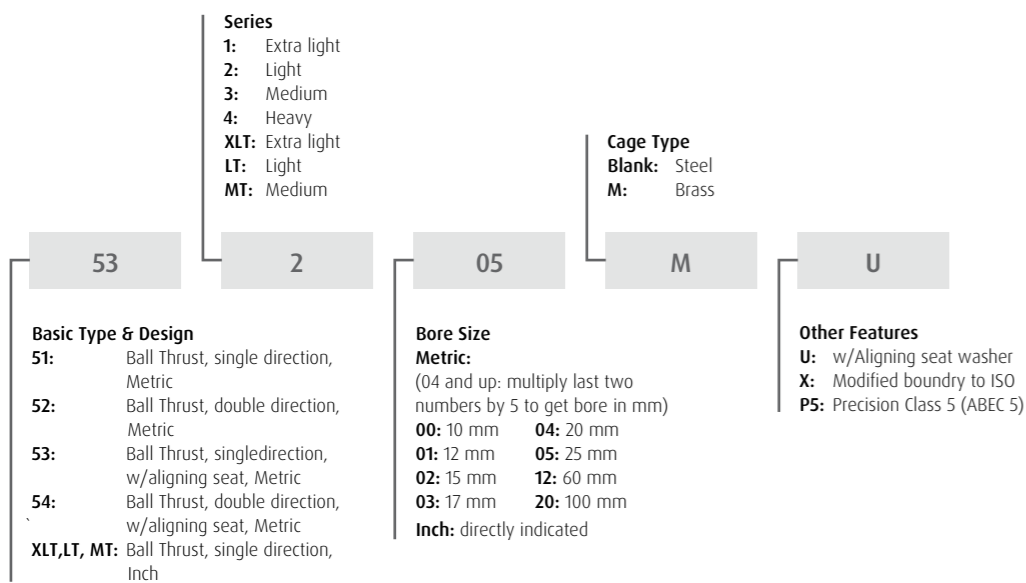




# Thrust Bearings

## Ball Thrust Bearings



### Design, Types, and Features

**Ball Thrust Bearings** are composed of washer-like bearing rings with raceway grooves for the balls. The ring attached to the shaft is called the inner ring or tight washer and the ring attached to the housing is called the outer ring or loose washer. In double direction thrust ball bearings there are three rings, with the center ring fixed to the shaft. Single direction thrust ball bearings can support axial loads in one direction only; double direction, in two. Both are available with an aligning seat and washer beneath the outer ring to compensate for shaft misalignment or deflection.

**Cylindrical Roller Thrust Bearings** are thrust bearings containing cylindrical rollers. They can sustain only axial loads, but they are suitable for heavy loads and have high axial rigidity. The cages are machined brass.

**Spherical Thrust Roller Bearings** have a spherical raceway in the outer ring with the rollers diagonally arranged in a single row. These bearings have a very high axial load capacity and are capable of taking moderate radial loads when an axial load is imposed. Because of the configuration of their rolling elements, spherical roller thrust bearings are capable of handling misalignment and are suited for moderate speed operation.

# Thrust Bearings

## Spherical Thrust Roller Bearings



### Bore Size

(05 and up: multiply last two numbers by 5 to get bore in mm)

**12:** 60 mm    **48:** 240 mm

**20:** 100 mm    **96:** 480 mm

500 millimeters and larger written as:

**/500:** 500 mm    **/710:** 710 mm

**/630:** 630 mm    **/1000:** 1000 mm

293

26

E

### Basic Type & Design

**292xx:** Spherical Roller Thrust, Light

**293xx:** Spherical Roller Thrust, Medium

**294xx:** Spherical Roller Thrust, Heavy

### Cage Type

**E:** Pressed Steel

**M:** Machined Brass  
(not always shown in the part number)

### Applications

Listed below are popular applications for the two thrust bearing styles shown in this section. They are ball thrust bearings and spherical roller thrust bearings. Also available, but not shown, are cylindrical roller thrust bearings (TMP) and tapered roller thrust bearings (TT, TTF or V-Flat). Please consult an NSK representative for more information.

The ball thrust bearings are designed to handle thrust loads while operating at moderate speeds.

These bearings can be ordered with an aligning seat and aligning washer if misalignment or deflection can not be avoided.

The spherical thrust bearings are designed to handle very heavy thrust loads in one direction while operating at low to moderate speeds. The design of the spherical thrust will also allow for some radial load while thrust load is imposed.

The spherical shape of the outer ring raceway makes these bearings excellent for handling misalignment.

### Ball Thrust Bearings

› Screw Jacks › Machine Tool Spindle Tail Stock › Vertical Openers (Spinning and Weaving Machines)

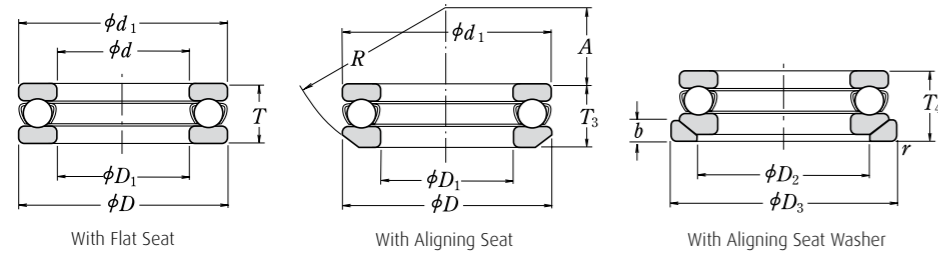
### Spherical Thrust Bearings

› Deep Well Pumps › Centrifugal Pumps › Power Plant Preheater › Coal Pulverizer › Plastic Forming Equipment  
› Crane Hook › Industrial Gear Boxes › Axial Piston Pumps

