

TOLERANCE TABLES AND RECOMMENDED FITS

Precision Tolerances

The RBC thin section ball bearings shown in this catalog are manufactured to ABEC 1F precision tolerances. Where required, RBC thin section ball bearings can be manufactured to ABEC 3F, ABEC 5F, and ABEC 7F precision tolerances.

RBC PRECISION CLASS 0 ABEC 1F C-TYPE

Values in 0.0001 in.

Bearing Bore Size Inches	Diameters		Race Runout Radial & Axial		Width Nominal	Radial Play Before Installation		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Inner Max	Outer Max		Min	Max	Shaft OD Nominal	Housing ID Nominal	Shaft OD Max	Shaft OD Min	Housing ID Max	Housing ID Min
1.00	-4	-5	5	8	-50	10	16	+4	+5	-4	-8	-5	-10
1.50	-5	-5	6	8	-50	12	18	+5	+5	-5	-10	-5	-10
2.00	-6	-5	8	10	-50	12	24	+6	+5	-6	-12	-5	-10
2.50	-6	-5	8	10	-50	12	24	+6	+5	-6	-12	-5	-10
3.00	-6	-6	8	10	-50	12	24	+6	+6	-6	-12	-6	-12
3.50	-8	-6	10	12	-50	16	28	+8	+6	-8	-16	-6	-12
4.00	-8	-6	10	12	-50	16	28	+8	+6	-8	-16	-6	-12
4.25	-8	-8	10	14	-50	16	28	+8	+8	-8	-16	-8	-16
4.50	-8	-8	10	14	-50	16	28	+8	+8	-8	-16	-8	-16
4.75	-10	-8	12	14	-50	20	34	+10	+8	-10	-20	-8	-16
5.00	-10	-8	12	14	-50	20	34	+10	+8	-10	-20	-8	-16
5.50	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
6.00	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
6.50	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
7.00	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
7.50	-12	-12	16	18	-50	24	42	+12	+12	-12	-24	-12	-24
8.00	-12	-12	16	18	-50	24	42	+12	+12	-12	-24	-12	-24
9.00	-12	-12	16	18	-50	24	42	+12	+12	-12	-24	-12	-24
10.00	-14	-14	18	20	-50	28	48	+14	+14	-14	-28	-14	-28
11.00	-14	-14	18	20	-50	28	48	+14	+14	-14	-28	-14	-28
12.00	-14	-14	18	20	-50	28	48	+14	+14	-14	-28	-14	-28
14.00	-16	-16	18	20	-100	32	52	+16	+16	-16	-32	-16	-32
16.00	-18	-18	18	20	-100	36	56	+18	+18	-18	-36	-18	-36
18.00	-18	-18	20	20	-100	36	56	+18	+18	-18	-36	-18	-36
20.00	-20	-20	20	20	-100	40	60	+20	+20	-20	-40	-20	-40
25.00	-30	-30	20	20	-100	60	80	+30	+30	-30	-60	-30	-60
30.00	-30	-30	20	20	-100	60	80	+30	+30	-30	-60	-30	-60
35.00	-40	-40	20	20	-100	80	100	+40	+40	-40	-80	-40	-80
40.00	-40	-40	20	20	-100	80	100	+40	+40	-40	-80	-40	-80

Does not apply to bearings with pre-load.

DUPLEX PAIR WIDTH TOLERANCES

Values in 0.0001 in.

Bearing Bore Size (Inches)		Width	
Over	Including	Max	Min
-	2.00	0	-200
2.00	5.00	0	-300
5.00	14.00	0	-400
14.00	40.00	0	-500



THIN SECTION BALL BEARINGS

TOLERANCE TABLES AND RECOMMENDED FITS

RBC PRECISION CLASS 0

Values in 0.0001 in.

