





Single row tapered roller bearings



Double row tapered roller bearings



Four row tapered roller bearings

1. Types, design features, and characteristics

Tapered roller bearings are designed so that the center lines of the raceways and rollers all converge at a single point as shown in **Diagram 1**.

Due to this design feature, rollers move along the center of the raceway surfaces. The tapered rollers are guided by the compound force of the inner and outer raceway surfaces which keep them pressed up against the large rib on the inner ring. A large variety of these bearings, including single, double, and four row arrangements, are in use both in metric and inch system sizes.

Table 1 lists the various types of tapered roller bearings and their characteristics.

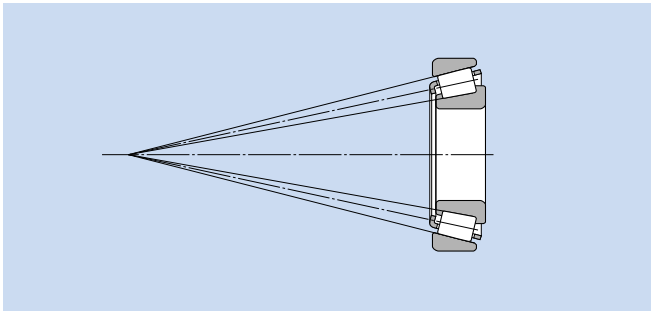


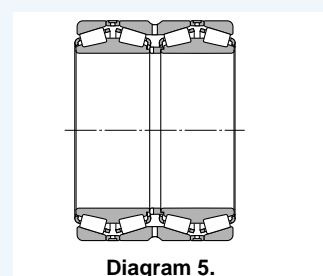
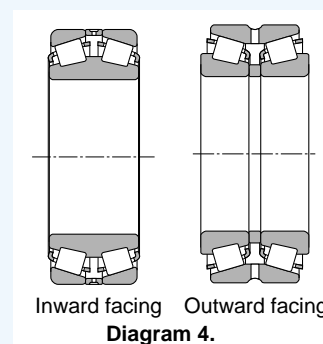
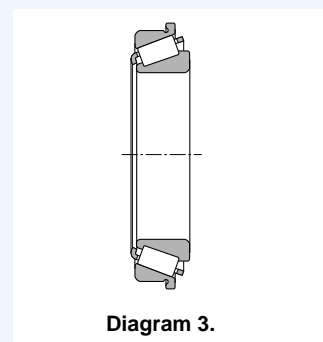
Diagram 1.

Table 1 Tapered roller bearing types and characteristics

Type	Characteristics									
Single row tapered roller bearings	(1) There are both metric and inch system dimension series, and they have been standardized as shown in the following table.									
	Dimension series									
	<table><tr><th></th><th>Metric system</th><th>Inch system</th></tr><tr><td>Regulations</td><td><ul style="list-style-type: none">● JIS B 1512● ISO 355</td><td><ul style="list-style-type: none">● ABMA (includes metric J-series)</td></tr><tr><td>Basic number</td><td>Example, 30210 * T2EE040</td><td>Inner ring no. / outer ring no. ("J" appears at the beginning of the basic number in the case of J-series.)</td></tr></table>		Metric system	Inch system	Regulations	<ul style="list-style-type: none">● JIS B 1512● ISO 355	<ul style="list-style-type: none">● ABMA (includes metric J-series)	Basic number	Example, 30210 * T2EE040	Inner ring no. / outer ring no. ("J" appears at the beginning of the basic number in the case of J-series.)
		Metric system	Inch system							
	Regulations	<ul style="list-style-type: none">● JIS B 1512● ISO 355	<ul style="list-style-type: none">● ABMA (includes metric J-series)							
Basic number	Example, 30210 * T2EE040	Inner ring no. / outer ring no. ("J" appears at the beginning of the basic number in the case of J-series.)								
* Dimension series previously not covered by 3XX are regulated under JIS B 1512; dimensions previously missing from 3XX will henceforth use the bearing number.										
(2) In addition to level type, there are also medium contact angle and large contact angle types, and the contact angle code C and D, respectively, is appended to the basic numbers of the latter two types.										
(3) Subunits										
<p>Tapered roller bearings can be disassembled into parts the inner ring, rollers, and cage (collectively known as the "cone") and the outer ring (known as the "cup"). These are the bearing's "subunits". Subunit dimensions are standardized under ISO or ABMA standards, and unified subunits are interchangeable within each dimensional standard. However, high precision grade bearings are generally not interchangeable, and these subunits must be used by assembling only subunits with identical manufacturing numbers.</p> <p>Aside from any cautionary notes that may appear, the single row tapered roller bearings listed in the dimension tables have subunits standardized for both metric and inch systems (including J series). (Refer to Diagram 2)</p>										
<div><div><div>Subunit dimensions</div><div></div></div><div><div>E : Outer ring (cup) nominal small-end diameter</div><div>α : Nominal contact angle</div></div><div>Diagram 2.</div></div>										

Table 1 (continued)

Type	Characteristics				
Single row tapered roller bearings	<p>(4) Concerning ET and 4T Types ET and 4T tapered roller bearings are made of high-purity case hardened steel and are manufactured with a special heat treatment developed by NTN. As a result, wear life and reliability have been improved to where life coefficient, a_2, values can be applied as follows:</p> <table border="1"> <tr> <td>4T tapered roller bearings:</td><td>$a_2 = 1.4$</td></tr> <tr> <td>ET tapered roller bearings:</td><td>$a_2 = 1.9$</td></tr> </table> <p>Furthermore, although not listed in the dimension tables, ET type bearings are also manufactured for some extra small bearing sizes. For details, consult NTN Engineering.</p> <p>(5) These bearings are constructed to have a high capacity for radial loads, axial loads, and combined loads. The larger the contact angle, the greater the axial load capacity becomes. When a pure radial load is placed on the bearings, an induced load in the axial direction is also generated, and so these bearings are generally used in pairs arranged face to face.</p> <p>(6) When used in pairs, proper internal clearances and preload can be set by adjusting the distance between the two bearings' inner and outer rings.</p> <p>(7) Inner and outer rings are separable, enabling them to be installed individually with the desired interference fit.</p> <p>(8) Tapered roller bearings are also manufactured with flanges attached to the outer rings. For more details, contact NTN Engineering. (Refer to Diagram 3)</p>	4T tapered roller bearings:	$a_2 = 1.4$	ET tapered roller bearings:	$a_2 = 1.9$
4T tapered roller bearings:	$a_2 = 1.4$				
ET tapered roller bearings:	$a_2 = 1.9$				
Double row tapered roller bearings	<p>(1) Outward facing types (using double row outer rings) and inward facing types (using double row inner rings) are both available, and they have been adjusted so that each type's internal clearance values are fixed. Therefore, only parts with identical manufacturing numbers can be used and they must be assembled according to their code numbers. (Refer to Diagram 4)</p> <p>(2) The axial internal clearances for double and duplex bearings are listed in Table 8 on pages A-58, 59.</p> <p>(3) Pairs of duplex single row tapered roller bearings are also manufactured. For more details, contact NTN Engineering.</p>				
Four row tapered roller bearings	<p>(1) As shown in Diagram 5, four row tapered roller bearings are constructed of two double row inner rings and two double row outer rings.</p> <p>(2) Bearings wear life is greatly improved through the use of induction hardening and, for large-sized bearings, hollow rollers and pin type cages.</p> <p>(3) Used primarily where heavy load capacity is important, and in the roller necks of rolling mills.</p>				



2. Standard cage type

In general, pressed cages are used in tapered roller bearings.

However, for large sized bearings, machined or pin type cages are also used; and for small sized bearings, molded resin cages are also used.

3. Allowable misalignment

Single row and	
back-to-back arrangement:0.0005rad (1.5')
Face-to-face:0.001rad (3.5')

In situations where large displacement is necessary, please consult **NTN Engineering**.



Inch Tapered Roller Bearings index

Series number	Cone or cup number is between	Page of bearing dimension table
335	4T-332 ~ 4T-344	B-165,167,169
355	4T-350A ~ 4T-359S	B-167,169,171
365	4T-362 ~ 4T-370A	B-171,173,175
385	4T-382A ~ 4T-389A	B-171,173,175,177
395	4T-390 ~ 4T-399A	B-173,177,179,181
415	4T-414 ~ 4T-420	B-167
435	4T-432 ~ 4T-438	B-169,171
455	4T-453A ~ 4T-469	B-169,171,175,177
475	4T-472 ~ 4T-484	B-179,181,183
495	4T-492A ~ 4T-498	B-183,185,187
525	4T-522 ~ 4T-529	B-169,171,175
535	4T-532A ~ 4T-543	B-167,175
555	4T-522 ~ 4T-560S	B-175,177,179,181
565	4T-563 ~ 4T-568	B-179,181
575	4T-572 ~ 4T-582	B-183,185
595	4T-592A ~ 4T-598A	B-185,187,189
615	4T-612 ~ 4T-623	B-175,177
635	4T-632 ~ 4T-644	B-179,181,183
655	4T-652 ~ 4T-665	B-181,183,185,187
675	4T-672 ~ 4T-687	B-187,189
745	4T-740 ~ 4T-749A	B-181,183,185,187
755	4T-752 ~ 4T-760	B-185,187
775	4T-772 ~ 4T-782	B-189
795	4T-792 ~ 4T-799A	B-191
835	4T-832 ~ 4T-850	B-181,185,187
855	4T-854 ~ 4T-861	B-189
895	4T-892 ~ 4T-898	B-193
935	4T-932 ~ 4T-941	B-189
1200	4T-1220 ~ 4T-1280	B-159
1300	4T-1328 ~ 4T-1380	B-157
1700	4T-1729 ~ 4T-1780	B-157,159
1900	4T-1930 ~ 4T-1985	B-159,161
2400	4T-2420 ~ 4T-2474	B-161
2500	4T-2520 ~ 4T-2585	B-161,163
2600	4T-2631 ~ 4T-2690	B-159,161

Series number	Cone or cup number is between	Page of bearing dimension table
2700	4T-2720 ~ 4T-2793	B-163,165,167
2800	4T-2820 ~ 4T-2879	B-163
2900	4T-2924 ~ 4T-2984	B-171
3100	4T-3120 ~ 4T-3196	B-161,163
3300	4T-3320 ~ 4T-3386	B-165,167
3400	4T-3420 ~ 4T-3490	B-163,165,167
3500	4T-3520 ~ 4T-3586	B-167,169,171
JS3500	4T-JS3510 ~ 4T-JS3549A	B-165
3700	4T-3720 ~ 4T-3782	B-169,171,173,175
3800	4T-3820 ~ 4T-3880	B-165,167,169
3900	4T-3920 ~ 4T-3994	B-175,177,179,181
A4000	4T-A4050 ~ 4T-A4138	B-157
4300	4T-4335 ~ 4T-4395	B-169
5300	4T-5335 ~ 4T-5395	B-173
5500	4T-5535 ~ 4T-5584	B-175,179
5700	4T-5735 ~ 4T-5760	B-183
A6000	4T-A6075 ~ 4T-A6157	B-157
6200	4T-6220 ~ 4T-6277	B-171
6300	4T-6320 ~ 4T-6386	B-181
6400	4T-6420 ~ 4T-6461A	B-183,185
6500	4T-6535 ~ 4T-6580	B-185,187
02400	4T-02420 ~ 4T-02476	B-161,163
02800	4T-02820 ~ 4T-02878	B-161,163
03000	4T-03062 ~ 4T-03162	B-157
05000	4T-05062 ~ 4T-05185	B-157
07000	4T-07079 ~ 4T-07204	B-157,159
09000	4T-09062 ~ 4T-09196	B-157
11000	4T-11162 ~ 4T-11315	B-167
11500	4T-11520 ~ 4T-11590	B-157
LM11700	4T-LM11710 ~ 4T-LM11749	B-157
LM11900	4T-LM11910 ~ 4T-LM11949	B-157
12000	4T-12175 ~ 4T-12303	B-169
12500	4T-12520 ~ 4T-12580	B-157
M12600	4T-M12610 ~ 4T-M12649	B-157
LM12700	4T-LM12711 ~ 4T-LM12749	B-157

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Series number	Cone or cup number is between	Page of bearing dimension table
13000	4T-13621 ~ 4T-13687	B-165
13800	4T-13830 ~ 4T-13889	B-165
14000	4T-14116 ~ 4T-14276	B-161,163,165
15000	4T-15100 ~ 4T-15245	B-159,161,163
15500	4T-15520 ~ 4T-15590	B-159,161
16000	4T-16137 ~ 4T-16284	B-163,165
17000	4T-17118 ~ 4T-17244	B-161
17500	4T-17520 ~ 4T-17580	B-157
18500	4T-18520 ~ 4T-18590	B-167
18600	4T-18620 ~ 4T-18690	B-169,171
18700	4T-18720 ~ 4T-18790	B-173
19000	4T-19150 ~ 4T-19281	B-165
21000	4T-21075 ~ 4T-21212	B-157
22700	4T-22720 ~ 4T-22780	B-169
23000	4T-23100 ~ 4T-23256	B-159
24700	4T-24720 ~ 4T-24780	B-167
25500	4T-25519 ~ 4T-25592	B-167,169,171
25800	4T-25820 ~ 4T-25880	B-163,165
26800	4T-26820 ~ 4T-26885	B-165,167,169
27600	4T-27620 ~ 4T-27691	B-185
27800	4T-27820 ~ 4T-27880	B-167
28000	4T-28150 ~ 4T-28315	B-167
28500	4T-28521 ~ 4T-28584	B-173,175
28600	4T-28622 ~ 4T-28682	B-173,177
28900	4T-28920 ~ 4T-28995	B-179
29500	4T-29520 ~ 4T-29590	B-177,179,181
29600	4T-29620 ~ 4T-29688	B-181,183
LM29700	4T-LM29710 ~ 4T-LM29748	B-165
31500	4T-31520 ~ 4T-31597	B-165
33000	4T-33225 ~ 4T-33462	B-177,181,183
33800	4T-33821 ~ 4T-33895	B-169,173,175
34000	4T-34274 ~ 4T-34478	B-181,183,185
36600	4T-36620 ~ 4T-36691	B-193
36900	4T-36920 ~ 4T-36990	B-193
37000	4T-37425 ~ 4T-37625	B-189

