



**YUANHE**

# Needle Roller Bearings

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Yuanhe Transmission (Zhenjiang) Co., Ltd.



Needle roller bearings are assembled with many slender needle rollers whose length is 3 times to 10 times the diameter. The structure is compact, and the diameter of the inscribed circle of the needle roller is relatively close to the outer diameter of the bearing, so it has a large radial load capacity.

## ◆ The main structural form

### 1. Solid outer ring needle roller bearings

#### NA 0000 type, NKI type.

This type of bearing has an inner ring and an outer ring (with lock ring, needle roller and cage), and has a high limit speed. It is divided into single row and double row.

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

The bearing outer ring of dW7mm has double lock ring, and the bearing outer ring of d>7mm has double rib.

Double row: NA69 series with d^32mm.

### 2. Needle roller and cage assembly K00000

The needle roller and cage assemblies are independent bearing units, the needle rollers are precisely guided by the cage. This kind of bearing has no ferrule, small radial surface and large bearing capacity, and is suitable for supporting structures with limited radial installation size.

The surface of the shaft diameter and the surface of the housing hole matched with the bearing are directly used as the inner and outer rolling surfaces of the bearing, its surface hardness is generally 58~64HRC, the surface hardening layer depth is 0.6~1mm, and the raceway surface roughness Ra value is usually 0.32 um;

When the dimensional tolerance of the housing hole is G6, the dimensional tolerance of the shaft is recommended as in Table 1. Shaft and housing hole raceway shape tolerances are recommended in Table 2.

Table 1 Dimensional tolerances of shafts

Nominal size of shaft diameter (mm)		Radial clearance		
Exceed	arrive	less than 0 groups	0 group	more than 0 groups
3	80	J5	h5	g6
80	200	h5	g5	f6

Table 2 Raceway Shape Tolerances

raceway diameter (mm)	Exceed	3	10	18	30	50	80	120	180	250	315
	arrive	10	18	30	50	80	120	180	250	315	400
Cylindricity (um)		2.5	3.0	4.0	4.0	5.0	6.0	8.0	10.0	12.0	13.0

### 3. Drawn cup needle roller bearings HK type and BK type without inner ring and cage

HK type bearings are perforated at both ends.

One end of the BK type bearing is a sealed type, which is used in the support of the journal without the protruding end, and can withstand a small axial swimming force, and the end face is closed for sealing.

This type of bearing consists of a thin-walled drawn outer ring, a cage and needle rollers. Its low cost and high load capacity make it suitable for bearing structures with limited radial installation dimensions. The surface of the journal that matches the bearing is hardened and directly used as a raceway. The bearing is fitted into the housing bore with an interference fit and does not require axial positioning. Bearings should be filled with sufficient grease before installation. Usually, there is no need to re-lubricate after assembly.

#### ◆ Cage material

Needle roller bearing cages are generally made of low-carbon high-quality steel, and other materials such as nylon can also be used.

#### ◆ Allowable inclination angle

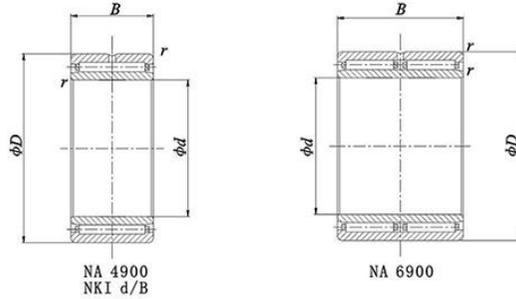
Needle roller bearings generally do not allow angular inclination. In use, the maximum deflection angle on the full length of the needle roller shall not be greater than 0.25%~0.3%.

#### ◆ Tolerance and clearance

Needle roller bearing tolerances are generally only grade 0.

