Koyo

Cylindrical Roller Bearings

European Production only

JTEKT
Koyo TOYODA

Koyo Cylindrical Roller Bearings

"...Where accurate rotational control is required..."

Introduction

Koyo Cylindrical Roller bearings are the products of choice for applications requiring high radial load capacity. Thanks to the rollers and raceways being in constant linear contact. This type of bearing is equally suitable whenever a combination of heavy radial and impact loads are involved.

Our European manufactured Cylindrical Roller bearings range from 20mm – 65mm bore diameter. They have been successfully used in many applications such as planetary gears, transmissions, hydraulic pumps and many other types of industrial machinery.

In addition to the range of single row Cylindrical Roller bearings manufactured in our European operations, Koyo produces a full range of Cylindrical Roller bearings at our facilities in Japan, including single row, double row, four row and full complement variations, with bore sizes from 20mm – 2500mm+.

Machined with great accuracy, Koyo Cylindrical roller bearings guarantee optimal performance at high speeds.

Product line up

Single-row radial bearings (Metric series)

Koyo Cylindrical Roller bearings are designed with integral end flanges on the outer ring providing accurate guiding of the rolling elements. The inner rings are separable to allow for simplified mounting and removal when required. The line contact between the Cylindrical Rollers and raceways has been modified, to reduce edge stressing and the bearings are manufactured to reference standard DN5412.

Upon request, all NU design bearings can be provided without inner rings. This product variant is recognised by the letter 'R' in the prefix.

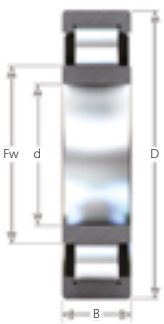
* Note:

- ✔ E-design bearing, molded window type cage of engineered polymer can be recognized by the letters "E.TVP" mentioned in the suffix.
- ✔ Machined brass caged can be recognized by the letter "M" in the suffix

Types | NU | NJ | NUP | RNU

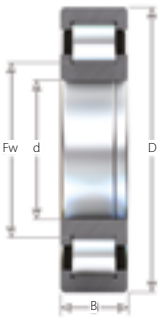
The different types of Cylindrical Roller bearings can be recognized by the arrangement of their end ribs.
Koyo Cylindrical Roller bearings are available in the following types:

NU



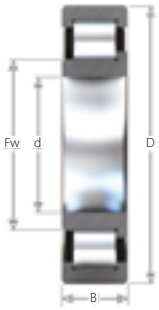
Bearings of NU design have two integral flanges on the outer ring. Their cylindrical inner ring makes these types of products well suited for use as floating bearings. NU design bearings are fully separable, which simplifies their mounting and removal.

NUP



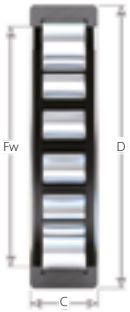
Cylindrical bearing type NUP has a double ribbed outer ring and a single-ribbed inner ring with an abutting loose rib, which allows the bearing to provide axial location and to carry light thrust loads in both directions.

NJ



Cylindrical roller radial bearings of NJ design have two integral flanges on the outer ring and one integral flange on the inner ring. This type is particularly suitable in case of axial loading in one direction.

RNU



Cylindrical Roller bearings of RNU style are supplied without the inner ring, so that the rolling elements are run directly onto an appropriately hardened and ground shaft. For the majority of general applications this requires the shaft to be machined to g6 and the housing bore to K6 tolerance.

Cage

Cylindrical Roller bearings series starting with 2..E, 22..E, 3..E and 23..E are equipped with cages made from glass fiber reinforced polyamide. These cage constructions allow maximum load carrying capability and can be used in operating temperatures up to 120° Celsius over extended periods. For this kind of cage we use the suffix TVP. Other polymer cages which can perform in much higher temperatures are also available on request. For more information, please contact your nearest Koyo Engineer.

In very rare cases a non-compatibility with the cage material can occur when lubricating with oil. Please contact your nearest Koyo engineer when this happens.

