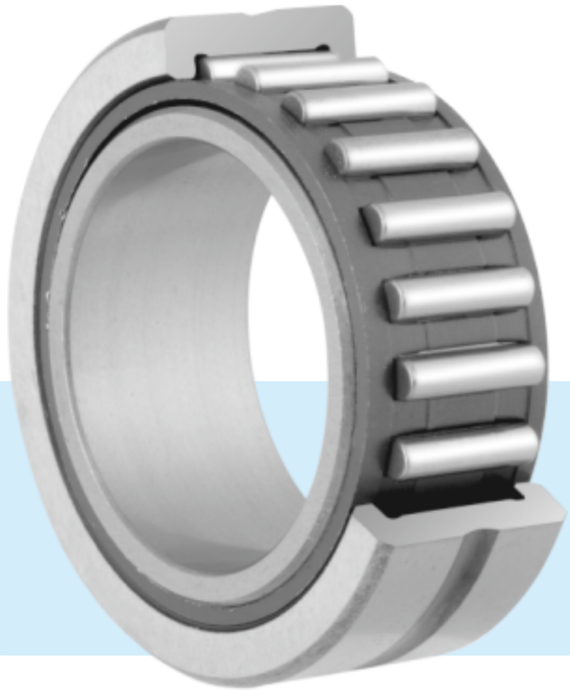
Needle roller bearing



Needle roller bearing

Needle roller bearing

Needle roller bearings contain multiple long and thin needle rollers whose length is 3~10 times longer than their diameter. The structure is compact, and the inscribed circle diameter of the needle roller is close to the outer diameter of the bearing, so the radial load capacity is high.

1. Main structure

(1) Solid outer ring needle roller bearing NA 0000 type, NKI type

This type of bearing has an inner ring and an outer ring (with locking ring, needle rollers and cage). It has a high limit speed and falls into two types: single row and double row.

Single row:NA48, NA49, NA69 series (d <32mm) and NKI type.

When d ⩽7mm, the bearing outer ring has ring locking collars; when d>7mm, bearing outer ring has double ribs.

Double row: NA69 series (d⩾32mm)

RNA type solid outer ring needle roller bearings have no inner ring. Either with or without a cage is acceptable and there may be one or two rows of needle rollers.

(2) Needle roller and cage assembly K0000

The needle roller and cage assembly are independent bearing units, and the needle roller is precisely guided by the cage. This kind of bearing has no ring, and are featured by small radial surface and large bearing capacity. It is suitable for supporting structure with limited radial installation size. The bearing diameter surface and housing hole surface matched with the bearing are directly used as the inner and outer rolling surface of the bearing. The surface hardness is generally 58~64HRC, the surface hardened layer depth is 0.6~1mm, and the raceway surface roughness Ra value is usually 0.32μm. When shaft rotation accuracy is required, Ra value is 0.20μm. When the dimensional tolerance of housing hole is G6, the dimensional tolerance of shaft is recommended as shown in Table 1. The shaft and housing hole raceway form tolerances are recommended in Table 2.

(3) HK and BK type drawn cup needle roller bearings without inner ring and with cage

HK type, bearing with open ends

BK type, one end of bearing is sealed type; it is used for the supporters without protruding end on the journal, and can bear small axial movement force, and the sealed end is used for sealing.

This kind of bearing is composed of a thin-wall stamped outer ring, cage and needle rollers. The cost is low, the load capacity is high, and it is suitable for supporting structures with limited radial installation dimension. The surface of the shaft journal surface is directly used as the raceway after hardening. The bearing is fed into the housing bore with interference fit, and there is no need to provide axial location. The bearing shall be filled with sufficient lubricating grease before mounted. Generally, no further lubrication is needed after assembly.

2. Cage material

The needle roller bearing cage is generally made of low carbon high quality steel, but other materials such as nylon can also be used.

3. Allowable misalignment angle

Needle roller bearings are generally not allowed to have an angular misalignment. During operation, the maximum bending angle on the span of the needle roller shall not be greater than 0.25%.

4. Tolerance and clearance

The radial clearance value of cylindrical roller bearings is used for needle roller bearings with inner ring, outer rings and cage (except stamped outer rings and heavy series bearings).

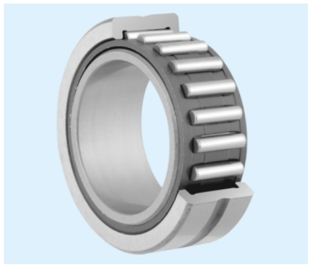
For heavy series bearings with inner and outer rings and needle roller bearings with cage whose inner ring is delivered as a separate part, their radial clearance adopts the radial clearance value of cylindrical roller bearing according to inner ring raceway diameter or needle roller assembly inscribed circle diameter.

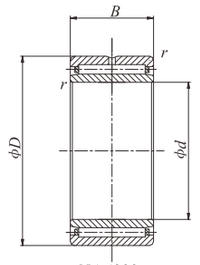
Table 1 Dimension tolerance of the shaft

Radial clearance group	Dimensional tolerance of shaft	
	Shaft diameter's nominal dimension ⩽80mm	Shaft diameter's nominal dimension >80mm
< 0 group	j5	h5
= 0 group	h5	g5
> 0 group	g6	f6

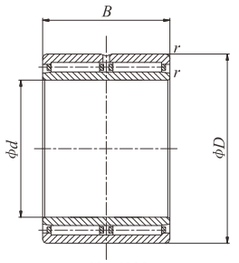
Table 2 Raceway form tolerance

Shaft diameter's nominal dimension (mm)	Over	3	10	18	30	50	80
	To	10	18	30	50	80	-
Cylindricity (μm)	Shaft	2.5	3	4	4	5	6
	Housing hole	4	5	6	7	8	10





