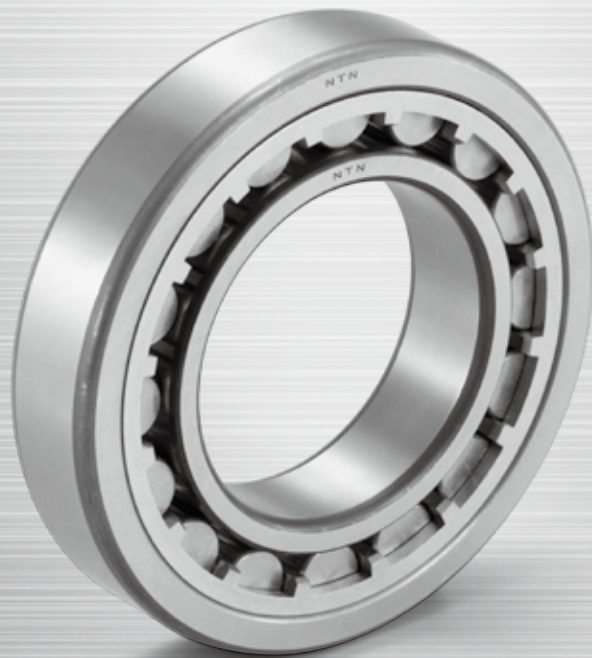


Cylindrical Roller Bearings



Cylindrical roller bearing



E Type cylindrical roller bearing



Double-row cylindrical roller bearing

1. Types, design features, and characteristics

Cylindrical roller bearings can accommodate heavy radial loads due to the line contact formed between their rolling elements and raceways. These bearings are also suitable for high speed applications since the rollers are guided by either inner or outer ring ribs. Cylindrical roller bearings are separable, allowing them to be easily installed and disassembled even when interference fits are required.

Among the various types of cylindrical roller bearings, E type and EA type have a high load capacity while maintaining standard boundary dimensions. HT type has a large axial load

capacity, and HL type provides extended fatigue life in poor lubrication conditions. Multiple row bearing arrangements are also available.

For extremely heavy load applications, the non-separable full complement SL type bearing offers special advantages. For SL type and four-row cylindrical roller bearings, see section "C. Special application bearings."

Table 1 shows the various types and characteristics of single row cylindrical roller bearings. Table 2 shows the characteristics of non-standard type cylindrical roller bearings.

Table 1 Cylindrical roller bearing types and characteristics







Type code	Design	Characteristics
NU type N type	 <p>NU type</p>  <p>N type</p>	<ul style="list-style-type: none"> • NU type outer rings have two ribs. The outer ring, roller, and cage assembly can be separated from the inner ring. • N type inner rings have two ribs. The inner ring, roller, and cage assembly can be separated from the outer ring. • Unable to accommodate any axial loading. • This is widely used as the floating side bearing in a fixed-float arrangement.
NJ type NF type	 <p>NJ type</p>  <p>NF type</p>	<ul style="list-style-type: none"> • NJ type has two ribs on the outer ring, a single rib on the inner ring; NF type has a single rib on the outer ring, and two ribs on the inner ring. • Can receive single direction axial loads. • When there is no distinction between the fixed side and floating side bearing, these types can be used as a pair in close proximity.
NUP type NH type (NJ+HJ)	 <p>NUP type</p>  <p>NH type</p>	<ul style="list-style-type: none"> • NUP type has a collar ring attached to the ribless side of the inner ring; NH type is NJ type with an L type collar ring attached. All of these collar rings are separable, and therefore it is necessary to fix the inner ring axially. • Can accommodate axial loads in either direction. • Widely used as the shaft's fixed-side bearing.

Table 2 Non-standard type cylindrical roller bearing characteristics

Designation	Characteristics
E type and EA type Cylindrical roller bearing	<ul style="list-style-type: none"> Boundary dimensions are the same as the standard type, but the diameter, length and number of the rollers have been increased, resulting in higher load capacity. Identified by the addition of "E" to the end of the basic roller number. Enables compact design due increased load rating. Rollers' inscribed circle diameter differs from the standard type rollers and therefore cannot be interchanged. EA type bearings are ULTAGE series¹⁾. <p>Note: In the dimension tables, both E type and EA type are listed.</p>
Cylindrical roller bearing for axial loads (HT type)	<ul style="list-style-type: none"> Can accommodate larger axial loads than the standard type due to improved geometry of the rib roller end surface. Please consult NTN Engineering concerning necessary considerations, such as load, lubricant, and installation conditions.
Double-row cylindrical roller bearing	<ul style="list-style-type: none"> NN type and NNU type are available. Widely used for applications requiring thin-walled bearings, such the main shafts of machine tools, rolling machine rollers, and in printing equipment. Internal radial clearance is adjusted for the spindle of machine tools by pressing the tapered bore of the inner ring on a tapered shaft. <p>Remarks: For precision bearings for machine tools, see precision rolling bearings (CAT. No. 2260/E).</p>

1) ULTAGE series cylindrical roller bearings has been developed for "longer life," "improved loading capability," and "higher speed," which are required for various types of industrial machinery. For details, see **the special catalog (CAT. No. 3037/E)**.

2. Standard cage type

Table 3 shows the standard cage types for cylindrical roller bearings.

The basic load ratings listed in the dimension charts correspond to use of the standard cages listed in Table 3. The basic load ratings

listed in the dimension tables are for standard configurations. These ratings can change when a different cage type and number of rolling elements is utilized.

Table 3 Standard cage types

Cage type	Resin cage	Pressed cage	Machined cage	
			Single type	Studded double type
Bearing series				
NU10	—	—	—	1005 to 10/500
NU2	—	208 to 230	232 to 240	244 to 264
NU2E	—	—	220E to 240E	—
NU2EA	204EA to 219EA	—	—	—
NU22	—	2208 to 2230	2232 to 2240	2244 to 2264
NU22E	—	—	2219E to 2240E	—
NU22EA	2204EA to 2218EA	—	—	—
NU3	—	308 to 324	326 to 330	332 to 356
NU3E	—	—	316E to 332E	—
NU3EA	304EA to 315EA	—	—	—
NU23	—	2308 to 2320	2322 to 2330	2332 to 2356
NU23E	—	—	2316E to 2332E	—
NU23EA	2304EA to 2315EA	—	—	—
NU4	—	405 to 416	—	—

Note: 1. Within the same bearing series, cage type is constant regardless of the cylindrical roller bearing type (NJ, NUP, N, NF).
 2. For high speed and other special applications, machined cages can be manufactured when necessary. Consult **NTN** Engineering.
 3. Among EA type bearings that use resin cages as standard, certain varieties use pressed cages. Consult **NTN** Engineering.
 4. Although machined cages are the standard for two-row cylindrical roller bearings, resin cages may also be used in some of these bearings for machine tool applications.

3. Allowable misalignment

Edge loading due to misalignment under general load conditions should be avoided to prevent premature bearing failure. The maximum allowable misalignment based on bearing series can be found below. The values apply when the bearings are to be used as the floating side of NU and N types. For NJ, NUP, and NH types that are to be used for the fixed side, consult NTN Engineering. Depending on the magnitude of the axial load, the edge loading may exceed recommended limits, which could lead to a reduction in bearing life.

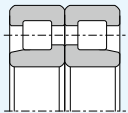
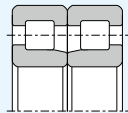
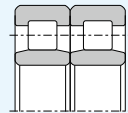
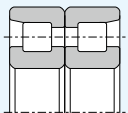
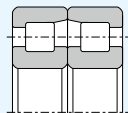
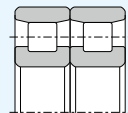
- Bearing series 0 or 1 1/1 000
- Bearing series 2 1/2 000
- Bearing series 0, 1, and 2 single-row ULTAGE 1/500
- Double-row cylindrical roller bearings¹⁾ 1/2 000

1) Does not include high precision bearings for machine tool main shaft applications.

4. Combinations of cylindrical roller bearings

Table 4 shows the representative combinations of bearings.

Table 4 Combination type

Back-to-back arrangement (DB)	Face-to-face arrangement (DF)	Symmetrical parts arrangement (D2)
 NJ type	 NJ type	 NU type
 NF type	 NF type	 N type

Note: 1. Bearings are manufactured in a set so that two bearings receive a load evenly; therefore, they must be assembled together with identically numbered bearings and not mixed with other arrangements.
2. Triplex arrangements of bearings are also available. Consult NTN Engineering for details.