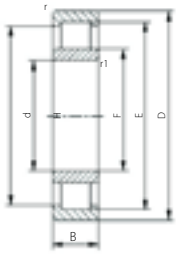
Machined Brass cages can be offered when a bearing has to operate in extreme environments. These cages are designated by the suffix "M"

Dimension accuracy, tolerance and bearing clearance

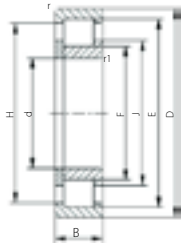
Metric series Cylindrical Roller radial bearings are available in various tolerance classes and clearance groups. Single row cylindrical roller bearings are made to normal clearance group C0. Upon request Koyo can equally provide Cylindrical Roller bearings with radial clearance C2, C3 and C4.

Koyo®

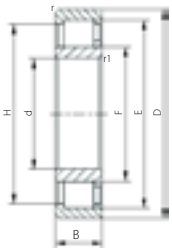
Product table



NU



NUP



NJ

S1 = axial displacement

RNU

	Boundary dimensions									Bearing No.	C3 radial Clearance	Brass Cage	Basic load ratings (kN)		Limiting speeds (min^{-1})		Mass
d	*D*	*B*	F_w	E_w	*r* min.	r_1 min.	*H* ≈	*J* ≈	*S1*				*Cr*	*C0r*	Grease lub.	Oil lub.	(kg)
15	35	11	19.3	30.3	0.6	0.3	27.8	21.8		NJ202E.TVP	✓	✓	17.4	11.6	16000	25000	0.047
	35	11	19.3	30.3	0.6	0.3	27.8		1	NU202E.TVP	✓	✓	17.4	11.6	16000	25000	0.047
17	40	12	22.1	35.1	0.6	0.3	32.0	24.7		NJ203E.TVP	✓		23.7	16.0	14000	22000	0.068
	40	12	22.1	35.1	0.6	0.3	32.0		1.2	NU203E.TVP	✓		23.7	16.0	14000	22000	0.068
	40	12	22.1	35.1	0.6	0.3	32.0	24.7		NUP203E.TVP	✓		23.7	16.0	14000	22000	0.068
	40	16	22.1	35.1	0.6	0.3	32.0	24.7		NJ2203E.TVP	✓		31.7	23.3	14000	22000	0.091
	40	16	22.1	35.1	0.6	0.3	32.0		1	NU2203E.TVP	✓		31.7	23.3	14000	22000	0.091
	40	16	22.1	35.1	0.6	0.3	32.0	24.7		NUP2203E.TVP	✓		31.7	23.3	14000	22000	0.091
	47	14	24.2	40.2	1.1	0.6	36.8	27.6		NJ303E.TVP	✓		33.5	22.8	13000	21000	0.121
	47	14	24.2	40.2	1.1	0.6	36.8		1.2	NU303E.TVP	✓		33.5	22.8	13000	21000	0.121
	47	14	24.2	40.2	1.1	0.6	36.8	27.6		NUP303E.TVP	✓		33.5	22.8	13000	21000	0.121
20	47	14	26.5	41.5	1.0	0.6	38.4	29.9		NJ204E.TVP	✓	✓	36.3	26.5	12000	18000	0.133
	47	14	26.5	41.5	1.0	0.6	38.4		1	NU204E.TVP	✓	✓	36.3	26.5	12000	18000	0.133
	47	14	26.5	41.5	1.0	0.6	38.4	29.9		NUP204E.TVP	✓	✓	36.3	26.5	12000	18000	0.133
	47	18	26.5	41.5	1.0	0.6	38.4	29.9		NJ2204E.TVP	✓		42.7	32.7	12000	18000	0.142
	47	18	26.5	41.5	1.0	0.6	38.4		1.8	NU2204E.TVP	✓		42.7	32.7	12000	18000	0.142
	47	18	26.5	41.5	1.0	0.6	38.4	29.9		NUP2204E.TVP	✓		42.7	32.7	12000	18000	0.142
	52	15	27.5	45.5	1.1	0.6	41.8	31.4		NJ304E.TVP	✓		40.8	28.0	12000	18000	0.152
	52	15	27.5	45.5	1.1	0.6	41.8		1.1	NU304E.TVP	✓		40.8	28.0	12000	18000	0.152
