	6 000	7 500
	75	16	1	0.6	52.5	67.5	32 500	35 500	9 000	11 000
	85	19	1.1	1.1	—	75	46 000	47 000	7 500	9 000
50	85	19	1.1	1.1	54.5	—	63 000	66 500	6 700	8 000
	85	23	1.1	1.1	54.5	—	76 000	84 500	6 700	8 500
	100	25	1.5	1.5	—	86.5	74 000	71 000	6 300	7 500
	100	25	1.5	1.5	58.5	—	97 500	98 500	6 000	7 500
	100	36	1.5	1.5	58.5	—	137 000	153 000	5 300	6 700
55	120	29	2	2	64.5	100.5	107 000	102 000	5 600	6 700
	80	16	1	0.6	57.5	72.5	32 000	36 000	8 000	10 000
	90	20	1.1	1.1	—	80.4	48 000	51 000	7 100	8 500
	90	20	1.1	1.1	59.5	—	69 000	76 500	6 300	7 500
	90	23	1.1	1.1	59.5	—	83 500	97 000	6 300	8 000

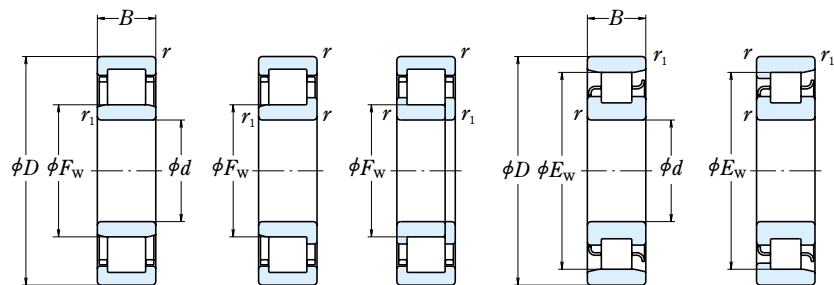
Bearing Numbers <sup>(2)</sup>						Abutment and Fillet Dimensions (mm)								Mass (kg) approx.		
NU	NJ	NUP	N	NF	—	d <sub>a</sub> <sup>(4)</sup> min.	d <sub>b</sub> min.	d <sub>b</sub> <sup>(5)</sup> max.	d <sub>c</sub> min.	d <sub>d</sub> min.	D <sub>a</sub> <sup>(4)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.		r <sub>a</sub> max.	r <sub>b</sub> max.
NU1008	NU NJ	NUP	N	—	—	45	44	46	49	—	63	64	62	1	0.6	0.223
N 208	—	—	N	NF	—	46.5	—	—	—	—	—	73.5	72	1	1	0.375
NU 208 EW	NU NJ	NUP	—	—	—	46.5	46.5	48	52	56	73.5	—	—	1	1	0.379
NU2208 ET	NU NJ	NUP	—	—	—	46.5	46.5	48	52	56	73.5	—	—	1	1	0.480
N 308	—	—	N	NF	—	48	—	—	—	—	—	82	79	1.5	1.5	0.649
NU 308 EW	NU NJ	NUP	—	—	—	48	48	50	55	60	82	—	—	1.5	1.5	0.747
NU2308 ET	NU NJ	NUP	—	—	—	48	48	50	55	60	82	—	—	1.5	1.5	0.933
NU 408	NU NJ	NUP	N	NF	—	49	49	56	60	67	101	101	94	2	2	1.28
NU1009	NU	—	N	NF	—	50	49	51	54	—	70	71	68	1	0.6	0.279
N 209	—	—	N	NF	—	51.5	—	—	—	—	—	78.5	77	1	1	0.429
NU 209 EW	NU NJ	NUP	—	—	—	51.5	51.5	52	57	61	78.5	—	—	1	1	0.438
NU2209 ET	NU NJ	NUP	—	—	—	51.5	51.5	52	57	61	78.5	—	—	1	1	0.521
N 309	—	—	N	NF	—	53	—	—	—	—	—	92	77	1.5	1.5	0.869
NU 309 EW	NU NJ	NUP	—	—	—	53	53	56	60	66	92	—	—	1.5	1.5	1.01
NU2309 ET	NU NJ	NUP	—	—	—	53	53	56	60	66	92	—	—	1.5	1.5	1.28
NU 409	NU NJ	NUP	N	NF	—	54	54	62	66	74	111	111	103	2	2	1.62
NU1010	NU NJ	NUP	N	—	—	55	54	56	59	—	75	76	73	1	0.6	0.301
N 210	—	—	N	NF	—	56.5	—	—	—	—	—	83.5	82	1	1	0.483
NU 210 EW	NU NJ	NUP	—	—	—	56.5	56.5	57	62	67	83.5	—	—	1	1	0.50
NU2210 ET	NU NJ	NUP	—	—	—	56.5	56.5	57	62	67	83.5	—	—	1	1	0.562
N 310	—	—	N	NF	—	59	—	—	—	—	—	101	97	2	2	1.11
NU 310 EW	NU NJ	NUP	—	—	—	59	59	63	67	73	101	—	—	2	2	1.3
NU2310 ET	NU NJ	NUP	—	—	—	59	59	63	67	73	101	—	—	2	2	1.7
NU 410	NU NJ	NUP	N	NF	—	61	61	68	73	81	119	119	113.3	2	2	1.99
NU1011	NU NJ	—	N	—	—	61.5	60	63	66	—	83.5	85	82	1	1	0.445
N 211	—	—	N	NF	—	63	—	—	—	—	—	93.5	91	1.5	1	0.634
NU 211 EW	NU NJ	NUP	—	—	—	63	61.5	64	68	73	92	—	—	1.5	1	0.669
NU2211 ET	NU NJ	NUP	—	—	—	63	61.5	64	68	73	92	—	—	1.5	1	0.783
N 311	—	—	N	NF	—	64	—	—	—	—	—	111	107	2	2	1.42
NU 311 EW	NU NJ	NUP	—	—	—	64	64	68	72	80	111	—	—	2	2	1.64
NU2311 ET	NU NJ	NUP	—	—	—	64	64	68	72	80	111	—	—	2	2	2.18
NU 411	NU NJ	NUP	N	NF	—	66	66	75	79	87	129	129	119	2	2	2.5

Notes <sup>(1)</sup> The limiting speeds listed above apply to bearings with machined cages (No suffix). For bearings with pressed cages, reduce the limiting speed by 20%. (Not applicable to bearing numbers with an EM, EW, or ET suffix.)  
<sup>(2)</sup> The bearings with suffix ET have polyamide cage. The maximum operating temperature should be less than 120 °C.

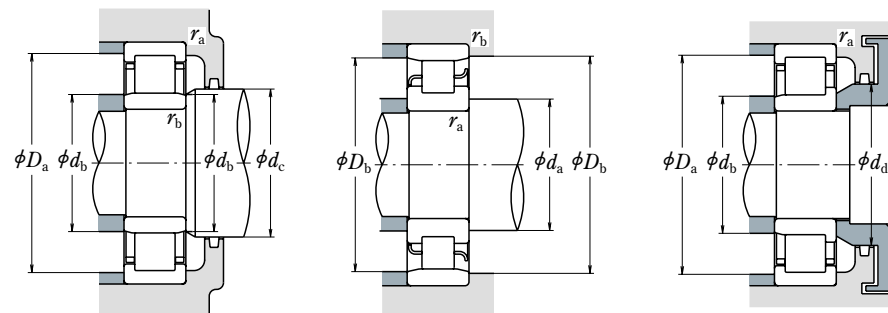
Notes <sup>(3)</sup> When L-shaped thrust collars (See section for L-Shaped Thrust Collars starting on page B100) are used, the bearings become the NH type.  
<sup>(4)</sup> If axial loads are applied, increase d<sub>a</sub> and reduce D<sub>a</sub> from the values listed above.  
<sup>(5)</sup> d<sub>b</sub> (max.) are values for adjusting rings for NU, NJ Types.

# SINGLE-ROW CYLINDRICAL ROLLER BEARINGS

Bore Diameter 60 – 75 mm



NU NJ NUP N NF



d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
60	95	18	1.1	1	69.5	85.5	40 000	48 500	6 700	8 500
	110	22	1.5	1.5	—	97.5	68 500	75 000	6 000	7 100
	110	22	1.5	1.5	72	—	97 500	107 000	5 300	6 300
	110	28	1.5	1.5	72	—	131 000	157 000	5 300	6 300
	130	31	2.1	2.1	—	113	124 000	126 000	4 800	5 600
	130	31	2.1	2.1	77	—	124 000	126 000	4 800	5 600
	130	31	2.1	2.1	77	—	150 000	157 000	4 800	5 600
	130	46	2.1	2.1	77	—	222 000	262 000	4 300	5 300
	150	35	2.1	2.1	83	127	167 000	168 000	4 300	5 300
	65	100	18	1.1	1	74.5	90.5	41 000	51 000	6 300
120		23	1.5	1.5	—	105.6	84 000	94 500	5 300	6 300
120		23	1.5	1.5	78.5	—	108 000	119 000	4 800	5 600
120		31	1.5	1.5	78.5	—	149 000	181 000	4 800	6 000
140		33	2.1	2.1	—	121.5	135 000	139 000	4 300	5 300
140		33	2.1	2.1	83.5	—	135 000	139 000	4 300	5 300
140		33	2.1	2.1	82.5	—	181 000	191 000	4 300	5 300
140		48	2.1	2.1	82.5	—	233 000	265 000	3 800	4 800
160		37	2.1	2.1	89.3	135.3	182 000	186 000	4 000	4 800
70		110	20	1.1	1	80	100	58 500	70 500	6 000
	125	24	1.5	1.5	—	110.5	83 500	95 000	5 000	6 300
	125	24	1.5	1.5	83.5	—	119 000	137 000	5 000	6 300
	125	31	1.5	1.5	83.5	—	156 000	194 000	4 500	5 600
	150	35	2.1	2.1	—	130	158 000	168 000	4 000	5 000
	150	35	2.1	2.1	90	—	158 000	168 000	4 000	5 000
	150	35	2.1	2.1	89	—	205 000	222 000	4 000	5 000
	150	51	2.1	2.1	89	—	274 000	325 000	3 600	4 500
	180	42	3	3	100	152	228 000	236 000	3 600	4 300
	75	115	20	1.1	1	85	105	60 000	74 500	5 600
130		25	1.5	1.5	—	116.5	96 500	111 000	4 800	6 000
130		25	1.5	1.5	88.5	—	130 000	156 000	4 800	6 000
130		31	1.5	1.5	88.5	—	162 000	207 000	4 300	5 300
160		37	2.1	2.1	—	139.5	179 000	189 000	3 800	4 800
160		37	2.1	2.1	95.5	—	179 000	189 000	3 800	4 800
160		37	2.1	2.1	95	—	240 000	263 000	3 800	4 800
160		55	2.1	2.1	95	—	330 000	395 000	3 400	4 300
190		45	3	3	104.5	160.5	262 000	274 000	3 400	4 000

**Notes** <sup>(1)</sup> The limiting speeds listed above apply to bearings with machined cages (No suffix). For bearings with pressed cages, reduce the limiting speed by 20%. (Not applicable to bearing numbers with an EM, EW, or ET suffix.)

