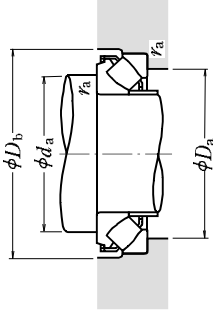
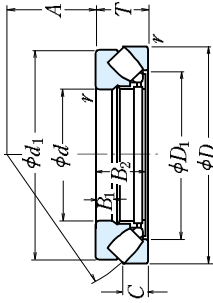
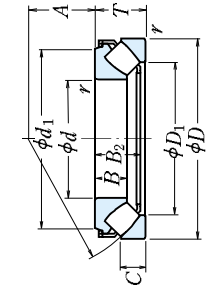


THRUST SPHERICAL ROLLER BEARINGS

Bore Diameter 60 – 200 mm



Dynamic Equivalent Load
 $P = 1.2F_r + F_a$

Static Equivalent Load
 $F_0 = 2.8F_r + F_a$

However, $F_r/F_0 \leq 0.55$ must be satisfied.

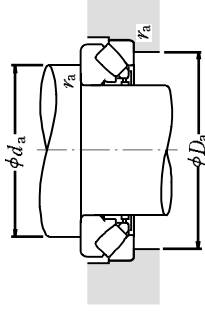
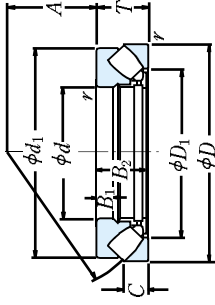
Boundary Dimensions (mm)		Basic Load Ratings			Limiting Speeds (min ⁻¹)		Bearing Numbers	
d	D	T	r	C _a	C _{0a}	C _a	C _{0a}	
60	130	42	1.5	330 000	885 000	33 500	90 000	29412E
65	140	45	2	405 000	1 100 000	41 500	112 000	29413E
70	150	48	2	450 000	1 240 000	46 000	126 000	29414E
75	160	51	2	515 000	1 430 000	52 500	148 000	29415E
80	170	54	2.1	575 000	1 600 000	58 500	163 000	29416E
85	180	58	2.1	630 000	1 760 000	64 500	179 000	29417E
90	190	60	2.1	695 000	1 950 000	70 500	199 000	29418E
100	210	67	3	840 000	2 400 000	86 000	245 000	29420E
110	230	73	3	1 010 000	2 930 000	103 000	299 000	29422E
120	250	78	4	1 160 000	3 400 000	119 000	350 000	29424E
130	270	85	4	1 330 000	3 960 000	135 000	400 000	29426E
140	280	85	4	1 370 000	4 200 000	140 000	425 000	29428E
150	300	90	4	1 580 000	4 900 000	162 000	500 000	29430E
160	320	95	5	1 740 000	5 400 000	178 000	550 000	29432E
170	340	103	5	1 680 000	5 800 000	171 000	595 000	29434E
180	360	109	5	1 870 000	6 500 000	190 000	660 000	29436E
190	380	115	5	2 100 000	7 450 000	215 000	760 000	29438E
200	400	122	5	2 290 000	8 150 000	234 000	835 000	29440E

Note (†) For heavy load applications, a d_{a1a} value should be chosen which is large enough to support the shaft washer rib.

Dimensions (mm)		Spacer Sleeve Dimensions (mm)		Abutment and Fillet Dimensions (mm)		Mass (kg)						
d ₁	D ₁	B ₁	B ₂	C	A	d _{SI}	d _{S2}	d _{a1}	D _a	D _b	r _a	approx.
114.5	89	27	38	20	38	67	67	90	108	133	1.5	2.55
121.5	93	29.5	40.5	22	42	72	72	100	115	143	2	3.2
131.5	102	31	43	24	44	78	83	105	125	153	2	3.9
138	107	33.5	46	25	47	83	88	115	132	163	2	4.65
148	114.5	35	48.5	27	50	89	89	120	140	173	2	5.55
134.5	112	24.5	35.5	19	50	91	91	115	135	153	1.5	2.7
156.5	124	37	51.5	28	54	95	95	130	150	183	2	6.55
139.5	118	24.5	35	19	52	97	97	120	140	168	1.5	2.83
165.5	129.5	39	54.5	29	56	100	100	135	157	193	2	7.55
152	128	26.2	38	20.8	58	107	107	130	150	173	1.5	3.6
185	144	43	59.5	33	62	111	111	150	175	214	2.5	10.3
169.5	142.5	30.3	43.5	24	64	117	117	145	165	193	2	5.25
200	157	47	64.5	36	69	121	129	165	190	234	2.5	13.3
187.5	156.5	34	48.5	27	70	130	130	160	180	214	2	7.3
215	171	50.5	69.5	38	74	132	142	180	205	254	3	16.6
203.5	168.5	37	53.5	28	76	141	143	170	195	229	2	8.95
235	185	54	74.5	42	81	143	153	195	225	275	3	21.1
216.5	179	38.5	54	30	82	148	154	185	205	244	2	10.4
244.5	195.5	54	74.5	42	86	153	162	205	235	285	3	22.2
224	190	38	54.5	29	87	158	163	195	215	254	2	10.8
266	209	58	81	44	92	164	175	220	250	306	3	27.3
243	203	42	60	33	92	169	176	210	235	275	2.5	14.3
278	224.5	60.5	84.5	46	99	175	189	230	265	326	4	32.1
252	214.5	42.2	60.5	32	96	178	188	220	245	285	2.5	14.8
310	243	37	59	50	104	—	—	245	285	—	4	43.5
330	227	46	65.5	36	103	189	195	235	260	306	2.5	19
370	255	39	105	52	110	—	—	260	300	—	4	52
288.5	244	49	69	38	110	200	211	250	275	326	3	23
345	271	41	111	55	117	—	—	275	320	—	4	60
306.5	236	15	46	24	108	—	—	235	255	—	2	8.55
366	257	53.5	75	41	116	211	224	265	295	346	3	28.5
365	280	43	117	59	122	—	—	290	335	—	4	69