	52	15	27.5	45.5	1.1	0.6	41.8	31.4		NUP304E.TVP	✓		40.8	28.0	12000	18000	0.152
	52	21	27.5	45.5	1.1	0.6	41.8	31.4		NJ2304E.TVP	✓		53.7	40.0	12000	18000	0.207
	52	21	27.5	45.5	1.1	0.6	41.8		2	NU2304E.TVP	✓		53.7	40.0	12000	18000	0.207
	52	21	27.5	45.5	1.1	0.6	41.8	31.4		NUP2304E.TVP	✓		53.7	40.0	12000	18000	0.207
25	47	12	30.5	41.5	0.6	0.3	38.9		2.4	NU1005M	✓	✓	18.4	13.6	9800	15000	0.083
	52	15	30.5	41.5	0.6	0.3	38.9	34.9		NJ205E.TVP	✓	✓	38.8	29.8	9800	15000	0.140
	52	15	30.5	41.5	0.6	0.3	38.9		1.3	NU205E.TVP	✓	✓	38.8	29.8	9800	15000	0.140
	52	15	30.5	41.5	0.6	0.3	38.9	34.9		NUP205E.TVP	✓	✓	38.8	29.8	9800	15000	0.140
	52	18	30.5	41.5	0.6	0.3	38.9	34.9		NJ2205E.TVP	✓		45.6	36.7	9800	15000	0.160
	52	18	30.5	41.5	0.6	0.3	38.9		1.7	NU2205E.TVP	✓		45.6	36.7	9800	15000	0.160
	52	18	30.5	41.5	0.6	0.3	38.9	34.9		NUP2205E.TVP	✓		45.6	36.7	9800	15000	0.160
	62	17	34.0	54.0	1.1	1.1	50.1	38.3		NJ305E.TVP	✓	✓	53.6	38.9	9400	14000	0.243
	62	17	34.0	54.0	1.1	1.1	50.1		1.5	NU305E.TVP	✓	✓	53.6	38.9	9400	14000	0.243
	62	17	34.0	54.0	1.1	1.1	50.1	38.3		NUP305E.TVP	✓	✓	53.6	38.9	9400	14000	0.243
	62	24	34.0	54.0	1.1	1.1	50.1	38.3		NJ2305E.TVP	✓		72.7	57.6	9400	14000	0.348
	62	24	34.0	54.0	1.1	1.1	50.1		1.9	NU2305E.TVP	✓		72.7	57.6	9400	14000	0.348
	62	24	34.0	54.0	1.1	1.1	50.1	38.3		NUP2305E.TVP	✓		72.7	57.6	9400	14000	0.348
30	55	13	36.5	48.5	1.0	0.6	45.7		2.4	NU1006M	✓	✓	27.6	22.9	8100	13000	0.134
	62	16	37.5	55.5	1.0	0.6	52.0	41.4		NJ206E.TVP	✓		50.6	39.0	8300	13000	0.206
	62	16	37.5	55.5	1.0	0.6	52.0		1.4	NU206E.TVP	✓		50.6	39.0	8300	13000	0.206
	62	16	37.5	55.5	1.0	0.6	52.0	41.4		NUP206E.TVP	✓		50.6	39.0	8300	13000	0.206
	62	20	37.5	55.5	1.0	0.6	52.0	41.4		NJ2206E.TVP	✓		62.7	51.5	8300	13000	0.255
	62	20	37.5	55.5	1.0	0.6	52.0		1.6	NU2206E.TVP	✓		62.7	51.5	8300	13000	0.255
	62	20	37.5	55.5	1.0	0.6	52.0	41.4		NUP2206E.TVP	✓		62.7	51.5	8300	13000	0.255
	72	19	40.5	62.5	1.1	1.1	58.3	45.1		NJ306E.TVP	✓		68.3	52.1	7800	12000	0.370
	72	19	40.5	62.5	1.1	1.1	58.3		1.9	NU306E.TVP	✓		68.3	52.1	7800	12000	0.370
	72	19	40.5	62.5	1.1	1.1	58.3	45.1		NUP306E.TVP	✓		68.3	52.1	7800	12000	0.370
	72	27	40.5	62.5	1.1	1.1	58.3	45.1		NJ2306E.TVP	✓		95.0	79.5	7800	12000	0.530
	72	27	40.5	62.5	1.1	1.1	58.3		2.5	NU2306E.TVP	✓		95.0	79.5	7800	12000	0.530
	72	27	40.5	62.5	1.1	1.1	58.3	45.1		NUP2306E.TVP	✓		95.0	79.5	7800	12000	0.530

