

Cylindrical Roller Bearings

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● Designs and Configurations

NACHI Cylindrical Roller Bearings are produced in a wide variety of designs and configurations.

● Conventional Design

Cylindrical Roller Bearings of conventional design are available in 10 configurations as shown in Fig. 1. Configurations N, NU, NN and NNU will not sustain axial loading. These configurations must be used as the float end bearing.

Configurations NF, NJ, NUH are designed with the capability of sustaining axial loading in one direction. Configuration NUH is basically an NU

bearing with an addition of a guide ring (an “L” ring).

The NUH dimensional data is the same as the NH bearing configuration.

Configuration NF, NJ, and NUH can sustain axial loading in one direction.

Configuration NH, NP, and NUP have bi-directional thrust load-carrying-capability.

● The suffix of the bearing number indicates:

E: high capacity

G: polyamide cage

● The bearing with polyamide cage should be used at less than 120°C operating temperature.

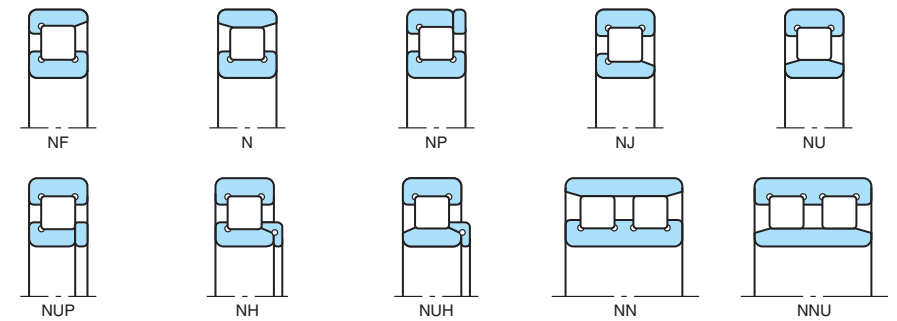


Fig 1. Cylindrical Roller Bearing Configurations

Table 1. Cylindrical Roller Bearing Standard Cage

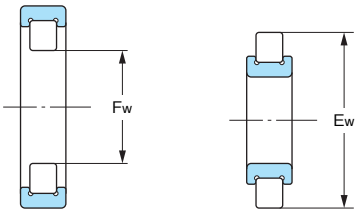
Bearing series	Pressed Steel	Machined Brass
NU10	1007~1038	1040~10/500
NU2	203~ 228	230~ 264
NU22	2204~2226	2228~2252
NU3	304~ 324	326~ 352
NU23	2304~2319	2320~2340
NU4	405~ 416	417~ 430



● Interchangeable Bearings

Interchangeable cylindrical roller bearing means that a separable ring can be replaced by another ring of the bearing with the same bearing number without impairing the function of the bearing.

Table 2. Interchangeable Cylindrical Roller Bearings: Tolerance of Inscribed (Fw) and Circumscribed (Ew) Diameters



Unit: μm

Nominal bore dia. d (mm)		Tolerance of Fw		Tolerance of Ew	
Over	Incl.	High	Low	High	Low
—	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	—	—

● Radial Internal Clearance

The initial radial internal clearance of the bearing should be determined for optimal bearing operation.

The following procedure should be observed to determine the proper initial radial internal clearance:

- (a) Place the bearing in an upright position with inner/outer ring faces parallel.
- (b) Place thumbs on inner ring bore and oscillate inner ring two or three times, pressing down firmly. This "seats" the inner ring and rollers.
- (c) Position the individual roller assemblies so that a roller is at the top of inner ring - on both sides of the bearing.
- (d) Press the two rollers inward to assure contact with the center guide ring as well as the inner ring raceway.
- (e) With the rollers in correct position, insert a thin feeler gauge between the rollers and the raceway. **Caution : DO NOT ROLL THE BEARING.**
- (f) Move it carefully over the top roller between the roller and outer raceway.
- (g) Repeat this procedure, using progressively thicker feeler gauge until one is found that will not go through.
- (h) The gauge thickness that preceded the "No - GO" gauge is the radial internal clearance.

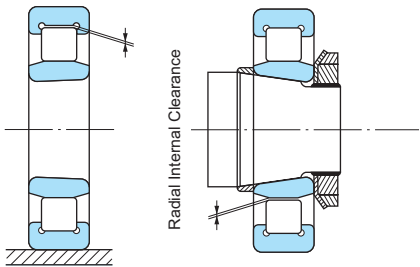
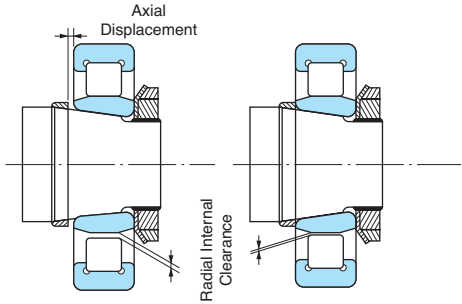


Table 3. Mounting cylindrical roller bearings with tapered bore



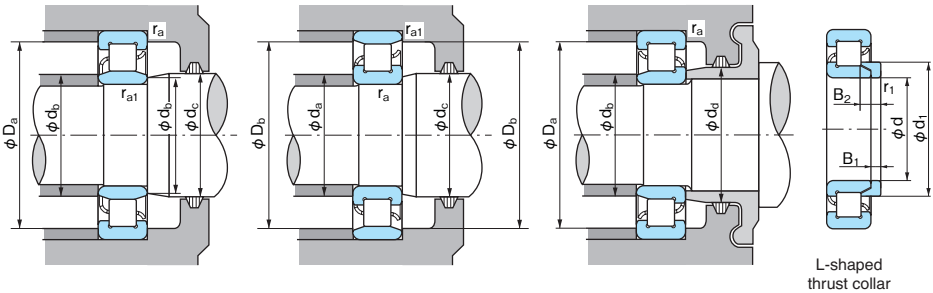
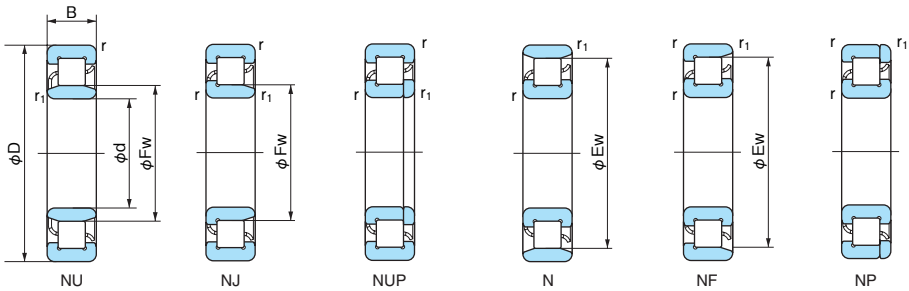
Unit: μm

Bearing Bore Diameter d (mm)		Radial Clearance Reduction (mm)		Axial displacement Taper 1:12			
				Direct Mounting on the shaft (mm)		With Adapter Assemblies (mm)	
Over	Incl.	min	max	min	max	max	min
40	50	0.025	0.030	0.40	0.50	0.55	0.60
50	65	0.030	0.035	0.50	0.55	0.60	0.70
65	80	0.030	0.040	0.50	0.65	0.60	0.75
80	100	0.035	0.045	0.55	0.70	0.70	0.85
100	120	0.040	0.050	0.65	0.80	0.75	0.90
120	140	0.045	0.055	0.70	0.85	0.85	1.00
140	160	0.045	0.060	0.70	0.95	0.85	1.05
160	180	0.050	0.065	0.80	1.00	0.90	1.15
180	200	0.055	0.070	0.85	1.10	1.00	1.20
200	225	0.065	0.080	1.00	1.25	1.15	1.35
225	250	0.070	0.085	1.10	1.30	1.20	1.45
250	280	0.075	0.095	1.15	1.45	1.30	1.60
280	315	0.080	0.100	1.25	1.55	1.35	1.65
315	355	0.095	0.115	1.45	1.75	1.60	1.90
355	400	0.100	0.125	1.55	1.90	1.65	2.05
400	450	0.115	0.140	1.80	2.20	1.90	2.30
450	500	0.130	0.160	2.00	2.50	2.10	2.60

Note: 1. The axial displacement values are applied for mounting on a solid shaft. In case of a hollow shaft, larger axial displacement should be applied.
2. It is imperative to check radial internal clearance after mounting when ;
- The initial unmounted radial internal clearance is in the lower half of the tolerance range.
- There is a temperature difference between the inner and outer rings under operating conditions.
Internal clearance after mounting must be above the values shown in the table.