5. Tolerance of inscribed circle diameter and circumscribed circle diameter of rollers of interchangeable cylindrical roller bearings

Table 5 Tolerance of inscribed circle diameter and circumscribed circle diameter of rollers of interchangeable cylindrical roller bearings

Unit: μm

Nominal bore diameter		Dimensional tolerance of roller inscribed circle diameter Δ_{FW}		Dimensional tolerance of roller circumscribed circle diameter Δ_{EW}	
d (mm)		Upper	Lower	Upper	Lower
Over	Incl.				
17 ¹⁾	20	+10	0	0	-10
20	50	+15	0	0	-15
50	120	+20	0	0	-20
120	200	+25	0	0	-25
200	250	+30	0	0	-30
250	315	+35	0	0	-35
315	400	+40	0	0	-40
400	500	+45	0	0	-45

1) 17 mm is included in this dimensional division.
Note: Interchangeable cylindrical roller bearings are bearings having the same number in the group. The bearing function is not impaired even if an outer ring is combined with an inner ring with rollers or an inner ring is combined with an outer ring with rollers.

6. Allowable speed of cylindrical roller bearing ULTAGE series

As the rotational speed of the bearing increases, the temperature of the bearing also increases because of the friction heat produced inside the bearing. Operation at excessive temperatures will significantly deteriorate the lubricant performance, causing abnormal temperature rises and seizure. Factors affecting the allowable speed of bearings are as follows.

- (1) Bearing type
- (2) Bearing size
- (3) Lubrication (grease lubrication, circulating lubrication, oil lubrication, etc.)
- (4) Bearing internal clearance (bearing internal clearance during operation)
- (5) Bearing load
- (6) Shaft and housing accuracy

The allowable speed specified in the bearing dimension table is the reference speed limit which allows for satisfactory heat dissipation and lubrication conditions before adversely affecting the bearing. The allowable speed of ULTAGE series cylindrical roller bearings specified in the catalog is defined as follows.

[Oil lubrication]

The allowable speed for oil lubrication is the speed at which the outer ring temperature reaches 80°C with room temperature spindle oil (lubrication oil viscosity: VG32) supplied at 1 liter/min under an operating load of 5% of the basic static load rating C_{0r} .

[Grease lubrication]

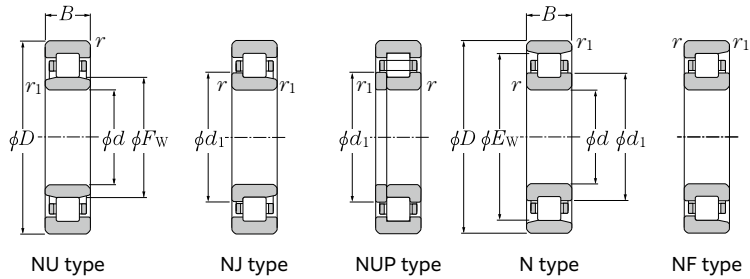
The allowable speed for grease lubrication is the speed at which the outer ring temperature reaches 80°C with lithium-based grease (consistency: NLGI3) filled 20%-30% of the free space under an operating load of 5% of the basic static load rating C_{0r} .

In either of the lubrication methods, the bearing temperature rise differs if the usage condition (operating load, rotational speed

pattern, lubricating condition, etc.) is different; therefore, the bearings must be selected with sufficient allowable speed as specified in the catalog.

If 80% of the allowable speed specified in the dimension table is exceeded or the bearing is used under vibration or impact conditions, please consult NTN Engineering.

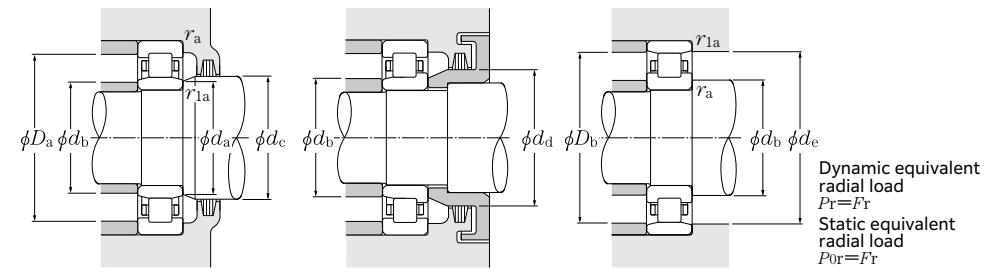
See section "9. Allowable speed" for the definition of the allowable speed of the cylindrical roller bearings that are not part of the ULTAGE series.



d 60 ~ 75mm

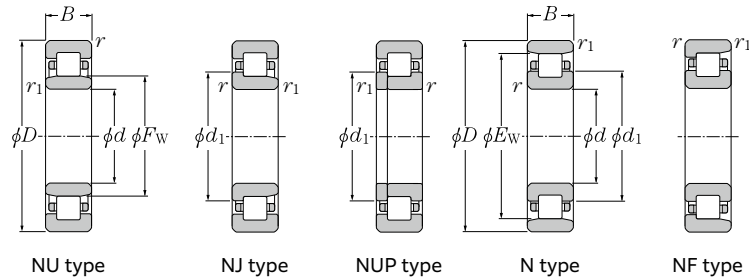
d	Boundary dimensions				Basic load rating		Fatigue load limit C_u	Allowable speed ²⁾		Bearing number ³⁾⁴⁾			
	D	B	$r_{s \min}^{1)}$	$r_{1s \min}^{1)}$	dynamic C_r	static C_{0r}		Grease lubrication	Oil lubrication	NU type	NJ type	NUP type	N type
60	130	31	2.1	2.1	137	126	15.4	5 500	6 500	**NU312	NJ	NUP	N
	130	31	2.1	2.1	177	157	19.1	4 900	7 000	**NU312EA	NJ	NUP	N
	130	46	2.1	2.1	187	188	22.9	4 800	5 700	**NU2312	NJ	NUP	N
	130	46	2.1	2.1	263	262	32.0	4 400	6 200	**NU2312EA	NJ	NUP	N
	150	35	2.1	2.1	185	168	20.2	3 900	4 600	NU412	NJ	NUP	N
65	100	18	1.1	1	45.5	51.0	6.30	7 000	8 200	NU1013	NJ	NUP	N
	120	23	1.5	1.5	93.0	94.5	11.5	5 900	7 000	**NU213	NJ	NUP	N
	120	23	1.5	1.5	127	119	14.5	5 400	7 600	**NU213EA	NJ	NUP	N
	120	31	1.5	1.5	133	149	18.2	5 400	6 300	**NU2213	NJ	NUP	N
	120	31	1.5	1.5	176	181	22.1	4 800	6 700	**NU2213EA	NJ	NUP	N
	140	33	2.1	2.1	150	139	16.8	5 100	6 000	**NU313	NJ	NUP	N
	140	33	2.1	2.1	213	191	23.1	4 600	6 500	**NU313EA	NJ	NUP	N
	140	48	2.1	2.1	208	212	25.7	4 400	5 200	**NU2313	NJ	NUP	N
70	110	20	1.1	1	64.5	70.5	8.60	6 500	7 600	NU1014	NJ	NUP	N
	125	24	1.5	1.5	92.5	95.0	11.6	5 500	6 500	**NU214	NJ	NUP	N
	125	24	1.5	1.5	140	137	16.7	5 000	7 100	**NU214EA	NJ	NUP	N
	125	31	1.5	1.5	132	151	18.4	5 000	5 900	**NU2214	NJ	NUP	N
	125	31	1.5	1.5	184	194	23.7	4 500	6 200	**NU2214EA	NJ	NUP	N
	150	35	2.1	2.1	175	168	20.0	4 700	5 500	**NU314	NJ	NUP	N
	150	35	2.1	2.1	242	222	26.2	4 200	6 000	**NU314EA	NJ	NUP	N
	150	51	2.1	2.1	247	262	31.0	4 100	4 800	**NU2314	NJ	NUP	N
75	115	20	1.1	1	66.5	74.5	9.10	6 100	7 100	NU1015	NJ	NUP	N
	130	25	1.5	1.5	107	111	13.4	5 100	6 000	**NU215	NJ	NUP	N
	130	25	1.5	1.5	154	156	18.9	4 700	6 600	**NU215EA	NJ	NUP	N
	130	31	1.5	1.5	144	162	19.6	4 700	5 500	**NU2215	NJ	NUP	N
	130	31	1.5	1.5	191	207	25.0	4 200	5 900	**NU2215EA	NJ	NUP	N
	160	37	2.1	2.1	211	205	23.8	4 400	5 200	**NU315	NJ	NUP	N
	160	37	2.1	2.1	284	263	30.5	4 000	5 600	**NU315EA	NJ	NUP	N
	160	55	2.1	2.1	286	300	35.0	3 800	4 500	**NU2315	NJ	NUP	N
190	45	3	3	291	274	30.5	3 200	3 700	NU415	NJ	NUP	N	

1) Smallest allowable dimension for chamfer dimension r or r₁.
 2) This value is for machined cages; when pressed cages are used, 80% of this value is acceptable.
 3) Bearing numbers marked "*" designate ULTAGE series bearings. 4) Bearing marked "**" are going to be integrated with ULTAGE Series.