Boundary dimensions										Bearing No.	C3 radial Clearance	Brass Cage	Basic load ratings (kN)		Limiting speeds (min^{-1})		Mass
d	*D*	*B*	F_w	E_w	*r* min.	r_1 min.	*H* ≈	*J* ≈	*S1*				C_r	C_{0r}	Grease lub.	Oil lub.	(kg)
35	62	14	42.0	55.0	1.0	0.6	51.9			NU1007M	✓	✓	33.3	28.7	7000	11000	0.186
	72	17	44.0	64.0	1.1	0.6	60.1	48.0		NJ207E.TVP	✓	✓	64.8	52.2	7000	11000	0.303
	72	17	44.0	64.0	1.1	0.6	60.1			NU207E.TVP	✓	✓	64.8	52.2	7000	11000	0.303
	72	17	44.0	64.0	1.1	0.6	60.1	48.0		NUP207E.TVP	✓	✓	64.8	52.2	7000	11000	0.303
	72	23	44.0	64.0	1.1	0.6	60.1	48.0		NJ2207E.TVP	✓		78.9	67.3	7000	11000	0.395
	72	23	44.0	64.0	1.1	0.6	60.1			NU2207E.TVP	✓		78.9	67.3	7000	11000	0.395
	72	23	44.0	64.0	1.1	0.6	60.1	48.0		NUP2207E.TVP	✓		78.9	67.3	7000	11000	0.395
	80	21	46.2	70.2	1.5	1.1	65.7	51.2		NJ307E.TVP	✓		85.3	67.4	6800	10000	0.485
	80	21	46.2	70.2	1.5	1.1	65.7			NU307E.TVP	✓		85.3	67.4	6800	10000	0.485
	80	21	46.2	70.2	1.5	1.1	65.7	51.2		NUP307E.TVP	✓		85.3	67.4	6800	10000	0.485
	80	31	46.2	70.2	1.5	1.1	65.7	51.2		NJ2307E.TVP	✓		118.0	103.0	6800	10000	0.720
	80	31	46.2	70.2	1.5	1.1	65.7			NU2307E.TVP	✓		118.0	103.0	6800	10000	0.720
	80	31	46.2	70.2	1.5	1.1	65.7	51.2		NUP2307E.TVP	✓		118.0	103.0	6800	10000	0.720
40	68	15	47.0	61.0	1.0	0.6	57.6			NU1008M	✓	✓	39.7	35.4	6200	9600	0.225
	80	18	49.5	71.5	1.1	1.1	67.3	54.1		NJ208E.TVP	✓	✓	71.8	57.7	6200	9600	0.380
	80	18	49.5	71.5	1.1	1.1	67.3			NU208E.TVP	✓	✓	71.8	57.7	6200	9600	0.380
	80	18	49.5	71.5	1.1	1.1	67.3	54.1		NUP208E.TVP	✓	✓	71.8	57.7	6200	9600	0.380
	80	23	49.5	71.5	1.1	1.1	67.3	54.1		NJ2208E.TVP	✓		92.4	79.8	6200	9600	0.490
	80	23	49.5	71.5	1.1	1.1	67.3			NU2208E.TVP	✓		92.4	79.8	6200	9600	0.490
	80	23	49.5	71.5	1.1	1.1	67.3	54.1		NUP2208E.TVP	✓		92.4	79.8	6200	9600	0.490
	90	23	52.0	80.0	1.5	1.5	74.9	57.7		NJ308E.TVP	✓		105.0	82.7	6100	9300	0.660
	90	23	52.0	80.0	1.5	1.5	74.9			NU308E.TVP	✓		105.0	82.7	6100	9300	0.660