Cylindrical Roller Bearings

Bore Diameter: 17~30mm

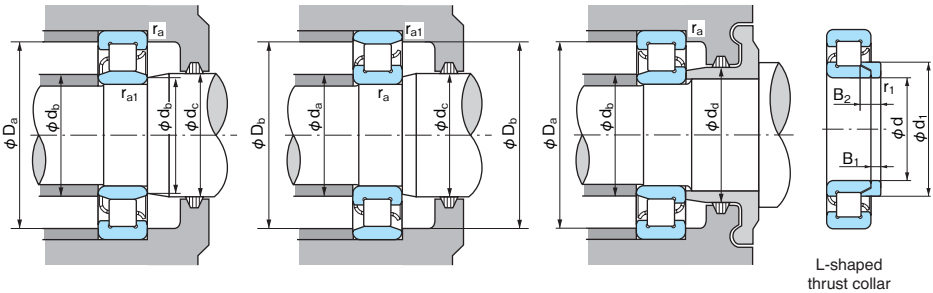
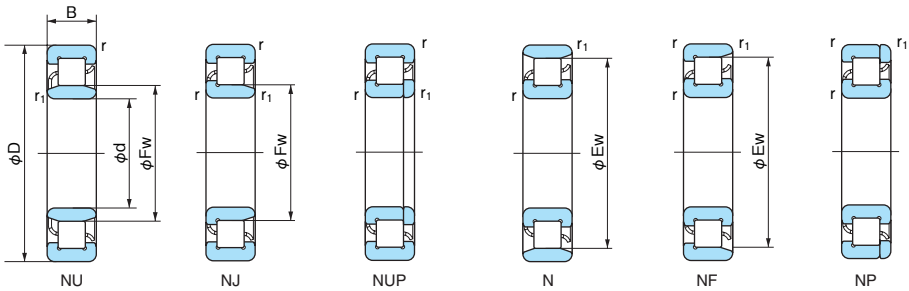


1N=0.102kgf																																					
Boundary dimensions (mm)							Bearing No.						Basic dynamic load rating Cr (N)		Basic static load rating Cor (N)		Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)								
d	D	B	Ew	Fw	r (min)	r1 (min)	NU	NJ	NUP	N	NF	NP	load rating Cr (N)	load rating Cor (N)	Grease lubrication	Oil lubrication		da (min)	db (min)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	ra (min)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference		
17	40	12	33.9	22.9	0.6	0.3	NU 203	NJ	NUP	N	NF	NP	12600	7950	16000	19000		22	19	22	24	25	35	34	34	0.6	0.3	0.082	0.080	—	—	—	—	—	—	—	—
20	47	14	40	27	1	0.6	NU 204	NJ	NUP	N	NF	NP	15400	12700	15000	18000		26	25	26	29	32	41	42	42	1	0.6	0.112	0.110	HJ 204	20	30	3	6.75	0.6	0.012	
	47	14	—	26.5	1	0.6	NU 204 E	NJ	NUP	—	—	—	25700	22600	13000	16000		—	25	26	29	32	41	—	—	1	0.6	0.124	—	HJ 204 E	20	29.8	3	5.5	0.6	0.011	
	47	18	—	27	1	0.6	NU 2204	NJ	NUP	—	—	—	20700	18400	14000	17000		—	25	26	29	32	41	—	—	1	0.6	0.144	—	HJ 2204	20	30	3	7.5	0.6	0.012	
	47	18	—	26.5	1	0.6	NU 2204 E	NJ	NUP	—	—	—	30500	28300	13000	16000		—	25	26	29	32	41	—	—	1	0.6	0.162	—	HJ 2204 E	20	29.8	3	6.5	0.6	0.011	
	52	15	44.5	28.5	1.1	0.6	NU 304	NJ	NUP	N	NF	NP	21400	17300	12000	15000		27	25	27	30	33	45	47	47	1	0.6	0.154	0.150	HJ 304	20	31.8	4	7.5	0.6	0.017	
	52	15	—	27.5	1.1	0.6	NU 304 EG	NJ	NUP	—	—	—	31500	26900	12000	15000		—	25	27	30	33	45	—	—	1	0.6	0.150	—	HJ 304 E	20	31.4	4	6.5	0.6	0.016	
	52	21	—	28.5	1.1	0.6	NU 2304	NJ	NUP	—	—	—	30500	27200	11000	14000		—	25	27	30	33	45	—	—	1	0.6	0.213	—	HJ 2304	20	31.8	4	8.5	0.6	0.018	
52	21	—	27.5	1.1	0.6	NU 2304 E	NJ	NUP	—	—	—	42000	39000	11000	14000		—	25	27	30	33	45	—	—	1	0.6	0.240	—	HJ 2304 E	20	31.4	4	7.5	0.6	0.017		
25	47	12	41.5	30.5	0.6	0.3	NU 1005	—	—	N	—	—	14300	13100	15000	18000		29	27.5	30	32	—	42	45	41.8	0.6	0.3	0.086	0.084	—	—	—	—	—	—	—	
	52	15	45	32	1	0.6	NU 205	NJ	NUP	N	NF	NP	17700	15700	13000	16000		31	30	31	34	37	46	47	47	1	0.6	0.133	0.130	HJ 205	25	35	3	7.25	0.6	0.015	
	52	15	—	31.5	1	0.6	NU 205 EG	NJ	NUP	—	—	—	29300	27700	12000	14000		—	30	31	34	37	46	—	—	1	0.6	0.140	—	HJ 205 E	25	34.8	3	6	0.6	0.013	
	52	18	—	32	1	0.6	NU 2205	NJ	NUP	—	—	—	24300	23500	12000	14000		—	30	31	34	37	46	—	—	1	0.6	0.163	—	HJ 2205	25	35	3	7.5	0.6	0.016	
	52	18	—	31.5	1	0.6	NU 2205 EG	NJ	NUP	—	—	—	35000	34500	12000	14000		—	30	31	34	37	46	—	—	1	0.6	0.185	—	HJ 2205 E	25	34.8	3	6.5	0.6	0.015	
	62	17	53	35	1.1	1.1	NU 305	NJ	NUP	N	NF	NP	29300	25200	10000	13000		32	32	33	37	40	55	55	55	1	1	0.238	0.230	HJ 305	25	39	4	8	1.1	0.027	
	62	17	—	34	1.1	1.1	NU 305 EG	NJ	NUP	—	—	—	41500	37500	10000	12000		—	32	33	37	40	55	—	—	1	1	0.240	—	HJ 305 E	25	38.2	4	7	1.1	0.024	
	62	24	—	35	1.1	1.1	NU 2305	NJ	NUP	—	—	—	42500	41000	9300	11000		—	32	33	37	40	55	—	—	1	1	0.340	—	HJ 2305	25	39	4	9	1.1	0.029	
62	24	—	34	1.1	1.1	NU 2305 E	NJ	NUP	—	—	—	57000	56000	9000	11000		—	32	33	37	40	55	—	—	1	1	0.390	—	HJ 2305 E	25	38.2	4	8	1.1	0.026		
80	21	62.8	38.8	1.5	1.5	NU 405	NJ	NUP	N	NF	NP	46500	40000	9000	11000		33.5	33.5	38	41	46	71.5	71.5	64	1.5	1.5	0.564	0.550	HJ 405	25	43.6	6	10.5	1.5	0.054		
30	55	13	48.5	36.5	1	0.6	NU 1006	—	—	N	—	—	19700	19600	12000	15000		35	33.5	35	38	—	49	52	49	1	0.6	0.123	0.121	—	—	—	—	—	—	—	
	62	16	53.5	38.5	1	0.6	NU 206	NJ	NUP	N	NF	NP	23500	21500	11000	13000		36	35	37	40	44	56	57	56	1	0.6	0.204	0.200	HJ 206	30	41.8	4	8.25	0.6	0.026	
	62	16	—	37.5	1	0.6	NU 206 EG	NJ	NUP	—	—	—	39000	37500	9500	12000		—	35	37	40	44	56	—	—	1	0.6	0.210	—	HJ 206 E	30	41.4	4	7	0.6	0.024	
	62	20	—	38.5	1	0.6	NU 2206	NJ	NUP	—	—	—	33000	33000	10000	12000		—	35	37	40	44	56	—	—	1	0.6	0.262	—	HJ 2206	30	41.8	4	8.5	0.6	0.026	
	62	20	—	37.5	1	0.6	NU 2206 EG	NJ	NUP	—	—	—	49000	50000	9500	12000		—	35	37	40	44	56	—	—	1	0.6	0.295	—	HJ 2206 E	30	41.4	4	7.5	0.6	0.025	
	72	19	62	42	1.1	1.1	NU 306	NJ	NUP	N	NF	NP	38500	35000	8500	11000		37	37	40	44	48	65	65	64	1	1	0.357	0.350	HJ 306	30	45.9	5	9.5	1.1	0.044	
	72	19	—	40.5	1.1	1.1	NU 306 EG	NJ	NUP	—	—	—	53000	50000	8500	10000		—	37	40	44	48	65	—	—	1	1	0.370	—	HJ 306 E	30	45.1	5	8.5	1.1	0.041	
	72	27	—	42	1.1	1.1	NU 2306	NJ	NUP	—	—	—	51500	51000	8200	9800		—	37	40	44	48	65	—	—	1	1	0.500	—	HJ 2306	30	45.9	5	11.5	1.1	0.048	
	72	27	—	40.5	1.1	1.1	NU 2306 E	NJ	NUP	—	—	—	74500	77500	8000	9500		—	37	40	44	48	65	—	—	1	1	0.585	—	HJ 2306 E	30	45.1	5	9.5	1.1	0.043	
90	23	73	45	1.5	1.5	NU 406	NJ	NUP	N	NF	NP	62500	55000	7500	9500		38.5	38.5	44	47	52	81.5	81.5	74	1.5	1.5	0.770	0.750	HJ 406	30	50.5	7	11.5	1.5	0.080		

Note: (1) The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Cylindrical Roller Bearings