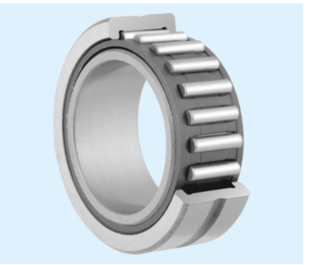
NA 4900
NKI d/B

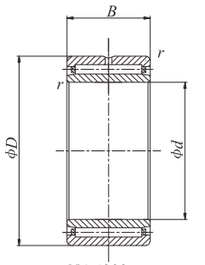


NA 6900

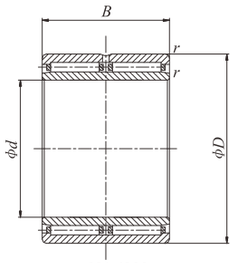
d 10~25 mm

Boundary dimensions (mm)				Basic load ratings (kN)		Limiting speeds (r/min)		Bearing Numbers	Reference mass (kg)
d	D	B	r (Min)	C_r	C_{0r}	Grease	Oil		
10	22	13	0.3	8.8	10.4	17000	26000	**NA4900**	0.023
	22	16	0.3	10.2	12.5	17000	26000	**NKI10/16**	0.029
	22	20	0.3	12.8	16.6	17000	26000	**NKI10/20**	0.037
12	24	13	0.3	9.9	12.2	16000	24000	**NA4901**	0.026
	24	16	0.3	11.7	15.3	16000	24000	**NKI12/16**	0.033
	24	20	0.3	14.5	20.0	16000	24000	**NKI12/20**	0.042
	24	22	0.3	16.1	23.2	16000	24000	**NA6901**	0.046
15	27	16	0.3	13.4	19.0	14000	20000	**NKI15/16**	0.039
	27	20	0.3	16.5	25.5	14000	20000	**NKI15/20**	0.049
	28	13	0.3	11.2	15.3	13000	19000	**NA4902**	0.034
	28	23	0.3	17.2	27.0	13000	19000	**NA6902**	0.064
17	29	16	0.3	13.8	20.4	13000	19000	**NKI17/16**	0.043
	29	20	0.3	17.2	27.0	13000	19000	**NKI17/20**	0.054
	30	13	0.3	11.4	16.3	12000	18000	**NA4903**	0.037
	30	23	0.3	18.7	30.5	12000	18000	**NA6903**	0.072
20	32	16	0.3	15.4	24.5	10000	16000	**NKI20/16**	0.049
	32	20	0.3	19.0	32.5	10000	16000	**NKI20/20**	0.061
	37	17	0.3	21.6	28.0	9500	15000	**NA4904**	0.075
	37	30	0.3	35.2	53.0	9500	15000	**NA6904**	0.140
22	34	16	0.3	15.7	26.0	9500	15000	**NKI22/16**	0.052
	34	20	0.3	19.4	34.5	9500	15000	**NKI22/20**	0.065
	39	17	0.3	23.3	32.0	9000	14000	**NA49/22**	0.080
	39	30	0.3	36.9	57.0	9000	14000	**NA69/22**	0.150
25	38	20	0.3	22.0	36.5	9000	14000	**NKI25/20**	0.080
	38	30	0.3	31.9	60.0	9000	14000	**NKI25/30**	0.120