	90	23	52.0	80.0	1.5	1.5	74.9	57.7		NUP308E.TVP	✓		105.0	82.7	6100	9300	0.660
	90	33	52.0	80.0	1.5	1.5	74.9	57.7		NJ2308E.TVP	✓		144.0	123.0	6100	9300	0.950
	90	33	52.0	80.0	1.5	1.5	74.9			NU2308E.TVP	✓		144.0	123.0	6100	9300	0.950
	90	33	52.0	80.0	1.5	1.5	74.9	57.7		NUP2308E.TVP	✓		144.0	123.0	6100	9300	0.950
45	75	16	52.5	67.5	1.0	0.6	63.9			NU1009M	✓	✓	46.8	43.1	5600	8600	0.287
	85	19	54.5	76.5	1.1	1.1	72.4	59.1		NJ209E.TVP	✓		81.0	68.9	5600	8700	0.445
	85	19	54.5	76.5	1.1	1.1	72.4			NU209E.TVP	✓		81.0	68.9	5600	8700	0.445
	85	19	54.5	76.5	1.1	1.1	72.4	59.1		NUP209E.TVP	✓		81.0	68.9	5600	8700	0.445
	85	23	54.5	76.5	1.1	1.1	72.4	59.1		NJ2209E.TVP	✓		97.2	87.0	5600	8600	0.530
	85	23	54.5	76.5	1.1	1.1	72.4			NU2209E.TVP	✓		97.2	87.0	5600	8600	0.530
	85	23	54.5	76.5	1.1	1.1	72.4	59.1		NUP2209E.TVP	✓		97.2	87.0	5600	8600	0.530
	100	25	58.5	88.5	1.5	1.5	83.1	64.6		NJ309E.TVP	✓		127.0	104.0	5400	8200	0.895
	100	25	58.5	88.5	1.5	1.5	83.1			NU309E.TVP	✓		127.0	104.0	5400	8200	0.895
	100	25	58.5	88.5	1.5	1.5	83.1	64.6		NUP309E.TVP	✓		127.0	104.0	5400	8200	0.895
	100	36	58.5	88.5	1.5	1.5	83.1	64.6		NJ2309E.TVP	✓		176.0	158.0	5400	8200	1.290
	100	36	58.5	88.5	1.5	1.5	83.1			NU2309E.TVP	✓		176.0	158.0	5400	8200	1.290
	100	36	58.5	88.5	1.5	1.5	83.1	64.6		NUP2309E.TVP	✓		176.0	158.0	5400	8200	1.290
50	80	16	57.5	72.5	1.0	0.6	68.9			NU1010M	✓	✓	41.3	37.3	5000	7900	0.315
	90	20	59.5	81.5	1.1	1.1	77.4	64.1		NJ210E.TVP	✓		84.8	74.5	5100	7800	0.049
	90	20	59.5	81.5	1.1	1.1	77.4			NU210E.TVP	✓		84.8	74.5	5100	7800	0.049
	90	20	59.5	81.5	1.1	1.1	77.4	64.1		NUP210E.TVP	✓		84.8	74.5	5100	7800	0.049
	90	23	59.5	81.5	1.1	1.1	77.4	64.1		NJ2210E.TVP	✓		102.0	94.1	5100	7800	0.575
	90	23	59.5	81.5	1.1	1.1	77.4			NU2210E.TVP	✓		102.0	94.1	5100	7800	0.575
	90	23	59.5	81.5	1.1	1.1	77.4	64.1		NUP2210E.TVP	✓		102.0	94.1	5100	7800	0.575
	110	27	65.0	97.0	2.0	2.0	91.4	71.4		NJ310E.TVP	✓		143.0	119.0	4800	7400	1.140