NF type	Dimension			Installation-related dimensions								Mass			
	F _w	E _w	d ₁	d _a Min.	d _e Min.	d _b Max.	d _c Min.	d _d Min.	D _a Max.	D _b Max. Min. ⁵⁾	r _{as} Max.	r _{1as} Max.	NU type (approx.)	N type	
NF	77	113	84.2	71	71	75	79	86	119	119	116	2	2	1.8	1.76
NF	77	115	84.6	71	71	75	79	86	119	119	117	2	2	2.05	1.77
—	77	113	84.2	71	71	75	79	86	119	119	116	2	2	2.71	2.66
NF	77	115	84.6	71	71	75	79	86	119	119	117	2	2	2.96	2.73
NF	83	127	91.8	71	71	82	85	94	139	139	128	2	2	3	2.93
—	74.5	90.5	77.7	70	71.5	73	76	78.5	93.5	95	91.5	1	1	0.485	0.477
NF	79.6	105.6	84.8	73	73	77	81	87	112	112	108	1.5	1.5	1.02	1
NF	78.5	108.5	84.5	73	73	77	81	87	112	112	110	1.5	1.5	1.21	1.01
—	79.6	105.6	84.8	73	73	77	81	87	112	112	108	1.5	1.5	1.4	1.37
NF	78.5	108.5	84.5	73	73	77	81	87	112	112	110	1.5	1.5	1.6	1.44
NF	83.5	121.5	91	76	76	81	85	93	129	129	125	2	2	2.23	2.18
NF	82.5	124.5	91	76	76	81	85	93	129	129	127	2	2	2.54	2.2
—	83.5	121.5	91	76	76	81	85	93	129	129	125	2	2	3.27	3.2
NF	82.5	124.5	91	76	76	81	85	93	129	129	127	2	2	3.48	3.25
NF	89.3	135.3	98.5	76	76	88	91	100	149	149	137	2	2	3.6	3.5
—	80	100	84	75	76.5	78	82	85	103.5	105	101	1	1	0.699	0.689
NF	84.5	110.5	89.6	78	78	82	86	92	117	117	114	1.5	1.5	1.12	1.1
NF	83.5	113.5	89.5	78	78	82	86	92	117	117	115	1.5	1.5	1.3	1.13
—	84.5	110.5	89.6	78	78	82	86	92	117	117	114	1.5	1.5	1.47	1.44
NF	83.5	113.5	89.5	78	78	82	86	92	117	117	115	1.5	1.5	1.7	1.52
NF	90	130	98	81	81	87	92	100	139	139	134	2	2	2.71	2.65
NF	89	133	98	81	81	87	92	100	139	139	136	2	2	3.1	2.75
—	90	130	98	81	81	87	92	100	139	139	134	2	2	3.98	3.9
NF	89	133	98	81	81	87	92	100	139	139	136	2	2	4.25	3.95
NF	100	152	110.5	83	83	99	102	112	167	167	153	2.5	2.5	5.24	5.1
—	85	105	89	80	81.5	83	87	90	108.5	110	106	1	1	0.738	0.727
NF	88.5	116.5	94	83	83	87	90	96	122	122	120	1.5	1.5	1.23	1.21
NF	88.5	118.5	94.5	83	83	87	90	96	122	122	120	1.5	1.5	1.41	1.28
—	88.5	116.5	94	83	83	87	90	96	122	122	120	1.5	1.5	1.55	1.52
NF	88.5	118.5	94.5	83	83	87	90	96	122	122	120	1.5	1.5	1.79	1.61
NF	95.5	139.5	104.2	86	86	93	97	106	149	149	143	2	2	3.28	3.21
NF	95	143	104.6	86	86	93	97	106	149	149	146	2	2	3.74	3.28
—	95.5	139.5	104.2	86	86	93	97	106	149	149	143	2	2	4.87	4.77
NF	95	143	104.6	86	86	93	97	106	149	149	—	2	2	5.25	4.85
NF	104.5	160.5	116	88	88	103	107	118	177	177	162	2.5	2.5	6.22	6.06

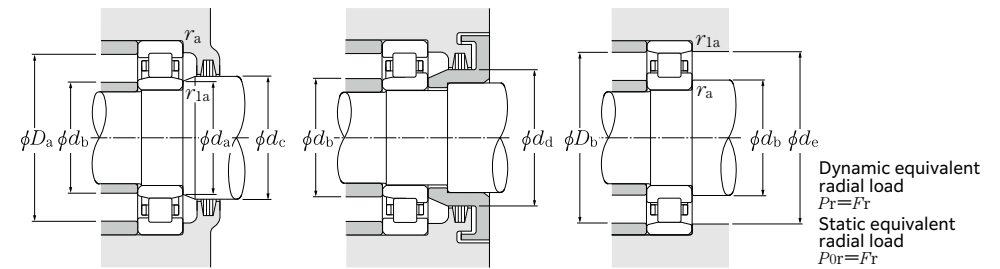
5) Does not apply to the sides of the outer ring rib of type NF bearings.



d 170 ~ 220mm

d	Boundary dimensions				Basic load rating		Fatigue load limit kN C _u	Allowable speed ²⁾		Bearing number			
	mm				dynamic	static		min ⁻¹					
	D	B	r _{s min¹⁾}	r _{1s min¹⁾}	C _r	C _{0r}		Grease lubrication	Oil lubrication	NU type	NJ type	NUP type	N type
170	260	42	2.1	2.1	310	400	38.5	2 600	3 000	NU1034	NJ	NUP	N
	310	52	4	4	530	635	59.5	2 200	2 500	NU234	NJ	NUP	N
	310	52	4	4	670	800	75.0	2 000	2 300	NU234E	NJ	NUP	—
	310	86	4	4	795	1 080	101	2 000	2 300	NU2234	NJ	NUP	N
	310	86	4	4	1 070	1 410	132	1 800	2 100	NU2234E	NJ	NUP	—
	360	72	4	4	885	1 010	92.0	1 800	2 200	NU334	NJ	NUP	N
	360	120	4	4	1 360	1 750	159	1 600	1 900	NU2334	NJ	NUP	N
180	280	46	2.1	2.1	380	485	46.5	2 400	2 900	NU1036	NJ	NUP	N
	320	52	4	4	550	675	62.5	2 000	2 400	NU236	NJ	NUP	N
	320	52	4	4	695	850	78.5	1 800	2 200	NU236E	NJ	NUP	—
	320	86	4	4	825	1 140	106	1 800	2 200	NU2236	NJ	NUP	N
	320	86	4	4	1 120	1 510	139	1 600	1 900	NU2236E	NJ	NUP	—
	380	75	4	4	1 000	1 150	103	1 700	2 000	NU336	NJ	NUP	N
	380	126	4	4	1 530	1 990	179	1 500	1 800	NU2336	NJ	NUP	N
190	290	46	2.1	2.1	390	510	48.0	2 300	2 700	NU1038	NJ	NUP	N
	340	55	4	4	615	770	70.0	1 900	2 200	NU238	NJ	NUP	N
	340	55	4	4	770	955	86.5	1 700	2 000	NU238E	NJ	NUP	—
	340	92	4	4	920	1 290	117	1 700	2 000	NU2238	NJ	NUP	N
	340	92	4	4	1 220	1 670	152	1 500	1 800	NU2238E	NJ	NUP	—
	400	78	5	5	1 080	1 260	111	1 600	1 900	NU338	NJ	NUP	N
	400	132	5	5	1 680	2 220	196	1 400	1 700	NU2338	NJ	NUP	N
200	310	51	2.1	2.1	430	580	53.5	2 200	2 600	NU1040	NJ	NUP	N
	360	58	4	4	690	865	77.5	1 800	2 100	NU240	NJ	NUP	N
	360	58	4	4	850	1 060	95.0	1 600	1 900	NU240E	NJ	NUP	—
	360	98	4	4	1 020	1 440	129	1 600	1 900	NU2240	NJ	NUP	N
	360	98	4	4	1 350	1 870	167	1 500	1 700	NU2240E	NJ	NUP	—
	420	80	5	5	1 080	1 270	111	1 500	1 800	NU340	NJ	NUP	N
	420	138	5	5	1 680	2 240	195	1 400	1 600	NU2340	NJ	NUP	N
220	340	56	3	3	555	750	67.0	2 000	2 300	NU1044	NJ	NUP	N
	400	65	4	4	845	1 080	94	1 600	1 900	NU244	NJ	NUP	N
	400	108	4	4	1 260	1 810	157	1 500	1 700	NU2244	NJ	NUP	N
	460	88	5	5	1 320	1 570	133	1 400	1 600	NU344	NJ	NUP	N
	460	145	5	5	1 970	2 620	222	1 200	1 400	NU2344	NJ	NUP	N

