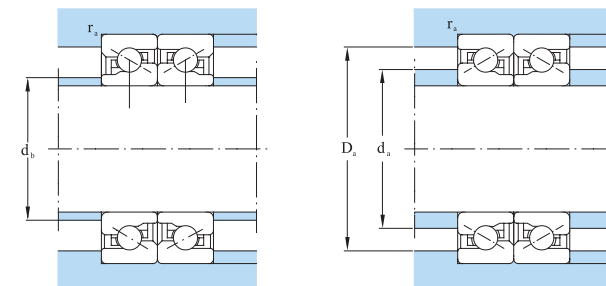
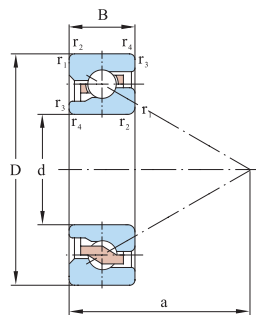


Angular contact thrust ball bearings

Single direction



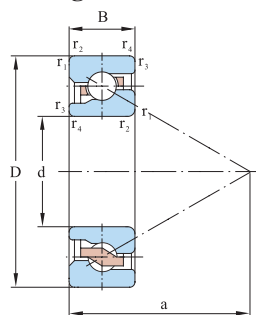
Designations	Boundary dimensions					Basic load ratings	
	d	D	B	r _{1, 2} min	r _{3, 4} min	Ca	Coa
	mm					kN	
7602012TN	12	32	10	1	0.6	11.6	20.4
7602015TN	15	35	11	1	0.6	12.5	24.5
7602017TN	17	40	12	1	0.6	16.6	33.5
7603017TN		47	14	1	0.6	15.9	24.2
7602020TN	20	47	14	1	0.6	15.1	25
7603020TN		52	15	1	0.6	19.6	30.8
7602025TN	25	52	15	1.1	1	17.4	30.7
7603025TN		62	17	1.1	1	23.3	41.4
7603025TN/R01		62	15	1.1	1	23.3	41.4
7602030TN	30	62	16	1.1	1	22.1	41.5
7602030TN/R01		62	15	1.1	1	22.1	41.5
7603030TN		72	19	1.1	1	29.9	54.1
7602035TN	35	72	17	1.5	1.1	26.2	54.5
7603035TN		80	21	1.5	1.1	36.5	100
7602035TN/R01	38.1	71.999	15.875	1.5	1.1	26.2	54.5
7602040TN	40	80	18	1.5	1.1	30.9	66.2
7603040TN/R01		90	20	1.5	1.1	48.2	93.6
7603040TN		90	23	1.5	1.1	48.2	93.6
7602045TN	45	85	19	1.5	1.1	36.2	78.7
7603045TN		100	25	1.5	1.1	58.5	170
7602050TN	50	90	20	1.5	1.1	36.9	83.7
7603050TN		110	27	1.5	1.1	69.5	208
7602055TN	55	100	21	1.5	1.1	40.5	132
7603055TN		120	29	1.5	1.1	69.4	148
7602060TN	60	110	22	1.5	1.1	56	183
7603060TN		130	31	1.5	1.1	88	270
7602065TN	65	120	23	1.5	1.1	57	196
7603065TN		140	33	1.5	1.1	100	325
7602070TN	70	125	24	1.5	1.1	65.5	224
7603070TN		150	35	1.5	1.1	110	360
7602075TN	75	130	25	1.5	1.1	67	240
7603075TN		160	37	1.5	1.1	125	425

