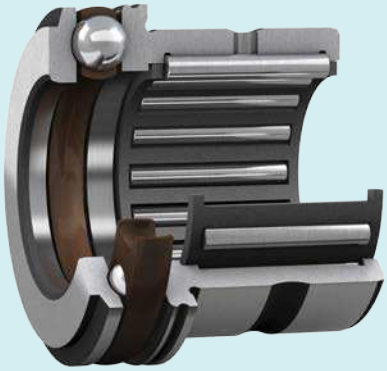


7 Needle roller bearings

Designation system

Prefixes

R	Bearing without an inner ring

Basic designation

BK	Drawn cup needle roller bearing with a closed end
HK	Drawn cup needle roller bearing with open ends
HN	Drawn cup needle roller bearing with open ends, full complement
IR	Needle roller bearing inner ring
K	Needle roller and cage assembly
LR	Needle roller bearing inner ring
NA 48, NA 49, NA 69	Needle roller bearing with machined rings, with flanges, with an inner ring
NAO	Needle roller bearing with machined rings, without flanges, with an inner ring
NK, NKS	Needle roller bearing with machined rings, with flanges, without an inner ring
NKI, NKIS	Needle roller bearing with machined rings, with flanges, with an inner ring
NKIA 59, NKIB 59	Needle roller / angular contact ball bearing
NKX	Needle roller / thrust ball bearing
NKXR	Needle roller / cylindrical roller thrust bearing
NX	Needle roller / full complement thrust ball bearing
PNA	Alignment needle roller bearing
RN	Needle roller

Suffixes

Group 1: Internal design

BF	Needle roller with flat ends
D	Deviating or modified internal design with the same boundary dimensions. Example: K 40x45x17 D (Needle roller and cage assembly with a double split cage)
DS	Single split needle roller and cage assembly
EGS	Inner ring with a non-directionally ground raceway
VGS	Inner ring with a pre-ground raceway and a machining allowance
ZW	Double row needle roller and cage assembly (double row cage)

Group 2: External design (seals, snap ring groove, etc.)

AS..	Outer ring with lubrication hole(s), the number following indicates the number of holes
ASR..	Outer ring with annular groove and lubrication hole(s), the number following indicates the number of holes
IS..	Inner ring with lubrication hole(s), the number following indicates the number of holes
ISR..	Inner ring with annular groove and lubrication hole(s), the number following indicates the number of holes
RS, .2RS	Contact seal on one or both sides, respectively • NBR or FKM or PUR for a drawn cup needle roller bearing • NBR for a machined needle roller bearing
Z	Combined needle roller bearing, factory greased thrust bearing with a cover without lubrication holes over the outside diameter

Group 3: Cage design

TN	Glass fibre reinforced PA66 cage

Group 4					
4.1	4.2	4.3	4.4	4.5	4.6

Group 4.6: Other variants

VG052 Single split PES (polyethersulfone) cage

Group 4.5: Lubrication

SM.. Special grease, two numbers following identify the grease

Group 4.4: Stabilization

S0 Bearing or inner ring heat stabilized for operating temperatures ≤ 150 °C (*300 °F*)
S1 Bearing or inner ring heat stabilized for operating temperatures ≤ 200 °C (*390 °F*)
S2 Bearing or inner ring heat stabilized for operating temperatures ≤ 250 °C (*480 °F*)
S3 Bearing or inner ring heat stabilized for operating temperatures ≤ 300 °C (*570 °F*)

Group 4.3: Bearing sets, matched bearings

..S Matched bearings for an equal load distribution. The number preceding indicates the number of bearings, e.g. NK 50/25 TN/2S

Group 4.2: Accuracy, clearance, preload, quiet running

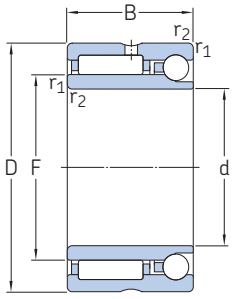
/SORT.. Tolerance grade of needle rollers of a needle roller and cage assembly, the numbers following identify the actual limits in µm, e.g. /SORT-2-4