<sup>(2)</sup> The bearings with suffix ET have polyamide cage. The maximum operating temperature should be less than 120 °C.

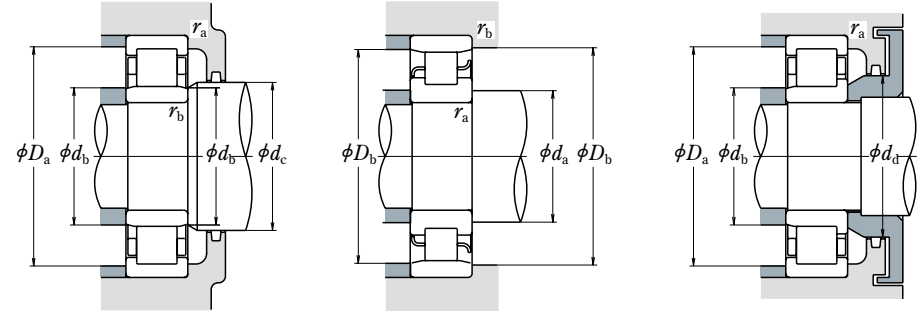
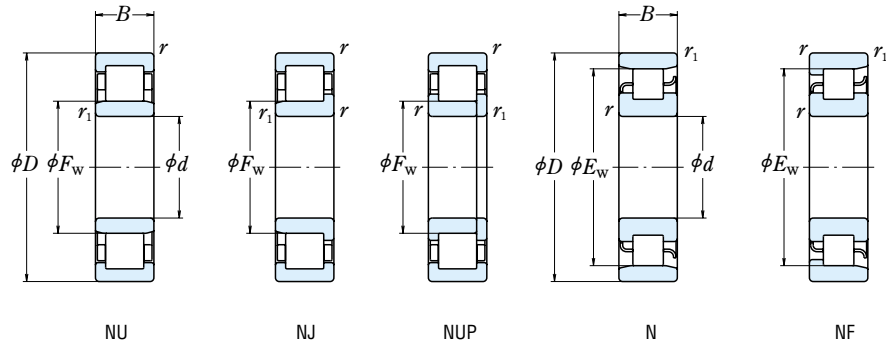
Bearing Numbers <sup>(2)</sup>						Abutment and Fillet Dimensions (mm)								Mass (kg) approx.		
NU	NJ	NUP	N	NF		d <sub>a</sub> <sup>(4)</sup> min.	d <sub>b</sub> min.	d <sub>b</sub> <sup>(5)</sup> max.	d <sub>c</sub> min.	d <sub>d</sub> min.	D <sub>a</sub> <sup>(4)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.		r <sub>a</sub> max.	r <sub>b</sub> max.
NU1012	NU NJ	—	N NF			66.5	65	68	71	—	88.5	90	87	1	1	0.474
N 212	—	—	N NF			68	—	—	—	—	—	102	100	1.5	1.5	0.823
NU 212 EW	NU NJ NUP	—	—			68	68	70	75	80	102	—	—	1.5	1.5	0.824
NU2212 ET	NU NJ NUP	—	—			68	68	70	75	80	102	—	—	1.5	1.5	1.06
N 312	—	—	N NF			71	—	—	—	—	—	119	115	2	2	1.78
NU 312	NU NJ NUP	—	—			71	71	75	79	86	119	—	—	2	2	1.82
NU 312 EM	NU NJ NUP	—	—			71	71	75	79	86	119	—	—	2	2	2.06
NU2312 ET	NU NJ NUP	—	—			71	71	75	79	86	119	—	—	2	2	2.7
NU 412	NU NJ NUP	N NF				71	71	80	85	94	139	139	130	2	2	3.04
NU1013	NU NJ	—	N NF			71.5	70	73	76	—	93.5	95	92	1	1	0.504
N 213	—	—	N NF			73	—	—	—	—	—	112	108	1.5	1.5	1.05
NU 213 EW	NU NJ NUP	—	—			73	73	76	81	87	112	—	—	1.5	1.5	1.05
NU2213 ET	NU NJ NUP	—	—			73	73	76	81	87	112	—	—	1.5	1.5	1.41
N 313	—	—	N NF			76	—	—	—	—	—	129	125	2	2	2.17
NU 313	NU NJ NUP	—	—			76	76	81	85	93	129	—	—	2	2	2.23
NU 313 EM	NU NJ NUP	—	—			76	76	80	85	93	129	—	—	2	2	2.56
NU2313 ET	NU NJ NUP	—	—			76	76	80	85	93	129	—	—	2	2	3.16
NU 413	NU NJ	—	N NF			76	76	86	91	100	149	149	138.8	2	2	3.63
NU1014	NU NJ NUP	N NF				76.5	75	79	82	—	103.5	105	101	1	1	0.693
N 214	—	—	N NF			78	—	—	—	—	—	117	113	1.5	1.5	1.14
NU 214 EM	NU NJ NUP	—	—			78	78	81	86	92	117	—	—	1.5	1.5	1.29
NU2214 ET	NU NJ NUP	—	—			78	78	81	86	92	117	—	—	1.5	1.5	1.49
N 314	—	—	N NF			81	—	—	—	—	—	139	133.5	2	2	2.67
NU 314	NU NJ NUP	—	—			81	81	87	92	100	139	—	—	2	2	2.75
NU 314 EM	NU NJ NUP	—	—			81	81	86	92	100	139	—	—	2	2	3.09
NU2314 ET	NU NJ NUP	—	—			81	81	86	92	100	139	—	—	2	2	3.92
NU 414	NU NJ NUP	N NF				83	83	97	102	112	167	167	155	2.5	2.5	5.28
NU1015	NU	—	N NF			81.5	80	83	87	—	108.5	110	106	1	1	0.731
N 215	—	—	N NF			83	—	—	—	—	—	122	119	1.5	1.5	1.23
NU 215 EM	NU NJ NUP	—	—			83	83	86	90	96	122	—	—	1.5	1.5	1.44
NU2215 ET	NU NJ NUP	—	—			83	83	86	90	96	122	—	—	1.5	1.5	1.57
N 315	—	—	N NF			86	—	—	—	—	—	149	143	2	2	3.2
NU 315	NU NJ NUP	—	—			86	86	93	97	106	149	—	—	2	2	3.26
NU 315 EM	NU NJ NUP	—	—			86	86	92	97	106	149	—	—	2	2	3.73
NU2315 ET	NU NJ NUP	—	—			86	86	92	97	106	149	—	—	2	2	4.86
NU 415	NU NJ	—	N NF			88	88	102	107	118	177	177	164	2.5	2.5	6.27

**Notes** <sup>(3)</sup> When L-shaped thrust collars (See section for L-Shaped Thrust Collars starting on page B100) are used, the bearings become the NH type.

<sup>(4)</sup> If axial loads are applied, increase d<sub>a</sub> and reduce D<sub>a</sub> from the values listed above.

<sup>(5)</sup> d<sub>b</sub> (max.) are values for adjusting rings for NU, NJ Types.

Bore Diameter 80 – 95 mm



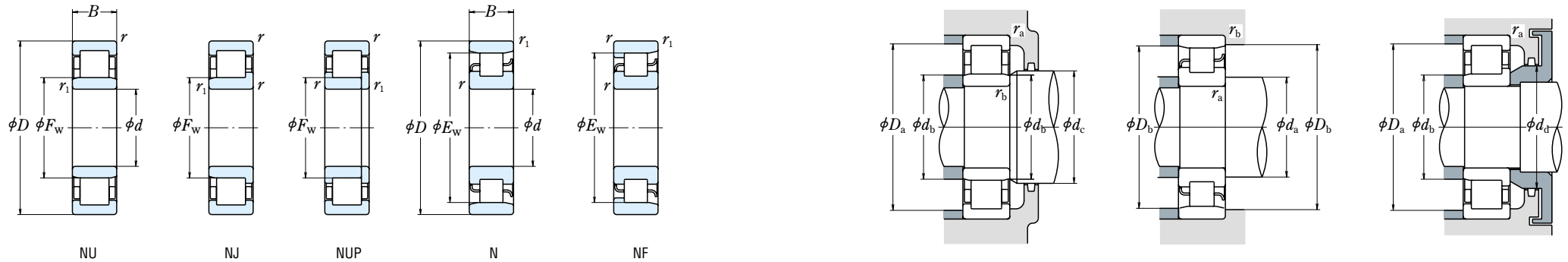
d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
80	125	22	1.1	1	91.5	113.5	72 500	90 500	5 300	6 300
	140	26	2	2	—	125.3	106 000	122 000	4 500	5 300
	140	26	2	2	95.3	—	139 000	167 000	4 500	5 300
	140	33	2	2	95.3	—	186 000	243 000	4 000	5 000
	170	39	2.1	2.1	—	147	190 000	207 000	3 600	4 300
	170	39	2.1	2.1	101	—	256 000	282 000	3 600	4 300
	170	58	2.1	2.1	101	—	355 000	430 000	3 200	4 000
	200	48	3	3	110	170	299 000	315 000	3 200	3 800
85	130	22	1.1	1	96.5	118.5	74 500	95 500	5 000	6 000
	150	28	2	2	—	133.8	120 000	140 000	4 300	5 000
	150	28	2	2	100.5	—	167 000	199 000	4 300	5 000
	150	36	2	2	100.5	—	217 000	279 000	3 800	4 500
	180	41	3	3	—	156	212 000	228 000	3 400	4 000
	180	41	3	3	108	—	212 000	228 000	3 400	4 000
	180	41	3	3	108	—	291 000	330 000	3 400	4 000
	180	60	3	3	108	—	395 000	485 000	3 000	3 800
	210	52	4	4	113	177	335 000	350 000	3 000	3 800
	90	140	24	1.5	1.1	103	127	88 000	114 000	4 500
160		30	2	2	—	143	152 000	178 000	4 000	4 800
160		30	2	2	107	—	182 000	217 000	4 000	4 800
160		40	2	2	107	—	242 000	315 000	3 600	4 300
190		43	3	3	—	165	240 000	265 000	3 200	3 800
190		43	3	3	113.5	—	240 000	265 000	3 200	3 800
190		43	3	3	113.5	—	315 000	355 000	3 200	3 800
190		64	3	3	113.5	—	435 000	535 000	2 800	3 400
225		54	4	4	123.5	191.5	375 000	400 000	2 800	3 400
95		145	24	1.5	1.1	108	132	90 500	120 000	4 300
	170	32	2.1	2.1	—	151.5	158 000	183 000	3 800	4 500
	170	32	2.1	2.1	112.5	—	220 000	265 000	3 800	4 500
	170	43	2.1	2.1	112.5	—	286 000	370 000	3 400	4 000
	200	45	3	3	—	173.5	259 000	289 000	3 000	3 600
	200	45	3	3	121.5	—	259 000	289 000	3 000	3 600
	200	45	3	3	121.5	—	335 000	385 000	3 000	3 600
	200	67	3	3	121.5	—	460 000	585 000	2 600	3 400
	240	55	4	4	133.5	201.5	400 000	445 000	2 600	3 200