Limiting speeds		Abutment and fillet dimensions					Mass
Grease	Oil	d _a min	d _b min	D _a max	r _a max	a	
r/min		mm					kg
6000	5300	18	17	27	0.6	24	0.04
5300	5000	21	20	30	0.6	27	0.05
4500		23	22	35	0.6	31	0.07
4200		23	22	42	0.6	32.1	0.13
4000	4500	26	25	42	0.6	36.1	0.12
3600	4300	26	25	47	0.6	38.7	0.17
3400	4300	32	31	46	1	41	0.16
3000	4000	32	31	56	1	46.4	0.26
3000	4000	32	31	56	1	45.4	0.23
2800	3800	37	36	56	1	48	0.22
2800	3800	37	36	56	1	47.5	0.21
2600	3600	39	37	65	1	53.9	0.4
2400	3600	44	42	65	1	55	0.32
2200	3400	44	42	73	1	67	0.53
2600	3600	47	45	65	1	54.5	0.28
2200		49	47	73	1	61.2	0.41
2000	2800	49	47	83	1	66.6	0.63
2000	2800	49	47	83	1	68.1	0.72
2000		54	52	78	1	66	0.46
1800		54	52	93	1	77.5	1.02
1900		60	58	83	1	70.9	0.53
1600		60	58	103	1	85.5	1.33
1700		65	63	92	1	77.5	0.75
1500		65	63	112	1	90.7	1.63
1600		70	68	102	1	86	0.96
1400		70	68	122	1	98	2.12
1400		75	73	112	1	92.5	1.2
1300		75	73	132	1	107.5	2.6
1400		80	78	117	1	96.5	1.32
1200		80	78	142	1	113	3.16
1300		85	83	122	1	102.5	1.45
1100		85	83	152	1	123	3.79

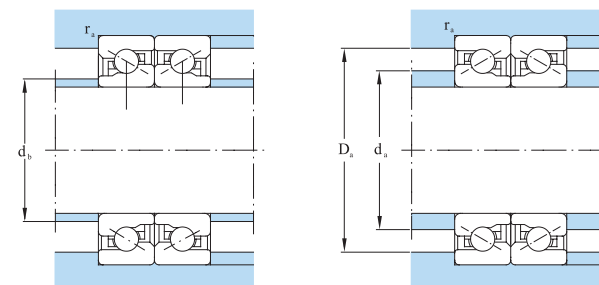


Angular contact thrust ball bearings

Single direction



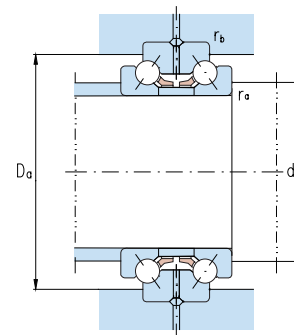
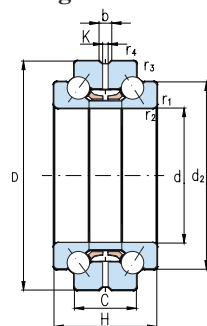
Designations	Boundary dimensions					Basic load ratings	
	d	D	B	r _{1, 2} min	r _{3, 4} min	Ca	Coa
	mm					kN	
7602080TN	80	140	26	1.5	1.1	76.5	280
7603080TN		170	39	1.5	1.1	137	465
7602085TN	85	150	28	1.5	1.1	88	325
7603085TN		180	41	1.5	1.1	160	540
7602090TN	90	160	30	1.5	1.1	98	365
7603090TN		190	43	1.5	1.1	163	570
7602095TN	95	170	32	1.5	1.1	110	415
7603095TN		200	45	1.5	1.1	163	600
76020100TN	100	180	34	1.5	1.1	122	465
76030100TN		215	47	1.5	1.1	193	710



Limiting speeds		Abutment and fillet dimensions					Mass
Grease	Oil	d _a min	d _b min	D _a max	r _a max	a	
r/min		mm					kg
1200		90	88	132	1	109	1.76
1100		90	88	162	1	129.5	4.5
1100		95	93	148	1	117	2.19
1000		95	93	172	1	136	5.29
1100		100	98	152	1	124	2.69
950		100	98	182	1	142.5	6.17
1000		105	103	162	1	131	3.26
900		105	103	192	1	150	7.15
950		110	108	170	1	138	3.19
850		110	108	205	1	161	8.73



Angular contact thrust ball bearings double direction

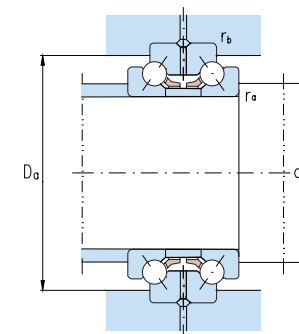
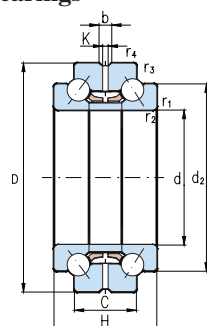