CN Normal radial internal clearance; only used together with an additional letter that identifies a reduced or displaced clearance range
- H Reduced clearance range corresponding to the upper half of the actual clearance range
- L Reduced clearance range corresponding to the lower half of the actual clearance range
- M Reduced clearance range corresponding to the two middle quarters of the actual clearance range
- P Displaced clearance range comprising the upper half of the actual clearance range plus the lower half of the next larger clearance range
- R Normal clearance range in accordance with the withdrawn DIN 620-4

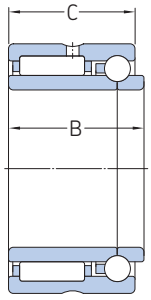
The above letters H, L, M and P are also used together with the clearance classes C2, C3, C4.

C2 Radial internal clearance smaller than Normal
C3 Radial internal clearance greater than Normal
C4 Radial internal clearance greater than C3
G2 Needle roller in accordance with ISO 3096 Grade 2
H.. Bearing without an inner ring and reduced inside diameter (under rollers) tolerance, the numbers following indicate the tolerance limits in µm, e.g. H+27+20
M../M.. Diameter tolerance of needle rollers, e.g. M2/M4 indicates diameter tolerance –2 to –4 µm
N/M.. Diameter tolerance of needle rollers, e.g. N/M2 indicates diameter tolerance 0 to –2 µm
P5 Dimensional and geometrical tolerances to class P5
P6 Dimensional and geometrical tolerances to class P6
P62 P6 + C2
P63 P6 + C3
P6CNR P6 + CNR

