

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.)

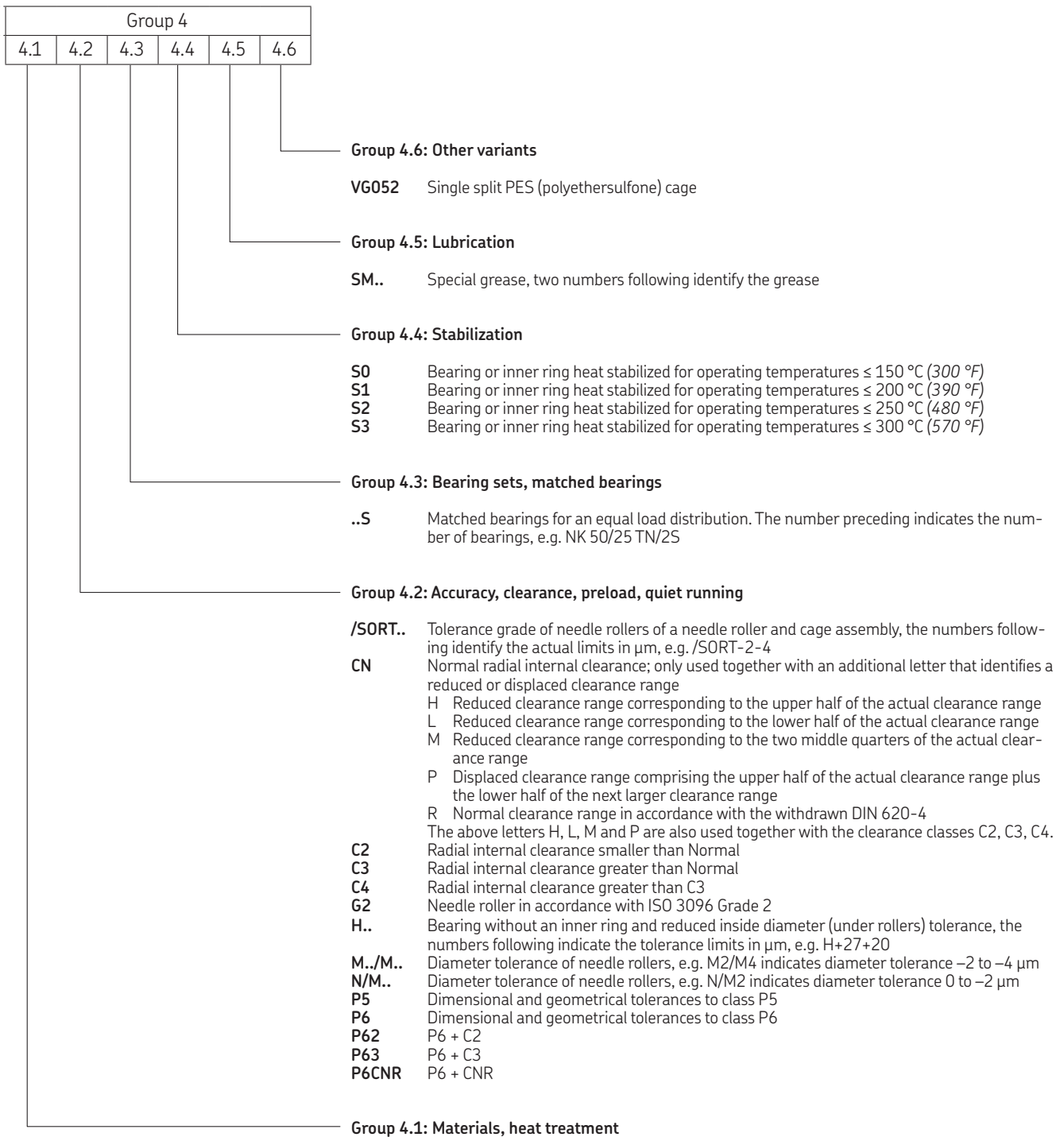
AS.. Outer ring with lubrication hole(s), the number following indicates the number of holes
ASR.. Outer ring with annular groove and lubrication hole(s), the number following indicates the number of holes
IS.. Inner ring with lubrication hole(s), the number following indicates the number of holes
ISR..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