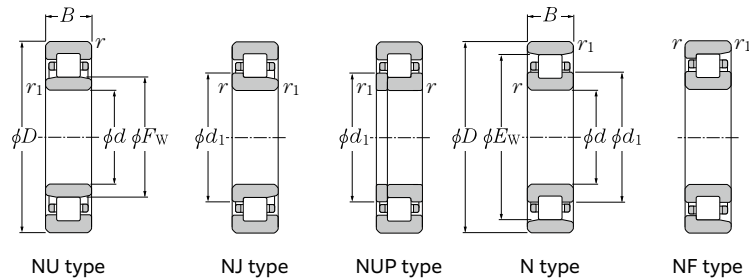
1) Smallest allowable dimension for chamfer dimension r or r_1 .
2) This value is for machined cages; when pressed cages are used, 80% of this value is acceptable.



Dynamic equivalent radial load
 $P_r = F_r$
Static equivalent radial load
 $P_{0r} = F_r$

NF type	Dimension				Installation-related dimensions										Mass	
	mm				mm										kg	
	F _w	E _w	d ₁	d _a Min.	d _e Min.	d _b Max.	d _c Min.	d _d Min.	D _a Max.	D _b Max.	D _b Min. ³⁾	r _{as} Max.	r _{1as} Max.	NU type (approx.)	N type	
—	193	237	201.8	181	181	190	197	203	249	249	239	2	2	7.88	7.76	
NF	208	272	220.5	186	186	204	211	223	294	294	277	3	3	17	16.7	
—	207	—	221.4	186	—	204	211	223	294	—	—	3	3	19.6	—	
—	208	272	220.5	186	186	204	211	223	294	294	277	3	3	27.2	26.7	
—	205	—	220.2	186	—	204	211	223	294	—	—	3	3	31	—	
NF	220	310	238	186	186	216	223	241	344	344	315	3	3	37	36.1	
—	220	310	238	186	186	216	223	241	344	344	315	3	3	59.5	58.3	
—	205	255	215	191	191	203	209	216	269	269	257	2	2	10.3	10.1	
NF	218	282	230.5	196	196	214	221	233	304	304	287	3	3	17.7	17.3	
—	217	—	231.4	196	—	214	221	233	304	—	—	3	3	20.4	—	
—	218	282	230.5	196	196	214	221	233	304	304	287	3	3	28.4	27.8	
—	215	—	230.2	196	—	214	221	233	304	—	—	3	3	31.9	—	
NF	232	328	252	196	196	227	235	255	364	364	333	3	3	44.2	43.2	
—	232	328	252	196	196	227	235	255	364	364	333	3	3	69.5	68.1	
—	215	265	225	201	201	213	219	226	279	279	267	2	2	10.7	10.5	
NF	231	299	244.5	206	206	227	234	247	324	324	304	3	3	21.3	20.8	
—	230	—	245.2	206	—	227	234	247	324	—	—	3	3	24.2	—	
—	231	299	244.5	206	206	227	234	247	324	324	304	3	3	34.4	33.7	
—	228	—	244	206	—	227	234	247	324	—	—	3	3	39.5	—	
NF	245	345	265	210	210	240	248	268	380	380	351	4	4	49.4	48.3	
—	245	345	265	210	210	240	248	268	380	380	351	4	4	80.5	78.9	
—	229	281	239.4	211	211	226	233	241	299	299	283	2	2	13.9	13.7	
NF	244	316	258	216	216	240	247	261	344	344	321	3	3	25.3	24.8	
—	243	—	259	216	—	240	247	261	344	—	—	3	3	28.1	—	
—	244	316	258	216	216	240	247	261	344	344	321	3	3	41.3	40.5	
—	241	—	257.8	216	—	240	247	261	344	—	—	3	3	47.8	—	
NF	260	360	280	220	220	254	263	283	400	400	366	4	4	55.8	54.5	
—	260	360	280	220	220	254	263	283	400	400	366	4	4	92.6	90.7	
—	250	310	262	233	233	248	254	264	327	327	313	2.5	2.5	18.2	17.9	
NF	270	350	286	236	236	266	273	289	384	384	355	3	3	37.7	37	
—	270	350	286	236	236	266	273	289	384	384	355	3	3	59	57.8	
NF	284	396	307	240	240	279	287	307	440	440	402	4	4	73.4	71.7	
—	284	396	307	240	240	279	287	307	440	440	402	4	4	116	114	

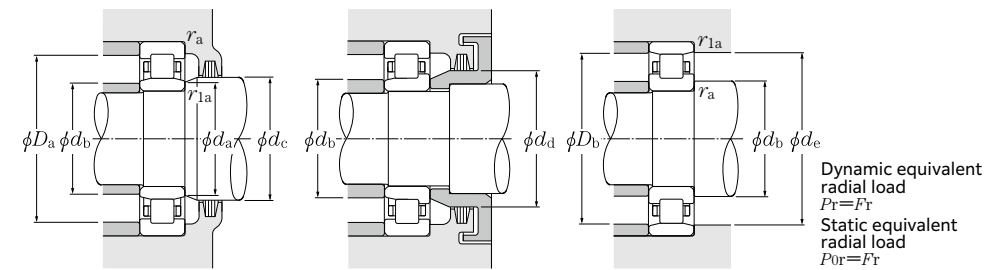
3) Does not apply to the sides of the outer ring rib of type NF bearings.