Group 4.1: Materials, heat treatment



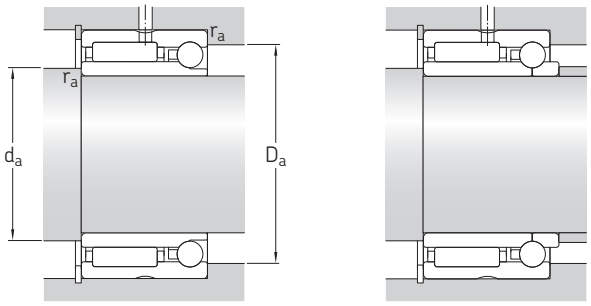
NKIA



NKIB

Principal dimensions				Basic load ratings				Fatigue load limit		Speed ratings		Mass	Designation
				radial dynamic	radial static	axial dynamic	axial static	radial	axial	Reference speed	Limiting speed		
d	D	B	C	C	C_0	C	C_0	P_u	P_u				
mm				kN				kN		r/min		kg	–
12	24	16	–	8,09	9,65	2,07	1,92	1,14	0,083	22 000	26 000	0,04	▸ **NKIA 5901**
	24	17,5	16	8,09	9,65	2,07	1,92	1,14	0,083	22 000	26 000	0,043	▸ **NKIB 5901**
15	28	18	–	11,2	15,3	2,27	2,37	1,83	0,099	19 000	22 000	0,05	▸ **NKIA 5902**
	28	20	18	11,2	15,3	2,27	2,37	1,83	0,099	19 000	22 000	0,052	▸ **NKIB 5902**
17	30	18	–	11,4	16,3	2,24	2,74	1,96	0,116	18 000	20 000	0,056	▸ **NKIA 5903**
	30	20	18	11,4	16,3	2,24	2,74	1,96	0,116	18 000	20 000	0,058	▸ **NKIB 5903**
20	37	23	–	21,6	28	3,79	4,21	3,35	0,176	15 000	17 000	0,1	▸ **NKIA 5904**
	37	25	23	21,6	28	3,79	4,21	3,35	0,176	15 000	17 000	0,11	▸ **NKIB 5904**
22	39	23	–	23,3	32	4,14	4,93	3,9	0,205	14 000	15 000	0,12	**NKIA 59/22**
	39	25	23	23,3	32	4,14	4,93	3,9	0,205	14 000	15 000	0,12	▸ **NKIB 59/22**
25	42	23	–	24,2	34,5	4,24	5,26	4,15	0,224	13 000	15 000	0,13	▸ **NKIA 5905**
	42	25	23	24,2	34,5	4,24	5,26	4,15	0,224	13 000	15 000	0,13	▸ **NKIB 5905**
30	47	23	–	25,5	39	4,54	6,32	4,65	0,268	11 000	13 000	0,15	▸ **NKIA 5906**
	47	25	23	25,5	39	4,54	6,32	4,65	0,268	11 000	13 000	0,15	▸ **NKIB 5906**
35	55	27	–	31,9	54	5,83	8,42	6,7	0,355	9 500	11 000	0,24	▸ **NKIA 5907**
	55	30	27	31,9	54	5,83	8,42	6,7	0,355	9 500	11 000	0,25	▸ **NKIB 5907**
40	62	30	–	42,9	71	7,17	10,9	8,8	0,467	8 000	9 500	0,32	▸ **NKIA 5908**
	62	34	30	42,9	71	7,17	10,9	8,8	0,467	8 000	9 500	0,32	▸ **NKIB 5908**
45	68	30	–	45,7	78	7,47	12	9,65	0,513	7 500	8 500	0,38	**NKIA 5909**
	68	34	30	45,7	78	7,47	12	9,65	0,513	7 500	8 500	0,38	▸ **NKIB 5909**
50	72	30	–	47,3	85	7,74	13,7	10,6	0,579	7 000	8 000	0,38	▸ **NKIA 5910**
	72	34	30	47,3	85	7,74	13,7	10,6	0,579	7 000	8 000	0,39	▸ **NKIB 5910**
55	80	34	–	57,2	106	9,27	16,7	13,2	0,697	6 300	7 000	0,55	**NKIA 5911**
	80	38	34	57,2	106	9,27	16,7	13,2	0,697	6 300	7 000	0,56	▸ **NKIB 5911**
60	85	34	–	60,5	114	9,58	18	14,3	0,77	6 000	6 700	0,59	▸ **NKIA 5912**
	85	38	34	60,5	114	9,58	18	14,3	0,77	6 000	6 700	0,6	▸ **NKIB 5912**
65	90	34	–	61,6	120	9,96	19,2	14,6	0,816	5 600	6 300	0,64	**NKIA 5913**
	90	38	34	61,6	120	9,96	19,2	14,6	0,816	5 600	6 300	0,64	▸ **NKIB 5913**
70	100	40	–	84,2	163	13,2	25	20,8	1,05	5 000	5 600	0,98	**NKIA 5914**
	100	45	40	84,2	163	13,2	25	20,8	1,05	5 000	5 600	0,99	▸ **NKIB 5914**

▸ Popular item



Dimensions			Abutment and fillet dimensions		
d	F	$r_{1,2}$ min.	d_a min.	D_a max.	r_a max.
mm			mm		
12	16	0,3	14	22	0,3
	16	0,3	14	22	0,3
15	20	0,3	17	26	0,3
	20	0,3	17	26	0,3
17	22	0,3	19	28	0,3
	22	0,3	19	28	0,3
20	25	0,3	22	35	0,3
	25	0,3	22	35	0,3
22	28	0,3	24	37	0,3
	28	0,3	24	37	0,3
25	30	0,3	27	40	0,3
	30	0,3	27	40	0,3
30	35	0,3	32	45	0,3
	35	0,3	32	45	0,3
35	42	0,6	39	51	0,6
	42	0,6	39	51	0,6
40	48	0,6	44	58	0,6
	48	0,6	44	58	0,6
45	52	0,6	49	64	0,6
	52	0,6	49	64	0,6
50	58	0,6	54	68	0,6
	58	0,6	54	68	0,6
55	63	1	60	75	1
	63	1	60	75	1
60	68	1	65	80	1
	68	1	65	80	1
65	72	1	70	85	1
	72	1	70	85	1
70	80	1	75	95	1
	80	1	75	95	1