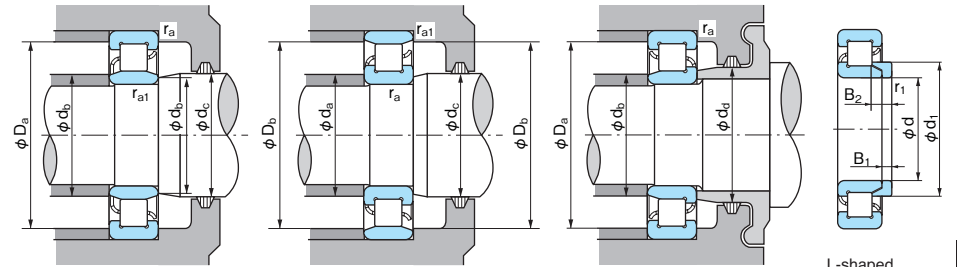
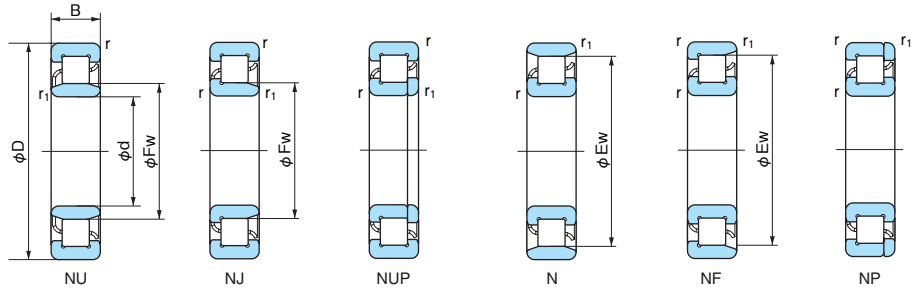


Cylindrical Roller Bearings

Bore Diameter: 17~30mm



L-shaped thrust collar

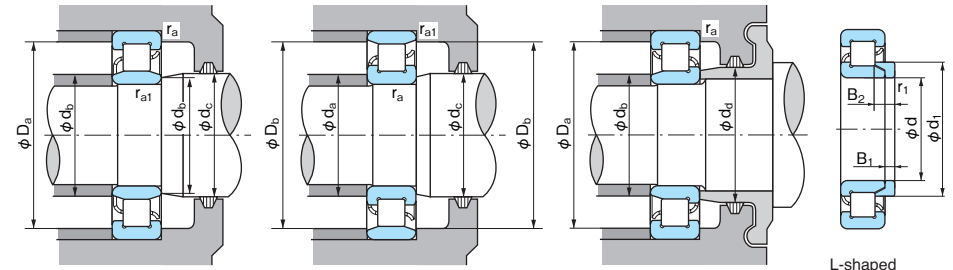
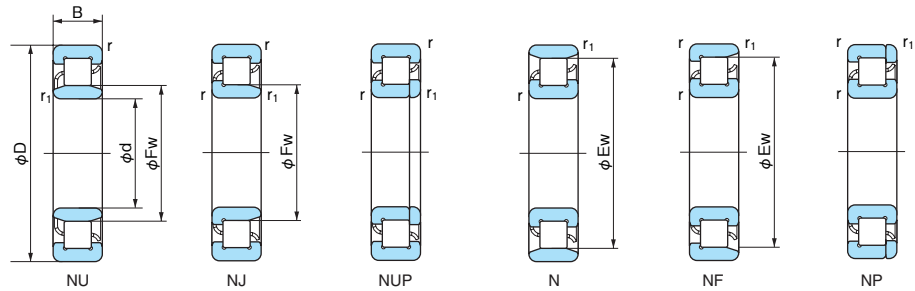
1N=0.102kgf

Boundary dimensions (mm)							Bearing No.						Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻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)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	Db (min)	ra (max)	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: (*) 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



L-shaped thrust collar

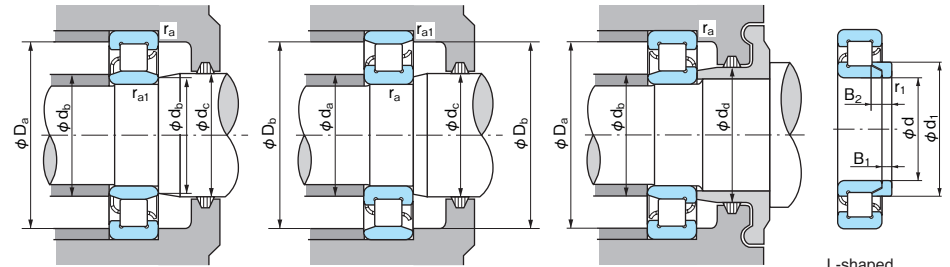
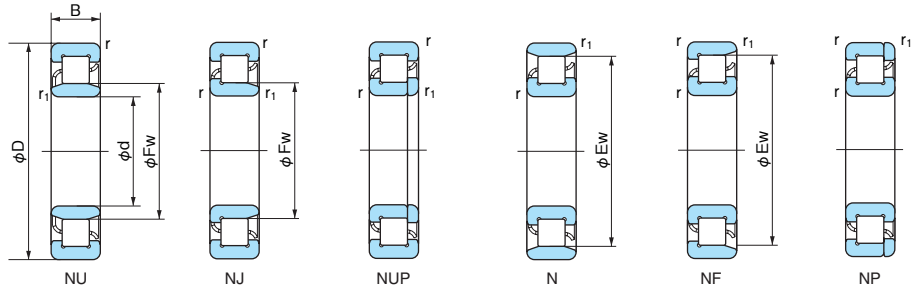
1N=0.102kgf

