

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.)

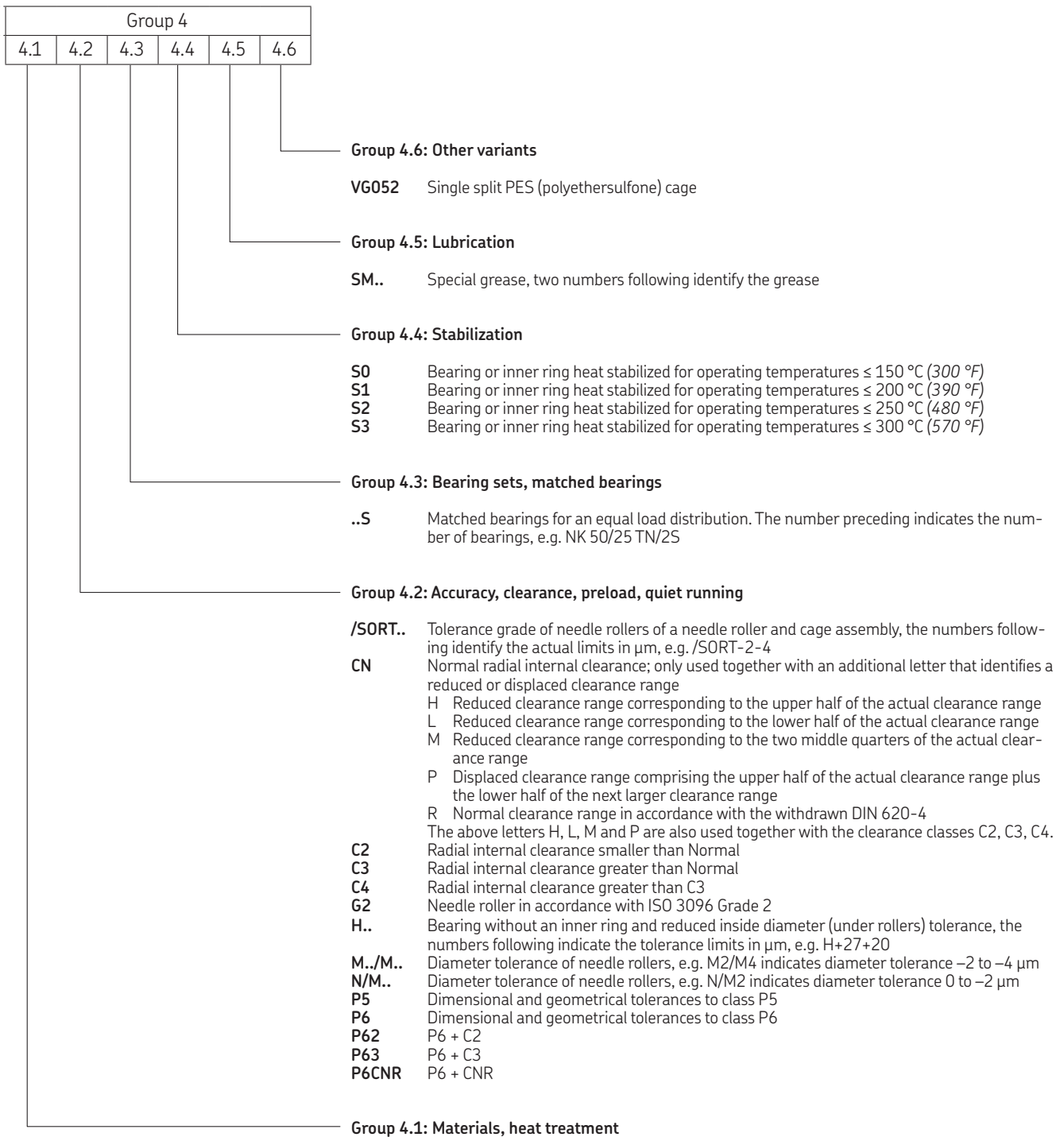
AS.. Outer ring with lubrication hole(s), the number following indicates the number of holes
ASR.. Outer ring with annular groove and lubrication hole(s), the number following indicates the number of holes
IS.. Inner ring with lubrication hole(s), the number following indicates the number of holes
ISR.. 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