Series number	Cone or cup number is between	Page of bearing dimension table
39500	4T-39520 ~ 4T-39590	B-175,177,179,181
41000	4T-41125 ~ 4T-41286	B-161
42000	4T-42346 ~ 4T-42584	B-187,189
42600	4T-42620 ~ 4T-42690	B-183,185
43000	4T-43131 ~ 4T-43312	B-163
44000	4T-44143 ~ 4T-44348	B-165,167
L44600	4T-L44610 ~ 4T-L44649	B-159
45200	4T-45220 ~ 4T-45289	B-171,173,175,177
L45400	4T-L45410 ~ 4T-L45449	B-161
46000	4T-46162 ~ 4T-46368	B-169
46700	4T-46720 ~ 4T-46790	B-193
47400	4T-47420 ~ 4T-47490	B-181
47600	4T-47620 ~ 4T-47686	B-183,185
47800	4T-47820 ~ 4T-47896	B-187,189
48200	4T-48220 ~ 4T-48290	B-191
48300	4T-48320 ~ 4T-48393	B-193
LM48500	4T-LM48510 ~ 4T-LM48548A	B-163
48600	4T-48620 ~ 4T-48685	B-193
49500	4T-49520 ~ 4T-49585	B-175
52000	4T-52375 ~ 4T-52400	B-189
53000	4T-53162 ~ 4T-53377	B-169
55000C	4T-55175C ~ 4T-55443	B-171,173,175
56000	4T-56425 ~ 4T-56650	B-189
59000	4T-59200 ~ 4T-59412	B-175
64000	4T-64433 ~ 4T-64700	B-191
65000	4T-65237 ~ 4T-65500	B-179
63500	4T-65320 ~ 4T-65390	B-173
66000	4T-66200 ~ 4T-66462	B-175,177
66500	4T-66520 ~ 4T-66589	B-175,177
LM67000	4T-LM67010 ~ 4T-LM67048	B-161
67300	4T-67332 ~ 4T-67391	B-191,193
67700	4T-67720 ~ 4T-67790	B-193
68000	4T-68450 ~ 4T-68712	B-191
L68100	4T-L68111 ~ 4T-L68149	B-165
L69300	4T-JL69310 ~ 4T-JL69349	B-165



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Series number	Cone or cup number is between	Page of bearing dimension table
71000	4T-71453 ~ 4T-71750	B-191
72000C	4T-72188C ~ 4T-72487	B-173,175,177
LM728000	4T-LM72810 ~ 4T-LM72849	B-159
74000	4T-74500 ~ 4T-74850	B-191,193
78000	4T-78225 ~ 4T-78551	B-177,179
78000C	4T-78214C ~ 4T-78551	B-175
LM78300	4T-LM78310A ~ 4T-LM78349A	B-165
M84500	4T-M84510 ~ 4T-M84548	B-159
M86600	4T-M86610 ~ 4T-M86649	B-159,161
M88000	4T-M88010 ~ 4T-M88048	B-163
HM88500	4T-HM88510 ~ 4T-HM88547	B-161,163
HM88600	4T-HM88610 ~ 4T-HM88649	B-163,165
HM89200	4T-HM89210 ~ 4T-HM89249	B-165
HM89400	4T-HM89410 ~ 4T-HM89499	B-163,165
90000	4T-J90354 ~ 4T-J90748	B-187,189
95000	4T-95475 ~ 4T-95925	B-191,193
97000	4T-97500 ~ 4T-97900	B-191
99000	4T-99100 ~ 4T-99575	B-193
LM102900	4T-LM102910 ~ 4T-LM102949	B-171
LM104900	4T-JLM104910 ~ 4T-LM104949	B-173
M205100	4T-JM205110 ~ 4T-JM205149	B-173
M207000	4T-JM207010 ~ 4T-JM207049	B-177
H211700	4T-JH211710 ~ 4T-JH211749	B-181
HM212000	4T-HM212010 ~ 4T-HM212049	B-179,181
L217800	4T-L217810 ~ 4T-L217849	B-187
LL217800	4T-LL217810 ~ 4T-LL217849	B-187
HM218200	4T-HM218210 ~ 4T-HM218248	B-187
HH221400	4T-HH221410 ~ 4T-HH221449A	B-185,189
HH224300	4T-HH224310 ~ 4T-HH224346	B-189,191
HH228300	4T-HH228310 ~ 4T-HH228349	B-191
M231600	4T-M231610 ~ 4T-M231648	B-193
LM300800	4T-LM300811 ~ 4T-LM300849	B-167
H307700	4T-JH307710 ~ 4T-JH307749	B-177
HM318400	4T-JHM318410 ~ 4T-JHM318448	B-187
L327200	4T-L327210 ~ 4T-L327249	B-191

Series number	Cone or cup number is between	Page of bearing dimension table
H414200	4T-H414210 ~ 4T-H414249	B-181,183
H415600	4T-JH415610 ~ 4T-JH415647	B-183
L432300	4T-L402310 ~ 4T-L432349	B-193
LM501300	4T-LM501310 ~ 4T-LM501349	B-167
LM503300	4T-LM503310 ~ 4T-LM503349A	B-171
HH506300	4T-HH506310 ~ 4T-HH506349	B-173
LM506800	4T-JLM506810 ~ 4T-JLM506849	B-175
LM508700	4T-JLM508710 ~ 4T-JLM508748	B-177
M511900	4T-JM511910 ~ 4T-JM511946	B-179
M515600	4T-JM515610 ~ 4T-JM515649	B-185
HM516400	4T-HM516410 ~ 4T-HM516448	B-183,185
HM516800	4T-JHM516810 ~ 4T-JHM516849	B-187
LM522500	4T-LM522510 ~ 4T-LM522548	B-189
HM522600	4T-JHM522610 ~ 4T-JHM522649	B-191
HM534100	4T-JHM534110 ~ 4T-JHM534149	B-193
LM603000	4T-LM603011 ~ 4T-LM603049	B-171
L610500	4T-L610510 ~ 4T-L610549	B-179
M612900	4T-JM612910 ~ 4T-JM612949	B-181
HM61700	4T-HM617010 ~ 4T-HM617049	B-187
L630300	4T-L630310 ~ 4T-L630349	B-193
LL639200	4T-LL639210 ~ 4T-LL639249	B-193
LM704600	4T-JLM704610 ~ 4T-JLM704649	B-173
LM710900	4T-JLM710910 ~ 4T-JLM710949	B-179
LM714100	4T-JLM714110 ~ 4T-JLM714149	B-183
M714200	4T-JM714210 ~ 4T-JM714249	B-183
H715300	4T-H714311 ~ 4T-H715348	B-179,181,183
M716600	4T-JM716610 ~ 4T-JM716648	B-187
M718100	4T-JM718110 ~ 4T-JM718149	B-187
M719100	4T-JM719113 ~ 4T-JM719149	B-187
M720200	4T-JM720210 ~ 4T-JM720249	B-189
L724300	4T-JL724314 ~ 4T-JL724348	B-191
M736100	4T-JM736110 ~ 4T-JM736149	B-193
M738200	4T-JM738210 ~ 4T-JM738249A	B-193
HM801300	4T-HM801310 ~ 4T-HM801349	B-167
M802000	4T-M802011 ~ 4T-M802048	B-169

Inch Tapered Roller Bearings index

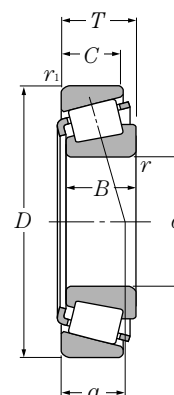
Series number	Cone or cup number is between	Page of bearing dimension table
HM803100	4T-HM803110 ~ 4T-HM803149	B-169
M804000	4T-M804010 ~ 4T-M804048	B-171
HM804800	4T-HM804810 ~ 4T-HM804849	B-169,173
LM806600	4T-LM806610 ~ 4T-LM806649	B-175
HM807000	4T-HM807010 ~ 4T-HM807049	B-171,173,175
L812100	4T-L812111 ~ 4T-L812148	B-181
LM813000	4T-JLM813010 ~ 4T-JLM813049	B-181
HM813800	4T-HM813810 ~ 4T-HM813844	B-177,179,181
L814700	4T-L814710 ~ 4T-L814749	B-183
LM814800	4T-LM814810 ~ 4T-LM814849	B-185
M822000	4T-JM822010 ~ 4T-JM822049	B-191
HM903200	4T-HM903210 ~ 4T-HM903249	B-169
M903300	4T-M903310 ~ 4T-M903345	B-169
HM907600	4T-HM907614 ~ 4T-HM907643	B-175
HM911200	4T-HM911210 ~ 4T-HM911245	B-175,179
H913800	4T-H913810 ~ 4T-JH913848	B-177,179,183
H917800	4T-H917810 ~ 4T-H917840	B-185
H924000	4T-H924010 ~ 4T-H924045	B-191
HM926700	4T-HM926710 ~ 4T-HM926747	B-191



How to use the Index

For example, when accessing the dimension tables with the bearing numbers 4T-HM911244 and 4T-HM911216, we see that the inner ring and outer ring bearing numbers are in the range 4T-HM911210 ~ 4T-HM911245. Therefore, information about this bearing will be on either page B-175 or B-179.

Metric system sizes

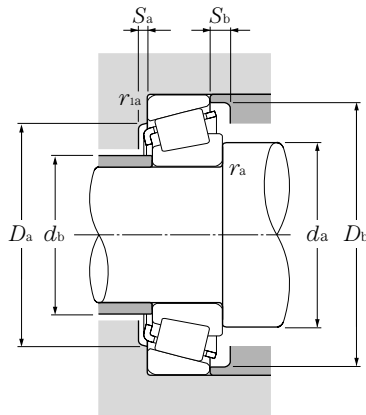


d 15 ~ 30mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
							dynamic	static	dynamic	static			
mm							kN		kgf		rpm		
d	D	T	B	C	r _{s min} ①	r _{ls min} ①	C _r	C _{or}	C _r	C _{or}	grease	oil	
15	42	14.25	13	11	1	1	23.2	20.8	2,370	2,120	9,900	13,000	4T-30302
17	40	13.25	12	11	1	1	20.5	20.3	2,090	2,070	9,900	13,000	4T-30203
	40	17.25	16	14	1	1	27.3	28.3	2,790	2,880	9,900	13,000	4T-32203
	40	17.25	16	14	1	1	26.2	28.2	2,670	2,870	9,900	13,000	4T-32203R®
	47	15.25	14	12	1	1	28.9	26.3	2,940	2,680	9,000	12,000	4T-30303
20	42	15	15	12	0.6	0.6	24.9	27.9	2,540	2,840	9,500	13,000	4T-32004X
	47	15.25	14	12	1	1	28.2	28.7	2,870	2,930	8,800	12,000	4T-30204
	47	19.25	18	15	1	1	36.5	39.5	3,700	4,000	8,800	12,000	4T-32204
	52	16.25	16	13	1.5	1.5	35.5	34.0	3,600	3,450	8,000	11,000	4T-30304A
	52	16.25	16	12	1.5	1.5	31.0	31.0	3,150	3,150	7,600	10,000	4T-30304CA
	52	22.25	21	18	1.5	1.5	46.5	48.5	4,750	4,950	8,000	11,000	4T-32304
22	44	15	15	11.5	0.6	0.6	27.0	31.5	2,760	3,250	8,900	12,000	4T-320/22X
25	47	15	15	11.5	0.6	0.6	27.8	33.5	2,830	3,450	7,900	11,000	4T-32005X
	47	17	17	14	0.6	0.6	32.5	40.5	3,300	4,150	8,000	11,000	4T-33005
	52	16.25	15	13	1	1	31.5	34.0	3,200	3,450	7,300	9,800	4T-30205
	52	19.25	18	16	1	1	42.0	47.0	4,300	4,800	7,300	9,800	4T-32205
	52	19.25	18	15	1	1	38.0	43.0	3,850	4,400	7,300	9,800	4T-32205R®
	52	19.25	18	15	1	1	38.0	46.5	3,900	4,750	7,100	9,400	4T-32205C
	52	19.25	18	15	1	1	34.5	42.0	3,500	4,250	7,100	9,400	4T-32205CR®
	52	22	22	18	1	1	47.5	57.5	4,850	5,850	7,300	9,800	4T-33205
	62	18.25	17	15	1.5	1.5	48.5	47.5	4,950	4,850	6,700	8,900	4T-30305
	62	18.25	17	14	1.5	1.5	41.5	41.5	4,250	4,250	6,400	8,500	4T-30305C
	62	18.25	17	13	1.5	1.5	40.5	43.5	4,150	4,450	5,900	7,800	4T-30305D
	62	25.25	24	20	1.5	1.5	61.5	64.5	6,250	6,600	6,700	8,900	4T-32305
28	52	16	16	12	1	1	33.0	40.5	3,400	4,150	7,300	9,700	4T-320/28X
	58	24	24	19	1	1	58.0	69.5	5,950	7,100	6,700	8,900	4T-332/28
30	55	17	17	13	1	1	37.5	46.0	3,800	4,700	6,900	9,200	4T-32006X
	55	20	20	16	1	1	42.5	54.0	4,300	5,500	6,900	9,200	4T-33006
	62	17.25	16	14	1	1	43.5	48.0	4,450	4,900	6,300	8,400	4T-30206
	62	21.25	20	17	1	1	54.5	64.0	5,600	6,550	6,300	8,400	4T-32206
	62	21.25	20	17	1	1	50.0	60.0	5,100	6,100	6,100	8,100	4T-32206C
	62	25	25	19.5	1	1	65.0	77.0	6,600	7,850	6,300	8,400	4T-33206
	72	20.75	19	16	1.5	1.5	60.0	61.0	6,100	6,200	5,700	7,600	4T-30306

① Minimal allowable dimension for chamfer dimension r or r_1 .