Please refer to the bearing tables for exact part number options

# Thrust Bearings

Single-direction Thrust Ball Bearings  
Bore Diameter 10 – 50 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil
10	11	24	24	9	51100 51200	10 100 12 800	14 000 17 100	6 700 6 000	10 000 9 000	0,019 0,028
	12	26	26	11						
12	13	26	26	9	51101 51201	10 400 13 300	15 400 19 000	6 700 5 600	10 000 8 500	0,021 0,031
	14	28	28	11						
15	16	28	28	9	51102 51202	10 600 16 700	16 800 24 800	6 300 5 000	9 500 7 500	0,023 0,043
	17	32	32	12						
17	18	30	30	9	51103 51203	11 400 17 300	19 500 27 300	6 000 4 800	9 000 7 500	0,025 0,050
	19	35	35	12						
20	21	35	35	10	51104 51204	15 100 22 500	26 600 37 500	5 300 4 300	8 000 6 300	0,037 0,077
	22	40	40	14						
25	26	42	42	11	51105 51205 51305 51405	19 700 28 000 36 000 56 000	37 000 50 500 61 500 89 500	4 800 3 800 3 200 2 600	7 100 5 600 5 000 4 000	0,056 0,111 0,169 0,334
	27	47	47	15						
	27	52	52	18						
	27	60	60	24						
30	32	47	47	11	51106 51206 51306 51406	20 600 29 500 43 000 73 000	42 000 58 000 78 500 126 000	4 300 3 400 2 800 2 200	6 700 5 300 4 300 3 400	0,064 0,137 0,267 0,519
	32	52	52	16						
	32	60	60	21						
	32	70	70	28						
35	37	52	52	12	51107 51207 51307 51407	22 100 39 500 56 000 87 500	49 500 78 000 105 000 155 000	4 000 3 000 2 400 2 000	6 000 4 500 3 800 3 000	0,081 0,21 0,386 0,769
	37	62	62	18						
	37	68	68	24						
	37	80	80	32						
40	42	60	60	13	51108 51208 51308 51408	27 100 47 500 70 000 103 000	63 000 98 500 135 000 188 000	3 600 2 800 2 200 1 700	5 300 4 300 3 400 2 600	0,12 0,27 0,536 1,1
	42	68	68	19						
	42	78	78	26						
	42	90	90	36						
45	47	65	65	14	51109 51209 51309 51409	28 100 48 000 80 500 128 000	69 000 105 000 163 000 246 000	3 400 2 600 2 000 1 600	5 000 4 000 3 000 2 400	0,143 0,31 0,672 1,46
	47	73	73	20						
	47	85	85	28						
	47	100	100	39						
50	52	70	70	14	51110 51210 51310 51410	29 000 49 000 97 500 147 000	75 500 111 000 202 000 288 000	3 200 2 400 1 800 1 400	4 800 3 600 2 800 2 200	0,153 0,378 0,931 1,94
	52	78	78	22						
	52	95	95	31						
	52	110	110	43						

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Single-direction Thrust Ball Bearings  
Bore Diameter 55 – 100 mm

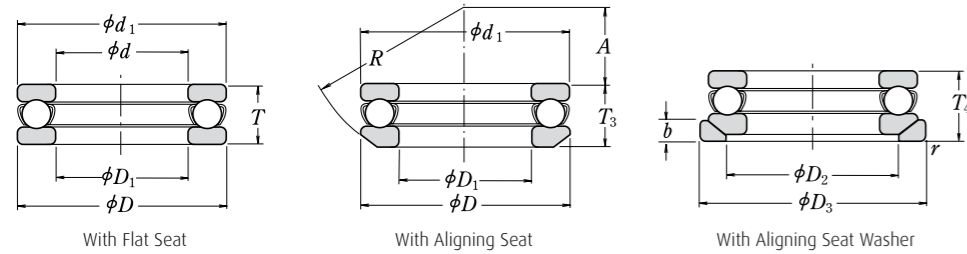


Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil
55	57	78	78	16	51111 51211 51311 51411	35 000 70 000 115 000 181 000	93 000 159 000 244 000 350 000	2 800 2 200 1 600 1 300	4 300 3 200 2 400 1 900	0,227 0,599 1,31 2,58
	57	90	90	25						
	57	105	105	35						
	57	120	120	48						
60	62	85	85	17	51112 51212 51312 51412	41 500 71 500 119 000 202 000	113 000 169 000 263 000 395 000	2 600 2 000 1 600 1 200	4 000 3 000 2 400 1 800	0,281 0,673 1,4 3,16
	62	95	95	26						
	62	110	110	35						
	62	130	130	51						
65	67	90	90	18	51113 51213 51313 51413	42 000 75 500 123 000 234 000	117 000 189 000 282 000 495 000	2 400 1 900 1 500 1 100	3 800 2 800 2 400 1 700	0,324 0,756 1,54 4,1
	67	100	100	27						
	67	115	115	36						
	68	140	140	56						
70	72	95	95	18	51114 51214 51314 51414	43 500 74 000 137 000 252 000	127 000 189 000 315 000 555 000	2 400 1 900 1 400 1 000	3 600 2 800 2 000 1 500	0,346 0,793 2,0 5,05
	72	105	105	27						
	72	125	125	40						
	73	150	150	60						
75	77	100	100	19	51115 51215 51315 51415	43 500 78 000 159 000 254 000	131 000 209 000 365 000 560 000	2 200 1 800 1 300 950	3 400 2 800 1 900 1 400	0,389 0,845 2,6 6,15
	77	110	110	27						
	77	135	135	44						
	78	160	160	65						
80	82	105	105	19	51116 51216 51316 51416	45 000 79 000 164 000 272 000	141 000 218 000 395 000 620 000	2 200 1 800 1 300 900	3 400 2 600 1 900 1 300	0,417 0,931 2,74 7,21
	82	115	115	28						
	82	140	140	44						
	83	170	170	68						
85	87	110	110	19	51117 51217 51317 51417X	46 500 96 000 207 000 310 000	150 000 264 000 490 000 755 000	2 200 1 600 1 100 850	3 200 2 400 1 700 1 300	0,44 1,22 3,57 8,51
	88	125	125	31						
	88	150	150	49						
	88	180	177	72						
90	92	120	120	22	51118 51218 51318 51418X	60 000 114 000 214 000 330 000	190 000 310 000 525 000 825 000	1 900 1 400 1 100 800	3 000 2 200 1 700 1 200	0,646 1,69 3,83 10,2
	93	135	135	35						
	93	155	155	50						
	93	190	187	77						
100	102	135	135	25	51120 51220 51320 51420X	86 000 135 000 239 000 370 000	268 000 375 000 595 000 985 000	1 700 1 300 1 000 710	2 600 2 000 1 500 1 100	0,96 2,25 4,98 14,8
	103	150	150	38						
	103	170	170	55						
	103	210	205	85						