Designations	Boundary dimensions					Basic load ratings		Limiting speeds	
	d	D	H	r _{1, 2} min	r _{3, 4} min	Ca	Coa	grease	oil
	mm					kN		r/min	
234405BM1	25	47	28	0.6	0.15	13.2	24.1	7500	10000
234705BM1	27	47	28	0.6	0.15	13.2	34.1	7500	10000
234406BM1	30	55	32	1.0	0.15	14.0	28.2	6700	9000
234706BM1	32	55	32	1.0	0.15	14.0	28.2	6700	9000
234407BM1	35	62	34	1.0	0.15	19.7	42.1	6000	8000
234707BM1	37	62	34	1.0	0.15	19.7	42.1	6000	8000
234408BM1	40	68	36	1.0	0.15	23.8	49.9	5600	7500
234708BM1	42	68	36	1.0	0.15	23.8	49.9	5600	7500
234409BM1	45	75	38	1.0	0.15	26.0	59.8	5300	7000
234709BM1	47	75	38	1.0	0.15	26.0	59.8	5300	7000
234410BM1	50	80	38	1.0	0.15	26.7	64.6	5000	6700
234710BM1	52	80	38	1.0	0.15	26.7	64.6	5000	6700
234411BM1	55	90	44	1.1	0.30	37.2	85.7	4500	6000
234711BM1	57	90	44	1.1	0.30	37.2	85.7	4500	6000
234412BM1	60	95	44	1.1	0.30	37.6	89.6	4300	5600
234712BM1	62	95	44	1.1	0.30	37.6	89.6	4300	5600
234413BM1	65	100	44	1.1	0.30	38.7	97.5	4300	5600
234713BM1	67	100	44	1.1	0.30	38.7	97.5	4300	5600
234414BM1	70	110	48	1.1	0.30	47.1	122.5	3800	5000
234714BM1	73	110	48	1.1	0.30	47.1	122.5	3800	5000
234415BM1	75	115	48	1.1	0.30	49.0	131.3	3800	5000
234715BM1	78	115	48	1.1	0.30	49.0	131.3	3800	5000
234416BM1	80	125	54	1.1	0.30	57.3	156.8	3400	4500
234716BM1	83	125	54	1.1	0.30	57.3	156.8	3400	4500
234417BM1	85	130	54	1.1	0.30	58.0	162.6	3200	4300
234717BM1	88	130	54	1.1	0.30	58.0	162.6	3200	4300
234418BM1	90	140	60	1.5	0.30	67.5	190	3000	4000
234718BM1	93	140	60	1.5	0.30	67.5	190	3000	4000
234419BM1	95	145	60	1.5	0.30	68.1	196.9	2800	3800
234719BM1	98	145	60	1.5	0.30	68.1	196.9	2800	3800
234920BM1	100	140	48	1.0	0.60	52.2	159.7	2800	3700
234420BM1	100	150	60	1.5	0.30	68.8	203.8	2800	3800