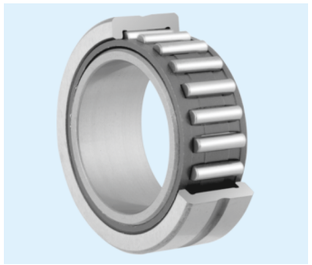
NA 4900
NKI d/B

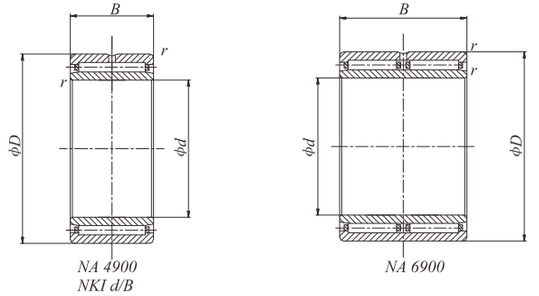


NA 6900

d 25~42 mm

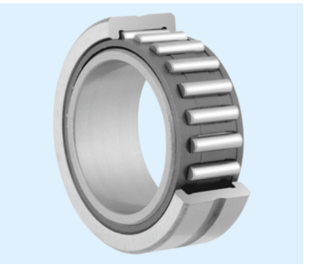
Boundary dimensions (mm)				Basic load ratings (kN)		Limiting speeds (r/min)		Bearing Numbers	Reference mass (kg)
d	D	B	r (Min)	C_r	C_{0r}	Grease	Oil		
25	42	17	0.3	24.2	34.5	8500	13000	**NA4905**	0.088
	42	30	0.3	38.0	62.0	8500	13000	**NA6905**	0.160
28	42	20	0.3	23.3	40.5	8000	12000	**NKI28/20**	0.097
	42	30	0.3	34.1	65.5	8000	12000	**NKI28/30**	0.150
	45	17	0.3	25.1	36.5	8000	12000	**NA49/28**	0.098
	45	30	0.3	39.6	65.5	8000	12000	**NA69/28**	0.180
30	45	20	0.3	24.6	45.0	7500	11000	**NKI30/20**	0.110
	45	30	0.3	35.8	72.0	7500	11000	**NKI30/30**	0.170
	47	17	0.3	25.5	39.0	7500	11000	**NA4906**	0.100
	47	30	0.3	42.9	75.0	7500	11000	**NA6906**	0.190
32	47	20	0.3	25.1	46.5	7500	11000	**NKI32/20**	0.120
	47	30	0.3	36.9	76.5	7500	11000	**NKI32/30**	0.180
	52	20	0.6	30.8	51.0	7000	10000	**NA49/32**	0.160
	52	36	0.6	47.3	90.0	7000	10000	**NA69/32**	0.290
35	50	20	0.3	26.4	51.0	7000	10000	**NKI35/20**	0.13
	50	30	0.3	38.0	83.0	7000	10000	**NKI35/30**	0.19
	55	20	0.6	31.9	54.0	6700	9500	**NA4907**	0.17
	55	36	0.6	48.4	93.0	6700	9500	**NA6907**	0.31
38	53	20	0.3	27.5	55.0	6700	9500	**NKI38/20**	0.14
	53	30	0.3	40.2	90.0	6700	9500	**NKI38/30**	0.21
40	55	20	0.3	27.5	57.0	6300	9000	**NKI40/20**	0.14
	55	30	0.3	40.2	93.0	6300	9000	**NKI40/30**	0.22
	62	22	0.6	42.9	71.0	5600	8000	**NA4908**	0.23
	62	40	0.6	67.1	125	5600	8000	**NA6908**	0.43
42	57	20	0.3	29.2	61.0	6000	8500	**NKI42/20**	0.15
	57	30	0.3	41.8	98.0	6000	8500	**NKI42/30**	0.22

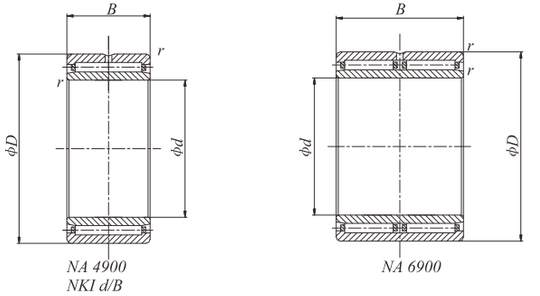




d 45~75 mm

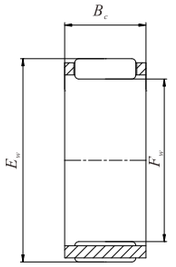
Boundary dimensions (mm)				Basic load ratings (kN)		Limiting speeds (r/min)		Bearing Numbers	Reference mass (kg)
d	D	B	r (Min)	C_r	C_{0r}	Grease	Oil		
45	62	62	0.6	38.0	78.0	5600	8000	**NKI45/25**	0.23
	62	62	0.6	49.5	110	5600	8000	**NKI45/35**	0.32
	68	68	0.6	45.7	78.0	5300	7500	**NA4909**	0.27
	68	68	0.6	70.4	137	5300	7500	**NA6909**	0.50
50	68	68	0.6	40.2	88.0	5300	7500	**NKI50/25**	0.27
	68	68	0.6	52.3	122	5300	7500	**NKI50/35**	0.38
	72	72	0.6	47.3	85.0	5000	7000	**NA4910**	0.27
	72	72	0.6	73.7	150	5000	7000	**NA6910**	0.52
55	72	25	0.6	41.8	96.5	4800	6700	**NKI55/25**	0.27
	72	35	0.6	55.0	134	4800	6700	**NKI55/35**	0.38
	80	25	1.0	57.2	106	4500	6300	**NA4911**	0.40
	80	45	1.0	89.7	190	4500	6300	**NA6911**	0.78
60	82	25	0.6	44.0	95.0	4300	6000	**NKI60/25**	0.40
	82	35	0.6	60.5	146	4300	6000	**NKI60/35**	0.55
	85	25	1.0	60.5	114	4300	6000	**NA4912**	0.43
	85	45	1.0	93.5	204	4300	6000	**NA6912**	0.81
65	90	25	1.0	52.8	106	4000	5600	**NKI65/25**	0.47
	90	35	1.0	73.7	163	4000	5600	**NKI65/35**	0.66
	90	25	1.0	61.6	120	4000	5600	**NA4913**	0.46
	90	45	1.0	95.2	212	4000	5600	**NA6913**	0.83
70	95	25	1.0	56.1	127	3600	5000	**NKI70/25**	0.52
	95	35	1.0	76.5	190	3600	5000	**NKI70/35**	0.74
	100	30	1.0	84.2	163	3600	5000	**NA4914**	0.73
	100	54	1.0	128	285	3600	5000	**NA6914**	1.35
75	105	25	1.0	69.3	132	3400	4800	**NKI75/25**	0.64
	105	35	1.0	96.8	200	3400	4800	**NKI75/35**	0.91