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)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	Db (min)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference	
35	62	14	55	42	1	0.6	NU 1007	—	—	N	—	—	22600	23200	11000	13000	40	38.5	41	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	0.054	
	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	0.176	

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: 50~60mm



L-shaped thrust collar

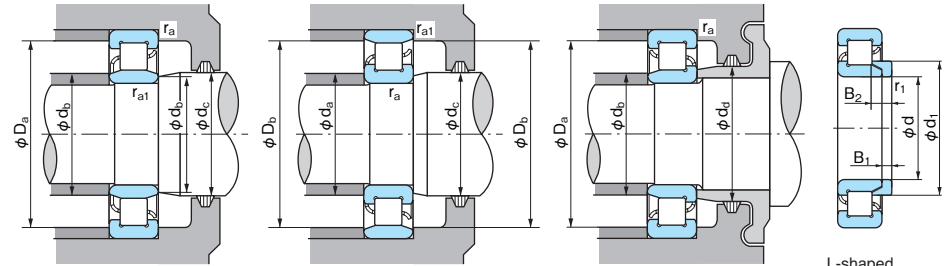
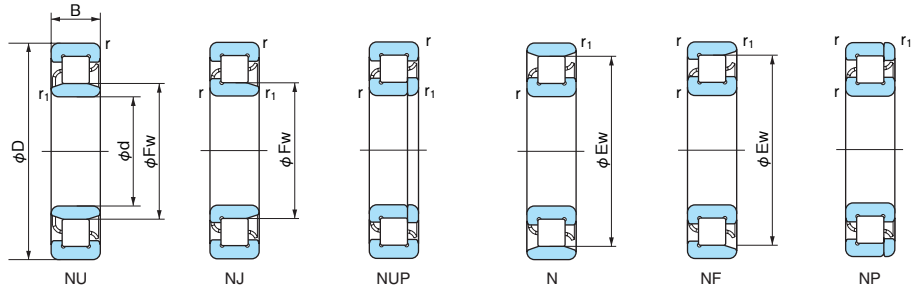
1N=0.102kgf

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)	db (max)	dc (min)	dd (min)	Da (max)	Db (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	1	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	
	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		
55	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	
	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		
60	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	
	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



L-shaped thrust collar

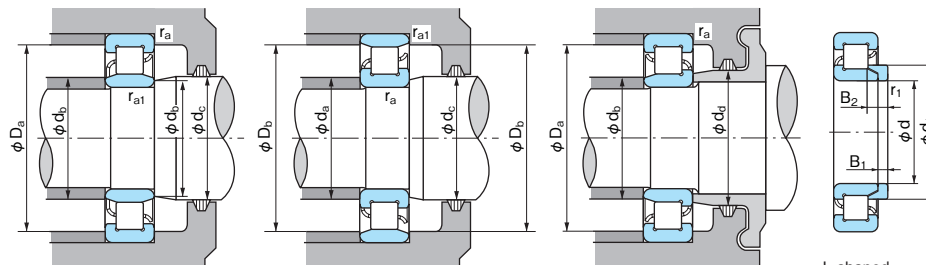
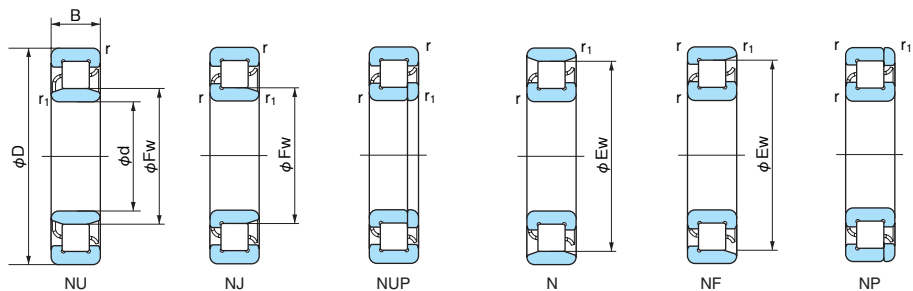
1N=0.102kgf