	110	27	65.0	97.0	2.0	2.0	91.4			NU310E.TVP	✓		143.0	119.0	4800	7400	1.140
	110	27	65.0	97.0	2.0	2.0	91.4	71.4		NUP310E.TVP	✓		143.0	119.0	4800	7400	1.140
	110	40	65.0	97.0	2.0	2.0	91.4	71.4		NJ2310E.TVP	✓		143.0	119.0	4800	7400	1.740
	110	40	65.0	97.0	2.0	2.0	91.4			NU2310E.TVP	✓		143.0	119.0	4800	7400	1.740
	110	40	65.0	97.0	2.0	2.0	91.4	71.4		NUP2310E.TVP	✓		143.0	119.0	4800	7400	1.740
55	90	18	64.5	80.5	1.1	1.0	76.7			NU1011M	✓	✓	53.9	52.4	4500	6900	0.464
	100	21	66.0	90.0	1.5	1.1	85.6	71.0		NJ211E.TVP	✓		110.0	102.0	4500	7000	0.665
	100	21	66.0	90.0	1.5	1.1	85.6			NU211E.TVP	✓		110.0	102.0	4500	7000	0.665
	100	21	66.0	90.0	1.5	1.1	85.6	71.0		NUP211E.TVP	✓		110.0	102.0	4500	7000	0.665
	100	25	66.0	90.0	1.5	1.1	85.6	71.0		NJ2211E.TVP	✓		129.0	125.0	4500	7000	0.780
	100	25	66.0	90.0	1.5	1.1	85.6			NU2211E.TVP	✓		129.0	125.0	4500	7000	0.780
	100	25	66.0	90.0	1.5	1.1	85.6	71.0		NUP2211E.TVP	✓		129.0	125.0	4500	7000	0.780
	120	29	70.5	106.5	2.0	2.0	100.3	77.7		NJ311E.TVP	✓		178.0	149.0	4400	6800	1.470
	120	29	70.5	106.5	2.0	2.0	100.3			NU311E.TVP	✓		178.0	149.0	4400	6800	1.470
	120	29	70.5	106.5	2.0	2.0	100.3	77.7		NUP311E.TVP	✓		178.0	149.0	4400	6800	1.470
60	110	22	72.0	100.0	1.5	1.5	95.1	77.7		NJ212E.TVP	✓		123.0	109.0	4200	6500	0.825
	110	22	72.0	100.0	1.5	1.5	95.1			NU212E.TVP	✓		123.0	109.0	4200	6500	0.825
	110	22	72.0	100.0	1.5	1.5	95.1	77.7		NUP212E.TVP	✓		123.0	109.0	4200	6500	0.825
	110	28	72.0	100.0	1.5	1.5	95.1	77.7		NJ2212E.TVP	✓		165.0	158.0	4200	6500	1.080
	110	28	72.0	100.0	1.5	1.5	95.1			NU2212E.TVP	✓		165.0	158.0	4200	6500	1.080
	110	28	72.0	100.0	1.5	1.5	95.1	77.7		NUP2212E.TVP	✓		165.0	158.0	4200	6500	1.080
65	120	31	78.5	108.5	1.5	1.5	103.2	84.6		NJ2213E.TVP	✓		192.0	188.0	3800	5900	1.420
	120	31	78.5	108.5	1.5	1.5	103.2			NU2213E.TVP	✓		192.0	188.0	3800	5900	1.420
	120	31	78.5	108.5	1.5	1.5	103.2	84.6		NUP2213E.TVP	✓		192.0	188.0	3800	5900	1.420

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