

Thrust Tapered Roller Bearings

10. THRUST TAPERED ROLLER BEARINGS

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BEARINGS TABLE

THRUST TAPERED ROLLER BEARINGS

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Thrust Tapered Roller Bearings

DESIGN, TYPES, AND FEATURES

THRUST TAPERED ROLLER BEARINGS

These are thrust bearings containing tapered rollers. TT-type bearings, which have a rib on the housing washer, can accurately guide the shaft in the radial direction. TTF-type bearings, which have no rib on the housing washer, can tolerate some eccentricity during operation.



Fig 1 TT, TTF Base Structure

TOLERANCES AND RUNNING ACCURACY

Thrust Tapered Roller Bearings Table 7.7 (Page A144)

RECOMMENDED FITS

Thrust Tapered Roller Bearings Table 8.4 (Pages A164)

Table 8.6 (Pages A165)

For inch design tapered roller thrust bearings, please contact NSK.

MINIMUM AXIAL LOAD

It is necessary to apply some axial load to thrust bearings to prevent slippage between the rolling elements and raceways. For more details, please contact NSK.

USAGE EXAMPLE

Typical structure of Heavy Duty Extruder is shown in Figure 2.

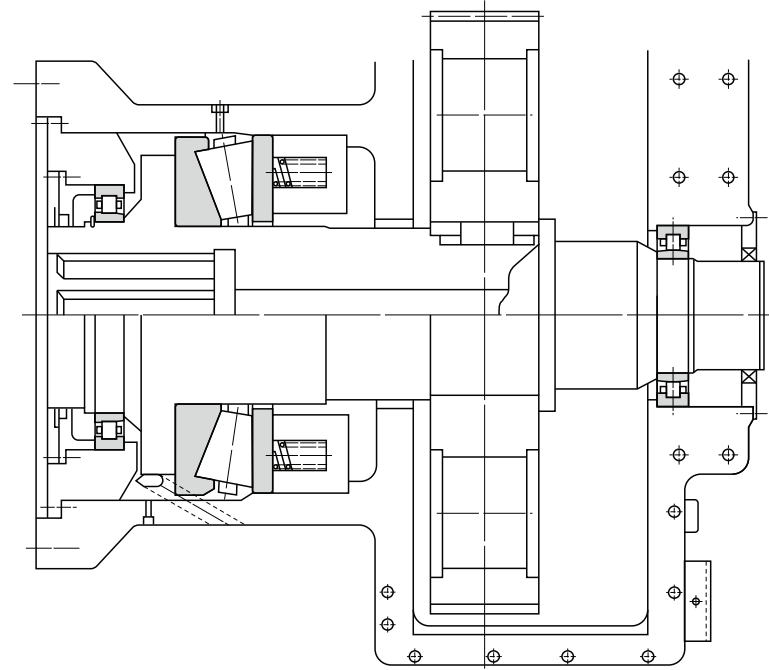
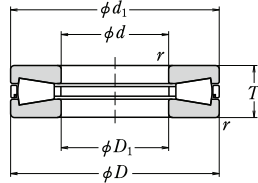


Figure 2 Thrust Tapered Roller Bearing in Heavy Duty Extruder

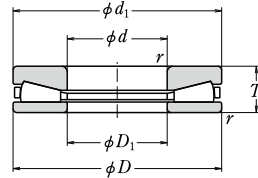
Thrust Tapered Roller Bearings

TT, TTF Types

Bore Diameter 101.600 - 168.275 mm



TT



TTF

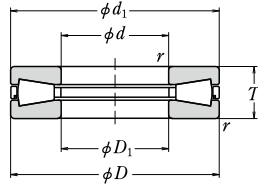
Boundary Dimensions (mm/inch)				Basic Load Ratings (kN)		Bearing Numbers
d	D	T	r min.	C _a	C _{0a}	
101.600	215.900	46.038	3.3	710	2 900	*101TT2151
4.0000	8.5000	1.8125	3.3	710	2 900	*101TT2151
111.760	223.520	55.880	3.3	790	2 920	*111TT2251
4.4000	8.8000	2.2000	3.3	790	2 920	*111TT2251
114.300	250.825	53.975	4.0	970	4 100	*114TT2551
4.5000	9.8750	2.1250	4.0	970	4 100	*114TT2551
127.000	266.700	58.738	4.8	1 040	4 350	*127TT2551
5.0000	10.5000	2.3125	4.8	1 040	4 350	*127TT2551
	266.700	58.738	4.8	1 030	4 500	*127TTF2651
	10.5000	2.3125	4.8	1 030	4 500	*127TTF2651
128.575	265.100	63.500	6.4	1 040	4 350	*128TT2651
5.0620	10.4370	2.5000	6.4	1 040	4 350	*128TT2651
130	250	70	2.1	1 100	4 100	130TTF2501
135	245	65	2.1	855	3 100	135TT2401
150	300	90	5	1 470	6 300	150TTF3001
152.400	317.500	69.850	6.4	1 470	6 330	*152TTF3151
6.0000	12.5000	2.7500	6.4	1 470	6 300	*152TTF3151
	317.500	69.850	6.4	1 550	6 700	*152TT3152
	12.2500	2.7500	6.4	1 550	6 700	*152TT3152
165.100	311.150	88.900	6.4	1 560	5 250	*165TT3151
6.5000	12.2500	3.5000	6.4	1 560	5 250	*165TT3151
168.275	304.800	69.850	6.4	1 230	5 000	*168TTF3051
6.6250	12.0000	2.7500	6.4	1 230	5 000	*168TTF3051