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Single-direction Thrust Ball Bearings  
Bore Diameter 110 – 190 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil
110	112	145	145	25	51122	88 000	288 000	1 700	2 400	1,04
	113	160	160	38	51222	136 000	395 000	1 300	1 900	2,42
	113	190	187	63	51322X	282 000	755 000	900	1 300	7,19
	113	230	225	95	51422X	415 000	1 150 000	630	950	20
120	122	155	155	25	51124	90 000	310 000	1 600	2 400	1,12
	123	170	170	39	51224	141 000	430 000	1 200	1 800	2,7
	123	210	205	70	51324X	330 000	930 000	800	1 200	9,7
	123	250	245	102	51424X	480 000	1 400 000	600	900	26,2
130	132	170	170	30	51126	105 000	350 000	1 400	2 000	1,68
	133	190	187	45	51226X	183 000	550 000	1 100	1 600	3,95
	134	225	220	75	51326X	350 000	1 030 000	750	1 100	12,1
	134	270	265	110	51426X	525 000	1 590 000	530	800	32,3
140	142	180	178	31	51128X	107 000	375 000	1 300	2 000	1,83
	143	200	197	46	51228X	186 000	575 000	1 000	1 500	4,3
	144	240	235	80	51328X	370 000	1 130 000	670	1 000	14,2
	144	280	275	112	51428X	550 000	1 750 000	530	800	34,7
150	152	190	188	31	51130X	110 000	400 000	1 300	1 900	1,95
	153	215	212	50	51230X	238 000	735 000	950	1 400	5,52
	154	250	245	80	51330X	380 000	1 200 000	670	1 000	15
	154	300	295	120	51430X	620 000	2 010 000	480	710	43,5
160	162	200	198	31	51132X	113 000	425 000	1 200	1 900	2,07
	163	225	222	51	51232X	249 000	805 000	900	1 400	6,04
	164	270	265	87	51332X	475 000	1 570 000	600	900	19,6
	164	320	315	130	51432X	650 000	2 210 000	450	670	52,7
170	172	215	213	34	51134X	135 000	510 000	1 100	1 700	2,72
	173	240	237	55	51234X	280 000	915 000	850	1 300	7,41
	174	280	275	87	51334X	465 000	1 570 000	600	900	20,3
	174	340	335	135	51434X	715 000	2 480 000	430	630	61,2
180	183	225	222	34	51136X	136 000	530 000	1 100	1 700	2,79
	183	250	247	56	51236X	284 000	955 000	800	1 200	7,94
	184	300	295	95	51336X	480 000	1 680 000	560	850	25,9
	184	360	355	140	51436X	750 000	2 730 000	400	600	70,5
190	193	240	237	37	51138X	172 000	655 000	1 000	1 600	3,6
	194	270	267	62	51238X	320 000	1 110 000	750	1 100	11,8
	195	320	315	105	51338X	550 000	1 960 000	500	750	36,5

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Single-direction Thrust Ball Bearings  
Bore Diameter 200 – 360 mm

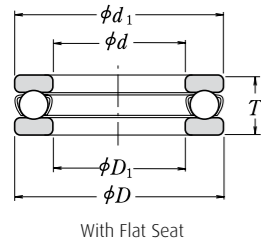


Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil
200	203	250	247	37	51140X	173 000	675 000	1 000	1 500	3,75
	204	280	277	62	51240X	315 000	1 110 000	710	1 100	12,3
	205	340	335	110	51340X	600 000	2 220 000	480	710	43,6
220	223	270	267	37	51144X	179 000	740 000	950	1 500	4,09
	224	300	297	63	51244X	325 000	1 210 000	670	1 000	13,6
240	243	300	297	45	51148X	229 000	935 000	850	1 200	6,55
	244	340	335	78	51248X	420 000	1 650 000	560	850	23,7
260	263	320	317	45	51152X	233 000	990 000	800	1 200	7,01
	264	360	355	79	51252X	435 000	1 800 000	560	850	25,1
280	283	350	347	53	51156X	315 000	1 310 000	710	1 000	12
	284	380	375	80	51256X	450 000	1 950 000	530	800	27,1
300	304	380	376	62	51160X	360 000	1 560 000	600	900	17,2
	304	420	415	95	51260X	540 000	2 410 000	450	670	43,5
320	324	400	396	63	51164X	365 000	1 660 000	600	900	18,6
	325	440	435	95	51264X	585 000	2 680 000	450	670	45
340	344	420	416	64	51168X	375 000	1 760 000	560	850	19,9
	345	460	455	96	51268X	595 000	2 800 000	430	630	47,9
360	364	440	436	65	51172X	385 000	1 860 000	560	800	21,5
	365	500	495	110	51272X	705 000	3 500 000	380	560	68,8