② This bearing does not incorporate the subunit dimensions.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

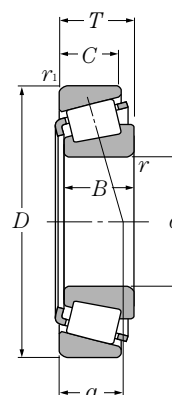
$$P_{or} = 0.5F_r + Y_0F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_0 see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass
	d_a	d_b	D_a		D_b		S_a	S_b	r_{as}			r_{1as}	Y_2	
	min	max	max	min	min	min	min	max	max			a		e
2FB	20.5	22	36.5	35	38	2	3	1	1	9.5	0.29	2.11	1.16	0.098
2DB	22.5	23	34.5	33	37	2	2	1	1	9.5	0.35	1.74	0.96	0.08
2DD	22.5	23	34.5	33	37	2	3	1	1	11.5	0.31	1.92	1.06	0.102
	22.5	22	34.5	33	36.5	2	3	1	1	11	0.35	1.74	0.96	0.104
2FB	22.5	24	41.5	40	42	3	3.5	1	1	10.5	0.29	2.11	1.16	0.134
3CC	24.5	25	37.5	36	39	3	3	0.6	0.6	10.5	0.37	1.60	0.88	0.097
2DB	25.5	27	41.5	40	44	2	3	1	1	11.5	0.35	1.74	0.96	0.127
2DD	25.5	26	41.5	39	43	2	4	1	1	12.5	0.33	1.81	1.00	0.16
2FB	28.5	28	43.5	42.5	47.5	3	3	1.5	1.5	10.5	0.30	2.00	1.10	0.176
	28.5	27.5	43.5	39.5	48	3	4	1.5	1.5	13.5	0.55	1.10	0.60	0.17
2FD	28.5	27	43.5	43	47	3	4	1.5	1.5	14	0.30	2.00	1.10	0.245
3CC	26.5	27	39.5	38	41	3	3.5	0.6	0.6	11	0.40	1.51	0.83	0.106
4CC	29.5	30	42.5	40	44	3	3.5	0.6	0.6	12	0.43	1.39	0.77	0.114
2CE	29.5	29	42.5	40	43.5	3	3	0.6	0.6	11	0.29	2.07	1.14	0.13
3CC	30.5	31	46.5	44	48	2	3	1	1	12.5	0.37	1.60	0.88	0.154
2CD	30.5	31	46.5	43	48	2	4	1	1	14	0.36	1.67	0.92	0.187
	30.5	31	46.5	43	48	2	4	1	1	13.5	0.37	1.60	0.88	0.181
5CD	30.5	30	46.5	42	49	2	4	1	1	16	0.58	1.03	0.57	0.19
	30.5	30	46.5	42	49	2	4	1	1	16	0.55	1.10	0.60	0.19
2DE	30.5	30	46.5	43	49	4	4	1	1	14	0.35	1.71	0.94	0.217
2FB	33.5	34	53.5	52	57	3	3	1.5	1.5	13	0.30	2.00	1.10	0.272
	33.5	34	53.5	48	58	3	4	1.5	1.5	16	0.55	1.10	0.60	0.264
7FB	33.5	34	53.5	45.5	58.5	3	5	1.5	1.5	20	0.83	0.73	0.40	0.284
2FD	33.5	32	53.5	52	57	3	5	1.5	1.5	16	0.30	2.00	1.10	0.381
4CC	33.5	33	46.5	45	49	3	4	1	1	12.5	0.43	1.39	0.77	0.146
2DE	33.5	34	52.5	49	55	5	5	1	1	15.5	0.34	1.77	0.97	0.293
4CC	35.5	35	49.5	48	52	3	4	1	1	13.5	0.43	1.39	0.77	0.166
2CE	35.5	35.5	49.5	46.5	52	3	4	1	1	13	0.29	2.06	1.13	0.201
3DB	35.5	37	56.5	53	57	2	3	1	1	13.5	0.37	1.60	0.88	0.241
3DC	35.5	37	56.5	52	58	2.5	4	1	1	15.5	0.37	1.60	0.88	0.301
5DC	35.5	35	56.5	49	59.5	2	5	1	1	18.5	0.56	1.07	0.59	0.294
2DE	35.5	36	56.5	53	59	5	5.5	1	1	16	0.34	1.76	0.97	0.344
2FB	38.5	40	63.5	62	66	3	4.5	1.5	1.5	15	0.31	1.90	1.05	0.408

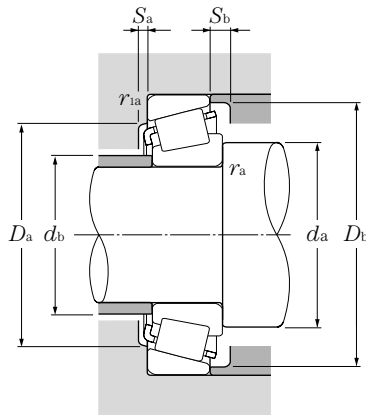
Metric system sizes



d 30 ~ 45mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
d	D	T	mm		r _{s min} ❶	r _{ls min} ❶	dynamic	static	dynamic	static	grease	oil	
			B	C			kN		kgf				
							C _r	C _{or}	C _r	C _{or}			
30	72	20.75	19	15	1.5	1.5	58.5	58.5	6,000	5,950	5,500	7,300	4T-30306CA
	72	20.75	19	14	1.5	1.5	48.5	51.5	4,950	5,250	5,000	6,700	4T-30306D
	72	28.75	27	23	1.5	1.5	81.0	90.0	8,250	9,150	5,700	7,600	4T-32306
	72	28.75	27	23	1.5	1.5	79.0	94.0	8,050	9,550	5,500	7,300	* 4T-32306C
	72	28.75	27	23	1.5	1.5	70.0	88.5	7,150	9,050	5,500	7,300	4T-32306CR [®]
32	58	17	17	13	1	1	37.0	46.5	3,750	4,750	6,600	8,700	4T-320/32X
	65	26	26	20.5	1	1	70.5	85.0	7,200	8,650	6,000	8,000	4T-332/32
	75	29.75	28	23	1.5	1.5	84.0	102	8,600	10,400	5,200	6,900	4T-323/32C
35	55	14	14	11.5	0.6	0.6	27.4	37.5	2,790	3,850	6,800	9,000	32907XU
	62	18	18	14	1	1	41.5	52.5	4,250	5,350	6,100	8,100	4T-32007X
	62	21	21	17	1	1	50.5	66.5	5,150	6,800	6,100	8,100	4T-33007
	72	18.25	17	15	1.5	1.5	55.5	61.5	5,650	6,250	5,500	7,400	4T-30207
	72	24.25	23	19	1.5	1.5	72.5	87.0	7,400	8,900	5,500	7,400	4T-32207
	72	24.25	23	19	1.5	1.5	68.0	85.5	6,950	8,750	5,300	7,100	4T-32207C
	72	24.25	23	18	1.5	1.5	62.0	78.5	6,300	8,000	5,300	7,100	4T-32207CR [®]
	72	28	28	22	1.5	1.5	87.5	109	8,900	11,200	5,500	7,400	4T-33207
	80	22.75	21	18	2	1.5	75.0	77.0	7,650	7,900	5,000	6,600	4T-30307
	80	22.75	21	17	2	1.5	66.5	68.5	6,750	7,000	4,800	6,400	4T-30307C
	80	22.75	21	15	2	1.5	63.5	70.0	6,450	7,100	4,400	5,800	4T-30307D
80	32.75	31	25	2	1.5	101	115	10,300	11,700	5,000	6,600	4T-32307	
80	32.75	31	25	2	1.5	93.0	117	9,500	12,000	4,800	6,400	4T-32307C	
40	62	15	15	12	0.6	0.6	32.5	48.0	3,350	4,900	5,900	7,800	32908XU
	68	19	19	14.5	1	1	50.0	65.5	5,100	6,650	5,300	7,100	4T-32008X
	68	22	22	18	1	1	59.5	82.5	6,050	8,400	5,300	7,100	4T-33008
	75	26	26	20.5	1.5	1.5	79.5	103	8,100	10,500	5,200	6,900	4T-33108
	80	19.75	18	16	1.5	1.5	61.0	67.0	6,250	6,850	4,900	6,600	4T-30208
	80	24.75	23	19	1.5	1.5	79.5	93.5	8,100	9,550	4,900	6,600	4T-32208
	80	32	32	25	1.5	1.5	103	132	10,500	13,400	4,900	6,600	4T-33208
	85	33	32.5	28	2.5	2	118	144	12,000	14,700	4,600	6,200	4T-T2EE040
	90	25.25	23	20	2	1.5	91.5	102	9,350	10,400	4,400	5,900	4T-30308
	90	25.25	23	19	2	1.5	83.0	87.0	8,450	8,900	4,200	5,600	4T-30308C
	90	25.25	23	17	2	1.5	77.0	85.5	7,850	8,700	3,900	5,200	4T-30308D
90	35.25	33	27	2	1.5	122	150	12,500	15,300	4,400	5,900	32308U	
90	35.25	33	27	2	1.5	110	140	11,300	14,300	4,200	5,600	4T-32308C	
45	68	15	15	12	0.6	0.6	33.5	51.5	3,450	5,250	5,300	7,000	* 32909XU

❶ Minimal allowable dimension for chamfer dimension r or r_1 . ❷ This bearing does not incorporate the subunit dimensions.
Note: When selecting bearings with bearing numbers marked with " * ", please consult NTN Engineering.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

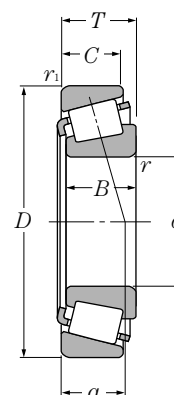
$$P_{or} = 0.5 F_r + Y_0 F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_0 see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass kg (approx.)
	d_a min	d_b max	D_a mm max min		D_b mm min	S_a min	S_b min	r_{as} max	r_{1as} max			a	e	
7FB 2FD 5FD	38.5	39.5	63.5	57	67	3	5.5	1.5	1.5	17.5	0.47	1.27	0.70	0.398
	38.5	39	63.5	55	68	3	6.5	1.5	1.5	23.5	0.83	0.73	0.40	0.398
	38.5	38	63.5	59	66	3	5.5	1.5	1.5	18.5	0.31	1.90	1.05	0.583
	38.5	37	63.5	57	68	2	5.5	1.5	1.5	23	0.55	1.10	0.60	0.592
	38.5	37	63.5	57	67.5	2	5.5	1.5	1.5	23	0.61	0.99	0.54	0.594
4CC 2DE 5FD	37.5	38	52.5	50	55	3	4	1	1	14.5	0.45	1.32	0.73	0.181
	37.5	38	59.5	55	62	5	5.5	1	1	17	0.35	1.73	0.95	0.395
	40.5	39	66.5	61	71	3	6.5	1.5	1.5	23	0.55	1.10	0.60	0.659
2BD 4CC 2CE 3DB 3DC 5DC	39.5	40	50.5	48	52.5	2.5	2.5	0.6	0.6	10.5	0.29	2.06	1.13	0.121
	40.5	40	56.5	54	59	4	4	1	1	15.5	0.45	1.32	0.73	0.224
	40.5	40.5	56.5	52	59	3	4	1	1	14	0.31	1.97	1.08	0.263
	43.5	44	63.5	62	67	3	3	1.5	1.5	15	0.37	1.60	0.88	0.344
	43.5	43	63.5	61	67	3	5	1.5	1.5	17.5	0.37	1.60	0.88	0.457
	43.5	42	63.5	59	68	3	6	1.5	1.5	21.5	0.58	1.03	0.57	0.461
	43.5	42	63.5	59	68	3	6	1.5	1.5	20.5	0.55	1.10	0.60	0.461
2DE 2FB	43.5	42	63.5	61	68	5	6	1.5	1.5	18.5	0.35	1.70	0.93	0.531
	45	45	71.5	70	74	3	4.5	2	1.5	17	0.31	1.90	1.05	0.540
	45	44	71.5	63.5	75.5	3	5.5	2	1.5	20.5	0.55	1.10	0.60	0.517
7FB 2FE 5FE	45	44	71.5	62	76.5	3	7.5	2	1.5	26	0.83	0.73	0.40	0.530
	45	43	71.5	66	74	3	7.5	2	1.5	20.5	0.31	1.90	1.05	0.787
	45	43	71.5	66	76	3	7.5	2	1.5	25	0.55	1.10	0.60	0.797
2BC 3CD 2BE 2CE 3DB 3DC 2DE 2EE 2FB	44.5	45.5	57.5	54	58.5	3	3	0.6	0.6	11.5	0.29	2.07	1.14	0.161
	45.5	46	62.5	60	65	4	4.5	1	1	15	0.38	1.58	0.87	0.273
	45.5	46	62.5	60	64	2.5	4	1	1	15	0.28	2.12	1.17	0.312
	48.5	47	66.5	65	71	4	5.5	1.5	1.5	18	0.36	1.69	0.93	0.494
	48.5	49	71.5	69	75	3	3.5	1.5	1.5	16.5	0.37	1.60	0.88	0.435
	48.5	48	71.5	68	75	3	5.5	1.5	1.5	19	0.37	1.60	0.88	0.558
	48.5	47	71.5	67	76	5	7	1.5	1.5	21	0.36	1.68	0.92	0.728
	52	48	75	70	80	5	5	2	2	22.5	0.34	1.74	0.96	0.907
	50	52	81.5	77	82	3	5	2	1.5	19.5	0.35	1.74	0.96	0.769
	50	50	80	72	85.5	3.5	6	2	1.5	23	0.55	1.10	0.60	0.728
7FB 2FD 5FD	50	50	81.5	71	86.5	3	8	2	1.5	29.5	0.83	0.73	0.40	0.738
	50	50	81.5	73	82	3	8	2	1.5	23	0.35	1.74	0.96	1.08
	50	48	81.5	72	84	3	8	2	1.5	27.5	0.55	1.10	0.60	1.1
2BC	50	50	63.5	59.5	64.5	3	3	0.6	0.6	12	0.32	1.88	1.04	0.188