Dimensions (mm)		Corner Radius of Shaft or Housing	Mass (kg)
D ₁	d ₁	r _a	approx.
103.200	214.300	3.3	8.9
103.200	214.300	3.3	8.9
113.300	221.900	3.3	11.2
113.300	221.900	3.3	11.2
114.500	250.825	4.0	14.4
114.500	250.825	4.0	14.4
128.600	265.100	4.8	17.3
128.600	265.100	4.8	17.3
128.600	265.100	4.8	17.3
128.600	265.100	4.8	17.3
128.900	265.100	6.4	18.2
128.900	265.100	6.4	18.2
130.3	250	2	17
135.3	245	2	14.5
152	306	4	34.2
152.700	315.900	6.4	28.9
152.700	315.900	6.4	28.9
152.400	317.500	6.4	28.9
152.400	317.500	6.4	28.9
165.400	311.150	6.4	33
165.400	311.150	6.4	33
169.000	302.500	6.4	24.1
169.000	302.500	6.4	24.1

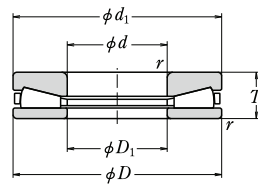
Note * Bearings marked * are inch design.

Thrust Tapered Roller Bearings

TT, TTF Types
Bore Diameter 170 - 241.300 mm



TT



TTF

Boundary Dimensions (mm/inch)				Basic Load Ratings (kN)		Bearing Numbers
d	D	T	r min.	C _a	C _{0a}	
170	320	100	5	1 650	5 550	170TT3201
174.625	358.775	82.550	6.4	1 740	7 400	*174TT3551
6.8750	14.1250	3.2500	6.4	1 740	7 400	*174TT3551
	358.775	82.550	6.4	1 740	7 400	*174TTF3551
	14.1250	3.2500	6.4	1 740	7 400	*174TTF3551
177.800	368.300	82.550	8.0	1 900	8 250	*177TT3651
7.0000	14.5000	3.2500	8.0	1 900	8 250	*177TT3651
203.200	419.100	92.075	9.7	2 530	11 300	*203TT4151
8.0000	16.5000	3.6250	9.7	2 530	11 300	*203TT4151
	419.100	92.075	9.7	2 530	11 300	*203TTF4153A
	16.5000	3.6250	9.7	2 530	11 300	*203TTF4153A
	419.100	120.650	9.7	2 530	11 300	*203TT4152
	16.5000	4.7500	9.7	2 530	11 300	*203TT4152
	419.100	120.650	9.7	2 530	11 300	*203TTF4152
	16.5000	4.7500	9.7	2 530	11 300	*203TTF4152
206.375	419.100	120.370	C10	2 590	11 700	*206TT4151
8.1250	16.5000	4.7390	C10	2 590	11 700	*206TT4151
228.600	482.600	104.775	11.2	3 350	16 400	*228TT4851
9.0000	19.0000	4.1250	11.2	3 350	16 400	*228TT4851
	482.600	104.775	11.2	3 350	16 400	*228TTF4851
	19.0000	4.1250	11.2	3 350	16 400	*228TTF4851
234.950	546.100	127.000	15.9	4 600	21 400	*234TT5451
9.2500	21.5000	5.0000	15.9	4 600	21 400	*234TT5451
241	404	110	4	2 200	8 650	241TTF4002
241.300	496.888	129.000	C8	3 450	16 700	*241TT4952
9.5000	19.5625	5.0787	C8	3 450	16 700	*241TT4952

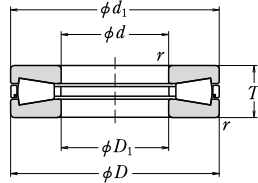
Dimensions (mm)		Corner Radius of Shaft or Housing	Mass (kg)
D ₁	d ₁	r _a	approx.
170.5	320	4	39.3
174.625	358.775	6.4	43.3
174.625	358.775	6.4	43.3
174.625	358.775	6.4	43.3
174.625	358.775	6.4	43.3
180.400	365.800	8.0	45.9
180.400	365.800	8.0	45.9
205.600	416.700	9.7	66.1
205.600	416.700	9.7	66.1
203.200	419.100	9.7	66.1
203.200	419.100	9.7	66.1
205.600	416.700	9.7	86.6
205.600	416.700	9.7	86.6
205.600	416.700	9.7	86.6
205.600	416.700	9.7	86.6
206.375	419.100	6	85.5
206.375	419.100	6	85.5
228.900	482.600	11.2	101
228.900	482.600	11.2	101
230.600	480.600	11.2	101
230.600	480.600	11.2	101
237.000	544.000	15.9	165
237.000	544.000	15.9	165
241	404	3	61.8
241.300	496.888	5	130
241.300	496.888	5	130

Note * Bearings marked * are inch design.

