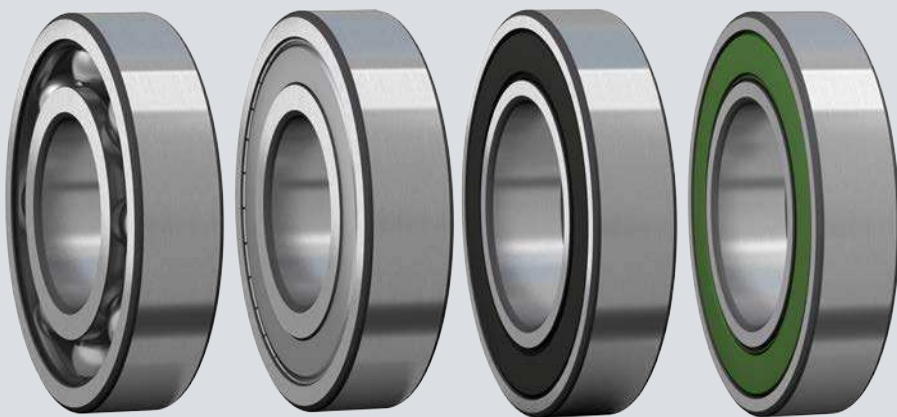




1

Deep groove ball bearings



Designation system



Prefixes

- ICOS- Oil sealed bearing unit
- D/W Stainless steel, inch dimensions
- W Stainless steel, metric dimensions
- WBB1 Stainless steel, metric dimensions, not in accordance with ISO dimension series

Basic designation

Listed in [table 4, page 30](#)

- 2.. Single row bearing with filling slots in the O2 dimension series
- 3.. Single row bearing with filling slots in the O3 dimension series
- EE, EEB, R, RLS, RMS Inch bearing
- Bearing size for inch bearings
- 2 (/8) 1/4 in. (6,35 mm) bore diameter
- to
- 40 (/8) 5 in. (127 mm) bore diameter

Suffixes

Group 1: Internal design

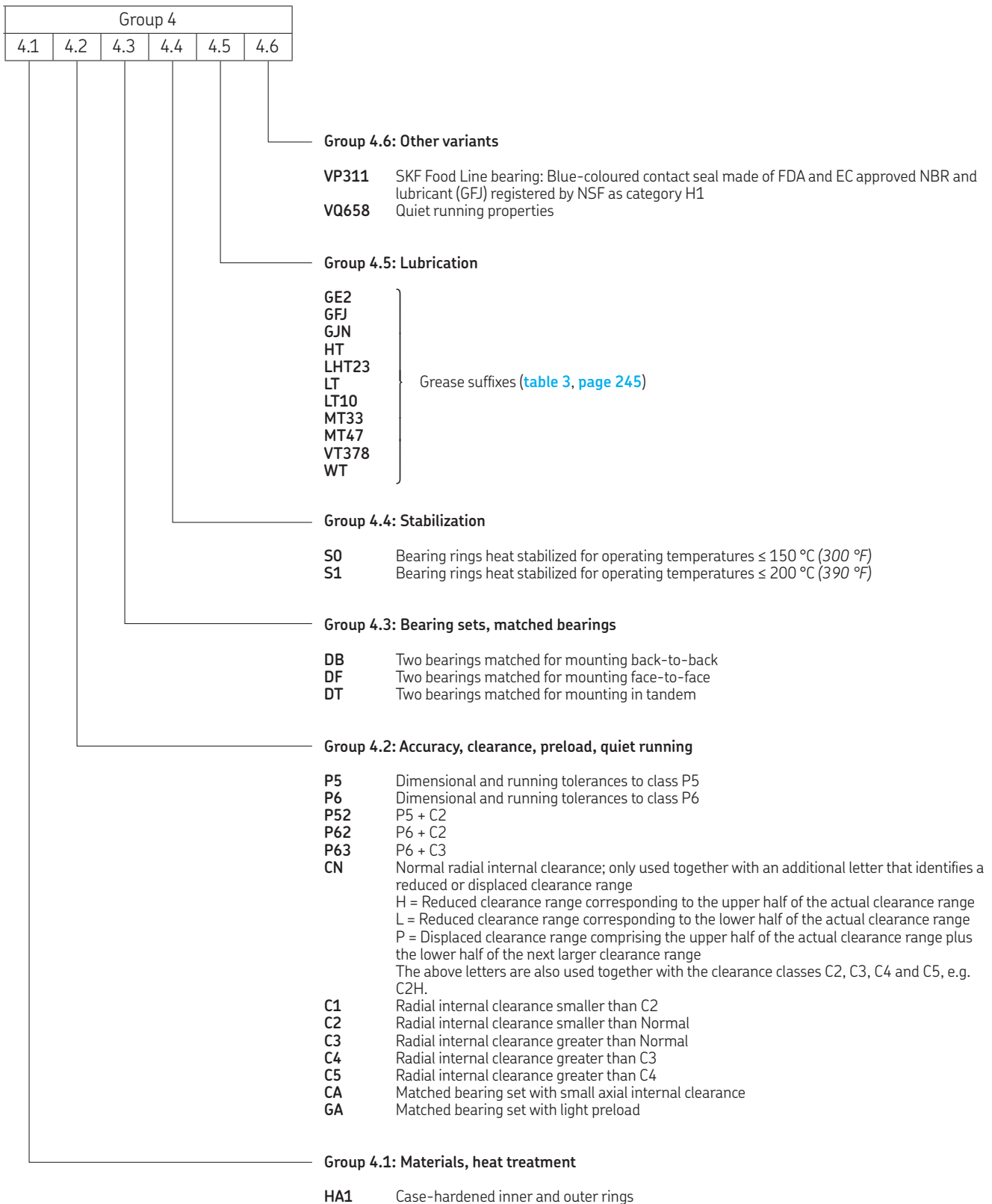
- A, AA, C, D Deviating or modified internal design
- E Reinforced ball set