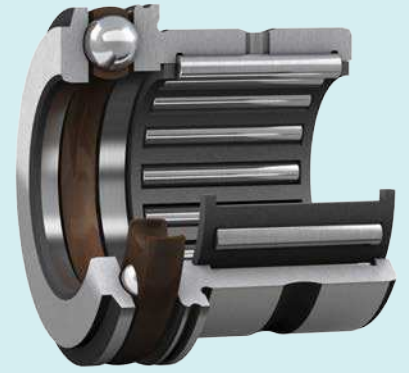
- NBR or FKM or PUR for a drawn cup needle roller bearing
- NBR for a machined needle roller bearing

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





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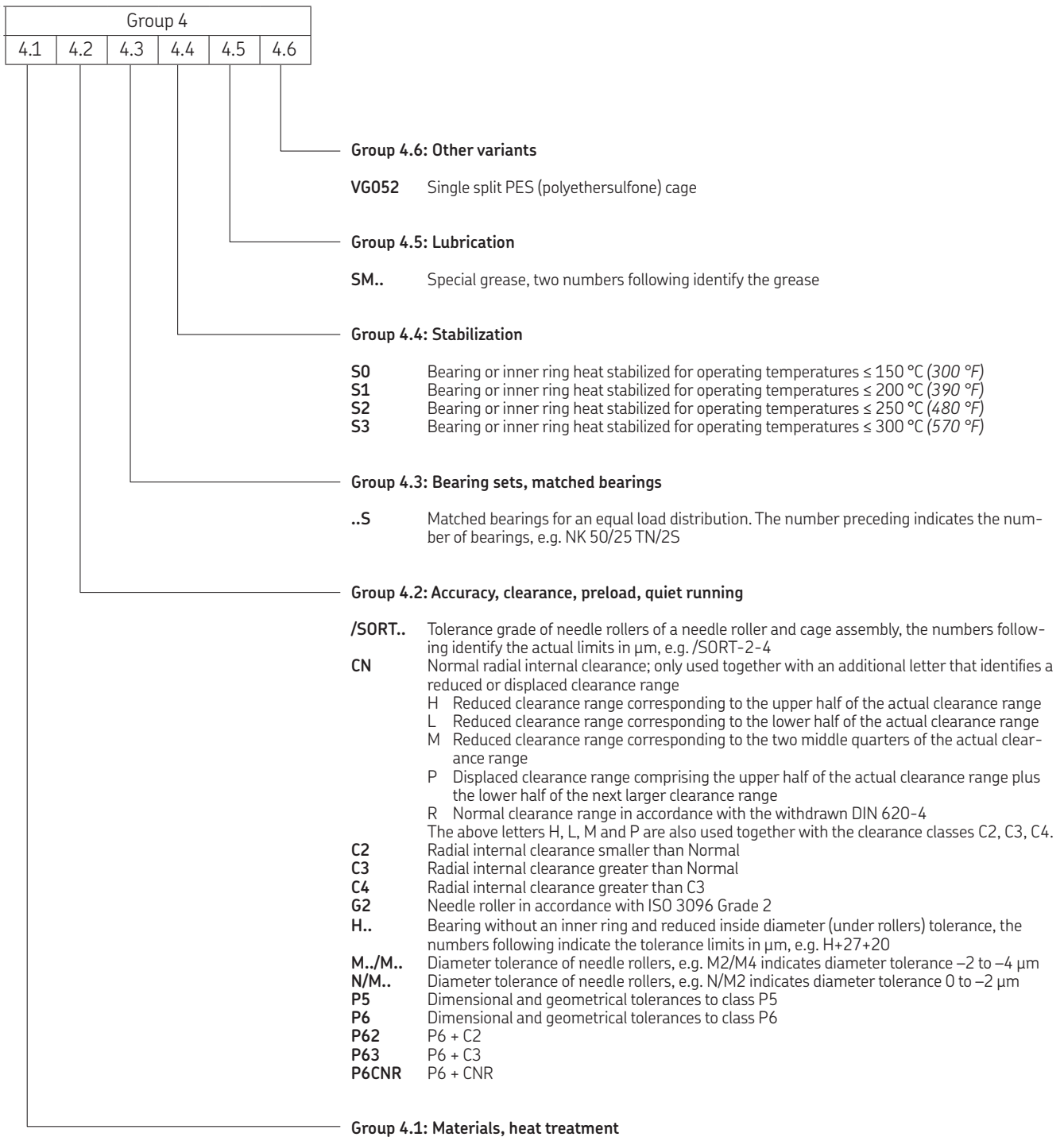
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Z Combined needle roller bearing, factory greased thrust bearing with a cover without lubrication holes over the outside diameter