d 75~100 mm

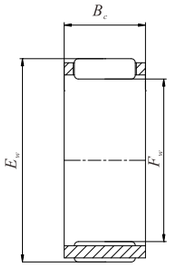
Boundary dimensions (mm)				Basic load ratings (kN)		Limiting speeds (r/min)		Bearing Numbers	Reference mass (kg)
d	D	B	r (Min)	C_r	C_{0r}	Grease	Oil		
75	105	25	1.0	84.2	140	3200	4800	**NA4915**	0.68
	105	35	1.0	130	216	3200	4800	**NA6915**	0.96
80	110	30	1.0	72.1	183	3200	4500	**NKI80/25**	0.88
	110	54	1.0	101	315	3200	4500	**NKI80/35**	1.50
	110	26	1.0	88.0	146	3000	4500	**NA4916**	0.75
	110	36	1.0	134	232	3000	4500	**NA6916**	1.05
85	115	35	1.0	73.7	250	2800	4300	**NKI85/26**	1.25
	115	63	1.0	105	425	2800	4300	**NKI85/36**	2.20
	120	26	1.0	108	156	2800	4000	**NA4917**	0.78
	120	36	1.0	165	250	2800	4000	**NA6917**	1.10
90	120	35	1.1	76.5	265	2600	4000	**NKI90/26**	1.30
	120	63	1.1	108	450	2600	4000	**NKI90/36**	2.30
	125	26	1.0	112	166	2600	3800	**NA4918**	0.82
	125	63	1.0	172	265	2600	3800	**NA6918**	1.15
95	125	35	1.1	78.1	270	2400	3800	**NKI95/26**	1.40
	125	63	1.1	112	465	2400	3800	**NKI95/36**	2.50
	130	30	1.1	114	220	2400	3600	**NA4919**	1.00
	130	40	1.1	172	305	2400	3600	**NA6919**	1.35
100	130	30	1.1	96.8	280	2200	3600	**NKI100/30**	1.90
	130	40	1.1	123	320	2200	3600	**NKI100/40**	3.00
	140	40	1.0	125	170	3400	3400	**NA4920**	0.78



Single row K type

F_w 10~16 mm

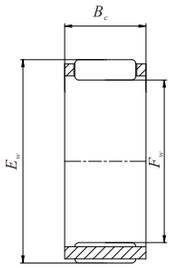
Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers	Reference mass (g)
F_w	E_w	B_c	C_r	C_{0r}	Oil		
10	13	10	4500	5250	27000	**K101310**	1.6
	13	13	6000	7600	27000	**K101313**	2.1
	13	16	6300	7800	27000	**K101316**	2.2
	14	10	7000	7900	27000	**K101410**	2.9
	14	13	8000	9100	26000	**K101413**	4.3
	16	12	7000	9300	27000	**K101612**	3.7
12	15	9	4120	5210	25000	**K121509**	2.7
	15	10	4320	5730	25000	**K121510**	1.9
	15	13	6000	8100	25000	**K121513**	2.4
	16	8	4200	4700	25000	**K121608**	2.9
	16	10	6000	6900	25000	**K121610**	3.8
	16	13	7900	9200	25000	**K121613**	3.4
14	17	10	5100	6800	23000	**K141710**	4.0
	17	17	9300	14000	23000	**K141717**	6.8
	18	10	6800	8300	23000	**K141810**	4.8
	18	13	8100	9800	23000	**K141813**	6.3
	18	14	9200	12000	23000	**K141814**	6.8
	18	15	10000	13000	23000	**K141815**	7.3
15	14	14	7500	11000	23000	**K151814**	5.3
	18	17	9600	15900	23000	**K151817**	6.4
	19	10	7200	9000	22000	**K151910**	5.1
	19	13	8300	9800	22000	**K151913**	7.0
	19	17	10300	15000	22000	**K151917**	8.8
	19	24	12800	20100	22000	**K151924**	10.5
16	20	10	7600	9700	22000	**K162010**	5.7
	20	13	8700	11300	22000	**K162013**	7.1
	20	17	11200	16300	22000	**K162017**	9.2
	21	10	9000	12000	22000	**K162110**	6.7
	22	12	11000	12000	21000	**K162212**	10.4
	22	13	12000	13400	21000	**K162213**	11.9



Single row K type

F_w 18~25 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers	Reference mass (g)
F_w	E_w	B_c	C_r	C_{0r}	Oil		
18	22	10	8200	9900	20000	**K182210**	6.1
	22	13	9000	12100	20000	**K182213**	7.7
	22	17	11900	17600	20000	**K182217**	10.8
	24	12	11200	12900	20000	**K182412**	11.6
	24	13	12900	14900	20000	**K182413**	12.6
	24	20	20000	26500	20000	**K182420**	19.0
20	24	10	8700	12100	19000	**K202410**	6.5
	24	12	9600	13800	19000	**K202412**	8.0
	24	13	9600	13800	19000	**K202413**	8.9
	24	17	12400	20000	19000	**K202417**	11.2
	26	12	13100	15700	19000	**K202612**	13.2
	26	13	14100	17400	19000	**K202613**	14.3
22	26	10	8700	12900	18000	**K222610**	7.1
	26	13	10000	15400	18000	**K222613**	9.4
	26	17	13100	22100	18000	**K222617**	12.1
	27	13	14000	23000	18000	**K222713**	10.8
	28	17	19000	26500	18000	**K222817**	19.7
	28	23	20000	27000	19000	**K222823**	26.0
24	28	10	9400	14300	17000	**K242810**	8.1
	28	13	10500	17000	17000	**K242813**	10.1
	28	17	14000	24500	17000	**K242817**	13.2
	29	13	13100	19100	16000	**K242913**	13.5
	30	17	19000	27000	16000	**K243017**	21.5
	30	31	27000	43000	16000	**K243031**	39.1
25	29	10	9700	14900	16000	**K252910**	8.3
	29	13	10800	17900	16000	**K252913**	10.4
	29	17	14500	25500	16000	**K252917**	13.7
	30	25	21700	40400	15000	**K253025**	21.0
	30	26	20100	26500	15000	**K253026**	21.6
	31	17	19000	28000	16000	**K253117**	21.8

