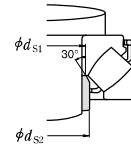
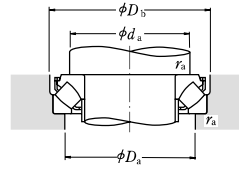
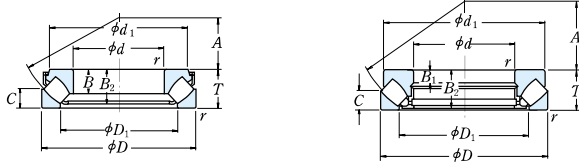


THRUST SPHERICAL ROLLER BEARINGS

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

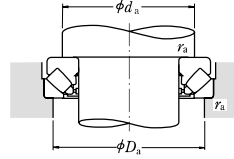
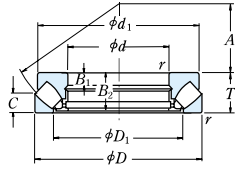
d	Boundary Dimensions (mm)				Basic Load Ratings (N)				Limiting Speeds (min ⁻¹) Oil	Bearing Numbers
	D	T	r min.	r	C _a	C _{0a}	C _a (kgf)	C _{0a} (kgf)		
60	130	42	1.5	1.5	330 000	885 000	33 500	90 000	2 600	29412 E
65	140	45	2	2	405 000	1 100 000	41 500	112 000	2 400	29413 E
70	150	48	2	2	450 000	1 240 000	46 000	126 000	2 400	29414 E
75	160	51	2	2	515 000	1 430 000	52 500	146 000	2 200	29415 E
80	170	54	2.1	2.1	575 000	1 600 000	58 500	163 000	2 000	29416 E
85	150	39	1.5	1.5	330 000	1 040 000	34 000	106 000	2 400	29317 E
	180	58	2.1	2.1	630 000	1 760 000	64 500	179 000	1 900	29417 E
90	155	39	1.5	1.5	350 000	1 080 000	35 500	110 000	2 200	29318 E
	190	60	2.1	2.1	695 000	1 950 000	70 500	199 000	1 600	29418 E
100	170	42	1.5	1.5	410 000	1 280 000	41 500	131 000	2 000	29320 E
	210	67	3	3	840 000	2 400 000	86 000	245 000	1 600	29420 E
110	190	48	2	2	530 000	1 710 000	54 000	174 000	1 800	29322 E
	230	73	3	3	1 010 000	2 930 000	103 000	299 000	1 500	29422 E
120	210	54	2.1	2.1	645 000	2 100 000	65 500	214 000	1 600	29324 E
	250	78	4	4	1 160 000	3 400 000	119 000	350 000	1 400	29424 E
130	225	58	2.1	2.1	740 000	2 450 000	75 500	250 000	1 500	29326 E
	270	85	4	4	1 330 000	3 900 000	135 000	400 000	1 200	29426 E
140	240	60	2.1	2.1	840 000	2 810 000	85 500	287 000	1 400	29328 E
	280	85	4	4	1 370 000	4 200 000	140 000	425 000	1 200	29428 E
150	250	60	2.1	2.1	870 000	2 900 000	89 000	296 000	1 400	29330 E
	300	90	4	4	1 580 000	4 900 000	162 000	500 000	1 100	29430 E
160	270	67	3	3	1 010 000	3 400 000	103 000	345 000	1 300	29332 E
	320	95	5	5	1 740 000	5 400 000	178 000	550 000	1 100	29432 E
170	280	67	3	3	1 050 000	3 600 000	107 000	355 000	1 200	29334 E
	340	103	5	5	1 680 000	5 800 000	171 000	595 000	1 000	29434 E
180	300	73	3	3	1 230 000	4 200 000	125 000	430 000	1 100	29336 E
	360	109	5	5	1 870 000	6 500 000	190 000	660 000	900	29436 E
190	320	78	4	4	1 370 000	4 700 000	140 000	480 000	1 100	29338 E
	380	115	5	5	2 100 000	7 450 000	215 000	760 000	850	29438 E
200	280	48	2	2	540 000	2 310 000	55 000	236 000	1 500	29240
	340	85	4	4	1 570 000	5 450 000	160 000	555 000	1 000	29340 E
	400	122	5	5	2 290 000	8 150 000	234 000	835 000	800	29440