THRUST SPHERICAL ROLLER BEARINGS

Bores Diameter 220 – 420 mm



Dynamic Equivalent Load
 $P = 1.2F_r + F_a$
Static Equivalent Load
 $P_0 = 2.8F_r + F_a$
 However, $F_r/F_a \leq 0.55$ must be satisfied.

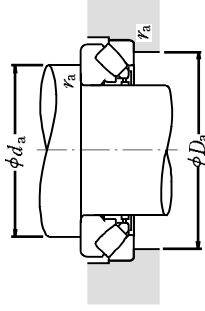
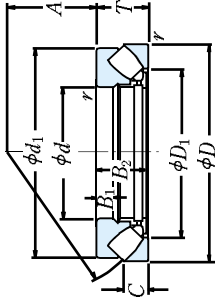
Boundary Dimensions (mm)		Basic Load Ratings (N)				Basic Load Ratings (kgf)				Limiting Speeds (min ⁻¹)	Bearing Numbers
d	D	T	r	Ca	C0a	Ca	C0a	Ca	C0a	Oil	
220	300	48	2	560 000	2 500 000	57 000	255 000	29244	1 400	29244	
	360	85	4	1 340 000	5 200 000	137 000	530 000	29344	950	29344	
	420	122	6	2 350 000	8 650 000	240 000	880 000	29444	800	29444	
240	340	60	2.1	800 000	3 450 000	82 000	350 000	29248	1 200	29248	
	380	85	4	1 360 000	5 400 000	136 000	550 000	29348	950	29348	
	440	122	6	2 420 000	9 100 000	247 000	930 000	29448	750	29448	
260	360	60	2.1	855 000	3 850 000	87 500	395 000	29252	1 200	29252	
	420	95	5	1 700 000	6 800 000	173 000	695 000	29352	800	29352	
	480	132	6	2 820 000	10 700 000	287 000	1 090 000	29452	710	29452	
280	380	60	2.1	885 000	4 100 000	90 000	420 000	29256	1 100	29256	
	440	95	5	1 830 000	7 650 000	187 000	780 000	29356	800	29356	
	520	145	6	3 400 000	13 100 000	345 000	1 330 000	29456	630	29456	
	520	145	6	3 950 000	14 900 000	400 000	1 520 000	29456 EM	630	29456 EM	
300	420	73	3	1 160 000	5 150 000	118 000	525 000	29260	950	29260	
	480	109	5	2 190 000	9 100 000	224 000	925 000	29360	710	29360	
	540	145	6	3 500 000	13 700 000	355 000	1 390 000	29460	630	29460	
320	500	109	5	2 230 000	9 400 000	237 000	960 000	29264	950	29264	
	580	155	7.5	3 650 000	14 600 000	370 000	1 490 000	29464	560	29464	
340	460	73	3	1 230 000	5 750 000	125 000	590 000	29268	900	29268	
	540	122	5	2 640 000	11 200 000	269 000	1 140 000	29368	630	29368	
	620	170	7.5	4 400 000	17 400 000	450 000	1 780 000	29468	530	29468	
360	500	85	4	1 550 000	7 300 000	158 000	745 000	29272	800	29272	
	560	122	5	2 670 000	11 500 000	272 000	1 180 000	29372	600	29372	
	640	170	7.5	4 200 000	17 200 000	430 000	1 750 000	29472	500	29472	
	640	170	7.5	5 450 000	20 400 000	555 000	2 800 000	29472 EM	500	29472 EM	
380	520	85	4	1 620 000	7 800 000	165 000	795 000	29276	800	29276	
	600	132	6	3 300 000	14 500 000	335 000	1 480 000	29376	560	29376	
	670	175	7.5	4 800 000	19 500 000	490 000	1 990 000	29476	480	29476	
400	540	85	4	1 640 000	8 000 000	167 000	815 000	29280	750	29280	
	620	132	6	3 250 000	14 500 000	330 000	1 480 000	29380	530	29380	
	710	185	7.5	5 400 000	22 100 000	550 000	2 250 000	29480	450	29480	
420	580	95	5	2 010 000	9 800 000	205 000	1 000 000	29284	670	29284	
	650	140	6	3 500 000	15 700 000	350 000	1 600 000	29348	500	29348	
	730	185	7.5	5 650 000	23 500 000	575 000	2 400 000	29484	450	29484	