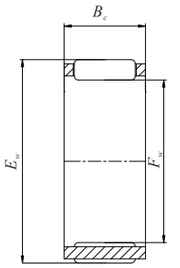


Single row K type

F_w 26~35 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers	Reference mass (g)
F_w	E_w	B_c	C_r	C_{0r}	Oil		
26	30	10	9500	15500	16000	**K263010**	9.0
	30	13	11100	18700	16000	**K263013**	11.4
	30	17	14700	27000	16000	**K263017**	15.0
	31	13	12400	18400	15000	**K263113**	9.9
	31	15	12500	19000	16000	**K263115**	10.3
	30	22	15200	28000	15000	**KK263022**	12.3
28	32	17	15000	32400	14000	**K283217**	18.2
	33	13	14800	23600	14000	**K283313**	15.2
	33	17	19100	33000	14000	**K283317**	19.5
	33	27	22800	40500	14000	**K283327**	19.0
	34	17	21300	35000	14000	**K283417**	24.2
	35	16	21000	29000	14000	**K283516**	29.0
30	34	13	11800	21200	13000	**K303413**	14.6
	35	13	15100	25000	13000	**K303513**	16.3
	35	17	19100	33500	13000	**K303517**	21.3
	35	27	30000	58500	13000	**K303527**	33.3
	37	16	22500	33000	13000	**K303716**	26.4
	37	18	25500	38000	13000	**K303718**	34.0
32	37	13	15000	25000	12000	**K323713**	18.3
	37	17	19400	35000	12000	**K323717**	22.4
	37	27	29500	59500	12000	**K323727**	36.7
	37	28	23100	43000	12000	**K323728TN**	22.3
	38	16	21000	34000	12000	**K323816**	25.0
	38	20	26000	44500	12000	**K323820**	31.0
35	40	13	15800	27500	11000	**K354013**	18.8
	40	17	20300	38000	11000	**K354017**	25.3
	40	25	29000	59500	11000	**K354025**	31.0
	40	27	24500	48000	11000	**K235427TN**	23.4
	40	27	27800	62100	11000	**K354027**	28.0
	40	30	25000	49500	11000	**K354030**	43.0

Remarks: The suffix TN represents nylon cage.

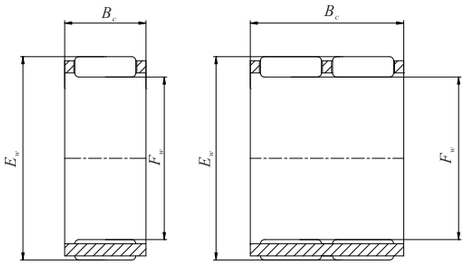


Single row K type

F_w 37~50 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers	Reference mass (g)
F_w	E_w	B_c	C_r	C_{0r}	Oil		
37	42	17	21900	42500	10000	**K374217**	25.8
	42	27	31500	67500	10000	**K374227**	40.7
	45	26	43500	73500	10000	**K374526**	60.5
38	43	17	20000	38000	10000	**K384317**	26.1
	43	27	31000	67500	10000	**K384327**	43.2
	46	20	35000	56500	10000	**K384620**	46.0
40	44	13	13500	28000	10000	**K404413**	20.0
	45	13	17100	32000	10000	**K404513**	21.5
	45	17	20900	41000	10000	**K404517**	27.4
	45	21	24400	49500	10000	**K404521**	36.5
	45	27	32500	72500	10000	**K404527**	46.0
	46	17	24500	44500	9000	**K404617**	30.0
42	47	13	17300	33000	9000	**K424713**	22.5
	47	17	21100	42500	9000	**K424717**	31.1
	47	25	27000	57500	9000	**K424725TN**	25.7
	47	27	33000	74500	9000	**K424727**	46.6
	48	35	35000	76000	9000	**K424835**	60.0
	50	18	31000	49500	12000	**K425018**	53.0
45	49	19	17500	40000	8000	**K454919**	27.0
	50	17	22000	45500	8000	**K455017**	25.5
	50	27	34000	79500	8000	**K455027**	50.0
	50	32	38000	90500	8000	**K455032TN**	45.0
	52	18	31000	56500	8000	**K455218**	51.0
	52	21	39500	57500	8000	**K455221TN**	32.9
50	55	14	17500	36000	7500	**K505514**	31.0
	55	17	21400	46500	7500	**K505517**	35.0
	55	20	26000	59500	7500	**K505520**	39.4
	55	30	38500	96500	7500	**K505530**	59.4
	57	18	33000	62500	7000	**K505718**	53.4
	58	20	35000	61500	7000	**K505820**	64.9

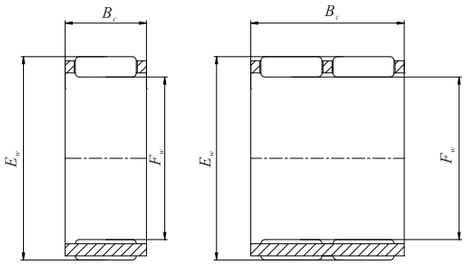
Remarks: The suffix TN represents nylon cage.