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)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	Db (min)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) 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 213E	NJ	NUP	—	—	—	108000	119000	4800	5600	—	73.5	77	81	87	111.5	—	—	1.5	1.5	1.18	—	HJ 213E	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 2213E	NJ	NUP	—	—	—	149000	181000	4800	6000	—	73.5	77	81	87	111.5	—	—	1.5	1.5	1.65	—	HJ 2213E	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 313E	NJ	NUP	—	—	—	181000	191000	4000	4800	—	77	81	85	93	128	—	—	2	2	2.55	—	HJ 313E	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 2313E	NJ	NUP	—	—	—	247000	287000	3800	4800	—	77	81	85	93	128	—	—	2	2	3.56	—	HJ 2313E	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 214E	NJ	NUP	—	—	—	119000	137000	4600	5600	—	78.5	82	86	92	116.5	—	—	1.5	1.5	1.26	—	HJ 214E	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 2214E	NJ	NUP	—	—	—	156000	194000	4600	5600	—	78.5	82	86	92	116.5	—	—	1.5	1.5	1.68	—	HJ 2214E	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 314E	NJ	NUP	—	—	—	205000	222000	3600	4300	—	82	87	92	100	138	—	—	2	2	3.15	—	HJ 314E	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 2314E	NJ	NUP	—	—	—	274000	325000	3600	4500	—	82	87	92	100	138	—	—	2	2	4.30	—	HJ 2314E	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 215E	NJ	NUP	—	—	—	130000	156000	4300	5300	—	83.5	87	90	96	121.5	—	—	1.5	1.5	1.38	—	HJ 215E	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 2215E	NJ	NUP	—	—	—	162000	207000	4300	5300	—	83.5	87	90	96	121.5	—	—	1.5	1.5	1.80	—	HJ 2215E	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 315E	NJ	NUP	—	—	—	240000	263000	3400	4000	—	87	93	97	106	148	—	—	2	2	3.70	—	HJ 315E	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 2315E	NJ	NUP	—	—	—	330000	395000	3400	4300	—	87	93	97	106	148	—	—	2	2	5.30	—	HJ 2315E	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: 80~90mm



L-shaped thrust collar

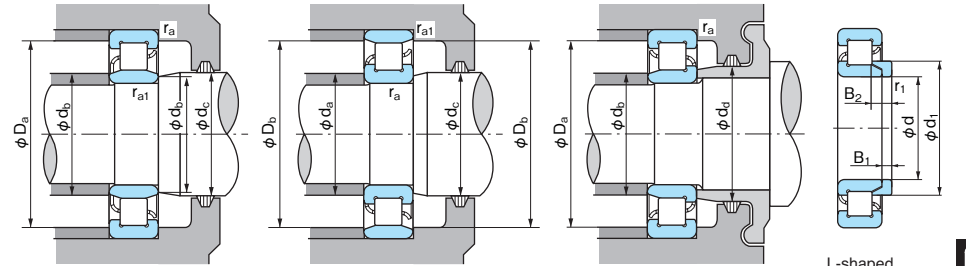
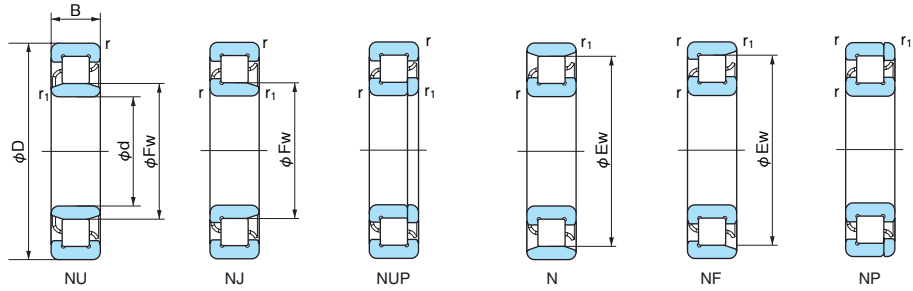
1N=0.102kgf