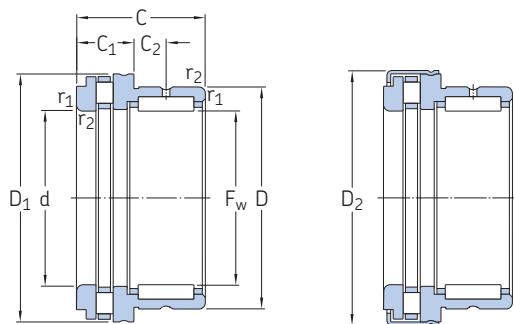
Group 3: Cage design

TN Glass fibre reinforced PA66 cage



7.10 Needle roller / cylindrical roller thrust bearings

F_w 15 – 50 mm

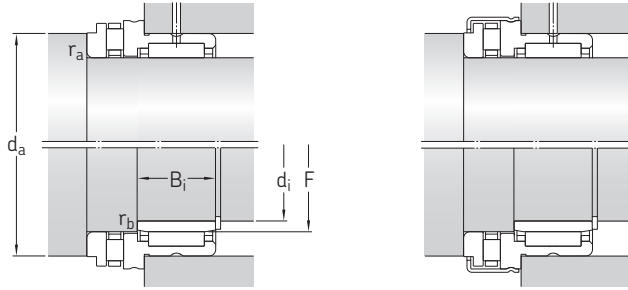


NKXR

NKXR..Z

Principal dimensions			Basic load ratings				Fatigue load limit		Minimum load factor	Speed ratings		Mass	Designation
F _w	D	C	radial dynamic C	static C ₀	axial dynamic C	static C ₀	radial P _u	axial P _u	A	Reference speed	Limiting speed	kg	
mm			kN				kN		–	r/min			–
15	24	23	11	14	11,2	27	1,66	2,45	0,000 058	4 300	8 500	0,042	NKXR 15
	24	23	11	14	11,2	27	1,66	2,45	0,000 058	4 300	8 500	0,045	▶ NKXR 15 Z
17	26	25	12,1	16,6	12,2	31,5	1,96	2,85	0,000 079	4 300	8 500	0,05	▶ NKXR 17
	26	25	12,1	16,6	12,2	31,5	1,96	2,85	0,000 079	4 300	8 500	0,053	▶ NKXR 17 Z
20	30	30	16,5	25,5	18,6	48	3,05	4,65	0,00018	3 800	7 500	0,08	▶ NKXR 20
	30	30	16,5	25,5	18,6	48	3,05	4,65	0,00018	3 800	7 500	0,084	▶ NKXR 20 Z
25	37	30	19	32,5	25	69,5	4	6,8	0,00039	3 200	6 300	0,12	NKXR 25
	37	30	19	32,5	25	69,5	4	6,8	0,00039	3 200	6 300	0,13	▶ NKXR 25 Z
30	42	30	22,9	38	27	78	4,8	7,65	0,00049	3 000	6 000	0,14	NKXR 30
	42	30	22,9	38	27	78	4,8	7,65	0,00049	3 000	6 000	0,14	▶ NKXR 30 Z
35	47	30	24,6	45	29	93	5,6	9,15	0,00069	2 800	5 600	0,16	NKXR 35
	47	30	24,6	45	29	93	5,6	9,15	0,00069	2 800	5 600	0,17	▶ NKXR 35 Z
40	52	32	26,4	51	43	137	6,3	13,7	0,0015	2 400	5 000	0,2	NKXR 40
	52	32	26,4	51	43	137	6,3	13,7	0,0015	2 400	5 000	0,21	▶ NKXR 40 Z
45	58	32	27,5	57	45	153	7,1	15,3	0,0019	2 200	4 500	0,24	NKXR 45
	58	32	27,5	57	45	153	7,1	15,3	0,0019	2 200	4 500	0,26	▶ NKXR 45 Z
50	62	35	38	78	47,5	166	9,65	16,6	0,0022	2 200	4 300	0,27	NKXR 50
	62	35	38	78	47,5	166	9,65	16,6	0,0022	2 200	4 300	0,29	▶ NKXR 50 Z

▶ Popular item



Dimensions			Abutment and fillet dimensions							Associated inner ring ¹⁾ Dimensions			Designation
F _w	C ₁	C ₂	d	D ₁	D ₂	r _{1,2} min.	d _a min.	r _a max.	r _b max.	d _i	F	B _i	
mm			mm							mm			–
15	9	6,5	15	28,1	–	0,3	23,7	0,3	0,3	12	15	16	IR 12x15x16
	9	6,5	15	–	29,2	0,3	23,7	0,3	0,3	12	15	16	IR 12x15x16
17	9	8	17	30,1	–	0,3	25,7	0,3	0,3	14	17	17	IR 14x17x17
	9	8	17	–	31,2	0,3	25,7	0,3	0,3	14	17	17	IR 14x17x17
20	10	10,5	20	35,1	–	0,3	30,7	0,3	0,3	17	20	20	IR 17x20x20
	10	10,5	20	–	36,2	0,3	30,7	0,3	0,3	17	20	20	IR 17x20x20
25	11	9,5	25	42,1	–	0,6	37,7	0,6	0,3	20	25	20	IR 20x25x20
	11	9,5	25	–	43,2	0,6	37,7	0,6	0,3	20	25	20	IR 20x25x20
30	11	9,5	30	47,1	–	0,6	42,7	0,6	0,3	25	30	20	IR 25x30x20
	11	9,5	30	–	48,2	0,6	42,7	0,6	0,3	25	30	20	IR 25x30x20
35	12	9	35	52,1	–	0,6	47,7	0,6	0,3	30	35	20	IR 30x35x20
	12	9	35	–	53,2	0,6	47,7	0,6	0,3	30	35	20	IR 30x35x20
40	13	10	40	60,1	–	0,6	55,7	0,6	0,3	35	40	20	IR 35x40x20
	13	10	40	–	61,2	0,6	55,7	0,6	0,3	35	40	20	IR 35x40x20
45	14	9	45	65,2	–	0,6	60,6	0,6	0,3	40	45	20	IR 40x45x20
	14	9	45	–	66,5	0,6	60,6	0,6	0,3	40	45	20	IR 40x45x20
50	14	10	50	70,2	–	0,6	65,5	0,6	0,6	45	50	25	IR 45x50x25
	14	10	50	–	71,5	0,6	65,5	0,6	0,6	45	50	25	IR 45x50x25

¹⁾ For additional information → Needle roller bearing inner rings, page 593