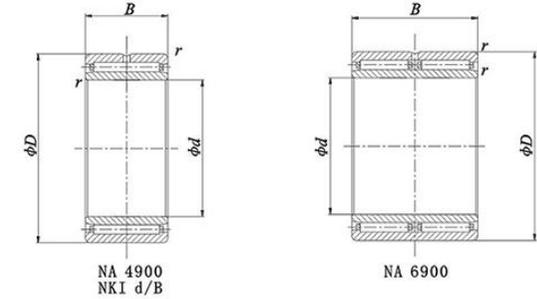
由 Needle roller bearings with inner and outer rings and cages (except for drawn outer rings and heavy series bearings) use the radial clearance values of cylindrical roller bearings. Heavy series bearings with inner and outer rings and caged needle roller bearings with inner ring delivered as a separate part, the radial clearance is based on the diameter of the inner ring raceway or the diameter of the inscribed circle of the needle roller assembly. Use cylindrical rollers Radial clearance value of the bearing.

# Solid outer ring needle roller bearings



*d* 10~25 mm

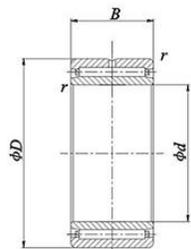
<i>d</i>	Main Dimensions (mm)			Basic Rated Load (kN)		Limit Speed (r/min)		Nominal Model	Reference Quality (kg)
	<i>D</i>	<i>B</i>	<i>r</i> (Min)	<i>C<sub>r</sub></i>	<i>C<sub>w</sub></i>	Grease	Oil		
<b>10</b>	22	13	0.3	8.8	10.4	17000	26000	NA4900	0.023
	22	16	0.3	10.2	12.5	17000	26000	NKI10/16	0.029
	22	20	0.3	12.8	16.6	17000	26000	NKI10/20	0.037
<b>12</b>	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
<b>15</b>	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
<b>17</b>	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
<b>20</b>	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
<b>22</b>	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
<b>25</b>	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



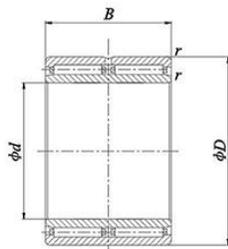
*d* 25~42 mm

<i>d</i>	Main Dimensions (mm)			Basic Rated Load (kN)		Limit Speed (r/min)		Nominal Model	Reference Quality (kg)
	<i>D</i>	<i>B</i>	<i>r</i> (Min)	<i>C<sub>r</sub></i>	<i>C<sub>w</sub></i>	Grease	Oil		
<b>25</b>	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
<b>28</b>	42	20	0.3	23.3	40.5	8000	12000	NKI28/20	0.097
	42	30	0.3	34.1	65.5	8000	12000	NKI18/30	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
<b>30</b>	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
<b>32</b>	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
<b>35</b>	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
<b>38</b>	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
<b>40</b>	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
<b>42</b>	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

# Solid outer ring needle roller bearings



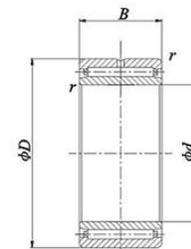
NA 4900  
NKI d/B



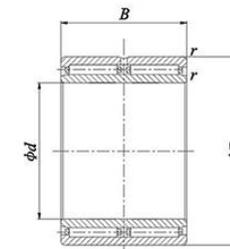
NA 6900

## d 45~75 mm

d	Main Dimensions (mm)			Basic Rated Load (kN)		Limit Speed (r/min)		Nominal Model	Reference Quality (kg)
	D	B	r (Min)	C <sub>r</sub>	C <sub>w</sub>	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