Other dimensions					Abutment and fillet dimensions				Mass
B	C	d ₂	K	b	d _a min	D _a max	r _a max	r _b max	
mm					mm				kg
7.0	14	40.0	2.5	6	33.0	43.5	0.6	0.15	0.186
7.0	14	40.0	2.5	6	33.0	43.5	0.6	0.15	0.168
8.0	16	47.0	3.0	6	39.0	51.0	1.0	0.15	0.286
8.0	16	47.0	3.0	6	39.0	51.0	1.0	0.15	0.262
8.5	17	53.0	3.0	7	45.0	58.0	1.0	0.15	0.375
8.5	17	53.0	3.0	7	45.0	58.0	1.0	0.15	0.345
9.0	18	58.5	3.0	7	50.0	64.0	1.0	0.15	0.457
9.0	18	58.5	3.0	7	50.0	64.0	1.0	0.15	0.419
9.5	19	65.0	3.0	7	56.0	71.0	1.0	0.15	0.551
9.5	19	65.0	3.0	7	56.0	71.0	1.0	0.15	0.510
9.5	19	70.0	4.0	8	61.0	76.0	1.0	0.15	0.624
9.5	19	70.0	4.0	8	61.0	76.0	1.0	0.15	0.577
11.0	22	78.0	4.0	8	68.0	85.0	1.0	0.3	0.949
11.0	22	78.0	4.0	8	68.0	85.0	1.0	0.3	0.889
11.0	22	83.0	4.0	8	73.0	90.0	1.0	0.3	0.989
11.0	22	83.0	4.0	8	73.0	90.0	1.0	0.3	0.909
11.0	22	88.0	4.0	8	78.0	95.0	1.0	0.3	1.080
11.0	22	88.0	4.0	8	78.0	95.0	1.0	0.3	1.010
12.0	24	97.0	4.0	8	85.0	105.0	1.0	0.3	1.510
12.0	24	97.0	4.0	8	85.0	105.0	1.0	0.3	1.380
12.0	24	102.0	4.0	8	90.0	110.0	1.0	0.3	1.590
12.0	24	102.0	4.0	8	90.0	110.0	1.0	0.3	1.450
13.5	27	110.0	4.0	8	97.0	119.0	1.0	0.3	2.230
13.5	27	110.0	4.0	8	97.0	119.0	1.0	0.3	2.060
13.5	27	115.0	4.0	8	102.0	124.0	1.0	0.3	2.360
13.5	27	115.0	4.0	8	102.0	124.0	1.0	0.3	2.180
15.0	30	123.0	4.0	10	109.0	132.0	1.5	0.3	3.010
15.0	30	123.0	4.0	10	109.0	132.0	1.5	0.3	2.810
15.0	30	128.0	4.0	10	114.0	137.0	1.5	0.3	3.130
15.0	30	128.0	4.0	10	114.0	137.0	1.5	0.3	2.920
12.0	24	126.0	4.0	8	114.0	134.5	1.0	0.6	
15.0	30	133.0	4.0	10	119.0	142.0	1.5	0.3	3.190



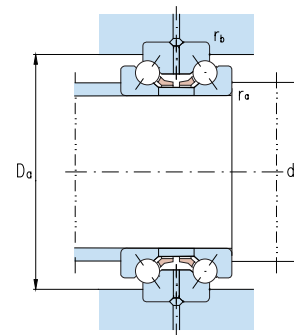
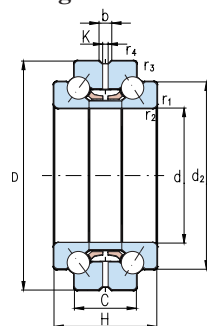
Angular contact thrust ball bearings double direction



Designations	Boundary dimensions					Basic load ratings		Limiting speeds	
	d	D	H	r _{1, 2} min	r _{3, 4} min	Ca	Coa	grease	oil
	mm					kN		r/min	
234720BM1	103	150	60	1.5	0.30	68.8	203.8	2800	3800
234921BM1	105	145	48	1.0	0.60	53.5	169.5	2700	3600
234421BM1	105	160	66	2.0	0.60	78.3	236.1	2400	3400
234721BM1	109	160	66	2.0	0.60	78.3	236.1	2400	3400
234922BM1	110	150	48	1.0	0.60	54.1	173.5	2700	3600
234422BM1	110	170	72	2.0	0.60	95.6	279.3	2200	3200
234722BM1	114	170	72	2.0	0.60	95.6	279.3	2200	3200
234924BM1	120	165	54	1.0	0.60	65.0	217.6	2400	3200
234424BM1	120	180	72	2.0	0.60	98.0	298.9	2200	3200
234924X	124	165	54	1.0	0.60	65.0	217.6	2400	3200
234724BM1	124	180	72	2.0	0.60	98.0	298.9	2200	3200
234926BM1	130	180	60	1.5	1.00	74.5	255.8	2200	2900
234426BM1	130	200	84	2.0	0.60	138.8	406.7	1900	2800
234926X	134	180	60	1.5	1.00	74.5	255.8	2200	2900
234726BM1	135	200	84	2.0	0.60	138.8	406.7	1900	2800
234928BM1	140	190	60	1.5	1.00	75.8	268.5	2100	2800
234428BM1	140	210	84	2.1	0.60	143.9	436.7	1800	2600
234928X	144	190	60	1.5	1.00	75.8	268.5	2100	2800
234728BM1	145	210	84	2.1	0.60	143.9	436.7	1800	2600
234930BM1	150	210	72	2.0	1.00	107.0	367.5	1800	2400
234430BM1	150	225	90	2.1	0.60	146.5	465.5	1700	2400
234930X	155	210	72	2.0	1.00	107.0	367.5	1800	2400
234730BM1	155	225	90	2.1	0.60	146.5	465.5	1700	2400
234932BM1	160	220	72	2.0	1.00	108.9	387.1	1800	2300
234432BM1	160	240	96	2.1	0.60	172.0	543.9	1600	2200
234932X	165	220	72	2.0	1.00	108.9	387.1	1800	2300
234732BM1	165	240	96	2.1	0.60	172.0	543.9	1600	2200
234934BM1	170	230	72	2.0	1.00	110.8	406.7	1700	2300
234934X	175	230	72	2.0	1.00	110.8	406.7	1700	2300
234936BM1	180	250	84	2.0	1.00	155.4	543.9	1500	2000
234936X	186	250	84	2.0	1.00	155.4	543.9	1500	2000
234938BM1	190	260	84	2.0	1.00	156.7	558.6	1500	2000