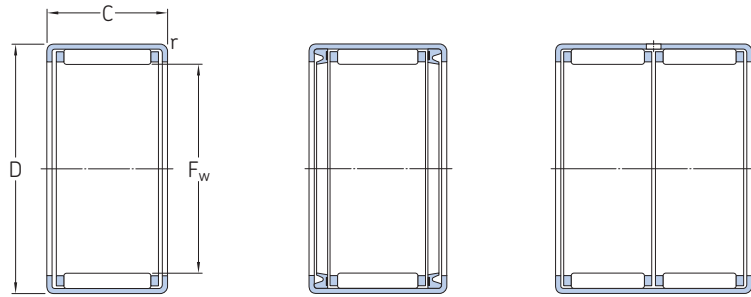
Group 3: Cage design

TN Glass fibre reinforced PA66 cage



7.2 Drawn cup needle roller bearings

F_w 3–17 mm



HK

HK ...2RS

HK (double row)

Principal dimensions			Basic load ratings		Fatigue load limit	Speed ratings		Mass	Designation
F_w	D	C	dynamic	static		Reference speed	Limiting speed		
mm			C	C_0	P_u	r/min		g	–
3	6,5	6	1,23	0,88	0,088	24 000	26 000	1	▶ HK 0306 TN
4	8	8	1,76	1,37	0,14	22 000	26 000	2	▶ HK 0408
5	9	9	2,38	2,08	0,22	22 000	24 000	2	▶ HK 0509
6	10	8	2,01	1,73	0,18	20 000	22 000	2,1	▶ HK 0608
	10	9	2,81	2,7	0,285	20 000	22 000	2,5	HK 0609
7	11	9	3,03	3,05	0,325	20 000	22 000	2,6	HK 0709
8	12	8	2,7	2,75	0,285	19 000	22 000	2,7	▶ HK 0808
	12	10	3,69	4,05	0,44	19 000	22 000	3	▶ HK 0810
	12	12	2,7	2,75	0,285	–	13 000	3,3	▶ HK 0812.2RS
9	13	8	3,52	3,9	0,415	18 000	20 000	3	▶ HK 0908
	13	10	4,13	4,8	0,53	18 000	20 000	4	▶ HK 0910
	13	12	5,12	6,4	0,72	18 000	20 000	4,6	HK 0912
10	14	10	4,29	5,3	0,57	18 000	20 000	4,1	HK 1010
	14	12	5,39	6,95	0,78	18 000	20 000	4,8	▶ HK 1012
	14	14	4,29	5,3	0,57	–	12 000	4,6	▶ HK 1014.2RS
	14	15	6,6	9	1,02	18 000	20 000	6	▶ HK 1015
12	16	10	4,84	6,4	0,71	16 000	18 000	4,6	▶ HK 1210
	18	12	6,27	7,35	0,85	16 000	18 000	9,5	▶ HK 1212
	18	16	6,27	7,35	0,85	–	10 000	11	▶ HK 1216.2RS
13	19	12	6,6	8	0,915	16 000	17 000	10,5	▶ HK 1312
14	20	12	6,82	8,65	0,98	15 000	17 000	10,5	▶ HK 1412
15	21	12	7,65	9,5	1,08	15 000	16 000	11	▶ HK 1512
	21	16	10,1	14,6	1,7	15 000	16 000	15	▶ HK 1516
	21	22	13	20	2,28	15 000	16 000	20	▶ HK 1522 ¹⁾
16	22	12	7,37	9,8	1,12	14 000	16 000	12	▶ HK 1612
	22	16	10,5	15,6	1,8	14 000	16 000	16	▶ HK 1616
	22	20	10,5	15,6	1,8	–	9 000	18	HK 1620.2RS
	22	22	12,8	19,6	2,24	14 000	16 000	24	▶ HK 1622 ¹⁾
17	23	12	7,65	10,6	1,2	14 000	15 000	13	▶ HK 1712

▶ Popular item

¹⁾ Double row, outer ring with a lubrication hole.