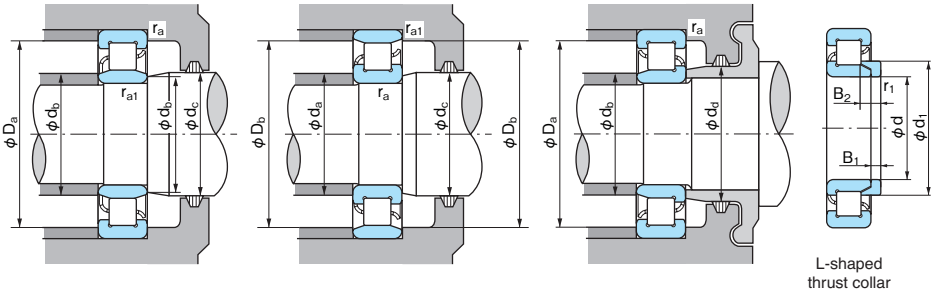
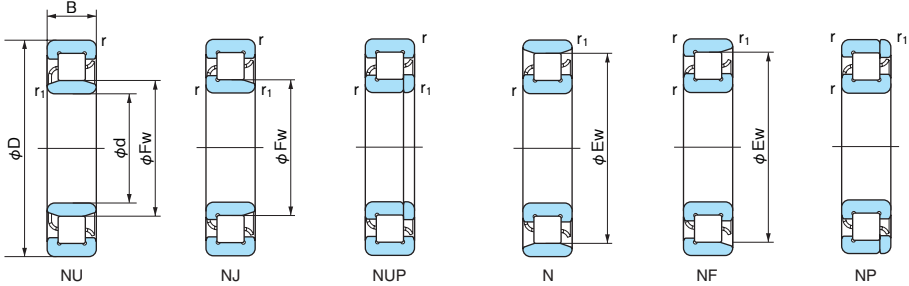
Bore Diameter: 35~45mm



												1N=0.102kgf																							
Boundary dimensions (mm)						Bearing No.						Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)									
d	D	B	Ew	Fw	r (min)	r ₁ (min)	NU	NJ	NUP	N	NF	NP					d _a (min)	d _b (min)	d _b (max)	d _c (min)	d _d (min)	D _a (max)	D _b (max)	r _a (max)	r _{a1} (max)	NU	N	Bearing No.	d	d ₁ (max)	B ₁	B ₂	r ₁ (min)	Mass (kg) Reference	
35	62	14	55	42	1	0.6	NU 1007	—	—	N	—	—	22600	23200	11000	13000	40	38.5	(max)	44	—	56	59	55.5	1	0.6	0.185	0.182	—	—	—	—	—	—	—
	72	17	61.8	43.8	1.1	0.6	NU 207	NJ	NUP	N	NF	NP	33500	31500	9500	11000	42	40	43	46	50	65	67	64	1	0.6	0.295	0.290	HJ 207	35	47.6	4	8	0.6	0.032
	72	17	—	44	1.1	0.6	NU 207EG	NJ	NUP	—	—	—	50500	50000	8500	10000	—	40	43	46	50	65	—	—	1	0.6	0.300	—	HJ 207E	35	48.2	4	7	0.6	0.032
	72	23	—	43.8	1.1	0.6	NU 2207	NJ	NUP	—	—	—	49000	51000	8500	10000	—	40	43	46	50	65	—	—	1	0.6	0.402	—	HJ 2207	35	47.6	4	8.5	0.6	0.033
	72	23	—	44	1.1	0.6	NU 2207EG	NJ	NUP	—	—	—	61500	65000	8500	10000	—	40	43	46	50	65	—	—	1	0.6	0.446	—	HJ 2207E	35	48.2	4	8.5	0.6	0.035
	80	21	68.2	46.2	1.5	1.1	NU 307	NJ	NUP	N	NF	NP	49500	47000	8000	9500	43.5	42	45	48	53	71.5	73	71	1.5	1	0.470	0.460	HJ 307	35	50.8	6	11	1.1	0.060
	80	21	—	46.2	1.5	1.1	NU 307EG	NJ	NUP	—	—	—	66500	65500	7500	9500	—	42	45	48	53	71.5	—	—	1.5	1	0.490	—	HJ 307E	35	51.1	6	9.5	1.1	0.058
	80	31	—	46.2	1.5	1.1	NU 2307	NJ	NUP	—	—	—	60500	60000	7200	8600	—	42	45	48	53	71.5	—	—	1.5	1	0.696	—	HJ 2307	35	50.8	6	14	1.1	0.067
	80	31	—	46.2	1.5	1.1	NU 2307E	NJ	NUP	—	—	—	99000	109000	6800	8500	—	42	45	48	53	71.5	—	—	1.5	1	0.780	—	HJ 2307E	35	51.1	6	11	1.1	0.062
100	25	83	53	1.5	1.5	NU 407	NJ	NUP	—	NF	NP	75500	69000	6700	8000	43.5	43.5	52	55	61	91.5	91.5	84	1.5	1.5	1.05	1.02	HJ 407	35	59	8	13	1.5	0.120	
40	68	15	61	47	1	0.6	NU 1008	—	—	N	—	—	27300	29000	10000	12000	45	45	46	49	—	62	64	61.5	1	0.6	0.226	0.223	—	—	—	—	—	—	
	80	18	70	50	1.1	1.1	NU 208	NJ	NUP	N	NF	NP	43500	43000	8500	10000	47	47	49	52	56	73	73	72	1	1	0.369	0.360	HJ 208	40	54.2	5	9	1.1	0.049
	80	18	—	49.5	1.1	1.1	NU 208EG	NJ	NUP	—	—	—	55500	55500	9500	9000	—	47	49	52	56	73	—	—	1	1	0.380	—	HJ 208E	40	54.1	5	8.5	1.1	0.047
	80	23	—	50	1.1	1.1	NU 2208	NJ	NUP	—	—	—	58000	62000	7500	9000	—	47	49	52	56	73	—	—	1	1	0.490	—	HJ 2208	40	54.2	5	9.5	1.1	0.050
	80	23	—	49.5	1.1	1.1	NU 2208EG	NJ	NUP	—	—	—	72500	77500	7500	9000	—	47	49	52	56	73	—	—	1	1	0.743	—	HJ 2208E	40	54.1	5	9	1.1	0.049
	90	23	77.5	53.5	1.5	1.5	NU 308	NJ	NUP	N	NF	NP	58500	57000	6700	8500	48.5	48.5	51	55	60	81.5	81.5	80	1.5	1.5	0.665	0.650	HJ 308	40	58.4	7	12.5	1.5	0.090
	90	23	—	52	1.5	1.5	NU 308EG	NJ	NUP	—	—	—	83000	81500	6700	8000	—	48.5	51	55	60	81.5	—	—	1.5	1.5	0.670	—	HJ 308E	40	57.7	7	11	1.5	0.084
	90	33	—	53.5	1.5	1.5	NU 2308	NJ	NUP	—	—	—	82500	88000	6500	7800	—	48.5	51	55	60	81.5	—	—	1.5	1.5	0.956	—	HJ 2308	40	58.4	7	14.5	1.5	0.097
	90	33	—	52	1.5	1.5	NU 2308E	NJ	NUP	—	—	—	114000	122000	6400	7700	—	48.5	51	55	60	81.5	—	—	1.5	1.5	1.05	—	HJ 2308E	40	57.7	7	12.5	1.5	0.090
110	27	92	58	2	2	NU 408	NJ	NUP	N	NF	NP	95500	89000	6000	7500	50	50	57	60	67	100	100	93	2	2	1.33	1.30	HJ 408	40	64.8	8	13	2	0.144	
45	75	16	67.5	52.5	1	0.6	NU 1009	—	—	N	—	—	32500	35500	9000	11000	50	50	52	54	—	69	71	68	1	0.6	0.284	0.289	—	—	—	—	—	—	
	85	19	75	55	1.1	1.1	NU 209	NJ	NUP	N	NF	NP	46000	47000	7500	9000	52	52	54	57	61	78	78	77	1	1	0.430	0.420	HJ 209	45	59	5	9.5	1.1	—
	85	19	—	54.5	1.1	1.1	NU 209EG	NJ	NUP	—	—	—	63000	66500	7000	8500	—	52	54	57	61	78	—	—	1	1	0.440	—	HJ 209E	45	59.1	5	8.5	1.1	0.053
	85	23	—	55	1.1	1.1	NU 2209	NJ	NUP	—	—	—	61500	68000	7400	8900	—	52	54	57	61	78	—	—	1	1	0.536	—	HJ 2209	45	59	5	9.5	1.1	0.054
	85	23	—	54.5	1.1	1.1	NU 2209EG	NJ	NUP	—	—	—	76000	84500	7000	8500	—	52	54	57	61	78	—	—	1	1	0.593	—	HJ 2209E	45	59.1	5	9	1.1	0.054
	100	25	86.5	58.5	1.5	1.5	NU 309	NJ	NUP	N	NF	NP	78500	77500	6300	7500	53.5	53.5	57	60	66	91.5	91.5	89	1.5	1.5	0.871	0.850	HJ 309	45	64	7	12.5	1.5	0.105
	100	25	—	58.5	1.5	1.5	NU 309EG	NJ	NUP	—	—	—	97500	98500	6000	7500	—	53.5	57	60	66	91.5	—	—	1.5	1.5	0.910	—	HJ 309E	45	64.5	7	11.5	1.5	0.103
	100	36	—	58.5	1.5	1.5	NU 2309	NJ	NUP	—	—	—	99000	104000	6100	7300	—	53.5	57	60	66	91.5	—	—	1.5	1.5	1.25	—	HJ 2309	45	64	7	15	1.5	0.115
	100	36	—	58.5	1.5	1.5	NU 2309E	NJ	NUP	—	—	—	137000	153000	6000	7200	—	53.5	57	60	66	91.5	—	—	1.5	1.5	1.40	—	HJ 2309E	45	64.5	7	13	1.5	0.112
120	29	100.5	64.5	2	2	NU 409	NJ	NUP	N	NF	NP	107000	102000	5600	6700	55	55	63	66	74	110	110	102	2	2	1.67	1.64	HJ 409	45	71.8	8	13.5	2	0.178	