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

- N Snap ring groove in the outer ring
- NR Snap ring groove in the outer ring, with snap ring
- N1 One locating slot (notch) in one outer ring side face
- R Flanged outer ring
- RS1, -2RS1 Contact seal, NBR, on one or both sides
- RS2, -2RS2 Contact seal, FKM, on one or both sides
- RSH, -2RSH Contact seal, NBR, on one or both sides
- RSH2, -2RSH2 Contact seal, FKM, on one or both sides
- RSL, -2RSL Low-friction seal, NBR, on one or both sides
- RST, -2RST Low-friction seal, NBR, on one or both sides
- RZ, -2RZ Non-contact seal, NBR, on one or both sides
- Z, -2Z Shield on one or both sides
- ZNBR Shield on one side, snap ring groove in the outer ring, with snap ring on the same side as the shield
- ZNR Shield on one side, snap ring groove in the outer ring, with snap ring on the opposite side of the shield
- ZZNR Shield on both sides, snap ring groove in the outer ring, with snap ring
- ZZS Shield on both sides, held in place by a retaining ring
- X Boundary dimensions not in accordance with ISO dimension series

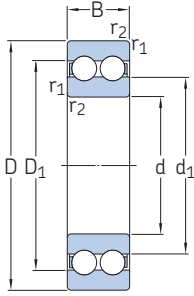
Group 3: Cage design

- **1** For stainless steel bearings: stamped stainless steel cage, ball centred
2 For other bearings: stamped steel cage, ball centred
- M Machined brass cage, ball centred; different designs or material grades are identified by a number following the M, e.g. M2
- MA(S) Machined brass cage, outer ring centred. The 'S' indicates a lubrication groove in the guiding surface.
- MB(S) Machined brass cage, inner ring centred. The 'S' indicates a lubrication groove in the guiding surface.
- TN PA66 cage, ball centred
- TN9 Glass fibre reinforced PA66 cage, ball centred
- TN9/VG1561 Glass fibre reinforced PA46 cage, ball centred
- TNH Glass fibre reinforced PEEK cage, ball centred

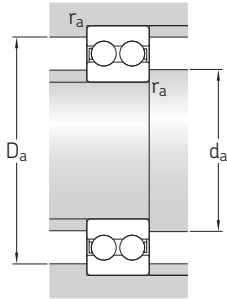


1.6 Double row deep groove ball bearings d 10 – 75 mm

1.6



Principal dimensions			Basic load ratings dynamic static		Fatigue load limit	Speed ratings Reference speed Limiting speed		Mass	Designation
d	D	B	C	C ₀	P _u				
mm			kN		kN	r/min		kg	–
10	30	14	9,23	5,2	0,224	40 000	22 000	0,049	4200 ATN9
12	32	14	10,6	6,2	0,26	36 000	20 000	0,052	4201 ATN9
	37	17	13	7,8	0,325	34 000	18 000	0,092	4301 ATN9
15	35	14	11,9	7,5	0,32	32 000	17 000	0,059	4202 ATN9
	42	17	14,8	9,5	0,405	28 000	15 000	0,12	4302 ATN9
17	40	16	14,8	9,5	0,405	28 000	15 000	0,09	4203 ATN9
	47	19	19,5	13,2	0,56	24 000	13 000	0,16	4303 ATN9
20	47	18	17,8	12,5	0,53	24 000	13 000	0,14	4204 ATN9
	52	21	23,4	16	0,68	22 000	12 000	0,21	4304 ATN9
25	52	18	19	14,6	0,62	20 000	11 000	0,17	4205 ATN9
	62	24	31,9	22,4	0,95	18 000	10 000	0,34	4305 ATN9
30	62	20	26	20,8	0,88	17 000	9 500	0,29	4206 ATN9
	72	27	41	30	1,27	16 000	8 500	0,5	4306 ATN9
35	72	23	35,1	28,5	1,2	15 000	8 000	0,4	4207 ATN9
	80	31	50,7	38	1,63	14 000	7 500	0,68	4307 ATN9
40	80	23	37,1	32,5	1,37	13 000	7 000	0,5	4208 ATN9
	90	33	55,9	45	1,9	12 000	6 700	0,95	4308 ATN9
45	85	23	39	36	1,53	12 000	6 700	0,54	4209 ATN9
	100	36	68,9	56	2,4	11 000	6 000	1,25	4309 ATN9
50	90	23	41	40	1,7	11 000	6 000	0,58	4210 ATN9
	110	40	81,9	69,5	2,9	10 000	5 300	1,7	4310 ATN9
55	100	25	44,9	44	1,9	10 000	5 600	0,8	4211 ATN9
	120	43	97,5	83	3,45	9 000	5 000	2,15	4311 ATN9
60	110	28	57,2	55	2,36	9 500	5 300	1,1	4212 ATN9
	130	46	112	98	4,15	8 500	4 500	2,65	4312 ATN9
65	120	31	67,6	67	2,8	8 500	4 800	1,45	4213 ATN9
	140	48	121	106	4,5	8 000	4 300	3,25	4313 ATN9
70	125	31	70,2	73,5	3,1	8 000	4 300	1,5	4214 ATN9
75	130	31	72,8	80	3,35	7 500	4 000	1,6	4215 ATN9
	160	55	156	143	5,5	6 700	3 600	4,8	4315 ATN9