Single row K type *Double row KK type*

F_w 55~80 mm

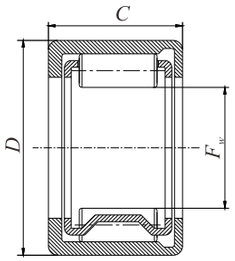
Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers	Reference mass (g)
F_w	E_w	B_c	C_r	C_{0r}	Oil		
55	60	20	28000	65500	6500	K556020	43.4
	60	27	37500	96500	6500	K556027	60.5
	60	30	40500	100300	6500	K556030	68.6
	61	20	41000	110000	6500	K556120	56.0
	62	18	35000	69500	6500	K556218	58.4
	63	15	24500	40500	6500	K556315	53.0
60	65	20	29000	71500	6000	K606520	50.5
	65	30	42000	115500	6000	K606530	71.2
	65	20	43000	84500	5500	K606820	79.0
	68	23	49000	110500	5500	K606823	94.0
	68	25	52500	84500	5500	K606825	97.0
	68	27	59000	100500	6000	K606827	98.0
70	76	20	35500	85500	4500	K707620	70.0
	76	30	51500	138500	4500	K707630	100
	78	25	51500	111500	4500	K707825	115
	78	30	59500	134500	4500	K707830	136
	80	30	72500	147500	4500	K708030	150
	78	46	77500	188000	4500	KK707846	230
75	81	20	37000	93500	4500	K758120	72.0
	81	30	51500	142000	4500	K758130	106
	83	23	49500	108000	4500	K758323	113
	83	30	61500	142000	4000	K758330	147
	83	35	62500	146000	4000	KK758335	165
	83	40	72500	176500	4000	KK758340	190
80	86	20	38000	97500	4000	K808620	76.0
	86	30	55500	158500	4000	K808630	114
	88	30	71500	178500	4000	K808830	141
	88	40	75500	191500	4000	KK808840	204
	88	46	87500	230000	4000	KK808846	235



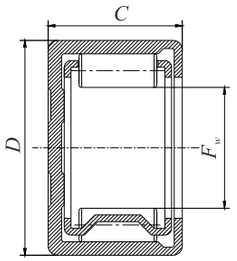
Single row K type *Double row KK type*

F_w 85~110 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers	Reference mass (g)
F_w	E_w	B_c	C_r	C_{0r}	Oil		
85	92	20	44000	107500	3500	K859220	96.0
90	97	20	44500	122500	3000	K909720	103
	98	27	60500	149500	3000	K909827	150
	98	30	67500	171500	3000	K909830	172
95	102	20	45500	122500	2900	K9510220	110
	103	30	68500	179500	2900	K9510330	177
	103	40	82500	227500	2900	KK9510340	250
100	107	21	47500	126500	2700	K100×107×21	120
	108	27	56500	142500	2700	K100×108×27	176
	108	30	70500	187500	2700	K100×108×30	190
105	112	21	47000	126500	2500	K105×112×21	123
	113	30	71500	196500	2500	K105×113×30	198
110	118	30	77500	218500	2300	K110×118×30	217



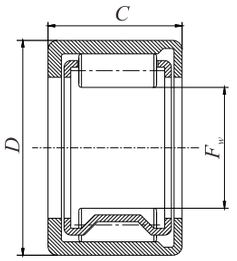
HK type with open ends



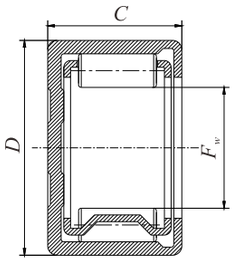
BK type with closed ends

F_w 16~22 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers and reference mass			
F_w	D	C	C_r	C_{0r}	Oil	With open ends	Weight (g)	With closed ends	Weight (g)
16	22	16	10100	14300	14000	HK162216	15.8	BK162216	17.6
	22	17	12900	17200	12000	HK162217	18.0	—	—
	22	22	11000	17400	14000	HK162222	21.7	BK162222	23.4
17	22	15	6300	8600	11000	HK172215	10.0	—	—
	23	12	6900	9300	13000	HK172312	12.2	BK172312	14.5
	23	14	6800	10200	10000	HK172314	14.0	—	—
	23	16	8500	12500	10000	HK172316	15.9	—	—
	23	18	9500	10600	10000	HK172318	19.0	—	—
	24	15	11200	12800	10000	HK172415	17.0	—	—
	25	14	13100	14700	10000	HK172514	17.7	—	—
	25	16	9320	10400	10000	HK172516	20.0	—	—
	25	18	9500	10600	11000	HK172518	23.5	—	—
20	26	10	5900	7200	10000	HK202610	11.8	BK202610	14.0
	26	11	7500	9200	9000	HK202611	12.0	—	—
	26	12	7600	10100	10000	HK202612	14.1	BK202612	16.7
	26	14	9700	18100	9000	HK202614	15.7	—	—
	26	16	11700	29100	10000	HK202616	19.3	BK202616	22.3
	26	18	7900	12800	9000	HK202618	23.3	—	—
	26	20	13700	24000	10000	HK202620	24.1	BK202620	27.1
	26	25	9100	14800	9900	HK202625	28.0	—	—
	26	30	21800	40000	10100	HK202630	34.7	BK202630	37.4
	27	18	26000	47200	9900	HK202718	78.0	—	—
	27	20	26300	47800	9900	HK202720	82.0	—	—
	27	30	28500	48800	9900	HK202730	94.0	—	—
	28	16	29600	49800	9900	HK202816	28.5	—	—
	29	18	30900	54600	9900	HK202918	41.0	—	—
22	28	10	7200	9500	10010	HK222810	12.3	—	—
	28	12	8100	10400	10010	HK222812	15.0	BK222812	18.1
	28	16	11400	18100	10010	HK222816	20.9	BK222816	24.3