Cylindrical Roller Bearings

Bore Diameter: 50~60mm

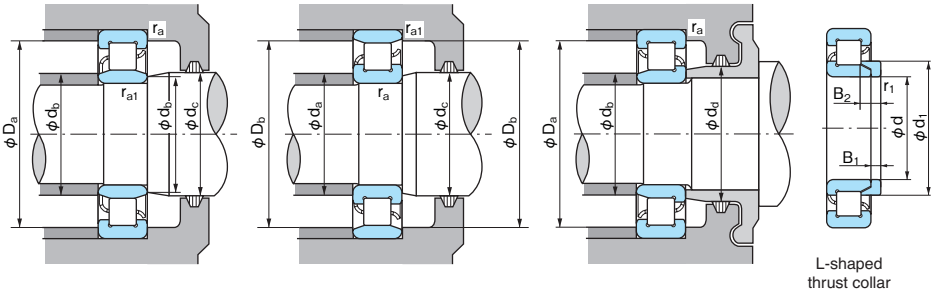
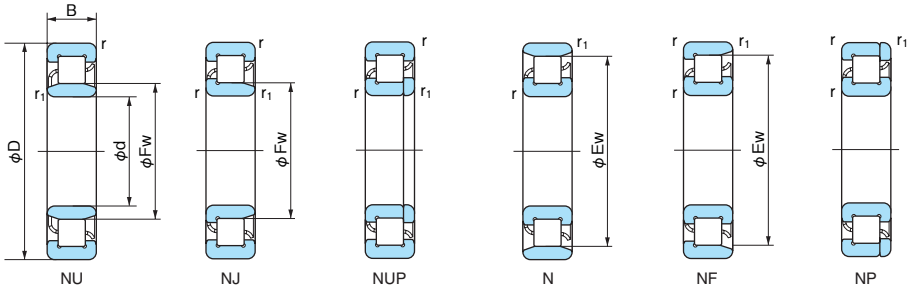


1N=0.102kgf																																				
Boundary dimensions (mm)						Bearing No.						Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)										
d	D	B	Ew	Fw	r (min)	r1 (min)	NU	NJ	NUP	N	NF	NP			Grease lubrication	Oil lubrication		da (min)	db (min)	dc (max)	dd (min)	Da (max)	Db (min)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference		
50	80	16	72.5	57.5	1	0.6	NU 1010	—	—	N	—	—	32000	36000	8500	10000		53	55	57	59	—	74	76	73	1	0.6	0.310	0.306	—	—	—	—	—	—	—
	90	20	80.4	60.4	1.1	1.1	NU 210	NJ	NUP	N	NF	NP	48000	51000	7100	8500		57	57	58	62	67	83	83	83	1	1	0.481	0.470	HJ 210	50	64.6	5	10	1.1	0.063
	90	20	—	59.5	1.1	1.1	NU 210EG	NJ	NUP	—	—	—	69000	76500	6400	7700		—	57	58	62	67	83	—	—	1	1	0.490	—	HJ 210E	50	64.1	5	9	1.1	0.059
	90	23	—	60.4	1.1	1.1	NU 2210	NJ	NUP	—	—	—	64000	73500	6500	8000		—	57	58	62	67	83	—	—	1	1	0.580	—	HJ 2210	50	64.6	5	9.5	1.1	0.062
	90	23	—	59.5	1.1	1.1	NU 2210EG	NJ	NUP	—	—	—	83500	97000	6400	8000		—	57	58	62	67	83	—	—	1	1	0.632	—	HJ 2210E	50	64.1	5	9	1.1	0.059
	110	27	95	65	2	2	NU 310	NJ	NUP	N	NF	NP	87000	86000	5600	6700		60	60	63	67	73	100	100	98	2	2	1.17	1.14	HJ 310	50	71	8	14	2	0.145
	110	27	—	65	2	2	NU 310EG	NJ	NUP	—	—	—	110000	113000	5400	6500		—	60	63	67	73	100	—	—	2	2	1.17	—	HJ 310E	50	71.4	8	13	2	0.145
	110	40	—	65	2	2	NU 2310	NJ	NUP	—	—	—	121000	131000	5400	6500		—	60	63	67	73	100	—	—	2	2	1.69	—	HJ 2310	50	71	8	17	2	0.159
55	110	40	—	65	2	2	NU 2310E	NJ	NUP	—	—	—	163000	187000	5400	6500		—	60	63	67	73	100	—	—	2	2	1.85	—	HJ 2310E	50	71.4	8	14.5	2	0.152
	130	31	110.8	70.8	2.1	2.1	NU 410	NJ	NUP	N	NF	NP	138000	136000	5000	6000		62	62	69	73	81	118	118	112	2	2	2.05	2.01	HJ 410	50	78.8	9	14.5	2.1	0.230
	90	18	80.5	64.5	1.1	1	NU 1011	—	—	N	—	—	37500	44000	7500	9000		61.5	61	63	66	—	83	85	81.5	1	1	0.449	0.445	—	—	—	—	—	—	
	100	21	88.5	66.5	1.5	1.1	NU 211	NJ	NUP	N	NF	NP	58000	62500	6300	7500		63.5	62	65	68	73	91.5	93	91	1.5	1	0.634	0.630	HJ 211	55	70.8	6	11	1.1	0.086
	100	21	—	66	1.5	1.1	NU 211EG	NJ	NUP	—	—	—	86500	98500	5800	7100		—	62	65	68	73	91.5	—	—	1.5	1	0.670	—	HJ 211E	55	70.9	6	9.5	1.1	0.083
	100	25	—	66.5	1.5	1.1	NU 2211	NJ	NUP	—	—	—	75500	87000	6200	7400		—	62	65	68	73	91.5	—	—	1.5	1	0.780	—	HJ 2211	55	70.8	6	11	1.1	0.086
	100	25	—	66	1.5	1.1	NU 2211EG	NJ	NUP	—	—	—	101000	122000	5800	7100		—	62	65	68	73	91.5	—	—	1.5	1	0.870	—	HJ 2211E	55	70.9	6	10	1.1	0.085
	120	29	104.5	70.5	2	2	NU 311	NJ	NUP	N	NF	NP	111000	111000	5000	6300		65	65	69	72	80	110	110	107	2	2	1.43	1.40	HJ 311	55	77.2	9	15	2	0.186
60	120	29	—	70.5	2	2	NU 311EG	NJ	NUP	—	—	—	137000	143000	4800	5600		—	65	69	72	80	110	—	—	2	2	1.50	—	HJ 311E	55	77.6	9	14	2	0.186
	120	43	—	70.5	2	2	NU 2311	NJ	NUP	—	—	—	148000	162000	4800	5600		—	65	69	72	80	110	—	—	2	2	2.10	—	HJ 2311	55	77.2	9	18.5	2	0.206
	120	43	—	70.5	2	2	NU 2311E	NJ	NUP	—	—	—	201000	233000	4800	5600		—	65	69	72	80	110	—	—	2	2	2.35	—	HJ 2311E	55	77.6	9	15.5	2	0.195
	140	33	117.2	77.2	2.1	2.1	NU 411	NJ	NUP	N	NF	NP	139000	138000	4800	5600		67	67	76	79	87	128	128	119	2	2	2.54	2.51	HJ 411	55	85.2	10	16.5	2.1	0.292
	95	18	85.5	69.5	1.1	1	NU 1012	—	—	N	—	—	40000	48500	6700	8500		66.5	66	68	71	—	88	90	86.5	1	1	0.484	0.477	—	—	—	—	—	—	
	110	22	97.5	73.5	1.5	1.5	NU 212	NJ	NUP	N	NF	NP	68500	75000	6000	7100		68.5	68.5	71	75	80	101.5	101.5	100	1.5	1.5	0.835	0.820	HJ 212	60	78.4	6	11	1.5	0.109
	110	22	—	72	1.5	1.5	NU 212E	NJ	NUP	—	—	—	97500	107000	5300	6300		—	68.5	71	75	80	101.5	—	—	1.5	1.5	0.921	—	HJ 212E	60	77.7	6	10	1.5	0.104
	110	28	—	73.5	1.5	1.5	NU 2212	NJ	NUP	—	—	—	96000	116000	5300	6300		—	68.5	71	75	80	101.5	—	—	1.5	1.5	1.07	—	HJ 2212	60	78.4	6	11	1.5	0.109
60	110	28	—	72	1.5	1.5	NU 2212E	NJ	NUP	—	—	—	131000	157000	5300	6300		—	68.5	71	75	80	101.5	—	—	1.5	1.5	1.23	—	HJ 2212E	60	77.7	6	10	1.5	0.104
	130	31	113	77	2.1	2.1	NU 312	NJ	NUP	N	NF	NP	124000	126000	4800	5600		72	72	75	79	86	118	118	116	2	2	1.82	1.78	HJ 312	60	84.2	9	15.5	2.1	0.224
	130	31	—	77	2.1	2.1	NU 312EG	NJ	NUP	—	—	—	150000	157000	4300	5000		—	72	75	79	86	118	—	—	2	2	1.87	—	HJ 312E	60	84.5	9	14.5	2.1	0.222
	130	46	—	77	2.1	2.1	NU 2312	NJ	NUP	—	—	—	169000	188000	4300	5300		—	72	75	79	86	118	—	—	2	2	2.69	—	HJ 2312	60	84.2	9	19	2.1	0.248
	130	46	—	77	2.1	2.1	NU 2312E	NJ	NUP	—	—	—	222000	262000	4300	5300		—	72	75	79	86	118	—	—	2	2	3.01	—	HJ 2312E	60	84.5	9	16	2.1	0.232
	150	35	127	83	2.1	2.1	NU 412	NJ	NUP	N	NF	NP	167000	168000	4300	5300		72	72	82	85	94	118	118	128	2	2	3.05	3.02	HJ 412	60	91.8	10	16.5	2.1	0.336

Note: (¹) The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Cylindrical Roller Bearings