Metric system sizes

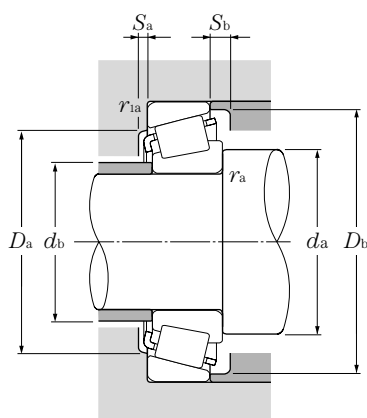


d 45 ~ 60mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
d	D	T	mm		$r_{s \min}$ ①	$r_{ls \min}$ ①	dynamic	static	dynamic	static	grease	oil	
			B	C			kN		kgf				
							C_r	C_{or}	C_r	C_{or}			
45	75	20	20	15.5	1	1	57.5	76.5	5,850	7,800	4,800	6,400	4T-32009X
	75	24	24	19	1	1	66.0	93.5	6,750	9,550	4,800	6,400	4T-33009
	80	26	26	20.5	1.5	1.5	84.5	115	8,650	11,700	4,700	6,200	4T-33109
	85	20.75	19	16	1.5	1.5	67.5	78.5	6,900	8,000	4,400	5,900	4T-30209
	85	24.75	23	19	1.5	1.5	82.0	100	8,350	10,200	4,400	5,900	4T-32209
	85	32	32	25	1.5	1.5	107	141	10,900	14,400	4,400	5,900	4T-33209
	100	27.25	25	22	2	1.5	111	126	11,300	12,800	4,000	5,300	4T-30309
	100	27.25	25	18	2	1.5	96.0	109	9,800	11,100	3,500	4,600	4T-30309D
100	38.25	36	30	2	1.5	154	191	15,700	19,500	4,000	5,300	32309U	
50	72	15	15	12	0.6	0.6	35.5	57.0	3,650	5,800	4,700	6,300	* 32910XU
	72	15	14	12	0.6	0.6	31.5	50.5	3,200	5,150	4,700	6,300	32910 [®]
	80	20	20	15.5	1	1	62.5	88.0	6,400	9,000	4,400	5,800	4T-32010X
	80	24	24	19	1	1	69.5	103	7,100	10,500	4,400	5,800	4T-33010
	85	26	26	20	1.5	1.5	86.5	121	8,850	12,400	4,200	5,600	4T-33110
	90	21.75	20	17	1.5	1.5	77.0	93.0	7,850	9,450	4,000	5,300	4T-30210
	90	24.75	23	19	1.5	1.5	87.5	109	8,900	11,100	4,000	5,300	4T-32210
	90	32	32	24.5	1.5	1.5	115	158	11,700	16,100	4,000	5,300	4T-33210
	100	36	35	30	2.5	2.5	151	190	15,400	19,400	3,800	5,100	4T-T2ED050
	105	32	29	22	3	3	107	132	10,900	13,500	3,400	4,500	4T-T7FC050
	110	29.25	27	23	2.5	2	133	152	13,500	15,500	3,600	4,800	4T-30310
110	29.25	27	19	2.5	2	113	130	11,600	13,300	3,200	4,200	4T-30310D	
110	42.25	40	33	2.5	2	184	232	18,700	23,600	3,600	4,800	32310U	
55	80	17	17	14	1	1	44.5	73.5	4,550	7,500	4,300	5,700	32911XU
	90	23	23	17.5	1.5	1.5	80.5	118	8,200	12,000	4,000	5,400	4T-32011X
	90	27	27	21	1.5	1.5	91.5	138	9,350	14,100	4,000	5,400	4T-33011
	95	30	30	23	1.5	1.5	111	155	11,300	15,800	3,900	5,200	4T-33111
	100	22.75	21	18	2	1.5	93.0	111	9,500	11,300	3,600	4,900	4T-30211
	100	26.75	25	21	2	1.5	108	134	11,000	13,700	3,600	4,900	4T-32211
	100	35	35	27	2	1.5	138	188	14,100	19,100	3,600	4,900	4T-33211
	120	31.5	29	25	2.5	2	155	179	15,800	18,300	3,300	4,400	4T-30311
	120	31.5	29	21	2.5	2	132	154	13,500	15,700	2,900	3,800	4T-30311D
120	45.5	43	35	2.5	2	215	275	21,900	28,000	3,300	4,400	32311U	
60	85	17	17	14	1	1	51.0	83.0	5,200	8,450	4,000	5,300	32912XA [®]
	95	23	23	17.5	1.5	1.5	82.0	123	8,350	12,500	3,700	4,900	4T-32012X
	95	27	27	21	1.5	1.5	93.5	145	9,550	14,700	3,700	4,900	4T-33012
	100	30	30	23	1.5	1.5	113	164	11,600	16,700	3,600	4,700	4T-33112

① Minimal allowable dimension for chamfer dimension r or r_1 .

② This bearing does not incorporate the subunit dimensions.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

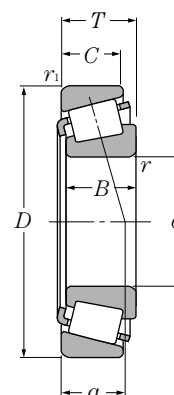
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass	
	mm														
	d_a	d_b	D_a	D_b	S_a	S_b	r_{as}	r_{1as}							
	min	max	max	min	min	min	max	max	a			e	Y_2	Y_o	kg (approx.)
3CC	50.5	51	69.5	67	72	4	4.5	1	1	16.5	0.39	1.53	0.84	0.346	
2CE	50.5	51	69.5	67	71	4	5	1	1	16	0.29	2.04	1.12	0.398	
3CE	53.5	52	71.5	69	77	4	5.5	1.5	1.5	19.5	0.38	1.57	0.86	0.542	
3DB	53.5	54	76.5	74	80	3	4.5	1.5	1.5	18	0.40	1.48	0.81	0.495	
3DC	53.5	53	76.5	73	81	3	5.5	1.5	1.5	20	0.40	1.48	0.81	0.607	
3DE	53.5	52	76.5	72	81	5	7	1.5	1.5	22	0.39	1.56	0.86	0.783	
2FB	55	59	91.5	86	93	3	5	2	1.5	21	0.35	1.74	0.96	1.01	
7FB	55	56	91.5	79	96	3	9	2	1.5	32.5	0.83	0.73	0.40	0.958	
2FD	55	56	91.5	82	93	3	8	2	1.5	25.5	0.35	1.74	0.96	1.46	
2BC	54.5	55	67.5	63.5	69	3	3	0.6	0.6	13.5	0.34	1.76	0.97	0.191	
	54.5	55	67.5	63.5	69.5	3	3	0.6	0.6	14.5	0.36	1.67	0.92	0.192	
3CC	55.5	56	74.5	72	77	4	4.5	1	1	17.5	0.42	1.42	0.78	0.366	
2CE	55.5	56	74.5	72	76	4	5	1	1	17.5	0.32	1.90	1.04	0.433	
3CE	58.5	56	76.5	74	82	4	6	1.5	1.5	20.5	0.41	1.46	0.80	0.58	
3DB	58.5	58	81.5	79	85	3	4.5	1.5	1.5	19.5	0.42	1.43	0.79	0.563	
3DC	58.5	58	81.5	78	85	3	5.5	1.5	1.5	21	0.42	1.43	0.79	0.648	
3DE	58.5	57	81.5	77	87	5	7.5	1.5	1.5	23.5	0.41	1.45	0.80	0.852	
2ED	62	59	88	84	94	6	6	2	2	25.5	0.34	1.75	0.96	1.31	
7FC	64	60	91	78	100	4	10	2.5	2.5	36.5	0.87	0.69	0.38	1.23	
2FB	62	65	100	95	102	3	6	2	2	23	0.35	1.74	0.96	1.31	
7FB	62	62	100	87	105	3	10	2	2	35	0.83	0.73	0.40	1.25	
2FD	62	62	100	90	102	3	9	2	2	28.5	0.35	1.74	0.96	1.92	
2BC	60.5	60.5	74.5	70.5	76.5	3	3	1	1	14.5	0.31	1.94	1.07	0.274	
3CC	63.5	63	81.5	81	86	4	5.5	1.5	1.5	20	0.41	1.48	0.81	0.563	
2CE	63.5	63	81.5	81	86	5	6	1.5	1.5	19.5	0.31	1.92	1.06	0.643	
3CE	63.5	62	86.5	83	91	5	7	1.5	1.5	22	0.37	1.60	0.88	0.846	
3DB	65	64	91.5	88	94	4	4.5	2	1.5	21	0.40	1.48	0.81	0.74	
3DC	65	63	91.5	87	95	4	5.5	2	1.5	22.5	0.40	1.48	0.81	0.876	
3DE	65	62	91.5	85	96	6	8	2	1.5	25.5	0.40	1.50	0.83	1.15	
2FB	67	71	110	104	111	4	6.5	2	2	24.5	0.35	1.74	0.96	1.66	
7FB	67	68	110	94	113	4	10.5	2	2	38	0.83	0.73	0.40	1.59	
2FD	67	68	110	99	111	4	10.5	2	2	30.5	0.35	1.74	0.96	2.44	
4CC	65.5	65.5	79.5	76.5	82	3	3	1	1	15.5	0.33	1.80	0.99	0.296	
2CE	68.5	67	86.5	85	91	4	5.5	1.5	1.5	21	0.43	1.39	0.77	0.576	
3CE	68.5	67	86.5	85	90	5	6	1.5	1.5	20.5	0.33	1.83	1.01	0.684	
3CE	68.5	67	91.5	88	96	5	7	1.5	1.5	23.5	0.40	1.51	0.83	0.912	

Note: When selecting bearings with bearing numbers marked with " * ", please consult NTN Engineering.

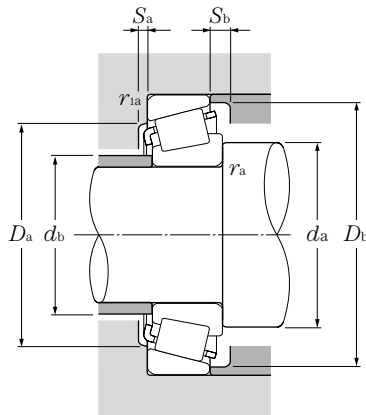
Metric system sizes



d 60 ~ 75mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
d	D	T	mm				dynamic	static	dynamic	static	grease	oil	
			B	C	r _{s min} ①	r _{ls min} ①	kN		kgf				
							C _r	C _{or}	C _r	C _{or}			
60	110	23.75	22	19	2	1.5	105	125	10,700	12,700	3,400	4,500	4T-30212
	110	29.75	28	24	2	1.5	130	164	13,200	16,800	3,400	4,500	32212U
	110	38	38	29	2	1.5	161	223	16,400	22,700	3,400	4,500	33212U
	115	40	39	33	2.5	2.5	188	249	19,200	25,400	3,200	4,300	4T-T2EE060
	125	37	33.5	26	3	3	145	186	14,800	18,900	2,800	3,700	4T-T7FC060
	130	33.5	31	26	3	2.5	180	210	18,300	21,400	3,000	4,000	30312U
	130	33.5	31	22	3	2.5	150	176	15,300	17,900	2,700	3,600	4T-30312D
	130	48.5	46	37	3	2.5	244	315	24,900	32,000	3,000	4,000	32312U
65	90	17	17	14	1	1	48.5	85.0	4,900	8,700	3,700	4,900	32913XU
	100	23	23	17.5	1.5	1.5	83.0	128	8,450	13,000	3,400	4,600	4T-32013X
	100	27	27	21	1.5	1.5	97.5	156	9,950	16,000	3,400	4,600	4T-33013
	110	34	34	26.5	1.5	1.5	144	211	14,700	21,500	3,300	4,400	4T-33113
	120	24.75	23	20	2	1.5	123	148	12,500	15,000	3,100	4,200	4T-30213
	120	32.75	31	27	2	1.5	159	206	16,200	21,000	3,100	4,200	32213U
	120	41	41	32	2	1.5	195	265	19,900	27,100	3,100	4,200	33213U
	140	36	33	28	3	2.5	203	238	20,700	24,300	2,800	3,700	30313U
	140	36	33	23	3	2.5	173	204	17,700	20,900	2,500	3,300	4T-30313D
	140	51	48	39	3	2.5	273	350	27,800	36,000	2,800	3,700	32313U
70	100	20	20	16	1	1	68.5	110	7,000	11,200	3,400	4,600	32914XU
	110	25	25	19	1.5	1.5	105	160	10,700	16,400	3,200	4,200	4T-32014X
	110	31	31	25.5	1.5	1.5	127	204	12,900	20,800	3,200	4,200	4T-33014
	125	26.25	24	21	2	1.5	131	162	13,400	16,500	2,900	3,900	4T-30214
	125	33.25	31	27	2	1.5	166	220	16,900	22,400	2,900	3,900	32214U
	125	41	41	32	2	1.5	201	282	20,500	28,700	2,900	3,900	33214U
	140	39	35.5	27	3	3	173	231	17,600	23,500	2,400	3,200	4T-T7FC070
	150	38	35	30	3	2.5	230	272	23,400	27,800	2,600	3,500	30314U
	150	38	35	25	3	2.5	193	229	19,600	23,300	2,300	3,000	4T-30314D
	150	54	51	42	3	2.5	310	405	31,500	41,000	2,600	3,500	32314U
75	105	20	20	16	1	1	69.5	114	7,100	11,600	3,200	4,300	32915XU
	115	25	25	19	1.5	1.5	106	167	10,800	17,000	3,000	4,000	32015XU
	115	31	31	25.5	1.5	1.5	111	186	11,300	19,000	3,000	4,000	33015U
	130	27.25	25	22	2	1.5	139	175	14,200	17,900	2,700	3,600	4T-30215
	130	33.25	31	27	2	1.5	168	224	17,100	22,800	2,700	3,600	32215U
	130	41	41	31	2	1.5	208	298	21,200	30,500	2,700	3,600	33215U
	160	40	37	31	3	2.5	255	305	26,000	31,000	2,400	3,200	30315U
	160	40	37	26	3	2.5	215	256	21,900	26,100	2,100	2,800	30315DU

① Minimal allowable dimension for chamfer dimension r or r_1 .