d 240 ~ 440mm

Boundary dimensions			Basic load rating		Fatigue load limit kN Cu	Allowable speed 2)		Bearing number					
d	D	B	dynamic C _r	static C _{0r}		Grease lubrication	Oil lubrication	NU type	NJ type	NUP type	N type		
		r _s min ¹⁾	r _{1s} min ¹⁾	kN		min ⁻¹							
240	360	56	3	3	585	820	72.0	1 800	2 100	NU1048	NJ	NUP	N
	440	72	4	4	1 040	1 340	113	1 500	1 700	NU248	NJ	NUP	N
	440	120	4	4	1 590	2 320	196	1 300	1 600	NU2248	NJ	NUP	N
	500	95	5	5	1 590	1 950	160	1 300	1 500	NU348	NJ	NUP	N
	500	155	5	5	2 330	3 200	262	1 100	1 300	NU2348	NJ	NUP	N
260	400	65	4	4	715	1 000	85.0	1 600	1 900	NU1052	NJ	NUP	N
	480	80	5	5	1 270	1 660	137	1 300	1 600	NU252	NJ	NUP	N
	480	130	5	5	1 980	2 930	241	1 200	1 400	NU2252	NJ	NUP	N
	540	102	6	6	1 790	2 230	180	1 200	1 400	NU352	NJ	NUP	N
	540	165	6	6	2 600	3 600	289	1 000	1 200	NU2352	NJ	NUP	N
280	420	65	4	4	730	1 050	88.0	1 500	1 800	NU1056	NJ	NUP	N
	500	80	5	5	1 320	1 760	143	1 200	1 400	NU256	NJ	NUP	N
	500	130	5	5	2 050	3 100	252	1 100	1 300	NU2256	NJ	NUP	N
	580	108	6	6	2 010	2 540	200	1 100	1 200	NU356	NJ	NUP	N
	580	175	6	6	3 000	4 250	335	920	1 100	NU2356	NJ	NUP	N
300	460	74	4	4	950	1 340	109	1 400	1 600	NU1060	NJ	NUP	N
	540	85	5	5	1 560	2 070	164	1 100	1 300	NU260	NJ	NUP	N
	540	140	5	5	2 420	3 650	290	1 000	1 200	NU2260	NJ	NUP	N
320	480	74	4	4	970	1 410	113	1 300	1 500	NU1064	NJ	NUP	N
	580	92	5	5	1 780	2 390	186	1 000	1 200	NU264	NJ	NUP	N
	580	150	5	5	2 830	4 350	340	950	1 100	NU2264	NJ	NUP	N
340	520	82	5	5	1 160	1 670	132	1 200	1 400	NU1068	NJ	NUP	N
360	540	82	5	5	1 190	1 750	136	1 100	1 300	NU1072	NJ	NUP	N
380	560	82	5	5	1 220	1 840	141	1 100	1 200	NU1076	NJ	NUP	N
400	600	90	5	5	1 460	2 190	164	990	1 200	NU1080	NJ	NUP	N
420	620	90	5	5	1 500	2 290	170	950	1 100	NU1084	NJ	NUP	N
440	650	94	6	6	1 590	2 430	178	900	1 100	NU1088	NJ	NUP	N

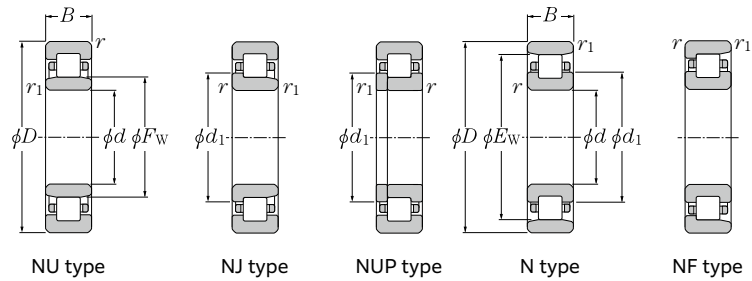
1) Smallest allowable dimension for chamfer dimension r or r₁.
 2) This value is for machined cages; when pressed cages are used, 80% of this value is acceptable.



NF type	Dimension				Installation-related dimensions								Mass		
	F _w	E _w	d ₁		d _a Min.	d _e Min.	d _b Max.	d _c Min.	d _d Min.	D _a Max.	D _b Max.	r _{as} Max.	r _{1as} Max.	NU type (approx.)	N type
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg
—	270	330	282	253	253	268	275	284	347	347	333	2.5	2.5	19.6	19.3
NF	295	385	313	256	256	293	298	316	424	424	390	3	3	50.2	49.2
—	295	385	313	256	256	293	298	316	424	424	390	3	3	80	78.4
NF	310	430	335	260	260	305	313	333	480	480	436	4	4	93.4	91.3
—	310	430	335	260	260	305	313	333	480	480	436	4	4	147	144
—	296	364	309.6	276	276	292	300	312	384	384	367	3	3	29.1	28.7
NF	320	420	340	280	280	318	323	343	460	460	426	4	4	66.9	65.6
—	320	420	340	280	280	318	323	343	460	460	426	4	4	104	102
NF	336	464	362	284	284	331	339	359	516	516	471	5	5	117	114
—	336	464	362	284	284	331	339	359	516	516	471	5	5	182	178
—	316	384	329.6	296	296	312	320	332	404	404	387	3	3	30.9	30.4
NF	340	440	360	300	300	336	343	365	480	480	446	4	4	70.8	69.4
—	340	440	360	300	300	336	343	365	480	480	446	4	4	109	107
NF	362	498	390	304	304	356	366	386	556	556	505	5	5	142	139
—	362	498	390	304	304	356	366	386	556	556	505	5	5	222	218
—	340	420	356	316	316	336	344	358	444	444	423	3	3	43.6	42.9
NF	364	476	387	320	320	361	368	392	520	520	482	4	4	88.2	86.4
—	364	476	387	320	320	361	368	392	520	520	482	4	4	138	135
—	360	440	376	336	336	356	364	378	464	464	443	3	3	46	45.3
NF	390	510	415	340	340	386	393	419	560	560	516	4	4	111	109
—	390	510	415	340	340	386	393	419	560	560	516	4	4	172	168
—	385	475	403	360	360	381	390	405	500	500	479	4	4	61.8	60.8
—	405	495	423	380	380	401	410	425	520	520	499	4	4	64.7	63.7
—	425	515	443	400	400	421	430	445	540	540	519	4	4	67.5	66.5
—	450	550	470	420	420	446	455	473	580	580	554	4	4	87.6	86.3
—	470	570	490	440	440	466	475	493	600	600	574	4	4	91	89.6
—	493	597	513.8	464	464	488	499	517	626	626	602	5	5	105	103

3) Does not apply to the sides of the outer ring rib of type NF bearings.

Cylindrical Roller Bearings

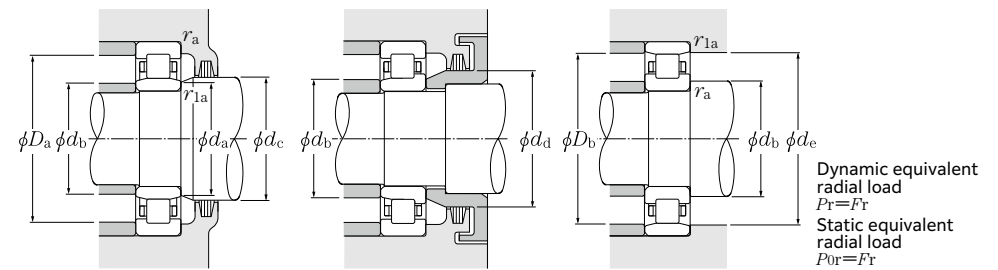


d 460 ~ 500mm

d	Boundary dimensions					Basic load rating		Fatigue load limit kN C _u	Allowable speed ²⁾		Bearing number				
	D	B	r _s min ¹⁾	r _{1s} min ¹⁾	mm	dynamic kN C _r	static kN C _{0r}		Grease lubrication	Oil lubrication	min ⁻¹	min ⁻¹	NU type	NJ type	NUP type
460	680	100	6	6	1 710	2 630	191	850	1 000			NU1092	NJ	NUP	N
480	700	100	6	6	1 750	2 750	197	810	960			NU1096	NJ	NUP	N
500	720	100	6	6	1 790	2 870	203	770	910			NU10/500	NJ	NUP	N

1) Smallest allowable dimension for chamfer dimension r or r₁.
2) This value is for machined cages; when pressed cages are used, 80% of this value is acceptable.

Cylindrical Roller Bearings

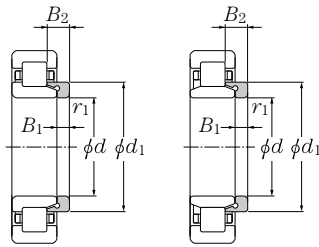


Dynamic equivalent radial load
 $P_r = F_r$
Static equivalent radial load
 $P_{0r} = F_r$

NF type	Dimension					Installation-related dimensions							Mass		
	F _w	E _w	d ₁	d _a Min.	d _e Min.	d _b Max.	d _c Min.	d _d Min.	mm D _a Max.	D _b Max.	Min. ³⁾	r _{as} Max.	r _{1as} Max.	kg NU type (approx.)	N type
—	516	624	537.6	484	484	511	522	541	656	656	629	5	5	122	120
—	536	644	557.6	504	504	531	542	561	676	676	649	5	5	126	124
—	556	664	577.6	524	524	551	562	581	696	696	669	5	5	130	128

3) Does not apply to the sides of the outer ring rib of type NF bearings.