Bearing Numbers <sup>(2)</sup>	Abutment and Fillet Dimensions (mm)										Mass (kg) approx.					
	NU	NJ	NUP	N	NF	d <sub>a</sub> <sup>(4)</sup> min.	d <sub>b</sub> min.	d <sub>b</sub> <sup>(5)</sup> max.	d <sub>c</sub> min.	d <sub>d</sub> min.		D <sub>a</sub> <sup>(4)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.
NU1016	—	—	—	—	—	86.5	85	90	94	—	118.5	120	115	1	1	0.969
N 216	—	—	—	N	NF	89	—	—	—	—	—	131	128	2	2	1.47
NU 216 EM	NU	NJ	NUP	—	—	89	89	92	97	104	131	—	—	2	2	1.7
NU2216 ET	NU	NJ	NUP	—	—	89	89	92	97	104	131	—	—	2	2	1.96
N 316	—	—	—	N	NF	91	—	—	—	—	—	159	150	2	2	3.85
NU 316 EM	NU	NJ	NUP	—	—	91	91	98	105	114	159	—	—	2	2	4.45
NU2316 ET	NU	NJ	NUP	—	—	91	91	98	105	114	159	—	—	2	2	5.73
NU 416	NU	NJ	—	N	NF	93	93	107	112	124	187	187	173	2.5	2.5	7.36
NU1017	NU	—	—	N	—	91.5	90	95	99	—	123.5	125	120	1	1	1.01
N 217	—	—	—	N	NF	94	—	—	—	—	—	141	137	2	2	1.87
NU 217 EM	NU	NJ	NUP	—	—	94	94	98	104	110	141	—	—	2	2	2.11
NU2217 ET	NU	NJ	NUP	—	—	94	94	98	104	110	141	—	—	2	2	2.44
N 317	—	—	—	N	NF	98	—	—	—	—	—	167	159	2.5	2.5	4.53
NU 317	NU	NJ	NUP	—	—	98	98	105	110	119	167	—	—	2.5	2.5	4.6
NU 317 EM	NU	NJ	NUP	—	—	98	98	105	110	119	167	—	—	2.5	2.5	5.26
NU2317 ET	NU	NJ	NUP	—	—	98	98	105	110	119	167	—	—	2.5	2.5	6.77
NU 417	NU	NJ	—	N	NF	101	101	110	115	128	194	194	180	3	3	9.56
NU1018	NU	—	—	N	—	98	96.5	101	106	—	132	133.5	129	1.5	1	1.35
N 218	—	—	—	N	NF	99	—	—	—	—	—	151	146	2	2	2.31
NU 218 EM	NU	NJ	NUP	—	—	99	99	104	109	116	151	—	—	2	2	2.6
NU2218 ET	NU	NJ	NUP	—	—	99	99	104	109	116	151	—	—	2	2	3.11
N 318	—	—	—	N	NF	103	—	—	—	—	—	177	168	2.5	2.5	5.31
NU 318	NU	NJ	NUP	—	—	103	103	112	117	127	177	—	—	2.5	2.5	5.38
NU 318 EM	NU	NJ	NUP	—	—	103	103	111	117	127	177	—	—	2.5	2.5	6.1
NU2318 ET	NU	NJ	NUP	—	—	103	103	111	117	127	177	—	—	2.5	2.5	7.9
NU 418	NU	NJ	—	N	NF	106	106	120	125	139	209	209	196	3	3	11.5
NU1019	NU	NJ	—	N	—	103	101.5	106	111	—	137	138.5	134	1.5	1	1.41
N 219	—	—	—	N	NF	106	—	—	—	—	—	159	155	2	2	2.79
NU 219 EM	NU	NJ	NUP	—	—	106	106	110	116	123	159	—	—	2	2	3.17
NU2219 ET	NU	NJ	NUP	—	—	106	106	110	116	123	159	—	—	2	2	3.81
N 319	—	—	—	N	NF	108	—	—	—	—	—	187	177	2.5	2.5	6.09
NU 319	NU	NJ	NUP	—	—	108	108	118	124	134	187	—	—	2.5	2.5	6.23
NU 319 EM	NU	NJ	NUP	—	—	108	108	118	124	134	187	—	—	2.5	2.5	7.13
NU2319 ET	NU	NJ	NUP	—	—	108	108	118	124	134	187	—	—	2.5	2.5	9.21
NU 419	NU	NJ	NUP	—	NF	111	111	130	136	149	224	224	206	3	3	13.6

Notes <sup>(1)</sup> The limiting speeds listed above apply to bearings with machined cages (No suffix). For bearings with pressed cages, reduce the limiting speed by 20%. (Not applicable to bearing numbers with an EM, EW, or ET suffix.)  
<sup>(2)</sup> The bearings with suffix ET have polyamide cage. The maximum operating temperature should be less than 120 °C.

Notes <sup>(3)</sup> When L-shaped thrust collars (See section for L-Shaped Thrust Collars starting on page B100) are used, the bearings become the NH type.  
<sup>(4)</sup> If axial loads are applied, increase d<sub>a</sub> and reduce D<sub>a</sub> from the values listed above.  
<sup>(5)</sup> d<sub>b</sub> (max.) are values for adjusting rings for NU, NJ Types.

Bore Diameter 100 – 120 mm



d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
100	150	24	1.5	1.1	113	137	93 000	126 000	4 300	5 300
	180	34	2.1	2.1	—	160	183 000	217 000	3 600	4 300
	180	34	2.1	2.1	119	—	249 000	305 000	3 600	4 300
	180	46	2.1	2.1	119	—	335 000	445 000	3 200	3 800
	215	47	3	3	—	185.5	299 000	335 000	2 800	3 400
	215	47	3	3	129.5	—	299 000	335 000	2 800	3 400
	215	47	3	3	127.5	—	380 000	425 000	2 800	3 400
	215	73	3	3	127.5	—	570 000	715 000	2 400	3 000
	250	58	4	4	139	211	450 000	500 000	2 600	3 000
	105	160	26	2	1.1	119.5	145.5	109 000	149 000	4 000
190		36	2.1	2.1	—	168.8	201 000	241 000	3 400	4 000
190		36	2.1	2.1	125	—	262 000	310 000	3 400	4 000
225		49	3	3	—	195	320 000	360 000	2 600	3 200
225		49	3	3	133	—	425 000	480 000	2 600	3 200
260		60	4	4	144.5	220.5	495 000	555 000	2 400	3 000
110	170	28	2	1.1	125	155	131 000	174 000	3 800	4 500
	200	38	2.1	2.1	—	178.5	229 000	272 000	3 200	3 800
	200	38	2.1	2.1	132.5	—	293 000	365 000	3 200	3 800
	200	53	2.1	2.1	132.5	—	385 000	515 000	2 800	3 400
	240	50	3	3	—	207	360 000	400 000	2 600	3 000
	240	50	3	3	143	—	450 000	525 000	2 600	3 000
120	280	65	4	4	155	—	550 000	620 000	2 200	2 800
	180	28	2	1.1	135	165	139 000	191 000	3 400	4 300
	215	40	2.1	2.1	—	191.5	248 000	299 000	3 000	3 400
	215	40	2.1	2.1	143.5	—	335 000	420 000	3 000	3 400
	215	58	2.1	2.1	143.5	—	450 000	620 000	2 600	3 200
	260	55	3	3	—	226	450 000	510 000	2 200	2 800
	260	55	3	3	154	—	530 000	610 000	2 200	2 800
	260	86	3	3	154	—	795 000	1 030 000	2 000	2 600
310	72	5	5	170	260	675 000	770 000	2 000	2 400	

Notes <sup>(1)</sup> The limiting speeds listed above apply to bearings with machined cages (No suffix). For bearings with pressed cages, reduce the limiting speed by 20%. (Not applicable to bearing numbers with an EM, EW, or ET suffix.)

<sup>(2)</sup> The bearings with suffix ET have polyamide cage. The maximum operating temperature should be less than 120 °C.

Bearing Numbers <sup>(2)</sup>	Abutment and Fillet Dimensions (mm)								Mass (kg) approx.							
	NU	NJ	NUP	N	NF	d <sub>a</sub> <sup>(4)</sup> min.	d <sub>b</sub> min.	d <sub>b</sub> <sup>(5)</sup> max.		d <sub>c</sub> min.	d <sub>d</sub> min.	D <sub>a</sub> <sup>(4)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.
NU1020	NU	NJ	NUP	N	—	108	106.5	111	116	—	142	143.5	139	1.5	1	1.47
N 220	—	—	—	N	NF	111	—	—	—	—	—	169	163	2	2	3.36
NU 220 EM	NU	NJ	NUP	—	—	111	111	116	122	130	169	—	—	2	2	3.81
NU2220 ET	NU	NJ	NUP	—	—	111	111	116	122	130	169	—	—	2	2	4.69
N 320	—	—	—	N	NF	113	—	—	—	—	—	202	190	2.5	2.5	7.59
NU 320	NU	NJ	NUP	—	—	113	113	126	132	143	202	—	—	2.5	2.5	7.69
NU 320 EM	NU	NJ	NUP	—	—	113	113	124	132	143	202	—	—	2.5	2.5	8.63
NU2320 ET	NU	NJ	NUP	—	—	113	113	124	132	143	202	—	—	2.5	2.5	11.8
NU 420	NU	NJ	—	N	NF	116	116	135	141	156	234	234	215	3	3	15.5
NU1021	NU	—	—	N	NF	114	111.5	118	122	—	151	153.5	147	2	1	1.83
N 221	—	—	—	N	NF	116	—	—	—	—	—	179	172	2	2	4.0
NU 221 EM	NU	NJ	NUP	—	—	116	116	121	129	137	179	—	—	2	2	4.58
N 321	—	—	—	N	NF	118	—	—	—	—	—	212	199	2.5	2.5	8.69
NU 321 EM	NU	NJ	NUP	—	—	118	118	131	137	149	212	—	—	2.5	2.5	9.84
NU 421	NU	NJ	—	N	NF	121	121	141	147	162	244	244	225	3	3	17.3
NU1022	NU	NJ	—	N	NF	119	116.5	123	128	—	161	163.5	157	2	1	2.27
N 222	—	—	—	N	NF	121	—	—	—	—	—	189	182	2	2	4.64
NU 222 EM	NU	NJ	NUP	—	—	121	121	129	135	144	189	—	—	2	2	5.37
NU2222 EM	NU	NJ	NUP	—	—	121	121	129	135	144	189	—	—	2	2	7.65
N 322	—	—	—	N	NF	123	—	—	—	—	—	227	211	2.5	2.5	10.3
NU 322 EM	NU	NJ	NUP	—	—	123	123	139	145	158	227	—	—	2.5	2.5	11.8
NU 422	NU	NJ	—	—	—	126	126	151	157	173	264	—	—	3	3	22.1
NU1024	NU	NJ	NUP	N	—	129	126.5	133	138	—	171	173.5	167	2	1	2.43
N 224	—	—	—	N	NF	131	—	—	—	—	—	204	196	2	2	5.63
NU 224 EM	NU	NJ	NUP	—	—	131	131	140	146	156	204	—	—	2	2	6.43
NU2224 EM	NU	NJ	NUP	—	—	131	131	140	146	156	204	—	—	2	2	9.51
N 324	—	—	—	N	NF	133	—	—	—	—	—	247	230	2.5	2.5	12.9
NU 324 EM	NU	NJ	NUP	—	—	133	133	150	156	171	247	—	—	2.5	2.5	15
NU2324 EM	NU	NJ	NUP	—	—	133	133	150	156	171	247	—	—	2.5	2.5	25
NU 424	NU	NJ	NUP	N	—	140	140	166	172	190	290	290	266	4	4	30.2