Note (1) For heavy load applications, a d_{a1} value should be chosen which is large enough to support the shaft washer rib.

Dimensions (mm)		Abutment and Fillet Dimensions (mm)		Mass (kg)
d_1	d_1	$d_{a1}^{(1)}$	r_a	
285	254	260	2	9.2
335	280	285	3	33
385	308	310	5	74
375	283	285	2	16.5
355	300	300	3	26.5
405	326	330	5	79
345	302	305	2	18
390	329	330	4	48.5
445	357	360	5	105
365	323	325	3	19
410	348	350	4	52.5
480	384	390	5	132
480	380	410	5	134
400	353	355	2.5	30
450	379	380	4	74
500	402	410	5	140
420	372	375	2.5	32.5
470	399	400	4	77
555	436	435	6	175
440	395	395	2.5	33.5
510	428	430	4	103
590	462	465	6	218
480	423	420	3	51
525	448	445	3	51
610	480	485	6	207
580	474	485	6	220
496	441	440	3	52
568	477	480	5	140
640	504	510	6	254
517	460	460	3	55
590	494	490	3	55
680	536	540	6	306
553	489	490	4	72
620	520	525	5	170
700	556	560	6	323

THRUST SPHERICAL ROLLER BEARINGS

Bore Diameter 440 – 500 mm



Dynamic Equivalent Load

$$P = 1.2F_r + F_a$$

Static Equivalent Load

$$P_0 = 2.8F_r + F_a$$

However, $F_r/F_a \leq 0.55$ must be satisfied.

Boundary Dimensions (mm)		Basic Load Ratings				Limiting Speeds (min ⁻¹)	Bearing Numbers		
d	D	T	r min.	C _a	(N)	C _{0a}	C _a	C _{0a}	Oil
440	600	95	5	2 030 000	10 100 000	207 000	1 030 000	670	29288
	680	145	6	3 750 000	16 700 000	330 000	1 710 000	480	29388
	780	206	9.5	6 550 000	27 200 000	665 000	2 770 000	400	29488 EM
460	620	95	5	2 060 000	10 300 000	210 000	1 050 000	670	29292
	710	150	6	4 100 000	18 400 000	420 000	1 880 000	450	29392
	800	206	9.5	6 750 000	28 600 000	690 000	2 920 000	380	29492
480	650	103	5	2 370 000	12 100 000	241 000	1 240 000	600	29296
	730	150	6	4 150 000	19 000 000	435 000	1 940 000	450	29396
	850	224	9.5	7 200 000	31 000 000	730 000	3 150 000	360	29496
500	670	103	5	2 390 000	12 400 000	244 000	1 270 000	600	292500
	750	150	6	4 350 000	20 400 000	445 000	2 080 000	450	293500
	870	224	9.5	7 850 000	33 000 000	800 000	3 350 000	340	294500

Note (†) For heavy load applications, a d_a value should be chosen which is large enough to support the shaft washer rib.

Dimensions (mm)		Abutment and Fillet Dimensions (mm)			Mass (kg)				
d_1	D_1	B_1	B_2	C	A	$d_{fil}^{(1)}$ min.	D_a max.	r_a max.	approx.
575	508	30	91	49	235	510	545	4	77
645	548	49	140	70	245	550	600	5	190
745	588	74	199	100	260	595	670	8	407
710	577	74	199	101	257	605	675	8	402
592	530	30	91	46	245	530	570	4	80
666	567	51	144	72	257	575	630	5	210
765	608	74	199	100	272	615	690	8	420
624	556	33	99	55	259	555	595	4	97
660	590	51	144	72	270	595	650	5	215
810	638	81	216	108	280	645	730	8	545
645	574	33	99	55	268	575	615	4	100
715	611	51	144	74	280	615	670	5	220
830	661	81	216	107	290	670	750	8	560