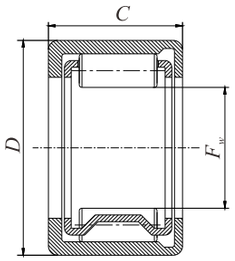
HK type with open ends



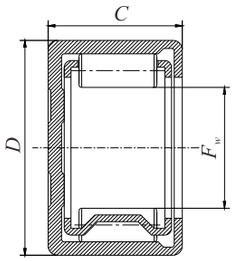
BK type with closed ends

F_w 22~30 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers and reference mass			
F_w	D	C	C_r	C_{0r}	Oil	With open ends	Weight (g)	With closed ends	Weight (g)
22	28	20	14500	25000	10010	HK222820	26.2	BK222820	29.9
	28	30	17500	30400	9000	HK222830	32.0	—	—
	29	25	18100	31500	9000	HK222925	37.0	—	—
	29	30	19400	33100	9000	HK222930	43.0	—	—
	30	14	19800	34000	9000	HK223014	21.9	—	—
25	32	12	10000	14200	9000	HK253212	20.0	BK253212	23.2
	32	14	13600	18700	9000	HK253214	21.9	—	—
	32	16	13600	20000	9000	HK253216	27.3	BK253216	31.0
	32	18	17500	25800	9000	HK253218	28.2	—	—
	32	20	17900	30000	9000	HK253220	34.1	BK253220	38.7
	32	25	22200	36700	9000	HK253225	40.0	—	—
	32	26	22500	42000	9000	HK253226	44.8	BK253226	49.0
	32	38	30000	58000	9000	HK253238	64.7	BK253238	69.0
	33	10	34800	69600	9000	HK253310	17.0	—	—
	33	15	35700	70000	9000	HK253315	27.4	—	—
	35	20	36100	78650	9000	HK253520	44.9	—	—
28	35	16	15400	22500	8700	HK283516	30.1	BK283516	34.1
	35	18	18500	29300	8700	HK283518	31.7	—	—
	35	20	18900	32000	8700	HK283520	37.6	BK283520	43.0
30	37	12	10100	16200	8100	HK303712	24.0	BK303712	27.9
	37	16	15200	27200	8100	HK303716	32.0	BK303716	37.1
	37	18	19200	31500	8100	HK303718	33.6	—	—
	37	20	19700	33500	8100	HK303720	40.1	BK303720	46.5
	37	26	24800	50000	8100	HK202626	52.9	BK202626	59.4
	37	38	32500	74000	8100	HK303738	76.1	BK303738	82.8
	38	12	38100	80000	8100	HK303812	28.0	—	—
	38	16	39000	82000	8100	HK303816	32.7	—	—
	38	24	39910	88800	8100	HK303824	49.0	—	—
	38	32	38890	88700	8100	HK303832	69.0	—	—



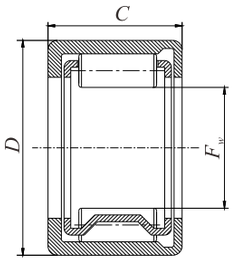
HK type with open ends



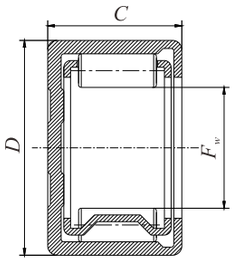
BK type with closed ends

F_w 5~10 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers and reference mass			
						With open ends	Weight (g)	With closed ends	Weight (g)
F_w	D	C	C_r	C_{0r}	Oil				
5	9	9	2200	1790	36000	HK050909	1.6	BK050909	2.1
6	10	7	1600	1400	30000	HK061007	1.8	—	—
	10	8	1830	1550	32000	HK061008	2.1	BK061008	2.2
	10	9	2650	2400	30000	HK061009	2.2	BK061009	2.6
	10	11	1700	1500	29000	HK061011	2.3	—	—
	12	8	2230	2010	33000	HK061208	2.5	—	—
7	11	9	2800	2150	27000	HK071109	2.3	BK071109	2.9
	12	8	3300	3220	37000	HK071208	2.2	—	—
	12	9	3400	3150	37000	HK071209	2.4	—	—
8	12	8	2550	2400	21000	HK081208	2.7	BK081208	3.0
	12	10	3700	3450	21000	HK081210	3.0	BK081210	3.4
	14	10	3800	3950	25000	HK081410	5.4	BK081410	5.8
	14	12	4100	4320	25000	HK081412	6.6	—	—
9	13	8	3650	4050	25000	HK091308	3.0	BK091308	3.4
	13	10	4050	4250	25000	HK091310	4.0	BK091310	4.0
	13	11	4300	4700	25000	HK091311	4.1	—	—
	13	12	5000	6300	25000	HK091312	4.6	BK091312	4.9
	15	10	5300	6300	25000	HK091510	5.6	BK091510	5.6
10	13	8	4100	4800	20000	HK101308	3.5	—	—
	14	10	3900	4800	19000	HK101410	4.1	BK101410	4.3
	14	12	5000	6300	19000	HK101412	4.8	BK101412	5.0
	14	15	6700	7800	19000	HK101415	6.0	BK101415	6.2
	15	15	6800	8800	19000	HK101515	6.5	—	—
	16	10	6800	8800	18000	HK101610	6.5	BK101610	6.8
	16	12	6800	8800	18000	HK101612	7.5	—	—
	16	15	6800	8800	18000	HK101615	11.0	—	—
	17	15	7200	8000	19000	HK101715	11.5	—	—
	18	12	5500	4900	19000	HK101812	8.5	—	—