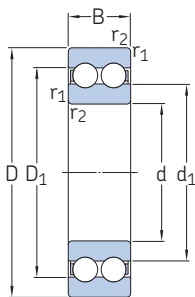


Dimensions				Abutment and fillet dimensions			Calculation factors	
d	d ₁ ≈	D ₁ ≈	r _{1,2} min.	d _a min.	D _a max.	r _a max.	k _r	f ₀
mm				mm			-	
10	16,7	23,3	0,6	14,2	25,8	0,6	0,05	12
12	18,3 20,5	25,7 28,5	0,6 1	16,2 17,6	27,8 31,4	0,6 1	0,05 0,06	12 12
15	21,5 24,5	29 32,5	0,6 1	19,2 20,6	30,8 36,4	0,6 1	0,05 0,06	13 13
17	24,3 28,7	32,7 38,3	0,6 1	21,2 22,6	35,8 41,4	0,6 1	0,05 0,06	13 13
20	29,7 31,8	38,3 42,2	1 1,1	25,6 27	41,4 45	1 1	0,05 0,06	14 13
25	34,2 37,3	42,8 49,7	1 1,1	30,6 32	46,4 55	1 1	0,05 0,06	14 13
30	40,9 43,9	51,1 58,1	1 1,1	35,6 37	56 65	1 1	0,05 0,06	14 13
35	47,5 49,5	59,5 65,4	1,1 1,5	42 44	65 71	1 1,5	0,05 0,06	14 13
40	54 56,9	66 73,1	1,1 1,5	47 49	73 81	1 1,5	0,05 0,06	15 14
45	59,5 63,5	71,5 81,5	1,1 1,5	52 54	78 91	1 1,5	0,05 0,06	15 14
50	65,5 70	77,5 90	1,1 2	57 61	83 99	1 2	0,05 0,06	15 14
55	71,2 76,5	83,8 98,5	1,5 2	64 66	91 109	1,5 2	0,05 0,06	16 14
60	75,6 83,1	90,4 107	1,5 2,1	69 72	101 118	1,5 2	0,05 0,06	15 14
65	82,9 89,6	99,1 115	1,5 2,1	74 77	111 128	1,5 2	0,05 0,06	15 14
70	89,4	106	1,5	79	116	1,5	0,05	15
75	96,9 103	114 132	1,5 2,1	84 87	121 148	1,5 2	0,05 0,06	16 14

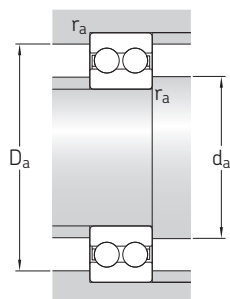
1.6 Double row deep groove ball bearings

d 80 – 90 mm

1.6



Principal dimensions			Basic load ratings		Fatigue load limit	Speed ratings		Mass	Designation
d	D	B	dynamic C	static C ₀		Reference speed	Limiting speed		
mm			kN		kN	r/min		kg	–
80	140	33	80,6	90	3,6	7 000	3 800	2	4216 ATN9
85	150	36	93,6	102	4	7 000	3 600	2,55	4217 ATN9
90	160	40	112	122	4,65	6 300	3 400	3,2	4218 ATN9



Dimensions				Abutment and fillet dimensions			Calculation factors	
d	d_1 ≈	D_1 ≈	$r_{1,2}$ min.	d_a min.	D_a max.	r_a max.	k_r	f_0
mm				mm			-	
80	102	120	2	91	129	2	0,05	16
85	105	125	2	96	139	2	0,05	15
90	114	136	2	101	149	2	0,05	15