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)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	Db (min)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference	
80	125	22	113.5	91.5	1.1	1	NU 1016	—	—	N	—	—	72500	90500	5300	6300	86.5	86	90	94	—	118	120	113.5	1	1	1.03	0.994	—	—	—	—	—	—	—	—
	140	26	125.3	95.3	2	2	NU 216	NJ	NUP	N	NF	NP	106000	122000	4500	5300	90	90	94	97	104	130	130	128	2	2	1.53	1.50	HJ 216	80	101.2	8	13.5	2	0.214	
	140	26	—	95.3	2	2	NU 216E	NJ	NUP	—	—	—	139000	167000	4000	4800	—	90	94	97	104	130	—	—	2	2	1.66	—	HJ 216E	80	101.6	8	12.5	2	0.213	
	140	33	—	95.3	2	2	NU 2216	NJ	NUP	—	—	—	147000	186000	4000	5000	—	90	94	97	104	130	—	—	2	2	1.96	—	HJ 2216	80	101.2	8	13.5	2	0.214	
	140	33	—	95.3	2	2	NU 2216E	NJ	NUP	—	—	—	186000	243000	4000	5000	—	90	94	97	104	130	—	—	2	2	2.15	—	HJ 2216E	80	101.6	8	12.5	2	0.213	
	170	39	147	103	2.1	2.1	NU 316	NJ	NUP	N	NF	NP	190000	207000	3600	4300	92	92	99	105	114	158	158	151	2	2	3.93	3.83	HJ 316	80	111.8	11	19.5	2.1	0.479	
	170	39	—	101	2.1	2.1	NU 316E	NJ	NUP	—	—	—	256000	282000	3200	3800	—	92	99	105	114	158	—	—	2	2	4.38	—	HJ 316E	80	110.6	11	17	2.1	0.440	
	170	58	—	103	2.1	2.1	NU 2316	NJ	NUP	—	—	—	274000	330000	3200	4000	—	92	99	105	114	158	—	—	2	2	5.83	—	HJ 2316	80	111.8	11	23	2.1	0.517	
	170	58	—	101	2.1	2.1	NU 2316E	NJ	NUP	—	—	—	355000	430000	3200	4000	—	92	99	105	114	158	—	—	2	2	6.35	—	HJ 2316E	80	110.6	11	20	2.1	0.475	
200	48	170	110	3	3	NU 416	NJ	NUP	N	NF	NP	299000	315000	3200	3800	94	94	109	112	124	186	186	172	2.5	2.5	7.45	7.28	HJ 416	80	122	13	22	3	0.779		
85	130	22	118.5	96.5	1.1	1	NU 1017	—	—	N	—	—	74500	95500	5000	6000	91.5	91	95	99	—	123	125	118.5	1	1	1.06	1.04	—	—	—	—	—	—	—	
	150	28	133.8	101.8	2	2	NU 217	NJ	NUP	N	NF	NP	120000	140000	4300	5000	95	95	99	104	110	140	140	137	2	2	1.92	1.87	HJ 217	85	108.2	8	14	2	0.253	
	150	28	—	100.5	2	2	NU 217E	NJ	NUP	—	—	—	167000	199000	3800	4500	—	95	99	104	110	140	—	—	2	2	2.10	—	HJ 217E	85	107.6	8	12.5	2	0.239	
	150	36	—	101.8	2	2	NU 2217	NJ	NUP	—	—	—	170000	218000	3800	4500	—	95	99	104	110	140	—	—	2	2	2.50	—	HJ 2217	85	108.2	8	14	2	0.253	
	150	36	—	100.5	2	2	NU 2217E	NJ	NUP	—	—	—	217000	279000	3800	4500	—	95	99	104	110	140	—	—	2	2	2.75	—	HJ 2217E	85	107.6	8	13	2	0.243	
	180	41	156	108	3	3	NU 317	NJ	NUP	N	NF	NP	224000	247000	3400	4000	99	99	106	110	119	166	166	160	2.5	2.5	4.54	4.44	HJ 317	85	117.5	12	20.5	3	0.560	
	180	41	—	108	3	3	NU 317E	NJ	NUP	—	—	—	291000	330000	3000	3600	—	99	106	110	119	166	—	—	2.5	2.5	5.12	—	HJ 317E	85	117.9	12	18.5	3	0.545	
	180	60	—	108	3	3	NU 2317	NJ	NUP	—	—	—	315000	380000	3000	3800	—	99	106	110	119	166	—	—	2.5	2.5	6.62	—	HJ 2317	85	117.5	12	24	3	0.603	
	180	60	—	108	3	3	NU 2317E	NJ	NUP	—	—	—	390000	485000	3000	3600	—	99	106	110	119	166	—	—	2.5	2.5	7.35	—	HJ 2317E	85	117.9	12	22	3	0.590	
210	52	177	113	4	4	NU 417	NJ	NUP	N	NF	NP	330000	350000	3000	3800	103	103	111	115	128	192	192	179	3	3	9.10	8.68	HJ 417	85	126	14	24	4	0.876		
90	140	24	127	103	1.5	1.1	NU 1018	—	—	N	—	—	88000	114000	4800	5600	98	97	101	106	—	131.5	133.5	127.5	1.5	1	1.36	1.34	—	—	—	—	—	5	—	
	160	30	143	107	2	2	NU 218	NJ	NUP	N	NF	NP	152000	178000	4000	4800	100	100	105	109	116	150	150	146	2	2	2.30	2.25	HJ 218	90	114.2	9	15	2	0.311	
	160	30	—	107	2	2	NU 218E	NJ	NUP	—	—	—	182000	217000	3600	4300	—	100	105	109	116	150	—	—	2	2	2.53	—	HJ 218E	90	114.4	9	14	2	0.306	
	160	40	—	107	2	2	NU 2218	NJ	NUP	—	—	—	207000	265000	3600	4300	—	100	105	109	116	150	—	—	2	2	3.10	—	HJ 2218	90	114.2	9	16	2	0.320	
	160	40	—	107	2	2	NU 2218E	NJ	NUP	—	—	—	242000	315000	3600	4300	—	100	105	109	116	150	—	—	2	2	3.48	—	HJ 2218E	90	114.4	9	15	2	0.315	
	190	43	165	115	3	3	NU 318	NJ	NUP	N	NF	NP	240000	265000	3200	3800	104	104	111	117	127	176	176	169	2.5	2.5	5.37	5.25	HJ 318	90	125	12	21	3	0.644	
	190	43	—	113.5	3	3	NU 318E	NJ	NUP	—	—	—	335000	380000	2800	3400	—	104	111	117	127	176	—	—	2.5	2.5	5.92	—	HJ 318E	90	124.2	12	18.5	3	0.601	
	190	64	—	115	3	3	NU 2318	NJ	NUP	—	—	—	325000	395000	2800	3600	—	104	111	117	127	176	—	—	2.5	2.5	7.90	—	HJ 2318	90	125	12	26	3	0.713	
	190	64	—	113.5	3	3	NU 2318E	NJ	NUP	—	—	—	435000	535000	2800	3400	—	104	111	117	127	176	—	—	2.5	2.5	8.72	—	HJ 2318E	90	124.2	12	22	3	0.653	
225	54	191.5	123.5	4	4	NU 418	NJ	NUP	N	NF	NP	375000	400000	2800	3400	108	108	122	125	139	207	207	194	3	3	10.6	10.3	HJ 418	90	137	14	24	4	1.06		