L type collar ring



NH=NJ+HJ

NUJ=NU+HJ

d 105 ~ 200mm

d	Dimension mm				L type collar ring number	Mass kg (approx.)
	d ₁	B ₁	B ₂	r _{1s} min ¹⁾		
105	147	13	22.5	3	HJ321	0.97
110	141.5	11	18.5	2.1	HJ222	0.615
	142.1	11	17	2.1	HJ222E	0.553
	141.5	11	20.5	2.1	HJ2222	0.645
	142.1	11	19.5	2.1	HJ2222E	0.605
	155.5	14	23	3	HJ322	1.17
	156.6	14	22	3	HJ322E	1.09
	155.5	14	28	3	HJ2322	1.28
156.6	14	26.5	3	HJ2322E	1.25	
120	153	11	19	2.1	HJ224	0.715
	153.9	11	17	2.1	HJ224E	0.634
	153	11	22	2.1	HJ2224	0.767
	153.9	11	20	2.1	HJ2224E	0.705
	168.5	14	23.5	3	HJ324	1.4
	169.2	14	22.5	3	HJ324E	1.28
	168.5	14	28	3	HJ2324	1.53
169.2	14	26	3	HJ2324E	1.42	
130	165.5	11	19	3	HJ226	0.84
	164.7	11	17	3	HJ226E	0.684
	165.5	11	25	3	HJ2226	0.953
	164.7	11	21	3	HJ2226E	0.831
	182	14	24	4	HJ326	1.62
	183	14	23	4	HJ326E	1.53
	182	14	29.5	4	HJ2326	1.8
183	14	28	4	HJ2326E	1.75	
140	179.5	11	19	3	HJ228	1
	180.2	11	18	3	HJ228E	0.929
	179.5	11	25	3	HJ2228	1.14
	180.2	11	23	3	HJ2228E	1.11
	196	15	26	4	HJ328	1.93
	196.8	15	25	4	HJ328E	1.91
	196	15	33.5	4	HJ2328	2.21
196.8	15	31	4	HJ2328E	2.3	

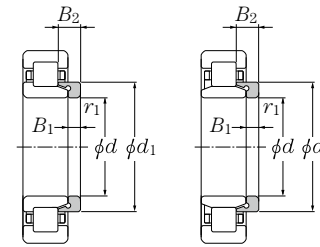
150 193 12 20.5 3 **HJ230** 1.24

1) Smallest allowable dimension for chamfer dimension r.

Note: 1 This L type collar ring is used with NU type cylindrical roller bearings; in duplex arrangements with NJ or NU type bearing numbers, they become NH type and NUJ type respectively. Refer to pages B-106 to B-111 for bearing dimensions, allowable rotations, and mass.

d	Dimension mm				L type collar ring number	Mass kg (approx.)
	d ₁	B ₁	B ₂	r _{1s} min ¹⁾		
150	194	12	19.5	3	HJ230E	1.18
	193	12	26.5	3	HJ2230	1.39
	194	12	24.5	3	HJ2230E	1.42
	210	15	26.5	4	HJ330	2.37
	211	15	25	4	HJ330E	2.25
	210	15	34	4	HJ2330	2.69
	211	15	31.5	4	HJ2330E	2.6
160	207	12	21	3	HJ232	1.48
	207.8	12	20	3	HJ232E	1.34
	207	12	28	3	HJ2232	1.69
	206.6	12	24.5	3	HJ2232E	1.61
	225	15	28	4	HJ332	2.75
	223.2	15	25	4	HJ332E	2.4
	225	15	37	4	HJ2332	3.16
223.2	15	32	4	HJ2332E	2.85	
170	220.5	12	22	4	HJ234	1.7
	221.4	12	20	4	HJ234E	1.51
	220.5	12	29	4	HJ2234	1.93
	220.2	12	24	4	HJ2234E	1.82
	238	16	29.5	4	HJ334	3.25
	238	16	38.5	4	HJ2334	3.71
	180	230.5	12	22	4	HJ236
231.4		12	20	4	HJ236E	1.7
230.5		12	29	4	HJ2236	2.04
230.2		12	24	4	HJ2236E	1.91
252		17	30.5	4	HJ336	3.85
252		17	40	4	HJ2336	4.42
190		244.5	13	23.5	4	HJ238
	245.2	13	21.5	4	HJ238E	1.94
	244.5	13	31.5	4	HJ2238	2.52
	244	13	26.5	4	HJ2238E	2.38
	265	18	32	5	HJ338	4.45
	265	18	41.5	5	HJ2338	5.05

200 258 14 25 4 **HJ240** 2.6



NH=NJ+HJ

NUJ=NU+HJ

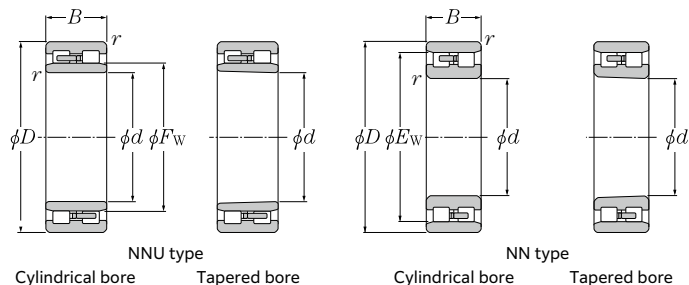
d 200 ~ 320mm

d	Dimension mm				L type collar ring number	Mass kg (approx.)
	d ₁	B ₁	B ₂	r _{1s} min ¹⁾		
200	259	14	23	4	HJ240E	2.35
	258	14	34	4	HJ2240	2.99
	257.8	14	28	4	HJ2240E	2.86
	280	18	33	5	HJ340	5
	280	18	44.5	5	HJ2340	5.76
220	286	15	27.5	4	HJ244	3.55
	307	20	36	5	HJ344	7.05
240	313	16	29.5	4	HJ248	4.65
	335	22	39.5	5	HJ348	8.2
260	340	18	33	5	HJ252	6.2
	362	24	43	6	HJ352	11.4
280	360	18	33	5	HJ256	7.39
	390	26	46	6	HJ356	13.9
300	387	20	34.5	5	HJ260	9.14
320	415	21	37	5	HJ264	11.3

1) Smallest allowable dimension for chamfer dimension r.

Note: 1 This L type collar ring is used with NU type cylindrical roller bearings; in duplex arrangements with NJ or NU type bearing numbers, they become NH type and NUJ type respectively. Refer to pages B-110 to B-113 for bearing dimensions, allowable rotations, and mass.

● Double Row Cylindrical Roller Bearings

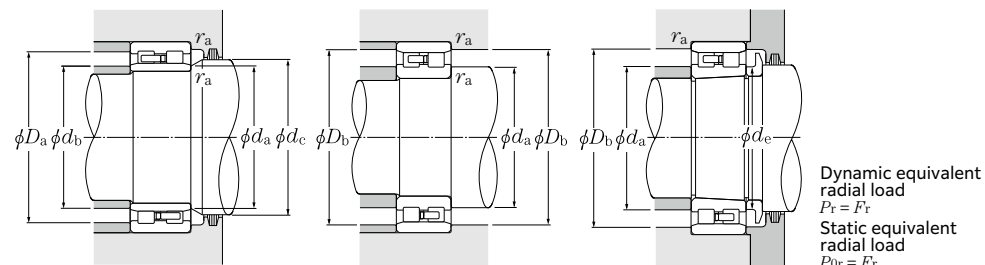


d 25 ~ 110mm

d	Boundary dimensions			Basic load rating		Fatigue load limit kN C _u	Allowable speed		Bearing number ²⁾	
	D	B	r _{s min} ¹⁾	dynamic kN C _r	static kN C _{0r}		min ⁻¹ Grease lubrication	Oil lubrication	Cylindrical bore	NNU type Tapered bore
25	47	16	0.6	28.6	30.0	3.65	14 000	17 000	—	—
30	55	19	1	34.0	37.0	4.55	12 000	15 000	—	—
35	62	20	1	42.0	47.5	5.80	11 000	13 000	—	—
40	68	21	1	48.0	55.5	6.75	9 700	11 000	—	—
45	75	23	1	57.5	68.5	8.35	8 800	10 000	—	—
50	80	23	1	59.0	72.5	8.85	8 000	9 400	—	—
55	90	26	1.1	77.0	96.5	11.8	7 300	8 600	—	—
60	95	26	1.1	78.5	102	12.4	6 700	7 900	—	—
65	100	26	1.1	83.0	111	13.6	6 200	7 300	—	—
70	110	30	1.1	105	143	17.4	5 800	6 800	—	—
75	115	30	1.1	107	149	18.2	5 400	6 300	—	—
80	125	34	1.1	128	179	21.6	5 100	5 900	—	—
85	130	34	1.1	135	194	23.1	4 800	5 600	—	—
90	140	37	1.5	158	228	26.6	4 500	5 300	—	—
95	145	37	1.5	162	238	27.4	4 300	5 000	—	—
100	140	40	1.1	145	260	30.0	4 300	5 100	NNU4920	NNU4920K
	150	37	1.5	170	256	29.2	4 000	4 800	—	—
105	145	40	1.1	147	268	30.5	4 100	4 800	NNU4921	NNU4921K
	160	41	2	220	320	36.0	3 800	4 500	—	—
110	150	40	1.1	152	284	32.0	3 900	4 600	NNU4922	NNU4922K
	170	45	2	254	375	41.5	3 600	4 300	—	—