NA 4900  
NKI d/B

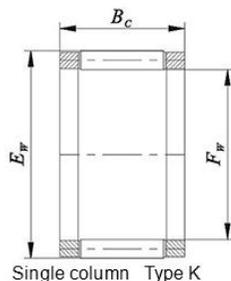


NA 6900

## d 75~100 mm

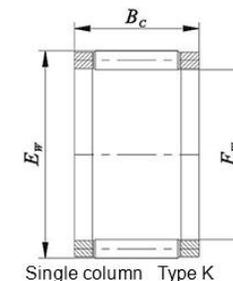
d	Main Dimensions (mm)			Basic Rated Load (kN)		Limit Speed (r/min)		Nominal Model	Reference Quality (kg)
	D	B	r (Min)	C <sub>r</sub>	C <sub>w</sub>	Grease	Oil		
75	105	25	1.0	84.2	140	3200	4800	NA4915	0.68
	105	35	1.0	130	216	3200	4800	NA6915	0.96
80	110	30	1.0	72.1	183	3200	4500	NKI80/25	0.88
	110	54	1.0	101	315	3200	4500	NKI80/35	1.50
	110	26	1.0	88.0	146	3000	4500	NA4916	0.75
85	110	36	1.0	134	232	3000	4500	NA6916	1.05
	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
90	120	36	1.0	165	250	2800	4000	NA6917	1.10
	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
95	125	63	1.0	172	265	2600	3800	NA69/18	1.15
	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
100	130	40	1.1	172	305	2400	3600	NA6919	1.35
	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

# Needle Roller and Cage Assembly



$F_w$  10~16 mm

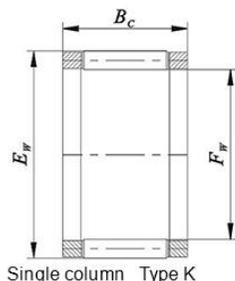
$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model	Reference Quality (g)
	$E_w$	$B_c$	$C_r$	$C_{br}$			
<b>10</b>	13	10	4500	5250	27000	K101310	1.6
	13	13	6000	7600	27000	K101313	2.1
	13	16	6300	7800	27000	K101316	2.2
	14	10	7000	7900	27000	K101410	2.9
	14	13	8000	9100	26000	K101413	4.3
	16	12	7000	9300	27000	K101612	3.7
<b>12</b>	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
<b>14</b>	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
<b>15</b>	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
<b>16</b>	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



$F_w$  18~25 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model	Reference Quality (g)
	$E_w$	$B_c$	$C_r$	$C_{br}$			
<b>18</b>	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
<b>20</b>	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
<b>22</b>	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
<b>24</b>	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
<b>25</b>	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

# Needle Roller and Cage Assembly

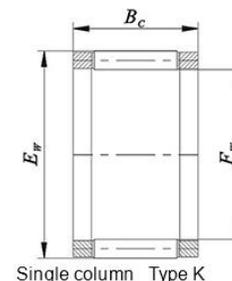


Single column Type K

## $F_w$ 26~35 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model	Reference Quality (g)
	$E_w$	$B_c$	$C_r$	$C_{br}$			
<b>26</b>	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
<b>28</b>	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
<b>30</b>	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
<b>32</b>	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
<b>35</b>	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

Note: suffix TN refers to nylon cage.



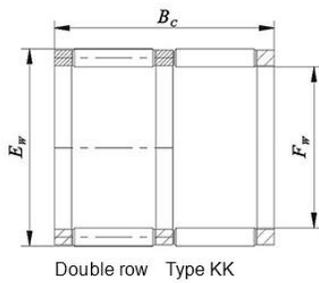
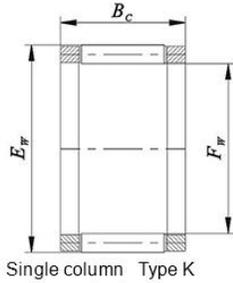
Single column Type K

## $F_w$ 37~50 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model	Reference Quality (g)
	$E_w$	$B_c$	$C_r$	$C_{br}$			
<b>37</b>	42	17	21900	42500	10000	K374217	25.8
	42	27	31500	67500	10000	K374227	40.7
	45	26	43500	73500	10000	K374526	60.5
<b>38</b>	43	17	20000	38000	10000	K384317	26.1
	43	27	31000	67500	10000	K384327	43.2
	46	20	35000	56500	10000	K384620	46.0
<b>40</b>	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
<b>42</b>	46	17	24500	44500	9000	K404617	30.0
	47	13	17300	33000	9000	K424713	22.5
	47	17	21100	42500	9000	K424717	31.1
	47	25	27000	57500	9000	K4242725TN	25.7
	47	27	33000	74500	9000	K424727	46.6
	48	35	35000	76000	9000	K424835	60.0
<b>45</b>	50	18	31000	49500	12000	K425018	53.0
	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
<b>50</b>	52	21	39500	57500	8000	K455221TN	32.9
	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
<b>58</b>	58	20	35000	61500	7000	K505820	64.9