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



L-shaped thrust collar

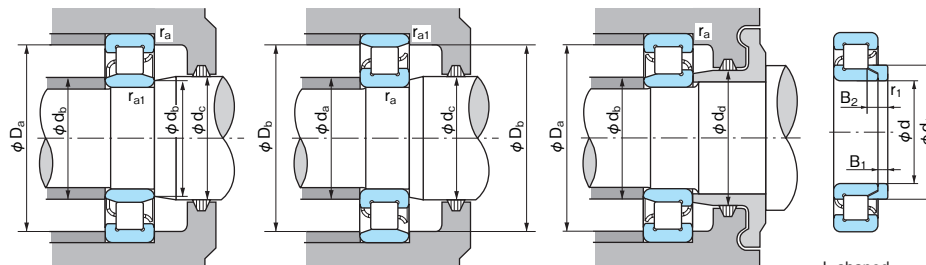
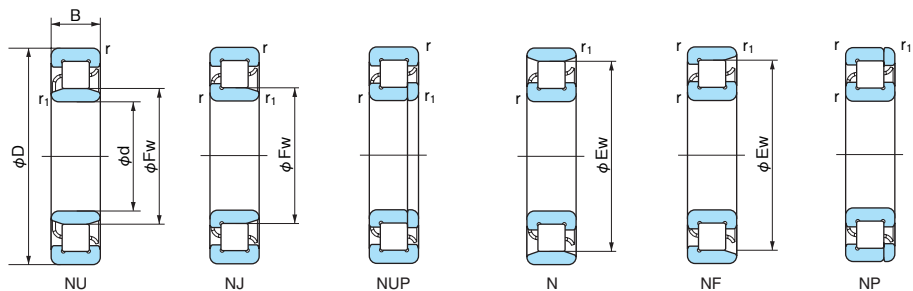
1N=0.102kgf