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

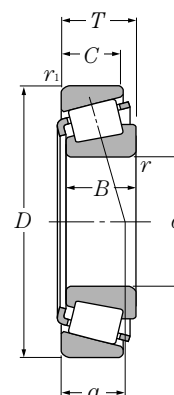
$$P_{or} = 0.5 F_r + Y_o F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a		D_b		S_a	S_b	r_{as}			r_{1as}	Y_2	
	min	max	max	min	min	min	min	max	max	a	e			
3EB	70	70	101.5	96	103	4	4.5	2	1.5	22	0.40	1.48	0.81	0.949
3EC	70	69	101.5	95	104	4	5.5	2	1.5	25	0.40	1.48	0.81	1.18
3EE	70	69	101.5	93	105	6	9	2	1.5	27.5	0.40	1.48	0.82	1.55
2EE	72	70	103	98	109	6	7	2	2	28.5	0.33	1.80	0.99	1.86
7FC	74	72	111	94	119	4	11	2.5	2.5	42	0.82	0.73	0.40	2
2FB	74	77	118	112	120	4	7.5	2.5	2	26.5	0.35	1.74	0.96	2.06
7FB	74	73	118	103	124	4	11.5	2.5	2	40.5	0.83	0.73	0.40	1.97
2FD	74	74	118	107	120	4	11.5	2.5	2	32	0.35	1.74	0.96	3.02
2BC	70.5	70	84.5	80	86.5	3	3	1	1	16.5	0.35	1.70	0.93	0.315
4CC	73.5	72	91.5	90	97	4	5.5	1.5	1.5	22.5	0.46	1.31	0.72	0.63
2CE	73.5	72	91.5	89	96	5	6	1.5	1.5	21.5	0.35	1.72	0.95	0.732
3DE	73.5	73	101.5	96	106	6	7.5	1.5	1.5	26	0.39	1.55	0.85	1.28
3EB	75	77	111.5	106	113	4	4.5	2	1.5	23.5	0.40	1.48	0.81	1.18
3EC	75	75	111.5	104	115	4	5.5	2	1.5	27	0.40	1.48	0.81	1.58
3EE	75	74	111.5	102	115	7	9	2	1.5	29.5	0.39	1.54	0.85	1.98
2GB	79	83	128	122	130	4	8	2.5	2	28.5	0.35	1.74	0.96	2.55
7GB	79	79	128	111	133	4	13	2.5	2	44	0.83	0.73	0.40	2.42
2GD	79	80	128	117	130	4	12	2.5	2	34.5	0.35	1.74	0.96	3.66
2BC	75.5	75	94.5	90	96	4	4	1	1	18	0.32	1.90	1.05	0.487
4CC	78.5	78	101.5	98	105	5	6	1.5	1.5	24	0.43	1.38	0.76	0.848
2CE	78.5	79	101.5	99	105	5	5.5	1.5	1.5	22.5	0.28	2.11	1.16	1.07
3EB	80	81	116.5	110	118	4	5	2	1.5	25.5	0.42	1.43	0.79	1.26
3EC	80	80	116.5	108	119	4	6	2	1.5	28.5	0.42	1.43	0.79	1.68
3EE	80	79	116.5	107	120	7	9	2	1.5	31	0.41	1.47	0.81	2.1
7FC	84	82	126	106	135	5	12	2.5	2.5	47.5	0.87	0.69	0.38	2.61
2GB	84	89	138	130	140	4	8	2.5	2	30	0.35	1.74	0.96	3.06
7GB	84	84	138	118	142	4	13	2.5	2	47	0.83	0.73	0.40	2.92
2GD	84	86	138	125	140	4	12	2.5	2	36.5	0.35	1.74	0.96	4.46
2BC	80.5	80	99.5	94	101.5	4	4	1	1	19	0.33	1.80	0.99	0.511
4CC	83.5	83	106.5	103	110	5	6	1.5	1.5	25.5	0.46	1.31	0.72	0.909
2CE	83.5	85	106.5	101	110.5	6	5.5	1.5	1.5	23	0.30	2.01	1.11	1.11
4DB	85	85	121.5	115	124	4	5	2	1.5	27	0.44	1.38	0.76	1.41
4DC	85	85	121.5	114	125	4	6	2	1.5	30	0.44	1.38	0.76	1.74
3EE	85	83	121.5	111	125	7	10	2	1.5	32	0.43	1.40	0.77	2.2
2GB	89	95	148	139	149	4	9	2.5	2	32	0.35	1.74	0.96	3.57
7GB	89	91	148	127	151	6	14	2.5	2	50	0.83	0.73	0.40	3.47

Metric system sizes

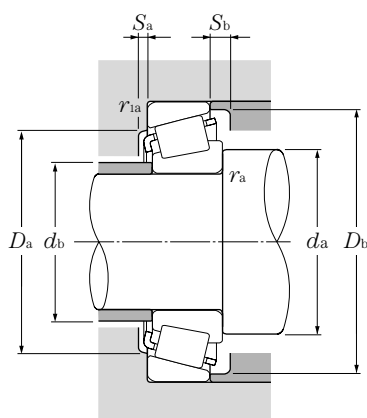


d 75 ~ 95mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
d	D	T	mm		r _{s min} ①	r _{ls min} ①	dynamic	static	dynamic	static	grease	oil	
			B	C			kN		kgf				
							C _r	C _{or}	C _r	C _{or}			
75	160	58	55	45	3	2.5	355	470	36,000	47,500	2,400	3,200	32315U
80	110	20	20	16	1	1	72.0	121	7,350	12,400	3,000	4,000	32916XU
	125	29	29	22	1.5	1.5	139	216	14,200	22,000	2,800	3,700	32016XU
	125	36	36	29.5	1.5	1.5	173	284	17,600	29,000	2,800	3,700	33016U
	140	28.25	26	22	2.5	2	160	200	16,300	20,400	2,500	3,400	30216U
	140	35.25	33	28	2.5	2	199	265	20,300	27,000	2,500	3,400	32216U
	140	46	46	35	2.5	2	250	365	25,500	37,500	2,500	3,400	33216U
	170	42.5	39	33	3	2.5	291	350	29,700	36,000	2,300	3,000	30316U
	170	42.5	39	27	3	2.5	236	283	24,100	28,900	2,000	2,700	30316DU
170	61.5	58	48	3	2.5	395	525	40,500	53,500	2,300	3,000	32316U	
85	120	23	23	18	1.5	1.5	94.0	157	9,600	16,100	2,800	3,800	32917XU
	130	29	29	22	1.5	1.5	142	224	14,400	22,900	2,600	3,500	32017XU
	130	36	36	29.5	1.5	1.5	176	296	18,000	30,000	2,600	3,500	33017U
	150	30.5	28	24	2.5	2	183	232	18,600	23,600	2,400	3,200	30217U
	150	38.5	36	30	2.5	2	224	300	22,900	30,500	2,400	3,200	32217U
	150	49	49	37	2.5	2	284	420	29,000	43,000	2,400	3,200	33217U
	180	44.5	41	34	4	3	305	365	31,000	37,000	2,100	2,900	30317U
	180	44.5	41	28	4	3	247	293	25,200	29,900	1,900	2,500	30317DU
180	63.5	60	49	4	3	405	525	41,000	53,500	2,100	2,900	32317U	
90	125	23	23	18	1.5	1.5	97.5	168	9,950	17,100	2,700	3,600	32918XU
	140	32	32	24	2	1.5	168	270	17,200	27,600	2,500	3,300	32018XU
	140	39	39	32.5	2	1.5	215	360	21,900	36,500	2,500	3,300	33018U
	160	32.5	30	26	2.5	2	208	267	21,200	27,200	2,200	3,000	30218U
	160	42.5	40	34	2.5	2	262	360	26,700	36,500	2,200	3,000	32218U
	190	46.5	43	36	4	3	335	405	34,500	41,500	2,000	2,700	30318U
	190	46.5	43	30	4	3	270	320	27,600	33,000	1,800	2,400	30318DU
	190	67.5	64	53	4	3	450	595	46,000	60,500	2,000	2,700	32318U
95	130	23	23	18	1.5	1.5	101	178	10,300	18,200	2,500	3,400	32919XU
	145	32	32	24	2	1.5	171	280	17,500	28,600	2,300	3,100	32019XU
	145	39	39	32.5	2	1.5	219	375	22,400	38,000	2,300	3,100	33019U
	170	34.5	32	27	3	2.5	226	290	23,000	29,600	2,100	2,800	30219U
	170	45.5	43	37	3	2.5	299	415	30,500	42,500	2,100	2,800	32219U
	200	49.5	45	38	4	3	365	445	37,500	45,500	1,900	2,500	* 30319U
	200	49.5	45	38	3	3	315	365	32,500	37,500	1,900	2,500	30319 [°]
	200	49.5	45	32	4	3	296	355	30,000	36,500	1,700	2,200	30319DU

① Minimal allowable dimension for chamfer dimension r or r_1 .

② This bearing does not incorporate the subunit dimensions.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

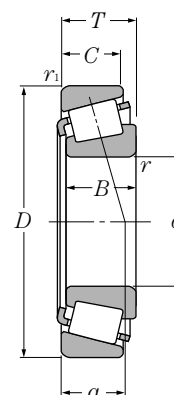
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass kg (approx.)
	d_a min	d_b max	D_a max	d_a min	D_b min	S_a min	S_b min	r_{as} max	r_{1as} max			e	Y_2	Y_o
2GD	89	91	148	133	149	4	13	2.5	2	39	0.35	1.74	0.96	5.35
2BC	85.5	85	104.5	99	106.5	4	4	1	1	20	0.35	1.71	0.94	0.54
3CC	88.5	89	116.5	112	120	6	7	1.5	1.5	27	0.42	1.42	0.78	1.28
2CE	88.5	89	116.5	112	119	6	6.5	1.5	1.5	25	0.28	2.16	1.19	1.6
3EB	92	91	130	124	132	4	6	2	2	27.5	0.42	1.43	0.79	1.72
3EC	92	90	130	122	134	4	7	2	2	31	0.42	1.43	0.79	2.18
3EE	92	89	130	119	135	7	11	2	2	35	0.43	1.41	0.78	2.92
2GB	94	102	158	148	159	4	9.5	2.5	2	34	0.35	1.74	0.96	4.41
7GB	94	97	158	134	159	6	15.5	2.5	2	53.5	0.83	0.73	0.40	4.11
2GD	94	98	158	142	159	4	13.5	2.5	2	41.5	0.35	1.74	0.96	6.41
2BC	93.5	92	111.5	111	115	4	5	1.5	1.5	21	0.33	1.83	1.01	0.773
4CC	93.5	94	121.5	117	125	6	7	1.5	1.5	28.5	0.44	1.36	0.75	1.35
2CE	93.5	94	121.5	118	125	6	6.5	1.5	1.5	26	0.29	2.06	1.13	1.7
3EB	97	97	140	132	141	5	6.5	2	2	30	0.42	1.43	0.79	2.14
3EC	97	96	140	130	142	5	8.5	2	2	33.5	0.42	1.43	0.79	2.75
3EE	97	95	140	128	144	7	12	2	2	37.5	0.42	1.43	0.79	3.58
2GB	103	107	166	156	167	5	10.5	3	2.5	35.5	0.35	1.74	0.96	5.2
7GB	103	103	166	143	169	6	16.5	3	2.5	56	0.83	0.73	0.40	4.85
2GD	103	102	166	150	167	5	14.5	3	2.5	43	0.35	1.74	0.96	7.15
2BC	98.5	96	116.5	112.5	120.5	4	5	1.5	1.5	22	0.34	1.75	0.96	0.817
3CC	100	100	131.5	125	134	6	8	2	1.5	30	0.42	1.42	0.78	1.79
2CE	100	100	131.5	127	135	7	6.5	2	1.5	28	0.27	2.23	1.23	2.18
3FB	102	103	150	140	150	5	6.5	2	2	32	0.42	1.43	0.79	2.66
3FC	102	102	150	138	152	5	8.5	2	2	36	0.42	1.43	0.79	3.49
2GB	108	113	176	165	177	5	10.5	3	2.5	37.5	0.35	1.74	0.96	6.03
7GB	108	109	176	151	179	6	16.5	3	2.5	59	0.83	0.73	0.40	5.66
2GD	108	108	176	157	177	5	14.5	3	2.5	45.5	0.35	1.74	0.96	8.57
2BC	103.5	101	121.5	117	125.5	4	5	1.5	1.5	23.5	0.36	1.68	0.92	0.851
4CC	105	105	136.5	130	140	6	8	2	1.5	31.5	0.44	1.36	0.75	1.83
2CE	105	104	136.5	131	139	7	6.5	2	1.5	28.5	0.28	2.16	1.19	2.27
3FB	109	110	158	149	159	5	7.5	2.5	2	34	0.42	1.43	0.79	3.07
3FC	109	108	158	145	161	5	8.5	2.5	2	39	0.42	1.43	0.79	4.3
2GB	113	118	186	172	186	5	11.5	3	2.5	40	0.35	1.74	0.96	6.98
	113	118	186	172	186	5	11.5	3	2.5	40	0.35	1.73	0.95	6.58
7GB	113	114	186	154	187	6	17.5	3	2.5	62.5	0.83	0.73	0.40	6.47

Note: When selecting bearings with bearing numbers marked with " * ", please consult NTN Engineering.