Bore Diameter: 65~75mm

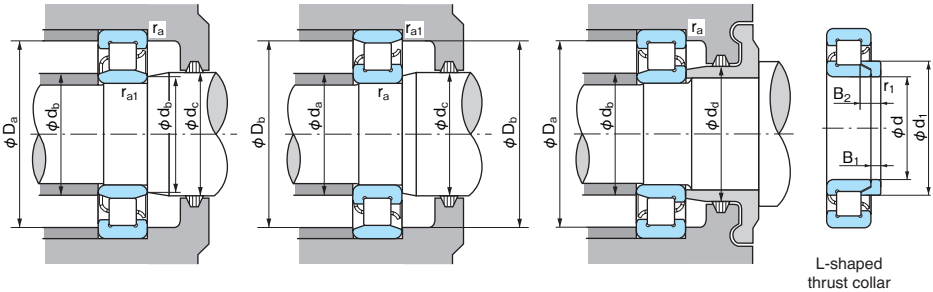
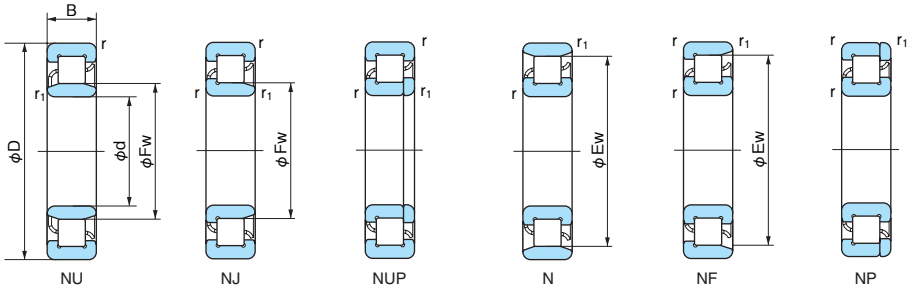


												1N=0.102kgf																									
Boundary dimensions (mm)						Bearing No.						Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)											
d	D	B	Ew	Fw	r	r ₁	NU	NJ	NUP	N	NF	NP			Grease lubrication	Oil lubrication		d _a	d _b	d _c	d _d	D _a	D _b		r _a	r _{a1}	NU	N	Bearing No.	d	d ₁	B ₁	B ₂	r ₁	Mass (kg)		
					(min)	(min)												(min)	(min)	(max)	(min)	(max)	(max)	(min)	(max)	(max)											Reference
65	100	18	90.5	74.5	1.1	1	NU 1013	—	—	N	—	—	41000	51000	6300	8000		71.5	71	73	75	—	93	95	91.5	1	1	0.514	0.560	—	—	—	—	—	—	—	—
	120	23	105.6	79.6	1.5	1.5	NU 213	NJ	NUP	N	NF	NP	84000	94500	5300	6300		73.5	73.5	77	81	87	111.5	111.5	108	1.5	1.5	1.06	1.04	HJ 213	65	84.8	6	11	1.5	0.127	
	120	23	—	78.5	1.5	1.5	NU 213 E	NJ	NUP	—	—	—	108000	119000	4800	5600		—	73.5	77	81	87	111.5	—	—	1.5	1.5	1.18	—	HJ 213 E	65	84.5	6	10	1.5	0.123	
	120	31	—	79.6	1.5	1.5	NU 2213	NJ	NUP	—	—	—	120000	149000	4800	6000		—	73.5	77	81	87	111.5	—	—	1.5	1.5	1.43	—	HJ 2213	65	84.8	6	11.5	1.5	0.130	
	120	31	—	78.5	1.5	1.5	NU 2213 E	NJ	NUP	—	—	—	149000	181000	4800	6000		—	73.5	77	81	87	111.5	—	—	1.5	1.5	1.65	—	HJ 2213 E	65	84.5	6	10.5	1.5	0.126	
	140	33	121.5	83.5	2.1	2.1	NU 313	NJ	NUP	N	NF	NP	135000	139000	4500	5300		77	77	81	85	93	128	128	125	2	2	2.27	2.22	HJ 313	65	91	10	17	2.1	0.286	
	140	33	—	82.5	2.1	2.1	NU 313 E	NJ	NUP	—	—	—	181000	191000	4000	4800		—	77	81	85	93	128	—	—	2	2	2.55	—	HJ 313 E	65	90.6	10	15.5	2.1	0.274	
	140	48	—	83.5	2.1	2.1	NU 2313	NJ	NUP	—	—	—	188000	212000	4000	4800		—	77	81	85	93	128	—	—	2	2	3.25	—	HJ 2313	65	91	10	20	2.1	0.309	
	140	48	—	82.5	2.1	2.1	NU 2313 E	NJ	NUP	—	—	—	247000	287000	3800	4800		—	77	81	85	93	128	—	—	2	2	3.56	—	HJ 2313 E	65	90.6	10	18	2.1	0.309	
	160	37	135.3	89.3	2.1	2.1	NU 413	NJ	NUP	N	NF	NP	195000	203000	4000	4800		77	77	88	91	100	148	148	137	2	2	3.68	3.58	HJ 413	65	98.5	11	18	2.1	0.417	
70	110	20	100	80	1.1	1	NU 1014	—	—	N	—	—	58500	70500	6000	7100		76.5	76	78	82	—	103	105	100.5	1	1	0.712	0.702	—	—	—	—	—	—	—	—
	125	24	110.5	84.5	1.5	1.5	NU 214	NJ	NUP	N	NF	NP	83500	95000	5000	6300		78.5	78.5	82	86	92	116.5	116.5	114	1.5	1.5	1.16	1.14	HJ 214	70	89.6	7	12.5	1.5	0.154	
	125	24	—	83.5	1.5	1.5	NU 214 E	NJ	NUP	—	—	—	119000	137000	4600	5600		—	78.5	82	86	92	116.5	—	—	1.5	1.5	1.26	—	HJ 214 E	70	89.5	7	11	1.5	0.149	
	125	31	—	84.5	1.5	1.5	NU 2214	NJ	NUP	—	—	—	119000	151000	4800	5600		—	78.5	82	86	92	116.5	—	—	1.5	1.5	1.52	—	HJ 2214	70	89.6	7	12.5	1.5	0.154	
	125	31	—	83.5	1.5	1.5	NU 2214 E	NJ	NUP	—	—	—	156000	194000	4600	5600		—	78.5	82	86	92	116.5	—	—	1.5	1.5	1.68	—	HJ 2214 E	70	89.5	7	11.5	1.5	0.152	
	150	35	130	90	2.1	2.1	NU 314	NJ	NUP	N	NF	NP	158000	220000	4000	5000		82	82	87	92	100	138	138	134	2	2	2.73	2.68	HJ 314	70	98	10	17.5	2.1	0.336	
	150	35	—	89	2.1	2.1	NU 314 E	NJ	NUP	—	—	—	205000	222000	3600	4300		—	82	87	92	100	138	—	—	2	2	3.15	—	HJ 314 E	70	97.5	10	15.5	2.1	0.315	
	150	51	—	90	2.1	2.1	NU 2314	NJ	NUP	—	—	—	223000	262000	3800	4500		—	82	87	92	100	138	—	—	2	2	3.97	—	HJ 2314	70	98	10	20.5	2.1	0.362	
	150	51	—	89	2.1	2.1	NU 2314 E	NJ	NUP	—	—	—	274000	325000	3600	4500		—	82	87	92	100	138	—	—	2	2	4.30	—	HJ 2314 E	70	97.5	10	18.5	2.1	0.343	
	180	42	152	100	3	3	NU 414	NJ	NUP	N	NF	NP	228000	236000	3600	4300		84	84	99	102	112	166	166	153	2.5	2.5	5.40	5.26	HJ 414	70	110.5	12	20	3	0.607	
75	115	20	105	85	1.1	1	NU 1015	—	—	N	—	—	60000	74500	5600	6700		81.5	81	83	87	—	108	110	105.5	1	1	0.745	0.735	—	—	—	—	—	—	—	—
	130	25	116.5	88.5	1.5	1.5	NU 215	NJ	NUP	N	NF	NP	96500	111000	4800	6000		83.5	83.5	87	90	96	121.5	121.5	120	1.5	1.5	1.24	1.22	HJ 215	75	94	7	12.5	1.5	0.161	
	130	25	—	88.5	1.5	1.5	NU 215 E	NJ	NUP	—	—	—	130000	156000	4300	5300		—	83.5	87	90	96	121.5	—	—	1.5	1.5	1.38	—	HJ 215 E	75	94.5	7	11	1.5	0.159	
	130	31	—	88.5	1.5	1.5	NU 2215	NJ	NUP	—	—	—	130000	162000	4500	5300		—	83.5	87	90	96	121.5	—	—	1.5	1.5	1.57	—	HJ 2215	75	94	7	12.5	1.5	0.161	
	130	31	—	88.5	1.5	1.5	NU 2215 E	NJ	NUP	—	—	—	162000	207000	4300	5300		—	83.5	87	90	96	121.5	—	—	1.5	1.5	1.80	—	HJ 2215 E	75	94.5	7	11.5	1.5	0.162	
	160	37	139.5	95.5	2.1	2.1	NU 315	NJ	NUP	N	NF	NP	190000	205000	3800	4800		87	87	93	97	106	148	148	143	2	2	3.21	3.15	HJ 315	75	104.2	11	18.5	2.1	0.406	
	160	37	—	95	2.1	2.1	NU 315 E	NJ	NUP	—	—	—	240000	263000	3400	4000		—	87	93	97	106	148	—	—	2	2	3.70	—	HJ 315 E	75	104.2	11	16.5	2.1	0.389	
	160	55	—	95.5	2.1	2.1	NU 2315	NJ	NUP	—	—	—	258000	300000	3400	4300		—	87	93	97	106	148	—	—	2	2	4.84	—	HJ 2315	75	104.2	11	21.5	2.1	0.437	
	160	55	—	95	2.1	2.1	NU 2315 E	NJ	NUP	—	—	—	330000	395000	3400	4300		—	87	93	97	106	148	—	—	2	2	5.30	—	HJ 2315 E	75	104.2	11	19.5	2.1	0.421	
	190	45	160.5	104.5	3	3	NU 415	NJ	NUP	N	NF	NP	262000	274000	3400	4000		89	89	103	107	118	176	176	162	2.5	2.5	6.40	6.25	HJ 415	75	116	13	21.5	3	0.710	