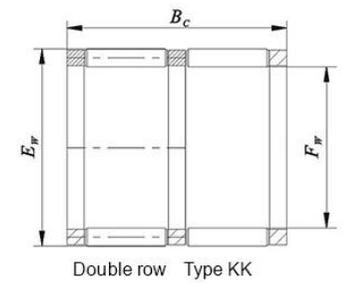
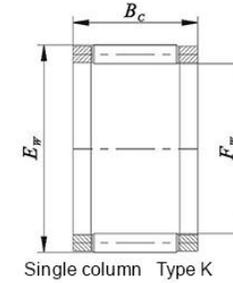
Note: suffix TN refers to nylon cage.

# Needle Roller and Cage Assembly



$F_w$  55~80 mm

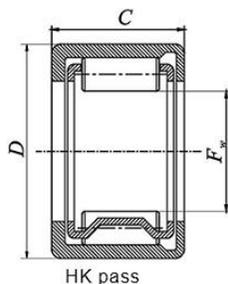
$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model	Reference Quality (g)
	$E_w$	$B_c$	$C_r$	$C_{or}$			
<b>55</b>	60	20	28000	65500	<b>6500</b>	K556020	43.4
	60	27	37500	96500	<b>6500</b>	K556027	60.5
	60	30	40500	100300	<b>6500</b>	K556030	68.6
	61	20	41000	110000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



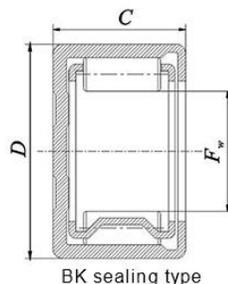
$F_w$  85~110 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model	Reference Quality (g)	
	$E_w$	$B_c$	$C_r$	$C_{or}$				
<b>85</b>	92	20	44000	107500	<b>3500</b>	K859220	96.0	
	<b>90</b>	97	20	44500	122500	3000	K909720	103
		98	27	60500	149500	3000	K909827	150
<b>95</b>	102	20	45500	122500	2900	K9510220	110	
		30	68500	179500	2900	K9510330	177	
	103	40	82500	227500	2900	KK9510340	250	
<b>100</b>	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	
<b>105</b>	112	21	47000	126500	2500	K105×112×21	123	
	113	30	71500	196500	2500	K105×113×30	198	
<b>110</b>	118	30	77500	218500	2300	K110×118×30	217	