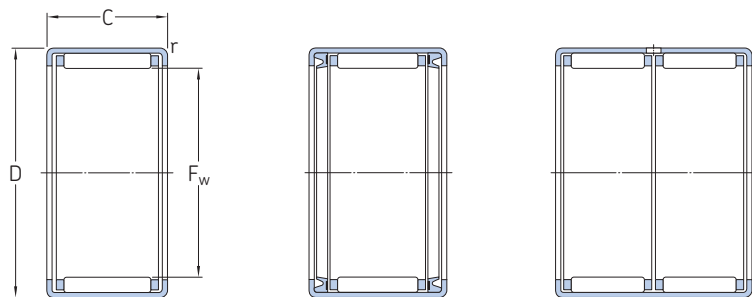
Dimensions		Associated inner rings ¹⁾		Associated radial shaft seals ²⁾	
F_w	r min.	IR series	LR series	Single lip	Double lip
mm		–		–	
3	0,3	–	–	–	–
4	0,3	–	–	G 4x8x2 S	–
5	0,4	–	–	G 5x9x2 S	–
6	0,4	–	–	G 6x10x2 S	–
	0,4	–	–	G 6x10x2 S	–
7	0,4	–	–	G 7x11x2 S	–
8	0,4	–	–	G 8x12x3	–
	0,4	IR 5x8x12	–	G 8x12x3	–
	0,4	–	–	–	–
9	0,4	–	–	G 9x13x3	–
	0,4	–	–	G 9x13x3	–
	0,4	IR 6x9x12	–	G 9x13x3	–
10	0,4	IR 7x10x10.5	LR 7x10x10.5	G 10x14x3	–
	0,4	IR 7x10x12	–	G 10x14x3	–
	0,4	–	–	–	–
	0,4	IR 7x10x16	–	G 10x14x3	–
12	0,4	IR 8x12x10.5	LR 8x12x10.5	G 12x16x3	–
	0,8	IR 8x12x12.5	LR 8x12x12.5	G 12x18x3	SD 12x18x3
	0,8	–	–	–	–
13	0,8	IR 10x13x12.5	LR 10x13x12.5	G 13x19x3	–
14	0,8	IR 10x14x13	–	G 14x20x3	SD 14x20x3
15	0,8	IR 12x15x12.5	LR 12x15x12.5	G 15x21x3	SD 15x21x3
	0,8	IR 12x15x16.5	LR 12x15x16.5	G 15x21x3	SD 15x21x3
	0,8	IR 12x15x22.5	LR 12x15x22.5	G 15x21x3	SD 15x21x3
16	0,8	IR 12x16x13	–	G 16x22x3	SD 16x22x3
	0,8	IR 12x16x16	–	G 16x22x3	SD 16x22x3
	0,8	–	–	–	–
	0,8	IR 12x16x22	–	G 16x22x3	SD 16x22x3
17	0,8	–	–	G 17x23x3	SD 17x23x3

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

²⁾ For additional information → skf.com/seals

7.2 Drawn cup needle roller bearings

F_w 18 – 30 mm



HK

HK ...2RS

HK (double row)

Principal dimensions			Basic load ratings		Fatigue load limit	Speed ratings		Mass	Designation
F_w	D	C	C	C_0	P_u	Reference speed	Limiting speed		
mm			kN		kN	r/min		g	–
18	24	12	7,92	11,2	1,27	13 000	15 000	13	▶ HK 1812
	24	16	7,92	11,2	1,27	–	8 500	15	▶ HK 1816.2RS
	24	16	11,2	17,6	2,04	13 000	15 000	18	▶ HK 1816
20	26	10	6,16	8,5	0,93	12 000	14 000	12	▶ HK 2010
	26	12	8,42	12,5	1,4	12 000	14 000	14	▶ HK 2012
	26	16	8,42	12,5	1,4	–	8 000	18	▶ HK 2016.2RS
22	26	16	12,3	20,4	2,36	12 000	14 000	19	▶ HK 2016
	26	20	12,3	20,4	2,36	–	8 000	23	▶ HK 2020.2RS
	26	20	15,1	26,5	3,15	12 000	14 000	24	▶ HK 2020
	26	30	20,9	40,5	4,75	12 000	14 000	35	▶ HK 2030 ¹⁾
25	28	10	7,21	10,6	1,2	11 000	12 000	13	▶ HK 2210
	28	12	8,8	13,7	1,56	11 000	12 000	15	▶ HK 2212
	28	16	8,8	13,7	1,56	–	7 500	18	▶ HK 2216.2RS
	28	16	13	22,4	2,6	11 000	12 000	21	▶ HK 2216
	28	20	13	22,4	2,6	–	7 500	23	▶ HK 2220.2RS
	28	20	15,7	29	3,45	11 000	12 000	26	▶ HK 2220
28	32	12	10,5	15,3	1,76	9 500	11 000	20	▶ HK 2512
	32	16	10,5	15,3	1,76	–	6 700	27	▶ HK 2516.2RS
	32	16	15,1	24	2,85	9 500	11 000	25	▶ HK 2516
	32	20	15,1	24	2,85	–	6 700	31	▶ HK 2520.2RS
	32	20	19	32,5	4	9 500	11 000	33	▶ HK 2520
	32	26	24,2	45	5,5	9 500	11 000	44	▶ HK 2526
	32	30	24,2	45	5,5	–	6 700	47	▶ HK 2530.2RS
	32	38	33	65,5	8	9 500	11 000	64	▶ HK 2538 ¹⁾
	35	16	15,7	26,5	3,15	9 000	9 500	26,5	▶ HK 2816
30	35	20	15,7	26,5	3,15	–	6 300	34	▶ HK 2820.2RS
	35	20	20,1	36,5	4,4	9 000	9 500	36	▶ HK 2820
	37	12	11,7	18,3	2,12	8 000	9 000	23	▶ HK 3012
30	37	16	11,7	18,3	2,12	–	5 600	31	▶ HK 3016.2RS
	37	16	16,5	29	3,4	8 000	9 000	31	▶ HK 3016
	37	20	20,9	40	4,75	8 000	9 000	38	▶ HK 3020
	37	26	27	54	6,55	8 000	9 000	51	▶ HK 3026
	37	38	35,8	80	9,5	8 000	9 000	76	▶ HK 3038 ¹⁾