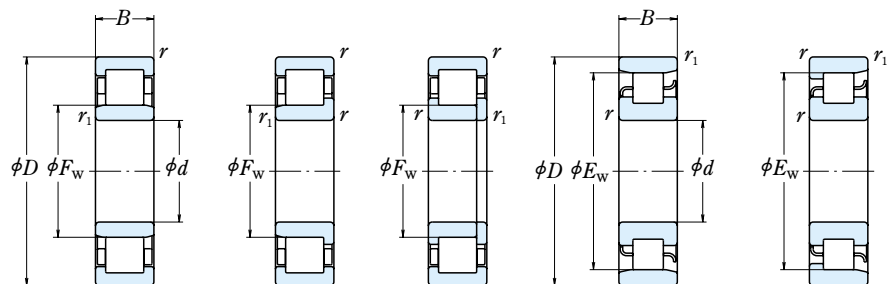
Notes <sup>(3)</sup> When L-shaped thrust collars (See section for L-Shaped Thrust Collars starting on page B100) are used, the bearings become the NH type.

<sup>(4)</sup> If axial loads are applied, increase d<sub>a</sub> and reduce D<sub>a</sub> from the values listed above.

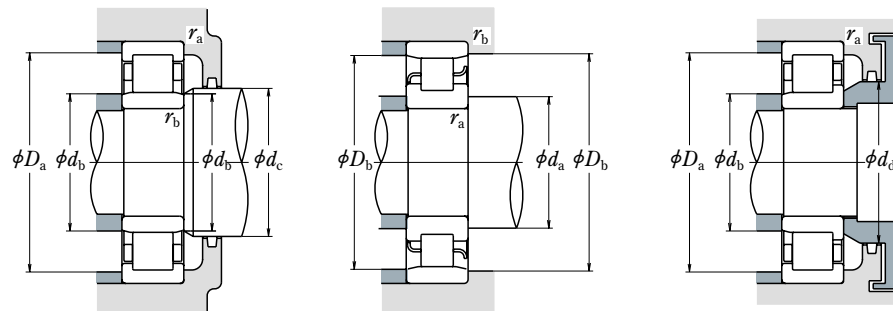
<sup>(5)</sup> d<sub>b</sub> (max.) are values for adjusting rings for NU, NJ Types.

# SINGLE-ROW CYLINDRICAL ROLLER BEARINGS

Bore Diameter 130 – 160 mm



NU NJ NUP N NF



d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
130	200	33	2	1.1	148	182	172 000	238 000	3 200	3 800
	230	40	3	3	—	204	258 000	320 000	2 600	3 200
	230	40	3	3	153.5	—	365 000	455 000	2 600	3 200
	230	64	3	3	153.5	—	530 000	735 000	2 400	3 000
	280	58	4	4	—	243	500 000	570 000	2 200	2 600
	280	58	4	4	167	—	615 000	735 000	2 200	2 600
	280	93	4	4	167	—	920 000	1 230 000	1 900	2 400
140	340	78	5	5	185	285	825 000	955 000	1 800	2 200
	210	33	2	1.1	158	192	176 000	250 000	3 000	3 600
	250	42	3	3	—	221	297 000	375 000	2 400	3 000
	250	42	3	3	169	—	395 000	515 000	2 400	3 000
	250	68	3	3	169	—	550 000	790 000	2 200	2 800
	300	62	4	4	—	260	550 000	640 000	2 000	2 400
	300	62	4	4	180	—	665 000	795 000	2 000	2 400
150	300	102	4	4	180	—	1 020 000	1 380 000	1 700	2 200
	360	82	5	5	198	302	875 000	1 020 000	1 700	2 000
	225	35	2.1	1.5	169.5	205.5	202 000	294 000	2 800	3 400
	270	45	3	3	—	238	345 000	435 000	2 200	2 800
	270	45	3	3	182	—	450 000	595 000	2 200	2 800
	270	73	3	3	182	—	635 000	930 000	2 000	2 600
	320	65	4	4	—	277	590 000	690 000	1 800	2 200
160	320	65	4	4	193	—	760 000	920 000	1 800	2 200
	320	108	4	4	193	—	1 160 000	1 600 000	1 600	2 000
	380	85	5	5	213	—	930 000	1 120 000	1 600	2 000
	240	38	2.1	1.5	180	220	238 000	340 000	2 600	3 200
	290	48	3	3	—	255	430 000	570 000	2 200	2 600
	290	48	3	3	195	—	500 000	665 000	2 200	2 600
	290	80	3	3	193	—	810 000	1 190 000	1 900	2 400
160	340	68	4	4	—	292	700 000	875 000	1 700	2 000
	340	68	4	4	204	—	860 000	1 050 000	1 700	2 000
	340	114	4	4	204	—	1 310 000	1 820 000	1 500	1 900

**Notes** <sup>(1)</sup> The limiting speeds listed above apply to bearings with machined cages (No suffix). For bearings with pressed cages, reduce the limiting speed by 20%. (Not applicable to bearing numbers with an EM, EW, or ET suffix.)

<sup>(2)</sup> The bearings with suffix ET have polyamide cage. The maximum operating temperature should be less than 120 °C.

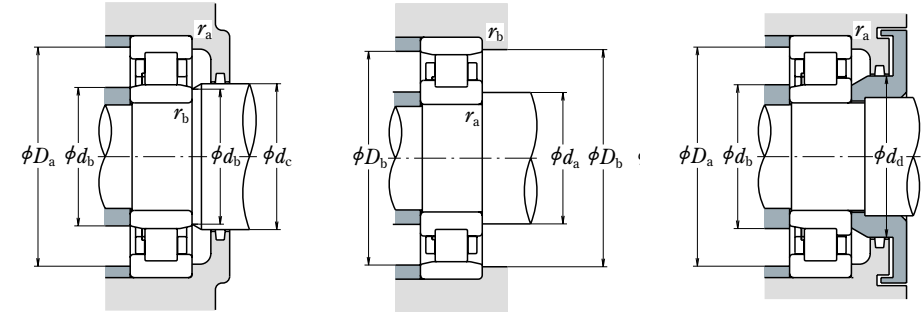
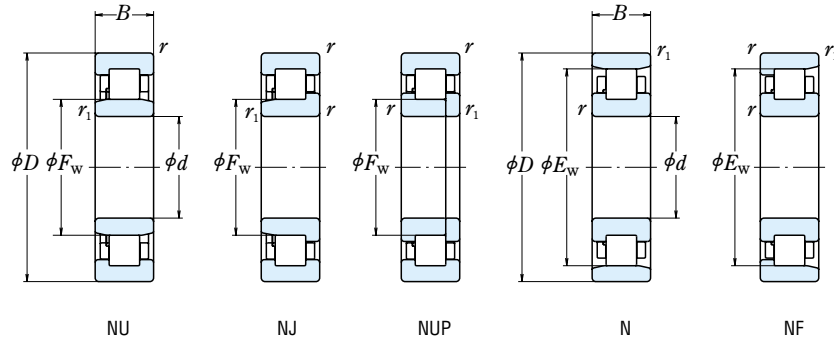
Bearing Numbers <sup>(2)</sup>						Abutment and Fillet Dimensions (mm)									Mass (kg)	
<sup>(3)</sup>						d <sub>a</sub> <sup>(4)</sup> min.	d <sub>b</sub> min.	d <sub>b</sub> <sup>(5)</sup> max.	d <sub>c</sub>	d <sub>d</sub>	D <sub>a</sub> <sup>(4)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.	approx.
NU	NJ	NUP	N	NF												
<b>NU1026</b>	<b>NU NJ</b>	—	<b>N NF</b>			139	136.5	146	151	—	191	193.5	184	2	1	3.66
<b>N 226</b>	—	—	<b>N NF</b>			143	—	—	—	—	—	217	208	2.5	2.5	6.48
<b>NU 226 EM</b>	<b>NU NJ NUP</b>	—	—			143	143	150	158	168	217	—	—	2.5	2.5	8.03
<b>NU2226 EM</b>	<b>NU NJ NUP</b>	—	—			143	143	150	158	168	217	—	—	2.5	2.5	9.44
<b>N 326</b>	—	—	<b>N NF</b>			146	—	—	—	—	—	264	247.5	3	3	17.7
<b>NU326 EM</b>	<b>NU NJ NUP</b>	—	—			146	146	163	169	184	264	—	—	3	3	18.7
<b>NU2326 EM</b>	<b>NU NJ NUP</b>	—	—			146	146	163	169	184	264	—	—	3	3	30
<b>NU 426</b>	<b>NU NJ</b>	—	<b>NF</b>			150	150	180	187	208	320	320	291	4	4	39.6
<b>NU1028</b>	<b>NU NJ NUP</b>	—	<b>N</b>			149	146.5	156	161	—	201	203.5	194	2	1	3.87
<b>N 228</b>	—	—	<b>N NF</b>			153	—	—	—	—	—	237	225	2.5	2.5	8.08
<b>NU228 EM</b>	<b>NU NJ NUP</b>	—	—			153	153	165	171	182	237	—	—	2.5	2.5	9.38
<b>NU2228 EM</b>	<b>NU NJ NUP</b>	—	—			153	153	165	171	182	237	—	—	2.5	2.5	15.2
<b>N 328</b>	—	—	<b>N NF</b>			156	—	—	—	—	—	284	266	3	3	21.7
<b>NU328 EM</b>	<b>NU NJ NUP</b>	—	—			156	156	176	182	198	284	—	—	3	3	22.8
<b>NU2328 EM</b>	<b>NU NJ NUP</b>	—	—			156	156	176	182	198	284	—	—	3	3	37.7
<b>NU 428</b>	<b>NU NJ</b>	—	<b>N</b>			160	160	193	200	222	340	340	308	4	4	46.4
<b>NU1030</b>	<b>NU NJ</b>	—	<b>N NF</b>			161	158	167	173	—	214	217	208	2	1.5	4.77
<b>N 230</b>	—	—	<b>N NF</b>			163	—	—	—	—	—	257	242	2.5	2.5	10.4
<b>NU230 EM</b>	<b>NU NJ NUP</b>	—	—			163	163	177	184	196	257	—	—	2.5	2.5	11.9
<b>NU2230 EM</b>	<b>NU NJ NUP</b>	—	—			163	163	177	184	196	257	—	—	2.5	2.5	19.3
<b>N 330</b>	—	—	<b>N NF</b>			166	—	—	—	—	—	304	283	3	3	25.8
<b>NU330 EM</b>	<b>NU NJ NUP</b>	—	—			166	166	188	195	213	304	—	—	3	3	27.1
<b>NU2330 EM</b>	<b>NU NJ NUP</b>	—	—			166	166	188	195	213	304	—	—	3	3	45.1
<b>NU 430</b>	<b>NU NJ</b>	—	—			170	170	208	216	237	360	—	—	4	4	55.8
<b>NU1032</b>	<b>NU NJ</b>	—	<b>N NF</b>			171	168	178	184	—	229	232	222	2	1.5	5.81
<b>N 232</b>	—	—	<b>N NF</b>			173	—	—	—	—	—	277	261	2.5	2.5	14.1
<b>NU232 EM</b>	<b>NU NJ NUP</b>	—	—			173	173	190	197	210	277	—	—	2.5	2.5	14.7
<b>NU2232 EM</b>	<b>NU NJ NUP</b>	—	—			173	173	188	197	210	277	—	—	2.5	2.5	24.5
<b>N 332</b>	—	—	<b>N</b>			176	—	—	—	—	—	324	298	3	3	30.8
<b>NU332 EM</b>	<b>NU NJ NUP</b>	—	—			176	176	199	211	228	324	—	—	3	3	32.1
<b>NU2332 EM</b>	<b>NU NJ NUP</b>	—	—			176	176	199	211	228	324	—	—	3	3	53.9