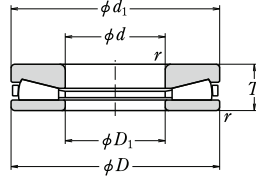
Thrust Tapered Roller Bearings

TT, TTF Types

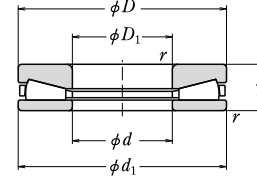
Bore Diameter 254.000 – 600 mm



TT



TTF



TTF-1

Boundary Dimensions (mm/inch)				Basic Load Ratings (kN)		Bearing Numbers
d	D	T	r min.	C ₀	C _{0a}	
254.000	539.750	117.475	11.2	3 950	18 600	*254TTF5351
10.0000	21.2500	4.6250	11.2	3 950	18 600	*254TTF5351
260	360	75	2.1	1 110	1 110	260TTF3601
273.050	552.450	133.350	C8	4 400	20 700	*273TTF5551
10.7500	21.7500	5.2500	C8	4 400	20 700	*273TTF5551
279.400	603.250	136.525	11.2	5 400	25 200	*279TTF6051
11.0000	23.7500	5.3750	11.2	5 400	25 200	*279TTF6051
330	440	85	3	1 300	6 300	330TTF4401
340	460	96	3	1 690	7 750	340TTF4603
350	460	85	2	1 370	6 600	350TTF4602A(!)
360	470	85	4	1 440	6 950	360TTF4701
360	600	120	4	3 700	20 100	360TTF6201
380	550	110	4	2 760	12 100	380TTF5501
406.400	711.200	146.050	9.7	5 900	28 600	*406TTF7151
16.0000	28.0000	5.7500	9.7	5 900	28 600	*406TTF7151
	838.200	177.800	12.7	8 950	46 500	*406TTF8351
	33.0000	7.0000	12.7	8 950	46 500	*406TTF8351
431.800	863.600	228.600	10.4	15 100	69 500	*431TTF8651
17.0000	34.0000	9.0000	10.4	15 100	69 500	*431TTF8651
440	600	105	4	2 720	13 900	440TTF6001
450	570	100	3	2 170	10 500	450TTF5701
460	580	90	3	1 890	9 550	460TTF5801
500	630	82	3	2 020	11 600	500TTF6301
508	730.25	120.65	6	4 900	26 100	508TTF7301
508.000	990.600	196.850	12.7	12 000	65 000	*508TTF9951
20.0000	39.0000	7.7500	12.7	12 000	65 000	*508TTF9951
558	780	120	9.5	4 800	25 500	558TTF7801
558.800	1 066.800	285.750	10.4	21 100	94 500	*558TTF1051
22.0000	42.0000	11.2500	10.4	21 100	94 500	*558TTF1051
560	670	85	3	1 950	10 700	560TTF6701
600	710	86	3	1 900	10 700	600TTF7101

Dimensions (mm)		Corner Radius of Shaft or Housing	Mass (kg)
D ₁	d ₁	r ₀	approx.
254.000	539.750	11.2	142
254.000	539.750	11.2	142
260.3	360	2	24.8
273.050	552.450	5	164
273.050	552.450	5	164
279.700	603.250	11.2	208
279.700	603.250	11.2	208
331	440	2.5	38.5
340	460	2.5	49.2
351	450	2	40.4
360.4	470	3	41.4
366	620	3	148
381	550	3	92.9
406.800	711.200	9.7	266
406.800	711.200	9.7	266
406.800	837.800	12.7	510
406.800	837.800	12.7	510
435.000	862.000	10.4	683
435.000	862.000	10.4	683
440	600	3	93.3
455	569	2.5	65.4
465	579	2.5	60
505	628	2.5	64.3
509	730.25	5	177
508.000	990.600	12.7	760
508.000	990.600	12.7	760
558	780	8	190
561.980	1 065.219	10.4	1 260
561.980	1 065.219	10.4	1 260
565	668	2.5	61.4
604	710	2.5	66.2

Note * Bearings marked * are inch design.

(!) For this bearing, the dimensional symbols are defined by Figure TTF-1.