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

## Thrust Bearings (Inch)

Single-direction Thrust Ball Bearings  
Bore Diameter 1/4 – 2 1/8 Inch



Boundary Dimensions (Inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil	
1/4	5/32	3/16	25/32	3/8	LT1/4B	6 550	7 760	9 600	14 500	0,014
5/16	1/32	1	1/32	1/32	LT3/16B	8 900	11 200	7 900	12 000	0,043
3/8	5/32	1	3/32	1/32	LT3/8B	8 900	11 200	7 900	12 000	0,043
7/16	5/32	1 1/32	1 1/4	5/8	LT7/16B	14 900	19 900	6 400	9 600	0,078
1/2	1/32	1 1/32	1 1/4	5/8	LT1/2B	19 200	25 100	6 400	9 600	0,074
9/16	1/32	1 1/32	1 1/8	5/8	LT9/16B	20 000	28 300	5 700	8 700	0,085
5/8	25/32	1 1/32	1 1/8	5/8	LT5/8B	20 000	28 300	5 700	8 700	0,085
3/4	25/32	1 1/32	1 1/2	5/8	LT3/4B	18 200	29 800	5 200	7 900	0,099
7/8	25/32	1 25/32	1 1/8	5/8	LT7/8B	19 600	29 800	4 800	7 200	0,106
	5/16	1 1/16	1 1/4	3/4	MT7/8	24 800	38 800	4 700	7 100	0,156
1	1 1/32	1 25/32	1 3/4	5/8	LT1B	19 300	29 800	4 600	7 000	0,113
	1 1/8	2	1 1/8	3/4	MT1	27 300	46 600	4 300	6 600	0,17
1 1/8	1 25/32	1 25/32	1 7/8	5/8	LT1 1/8B	20 500	39 700	4 200	6 400	0,122
	1 1/4	2 1/4	2 1/8	7/8	MT1 1/8	34 100	55 900	3 900	5 900	0,248
1 1/4	1 1/4	2 1/4	2 1/8	23/32	LT1 1/4B	23 100	44 000	3 900	5 900	0,177
	1 1/8	2 1/2	2 3/8	1	MT1 1/4	45 600	76 100	3 500	5 300	0,354
1 3/8	1 15/32	2 1/32	2 3/8	23/32	LT1 3/8B	22 700	44 000	3 600	5 500	0,181
1 1/2	1 15/32	2 15/32	2 3/8	23/32	LT1 1/2B	24 300	50 300	3 400	5 200	0,2
	1 1/8	2 1/8	2 3/4	1 1/8	MT1 1/2	57 500	99 400	3 000	4 600	0,531
1 5/8	1 21/32	2 5/32	2 7/8	23/32	LT1 5/8B	23 900	50 300	3 200	4 900	0,213
1 3/4	1 25/32	2 1/4	2 21/32	3/4	LT1 3/4B	35 400	75 100	3 000	4 500	0,276
	1 1/8	3 3/8	3 3/8	1 1/4	MT1 3/4	84 500	154 000	2 600	4 000	0,744
1 7/8	1 29/32	2 3/8	2 25/32	3/4	LT1 7/8B	31 000	69 900	2 800	4 200	0,291
2	2 1/32	2 15/32	2 5/8	3/4	LT2	33 600	81 500	2 600	4 000	0,304
	2 1/32	3 3/8	3 1/32	1 1/8	XLT2	25 900	62 900	2 600	3 900	0,312
	2 1/8	3 1/8	3 3/8	1 1/8	MT2	96 000	186 000	2 300	3 500	1,06
2 1/8	25/32	3 3/8	3 5/32	1 1/8	XLT2 1/8	25 500	62 900	2 400	3 700	0,326
	25/32	3 7/32	3 3/8	7/8	LT2 1/8	43 700	101 000	2 500	3 800	0,404