**Notes** <sup>(3)</sup> When L-shaped thrust collars (See section for L-Shaped Thrust Collars starting on page B100) are used, the bearings become the NH type.

<sup>(4)</sup> If axial loads are applied, increase  $d_a$  and reduce  $D_a$  from the values listed above.

<sup>(5)</sup>  $d_b$  (max.) are values for adjusting rings for NU, NJ Types.

Bore Diameter 170 – 220 mm

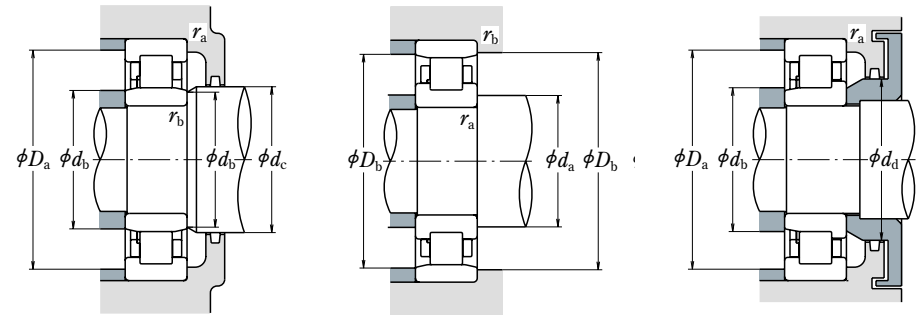
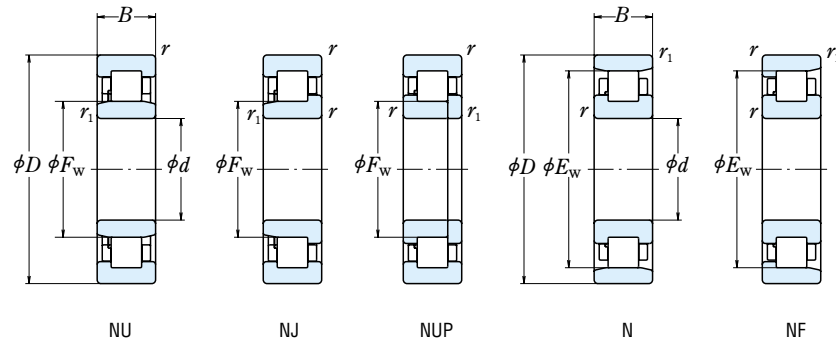


d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>W</sub>	E <sub>W</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
<b>170</b>	260	42	2.1	2.1	193	237	287 000	415 000	2 400	2 800
	310	52	4	4	—	272	475 000	635 000	2 000	2 400
	310	52	4	4	207	—	605 000	800 000	2 000	2 400
	310	86	4	4	205	—	925 000	1 330 000	1 800	2 200
	360	72	4	4	—	310	795 000	1 010 000	1 600	2 000
	360	72	4	4	218	—	930 000	1 150 000	1 600	2 000
<b>180</b>	360	120	4	4	216	—	1 490 000	2 070 000	1 400	1 800
	280	46	2.1	2.1	205	255	355 000	510 000	2 200	2 600
	320	52	4	4	—	282	495 000	675 000	1 900	2 200
	320	52	4	4	217	—	625 000	850 000	1 900	2 200
	320	86	4	4	215	—	1 010 000	1 510 000	1 700	2 000
	380	75	4	4	—	328	905 000	1 150 000	1 500	1 800
<b>190</b>	380	75	4	4	231	—	985 000	1 230 000	1 500	1 800
	380	126	4	4	227	—	1 560 000	2 220 000	1 300	1 700
	290	46	2.1	2.1	215	265	365 000	535 000	2 000	2 600
	340	55	4	4	—	299	555 000	770 000	1 800	2 200
	340	55	4	4	230	—	695 000	955 000	1 800	2 200
	340	92	4	4	228	—	1 100 000	1 670 000	1 600	2 000
<b>200</b>	400	78	5	5	—	345	975 000	1 260 000	1 400	1 700
	400	78	5	5	245	—	1 060 000	1 340 000	1 400	1 700
	400	132	5	5	240	—	1 770 000	2 520 000	1 300	1 600
	310	51	2.1	2.1	229	281	390 000	580 000	2 000	2 400
	360	58	4	4	—	316	620 000	865 000	1 700	2 000
	360	58	4	4	243	—	765 000	1 060 000	1 700	2 000
<b>220</b>	360	98	4	4	241	—	1 220 000	1 870 000	1 500	1 800
	420	80	5	5	—	360	975 000	1 270 000	1 300	1 600
	420	80	5	5	258	—	1 140 000	1 450 000	1 300	1 600
	420	138	5	5	253	—	1 910 000	2 760 000	1 200	1 500
	340	56	3	3	250	310	500 000	750 000	1 800	2 200
	400	65	4	4	—	350	760 000	1 080 000	1 500	1 800
	400	65	4	4	270	—	760 000	1 080 000	1 500	1 800
	400	108	4	4	270	—	1 140 000	1 810 000	1 300	1 600
	460	88	5	5	—	396	1 190 000	1 570 000	1 200	1 500
	460	88	5	5	284	—	1 190 000	1 570 000	1 200	1 500

Bearing Numbers						Abutment and Fillet Dimensions (mm)										Mass (kg) approx.
NU	NJ	NUP	N	NF		d <sub>a</sub> <sup>(2)</sup> min.	d <sub>b</sub> min.	d <sub>b</sub> <sup>(3)</sup> max.	d <sub>c</sub> min.	d <sub>d</sub> min.	D <sub>a</sub> <sup>(2)</sup> max.	D <sub>b</sub> max.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.	
<b>NU1034</b>	<b>NU NJ</b>	—	<b>N</b>	—		181	181	190	197	—	249	249	239	2	2	7.91
<b>N 234</b>	—	—	<b>N NF</b>	—		186	—	—	—	—	—	294	278	3	3	17.4
<b>NU234EM</b>	<b>NU NJ NUP</b>	—	—	—		186	186	202	211	223	294	—	—	3	3	18.3
<b>NU2234EM</b>	<b>NU NJ NUP</b>	—	—	—		186	186	200	211	223	294	—	—	3	3	29.9
<b>N 334</b>	—	—	<b>N</b>	—		186	—	—	—	—	—	344	316	3	3	36.6
<b>NU334EM</b>	<b>NU NJ NUP</b>	—	—	—		186	186	213	223	241	344	—	—	3	3	37.9
<b>NU2334EM</b>	<b>NU NJ NUP</b>	—	—	—		186	186	210	223	241	344	—	—	3	3	63.4
<b>NU1036</b>	<b>NU NJ</b>	—	<b>N NF</b>	—		191	191	202	209	—	269	269	258	2	2	10.2
<b>N 236</b>	—	—	<b>N NF</b>	—		196	—	—	—	—	—	304	288	3	3	18.1
<b>NU236EM</b>	<b>NU NJ NUP</b>	—	—	—		196	196	212	221	233	304	—	—	3	3	19
<b>NU2236EM</b>	<b>NU NJ NUP</b>	—	—	—		196	196	210	221	233	304	—	—	3	3	31.4
<b>N 336</b>	—	—	<b>N NF</b>	—		196	—	—	—	—	—	364	335	3	3	42.6
<b>NU336EM</b>	<b>NU NJ NUP</b>	—	—	—		196	196	226	235	255	364	—	—	3	3	44
<b>NU2336EM</b>	<b>NU NJ NUP</b>	—	—	—		196	196	222	235	255	364	—	—	3	3	74.6
<b>NU1038</b>	<b>NU NJ</b>	—	<b>N</b>	—		201	201	212	219	—	279	279	268	2	2	10.7
<b>N 238</b>	—	—	<b>N NF</b>	—		206	—	—	—	—	—	324	305	3	3	22
<b>NU238EM</b>	<b>NU NJ NUP</b>	—	—	—		206	206	225	234	247	324	—	—	3	3	23
<b>NU2238EM</b>	<b>NU NJ NUP</b>	—	—	—		206	206	223	234	247	324	—	—	3	3	38.3
<b>N 338</b>	—	—	<b>N</b>	—		210	—	—	—	—	—	380	352	4	4	48.7
<b>NU338EM</b>	<b>NU NJ NUP</b>	—	—	—		210	210	240	248	268	380	—	—	4	4	50.6
<b>NU2338EM</b>	<b>NU NJ NUP</b>	—	—	—		210	210	235	248	268	380	—	—	4	4	86.2
<b>NU1040</b>	<b>NU NJ</b>	—	<b>N NF</b>	—		211	211	226	233	—	299	299	284	2	2	14
<b>N 240</b>	—	—	<b>N NF</b>	—		216	—	—	—	—	—	344	323	3	3	26.2
<b>NU240EM</b>	<b>NU NJ NUP</b>	—	—	—		216	216	238	247	261	344	—	—	3	3	27.4
<b>NU2240EM</b>	<b>NU NJ NUP</b>	—	—	—		216	216	235	247	261	344	—	—	3	3	46.1
<b>N 340</b>	—	—	<b>N NF</b>	—		220	—	—	—	—	—	400	367	4	4	55.3
<b>NU340EM</b>	<b>NU NJ NUP</b>	—	—	—		220	220	252	263	283	400	—	—	4	4	57.1
<b>NU2340EM</b>	<b>NU NJ NUP</b>	—	—	—		220	220	247	263	283	400	—	—	4	4	99.3
<b>NU1044</b>	<b>NU NJ</b>	—	<b>N</b>	—		233	233	247	254	—	327	327	313	2.5	2.5	18.2
<b>N 244</b>	—	—	<b>N NF</b>	—		236	—	—	—	—	—	384	357	3	3	37
<b>NU 244</b>	<b>NU NJ NUP</b>	—	—	—		236	236	264	273	289	384	—	—	3	3	37.3
<b>NU2244</b>	<b>NU</b>	—	—	—		—	236	264	273	289	384	—	—	3	3	61.8
<b>N 344</b>	—	—	<b>N</b>	—		240	—	—	—	—	—	440	403	4	4	72.8
<b>NU 344</b>	<b>NU NJ</b>	—	—	—		240	240	278	287	307	440	—	—	4	4	74.6