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)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	Db (min)	ra (max)	ra1 (max)	NU	N	Bearing No.	d	d1 (max)	B1	B2	r1 (min)	Mass (kg) Reference					
95	145	24	132	108	1.5	1.1	NU 1019	—	—	N	—	—	90500	120000	4500	5300	103	102	106	111	—	136.5	138.5	132.5	1.5	1	1.42	1.40	—	—	—	—	—	—	—	—	—	—
	170	32	151.5	113.5	2.1	2.1	NU 219	NJ	NUP	N	NF	NP	165000	195000	3800	4500	107	107	111	116	123	158	158	155	2	2	2.81	2.75	HJ 219	95	121	9	15.5	2.1	0.357			
	170	32	—	112.5	2.1	2.1	NU 219E	NJ	NUP	—	—	—	222000	259000	3400	4000	—	107	111	116	123	158	—	—	2	2	3.08	—	HJ 219E	95	120.6	9	14	2.1	0.340			
	170	43	—	113.5	2.1	2.1	NU 2219	NJ	NUP	—	—	—	230000	298000	3400	4000	—	107	111	116	123	158	—	—	2	2	3.85	—	HJ 2219	95	121	9	16.5	2.1	0.367			
	170	43	—	112.5	2.1	2.1	NU 2219E	NJ	NUP	—	—	—	286000	370000	3400	4000	—	107	111	116	123	158	—	—	2	2	4.23	—	HJ 2219E	95	120.6	9	15.5	2.1	0.357			
	200	45	173.5	121.5	3	3	NU 319	NJ	NUP	N	NF	NP	259000	289000	3000	3600	109	109	119	124	134	186	186	178	2.5	2.5	6.23	6.13	HJ 319	95	132	13	22.5	3	0.774			
	200	45	—	121.5	3	3	NU 319E	NJ	NUP	—	—	—	335000	385000	2600	3200	—	109	119	124	134	186	—	—	2.5	2.5	6.92	—	HJ 319E	95	132.2	13	20.5	3	0.750			
	200	67	—	121.5	3	3	NU 2319	NJ	NUP	—	—	—	370000	460000	2600	3400	—	109	119	124	134	186	—	—	2.5	2.5	9.39	—	HJ 2319	95	132	13	26.5	3	0.836			
	200	67	—	121.5	3	3	NU 2319E	NJ	NUP	—	—	—	460000	585000	2600	3200	—	109	119	124	134	186	—	—	2.5	2.5	10.3	—	HJ 2319E	95	132.2	13	20.5	3	0.750			
	240	55	201.5	133.5	4	4	NU 419	NJ	NUP	N	NF	NP	400000	445000	2600	3200	113	113	132	136	149	222	222	204	3	3	14.0	13.6	HJ 419	95	147	15	25.5	4	1.32			
100	150	24	137	113	1.5	1.1	NU 1020	—	—	N	—	—	93000	126000	4300	5300	108	107	111	116	—	141.5	143.5	137.5	1.5	1	1.48	1.46	—	—	—	—	—	—	—	—	—	
	180	34	160	120	2.1	2.1	NU 220	NJ	NUP	N	NF	NP	183000	217000	3600	4300	112	112	117	122	130	168	168	164	2	2	3.30	3.23	HJ 220	100	128	10	17	2.1	0.448			
	180	34	—	119	2.1	2.1	NU 220E	NJ	NUP	—	—	—	250000	305000	3200	3800	—	112	117	122	130	168	—	—	2	2	3.73	—	HJ 220E	100	127.5	10	15	2.1	0.421			
	180	46	—	120	2.1	2.1	NU 2220	NJ	NUP	—	—	—	257000	335000	3200	3800	—	112	117	122	130	168	—	—	2	2	4.67	—	HJ 2220	100	128	10	18	2.1	0.459			
	180	46	—	119	2.1	2.1	NU 2220E	NJ	NUP	—	—	—	335000	445000	3200	3800	—	112	117	122	130	168	—	—	2	2	5.13	—	HJ 2220E	100	127.5	10	16	2.1	0.433			
	215	47	185.5	129.5	3	3	NU 320	NJ	NUP	N	NF	NP	300000	335000	2800	3400	114	114	125	132	143	201	201	190	2.5	2.5	7.70	7.53	HJ 320	100	140.5	13	22.5	3	0.892			
	215	47	—	127.5	3	3	NU 320E	NJ	NUP	—	—	—	380000	425000	2400	3000	—	114	125	132	143	201	—	—	2.5	2.5	8.45	—	HJ 320E	100	139.6	13	20.5	3	0.850			
	215	73	—	129.5	3	3	NU 2320	NJ	NUP	—	—	—	435000	545000	2400	3200	—	114	125	132	143	201	—	—	2.5	2.5	11.9	—	HJ 2320	100	140.5	13	27.5	3	0.977			
	215	73	—	127.5	3	3	NU 2320E	NJ	NUP	—	—	—	570000	715000	2400	3000	—	114	125	132	143	201	—	—	2.5	2.5	12.9	—	HJ 2320E	100	139.6	13	23.5	3	0.906			
	250	58	211	139	4	4	NU 420	NJ	NUP	N	NF	NP	450000	500000	2600	3000	118	118	137	141	156	232	232	213	3	3	14.4	14.0	HJ 420	100	153.5	16	27	4	1.52			
105	160	26	145.5	119.5	2	1.1	NU 1021	—	—	N	—	—	109000	149000	4000	4800	114	112	118	122	—	150	153.5	146.5	2	1	1.88	1.85	—	—	—	—	—	—	—	—		
	190	36	168.8	126.8	2.1	2.1	NU 221	NJ	NUP	N	NF	NP	202000	241000	3400	4000	117	117	124	129	137	178	178	173	2	2	4.03	3.95	HJ 221	105	135	10	17.5	2.1	0.507			
	225	49	195	135	3	3	NU 321	NJ	NUP	N	NF	NP	340000	385000	2600	3200	119	119	132	137	149	211	211	199	2.5	2.5	8.73	8.51	HJ 321	105	147	13	22.5	3	0.977			
	260	60	220.5	144.5	4	4	NU 421	NJ	NUP	N	NF	NP	495000	555000	2400	3000	123	123	143	147	162	242	242	223	3	3	19.5	19.1	HJ 421	105	159.5	16	27	4	1.62			
	170	28	155	125	2	1.1	NU 1022	—	—	N	—	—	131000	174000	3800	4500	119	117	124	128	—	160	163.5	156	2	1	2.34	2.31	—	—	—	—	—	—	—	—		
110	200	38	178.5	132.5	2.1	2.1	NU 222	NJ	NUP	N	NF	NP	240000	290000	3200	3800	122	122	130	135	144	188	188	182	2	2	4.64	4.58	HJ 222	110	141.5	11	18.5	2.1	0.608			
	200	38	—	132.5	2.1	2.1	NU 222E	NJ	NUP	—	—	—	293000	365000	2800	3400	—	122	130	135	144	188	—	—	2	2	5.17	—	HJ 222E	110	141.7	11	17	2.1	0.593			
	200	53	—	132.5	2.1	2.1	NU 2222	NJ	NUP	—	—	—	320000	440000	2800	3400	—	122	130	135	144	188	—	—	2	2	6.93	—	HJ 2222	110	141.5	11	20.5	2.1	0.600			
	200	53	—	132.5	2.1	2.1	NU 2222E	NJ	NUP	—	—	—	385000	515000	2800	3400	—	122	130	135	144	188	—	—	2	2	7.32	—	HJ 2222E	110	141.7	11	19.5	2.1	0.629			
	240	50	207	143	3	3	NU 322	NJ	NUP	N	NF	NP	380000	435000	2600	3000	124	124	140	145	158	226	226	211	2.5	2.5	10.4	10.2	HJ 322	110	155.5	14	23	3	1.17			
	240	50	—	143	3	3	NU 322E	NJ	NUP	—	—	—	450000	525000	2200	2800	—	124	140	145	158	226	—	—	2.5	2.5	11.1	—	HJ 322E	110	155.8	14	22	3	1.16			
	240	80	—	143	3	3	NU 2322	NJ	NUP	—	—	—	570000	735000	2200	2800	—	124	140	145	158	226	—	—	2.5	2.5	18.8	—	HJ 2322	110	155.5	14	28	3	1.27			
	240	80	—	143	3	3	NU 2322E	NJ	NUP	—	—	—	670000	880000	2200	2800	—	124	140	145	158	226	—	—	2.5	2.5	18.5	—	HJ 2322E	110	155.8	14	26.5	3	1.26			
	280	65	235	155	4	4	NU 422	NJ	NUP	N	NF	NP	550000	620000	2200	2800	128	128	153	157	173	262	262	237	3	3	20.5	19.9	HJ 422	110	171	17	29.5	4	2.05			