Other dimensions					Abutment and fillet dimensions				Mass
B	C	d ₂	K	b	d _a min	D _a max	r _a max	r _b max	
mm					mm				
15.0	30	133.0	4.0	10	119.0	142.0	1.5	0.3	2.970
12.0	24	131.0	4.0	8	119.0	139.5	1.0	0.6	
16.5	33	142.0	6.0	14	125.0	151.0	2.0	0.6	4.530
16.5	33	142.0	6.0	14	125.0	151.0	2.0	0.6	
12.0	24	136.0	4.0	8	124.0	144.5	1.0	0.6	
18.0	36	150.0	6.0	14	132.0	161.0	2.0	0.6	5.3232
18.0	36	150.0	6.0	14	132.0	161.0	2.0	0.6	
13.5	27	150.0	4.0	8	138.0	159.5	1.0	0.6	
18.0	36	160.0	6.0	14	142.0	171.0	2.0	0.6	5.540
13.5	27	150.0	4.0	8	138.0	159.5	1.0	0.6	
18.0	36	160.0	6.0	14	142.0	171.0	2.0	0.6	5.110
15.0	30	163.0	4.0	8	150.0	173.5	1.5	0.8	
21.0	42	177.0	6.0	14	156.0	190.0	2.0	0.6	10.10
15.0	30	163.0	4.0	8	150.0	173.5	1.5	0.8	
21.0	42	177.0	6.0	14	156.0	190.0	2.0	0.6	8.900
15.0	30	173.0	4.0	8	160.0	183.5	1.5	0.8	4.570
21.0	42	187.0	6.0	14	166.0	200.0	2.0	0.6	9.160
15.0	30	173.0	4.0	8	160.0	183.5	1.5	0.8	
21.0	42	187.0	6.0	14	166.0	200.0	2.0	0.6	8.440
18.0	36	190.0	6.0	12	174.0	202.0	2.0	1.0	6.940
22.5	45	200.0	6.0	14	178.0	213.0	2.0	0.6	11.10
18.0	36	190.0	6.0	12	174.0	202.0	2.0	1.0	
22.5	45	200.0	6.0	14	178.0	213.0	2.0	0.6	10.30
18.0	36	200.0	6.0	12	184.0	212.0	2.0	1.0	
24.0	48	212.0	6.0	14	190.0	227.0	2.0	0.6	13.60
18.0	36	200.0	6.0	12	184.0	212.0	2.0	1.0	
24.0	48	212.0	6.0	14	190.0	227.0	2.0	0.6	12.60
18.0	36	210.0	6.0	12	194.0	222.0	2.0	1.0	7.900
18.0	36	210.0	6.0	12	194.0	222.0	2.0	1.0	
21.0	42	227.0	6.0	12	207.0	242.0	2.0	1.0	11.30
21.0	42	227.0	6.0	12	207.0	242.0	2.0	1.0	
21.0	42	237.0	6.0	12	217.0	252.0	2.0	1.0	12.30