ABEC 1F A-TYPE AND X-TYPE

Bearing Bore Size Inches	Diameters		Race Runout Radial & Axial		Width Nominal	Radial Play Before Installation*		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Inner Max	Outer Max		Min	Max	Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
										Max	Min	Max	Min
1.00	-4	-5	3	4	-50	10	15	+4	+5	-4	-8	-5	-10
1.50	-5	-5	4	4	-50	12	17	+5	+5	-5	-10	-5	-10
2.00	-6	-5	5	5	-50	12	22	+6	+5	-6	-12	-5	-10
2.50	-6	-5	5	5	-50	12	22	+6	+5	-6	-12	-5	-10
3.00	-6	-6	6	6	-50	12	22	+6	+6	-6	-12	-6	-12
3.50	-8	-6	6	6	-50	16	26	+8	+6	-8	-16	-6	-12
4.00	-8	-6	6	6	-50	16	26	+8	+6	-8	-16	-6	-12
4.25	-8	-8	6	8	-50	16	26	+8	+8	-8	-16	-8	-16
4.50	-8	-8	6	8	-50	16	26	+8	+8	-8	-16	-8	-16
4.75	-10	-8	8	8	-50	20	30	+10	+8	-10	-20	-8	-16
5.00	-10	-8	8	8	-50	20	30	+10	+8	-10	-20	-8	-16
5.50	-10	-10	10	10	-50	20	30	+10	+10	-10	-20	-10	-20
6.00	-10	-10	10	10	-50	20	30	+10	+10	-10	-20	-10	-20
6.50	-10	-10	10	10	-50	20	30	+10	+10	-10	-20	-10	-20
7.00	-10	-12	10	10	-50	20	30	+10	+12	-10	-20	-12	-24
7.50	-12	-12	12	12	-50	24	34	+12	+12	-12	-24	-12	-24
8.00	-12	-12	12	12	-50	24	34	+12	+12	-12	-24	-12	-24
9.00	-12	-12	12	12	-50	24	34	+12	+12	-12	-24	-12	-24
10.00	-14	-14	14	14	-50	28	38	+14	+14	-14	-28	-14	-28
11.00	-14	-14	14	14	-50	28	38	+14	+14	-14	-28	-14	-28
12.00	-14	-14	14	14	-50	28	38	+14	+14	-14	-28	-14	-28
14.00	-14	-14	14	14	-100	28	38	+14	+14	-14	-28	-14	-28
16.00	-16	-16	16	16	-100	32	42	+16	+16	-16	-32	-16	-32
18.00	-16	-16	16	16	-100	32	42	+16	+16	-16	-32	-16	-32
20.00	-18	-18	18	18	-100	36	46	+18	+18	-18	-36	-18	-36
25.00	-18	-18	18	18	-100	36	46	+18	+18	-18	-36	-18	-36
30.00	-18	-18	18	18	-100	36	46	+18	+18	-18	-36	-18	-36
35.00	-20	-20	20	20	-100	40	50	+20	+20	-20	-40	-20	-40
40.00	-20	-20	20	20	-100	40	50	+20	+20	-20	-40	-20	-40

Does not apply to bearings with pre-load.

*X-Type Only

RBC PRECISION CLASS 3

Values in 0.0001 in.

ABEC 3F ALL TYPES

Bearing Bore Size Inches	Diameters		Race Runout Radial & Axial		Width Nominal	Radial Play Before Installation†		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Inner Max	Outer Max		Min	Max	Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
										Max	Min	Max	Min
1.00	-2	-3	3	4	-50	7	11	+2	+3	-2	-4	-3	-6
1.50	-3	-3	4	4	-50	8	12	+3	+3	-3	-6	-3	-6
2.00	-4	-4	4	5	-50	8	18	+4	+4	-4	-8	-4	-8
2.50	-4	-4	4	5	-50	8	18	+4	+4	-4	-8	-4	-8
3.00	-4	-4	4	6	-50	8	18	+4	+4	-4	-8	-4	-8
3.50	-5	-4	5	6	-50	10	20	+5	+4	-5	-10	-4	-8
4.00	-5	-4	5	6	-50	10	20	+5	+4	-5	-10	-4	-8
4.25	-5	-5	5	8	-50	10	20	+5	+5	-5	-10	-5	-10
4.50	-5	-5	5	8	-50	10	20	+5	+5	-5	-10	-5	-10
4.75	-6	-5	6	8	-50	12	22	+6	+5	-6	-12	-5	-10
5.00	-6	-5	6	8	-50	12	22	+6	+5	-6	-12	-5	-10
5.50	-6	-6	6	9	-50	12	22	+6	+6	-6	-12	-6	-12
6.00	-6	-6	6	9	-50	12	22	+6	+6	-6	-12	-6	-12
6.50	-6	-6	6	9	-50	12	22	+6	+6	-6	-12	-6	-12
7.00	-6	-7	6	10	-50	14	24	+6	+7	-6	-12	-7	-14
7.50	-7	-7	8	10	-50	14	24	+7	+7	-7	-14	-7	-14
8.00	-7	-7	8	10	-50	14	24	+7	+7	-7	-14	-7	-14
9.00	-7	-7	8	10	-50	14	24	+7	+7	-7	-14	-7	-14
10.00	-8	-8	10	12	-50	16	26	+8	+8	-8	-16	-8	-16
11.00	-8	-8	10	12	-50	16	26	+8	+8	-8	-16	-8	-16
12.00	-8	-9	10	14	-50	18	28	+8	+9	-8	-16	-9	-18
14.00	-8	-9	12	14	-100	18	28	+8	+9	-8	-16	-9	-18
16.00	-9	-10	14	16	-100	20	30	+9	+10	-9	-18	-10	-20
18.00	-9	-10	14	16	-100	20	30	+9	+10	-9	-18	-10	-20
20.00	-10	-12	16	18	-100	24	34	+10	+12	-10	-20	-12	-24

Does not apply to bearings with pre-load.

†C and X-Type Only

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THIN SECTION BALL BEARINGS

TOLERANCE TABLES AND RECOMMENDED FITS

**RBC PRECISION CLASS 4
ABEC 5F ALL TYPES**

Values in 0.0001 in.