# Drawn cup needle roller bearings



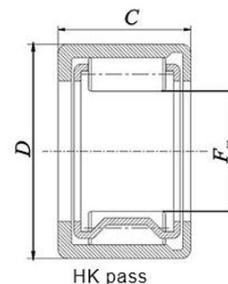
HK pass



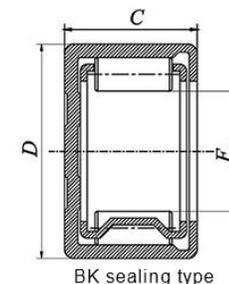
BK sealing type

$F_w$  5~10 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min)	Nominal Model and Reference Quality			
	$D$	$C$	$C_r$	$C_w$	Oil	Through hole type	weight(g)	Sealed open type	weight(g)
<b>5</b>	9	9	2200	1790	36000	HK050909	1.6	BK050909	2.1
<b>6</b>	10	7	1600	1400	30000	HK061007	1.8	—	—
		8	1830	1550	32000	HK061008	2.1	BK061008	2.2
		9	2650	2400	30000	HK061009	2.2	BK061009	2.6
	10	11	1700	1500	29000	HK061011	2.8	—	—
		8	2230	2010	33000	HK061208	2.5	—	—
<b>7</b>	11	9	2800	2150	27000	HK071109	2.3	BK071109	2.9
		8	3300	3220	37000	HK071208	2.2	—	—
	9	3400	3150	37000	HK071209	2.4	—	—	
<b>8</b>	12	8	2550	2400	21000	HK081208	2.7	BK081208	2.9
		10	3700	3450	21000	HK081210	3.0	BK081210	3.4
	14	10	3800	3950	25000	HK081410	5.4	BK081410	5.8
		12	4100	4320	25000	HK081412	6.6	—	—
<b>9</b>	13	8	3650	4050	25000	HK091308	3.0	BK091308	3.4
		10	4050	4250	25000	HK091310	4.0	BK091310	5.0
		11	4300	4700	25000	HK091311	4.1	—	—
	13	12	5000	6300	25000	HK091312	4.6	BK091312	4.9
		10	5300	6300	25000	HK091510	5.6	BK091510	5.6
<b>10</b>	13	8	4100	4800	20000	HK101308	3.5	—	—
		10	3900	4800	19000	HK101410	4.1	BK101410	4.3
		12	5000	6300	19000	HK101412	4.8	BK101412	5.0
	14	15	6700	7800	19000	HK101415	6.0	BK101415	6.2
		15	6800	8800	19000	HK101515	6.5	—	—
		10	6800	8800	18000	HK101610	6.5	BK101610	6.8
	16	12	6800	8800	18000	HK101612	7.5	—	—
		15	6800	8800	18000	HK101615	11.0	—	—
		15	7200	8000	19000	HK101715	11.5	—	—
		12	7200	8000	19000	HK101812	8.5	—	—



HK pass

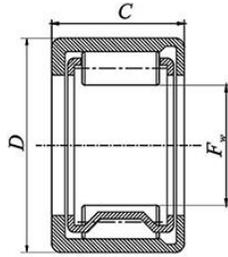


BK sealing type

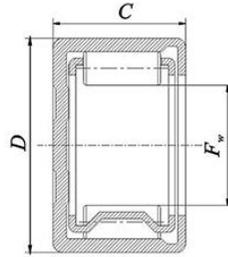
$F_w$  12~16 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min)	Nominal Model and Reference Quality					
	$D$	$C$	$C_r$	$C_w$	Oil	Through hole type	weight(g)	Sealed open type	weight(g)		
<b>12</b>	16	8	4150	5800	19000	HK121608	3.3	—	—		
		10	4150	5800	19000	HK121610	4.6	BK121610	5.2		
		12	3800	5100	15000	HK121612	5.6	BK121612	6.2		
	17	12	12	5100	7000	15000	HK121712	7.5	—	—	
			15	5100	7000	15000	HK121715	1.6	BK121715	2.1	
		17	18	5100	7000	15000	HK121718	11.0	—	—	
			18	12	5500	7000	17000	HK121715	1.6	BK121715	2.1
				14	6500	6300	15000	HK121814	10.6	—	—
	12	6800	7400	15000	HK121912	10	—	—			
	<b>13</b>	19	11	6300	6300	14000	HK131911	8.5	—	—	
12			6200	7100	17000	HK131912	8.9	BK131912	11.2		
<b>14</b>	20	10	6700	7000	16000	HK142010	8.8	BK142010	12.1		
		12	6800	7500	16000	HK142012	10.5	—	—		
		16	7300	9000	14000	HK142016	13.9	—	—		
<b>15</b>	20	12	5800	6000	14000	HK152012	8.4	—	—		
		16	6000	6200	14000	HK152016	11.4	—	—		
		20	6100	6400	14000	HK152020	13.8	—	—		
	21	12	12	7000	8400	14000	HK152112	11.1	BK152112	12.7	
			14	8500	10400	13000	HK152114	12.7	—	—	
		15	9100	11400	13000	HK152115	14.2	—	—		
	21	16	16	9800	11400	14000	HK152116	15.0	BK152116	16.5	
			22	10400	16500	14000	HK152122	20.4	BK152122	22.0	
		22	12	14300	18400	13000	HK152212	12.5	—	—	
			13	14300	18400	13000	HK152213	13.5	—	—	
<b>16</b>	21	6	4200	5300	12000	HK162106	5.5	—	—		
		9	4400	5600	12000	HK162109	7.5	—	—		
	22	12	7100	9200	14000	HK162212	11.7	BK162212	13.8		
		14	8800	9900	12000	HK162214	14.4	—	—		