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

## Thrust Bearings (Inch)

Single-direction Thrust Ball Bearings  
Bore Diameter 2 1/4 – 3 7/8 Inch

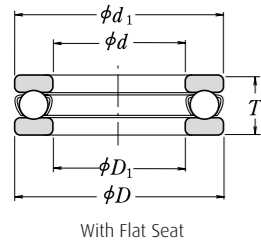


Boundary Dimensions (Inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil	
2 1/4	2 1/32	3 1/8	3 3/32	1 1/8	XLT2 1/4	26 800	69 200	2 300	3 500	0,34
	2 1/32	3 1/32	3 3/8	7/8	LT2 1/4	43 100	101 000	2 400	3 600	0,454
	2 3/8	4 1/4	4 1/8	1 1/8	MT2 1/4	128 000	246 000	2 000	3 100	1,75
2 3/8	2 15/32	3 7/8	3 15/32	1 1/8	XLT2 3/8	26 500	69 200	2 200	3 400	0,354
	2 15/32	3 11/32	3 3/8	1	LT2 3/8	58 000	137 000	2 200	3 400	0,581
2 1/2	2 1/32	3 1/8	3 15/32	1 1/8	XLT2 1/2	27 700	75 400	2 100	3 300	0,368
	2 1/32	3 33/32	3 1/8	1	LT2 1/2	57 500	137 000	2 100	3 200	0,64
	2 3/8	4 1/4	4 1/8	2	MT2 1/2	160 000	304 000	1 800	2 800	2,78
2 5/8	2 15/32	3 3/4	3 25/32	3/4	XLT2 5/8	32 100	85 400	2 000	3 100	0,454
	2 15/32	3 27/32	3 1/4	1	LT2 5/8	57 000	137 000	2 000	3 100	0,64
2 3/4	2 25/32	3 7/8	3 27/32	3/4	XLT2 3/4	33 700	93 100	2 000	3 000	0,513
	2 25/32	4 1/32	4	1	LT2 3/4	56 500	137 000	2 000	3 000	0,68
	2 7/8	5	4 7/8	2	MT2 3/4	177 000	365 000	1 700	2 600	2,89
2 7/8	2 25/32	4	3 31/32	3/4	XLT2 7/8	35 100	101 000	1 900	2 900	0,513
	2 25/32	4 1/32	4 1/8	1	LT2 7/8	64 000	157 000	1 900	2 900	0,708
3	3 1/8	4 1/8	4 1/8	3/4	XLT3	34 800	101 000	1 800	2 800	0,513
	3 1/8	4 3/8	4 3/8	1 1/8	LT3	72 500	179 000	1 800	2 700	0,948
	3 1/8	5 1/8	5 1/2	2 1/4	MT3	226 000	477 000	1 500	2 300	4,14
3 1/8	3 3/8	4 1/2	4 3/8	1 1/8	LT3 1/8	87 000	224 000	1 700	2 600	0,953
3 1/4	3 1/8	4 3/8	4 3/8	3/4	XLT3 1/4	35 800	97 000	1 700	2 600	0,54
	3 1/8	4 9/8	4 3/4	1 1/4	LT3 1/4	90 500	226 000	1 600	2 400	1,29
3 3/8	3 7/8	4 15/8	4 7/8	1 1/4	LT3 3/8	89 500	226 000	1 600	2 400	1,23
3 1/2	3 3/8	4 3/8	4 3/8	3/4	XLT3 1/2	36 800	116 000	1 600	2 400	0,567
	3 3/8	5 1/8	5	1 1/4	LT3 1/2	88 500	226 000	1 500	2 300	1,39
	3 3/8	6 1/8	6 3/8	2 1/2	MT3 1/2	274 000	616 000	1 300	1 900	5,81
3 5/8	3 7/8	5 3/8	5 1/8	1 1/4	LT3 5/8	94 500	251 000	1 500	2 200	1,31
3 3/4	3 3/8	4 7/8	4 3/8	3/4	XLT3 3/4	37 700	124 000	1 500	2 200	0,5943
	3 3/8	5 3/8	5 1/4	1 1/4	LT3 3/4	93 500	251 000	1 400	2 100	1,36
3 7/8	3 11/8	5 1/8	5 1/8	1 1/8	LT3 7/8	107 000	308 000	1 300	2 000	1,741

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

## Thrust Bearings (Inch)

Single-direction Thrust Ball Bearings  
Bore Diameter 4 – 9½ Inch



Boundary Dimensions (Inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil
4	4 1/16	5 1/4	5 3/16	7/8	XLT4	49 500	156 000	1 400	2 100	0,866
	4 1/8	5 5/16	5 3/4	1 1/8	LT4	122 000	325 000	1 300	2 000	2
	4 1/4	7 1/4	7 3/8	2 1/16	MT4	305 000	745 000	1 100	1 700	7,98
4 1/4	4 7/16	6 3/16	6 1/4	1 3/4	LT4 1/4	153 000	403 000	1 200	1 800	2,89
4 1/2	4 7/16	5 3/4	5 5/16	1	XLT4 1/2	50 500	168 000	1 200	1 900	1,11
	4 7/8	6 3/8	6 1/2	1 1/4	LT4 1/2	150 000	402 000	1 100	1 700	3,13
	4 7/8	8 3/8	8 1/4	3 3/8	MT4 1/2	398 000	1 070 000	950	1 400	13,8
4 3/4	4 7/8	7 1/8	7	2	LT4 3/4	203 000	547 000	1 000	1 600	4,32
5	5 1/16	6 1/2	6 3/16	1 1/8	XLT5	67 000	228 000	1 100	1 600	1,67
	5 1/8	7 3/8	7 1/4	2	LT5	201 000	548 000	1 000	1 500	4,47
	5 1/8	9 1/2	9 3/8	4	MT5	473 000	1 340 000	850	1 300	21,2
5 1/2	5 3/16	7	6 5/16	1 1/4	XLT5 1/2	68 500	243 000	950	1 500	1,7
	5 3/8	8 1/8	8	2 1/16	LT5 1/2	258 000	715 000	900	1 300	5,99
	5 3/8	10 3/8	10 1/4	4 1/4	MT5 1/2	486 000	1 640 000	750	1 100	25,9
6	6 1/16	7 3/8	7 1/16	1 1/4	XLT6	88 000	318 000	900	1 300	2,21
	6 1/8	8 1/4	8 3/8	2 3/8	LT6	280 000	808 000	800	1 200	7,44
	6 1/8	11 1/8	11	4 1/2	MT6	564 000	1 750 000	650	1 000	31,3
6 1/2	6 3/8	8 3/8	8	1 1/4	XLT6 1/2	90 000	338 000	800	1 200	2,48
	6 3/8	9 9/16	9 5/16	2 1/2	LT6 1/2	312 000	956 000	750	1 100	9,3
7	7 1/8	8 3/4	8 3/8	1 3/8	XLT7	113 000	428 000	750	1 100	3,06
	7 1/8	10 1/8	10	2 3/8	LT7	346 000	1 120 000	650	1 000	10,7
	7 1/8	12 3/4	12 3/8	5	MT7	619 000	2 410 000	550	850	45,8
7 1/2	7 3/8	9 1/4	9 1/8	1 3/8	XLT7 1/2	115 000	453 000	700	1 000	3,23
	7 3/8	10 7/8	10 3/4	2 3/4	LT7 1/2	310 000	1 030 000	600	950	13,4
8	8 1/8	10	9 7/8	1 1/2	XLT8	135 000	528 000	600	950	4,25
	8 1/8	11 3/8	11 1/2	3	LT8	339 000	1 120 000	550	850	16,3
	8 1/8	14 3/8	14 1/4	5 3/8	MT8	713 000	2 480 000	470	700	64,4
8 1/2	8 3/8	10 1/2	10 3/8	1 1/2	XLT8 1/2	138 000	559 000	600	900	4,72
9	9 1/8	11 1/4	11 1/8	1 3/8	XLT9	136 000	760 000	550	800	6,94
	9 1/8	13 3/8	13	3 1/2	LT9	476 000	1 790 000	480	750	25,9
9 1/2	9 3/8	11 3/4	11 3/8	1 3/8	XLT9 1/2	196 000	805 000	500	750	7,26