Note: (¹) The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Cylindrical Roller Bearings

Bore Diameter: 95~110mm

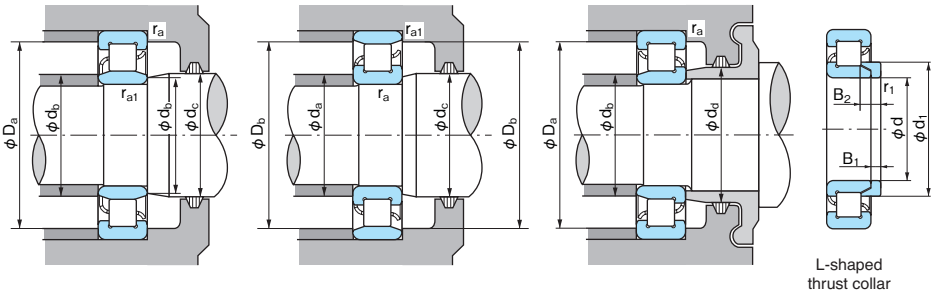
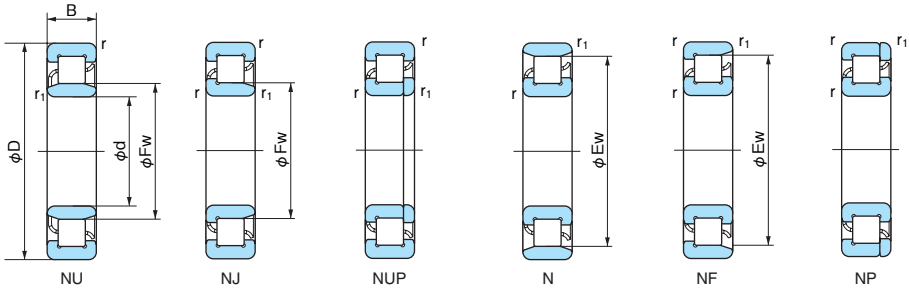


1N=0.102kgf																																			
Boundary dimensions (mm)							Bearing No.						Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)								
d	D	B	Ew	Fw	r (min)	r ₁ (min)	NU	NJ	NUP	N	NF	NP					d _a (min)	d _b (min)	d _c (max)	d _d (min)	D _a (max)	D _b (max)	r _a (max)	r _{a1} (max)	NU	N	Bearing No.	d	d ₁ (max)	B ₁	B ₂	r ₁ (min)	Mass (kg) Reference		
95	145	24	132	108	1.5	1.1	NU 1019	—	—	N	—	—	90500	120000	4500	5300																			
	170	32	151.5	113.5	2.1	2.1	NU 219	NJ	NUP	N	NF	NP	165000	195000	3800	4500																			
	170	32	—	112.5	2.1	2.1	NU 219 E	NJ	NUP	—	—	—	222000	259000	3400	4000																			
	170	43	—	113.5	2.1	2.1	NU 2219	NJ	NUP	—	—	—	230000	298000	3400	4000																			
	170	43	—	112.5	2.1	2.1	NU 2219 E	NJ	NUP	—	—	—	286000	370000	3400	4000																			
	200	45	173.5	121.5	3	3	NU 319	NJ	NUP	N	NF	NP	259000	289000	3000	3600																			
	200	45	—	121.5	3	3	NU 319 E	NJ	NUP	—	—	—	335000	385000	2600	3200																			
	200	67	—	121.5	3	3	NU 2319	NJ	NUP	—	—	—	370000	460000	2600	3400																			
	200	67	—	121.5	3	3	NU 2319 E	NJ	NUP	—	—	—	460000	585000	2600	3200																			
240	55	201.5	133.5	4	4	NU 419	NJ	NUP	N	NF	NP	400000	445000	2600	3200																				
100	150	24	137	113	1.5	1.1	NU 1020	—	—	N	—	—	93000	126000	4300	5300																			
	180	34	160	120	2.1	2.1	NU 220	NJ	NUP	N	NF	NP	183000	217000	3600	4300																			
	180	34	—	119	2.1	2.1	NU 220 E	NJ	NUP	—	—	—	250000	305000	3200	3800																			
	180	46	—	120	2.1	2.1	NU 2220	NJ	NUP	—	—	—	257000	335000	3200	3800																			
	180	46	—	119	2.1	2.1	NU 2220 E	NJ	NUP	—	—	—	335000	445000	3200	3800																			
	215	47	185.5	129.5	3	3	NU 320	NJ	NUP	N	NF	NP	300000	335000	2800	3400																			
	215	47	—	127.5	3	3	NU 320 E	NJ	NUP	—	—	—	380000	425000	2400	3000																			
	215	73	—	129.5	3	3	NU 2320	NJ	NUP	—	—	—	435000	545000	2400	3200																			
	215	73	—	127.5	3	3	NU 2320 E	NJ	NUP	—	—	—	570000	715000	2400	3000																			
	250	58	211	139	4	4	NU 420	NJ	NUP	N	NF	NP	450000	500000	2600	3000																			
105	160	26	145.5	119.5	2	1.1	NU 1021	—	—	N	—	—	109000	149000	4000	4800																			
	190	36	168.8	126.8	2.1	2.1	NU 221	NJ	NUP	N	NF	NP	202000	241000	3400	4000																			
	225	49	195	135	3	3	NU 321	NJ	NUP	N	NF	NP	340000	385000	2600	3200																			
	260	60	220.5	144.5	4	4	NU 421	NJ	NUP	N	NF	NP	495000	555000	2400	3000																			
110	170	28	155	125	2	1.1	NU 1022	—	—	N	—	—	131000	174000	3800	4500																			
	200	38	178.5	132.5	2.1	2.1	NU 222	NJ	NUP	N	NF	NP	240000	290000	3200	3800																			
	200	38	—	132.5	2.1	2.1	NU 222 E	NJ	NUP	—	—	—	293000	365000	2800	3400																			
	200	53	—	132.5	2.1	2.1	NU 2222	NJ	NUP	—	—	—	320000	440000	2800	3400																			
	200	53	—	132.5	2.1	2.1	NU 2222 E	NJ	NUP	—	—	—	385000	515000	2800	3400																			
	240	50	207	143	3	3	NU 322	NJ	NUP	N	NF	NP	380000	435000	2600	3000																			
	240	50	—	143	3	3	NU 322 E	NJ	NUP	—	—	—	450000	525000	2200	2800																			
	240	80	—	143	3	3	NU 2322	NJ	NUP	—	—	—	570000	735000	2200	2800																			
	240	80	—	143	3	3	NU 2322 E	NJ	NUP	—	—	—	670000	880000	2200	2800																			
	280	65	235	155	4	4	NU 422	NJ	NUP	N	NF	NP	550000	620000	2200	2800																			

Note: (¹) The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Cylindrical Roller Bearings

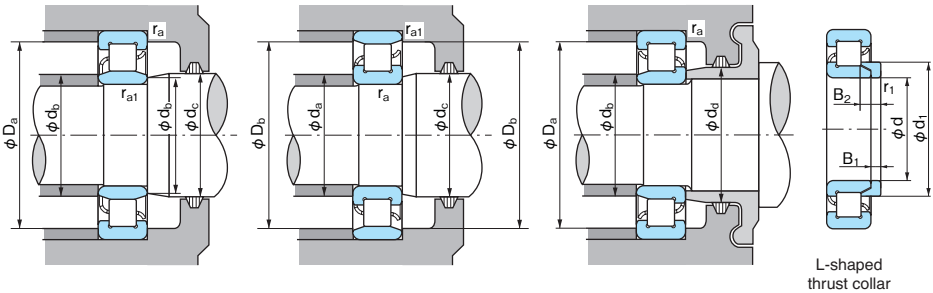
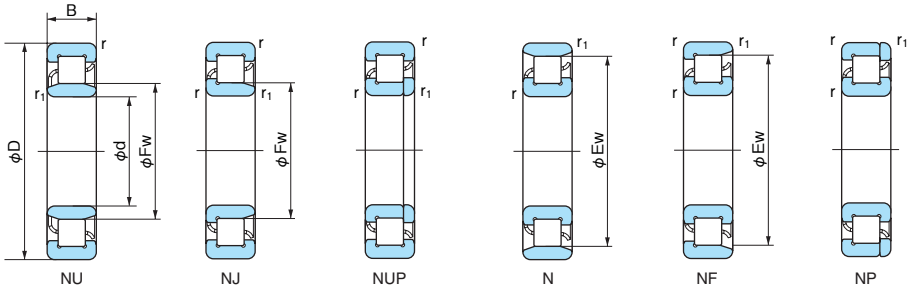
Bore Diameter: 120~140mm