Metric system sizes

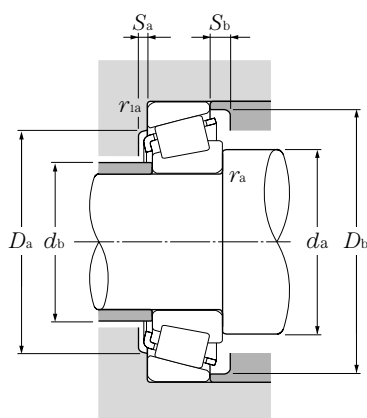


d 95 ~ 120mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
							dynamic	static	dynamic	static			
mm							kN		kgf		rpm		
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>r_s min</i> ^①	<i>r_{ls} min</i> ^①	<i>C_r</i>	<i>C_{or}</i>	<i>C_r</i>	<i>C_{or}</i>	grease	oil	
95	200	71.5	67	55	4	3	505	670	51,500	68,500	1,900	2,500	32319U
100	140	25	25	20	1.5	1.5	121	206	12,300	21,000	2,400	3,200	* 32920XU
	140	25	24	20	1.5	1.5	97.5	162	9,950	16,500	2,400	3,200	32920 [®]
	145	24	22.5	17.5	3	3	107	153	10,900	15,600	1,800	2,400	4T-T4CB100
	150	32	32	24	2	1.5	170	281	17,300	28,600	2,200	3,000	32020XU
	150	39	39	32.5	2	1.5	224	390	22,800	39,500	2,200	3,000	33020U
	180	37	34	29	3	2.5	258	335	26,300	34,500	2,000	2,700	30220U
	180	49	46	39	3	2.5	330	465	33,500	47,500	2,000	2,700	32220U
	215	51.5	47	39	4	3	410	500	41,500	51,000	1,800	2,400	30320U
	215	51.5	47	39	3	3	345	400	35,000	40,500	1,800	2,400	30320 [®]
	215	56.5	51	35	4	3	355	435	36,000	44,000	1,800	2,400	31320XU
215	77.5	73	60	4	3	570	770	58,500	78,500	1,800	2,400	32320U	
105	145	25	25	20	1.5	1.5	126	219	12,800	22,400	2,300	3,000	32921XA [®]
	160	35	35	26	2.5	2	201	335	20,500	34,000	2,100	2,800	32021XU
	160	43	43	34	2.5	2	245	420	25,000	43,000	2,100	2,800	33021U
	190	39	36	30	3	2.5	287	380	29,300	38,500	1,900	2,500	30221U
	190	53	50	43	3	2.5	380	540	38,500	55,500	1,900	2,500	32221U
	225	53.5	49	41	4	3	435	530	44,500	54,500	1,700	2,300	* 30321U
	225	53.5	49	41	3	3	365	420	37,000	43,000	1,700	2,300	30321 [®]
	225	58	53	36	4	3	380	470	39,000	47,500	1,700	2,300	* 31321XU
225	81.5	77	63	4	3	610	825	62,500	84,500	1,700	2,300	32321U	
110	150	25	25	20	1.5	1.5	127	226	13,000	23,100	2,200	2,900	32922XA [®]
	170	38	38	29	2.5	2	236	390	24,000	39,500	2,000	2,700	32022XU
	170	47	47	37	2.5	2	288	500	29,400	51,000	2,000	2,700	33022U
	200	41	38	32	3	2.5	325	435	33,000	44,000	1,800	2,400	30222U
	200	56	53	46	3	2.5	420	605	43,000	62,000	1,800	2,400	32222U
	240	54.5	50	42	4	3	480	590	49,000	60,000	1,600	2,200	* 30322U
	240	54.5	50	42	3	3	400	465	40,500	47,000	1,600	2,200	30322 [®]
	240	63	57	38	4	3	430	535	44,000	54,500	1,600	2,200	31322XU
	240	84.5	80	65	4	3	705	970	72,000	98,500	1,600	2,200	* 32322U
	240	84.5	80	65	3	3	620	830	63,500	84,500	1,600	2,200	32322 [®]
120	165	29	29	23	1.5	1.5	162	294	16,500	30,000	2,000	2,600	* 32924XU
	165	29	27	23	1.5	1.5	118	205	12,000	20,900	2,000	2,600	32924 [®]
	180	38	38	29	2.5	2	245	420	25,000	43,000	1,800	2,500	32024XU
	215	43.5	40	34	3	2.5	345	470	35,500	48,000	1,700	2,200	30224U

① Minimal allowable dimension for chamfer dimension r or r_1 .

② This bearing does not incorporate the subunit dimensions.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

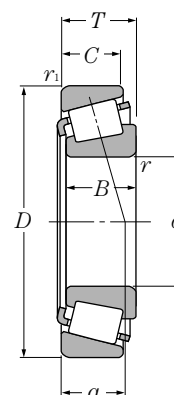
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass
	d_a	d_b	D_a		D_b		S_a	S_b	r_{as}			r_{1as}	Y_2	
	min	max	max	min	min	min	min	max	max			a		e
2GD	113	113	186	166	186	5	16.5	3	2.5	49	0.35	1.74	0.96	10.1
2CC	108.5	107.5	131.5	127.5	135.5	4	5	1.5	1.5	24.5	0.33	1.82	1.00	1.14
	108.5	107.5	131.5	127.5	135.5	4	5	1.5	1.5	25	0.35	1.73	0.95	1.08
4CB	114	109	131	130	140	4	6.5	2.5	2.5	30	0.47	1.27	0.70	1.15
4CC	110	109	141.5	134	144	6	8	2	1.5	32.5	0.46	1.31	0.72	1.91
2CE	110	108	141.5	135	143	7	6.5	2	1.5	29.5	0.29	2.09	1.15	2.37
3FB	114	116	168	157	168	5	8	2.5	2	36	0.42	1.43	0.79	3.78
3FC	114	114	168	154	171	5	10	2.5	2	41.5	0.42	1.43	0.79	5.12
2GB	118	127	201	184	200	5	12.5	3	2.5	41.5	0.35	1.74	0.96	8.56
	118	127	201	184	200	5	12.5	3	2.5	42	0.35	1.73	0.95	7.72
7GB	118	121	201	168	202	7	21.5	3	2.5	69	0.83	0.73	0.40	8.67
2GD	118	121	201	177	200	5	17.5	3	2.5	53	0.35	1.74	0.96	12.7
4DC	113.5	113.5	136.5	131.5	140.5	5	5	1.5	1.5	25	0.34	1.76	0.97	1.20
	117	116	150	143	154	6	9	2	2	34.5	0.44	1.35	0.74	2.42
2DE	117	116	150	145	153	7	9	2	2	31	0.28	2.12	1.17	3.00
3FB	119	122	178	165	178	6	9	2.5	2	38	0.42	1.43	0.79	4.39
3FC	119	119	178	161	180	6	10	2.5	2	44	0.42	1.43	0.79	6.25
2GB	123	132	211	193	209	6	12.5	3	2.5	43.5	0.35	1.74	0.96	9.79
	123	132	211	193	209	6	12.5	3	2.5	43.5	0.35	1.73	0.95	8.93
7GB	123	126	211	176	211	7	22	3	2.5	71.5	0.83	0.73	0.40	9.68
2GD	123	128	211	185	209	6	18.5	3	2.5	55	0.35	1.74	0.96	14.5
4DC	118.5	117.5	141.5	137	145.5	5	5	1.5	1.5	26.5	0.36	1.69	0.93	1.23
	122	122	160	152	163	7	9	2	2	36.5	0.43	1.39	0.77	3.07
2DE	122	121	160	152	161	7	10	2	2	33.5	0.29	2.09	1.15	3.80
3FB	124	129	188	174	188	6	9	2.5	2	40	0.42	1.43	0.79	5.18
3FC	124	126	188	170	190	6	10	2.5	2	47	0.42	1.43	0.79	7.43
2GB	128	141	226	206	222	6	12.5	3	2.5	45.5	0.35	1.74	0.96	11.4
	128	141	226	206	222	6	12.5	3	2.5	44	0.35	1.73	0.95	10.5
7GB	128	135	226	188	224	7	25	3	2.5	76	0.83	0.73	0.40	11.9
2GD	128	135	226	198	222	6	19.5	3	2.5	57.5	0.35	1.74	0.96	18.0
	128	135	226	198	222	6.5	19.5	3	2.5	56	0.35	1.73	0.95	16.9
2CC	128.5	128.5	156.5	150	160	6	6	1.5	1.5	29.5	0.35	1.72	0.95	1.77
	128.5	130.5	156.5	147.5	159.5	6	6	1.5	1.5	31	0.37	1.60	0.88	1.63
4DC	132	131	170	161	173	7	9	2	2	39	0.46	1.31	0.72	3.25
4FB	134	140	203	187	203	6	9.5	2.5	2	44	0.44	1.38	0.76	6.23

Note: When selecting bearings with bearing numbers marked with " * ", please consult NTN Engineering.

Metric system sizes

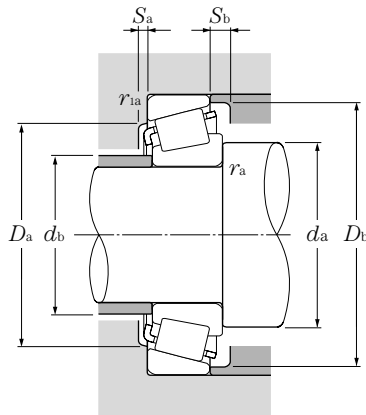


d 120 ~ 170mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
d	D	T	mm		r _{s min} ①	r _{ls min} ①	dynamic	static	dynamic	static	grease	oil	
			B	C			kN		kgf				
							C _r	C _{or}	C _r	C _{or}			
120	215	61.5	58	50	3	2.5	460	680	47,000	69,500	1,700	2,200	32224U
	260	59.5	55	46	4	3	560	695	57,000	71,000	1,500	2,000	30324U
	260	59.5	55	46	3	3	465	550	47,500	56,000	1,500	2,000	30324°
	260	68	62	42	4	3	515	655	52,500	67,000	1,500	2,000	31324XU
	260	90.5	86	69	4	3	815	1,130	83,000	116,000	1,500	2,000	32324U
130	180	32	32	25	2	1.5	194	350	19,800	36,000	1,800	2,400	* 32926XU
	180	32	30	26	2	2	142	252	14,500	25,700	1,800	2,400	32926°
	200	45	45	34	2.5	2	320	545	32,500	55,500	1,700	2,200	32026XU
	230	43.75	40	34	4	3	375	505	38,000	51,500	1,500	2,000	30226U
	230	67.75	64	54	4	3	530	815	54,000	83,000	1,500	2,000	32226U
	280	63.75	58	49	5	4	650	830	66,000	84,500	1,400	1,800	30326U
280	72	66	44	5	4	600	780	61,500	79,500	1,400	1,800	31326XU	
140	190	32	32	25	2	1.5	200	375	20,400	38,000	1,700	2,200	32928XU
	210	45	45	34	2.5	2	330	580	33,500	59,500	1,600	2,100	32028XU
	250	45.75	42	36	4	3	420	570	43,000	58,500	1,400	1,900	* 30228U
	250	45.75	42	36	3	3	375	485	38,000	49,500	1,400	1,900	30228°
	250	71.75	68	58	4	3	610	920	62,500	94,000	1,400	1,900	32228U
	300	67.75	62	53	5	4	735	950	75,000	97,000	1,300	1,700	* 30328U
	300	67.75	62	53	4	4	640	780	65,000	80,000	1,300	1,700	30328°
	300	77	70	47	5	4	685	905	70,000	92,500	1,300	1,700	31328XU
150	210	38	38	30	2.5	2	268	490	27,300	50,000	1,600	2,100	32930XU
	225	48	48	36	3	2.5	370	655	37,500	67,000	1,400	1,900	32030XU
	270	49	45	38	4	3	450	605	46,000	61,500	1,300	1,700	30230U
	270	77	73	60	4	3	700	1 070	71,500	109,000	1,300	1,700	32230U
	320	72	65	55	5	4	825	1 070	84,000	109,000	1,200	1,600	* 30330U
	320	72	65	55	4	4	680	875	69,500	89,000	1,200	1,600	30330°
	320	82	75	50	5	4	775	1,030	79,000	105,000	1,200	1,600	31330XU
160	220	38	38	30	2.5	2	276	520	28,200	53,000	1,500	1,900	32932XU
	240	51	51	38	3	2.5	435	790	44,500	80,500	1,400	1,800	32032XU
	290	52	48	40	4	3	525	720	53,500	73,500	1,200	1,600	30232U
	290	84	80	67	4	3	890	1,420	90,500	145,000	1,200	1,600	32232U
	340	75	68	58	5	4	915	1,200	93,500	122,000	1,100	1,500	* 30332U
	340	75	68	58	4	4	755	975	77,000	99,500	1,100	1,500	30332°
170	230	38	38	30	2.5	2	286	560	29,200	57,000	1,400	1,800	32934XU

① Minimal allowable dimension for chamfer dimension r or r_1 .