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

## Thrust Bearings (Inch)

Single-direction Thrust Ball Bearings  
Bore Diameter 10 – 18 Inch

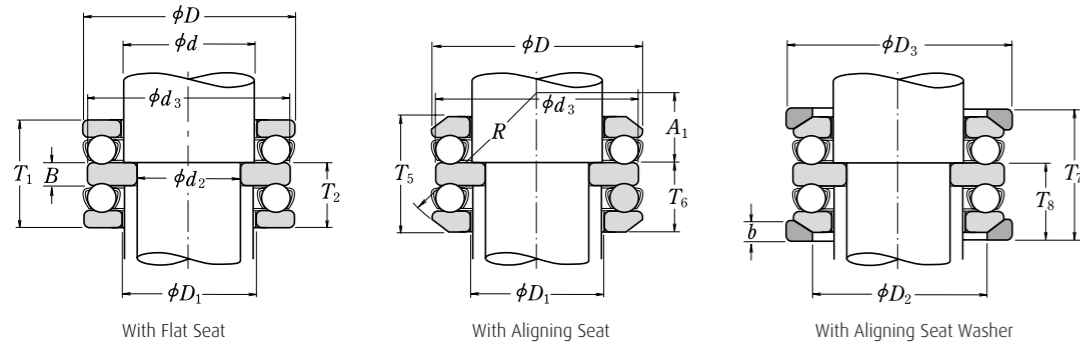


Boundary Dimensions (Inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil
10	10 3/8	12 1/2	12 3/8	2 3/8	XLT10	246 000	974 000	470	700	9,93
	10 3/8	14 3/8	14 1/2	4	LT10	559 000	2 190 000	410	600	36,2
10 1/2	10 3/8	13	12 3/8	2 3/8	XLT10 1/2	253 000	1 030 000	440	650	9,98
11	11 1/8	13 3/4	13 3/8	2 3/8	XLT11	275 000	1 100 000	410	600	13,4
	11 1/8	15 3/8	15 1/4	4 1/4	LT11	583 000	2 430 000	370	550	43,9
11 1/2	11 1/8	14 1/2	14 1/8	2 3/8	XLT11 1/2	284 000	1 120 000	390	600	14
12	12 3/8	15	14 3/8	2 1/2	XLT12	308 000	1 270 000	360	550	15,9
12 1/2	12 3/8	15 1/2	15 3/8	2 3/8	XLT12 1/2	317 000	1 340 000	340	500	18,6
13	13 3/8	16 1/4	16 3/8	2 3/4	XLT13	332 000	1 420 000	320	490	21,9
13 1/2	13 3/8	16 3/4	16 3/8	2 3/8	XLT13 1/2	363 000	1 600 000	310	470	22,5
14	14 3/8	17 1/2	17 3/8	3	XLT14	375 000	1 670 000	290	440	16,3
14 1/2	14 3/8	18	17 3/8	3 3/8	XLT14 1/2	408 000	1 860 000	280	420	28,4
15	15 3/8	18 3/4	18 1/2	3 1/4	XLT15	420 000	1 990 000	260	400	33,1
15 1/2	15 3/8	19 1/4	19	3 3/8	XLT15 1/2	434 000	2 050 000	250	380	35,8
16	16 3/8	20	19 3/4	3 1/2	XLT16	465 000	2 250 000	240	360	39,
16 1/2	16 3/8	20 1/2	20 3/4	3 3/8	XLT16 1/2	481 000	2 400 000	230	350	44,5
17	17 3/8	21 1/4	21	3 3/4	XLT17	513 000	2 610 000	220	330	49,9
17 1/2	17 3/8	21 3/4	21 1/2	3 3/8	XLT17 1/2	548 000	2 840 000	210	320	54
18	18 3/8	22 1/2	22 1/4	4	XLT18	543 000	2 860 000	200	310	59