▶ Popular item

¹⁾ Double row, outer ring with a lubrication hole.

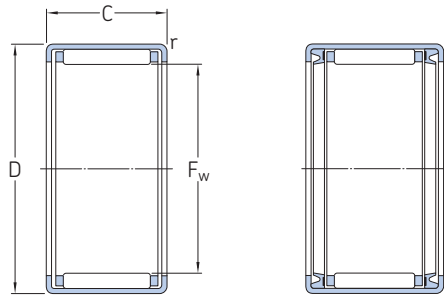
Dimensions		Associated inner rings ¹⁾		Associated radial shaft seals ²⁾	
F _w	r min.	IR series	LR series	Single lip	Double lip
mm		-		-	
18	0,8	-	LR 15x18x12.5	G 18x24x3	SD 18x24x3
	0,8	IR 15x18x16.5	LR 15x18x16.5	-	-
	0,8	IR 15x18x16.5	LR 15x18x16.5	G 18x24x3	SD 18x24x3
20	0,8	-	-	G 20x26x4	SD 20x26x4
	0,8	IR 15x20x13	-	G 20x26x4	SD 20x26x4
	0,8	IR 17x20x16.5	LR 17x20x16.5	-	-
	0,8	IR 17x20x16.5	LR 17x20x16.5	G 20x26x4	SD 20x26x4
	0,8	IR 17x20x20.5	LR 17x20x20.5	-	-
	0,8	IR 17x20x20.5	LR 17x20x20.5	G 20x26x4	SD 20x26x4
	0,8	IR 17x20x30.5	LR 17x20x30.5	G 20x26x4	SD 20x26x4
22	0,8	-	-	G 22x28x4	SD 22x28x4
	0,8	IR 17x22x13	-	G 22x28x4	SD 22x28x4
	0,8	IR 17x22x23	-	-	-
	0,8	IR 17x22x23	-	G 22x28x4	SD 22x28x4
	0,8	IR 17x22x23	-	-	-
	0,8	IR 17x22x23	-	G 22x28x4	SD 22x28x4
25	0,8	-	LR 20x25x12.5	G 25x32x4	-
	0,8	IR 20x25x17	LR 20x25x16.5	-	-
	0,8	IR 20x25x17	LR 20x25x16.5	G 25x32x4	-
	0,8	IR 20x25x20.5	LR 20x25x20.5	-	-
	0,8	IR 20x25x20.5	LR 20x25x20.5	G 25x32x4	-
	0,8	IR 20x25x26.5	LR 20x25x26.5	G 25x32x4	-
	0,8	IR 20x25x30	-	-	-
	0,8	IR 20x25x38.5	LR 20x25x38.5	G 25x32x4	-
28	0,8	IR 22x28x17	-	G 28x35x4	SD 28x35x4
	0,8	IR 22x28x20.5	LR 22x28x20.5	-	-
	0,8	IR 22x28x20.5	LR 22x28x20.5	G 28x35x4	SD 28x35x4
30	0,8	-	LR 25x30x12.5	G 30x37x4	SD 30x37x4
	0,8	IR 25x30x17	LR 25x30x16.5	-	-
	0,8	IR 25x30x17	LR 25x30x16.5	G 30x37x4	SD 30x37x4
	0,8	IR 25x30x20.5	LR 25x30x20.5	G 30x37x4	SD 30x37x4
	0,8	IR 25x30x26.5	LR 25x30x26.5	G 30x37x4	SD 30x37x4
	0,8	IR 25x30x38.5	LR 25x30x38.5	G 30x37x4	SD 30x37x4