Angular contact thrust ball bearings double direction



Designations	Boundary dimensions					Basic load ratings		Limiting speeds	
	d	D	H	r _{1, 2} min	r _{3, 4} min	Ca	Coa	grease	oil
	mm					kN		r/min	
234438BM1	190	290	120	2.1	0.60	235.7	788.9	1400	1900
234938X	196	260	84	2.0	1.00	156.7	558.6	1500	2000
234738BM1	197	290	120	2.1	0.60	235.7	788.9	1400	1900
234940BM1	200	280	96	2.0	1.00	184.7	656.6	1300	1800
234440BM1	200	310	132	2.1	0.60	271.3	916.3	1300	1700
234940X	207	280	96	2.0	1.00	184.7	656.6	1300	1800
234740BM1	207	310	132	2.1	0.60	271.3	916.3	1300	1700
234944BM1	220	300	96	2.0	1.00	189.8	715.4	1300	1700
234444BM1	220	340	144	3.0	1.00	333.8	1117.2	1200	1500
234944X	227	300	96	2.0	1.00	189.8	715.4	1300	1700
234744BM1	228	340	144	3.0	1.00	333.8	1117.2	1200	1500
234948BM1	240	320	96	2.0	1.00	196.2	769.3	1200	1600
234448BM1	240	360	144	3.0	1.00	341.4	1195.6	1100	1500
234948X	247	320	96	2.0	1.00	196.2	769.3	1200	1600
234748BM1	248	360	144	3.0	1.00	341.4	1195.6	1100	1500
234952BM1	260	360	120	2.0	1.00	261.2	1019.2	1000	1400
234452BM1	260	400	164	3.0	1.50	407.7	1509.2	980	1300
234952X	269	360	120	2.0	1.00	261.2	1019.2	1000	1400
234752BM1	269	400	164	3.0	1.50	407.7	1509.2	980	1300
234956BM1	280	380	120	2.0	1.00	265.0	1078	980	1300
234956X	289	380	120	2.0	1.00	265.0	1078	980	1300
234960BM1	300	420	144	3.0	1.00	336.3	1362.2	840	1100
234960X	310	420	144	3.0	1.00	336.3	1362.2	840	1100
234964BM1	320	440	144	3.0	1.00	341.4	1430.8	820	1100
234964X	330	440	144	3.0	1.00	341.4	1430.8	820	1100

Other dimensions					Abutment and fillet dimensions				Mass
B	C	d ₂	K	b	d _a min	D _a max	r _a max	r _b max	
mm					mm				kg
30.0	60	258.0	8.0	16	229.0	280.0	2.0	1.0	25.70
21.0	42	237.0	6.0	12	217.0	252.0	2.0	1.0	
30.0	60	258.0	8.0	16	229.0	280.0	2.0	1.0	23.70
24.0	48	252.0	6.0	14	231.0	270.0	2.0	1.0	17.00
33.0	66	274.0	8.0	16	243.0	300.0	2.0	1.0	33.60
24.0	48	252.0	6.0	14	231.0	270.0	2.0	1.0	
33.0	66	274.0	8.0	16	243.0	300.0	2.0	1.0	31.30
24.0	48	272.0	6.0	14	251.0	290.0	2.0	1.0	
36.0	72	304.0	12.0	22	267.0	330.0	2.5	1.0	38.60
24.0	48	272.0	6.0	14	251.0	290.0	2.0	1.0	
36.0	72	304.0	12.0	22	267.0	330.0	2.5	1.0	35.40
24.0	48	292.0	6.0	14	271.0	310.0	2.0	1.0	
36.0	72	322.0	12.0	22	287.0	350.0	2.5	1.0	40.90
24.0	48	292.0	6.0	14	271.0	310.0	2.0	1.0	
36.0	72	322.0	12.0	22	287.0	350.0	2.5	1.0	37.40
30.0	60	328.0	8.0	16	299.0	350.0	2.0	1.0	
41.0	82	354.0	12.0	22	315.0	388.0	3.0	1.5	60.00
30.0	60	328.0	8.0	16	299.0	350.0	2.0	1.0	
41.0	82	354.0	12.0	22	315.0	388.0	3.0	1.5	55.20
30.0	60	348.0	8.0	16	319.0	370.0	2.0	1.0	
30.0	60	348.0	8.0	16	319.0	370.0	2.0	1.0	
36.0	72	384.0	12.0	22	349.0	410.0	2.5	1.0	
36.0	72	384.0	12.0	22	349.0	431.0	2.5	1.0	
36.0	72	404.0	12.0	22	349.0	410.0	2.5	1.0	
36.0	72	404.0	12.0	22	369.0	430.0	2.5	1.0	