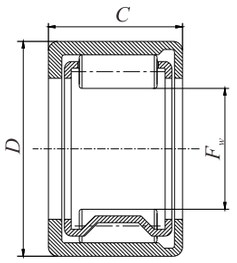
HK type with open ends



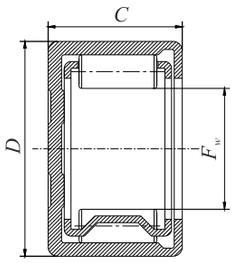
BK type with closed ends

F_w 12~16 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers and reference mass			
						With open ends	Weight (g)	With closed ends	Weight (g)
F_w	D	C	C_r	C_{0r}	Oil				
12	16	8	4150	5800	19000	HK121608	3.3	—	—
	16	10	4150	5800	19000	HK121610	4.6	BK121610	5.2
	16	12	3800	5100	15000	HK121612	5.6	BK121612	6.2
	17	12	5100	7000	15000	HK121712	7.5	—	—
	17	15	5100	7000	15000	HK121715	1.6	BK121715	2.1
	17	18	5100	7000	15000	HK121718	11.0	—	—
	18	12	5500	7000	17000	HK121812	9.1	BK121812	10.3
	18	14	6500	6300	15000	HK121814	10.6	—	—
	19	12	6800	7400	15000	HK121912	10	—	—
13	19	11	6300	6300	14000	HK131911	8.5	—	—
	19	12	6200	7100	17000	HK131912	8.9	BK131912	11.2
14	20	10	6700	7000	16000	HK142010	8.3	BK142010	12.1
	20	12	6800	7500	16000	HK142012	10.5	—	—
	20	16	7300	9000	14000	HK142016	13.9	—	—
15	20	12	5800	6000	14000	HK152012	8.4	—	—
	20	16	6000	6200	14000	HK152016	11.4	—	—
	20	20	6100	6400	14000	HK152020	13.8	—	—
	21	12	7000	8400	14000	HK152112	11.1	BK152112	12.7
	21	14	8500	10400	13000	HK152114	12.7	—	—
	21	15	9100	11400	13000	HK152115	14.2	—	—
	21	16	9800	11400	14000	HK152116	15.0	BK152116	16.5
	21	22	10400	16500	14000	HK152122	20.4	BK152122	22.0
	22	12	14300	18400	13000	HK152212	12.5	—	—
	22	13	14300	18400	13000	HK152213	13.5	—	—
16	21	6	4200	5300	12000	HK162106	5.5	—	—
	21	9	4400	5600	12000	HK162109	7.5	—	—
	22	12	7100	9200	14000	HK162212	11.7	BK162212	13.8
	22	14	8800	9900	12000	HK162214	14.4	—	—



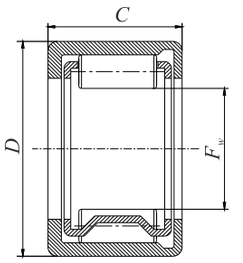
HK type with open ends



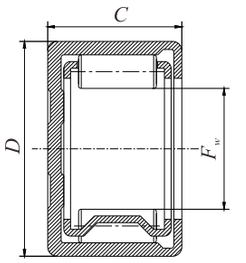
BK type with closed ends

F_w 32~55 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers and reference mass			
F_w	D	C	C_r	C_{0r}	Oil	With open ends	Weight (g)	With closed ends	Weight (g)
32	38	11	19700	43200	7800	HK323811	17.0	—	—
	39	24	25500	52000	7300	HK323924	50.7	—	—
	39	32	22600	54300	7100	HK323932	66.4	—	—
	40	32	27990	59890	7100	HK324032	72.7	—	—
35	42	12	12100	19300	7100	HK354212	27.7	BK354212	32.9
	42	16	15700	27500	7100	HK354216	36.9	BK354216	43.8
	42	20	20800	41000	7100	HK354220	46.1	BK354220	54.8
	43	16	24200	47100	6200	HK354316	37.0	—	—
	43	25	24440	48200	6200	HK354325	60.5	—	—
	43	32	24870	48880	6200	HK354332	80.0	—	—
	45	12	24870	48880	6200	HK354512	31.0	—	—
40	47	12	14000	24300	6300	HK404712	31.1	BK404712	38.2
	47	16	20000	38500	6300	HK404716	41.4	BK404716	51.0
	47	20	25500	52000	6300	HK404720	51.8	BK404720	62.0
	50	32	23000	42000	6000	HK405032	114.3	—	—
	50	38	24100	43000	6000	HK405038	130.8	—	—
45	52	12	12900	22500	5800	HK455212	34.8	BK455212	45.0
	52	16	19300	38000	5800	HK455216	46.2	BK455216	56.0
	52	20	22000	51000	5800	HK455220	56.0	BK455220	72.0
	55	38	27600	61000	5300	HK455538	135.0	—	—
50	57	16	15200	32500	5300	HK505716	51.2	—	—
	58	12	23600	57200	5300	HK505812	44.2	—	—
	58	20	28000	60000	5300	HK505820	72.0	BK505820	87.3
	58	25	34500	80000	5300	HK505825	90.1	BK505825	109.0
	60	38	27770	63100	4600	HK506038	140.0	—	—
55	63	20	29500	59900	4600	HK556320	78.0	BK556320	93.8
	63	25	33500	69980	4600	HK556325	109.0	—	—
	63	28	39090	98000	4600	HK556328	111.0	BK556328	132.0



HK type with open ends



BK type with closed ends

F_w 60 mm

Boundary dimensions (mm)			Basic load ratings (N)		Limiting speeds (r/min)	Bearing Numbers and reference mass			
F_w	D	C	C_r	C_{0r}	Oil	With open ends	Weight (g)	With closed ends	Weight (g)
60	68	12	12400	29000	4100	HK606812	49.2	BK606812	77.0
	68	20	30500	72000	4100	HK606820	86.0	BK606820	105.0
	68	32	50000	131000	4100	HK606832	136.0	BK606832	164.0