1N=0.102kgf																																				
Boundary dimensions (mm)						Bearing No.						Basic dynamic load rating Cr (N)		Basic static load rating Cor (N)		Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)								
d	D	B	Ew	Fw	r (min)	r1 (min)	NU	NJ	NUP	N	NF	NP	load rating	rating	Grease lubrication	Oil lubrication		da (min)	db (min)	dc (max)	dd (min)	Da (max)	Db (max)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference		
120	180	28	165	135	2	1.1	NU 1024	—	—	N	—	—	139000	191000	3400	4300		129	127	134	138	—	170	173.5	166	2	1	2.51	2.47	—	—	—	—	—	—	
	215	40	191.5	143.5	2.1	2.1	NU 224	NJ	NUP	N	NF	NP	260000	320000	3000	3400		132	132	141	146	156	203	203	196	2	2	5.61	5.50	HJ 224	120	153	11	19	2.1	0.700
	215	40	—	143.5	2.1	2.1	NU 224 E	NJ	NUP	—	—	—	335000	420000	2600	3200		—	132	141	146	156	203	—	—	2	2	6.25	—	HJ 224 E	120	153.4	11	17	2.1	0.680
	215	58	—	143.5	2.1	2.1	NU 2224	NJ	NUP	—	—	—	365000	490000	2600	3200		—	132	141	146	156	203	—	—	2	2	8.56	—	HJ 2224	120	153	11	22	2.1	0.749
	215	58	—	143.5	2.1	2.1	NU 2224 E	NJ	NUP	—	—	—	450000	620000	2600	3200		—	132	141	146	156	203	—	—	2	2	9.35	—	HJ 2224 E	120	153.4	11	20	2.1	0.731
	260	55	226	154	3	3	NU 324	NJ	NUP	N	NF	NP	450000	510000	2200	2800		134	134	151	156	171	246	246	230	2.5	2.5	15.4	15.1	HJ 324	120	168.5	14	23.5	3	1.38
	260	55	—	154	3	3	NU 324 E	NJ	NUP	—	—	—	530000	610000	2000	2600		—	134	151	156	171	246	—	—	2.5	2.5	15.2	—	HJ 324 E	120	168.6	14	22.5	3	1.36
	260	86	—	154	3	3	NU 2324	NJ	NUP	—	—	—	710000	920000	2000	2600		—	134	151	156	171	246	—	—	2.5	2.5	23.1	—	HJ 2324	120	168.5	14	28	3	1.51
	260	86	—	154	3	3	NU 2324 E	NJ	NUP	—	—	—	795000	1030000	2000	2600		—	134	151	156	171	246	—	—	2.5	2.5	22.9	—	HJ 2324 E	120	168.6	14	26	3	1.46
	310	72	260	170	5	5	NU 424	NJ	NUP	N	NF	NP	675000	770000	2000	2400		142	142	168	172	190	288	288	262	4	4	28.7	28.0	HJ 424	120	188	17	30.5	5	2.55
130	200	33	182	148	2	1.1	NU 1026	—	—	N	—	—	172000	238000	3200	3800		139	137	146	151	—	190	193.5	183	2	1	3.83	3.77	—	—	—	—	—	—	
	230	40	204	156	3	3	NU 226	NJ	NUP	N	NF	NP	270000	340000	2600	3200		144	144	151	158	168	216	216	208	2.5	2.5	7.60	7.39	HJ 226	130	165.5	11	19	3	0.805
	230	40	—	153.5	3	3	NU 226 E	NJ	NUP	—	—	—	365000	455000	2400	2800		—	144	151	158	168	216	—	—	2.5	2.5	7.50	—	HJ 226 E	130	164.2	11	17	3	0.775
	230	64	—	156	3	3	NU 2226	NJ	NUP	—	—	—	380000	530000	2400	3000		—	144	151	158	168	216	—	—	2.5	2.5	11.2	—	HJ 2226	130	165.5	11	25	3	0.911
	230	64	—	153.5	3	3	NU 2226 E	NJ	NUP	—	—	—	530000	735000	2400	3000		—	144	151	158	168	216	—	—	2.5	2.5	12.5	—	HJ 2226 E	130	164.2	11	21	3	0.833
	280	58	243	167	4	4	NU 326	NJ	NUP	N	NF	NP	555000	665000	2200	2600		148	148	164	169	184	262	262	247	3	3	18.2	17.8	HJ 326	130	182	14	24	4	1.61
	280	58	—	167	4	4	NU 326 E	NJ	NUP	—	—	—	615000	735000	1900	2400		—	148	164	169	184	262	—	—	3	3	18.5	—	HJ 326 E	130	182.3	14	23	4	1.59
	280	93	—	167	4	4	NU 2326	NJ	NUP	—	—	—	840000	1130000	1900	2400		—	148	164	169	184	262	—	—	3	3	29.1	—	HJ 2326	130	182	14	29.5	4	1.78
	280	93	—	167	4	4	NU 2326 E	NJ	NUP	—	—	—	920000	1230000	1900	2400		—	148	164	169	184	262	—	—	3	3	28.5	—	HJ 2326 E	130	182.3	14	28	4	1.75
	340	78	285	185	5	5	NU 426	NJ	NUP	N	NF	NP	825000	955000	1800	2200		152	152	183	187	208	318	318	287	4	4	36.9	36.1	HJ 426	130	205	18	32	5	3.23
140	210	33	192	158	2	1.1	NU 1028	—	—	N	—	—	176000	250000	3000	3600		149	147	156	161	—	200	203.5	193	2	1	4.07	4.00	—	—	—	—	—	—	
	250	42	221	169	3	3	NU 228	NJ	NUP	N	NF	NP	310000	420000	2400	3000		154	154	166	171	182	236	236	228	2.5	2.5	9.49	9.26	HJ 228	140	179.5	11	19	3	0.968
	250	42	—	169	3	3	NU 228 E	NJ	NUP	—	—	—	395000	515000	2200	2600		—	154	166	171	182	236	—	—	2.5	2.5	8.90	—	HJ 228 E	140	180	11	18	3	0.966
	250	68	—	169	3	3	NU 2228	NJ	NUP	—	—	—	465000	670000	2200	2800		—	154	166	171	182	236	—	—	2.5	2.5	14.3	—	HJ 2228	140	179.5	11	25	3	1.09
	250	68	—	169	3	3	NU 2228 E	NJ	NUP	—	—	—	570000	835000	2200	2600		—	154	166	171	182	236	—	—	2.5	2.5	14.9	—	HJ 2228 E	140	180	11	23	3	1.08
	300	62	260	180	4	4	NU 328	NJ	NUP	N	NF	NP	595000	745000	2000	2400		158	158	176	182	198	282	282	268	3	3	22.4	21.8	HJ 328	140	196	15	26	4	2.01
	300	62	—	180	4	4	NU 328 E	NJ	NUP	—	—	—	665000	795000	1800	2200		—	158	176	182	198	282	—	—	3	3	21.8	—	HJ 328 E	140	196	15	25	4	1.97
	300	102	—	180	4	4	NU 2328	NJ	NUP	—	—	—	920000	1250000	1800	2200		—	158	176	182	198	282	—	—	3	3	36.8	—	HJ 2328	140	196	15	33.5	4	2.27
	300	102	—	180	4	4	NU 2328 E	NJ	NUP	—	—	—	1020000	1380000	1800	2200		—	158	176	182	198	282	—	—	3	3	35.9	—	HJ 2328 E	140	196	15	31	4	2.18
	360	82	302	198	5	5	NU 428	NJ	NUP	N	NF	NP	875000	1020000	1700	2000		162	162	195	200	222	338	338	304	4	4	48.0	46.8	HJ 428	140	219	18	33	5	3.70

Note: ⁽¹⁾ The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Cylindrical Roller Bearings
Bore Diameter: 150~180mm

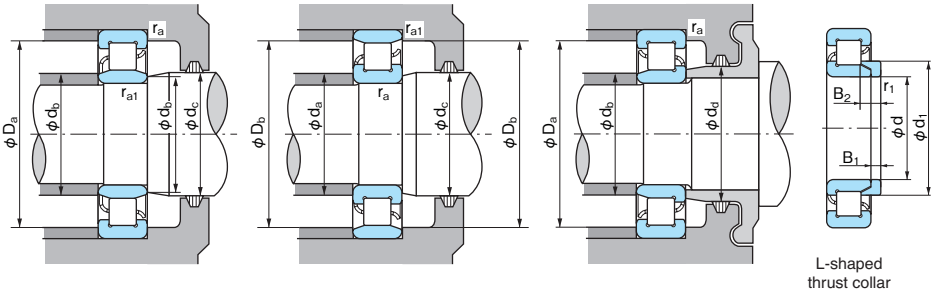
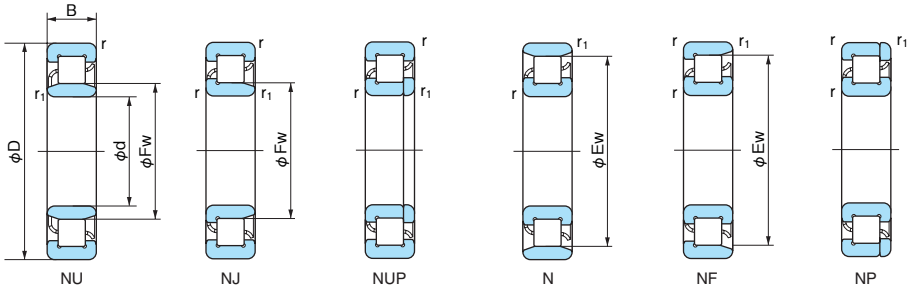