- Notes (1) When L-shaped thrust collars (Refer to page B101) are used, the bearings become the NH Type.
- (2) If axial loads are applied, increase d<sub>a</sub> and reduce D<sub>a</sub> from the values listed above.
- (3) d<sub>b</sub> (max.) are values for adjusting rings for NU, NJ Types.

Bore Diameter 240 – 500 mm



d	Boundary Dimensions (mm)						Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B	r min.	r <sub>1</sub> min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
240	360	56	3	3	270	330	530 000	820 000	1 600	2 000
	440	72	4	4	—	385	935 000	1 340 000	1 300	1 600
	440	72	4	4	295	—	935 000	1 340 000	1 300	1 600
	440	120	4	4	295	—	1 440 000	2 320 000	1 200	1 500
	500	95	5	5	—	430	1 360 000	1 820 000	1 100	1 300
260	400	65	4	4	296	364	645 000	1 000 000	1 500	1 800
	480	80	5	5	—	420	1 100 000	1 580 000	1 200	1 500
	480	80	5	5	320	—	1 100 000	1 580 000	1 200	1 500
	480	130	5	5	320	—	1 710 000	2 770 000	1 100	1 300
	540	102	6	6	336	—	1 540 000	2 090 000	1 000	1 200
280	420	65	4	4	316	384	660 000	1 050 000	1 400	1 700
	500	80	5	5	—	440	1 140 000	1 680 000	1 100	1 400
	500	80	5	5	340	—	1 140 000	1 680 000	1 100	1 400
300	460	74	4	4	340	420	885 000	1 400 000	1 300	1 500
	540	85	5	5	364	—	1 400 000	2 070 000	1 100	1 300
320	480	74	4	4	360	440	905 000	1 470 000	1 200	1 400
	580	92	5	5	—	510	1 540 000	2 270 000	950	1 200
	580	92	5	5	390	—	1 540 000	2 270 000	950	1 200
340	520	82	5	5	385	475	1 080 000	1 740 000	1 100	1 300
360	540	82	5	5	405	495	1 110 000	1 830 000	1 000	1 300
380	560	82	5	5	425	—	1 140 000	1 910 000	1 000	1 200
400	600	90	5	5	450	550	1 360 000	2 280 000	900	1 100
420	620	90	5	5	470	570	1 390 000	2 380 000	850	1 100
440	650	94	6	6	493	—	1 470 000	2 530 000	800	1 000
460	680	100	6	6	516	624	1 580 000	2 740 000	750	950
480	700	100	6	6	536	644	1 620 000	2 860 000	750	900
500	720	100	6	6	556	664	1 660 000	2 970 000	710	850

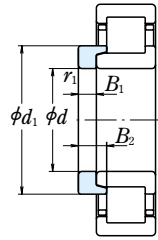
- Notes** (1) When L-shaped thrust collars (Refer to page B101) are used, the bearings become the NH Type.  
 (2) If axial loads are applied, increase  $d_a$  and reduce  $D_a$  from the values listed above.  
 (3)  $d_b$  (max.) are values for adjusting rings for NU, NJ Types.

Bearing Numbers	Abutment and Fillet Dimensions (mm)										Mass (kg) approx.					
	(1) NU	(1) NJ	(1) NUP	(1) N	(1) NF	$d_a$ (2) min.	$d_b$ min.	$d_b$ (3) max.	$d_c$ min.	$d_d$ (2) min.		$D_a$ max.	$D_b$ max.	$D_b$ min.	$r_a$ max.	$r_b$ max.
<b>NU1048</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	—	253	253	266	275	—	347	347	333	2.5	2.5	19.5
<b>N 248</b>	—	—	—	<b>N</b>	<b>NF</b>	256	—	—	—	—	—	424	392	3	3	49.6
<b>NU 248</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	—	—	256	256	289	298	316	424	—	—	3	3	50.4
<b>NU2248</b>	<b>NU</b>	—	—	—	—	—	256	289	298	316	424	—	—	3	3	84.9
<b>N 348</b>	—	—	—	<b>N</b>	—	260	—	—	—	—	—	480	438	4	4	92.3
<b>NU 348</b>	<b>NU</b>	<b>NJ</b>	—	—	—	260	260	304	313	333	480	—	—	4	4	94.6
<b>NU1052</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	<b>NF</b>	276	276	292	300	—	384	384	367	3	3	29.1
<b>N 252</b>	—	—	—	<b>N</b>	—	280	—	—	—	—	—	460	428	4	4	66.2
<b>NU 252</b>	<b>NU</b>	<b>NJ</b>	—	—	—	280	280	314	323	343	460	—	—	4	4	67.1
<b>NU2252</b>	<b>NU</b>	—	<b>NUP</b>	—	—	280	280	314	323	343	460	—	—	4	4	111
<b>NU 352</b>	<b>NU</b>	<b>NJ</b>	—	—	—	286	286	330	339	359	514	—	—	5	5	118
<b>NU1056</b>	<b>NU</b>	<b>NJ</b>	<b>NUP</b>	<b>N</b>	<b>NF</b>	296	296	312	320	—	404	404	387	3	3	30.8
<b>N 256</b>	—	—	—	<b>N</b>	<b>NF</b>	300	—	—	—	—	—	480	448	4	4	69.6
<b>NU 256</b>	<b>NU</b>	<b>NJ</b>	—	—	—	300	300	334	344	364	480	—	—	4	4	70.7
<b>NU1060</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	<b>NF</b>	316	316	336	344	—	444	444	424	3	3	43.7
<b>NU 260</b>	<b>NU</b>	<b>NJ</b>	—	—	—	320	320	358	368	391	520	—	—	4	4	89.2
<b>NU1064</b>	<b>NU</b>	—	—	<b>N</b>	<b>NF</b>	336	336	356	365	—	464	464	444	3	3	46.1
<b>N 264</b>	—	—	—	<b>N</b>	—	340	—	—	—	—	—	560	519	4	4	110
<b>NU 264</b>	<b>NU</b>	<b>NJ</b>	—	—	—	340	340	384	394	420	560	—	—	4	4	112
<b>NU1068</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	<b>NF</b>	360	360	381	390	—	500	500	479	4	4	61.8
<b>NU1072</b>	<b>NU</b>	—	—	<b>N</b>	<b>NF</b>	380	380	400	410	—	520	520	499	4	4	64.6
<b>NU1076</b>	<b>NU</b>	—	—	—	—	—	400	420	430	—	540	—	—	4	4	67.5
<b>NU1080</b>	<b>NU</b>	—	<b>NUP</b>	<b>N</b>	—	420	420	445	455	—	580	580	554.5	4	4	88.2
<b>NU1084</b>	<b>NU</b>	—	—	<b>N</b>	—	440	440	465	475	—	600	600	574.5	4	4	91.7
<b>NU1088</b>	<b>NU</b>	—	—	—	—	—	466	488	498	—	624	—	—	5	5	105
<b>NU1092</b>	<b>NU</b>	—	<b>NUP</b>	<b>N</b>	—	486	486	511	521	—	654	654	628.5	5	5	123
<b>NU1096</b>	<b>NU</b>	<b>NJ</b>	—	<b>N</b>	—	506	506	531	541	—	674	674	654	5	5	127
<b>NU10/500</b>	<b>NU</b>	—	—	<b>N</b>	—	526	526	551	558	—	694	694	674	5	5	131



L-Shaped Thrust Collars

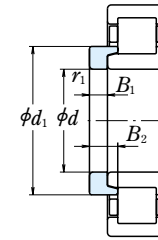
Bore Diameter 20 – 85 mm



L-Shaped Thrust Collar

d	Boundary Dimensions (mm)				Bearing Numbers	Mass (kg) approx.
	d <sub>1</sub>	B <sub>1</sub>	B <sub>2</sub>	r <sub>1</sub> min.		
20	30	3	6.75	0.6	HJ 204	0.012
	29.8	3	5.5	0.6	HJ 204 E	0.011
	30	3	7.5	0.6	HJ 2204	0.012
	29.8	3	6.5	0.6	HJ 2204 E	0.012
	31.8	4	7.5	0.6	HJ 304	0.017
	31.4	4	6.5	0.6	HJ 304 E	0.017
	31.8	4	8.5	0.6	HJ 2304	0.017
	31.4	4	7.5	0.6	HJ 2304 E	0.018
25	34.8	3	6	0.6	HJ 205 E	0.014
	34.8	3	6.5	0.6	HJ 2205 E	0.014
	38.2	4	7	1.1	HJ 305 E	0.025
	38.2	4	8	1.1	HJ 2305 E	0.026
30	43.6	6	10.5	1.5	HJ 405	0.057
	41.4	4	7	0.6	HJ 206 E	0.025
35	41.4	4	7.5	0.6	HJ 2206 E	0.025
	45.1	5	8.5	1.1	HJ 306 E	0.042
	45.1	5	9.5	1.1	HJ 2306 E	0.043
	50.5	7	11.5	1.5	HJ 406	0.080
	48.2	4	7	0.6	HJ 207 E	0.033
	48.2	4	8.5	0.6	HJ 2207 E	0.035
	51.1	6	9.5	1.1	HJ 307 E	0.060
	51.1	6	11	1.1	HJ 2307 E	0.062
	59	8	13	1.5	HJ 407	0.12
	40	54.1	5	8.5	1.1	HJ 208 E
54.1		5	9	1.1	HJ 2208 E	0.050
57.7		7	11	1.5	HJ 308 E	0.088
57.7		7	12.5	1.5	HJ 2308 E	0.091
64.8		8	13	2	HJ 408	0.14
45		59.1	5	8.5	1.1	HJ 209 E
	59.1	5	9	1.1	HJ 2209 E	0.055
	64.5	7	11.5	1.5	HJ 309 E	0.11
	64.5	7	13	1.5	HJ 2309 E	0.113
	71.8	8	13.5	2	HJ 409	0.175
50	64.1	5	9	1.1	HJ 210 E	0.061
	64.1	5	9	1.1	HJ 2210 E	0.061
	71.4	8	13	2	HJ 310 E	0.151
	71.4	8	14.5	2	HJ 2310 E	0.155
	78.8	9	14.5	2.1	HJ 410	0.23