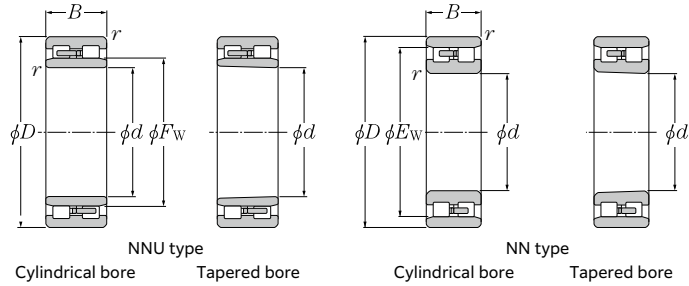
1) Smallest allowable dimension for chamfer dimension r.
2) "K" indicates bearings having a tapered bore with a taper ratio of 1:12.

● Double Row Cylindrical Roller Bearings

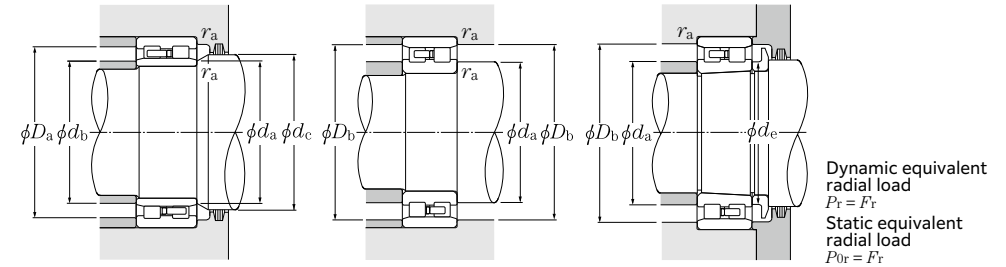


Bearing number ²⁾	Dimension		Installation-related dimensions								Mass (approx.) kg				
	NN type Cylindrical bore	Tapered bore	F _w	E _w	d _a Min.	d _e Min.	d _b Max.	d _c Min.	D _a Max.	D _b Max.	D _b Min.	r _{as} Max.	NNU type Cylindrical bore	NN type Tapered bore	NN type Cylindrical bore
NN3005	NN3005K	—	41.3	29	30	—	—	—	43	42	0.6	—	—	0.124	0.121
NN3006	NN3006K	—	48.5	35	36.5	—	—	—	50	49	1	—	—	0.199	0.193
NN3007	NN3007K	—	55	40	41.5	—	—	—	57	56	1	—	—	0.242	0.235
NN3008	NN3008K	—	61	45	47	—	—	—	63	62	1	—	—	0.312	0.303
NN3009	NN3009K	—	67.5	50	52	—	—	—	70	69	1	—	—	0.405	0.393
NN3010	NN3010K	—	72.5	55	57	—	—	—	75	74	1	—	—	0.433	0.419
NN3011	NN3011K	—	81	61.5	63.5	—	—	—	83.5	82	1	—	—	0.651	0.631
NN3012	NN3012K	—	86.1	66.5	68.5	—	—	—	88.5	87	1	—	—	0.704	0.683
NN3013	NN3013K	—	91	71.5	73.5	—	—	—	93.5	92	1	—	—	0.758	0.735
NN3014	NN3014K	—	100	76.5	79	—	—	—	103.5	101	1	—	—	1.04	1.01
NN3015	NN3015K	—	105	81.5	84	—	—	—	108.5	106	1	—	—	1.14	1.11
NN3016	NN3016K	—	113	86.5	89.5	—	—	—	118.5	114	1	—	—	1.52	1.47
NN3017	NN3017K	—	118	91.5	94.5	—	—	—	123.5	119	1	—	—	1.61	1.56
NN3018	NN3018K	—	127	98	101	—	—	—	132	129	1.5	—	—	2.07	2.01
NN3019	NN3019K	—	132	103	106	—	—	—	137	134	1.5	—	—	2.17	2.1
NN4920	NN4920K	113	129	106.5	110	111	115	133.5	133.5	131	1	1.83	1.75	1.75	1.67
NN3020	NN3020K	—	137	108	111	—	—	—	142	139	1.5	—	—	2.26	2.19
NN4921	NN4921K	118	134	111.5	115	116	120	138.5	138.5	136	1	1.91	1.82	1.82	1.73
NN3021	NN3021K	—	146	114	117	—	—	—	151	148	2	—	—	2.89	2.8
NN4922	NN4922K	123	139	116.5	120	121	125	143.5	143.5	141	1	1.99	1.9	1.9	1.81
NN3022	NN3022K	—	155	119	123	—	—	—	161	157	2	—	—	3.69	3.56

Double Row Cylindrical Roller Bearings



Double Row Cylindrical Roller Bearings



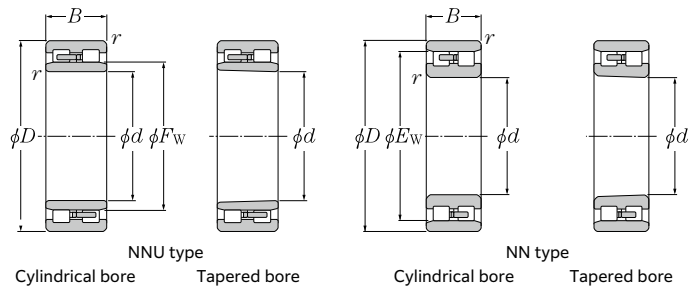
d 120 ~ 280mm

Boundary dimensions	Basic load rating		Fatigue load limit	Allowable speed		Bearing number 2)	
	dynamic	static		Grease lubrication	Oil lubrication	Cylindrical bore	Tapered bore
mm	kN	kN	min ⁻¹	min ⁻¹	mm	mm	mm
d	C_r	C_{0r}	C_u		D	B	$r_{s\min}^{1)}$
120	165	360	39.5	3 600	4 200	165	1.1
	180	390	42.5	3 300	3 900	180	2
130	180	440	47.0	3 300	3 900	180	1.5
	200	475	50.0	3 100	3 600	200	2
140	190	470	49.0	3 000	3 600	190	1.5
	210	515	53.0	2 800	3 300	210	2
150	210	690	70.5	2 800	3 300	210	2
	225	585	59.0	2 600	3 100	225	2.1
160	220	740	74.0	2 600	3 100	220	2
	240	660	65.5	2 500	2 900	240	2.1
170	230	765	75.5	2 500	2 900	230	2
	260	775	75.0	2 300	2 700	260	2.1
180	250	965	93.0	2 300	2 700	250	2
	280	995	94.5	2 200	2 600	280	2.1
190	260	1 030	98.0	2 200	2 600	260	2
	290	1 040	97.0	2 000	2 400	290	2.1
200	280	1 180	110	2 100	2 400	280	2.1
	310	1 170	107	1 900	2 300	310	2.1
220	300	1 300	118	1 900	2 200	300	2.1
	340	1 480	132	1 700	2 100	340	3
240	320	1 410	126	1 700	2 000	320	2.1
	360	1 600	140	1 600	1 900	360	3
260	360	2 070	179	1 600	1 800	360	2.1
	400	1 990	170	1 500	1 700	400	4
280	380	2 200	187	1 400	1 700	380	2.1
	420	2 080	174	1 300	1 600	420	4

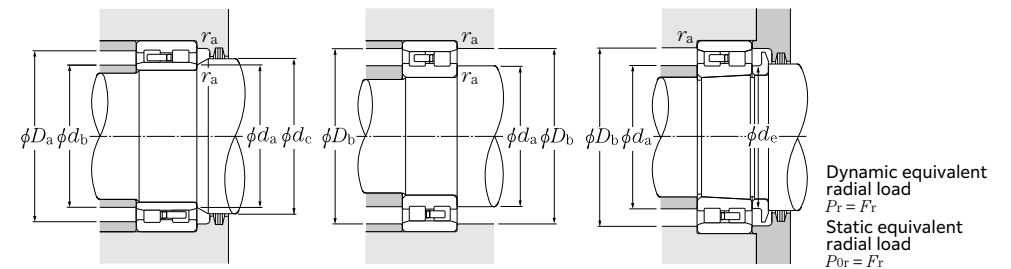
1) Smallest allowable dimension for chamfer dimension r .
 2) "K" indicates bearings having a tapered bore with a taper ratio of 1:12.