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



L-shaped thrust collar

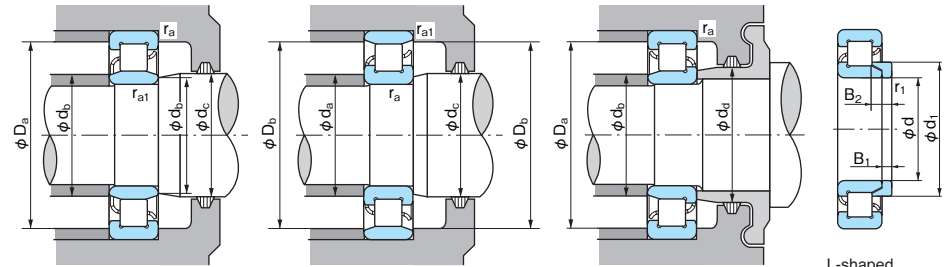
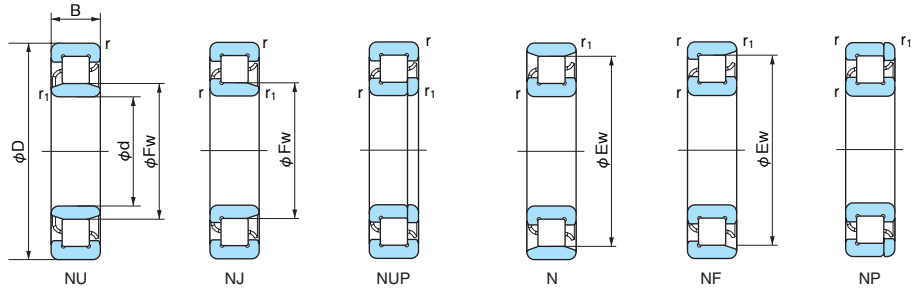
1N=0.102kgf