Bore Diameter 90~320 mm



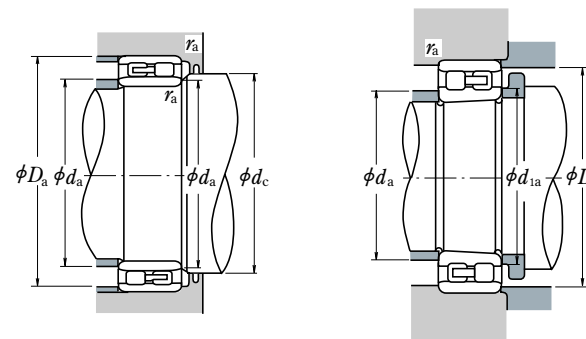
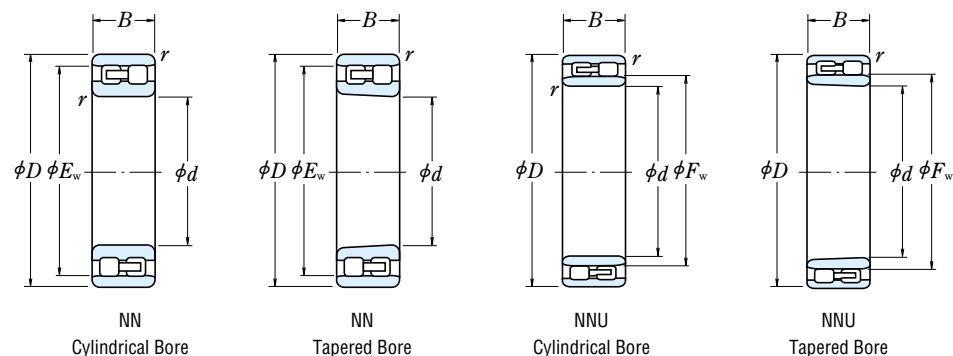
L-Shaped Thrust Collar

d	Boundary Dimensions (mm)				Bearing Numbers	Mass (kg) approx.	
	d <sub>1</sub>	B <sub>1</sub>	B <sub>2</sub>	r <sub>1</sub> min.			
55	70.9	6	9.5	1.1	HJ 211 E	0.087	
	70.9	6	10	1.1	HJ 2211 E	0.088	
	77.6	9	14	2	HJ 311 E	0.195	
	77.6	9	15.5	2	HJ 2311 E	0.20	
	85.2	10	16.5	2.1	HJ 411	0.29	
	60	77.7	6	10	1.5	HJ 212 E	0.108
		77.7	6	10	1.5	HJ 2212 E	0.108
84.5		9	14.5	2.1	HJ 312 E	0.231	
84.5		9	16	2.1	HJ 2312 E	0.237	
65	91.8	10	16.5	2.1	HJ 412	0.34	
	84.5	6	10	1.5	HJ 213 E	0.129	
	84.5	6	10.5	1.5	HJ 2213 E	0.131	
	90.6	10	15.5	2.1	HJ 313 E	0.288	
70	90.6	10	18	2.1	HJ 2313 E	0.298	
	98.5	11	18	2.1	HJ 413	0.42	
	89.5	7	11	1.5	HJ 214 E	0.157	
	89.5	7	11.5	1.5	HJ 2214 E	0.158	
	97.5	10	15.5	2.1	HJ 314 E	0.33	
	97.5	10	18.5	2.1	HJ 2314 E	0.345	
75	110.5	12	20	3	HJ 414	0.605	
	94.5	7	11	1.5	HJ 215 E	0.166	
	94.5	7	11.5	1.5	HJ 2215 E	0.167	
	104.2	11	16.5	2.1	HJ 315 E	0.41	
80	104.2	11	19.5	2.1	HJ 2315 E	0.43	
	116	13	21.5	3	HJ 415	0.71	
	101.6	8	12.5	2	HJ 216 E	0.222	
	101.6	8	12.5	2	HJ 2216 E	0.222	
	110.6	11	17	2.1	HJ 316 E	0.46	
85	110.6	11	20	2.1	HJ 2316 E	0.48	
	122	13	22	3	HJ 416	0.78	
	107.6	8	12.5	2	HJ 217 E	0.25	
	107.6	8	13	2	HJ 2217 E	0.252	
	117.9	12	18.5	3	HJ 317 E	0.575	
120	117.9	12	22	3	HJ 2317 E	0.595	
	126	14	24	4	HJ 417	0.88	

d	Boundary Dimensions (mm)				Bearing Numbers	Mass (kg) approx.
	d <sub>1</sub>	B <sub>1</sub>	B <sub>2</sub>	r <sub>1</sub> min.		
90	114.3	9	14	2	HJ 218 E	0.32
	114.3	9	15	2	HJ 2218 E	0.325
	124.2	12	18.5	3	HJ 318 E	0.63
	124.2	12	22	3	HJ 2318 E	0.66
	137	14	24	4	HJ 418	1.05
95	120.6	9	14	2.1	HJ 219 E	0.355
	120.6	9	15.5	2.1	HJ 2219 E	0.365
	132.2	13	20.5	3	HJ 319 E	0.785
	132.2	13	24.5	3	HJ 2319 E	0.815
100	147	15	25.5	4	HJ 419	1.3
	127.5	10	15	2.1	HJ 220 E	0.44
	127.5	10	16	2.1	HJ 2220 E	0.45
	139.6	13	20.5	3	HJ 320 E	0.89
	139.6	13	23.5	3	HJ 2320 E	0.92
105	153.5	16	27	4	HJ 420	1.5
	147	13	20.5	3	HJ 321 E	0.97
	159.5	16	27	4	HJ 421	1.65
110	141.7	11	17	2.1	HJ 222 E	0.62
	141.7	11	19.5	2.1	HJ 2222 E	0.645
	155.8	14	22	3	HJ 322 E	1.21
	155.8	14	26.5	3	HJ 2322 E	1.27
	171	17	29.5	4	HJ 422	2.1
120	153.4	11	17	2.1	HJ 224 E	0.71
	153.4	11	20	2.1	HJ 2224 E	0.745
	168.6	14	22.5	3	HJ 324 E	1.41
	168.6	14	26	3	HJ 2324 E	1.46
	188	17	30.5	5	HJ 424	2.6
	130	164.2	11	17	3	HJ 226 E
164.2		11	21	3	HJ 2226 E	0.84
182.3		14	23	4	HJ 326 E	1.65
182.3		14	28	4	HJ 2326 E	1.73
205		18	32	5	HJ 426	3.3
140	180	11	18	3	HJ 228 E	0.99
	180	11	23	3	HJ 2228 E	1.07
	196	15	25	4	HJ 328 E	2.04
	196	15	31	4	HJ 2328 E	2.14
	219	18	33	5	HJ 428	3.75

d	Boundary Dimensions (mm)				Bearing Numbers	Mass (kg) approx.
	d <sub>1</sub>	B <sub>1</sub>	B <sub>2</sub>	r <sub>1</sub> min.		
150	193.7	12	19.5	3	HJ 230 E	1.26
	193.7	12	24.5	3	HJ 2230 E	1.35
	210	15	25	4	HJ 330 E	2.35
	210	15	31.5	4	HJ 2330 E	2.48
160	234	20	36.5	5	HJ 430	4.7
	207.3	12	20	3	HJ 232 E	1.48
170	206.1	12	24.5	3	HJ 2232 E	1.55
	222.1	15	25	4	HJ 332 E	2.59
	222.1	15	32	4	HJ 2332 E	2.76
	220.8	12	20	4	HJ 234 E	1.7
180	219.5	12	24	4	HJ 2234 E	1.79
	238	16	33.5	4	HJ 434	3.25
	230.8	12	20	4	HJ 236 E	1.79
190	229.5	12	24	4	HJ 2236 E	1.88
	252	17	35	4	HJ 436	3.85
	244.5	13	21.5	4	HJ 238 E	2.19
	243.2	13	26.5	4	HJ 2238 E	2.31
200	266	18	36.5	5	HJ 438	4.45
	258.2	14	23	4	HJ 240 E	2.65
	258	14	34	4	HJ 2240	2.6
	256.9	14	28	4	HJ 2240 E	2.78
220	280	18	30	5	HJ 340 E	5.0
	286	15	27.5	4	HJ 244	3.55
	286	15	36.5	4	HJ 2244	3.55
	307	20	36	5	HJ 344	7.05
240	313	16	29.5	4	HJ 248	4.65
	313	16	38.5	4	HJ 2248	4.65
	335	22	39.5	5	HJ 348	8.2
260	340	18	33	5	HJ 252	6.2
	340	18	40.5	5	HJ 2252	6.2
	362	24	43	6	HJ 352	11.4
280	360	18	33	5	HJ 256	7.4
	387	20	34.5	5	HJ 260	9.15
320	415	21	37	5	HJ 264	11.3

Bore Diameter 25 – 140 mm



d	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B	r min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
25	47	16	0.6	—	41.3	25 800	30 000	14 000	17 000
30	55	19	1	—	48.5	31 000	37 000	12 000	14 000
35	62	20	1	—	55	39 500	50 000	10 000	12 000
40	68	21	1	—	61	43 500	55 500	9 000	11 000
45	75	23	1	—	67.5	52 000	68 500	8 500	10 000
50	80	23	1	—	72.5	53 000	72 500	7 500	9 000
55	90	26	1.1	—	81	69 500	96 500	6 700	8 000
60	95	26	1.1	—	86.1	73 500	106 000	6 300	7 500
65	100	26	1.1	—	91	77 000	116 000	6 000	7 100
70	110	30	1.1	—	100	97 500	148 000	5 600	6 700
75	115	30	1.1	—	105	96 500	149 000	5 300	6 300
80	125	34	1.1	—	113	119 000	186 000	4 800	6 000
85	130	34	1.1	—	118	125 000	201 000	4 500	5 600
90	140	37	1.5	—	127	143 000	228 000	4 300	5 000
95	145	37	1.5	—	132	150 000	246 000	4 000	5 000
100	140	40	1.1	112	—	155 000	295 000	4 000	5 000
	150	37	1.5	—	137	157 000	265 000	4 000	4 800
105	145	40	1.1	117	—	161 000	315 000	3 800	4 800
	160	41	2	—	146	198 000	320 000	3 800	4 500
110	150	40	1.1	122	—	167 000	335 000	3 600	4 500
	170	45	2	—	155	229 000	375 000	3 400	4 300
120	165	45	1.1	133.5	—	183 000	360 000	3 200	4 000
	180	46	2	—	165	239 000	405 000	3 200	3 800
130	180	50	1.5	144	—	274 000	545 000	3 000	3 800
	200	52	2	—	182	284 000	475 000	3 000	3 600
140	190	50	1.5	154	—	283 000	585 000	2 800	3 600
	210	53	2	—	192	298 000	515 000	2 800	3 400