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Double-direction Thrust Ball Bearings  
Bore Diameter 10 – 65 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg) approx
d <sub>2</sub>	d	D <sub>1</sub>	D	T <sub>1</sub>		C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil	
10	15	17	32	22	52202	16 700	24 800	4 800	7 100	0,081
15	20	22	40	26	52204	22 500	37 500	4 000	6 000	0,148
	25	27	60	45	52405	56 000	89 500	2 400	3 600	0,641
20	25	27	47	28	52205	28 000	50 500	3 400	5 300	0,213
	25	27	52	34	52305	36 000	61 500	3 000	4 500	0,324
	30	32	70	52	52406	73 000	126 000	2 200	3 200	0,978
25	30	32	52	29	52206	29 500	58 000	3 200	5 000	0,254
	30	32	60	38	52306	43 000	78 500	2 600	4 000	0,483
	35	37	80	59	52407	87 500	155 000	1 800	2 800	1,43
30	35	37	62	34	52207	39 500	78 000	2 800	4 300	0,406
	35	37	68	44	52307	56 000	105 000	2 400	3 600	0,71
	40	42	68	36	52208	47 500	98 500	2 600	3 800	0,543
	40	42	78	49	52308	70 000	135 000	2 000	3 000	1,04
	40	42	90	65	52408	103 000	188 000	1 700	2 400	1,98
35	45	47	73	37	52209	48 000	105 000	2 400	3 600	0,606
	45	47	85	52	52309	80 500	163 000	1 900	2 800	1,28
	45	47	100	72	52409	128 000	246 000	1 500	2 200	2,71
40	50	52	78	39	52210	49 000	111 000	2 400	3 400	0,697
	50	52	95	58	52310	97 500	202 000	1 700	2 600	1,78
	50	52	110	78	52410	147 000	288 000	1 400	2 000	3,51
45	55	57	90	45	52211	70 000	159 000	2 000	3 000	1,11
	55	57	105	64	52311	115 000	244 000	1 500	2 400	2,43
	55	57	120	87	52411	181 000	350 000	1 200	1 800	4,66
50	60	62	95	46	52212	71 500	169 000	1 900	3 000	1,22
	60	62	110	64	52312	119 000	263 000	1 500	2 200	2,59
	60	62	130	93	52412	202 000	395 000	1 100	1 700	5,74
	65	68	140	101	52413	234 000	495 000	1 000	1 600	7,41
55	65	67	100	47	52213	75 500	189 000	1 900	2 800	1,34
	65	67	115	65	52313	123 000	282 000	1 500	2 200	2,8
	70	72	105	47	52214	74 000	189 000	1 800	2 800	1,44
	70	72	125	72	52314	137 000	315 000	1 300	2 000	3,67
	70	73	150	107	52414	252 000	555 000	1 000	1 500	8,99
60	75	77	110	47	52215	78 000	209 000	1 800	2 600	1,54
	75	77	135	79	52315	159 000	365 000	1 200	1 800	4,74
	75	78	160	115	52415	254 000	560 000	900	1 400	10,8
65	80	82	115	48	52216	79 000	218 000	1 700	2 600	1,66
	80	82	140	79	52316	164 000	395 000	1 200	1 800	4,99
	80	83	170	120	52416	272 000	620 000	850	1 300	12,6
	85	88	180	128	52417X	310 000	755 000	800	1 200	15,4

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Double-direction Thrust Ball Bearings  
Bore Diameter 70 – 190 mm

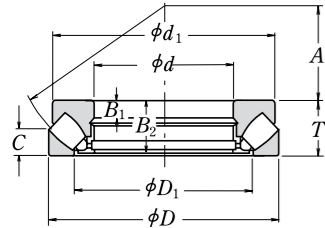


Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		Mass (kg) approx
d <sub>2</sub>	d	D <sub>1</sub>	D	T <sub>1</sub>		C <sub>r</sub>	C <sub>0a</sub>	Grease	Oil	
70	85	88	125	55	52217	96 000	264 000	1 500	2 200	2,26
	85	88	150	87	52317	207 000	490 000	1 100	1 600	6,38
	90	93	190	135	52418X	330 000	825 000	750	1 100	17,5
75	90	93	135	62	52218	114 000	310 000	1 400	2 000	3,09
	90	93	155	88	52318	214 000	525 000	1 100	1 600	6,79
80	100	103	210	150	52420X	370 000	985 000	670	1 000	26,8
85	100	103	150	67	52220	135 000	375 000	1 300	1 900	4,08
	100	103	170	97	52320	239 000	595 000	950	1 500	8,82
90	110	113	230	166	52422X	415 000	1 150 000	600	900	35,6
95	110	113	160	67	52222	136 000	395 000	1 200	1 800	4,39
	110	113	190	110	52322X	282 000	755 000	850	1 300	12,7
	120	123	250	177	52424X	515 000	1 540 000	560	850	47,6
100	120	123	170	68	52224	141 000	430 000	1 200	1 800	4,92
	120	123	210	123	52324X	330 000	930 000	750	1 100	17,6
	130	134	270	192	52426X	525 000	1 590 000	530	800	57,8
110	130	133	190	80	52226X	183 000	550 000	1 000	1 500	7,43
	130	134	225	130	52326X	350 000	1 030 000	710	1 100	21,5
	140	144	280	196	52428X	550 000	1 750 000	500	750	62,4
120	140	143	200	81	52228X	186 000	575 000	1 000	1 500	8,01
	140	144	240	140	52328X	370 000	1 130 000	670	1 000	24,8
	150	153	300	209	52430X	620 000	2 010 000	480	710	77,8
130	150	153	215	89	52230X	238 000	735 000	900	1 300	10,4
	150	154	250	140	52330X	380 000	1 200 000	630	950	30,3
	160	164	320	226	52432X	650 000	2 210 000	430	630	93,6
135	170	174	340	236	52434X	715 000	2 480 000	400	600	110
140	160	163	225	90	52232X	249 000	805 000	850	1 300	11,2
	160	164	270	153	52332X	475 000	1 570 000	600	900	35,1
	180	184	360	245	52436X	750 000	2 730 000	380	560	126
150	170	173	240	97	52234X	280 000	915 000	800	1 200	13,6
	170	174	280	153	52334X	465 000	1 570 000	560	850	40,8
	180	183	250	98	52236X	284 000	955 000	800	1 200	14,8
	180	184	300	165	52336X	480 000	1 680 000	530	800	46,3
160	190	194	270	109	52238X	320 000	1 110 000	710	1 100	22,1
	190	195	320	183	52338X	550 000	1 960 000	480	710	113
170	200	204	280	109	52240X	315 000	1 110 000	710	1 000	23,1
	200	205	340	192	52340X	600 000	2 220 000	450	670	78,4
190	220	224	300	110	52244X	325 000	1 210 000	670	1 000	25,2