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

²⁾ For additional information → skf.com/seals

7.2 Drawn cup needle roller bearings

F_w 35 – 60 mm



HK

HK...2RS

Principal dimensions			Basic load ratings		Fatigue load limit	Speed ratings		Mass	Designation
F_w	D	C	dynamic	static		Reference speed	Limiting speed		
mm			C	C_0	P_u	r/min		g	–
35	42	12	12,5	21,6	2,45	7 000	8 000	27	▶ HK 3512 ▶ HK 3516 HK 3520.2RS
	42	16	17,9	34	4	7 000	8 000	36	
	42	20	17,9	34	4	–	5 000	41	
	42	20	22,9	46,5	5,6	7 000	8 000	44	▶ HK 3520
40	47	12	13,4	24,5	2,8	6 300	7 000	30	▶ HK 4012 HK 4016.2RS ▶ HK 4016
	47	16	14,5	27,5	3,15	–	4 500	37	
	47	16	19	39	4,55	6 300	7 000	39	
	47	20	19	39	4,55	–	4 500	48	HK 4020.2RS
	47	20	24,2	53	6,4	6 300	7 000	54	▶ HK 4020
45	52	12	14,2	27,5	3,2	5 600	6 300	33	HK 4512 ▶ HK 4516 HK 4520.2RS
	52	16	20,5	43	5,1	5 600	6 300	47	
	52	20	20,5	43	5,1	–	4 000	54	
	52	20	26	60	7,2	5 600	6 300	56	▶ HK 4520
50	58	20	29,2	63	7,8	5 000	5 600	70	▶ HK 5020 HK 5024.2RS ▶ HK 5025
	58	24	29,2	63	7,8	–	3 600	81	
	58	25	36,9	85	10,6	5 000	5 600	85	
55	63	20	30,3	67	8,3	4 500	5 000	74	▶ HK 5520 HK 5528
	63	28	41,8	104	12,9	4 500	5 000	105	
60	68	12	17,6	32	3,8	4 300	4 800	49	HK 6012 HK 6020 HK 6032
	68	20	31,9	75	9,3	4 300	4 800	81	
	68	32	51,2	137	17	4 300	4 800	136	

7.2



Dimensions		Associated inner rings ¹⁾		Associated radial shaft seals ²⁾	
F _w	r min.	IR series	LR series	Single lip	Double lip
mm					
35	0,8	–	LR 30x35x12.5	G 35x42x4	SD 35x42x4
	0,8	IR 30x35x17	LR 30x35x16.5	G 35x42x4	SD 35x42x4
	0,8	IR 30x35x20.5	LR 30x35x20.5	–	–
	0,8	IR 30x35x20.5	LR 30x35x20.5	G 35x42x4	SD 35x42x4
40	0,8	–	LR 35x40x12.5	G 40x47x4	SD 40x47x4
	0,8	IR 35x40x20	LR 35x40x16.5	–	–
	0,8	IR 35x40x20	LR 35x40x16.5	G 40x47x4	SD 40x47x4
	0,8	IR 35x40x20.5	LR 35x40x20.5	–	–
	0,8	IR 35x40x20.5	LR 35x40x20.5	G 40x47x4	SD 40x47x4
45	0,8	–	–	G 45x52x4	SD 45x52x4
	0,8	IR 40x45x17	LR 40x45x16.5	G 45x52x4	SD 45x52x4
	0,8	IR 40x45x20.5	LR 40x45x20.5	–	–
	0,8	IR 40x45x20.5	–	G 45x52x4	SD 45x52x4
50	0,8	–	LR 45x50x20.5	G 50x58x4	SD 50x58x4
	0,8	IR 45x50x25.5	LR 45x50x25.5	–	–
	0,8	IR 45x50x25.5	LR 45x50x25.5	G 50x58x4	SD 50x58x4
55	0,8	–	LR 50x55x20.5	G 55x63x5	–
	0,8	–	–	G 55x63x5	–
60	0,8	–	–	–	–
	0,8	–	–	–	–
	0,8	–	–	–	–

¹⁾ For additional information → [Needle roller bearing inner rings, page 593](#)

²⁾ For additional information → skf.com/seals