Note (*) For heavy load applications, a d_s 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	B ₂	C	A	d _{s1} max.	d _{s2} max.	d _s ^(*) min.	D _a max.	D _b min.	r _a max.	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	78	105	125	153	2	3.9
138	107	33.5	46	25	47	83	83	115	132	163	2	4.65
148	114.5	35	48.5	27	50	89	89	120	140	173	2	5.55
156.5	124	37	51.5	28	54	95	95	130	150	183	2	6.55
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	158	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	99	50	104	—	—	245	285	—	4	43.5
270	227	46	65.5	36	103	189	195	235	260	306	2.5	19
330	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
266	236	15	46	24	108	—	—	235	255	—	2	8.55
306.5	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

Bore Diameter 220 – 420 mm



Dynamic Equivalent Load
 $P = 1.2F_r + F_a$
Static Equivalent Load
 $F_0 = 2.8F_r + F_a$
 However, $F_r/F_a \leq 0.55$ must be satisfied.

Boundary Dimensions (mm)				Basic Load Ratings				Limiting Speeds (min ⁻¹) Oil	Bearing Numbers
<i>d</i>	<i>D</i>	<i>T</i>	<i>r</i> _{min.}	<i>C</i> _a (N)	<i>C</i> _{0a} (kgf)	<i>C</i> _a (kgf)	<i>C</i> _{0a}		
220	300	48	2	560 000	2 500 000	57 000	255 000	1 400	29244
	360	85	4	1 340 000	5 200 000	137 000	530 000	950	29344
	420	122	6	2 350 000	8 650 000	240 000	880 000	800	29444
240	340	60	2.1	800 000	3 450 000	82 000	350 000	1 200	29248
	380	85	4	1 360 000	5 400 000	139 000	550 000	950	29348
	440	122	6	2 420 000	9 100 000	247 000	930 000	750	29448
260	360	60	2.1	855 000	3 850 000	87 500	395 000	1 200	29252
	420	95	5	1 700 000	6 800 000	173 000	695 000	800	29352
	480	132	6	2 820 000	10 700 000	287 000	1 090 000	710	29452
280	380	60	2.1	885 000	4 100 000	90 000	420 000	1 100	29256
	440	95	5	1 830 000	7 650 000	187 000	780 000	800	29356
	520	145	6	3 400 000	13 100 000	345 000	1 330 000	630	29456
	520	145	6	3 950 000	14 900 000	400 000	1 520 000	630	29456 EM
	540	145	6	3 500 000	13 700 000	355 000	1 390 000	630	29460
300	420	73	3	1 190 000	5 450 000	122 000	555 000	950	29264
	480	109	5	2 230 000	9 400 000	227 000	960 000	670	29364
	540	145	6	3 650 000	14 600 000	370 000	1 490 000	560	29464
320	440	73	3	1 230 000	5 750 000	125 000	590 000	900	29268
	540	122	5	2 640 000	11 200 000	269 000	1 140 000	630	29368
	620	170	7.5	4 400 000	17 400 000	450 000	1 780 000	530	29468
360	500	85	4	1 550 000	7 300 000	158 000	745 000	800	29272
	560	122	5	2 670 000	11 500 000	272 000	1 180 000	600	29372
	640	170	7.5	4 200 000	17 200 000	430 000	1 750 000	500	29472
	640	170	7.5	5 450 000	20 400 000	555 000	2 800 000	500	29472 EM
380	520	85	4	1 620 000	7 800 000	165 000	795 000	800	29276
	600	132	6	3 300 000	14 500 000	335 000	1 480 000	560	29376
	670	175	7.5	4 800 000	19 500 000	490 000	1 990 000	480	29476
400	540	85	4	1 640 000	8 000 000	167 000	815 000	750	29280
	620	132	6	3 250 000	14 500 000	330 000	1 480 000	530	29380
	710	185	7.5	5 400 000	22 100 000	550 000	2 250 000	450	29480
420	580	95	5	2 010 000	9 800 000	205 000	1 000 000	670	29284
	650	140	6	3 500 000	15 700 000	355 000	1 600 000	500	29384
	730	185	7.5	5 650 000	23 500 000	575 000	2 400 000	450	29484