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Spherical Thrust Roller Bearings  
Bore Diameter 60 – 240 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>		
60	89	130	114,5	42	29412E	330 000	885 000	2 600	2,55
65	93	140	121,5	45	29413E	405 000	1 100 000	2 400	3,2
70	102	150	131,5	48	29414E	450 000	1 240 000	2 400	3,9
75	107	160	138	51	29415E	515 000	1 430 000	2 200	4,65
80	114,5	170	148	54	29416E	575 000	1 600 000	2 000	5,55
85	112	150	134,5	39	29317E	330 000	1 040 000	2 400	2,7
	124	180	156,5	58	29417E	630 000	1 760 000	1 900	6,55
90	118	155	139,5	39	29318E	350 000	1 080 000	2 200	2,83
	129,5	190	165,5	60	29418E	695 000	1 950 000	1 800	7,55
100	128	170	152	42	29320E	410 000	1 280 000	2 000	3,6
	144	210	185	67	29420E	840 000	2 400 000	1 600	10,3
110	142,5	190	169,5	48	29322E	530 000	1 710 000	1 800	5,25
	157	230	200	73	29422E	1 010 000	2 930 000	1 500	13,3
120	156,5	210	187,5	54	29324E	645 000	2 100 000	1 600	7,3
	171	250	215	78	29424E	1 160 000	3 400 000	1 400	16,6
130	168,5	225	203,5	58	29326E	740 000	2 450 000	1 500	8,95
	185	270	235	85	29426E	1 330 000	3 900 000	1 200	21,1
140	179	240	216,5	60	29328E	840 000	2 810 000	1 400	10,4
	195,5	280	244,5	85	29428E	1 370 000	4 200 000	1 200	22,2
150	190	250	224	60	29330E	870 000	2 900 000	1 400	10,8
	209	300	266	90	29430E	1 580 000	4 900 000	1 100	27,3
160	203	270	243	67	29332E	1 010 000	3 400 000	1 300	14,3
	224,5	320	278	95	29432E	1 740 000	5 400 000	1 100	32,1
170	214,5	280	252	67	29334E	1 050 000	3 500 000	1 200	14,8
	243	340	310	103	29434	1 680 000	5 800 000	1 000	43,5
180	227	300	270	73	29336E	1 230 000	4 200 000	1 100	19
	255	360	330	109	29436	1 870 000	6 500 000	900	52
190	244	320	288,5	78	29338E	1 370 000	4 700 000	1 100	23
	271	380	345	115	29438	2 100 000	7 450 000	850	60
200	236	280	266	48	29240	540 000	2 310 000	1 500	8,55
	257	340	306,5	85	29340E	1 570 000	5 450 000	1 000	28,5
	280	400	365	122	29440	2 290 000	8 150 000	800	69
220	254	300	285	48	29244	560 000	2 500 000	1 400	9,2
	280	360	335	85	29344	1 340 000	5 200 000	950	33
	308	420	385	122	29444	2 350 000	8 650 000	800	74
240	283	340	325	60	29248	800 000	3 450 000	1 200	16,5
	300	380	355	85	29348	1 360 000	5 400 000	950	35,5
	326	440	405	122	29448	2 420 000	9 100 000	750	79

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.

# Thrust Bearings

Spherical Thrust Roller Bearings  
Bore Diameter 260 – 500 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	Mass (kg)
d	D <sub>1</sub>	D	d <sub>1</sub>	T		With Flat Seat	C <sub>r</sub>		
260	302	360	345	60	29252	855 000	3 850 000	1 200	18
	329	420	390	95	29352	1 700 000	6 800 000	800	48,5
	357	480	445	132	29452	2 820 000	10 700 000	710	105
280	323	380	365	60	29256	885 000	4 100 000	1 100	19
	348	440	410	95	29356	1 830 000	7 650 000	800	52,5
	384	520	480	145	29456	3 400 000	13 100 000	630	132
300	353	420	400	73	29260	1 160 000	5 150 000	950	30
	379	480	450	109	29360	2 190 000	9 100 000	710	74
	402	540	500	145	29460	3 500 000	13 700 000	630	140
320	372	440	420	73	29264	1 190 000	5 450 000	950	32,5
	399	500	470	109	29364	2 230 000	9 400 000	670	77
	436	580	555	155	29464	3 650 000	14 600 000	560	175
340	395	460	440	73	29268	1 230 000	5 750 000	900	33,5
	428	540	510	122	29368	2 640 000	11 200 000	630	103
	462	620	590	170	29468	4 400 000	17 400 000	530	218
360	423	500	480	85	29272	1 550 000	7 300 000	800	51
	448	560	525	122	29372	2 670 000	11 500 000	600	107
	480	640	610	170	29472	4 200 000	17 200 000	500	228
380	441	520	496	85	29276	1 620 000	7 800 000	800	52
	477	600	568	132	29376	3 300 000	14 500 000	560	140
	504	670	640	175	29476	4 800 000	19 500 000	480	254
400	460	540	517	85	29280	1 640 000	8 000 000	750	55
	494	620	590	132	29380	3 250 000	14 500 000	530	150
	536	710	680	185	29480	5 400 000	22 100 000	450	306
420	489	580	553	95	29284	2 010 000	9 800 000	670	72
	520	650	620	140	29384	3 500 000	15 700 000	500	170
	556	730	700	185	29484	5 650 000	23 500 000	450	323
440	508	600	575	95	29288	2 030 000	10 100 000	670	77
	548	680	645	145	29388	3 750 000	16 700 000	480	190
	588	780	745	206	29488	6 550 000	27 200 000	400	407
460	530	620	592	95	29292	2 060 000	10 300 000	670	80
	567	710	666	150	29392	4 100 000	18 400 000	450	210
	608	800	765	206	29492	6 750 000	28 600 000	380	420
480	556	650	624	103	29296	2 370 000	12 100 000	600	97
	590	730	690	150	29396	4 150 000	19 000 000	450	215
	638	850	810	224	29496	7 200 000	31 000 000	360	545
500	574	670	645	103	292/500	2 390 000	12 400 000	600	100
	611	750	715	150	293/500	4 350 000	20 400 000	450	220
	661	870	830	224	294/500	7 850 000	33 000 000	340	560

For all dimensions and specifications refer to Cat. RB/A/GB/... from page B203 to B229.