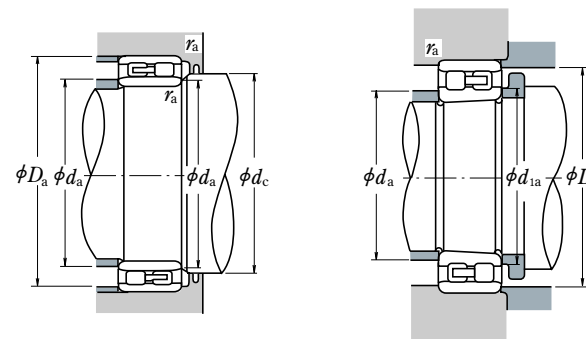
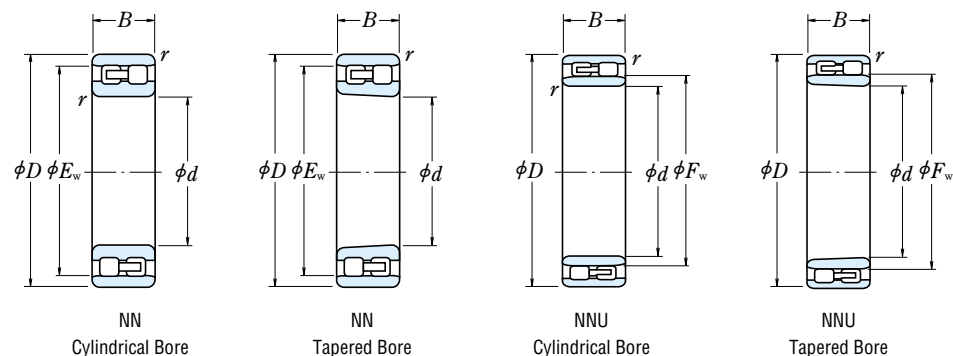
Bearing Numbers		Abutment and Fillet Dimensions (mm)							Mass (kg)
Cylindrical Bore	Tapered Bore <sup>(1)</sup>	d <sub>a</sub> <sup>(2)</sup>		d <sub>c</sub>		D <sub>a</sub>		r <sub>a</sub>	approx.
		min.	max.	min.	max.	min.	max.	min.	
NN 3005	NN 3005 K	29	—	29	—	43	42	0.6	0.127
NN 3006	NN 3006 K	35	—	36	—	50	50	1	0.198
NN 3007	NN 3007 K	40	—	41	—	57	56	1	0.258
NN 3008	NN 3008 K	45	—	46	—	63	62	1	0.309
NN 3009	NN 3009 K	50	—	51	—	70	69	1	0.407
NN 3010	NN 3010 K	55	—	56	—	75	74	1	0.436
NN 3011	NN 3011 K	61.5	—	62	—	83.5	83	1	0.647
NN 3012	NN 3012 K	66.5	—	67	—	88.5	88	1	0.693
NN 3013	NN 3013 K	71.5	—	72	—	93.5	93	1	0.741
NN 3014	NN 3014 K	76.5	—	77	—	103.5	102	1	1.06
NN 3015	NN 3015 K	81.5	—	82	—	108.5	107	1	1.11
NN 3016	NN 3016 K	86.5	—	87	—	118.5	115	1	1.54
NN 3017	NN 3017 K	91.5	—	92	—	123.5	120	1	1.63
NN 3018	NN 3018 K	98	—	99	—	132	129	1.5	2.09
NN 3019	NN 3019 K	103	—	104	—	137	134	1.5	2.19
NNU 4920	NNU 4920 K	106.5	111	108	115	133.5	—	1	1.9
NN 3020	NN 3020 K	108	—	109	—	142	139	1.5	2.28
NNU 4921	NNU 4921 K	111.5	116	113	120	138.5	—	1	1.99
NN 3021	NN 3021 K	114	—	115	—	151	148	2	2.88
NNU 4922	NNU 4922 K	116.5	121	118	125	143.5	—	1	2.07
NN 3022	NN 3022 K	119	—	121	—	161	157	2	3.71
NNU 4924	NNU 4924 K	126.5	133	128	137	158.5	—	1	2.85
NN 3024	NN 3024 K	129	—	131	—	171	167	2	4.04
NNU 4926	NNU 4926 K	138	143	140	148	172	—	1.5	3.85
NN 3026	NN 3026 K	139	—	141	—	191	185	2	5.88
NNU 4928	NNU 4928 K	148	153	150	158	182	—	1.5	4.08
NN 3028	NN 3028 K	149	—	151	—	201	195	2	6.34

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

Remarks Production of double-row cylindrical roller bearings is generally in the high precision classes (Class 5 or better).

Note <sup>(2)</sup> d<sub>a</sub> (max.) are values for adjusting rings for the NNU Type.

Bore Diameter 150 – 360 mm



d	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B	r min.	F <sub>w</sub>	E <sub>w</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
150	210	60	2	167	—	350 000	715 000	2 600	3 200
	225	56	2.1	—	206	335 000	585 000	2 600	3 000
160	220	60	2	177	—	365 000	760 000	2 400	3 000
	240	60	2.1	—	219	375 000	660 000	2 400	2 800
170	230	60	2	187	—	375 000	805 000	2 400	2 800
	260	67	2.1	—	236	450 000	805 000	2 200	2 600
180	250	69	2	200	—	480 000	1 020 000	2 200	2 600
	280	74	2.1	—	255	565 000	995 000	2 000	2 400
190	260	69	2	211.5	—	485 000	1 060 000	2 000	2 600
	290	75	2.1	—	265	595 000	1 080 000	2 000	2 400
200	280	80	2.1	223	—	570 000	1 220 000	1 900	2 400
	310	82	2.1	—	282	655 000	1 170 000	1 800	2 200
220	300	80	2.1	243	—	600 000	1 330 000	1 700	2 200
	340	90	3	—	310	815 000	1 480 000	1 700	2 000
240	320	80	2.1	263	—	625 000	1 450 000	1 600	2 000
	360	92	3	—	330	855 000	1 600 000	1 500	1 800
260	360	100	2.1	289	—	935 000	2 100 000	1 400	1 800
	400	104	4	—	364	1 030 000	1 920 000	1 400	1 700
280	380	100	2.1	309	—	960 000	2 230 000	1 300	1 700
	420	106	4	—	384	1 080 000	2 080 000	1 300	1 500
300	420	118	3	336	—	1 230 000	2 870 000	1 200	1 500
	460	118	4	—	418	1 290 000	2 460 000	1 200	1 400
320	440	118	3	356	—	1 260 000	3 050 000	1 100	1 400
	480	121	4	—	438	1 350 000	2 670 000	1 100	1 300
340	520	133	5	—	473	1 670 000	3 300 000	1 000	1 200
360	540	134	5	—	493	1 700 000	3 450 000	950	1 200

Bearing Numbers		Abutment and Fillet Dimensions (mm)							Mass (kg)
Cylindrical Bore	Tapered Bore <sup>(1)</sup>	d <sub>a</sub> <sup>(2)</sup> min.	d <sub>a</sub> <sup>(2)</sup> max.	d <sub>1a</sub> min.	d <sub>c</sub> min.	D <sub>a</sub> max.	r <sub>a</sub> min.	r <sub>a</sub> max.	approx.
<b>NNU 4930</b>	<b>NNU 4930 K</b>	159	166	162	171	201	—	2	6.39
<b>NN 3030</b>	<b>NN 3030 K</b>	161	—	162	—	214	209	2	7.77
<b>NNU 4932</b>	<b>NNU 4932 K</b>	169	176	172	182	211	—	2	6.76
<b>NN 3032</b>	<b>NN 3032 K</b>	171	—	172	—	229	222	2	9.41
<b>NNU 4934</b>	<b>NNU 4934 K</b>	179	186	182	192	221	—	2	7.12
<b>NN 3034</b>	<b>NN 3034 K</b>	181	—	183	—	249	239	2	12.8
<b>NNU 4936</b>	<b>NNU 4936 K</b>	189	199	193	205	241	—	2	10.4
<b>NN 3036</b>	<b>NN 3036 K</b>	191	—	193	—	269	258	2	16.8
<b>NNU 4938</b>	<b>NNU 4938 K</b>	199	211	203	217	251	—	2	10.9
<b>NN 3038</b>	<b>NN 3038 K</b>	201	—	203	—	279	268	2	17.8
<b>NNU 4940</b>	<b>NNU 4940 K</b>	211	222	214	228	269	—	2	15.3
<b>NN 3040</b>	<b>NN 3040 K</b>	211	—	214	—	299	285	2	22.7
<b>NNU 4944</b>	<b>NNU 4944 K</b>	231	242	234	248	289	—	2	16.6
<b>NN 3044</b>	<b>NN 3044 K</b>	233	—	236	—	327	313	2.5	29.6
<b>NNU 4948</b>	<b>NNU 4948 K</b>	251	262	254	269	309	—	2	18
<b>NN 3048</b>	<b>NN 3048 K</b>	253	—	256	—	347	334	2.5	32.7
<b>NNU 4952</b>	<b>NNU 4952 K</b>	271	288	275	295	349	—	2	31.1
<b>NN 3052</b>	<b>NN 3052 K</b>	276	—	278	—	384	368	3	47.7
<b>NNU 4956</b>	<b>NNU 4956 K</b>	291	308	295	315	369	—	2	33
<b>NN 3056</b>	<b>NN 3056 K</b>	296	—	298	—	404	388	3	51.1
<b>NNU 4960</b>	<b>NNU 4960 K</b>	313	335	318	343	407	—	2.5	51.9
<b>NN 3060</b>	<b>NN 3060 K</b>	316	—	319	—	444	422	3	70.7
<b>NNU 4964</b>	<b>NNU 4964 K</b>	333	355	338	363	427	—	2.5	54.9
<b>NN 3064</b>	<b>NN 3064 K</b>	336	—	340	—	464	442	3	76.6
<b>NN 3068</b>	<b>NN 3068 K</b>	360	—	365	—	500	477	4	102
<b>NN 3072</b>	<b>NN 3072 K</b>	380	—	385	—	520	497	4	106

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

Remarks Production of double-row cylindrical roller bearings is generally in the high precision classes (Class 5 or better).

Note <sup>(2)</sup> d<sub>a</sub> (max.) are values for adjusting rings for the NNU Type.