Bearing Bore Size Inches	Diameters		Race Runout				Width Nominal	Radial Play Before Installation†		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Radial		Axial			Min	Max	Shaft OD Nominal	Housing ID Nominal	Shaft OD Max	Min	Housing ID Max	Min
			Inner Max	Outer Max	Inner Max	Outer Max									
1.00	-2	-2	2	2	3	3	-50	5	9	+2	+2	-2	-4	-2	-4
1.50	-2	-2	2	2	3	3	-50	5	9	+2	+2	-2	-4	-2	-4
2.00	-3	-3	2	3	3	4	-50	5	9	+3	+3	-3	-6	-3	-6
2.50	-3	-3	2	3	3	4	-50	5	9	+3	+3	-3	-6	-3	-6
3.00	-3	-3	2	4	3	5	-50	6	12	+3	+3	-3	-6	-3	-6
3.50	-3	-3	3	4	4	5	-50	6	12	+3	+3	-3	-6	-3	-6
4.00	-3	-3	3	4	4	5	-50	6	12	+3	+3	-3	-6	-3	-6
4.25	-3	-4	3	4	4	5	-50	8	14	+3	+4	-3	-6	-4	-8
4.50	-3	-4	3	4	4	5	-50	8	14	+3	+4	-3	-6	-4	-8
4.75	-4	-4	3	4	4	5	-50	8	14	+4	+4	-4	-8	-4	-8
5.00	-4	-4	3	4	4	5	-50	8	14	+4	+4	-4	-8	-4	-8
5.50	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
6.00	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
6.50	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
7.00	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
7.50	-5	-5	4	5	5	6	-50	10	16	+5	+5	-5	-10	-5	-10
8.00	-5	-5	4	5	5	6	-50	10	16	+5	+5	-5	-10	-5	-10
9.00	-5	-5	4	5	5	6	-50	10	16	+5	+5	-5	-10	-5	-10
10.00	-5	-5	5	6	6	7	-50	10	16	+5	+5	-5	-10	-5	-10
11.00	-5	-5	5	6	6	7	-50	10	16	+5	+5	-5	-10	-5	-10
12.00	-5	-6	5	7	6	8	-50	12	18	+5	+6	-5	-10	-6	-12
14.00	-6	-6	5	7	7	8	-100	12	18	+6	+6	-6	-12	-6	-12
16.00	-6	-7	7	8	8	9	-100	14	20	+6	+7	-6	-12	-7	-14
18.00	-6	-7	7	8	8	9	-100	14	20	+6	+7	-6	-12	-7	-14
20.00	-7	-8	8	9	9	10	-100	14	22	+7	+8	-7	-14	-8	-16

Does not apply to bearings with pre-load.

†C and X-Type Only

**RBC PRECISION CLASS 6
ABEC 7F ALL TYPES**

Values in 0.0001 in.

Bearing Bore Size Inches	Diameters		Race Runout Radial & Axial		Width Nominal	Radial Play Before Installation†		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Inner Max	Outer Max		Min	Max	Shaft OD Nominal	Housing ID Nominal	Shaft OD Max	Min	Housing ID Max	Min
1.50	-2	-2	1.5	2	-50	5	9	+2	+2	-2	-4	-2	-4
2.00	-2	-2	1.5	2	-50	5	10	+2	+2	-2	-4	-2	-4
2.50	-2	-2	1.5	2	-50	5	10	+2	+2	-2	-4	-2	-4
3.00	-2	-3	1.5	2	-50	6	12	+2	+3	-2	-4	-3	-6
3.50	-2.5	-3	2	2	-50	6	12	+3	+3	-3	-5	-3	-6
4.00	-2.5	-3	2	2	-50	6	12	+3	+3	-3	-5	-3	-6
4.25	-2.5	-4	2	3	-50	8	14	+3	+4	-3	-5	-4	-8
4.50	-2.5	-4	2	3	-50	8	14	+3	+4	-3	-5	-4	-8
4.75	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8
5.00	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8
5.50	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8
6.00	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8
6.50	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8
7.00	-3	-4	3	4	-50	8	14	+3	+4	-3	-6	-4	-8
7.50	-4	-4	3	4	-50	8	14	+4	+4	-4	-8	-4	-8
8.00	-4	-4	3	4	-50	8	14	+4	+4	-4	-8	-4	-8
9.00	-4	-4	3	4	-50	8	14	+4	+4	-4	-8	-4	-8
10.00	-5	-5	4	4	-50	10	16	+5	+5	-5	-10	-5	-10
11.00	-5	-5	4	4	-50	10	16	+5	+5	-5	-10	-5	-10
12.00	-5	-5	4	5	-50	10	16	+5	+5	-5	-10	-5	-10
14.00	-5	-6	4	5	-100	12	18	+5	+6	-5	-10	-6	-12

Does not apply to bearings with pre-load.

†C and X-Type Only

THIN SECTION BALL BEARINGS