1N=0.102kgf																																				
Boundary dimensions (mm)							Bearing No.						Basic dynamic load rating Cr (N)		Basic static load rating Cor (N)		Limiting speed (min ⁻¹)(¹)		Abutment and fillet dimensions (mm)								Mass (kg)		Dimensions of L-shaped thrust collar (mm)							
d	D	B	Ew	Fw	r (min)	r1 (min)	NU	NJ	NUP	N	NF	NP	load rating Cr (N)	load rating Cor (N)	Grease lubrication	Oil lubrication		da (min)	db (min)	dc (max)	dd (min)	Da (max)	Db (min)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference		
150	225	35	205.5	169.5	2.1	1.5	NU 1030	—	—	N	—	—	202000	294000	2800	3400		161	158.5	167	173	—	213	217	207	2	1.5	4.90	4.83	—	—	—	—	—	—	—
	270	45	238	182	3	3	NU 230	NJ	NUP	N	NF	NP	375000	490000	2200	2800		164	164	179	184	196	256	256	245	2.5	2.5	11.9	11.7	HJ 230	150	193	12	20.5	3	1.22
	270	45	—	182	3	3	NU 230 E	NJ	NUP	—	—	—	450000	595000	2000	2400		—	164	179	184	196	256	—	—	2.5	2.5	11.5	—	HJ 230 E	150	193.7	12	19.5	3	1.23
	270	73	—	182	3	3	NU 2230	NJ	NUP	—	—	—	545000	800000	2000	2600		—	164	179	184	196	256	—	—	2.5	2.5	18.7	—	HJ 2230	150	193	12	26.5	3	1.36
	270	73	—	182	3	3	NU 2230 E	NJ	NUP	—	—	—	660000	990000	2000	2400		—	164	179	184	196	256	—	—	2.5	2.5	18.5	—	HJ 2230 E	150	193.7	12	24.5	3	1.35
	320	65	277	193	4	4	NU 330	NJ	NUP	N	NF	NP	660000	805000	1800	2200		168	168	190	195	213	302	302	287	3	3	26.5	25.9	HJ 330	150	210	15	26.5	4	2.32
	320	65	—	193	4	4	NU 330 E	NJ	NUP	—	—	—	755000	920000	1600	2000		—	168	190	195	213	302	—	—	3	3	28.8	—	HJ 330 E	150	210	15	25	4	2.26
	320	108	—	193	4	4	NU 2330	NJ	NUP	—	—	—	1020000	1400000	1700	2000		—	168	190	195	213	302	—	—	3	3	44.7	—	HJ 2330	150	210	15	34	4	2.62
	320	108	—	193	4	4	NU 2330 E	NJ	NUP	—	—	—	1160000	1600000	1600	2000		—	168	190	195	213	302	—	—	3	3	48.2	—	HJ 2330 E	150	210	15	31.5	4	2.52
380	85	317	213	5	5	NU 430	NJ	NUP	N	NF	NP	930000	1120000	1600	2000		172	172	210	216	237	358	358	319	4	4	54.5	53.3	HJ 430	150	234	20	36.5	5	4.61	
160	240	38	220	180	2.1	1.5	NU 1032	—	—	N	—	—	238000	340000	2600	3200		171	168.5	178	184	—	228	232	220	2	1.5	6.01	5.93	—	—	—	—	—	—	
	290	48	255	195	3	3	NU 232	NJ	NUP	N	NF	NP	430000	570000	2200	2600		174	174	192	197	210	276	276	262	2.5	2.5	14.5	14.2	HJ 232	160	207	12	21	3	1.44
	290	48	—	195	3	3	NU 232 E	NJ	NUP	—	—	—	500000	665000	1900	2200		—	174	192	197	210	276	—	—	2.5	2.5	15.6	—	HJ 232 E	160	207.3	12	20	3	1.43
	290	80	—	195	3	3	NU 2232	NJ	NUP	—	—	—	630000	940000	1900	2400		—	174	192	197	210	276	—	—	2.5	2.5	24.1	—	HJ 2232	160	205	12	28	3	1.50
	290	80	—	193	3	3	NU 2232 E	NJ	NUP	—	—	—	810000	1190000	1900	2400		—	174	192	197	210	276	—	—	2.5	2.5	25.9	—	HJ 2232 E	160	206.1	12	24.5	3	1.54
	340	68	292	208	4	4	NU 332	NJ	NUP	N	NF	NP	700000	875000	1700	2000		178	178	200	211	228	322	322	304	3	3	31.2	30.6	HJ 332	160	225	15	28	4	2.71
	340	68	—	204	4	4	NU 332 E	NJ	NUP	—	—	—	860000	1050000	1700	2000		—	178	200	211	228	322	—	—	3	3	34.1	—	HJ 332 E	160	222.1	15	25	4	2.49
	340	114	—	208	4	4	NU 2332	NJ	NUP	—	—	—	1070000	1520000	1500	1900		—	178	200	211	228	322	—	—	3	3	52.5	—	HJ 2332	160	225	15	37	4	3.09
340	114	—	204	4	4	NU 2332 E	NJ	NUP	—	—	—	1310000	1820000	1600	1900		—	178	200	211	228	322	—	—	3	3	57.2	—	HJ 2332 E	160	222.1	15	32	4	2.80	
170	260	42	237	193	2.1	2.1	NU 1034	—	—	N	—	—	287000	415000	2400	2800		181	182	190	197	—	248	249	237	2	2	8.02	7.90	—	—	—	—	—	—	
	310	52	272	208	4	4	NU 234	NJ	NUP	N	NF	NP	475000	635000	2000	2400		188	188	204	211	223	292	292	284	3	3	17.9	17.6	HJ 234	170	220.5	12	22	4	1.67
	310	52	—	207	4	4	NU 234 E	NJ	NUP	—	—	—	605000	800000	1900	2300		—	188	204	211	223	292	—	—	3	3	19.3	—	HJ 234 E	170	220.8	12	20	4	1.64
	310	86	—	208	4	4	NU 2234	NJ	NUP	—	—	—	725000	1100000	1800	2200		—	188	204	211	223	292	—	—	3	3	29.6	—	HJ 2234	170	219	12	29	4	1.78
	310	86	—	205	4	4	NU 2234 E	NJ	NUP	—	—	—	970000	1400000	1900	2300		—	188	204	211	223	292	—	—	3	3	31.9	—	HJ 2234 E	170	219.5	12	24	4	1.76
	360	72	310	220	4	4	NU 334	NJ	NUP	N	NF	NP	795000	1010000	1600	2000		188	188	216	223	241	342	342	314	3	3	37.1	36.1	HJ 334	170	238	16	29.5	4	3.20
	360	120	—	220	4	4	NU 2334	NJ	NUP	—	—	—	1220000	1750000	1400	1800		—	188	216	223	241	342	—	—	3	3	62.7	—	HJ 2334	170	238	16	38.5	4	3.62
180	280	46	255	205	2.1	2.1	NU 1036	—	—	N	—	—	355000	510000	2200	2600		191	192	203	209	—	268	269	256	2	2	10.8	10.5	—	—	—	—	—	—	
	320	52	282	218	4	4	NU 236	NJ	NUP	N	NF	NP	495000	675000	1900	2200		198	198	214	221	233	302	302	294	3	3	19.3	18.3	HJ 236	180	230.5	12	22	4	1.76
	320	52	—	217	4	4	NU 236 E	NJ	NUP	—	—	—	625000	850000	1800	2200		—	198	214	221	233	302	—	—	3	3	20.5	—	HJ 236 E	180	230.8	12	20	4	1.73
	320	86	—	218	4	4	NU 2236	NJ	NUP	—	—	—	775000	1210000	1700	2000		—	198	214	221	233	302	—	—	3	3	30.4	—	HJ 2236	180	229	12	29	4	1.87
	320	86	—	215	4	4	NU 2236 E	NJ	NUP	—	—	—	1010000	1510000	1800	2200		—	198	214	221	233	302	—	—	3	3	34.5	—	HJ 2236 E	180	229.5	12	24	4	1.85
	380	75	328	232	4	4	NU 336	NJ	NUP	N	NF	NP	9050000	1150000	1500	1800		198	198	227	235	255	362	362	332	3	3	42.8	41.9	HJ 336	180	252	17	30.5	4	3.80
380	126	—	232	4	4	NU 2336	NJ	NUP	—	—	—	1380000	1990000	1300	1700		—	198	227	235	255	362	—	—	3	3	73.1	—	HJ 2336	180	252	17	40	4	4.35	

Note: (¹) The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Cylindrical Roller Bearings

Bore Diameter: 400~500mm



													1N=0.102kgf			
Boundary dimensions (mm)							Bearing No.						Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)(¹)	
d	D	B	Ew	Fw	r (min)	r1 (min)	NU	NJ	NUP	N	NF	NP			Grease lubrication	Oil lubrication
400	600	90	550	450	5	5	NU 1080	—	—	N	—	—	1360000	2280000	950	1100
420	620	90	570	470	5	5	NU 1084	—	—	N	—	—	1390000	2380000	900	1100
440	650	94	597	493	6	6	NU 1088	—	—	N	—	—	1530000	2530000	850	1050
460	680	100	624	516	6	6	NU 1092	—	—	N	—	—	1630000	2740000	800	1000
480	700	100	644	536	6	6	NU 1096	—	—	N	—	—	1620000	2860000	780	950
500	720	100	664	556	6	6	NU 10/500	—	—	N	—	—	1700000	2970000	750	900

Note: (¹) The dimension table shows limiting speed for bearings made with machined cages. For bearings made with pressed steel cages, multiply the table limits by 0.8.

Abutment and fillet dimensions (mm)										Mass (kg)		Dimensions of L-shaped thrust collar (mm)							
da (min)	db (min) (max)		dc (min)	dd (min)	Da (max)	Db (max) (min)		ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference	
422	422	446	455	—	578	578	551	4	4	92.5	92.4	—	—	—	—	—	—	—	
442	442	466	475	—	598	598	571	4	4	97.6	95.8	—	—	—	—	—	—	—	
468	468	489	498	—	622	622	598	5	5	112	110	—	—	—	—	—	—	—	
488	488	512	520	—	652	652	625	5	5	130	128	—	—	—	—	—	—	—	
508	508	532	541	—	672	672	645	5	5	135	132	—	—	—	—	—	—	—	
528	528	552	561	—	692	692	665	5	5	140	137	—	—	—	—	—	—	—	