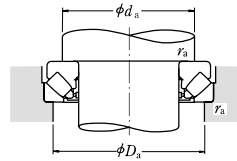
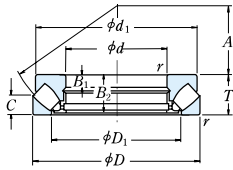
Dimensions (mm)							Abutment and Fillet Dimensions (mm)			Mass (kg) approx.
<i>d</i> ₁	<i>D</i> ₁	<i>B</i> ₁	<i>B</i> ₂	<i>C</i>	<i>A</i>	<i>d</i> _a ⁽¹⁾ min.	<i>D</i> _a max.	<i>r</i> _a max.		
285	254	15	46	24	117	260	275	2	9.2	
335	280	29	81	41	125	285	315	3	33	
385	308	43	117	58	132	310	355	5	74	
325	283	19	57	30	130	285	305	2	16.5	
355	300	29	81	41	135	300	330	3	35.5	
405	326	43	117	59	142	330	375	5	79	
345	302	19	57	30	139	305	325	2	18	
390	329	32	91	45	148	330	365	4	48.5	
445	357	48	127	64	154	360	405	5	105	
365	323	19	57	30	150	325	345	2	19	
410	348	32	91	46	158	350	390	4	52.5	
480	384	52	140	68	166	390	440	5	132	
480	380	52	140	70	166	410	445	5	134	
400	353	21	69	38	162	355	380	2.5	30	
450	379	37	105	50	168	380	420	4	74	
500	402	52	140	70	175	410	460	5	140	
420	372	21	69	38	172	375	400	2.5	32.5	
470	399	37	105	53	180	400	440	4	77	
555	436	55	149	75	191	435	495	6	175	
440	395	21	69	37	183	395	420	2.5	33.5	
510	428	41	117	59	192	430	470	4	103	
590	462	61	164	82	201	465	530	6	218	
480	423	25	81	44	194	420	455	3	51	
525	448	41	117	59	202	450	495	4	107	
610	480	61	164	82	210	485	550	6	228	
580	474	61	164	83	210	495	550	6	220	
496	441	27	81	42	202	440	475	3	52	
568	477	44	127	63	216	480	525	5	140	
640	504	63	168	85	230	510	575	6	254	
517	460	27	81	42	212	460	490	3	55	
590	494	44	127	64	225	500	550	5	150	
680	536	67	178	89	236	540	610	6	306	
553	489	30	91	46	225	490	525	4	72	
620	520	48	135	68	235	525	575	5	170	
700	556	67	178	89	244	560	630	6	323	

Note (1) For heavy load applications, a *d*_a value should be chosen which is large enough to support the shaft washer rib.

THRUST SPHERICAL ROLLER BEARINGS

Bore Diameter 440 – 500 mm

NSK



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.

d	Boundary Dimensions (mm)			Basic Load Ratings				Limiting Speeds (min ⁻¹) Oil	Bearing Numbers
	D	T	r _{min.}	(N)		(kgf)			
				C _a	C _{0a}	C _a	C _{0a}		
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	380 000	1 710 000	480	29388
	780	206	9.5	6 550 000	27 200 000	665 000	2 770 000	400	29488
	780	206	9.5	8 000 000	31 500 000	815 000	3 250 000	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	425 000	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	292/500
	750	150	6	4 350 000	20 400 000	445 000	2 080 000	450	293/500
	870	224	9.5	7 850 000	33 000 000	800 000	3 350 000	340	294/500

Dimensions (mm)						Abutment and Fillet Dimensions (mm)			Mass (kg)
d ₁	D ₁	B ₁	B ₂	C	A	d _a ⁽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
690	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

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