② This bearing does not incorporate the subunit dimensions.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

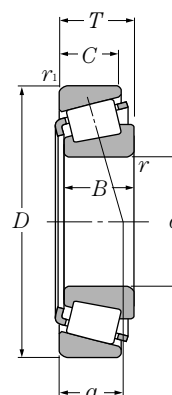
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial load factors		Mass
	d_a	d_b	D_a		D_b		S_a	S_b	r_{as}			r_{1as}	Y_2	Y_o
	min	max	max	min	min	min	min	max	max	a	e	(approx.)		
4FD 2GB	134	136	203	181	204	6	11.5	2.5	2	51.5	0.44	1.38	0.76	9.08
	138	152	246	221	239	6	13.5	3	2.5	49	0.35	1.74	0.96	14.2
	138	152	246	221	239	6	13.5	3	2.5	48.5	0.35	1.73	0.95	13.2
7GB	138	145	246	203	244	9	26	3	2.5	82.5	0.83	0.73	0.40	15.4
2GD	138	145	246	213	239	6	21.5	3	2.5	61.5	0.35	1.74	0.96	22.4
2CC	140	139	171.5	163.5	174	6	7	2	1.5	31.5	0.34	1.77	0.97	2.36
	140	139	170	163.5	174	6	6	2	2	34	0.37	1.60	0.88	2.22
4EC	142	144	190	178	192	8	11	2	2	43.5	0.43	1.38	0.76	4.96
4FB	148	152	216	203	218	7	9.5	3	2.5	45.5	0.44	1.38	0.76	7.25
4FD	148	146	216	193	219	7	13.5	3	2.5	57	0.44	1.38	0.76	11.2
2GB	152	164	262	239	255	8	14.5	4	3	53.5	0.35	1.74	0.96	17.4
7GB	152	152	262	218	261	9	28	4	3	87.5	0.83	0.73	0.40	19
2CC	150	150	181.5	177	184	6	6	2	1.5	34	0.36	1.67	0.92	2.51
	152	153	200	187	202	8	11	2	2	46	0.46	1.31	0.72	5.28
4FB	158	163	236	219	237	7	9.5	3	2.5	48.5	0.44	1.38	0.76	9.26
	158	163	236	219	237	7	9.5	2.5	2.5	47.5	0.43	1.39	0.77	8.37
4FD	158	158	236	210	238	9	13.5	3	2.5	61	0.44	1.38	0.76	14.1
2GB	162	179	282	251	273	9	14.5	4	3	56.5	0.35	1.74	0.96	21.2
7GB	162	179	282	252	273	9	14.5	4	3	57	0.35	1.73	0.95	20.4
	162	165	282	234	280	9	30	4	3	94	0.83	0.73	0.40	23
2DC	162	162	200	192	202	7	8	2	2	36.5	0.33	1.83	1.01	3.92
4EC	164	164	213	200	216	8	12	2.5	2	49.5	0.46	1.31	0.72	6.37
4GB	168	175	256	234	255	7	11	3	2.5	51.5	0.44	1.38	0.76	11.2
4GD	168	170	256	226	254	8	17	3	2.5	64.5	0.44	1.38	0.76	18.2
2GB	172	193	302	269	292	8	17	4	3	61	0.35	1.74	0.96	25.5
	172	193	302	269	292	8	17	4	3	62.5	0.37	1.60	0.88	24.7
	172	176	302	250	302	9	32	4	3	100.5	0.83	0.73	0.40	27.7
2DC	172	170.5	210	199	213.5	7	8	2	2	38.5	0.35	1.73	0.95	4.15
4EC	174	175	228	213	231	8	13	2.5	2	52.5	0.46	1.31	0.72	7.8
4GB	178	189	276	252	272	8	12	3	2.5	55.5	0.44	1.38	0.76	12.9
4GD	178	182	276	242	275	10	17	3	2.5	70	0.44	1.38	0.76	23.5
2GB	182	205	322	286	310	10	17	4	3	64	0.35	1.74	0.96	29.9
	182	205	322	286	311	10	17	4	3	65.5	0.37	1.60	0.88	29.2
3DC	182	183	220	213	222	7	8	2	2	42.5	0.38	1.57	0.86	4.4

Note: When selecting bearings with bearing numbers marked with " * ", please consult NTN Engineering.

Metric system sizes

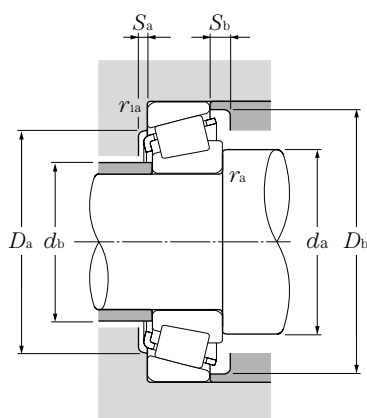


d 170 ~ 300mm

Boundary dimensions							Basic load ratings				Limiting speeds		Bearing numbers
d	D	T	mm		$r_{s \min}$ ①	$r_{ls \min}$ ①	dynamic	static	dynamic	static	grease	oil	
			B	C			kN		kgf				
							C_r	C_{or}	C_r	C_{or}			
170	260	57	57	43	3	2.5	500	895	51,000	91,000	1,300	1,700	32034XU
	310	57	52	43	5	4	610	845	62,000	86,500	1,100	1,500	30234U
	310	91	86	71	5	4	1,000	1,600	102,000	163,000	1,100	1,500	32234U
	360	80	72	62	5	4	1,010	1,320	103,000	135,000	1,000	1,400	* 30334U
	360	80	72	62	4	4	845	1,100	86,000	113,000	1,000	1,400	30334 [®]
180	250	45	45	34	2.5	2	350	700	36,000	71,500	1,300	1,700	32936XU
	280	64	64	48	3	2.5	645	1,170	66,000	119,000	1,200	1,600	32036XUE1
	320	57	52	43	5	4	630	890	64,000	91,000	1,100	1,400	30236U
	320	91	86	71	5	4	1,030	1,690	105,000	172,000	1,100	1,400	32236U
190	260	45	45	34	2.5	2	355	710	36,000	72,000	1,200	1,600	* 32938XU
	260	45	42	36	2.5	2.5	280	525	28,600	53,500	1,200	1,600	32938 [®]
	290	64	64	48	3	2.5	655	1,210	67,000	124,000	1,100	1,500	32038XUE1
	340	60	55	46	5	4	715	1,000	73,000	102,000	1,000	1,300	30238U
	340	97	92	75	5	4	1,150	1,850	117,000	189,000	1,000	1,300	* 32238U
	340	97	92	75	4	4	1,000	1,670	102,000	171,000	1,000	1,300	32238 [®]
200	280	51	51	39	3	2.5	485	895	49,000	91,000	1,100	1,500	32940XUE1
	310	70	70	53	3	2.5	800	1,470	81,500	149,000	1,100	1,400	32040XUE1
	360	64	58	48	5	4	785	1,110	80,000	113,000	950	1,300	30240U
	360	104	98	82	5	4	1,320	2,130	134,000	217,000	950	1,300	* 32240U
	360	104	98	82	4	4	1,150	1,970	118,000	201,000	950	1,300	32240 [®]
220	300	51	51	39	3	2.5	480	950	49,000	97,000	1,000	1,400	* 32944XUE1
	300	51	48	41	2.5	2.5	345	670	35,500	68,500	1,000	1,400	32944E1 [®]
	340	76	76	57	4	3	920	1,690	94,000	173,000	960	1,300	32044XU
240	320	51	51	39	3	2.5	490	1,000	50,000	102,000	940	1,200	32948XUE1
	360	76	76	57	4	3	930	1,760	95,000	179,000	870	1,200	32048XU
260	360	63.5	63.5	48	3	2.5	705	1,430	72,000	146,000	860	1,100	32952XUE1
	400	87	87	65	5	4	1,200	2,270	123,000	231,000	800	1,100	32052XU
280	380	63.5	63.5	48	3	2.5	725	1,520	74,000	155,000	790	1,100	32956XUE1
	420	87	87	65	5	4	1,220	2,350	125,000	240,000	740	980	32056XU
300	420	76	76	57	4	3	1,010	2,090	103,000	213,000	720	970	32960XUE1
	460	100	100	74	5	4	1,490	2,830	152,000	289,000	680	910	32060XU

① Minimal allowable dimension for chamfer dimension r or r_1 .

② This bearing does not incorporate the subunit dimensions.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

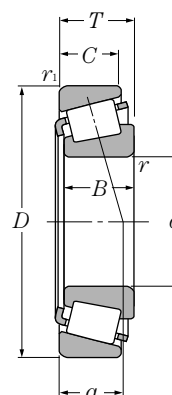
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant	Axial		Mass
	d_a	d_b	D_a	mm		S_a	S_b	r_{as}	r_{1as}			Y_2	Y_o	
				min	max									
	min	max	max	min	min	min	min	max	max	a	e			kg (approx.)
4EC	184	187	248	230	249	10	14	2.5	2	56	0.44	1.35	0.74	10.5
4GB	192	203	292	266	288	8	14	4	3	60.5	0.44	1.38	0.76	17
4GD	192	201	292	258	293	10	20	4	3	75	0.44	1.38	0.76	28.7
2GB	192	221	342	303	329	10	18	4	3	68	0.35	1.74	0.96	35.3
	192	215.5	342	297	327	10	18	4	3	69.5	0.37	1.60	0.88	34.8
4DC	192	193	240	225	241	8	11	2	2	54	0.48	1.25	0.69	6.54
3FD	194	197.5	268	243	269	10	16	2.5	2	59.5	0.42	1.42	0.78	14.5
4GB	202	211	302	274	297	9	14	4	3	63	0.45	1.33	0.73	17.7
4GD	202	204	302	267	305	10	20	4	3	77.5	0.45	1.33	0.73	30.7
4DC	202	204	250	235	251	8	11	2	2	55	0.48	1.26	0.69	6.77
	202	204	248	235	251	8	9	2	2	48.5	0.37	1.60	0.88	6.43
4FD	204	209	278	257	279	10	16	2.5	2	62.5	0.44	1.36	0.75	15.1
4GB	212	228	322	295	316	9	14	4	3	64	0.44	1.38	0.76	20.8
4GD	212	216	322	282	323	11	22	4	3	82	0.44	1.38	0.76	36.1
	212	216	322	286	323	11	22	4	3	87.5	0.49	1.23	0.68	33.3
3EC	214	214	268	254	271	9	12	2.5	2	53.5	0.39	1.52	0.84	8.88
4FD	214	221	298	273	297	11	17	2.5	2	66.5	0.43	1.39	0.77	19.3
4GB	222	242	342	311	336	10	16	4	3	70	0.44	1.38	0.76	25.4
3GD	222	230	342	298	340	11	22	4	3	85	0.41	1.48	0.81	43.6
	222	230	342	302	344	11	22	4	3	91.5	0.49	1.23	0.68	43.6
3EC	234	234	288	271	290	10	12	2.5	2	59.5	0.43	1.41	0.78	10.2
	234	235	288	274	290	10	10	2.5	2	57	0.39	1.55	0.85	9.63
4FD	238	243	326	300	326	12	19	3	2.5	72.5	0.43	1.39	0.77	25
4EC	254	254	308	290	311	10	12	2.5	2	65.5	0.46	1.31	0.72	10.9
4FD	258	261	346	318	346	12	19	3	2.5	78	0.46	1.31	0.72	26.8
3EC	274	279	348	325	347	11	15	2.5	2	69.5	0.41	1.48	0.81	18.8
4FC	282	287	382	352	383	14	22	4	3	85.5	0.43	1.38	0.76	39.4
4EC	294	298	368	344	368	11	15	2.5	2	75	0.43	1.39	0.76	20
4FC	302	305	402	370	402	14	22	4	3	90.5	0.46	1.31	0.72	41.8
3FD	318	324	406	379	405	13	19	3	2.5	80	0.39	1.52	0.84	31.4
4GD	322	329	442	404	439	15	26	4	3	98	0.43	1.38	0.76	59.6

Note: When selecting bearings with bearing numbers marked with " * ", please consult NTN Engineering.

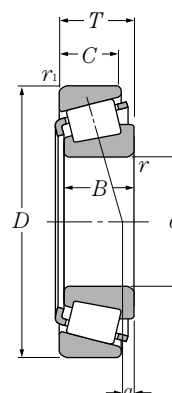
d 320 ~ 360mm

[illegible]

- ① Minimal allowable dimension for chamfer dimension r or r_1 .
- ② This bearing does not incorporate the subunit dimensions.

For values of e , Y_2 and Y_0 see the table below.

Inch system sizes

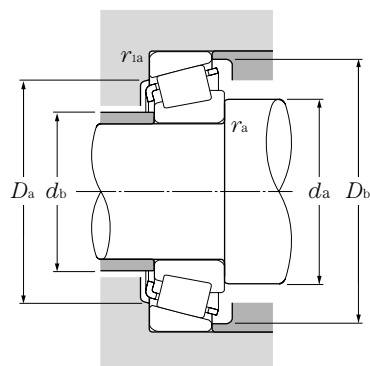


d 12.700 ~ 22.225mm

Boundary dimensions					Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static		
					kN		kgf		rpm	
d	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
12.700	34.988	10.998	10.988	8.730	12.3	11.6	1,260	1,180	12,000	16,000
14.989	34.988	10.998	10.988	8.730	12.3	11.6	1,260	1,180	12,000	16,000
15.875	41.275	14.288	14.681	11.112	20.3	18.7	2,070	1,910	10,000	13,000
	42.862	14.288	14.288	9.525	17.6	17.5	1,800	1,790	8,700	12,000
	42.862	16.670	16.670	13.495	26.7	26.0	2,720	2,650	9,800	13,000
	47.000	14.381	14.381	11.112	24.0	24.2	2,440	2,460	8,600	11,000
	49.225	19.845	21.539	14.288	38.5	39.0	3,900	3,950	8,500	11,000
16.993	47.000	14.381	14.381	11.112	24.0	24.2	2,440	2,460	8,600	11,000
17.462	39.878	13.843	14.605	10.668	23.8	24.2	2,420	2,470	10,000	13,000
19.050	39.992	12.014	11.153	9.525	12.8	12.8	1,310	1,300	10,000	13,000
	45.237	15.494	16.637	12.065	28.3	28.6	2,880	2,920	8,900	12,000
	47.000	14.381	14.381	11.112	24.0	24.2	2,440	2,460	8,600	11,000
	49.225	18.034	19.050	14.288	38.5	39.0	3,900	3,950	8,500	11,000
	49.225	19.845	21.539	14.288	38.5	39.0	3,900	3,950	8,500	11,000
	49.225	21.209	19.050	17.462	38.5	39.0	3,900	3,950	8,500	11,000
	53.975	22.225	21.839	15.875	40.0	39.0	4,100	3,950	8,000	11,000
19.987	56.896	19.368	19.837	15.875	42.5	46.5	4,350	4,750	7,200	9,600
19.987	47.000	14.381	14.381	11.112	24.0	24.2	2,440	2,460	8,600	11,000
20.000	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
20.625	49.225	19.845	21.539	14.288	38.5	39.0	3,900	3,950	8,500	11,000
20.638	49.225	19.845	19.845	15.875	37.5	39.0	3,800	3,950	8,200	11,000
21.430	50.005	17.526	18.288	13.970	38.0	39.0	3,850	3,950	8,000	11,000
21.986	45.974	15.494	16.637	12.065	29.6	34.0	3,000	3,450	8,400	11,000
22.225	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
	50.005	17.526	18.288	13.970	38.0	39.0	3,850	3,950	8,000	11,000
	52.388	19.368	20.168	14.288	40.5	43.0	4,150	4,350	7,600	10,000
	53.975	19.368	20.168	14.288	40.5	43.0	4,150	4,350	7,600	10,000

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.