# Drawn cup needle roller bearings



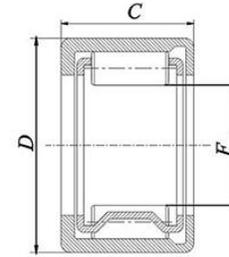
HK pass



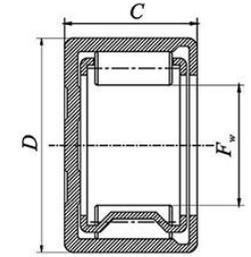
BK sealing type

$F_w$  16~22 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model and Reference Quality			
	$D$	$C$	$C_r$	$C_{or}$		Through hole type	weight(g)	Sealed open type	weight(g)
<b>16</b>	22	16	10100	14300	14000	HK162316	15.8	BK162316	17.6
	22	17	12900	17200	12000	HK162217	18.0	—	—
	22	22	11000	17400	14000	HK162222	21.7	BK162222	23.4
<b>17</b>	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	37.0	—	—
	25	14	13100	14700	10000	HK172514	17.7	—	—
<b>20</b>	26	10	5900	7200	10000	HK202610	11.8	BK202610	14.2
	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	—	—
	<b>22</b>	28	10	7200	9500	10010	HK202810	12.3	—
28		12	8100	10400	10010	HK202812	15.0	BK202812	18.1
28		16	11400	18100	10010	HK202816	20.9	BK202816	24.3



HK pass

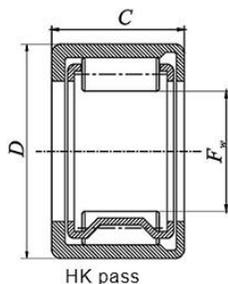


BK sealing type

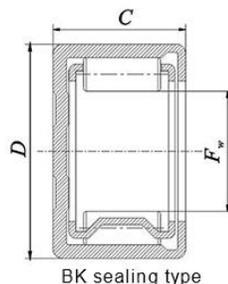
$F_w$  22~30 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model and Reference Quality			
	$D$	$C$	$C_r$	$C_{or}$		Through hole type	weight(g)	Sealed open type	weight(g)
<b>22</b>	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	—	—
<b>25</b>	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	—	—
<b>28</b>	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
	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	—	—
<b>30</b>	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	—	—

# Drawn cup needle roller bearings



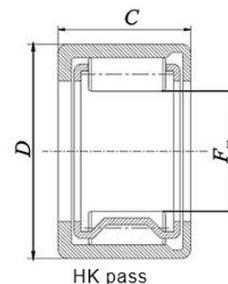
HK pass



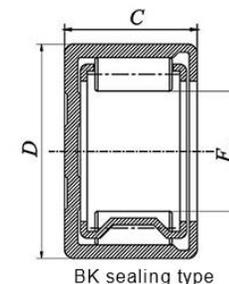
BK sealing type

$F_w$  32~55 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model and Reference Quality			
	$D$	$C$	$C_r$	$C_{or}$		Through hole type	weight(g)	Sealed open type	weight(g)
<b>32</b>	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	—	—
<b>35</b>	42	12	12100	19300	7100	HK354212	27.7	BK354212	32.9
	42	16	15700	27500	7100	HK354216	36.9	BK354216	32.9
	42	20	20800	41000	7100	HK354220	46.1	BK354220	32.9
	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	—	—
<b>40</b>	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	11.4.3	—	—
	50	38	24100	43000	6000	HK405038	13.0.8	—	—
<b>45</b>	52	12	12900	22500	5800	HK455212	34.8	BK455212	45.0
	52	16	19300	38000	5800	HK455216	46.2	BK455212	56.0
	52	20	22000	51000	5800	HK455220	56.0	BK455220	72.0
	55	38	27600	61000	5300	HK455538	135.0	—	—
<b>50</b>	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	—	—
<b>55</b>	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 pass



BK sealing type

$F_w$  60 mm

$F_w$	Main Dimensions (mm)		Basic Rated Load (N)		Limit Speed (r/min) Oil	Nominal Model and Reference Quality			
	$D$	$C$	$C_r$	$C_{or}$		Through hole type	weight(g)	Sealed open type	weight(g)
<b>60</b>	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

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