Bearing number 2)	Dimension		Installation-related dimensions								Mass (approx.)			
	mm	mm	d_a	d_e	d_b	d_c	D_a	D_b	D_b	r_{as}	mm	mm	mm	mm
mm	F_w	E_w	Min.	Min.	Max.	Min.	Max.	Max.	Min.	Max.	Cylindrical bore	Tapered bore	Cylindrical bore	Tapered bore
NN4924	134.5	154.5	126.5	130	133	137	158.5	158.5	156.5	1	2.75	2.63	2.63	2.51
	165	129	133	—	—	—	171	167	2	—	—	3.98	3.83	
NN4926	146	168	138	142	144	148	172	172	170	1.5	3.69	3.52	3.52	3.35
	182	139	143	—	—	—	191	183	2	—	—	5.92	5.71	
NN4928	156	178	148	152	154	158	182	182	180	1.5	3.94	3.76	3.76	3.58
	192	149	153	—	—	—	201	194	2	—	—	6.44	6.21	
NN4930	168.5	196.5	159	164	166	171	201	201	198.5	2	6.18	5.9	5.9	5.62
	206	161	166	—	—	—	214	208	2	—	—	7.81	7.53	
NN4932	178.5	206.5	169	174	176	182	211	211	208.5	2	6.53	6.23	6.24	5.94
	219	171	176	—	—	—	229	221	2	—	—	8.92	8.59	
NN4934	188.5	216.5	179	184	186	192	221	221	218.5	2	6.87	6.55	6.56	6.24
	236	181	187	—	—	—	249	238	2	—	—	12.6	12.2	
NN4936	202	234	189	195	199	205	241	241	236	2	9.9	9.46	9.45	9.01
	255	191	197	—	—	—	269	257	2	—	—	16.6	16	
NN4938	212	244	199	205	209	215	251	251	246	2	10.4	9.94	9.93	9.47
	265	201	207	—	—	—	279	267	2	—	—	18	17.4	
NN4940	225	261	211	218	222	228	269	269	264	2	14.7	14	14	13.3
	282	211	218	—	—	—	299	285	2	—	—	21.6	20.8	
NN4944	245	281	231	238	242	248	289	289	284	2	15.9	15.2	15.2	14.5
	310	233	240	—	—	—	327	313	2.5	—	—	29.3	28.2	
NN4948	265	301	251	258	262	269	309	309	304	2	17.2	16.4	16.4	15.6
	330	253	261	—	—	—	347	333	2.5	—	—	32.8	31.6	
NN4952	292	336	271	279	288	296	349	349	339	2	29.6	28.3	28.3	27
	364	276	285	—	—	—	384	367	3	—	—	47.4	45.8	
NN4956	312	356	291	299	308	316	369	369	359	2	31.6	30.2	30.2	28.8
	384	296	305	—	—	—	404	387	3	—	—	51.1	49.3	

● Double Row Cylindrical Roller Bearings



● Double Row Cylindrical Roller Bearings



d 300 ~ 500mm

d	Boundary dimensions			Basic load rating		Fatigue load limit kN C _u	Allowable speed		Bearing number ²⁾	
	mm			dynamic kN C _r	static kN C _{0r}		Grease lubrication	min ⁻¹ Oil lubrication	NNU type	
	D	B	r _{s min} ¹⁾						Cylindrical bore	Tapered bore
300	420	118	3	1 330	2 800	231	1 300	1 500	NNU4960	NNU4960K
	460	118	4	1 470	2 560	209	1 200	1 500	—	—
320	440	118	3	1 370	2 970	242	1 200	1 400	NNU4964	NNU4964K
	480	121	4	1 500	2 670	214	1 100	1 300	—	—
340	460	118	3	1 410	3 150	252	1 100	1 300	NNU4968	NNU4968K
	520	133	5	1 800	3 200	251	1 100	1 300	—	—
360	480	118	3	1 430	3 250	255	1 100	1 300	NNU4972	NNU4972K
	540	134	5	1 830	3 300	258	1 000	1 200	—	—
380	520	140	4	1 810	4 050	315	1 000	1 200	NNU4976	NNU4976K
	560	135	5	1 870	3 450	265	940	1 100	—	—
400	540	140	4	1 870	4 300	325	940	1 100	NNU4980	NNU4980K
	600	148	5	2 260	4 150	310	880	1 000	—	—
420	560	140	4	1 930	4 500	340	900	1 100	NNU4984	NNU4984K
	620	150	5	2 300	4 300	320	840	990	—	—
440	600	160	4	2 380	5 550	410	850	1 000	NNU4988	NNU4988K
	650	157	6	2 680	5 100	370	800	940	—	—
460	620	160	4	2 460	5 850	430	800	950	NNU4992	NNU4992K
	680	163	6	2 830	5 350	385	750	890	—	—
480	650	170	5	2 530	5 900	425	770	910	NNU4996	NNU4996K
500	670	170	5	2 670	6 400	455	730	860	NNU49/500	NNU49/500K

1) Smallest allowable dimension for chamfer dimension r.
2) "K" indicates bearings having a tapered bore with a taper ratio of 1:12.
B-124

Bearing number ²⁾	Dimension		Installation-related dimensions										Mass (approx.) kg					
	NNU type Cylindrical bore	NN type Tapered bore	mm		mm										NNU type		NN type	
			F _w	E _w	d _a Min.	d _e Min.	d _b Max.	d _c Min.	D _a Max.	D _b Max.	D _b Min.	r _{as} Max.	Cylindrical bore	Tapered bore	Cylindrical bore	Tapered bore		
NN4960	NN4960K	339	391	313	323	335	343	407	407	394	2.5	48.6	46.4	46.4	44.2			
NN3060	NN3060K	—	418	316	326	—	—	—	444	421	3	—	—	70.8	68.6			
NN4964	NN4964K	359	411	333	343	355	363	427	427	414	2.5	51.4	49.1	49	46.7			
NN3064	NN3064K	—	438	336	346	—	—	—	464	441	3	—	—	76.2	73.5			
—	—	379	—	353	363	375	383	447	—	—	2.5	54.2	51.7	—	—			
NN3068	NN3068K	—	473	360	371	—	—	—	500	477	4	—	—	102	98.5			
—	—	398	—	373	383	394	402	467	—	—	2.5	57	54.4	—	—			
NN3072	NN3072K	—	493	380	391	—	—	—	520	497	4	—	—	107	103			
—	—	425	—	396	408	420	430	504	—	—	3	84.5	80.6	—	—			
NN3076	NN3076K	—	512	400	411	—	—	—	540	516	4	—	—	113	109			
—	—	445	—	416	428	440	450	524	—	—	3	88.2	84.1	—	—			
NN3080	NN3080K	—	547	420	432	—	—	—	580	551	4	—	—	146	141			
—	—	465	—	436	448	460	470	544	—	—	3	92	87.7	—	—			
NN3084	NN3084K	—	567	440	452	—	—	—	600	571	4	—	—	154	148			
—	—	492	—	456	469	487	497	584	—	—	3	127	121	—	—			
NN3088	NN3088K	—	596	464	477	—	—	—	626	601	5	—	—	178	172			
—	—	512	—	476	489	507	517	604	—	—	3	132	126	—	—			
NN3092	NN3092K	—	622	484	498	—	—	—	656	627	5	—	—	202	195			
—	—	534	—	500	514	531	541	630	—	—	4	156	149	—	—			
—	—	556	—	520	534	551	561	650	—	—	4	162	155	—	—			