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 (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			
120	180	28	165	135	2	1.1	NU 1024	—	—	N	—	—	139000	191000	3400	4300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	215	40	191.5	143.5	2.1	2.1	NU 224	NJ	NUP	N	NF	NP	260000	320000	3000	3400	129	127	134	138	—	170	173.5	166	2	1	2.51	2.47	—	—	—	—	—	—	—	—
	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	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



L-shaped thrust collar

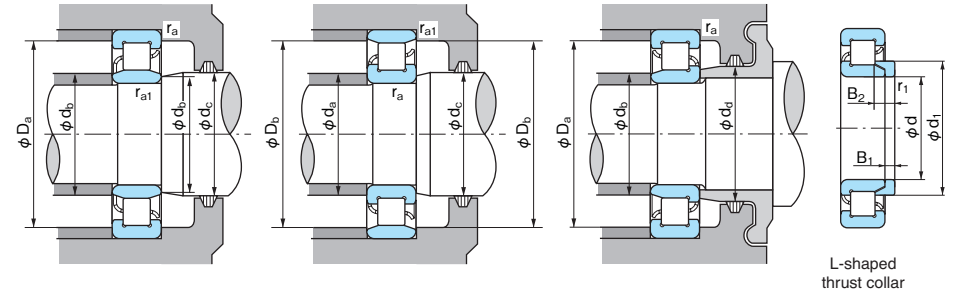
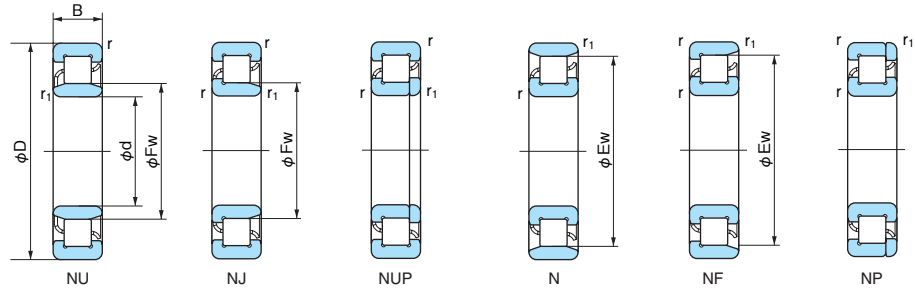
1N=0.102kgf

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	G	N	da (min)	db (min)	dc (min)	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 230E	NJ	NUP	—	—	—	450000	595000	2000	2400	—	164	179	184	196	256	—	—	2.5	2.5	11.5	—	HJ 230E	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 2230E	NJ	NUP	—	—	—	660000	990000	2000	2400	—	164	179	184	196	256	—	—	2.5	2.5	18.5	—	HJ 2230E	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 330E	NJ	NUP	—	—	—	755000	920000	1600	2000	—	168	190	195	213	302	—	—	3	3	28.8	—	HJ 330E	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 2330E	NJ	NUP	—	—	—	1160000	1600000	1600	2000	—	168	190	195	213	302	—	—	3	3	48.2	—	HJ 2330E	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 232E	NJ	NUP	—	—	—	500000	665000	1900	2200	—	174	192	197	210	276	—	—	2.5	2.5	15.6	—	HJ 232E	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 2232E	NJ	NUP	—	—	—	810000	1190000	1900	2400	—	174	192	197	210	276	—	—	2.5	2.5	25.9	—	HJ 2232E	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 332E	NJ	NUP	—	—	—	860000	1050000	1700	2000	—	178	200	211	228	322	—	—	3	3	34.1	—	HJ 332E	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 2332E	NJ	NUP	—	—	—	1310000	1820000	1600	1900	—	178	200	211	228	322	—	—	3	3	57.2	—	HJ 2332E	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 234E	NJ	NUP	—	—	—	605000	800000	1900	2300	—	188	204	211	223	292	—	—	3	3	19.3	—	HJ 234E	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 2234E	NJ	NUP	—	—	—	970000	1400000	1900	2300	—	188	204	211	223	292	—	—	3	3	31.9	—	HJ 2234E	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 236E	NJ	NUP	—	—	—	625000	850000	1800	2200	—	198	214	221	233	302	—	—	3	3	20.5	—	HJ 236E	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 2236E	NJ	NUP	—	—	—	1010000	1510000	1800	2200	—	198	214	221	233	302	—	—	3	3	34.5	—	HJ 2236E	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

Abutment and fillet dimensions (mm)										Mass (kg)		Dimensions of L-shaped thrust collar (mm)						
da (min)	db (min)	db (max)	dc (min)	dd (min)	Da (max)	Db (max)	Db (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	—	—	—	—	—	—	—

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.