2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring) or "TH" (outer ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

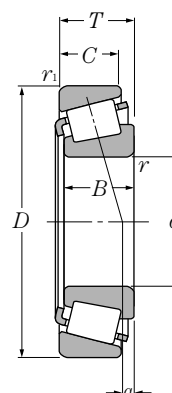
$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max	a		Y_2	Y_o	
4T-A4050/A4138	18.5	17	29	32	1.3	1.3	2.5	0.45	1.32	0.73	0.053
4T-A4059†/A4138	19.5	19	29	32	0.8	1.3	2.5	0.45	1.32	0.73	0.049
4T-03062/03162	21.5	20	34	37.5	1.3	2	5.4	0.31	1.93	1.06	0.092
4T-11590/11520	24.5	22.5	34.5	39.5	1.5	1.5	1.2	0.70	0.85	0.47	0.103
4T-17580/17520	23	21	36.5	39	1.5	1.5	5.8	0.33	1.81	1.00	0.122
4T-05062/05185	23.5	21	40.5	42.5	1.5	1.3	4.2	0.36	1.68	0.92	0.131
4T-09062/09195	22	21.5	42	44.5	0.8	1.3	9.4	0.27	2.26	1.24	0.203
4T-05066/05185	24.5	22	40.5	42.5	1.5	1.3	4.2	0.36	1.68	0.92	0.127
4T-LM11749/LM11710	23	21.5	34	37	1.3	1.3	5.3	0.29	2.10	1.15	0.084
4T-A6075/A6157	24	23	34	37	1	1.3	1.5	0.53	1.14	0.63	0.065
4T-LM11949/LM11910	28	23.5	39.5	41.5	1.3	1.3	5.6	0.30	2.00	1.10	0.122
4T-05075/05185	25	23.5	40.5	42.5	1.3	1.3	4.2	0.36	1.68	0.92	0.121
4T-09067/09195	25.5	24	42	44.5	1.3	1.3	7.6	0.27	2.26	1.24	0.179
4T-09078/09195	25.5	24	42	44.5	1.3	1.3	9.4	0.27	2.26	1.24	0.188
4T-09067/09196	25.5	24	41.5	44.5	1.3	1.5	7.6	0.27	2.26	1.24	0.198
4T-21075/21212††	31.5	26	43	50	1.5	2.3	5.6	0.59	1.02	0.56	0.248
4T-1775/1729	27	25	49	51	1.5	1.3	6.5	0.31	1.95	1.07	0.272
4T-05079†/05185	26.5	24	40.5	42.5	1.5	1.3	4.2	0.36	1.68	0.92	0.117
4T-07079/07196	27.5	26	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.138
4T-09081/09195	27.5	25.5	42	44.5	1.5	1.3	9.4	0.27	2.26	1.24	0.179
4T-12580/12520	28.5	26	42.5	45.5	1.5	1.5	7.1	0.32	1.86	1.02	0.182
4T-M12649/M12610	29	25.5	44	46	1.3	1.3	6.4	0.28	2.16	1.19	0.169
4T-LM12749†/LM12711††	27.5	26	40	42.5	1.3	1.3	5.4	0.31	1.96	1.08	0.123
4T-07087/07196	28.5	27	44.5	47	1.3	1	3.0	0.40	1.49	0.82	0.13
4T-M12648/M12610	28.5	26.5	44	46	1.3	1.3	6.4	0.28	2.16	1.19	0.165
4T-1380/1328	29.5	27	45	48.5	1.5	1.5	7.4	0.29	2.05	1.13	0.2
4T-1380/1329††	29.5	27	46	49	1.5	1.5	7.4	0.29	2.05	1.13	0.215

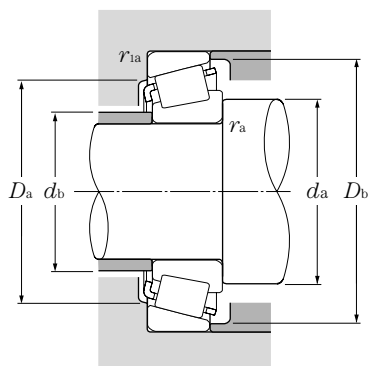
Inch system sizes



d 22.225 ~ 28.575mm

d	Boundary dimensions				Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C _r kN	C _{or}	C _r kgf	C _{or}	grease	oil
22.225	56.896	19.368	19.837	15.875	42.5	46.5	4,350	4,750	7,200	9,600
	57.150	22.225	22.225	17.462	47.0	49.5	4,800	5,050	7,100	9,500
22.606	47.000	15.500	15.500	12.000	27.5	32.5	2,800	3,300	8,200	11,000
23.812	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
	50.292	14.224	14.732	10.668	28.8	34.0	2,940	3,450	7,400	9,900
	56.896	19.368	19.837	15.875	42.5	46.5	4,350	4,750	7,200	9,600
24.981	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
25.000	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
25.159	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
25.400	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
	50.005	13.495	14.260	9.525	26.0	27.9	2,650	2,850	7,500	10,000
	50.292	14.224	14.732	10.668	28.8	34.0	2,940	3,450	7,400	9,900
	51.994	15.011	14.260	12.700	26.0	27.9	2,650	2,850	7,500	10,000
	56.896	19.368	19.837	15.875	42.5	46.5	4,350	4,750	7,200	9,600
	57.150	19.431	19.431	14.732	42.0	48.5	4,300	4,950	6,900	9,200
	61.912	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	64.292	21.433	21.433	16.670	51.5	64.5	5,250	6,600	6,100	8,100
26.157	65.088	22.225	21.463	15.875	47.0	50.5	4,800	5,150	5,700	7,600
	66.421	23.812	25.433	19.050	64.5	72.5	6,550	7,400	6,200	8,200
26.162	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
26.162	66.421	23.812	25.433	19.050	64.5	72.5	6,550	7,400	6,200	8,200
26.988	50.292	14.224	14.732	10.668	28.8	34.0	2,940	3,450	7,400	9,900
	60.325	19.842	17.462	15.875	39.5	45.5	4,050	4,650	6,700	8,900
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	66.421	23.812	25.433	19.050	64.5	72.5	6,550	7,400	6,200	8,200
28.575	56.896	19.845	19.355	15.875	40.5	44.5	4,150	4,550	6,700	8,900
	57.150	17.462	17.462	13.495	39.5	45.5	4,050	4,650	6,700	8,900

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

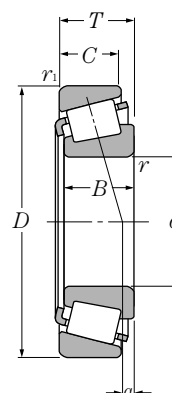
$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			Y_2	Y_o	
4T-1755/1729	29	27.5	49	51	1.3	1.3	6.5	0.31	1.95	1.07	0.256
4T-1280/1220	29.5	29	49	52	0.8	1.5	7.1	0.35	1.73	0.95	0.286
4T-LM72849/LM72810	30	28	40.5	44	1.5	1	3.0	0.47	1.27	0.70	0.125
4T-07093/07196	30.5	28.5	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.123
4T-L44640/L44610	30.5	28.5	44.5	47	1.5	1.3	3.4	0.37	1.60	0.88	0.137
4T-1779/1729	29.5	28.5	49	51	0.8	1.3	6.5	0.31	1.95	1.07	0.247
4T-07098/07196	31	29	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.118
4T-07097/07196	31	29	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.118
4T-07096/07196	31.5	29.5	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.117
4T-07100/07196	30.5	29.5	44.5	47	1	1	3.0	0.40	1.49	0.82	0.117
4T-07100S/07196	31.5	29.5	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.116
4T-L44643/L44610	31.5	29.5	44.5	47	1.3	1.3	3.4	0.37	1.60	0.88	0.13
4T-07100/07204	30.5	29.5	45	48	1	1.3	3.0	0.40	1.49	0.82	0.144
4T-1780/1729	30.5	30	49	51	0.8	1.3	6.5	0.31	1.95	1.07	0.238
4T-M84548/M84510	36	33	48.5	54	1.5	1.5	3.4	0.55	1.10	0.60	0.241
4T-15101/15243	32.5	31.5	54	58	0.8	2	6.0	0.35	1.71	0.94	0.3
4T-15100/15245	38	31.5	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.299
4T-15102/15245	34	31.5	55	58	1.5	1.3	6.0	0.35	1.71	0.94	0.301
4T-M86643/M86610	38	36.5	54	61	1.5	1.5	3.3	0.55	1.10	0.60	0.371
4T-23100/23256	39	34.5	53	63	1.5	1.5	2.0	0.73	0.82	0.45	0.36
4T-2687/2631	33.5	31.5	58	60	1.3	1.3	9.3	0.25	2.36	1.30	0.442
4T-15103/15245	33	32.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.296
4T-2682/2631	34.5	32	58	60	1.5	1.3	9.3	0.25	2.36	1.30	0.436
4T-L44649†/L44610	37.5	31	44.5	47	3.5	1.3	3.4	0.37	1.60	0.88	0.12
4T-15580†/15523	38.5	32	51	54	3.5	1.5	5.0	0.35	1.73	0.95	0.26
4T-15106†/15245	33.5	33	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.291
4T-2688†/2631	35	33	58	60	1.5	1.3	9.3	0.25	2.36	1.30	0.429
4T-1985/1930	34	33.5	51	54	0.8	0.8	6.7	0.33	1.82	1.00	0.217
4T-15590/15520	39.5	33.5	51	53	3.5	1.5	5.0	0.35	1.73	0.95	0.196

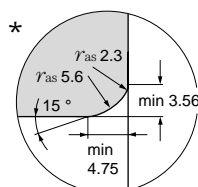
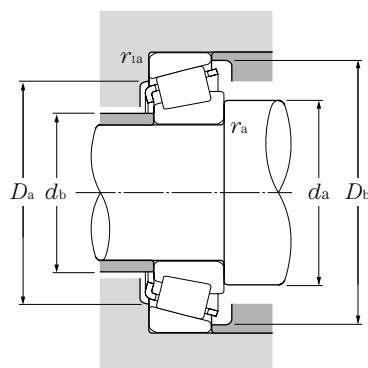
Inch system sizes
J system series



d 28.575 ~ 31.750mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	kN		kgf		grease	oil
28.575	58.738	19.050	19.355	15.080	40.5	44.5	4,150	4,550	6,700	8,900
	60.325	19.842	17.462	15.875	39.5	45.5	4,050	4,650	6,700	8,900
	60.325	19.845	19.355	15.875	40.5	44.5	4,150	4,550	6,700	8,900
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	64.292	21.433	21.433	16.670	51.5	64.5	5,250	6,600	6,100	8,100
	66.421	23.812	25.433	19.050	64.5	72.5	6,550	7,400	6,200	8,200
	68.262	22.225	22.225	17.462	57.0	67.0	5,800	6,850	5,800	7,700
	68.262	22.225	23.812	17.462	57.5	65.5	5,850	6,700	5,700	7,700
	69.850	23.812	25.357	19.050	69.0	81.5	7,050	8,300	5,700	7,600
29.000	72.626	24.608	24.257	17.462	58.0	55.5	5,900	5,700	5,800	7,700
	73.025	22.225	22.225	17.462	56.5	68.0	5,750	6,900	5,300	7,000
29.367	50.292	14.224	14.732	10.668	28.0	35.5	2,860	3,600	7,200	9,600
29.987	66.421	23.812	25.433	19.050	64.5	72.5	6,550	7,400	6,200	8,200
30.000	62.000	16.002	16.566	14.288	39.0	42.0	3,950	4,300	6,300	8,400
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
30.112	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
	72.000	29.370	27.783	23.020	72.0	97.0	7,350	9,850	5,400	7,100
30.162	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	62.000	16.002	16.566	14.288	39.0	42.0	3,950	4,300	6,300	8,400
	64.292	21.433	21.433	16.670	51.5	64.5	5,250	6,600	6,100	8,100
	69.850	23.812	25.357	19.050	69.0	81.5	7,050	8,300	5,700	7,600
30.213	72.626	30.162	29.997	23.812	84.5	98.0	8,600	9,950	5,500	7,300
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
30.226	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
31.750	59.131	15.875	16.764	11.811	34.5	41.0	3,500	4,150	6,300	8,400
	62.000	18.161	19.050	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{1s} and r_{2s} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load

dynamic
 $P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$P_{or} = 0.5F_r + Y_0F_a$

When $P_{or} < F_r$ use $P_{or} = F_r$

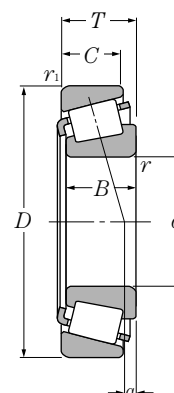
For values of e , Y_2 and Y_0 see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
4T-1985/1932	34	33.5	52	54	0.8	1.3	5.9	0.33	1.82	1.00	0.23
4T-15590/15523	39.5	33.5	51	54	3.5	1.5	5.0	0.35	1.73	0.95	0.25
4T-1985/1931	34	33.5	52	55	0.8	1.3	5.9	0.33	1.82	1.00	0.255
4T-15112/15245	40	34	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.277
4T-M86647/M86610	40	38	54	61	1.5	1.5	3.3	0.55	1.10	0.60	0.348
4T-2689/2631	36	34	58	60	1.3	1.3	9.3	0.25	2.36	1.30	0.416
4T-02474/02420	36.5	36	59	63	0.8	1.5	5.2	0.42	1.44	0.79	0.409
4T-2474/2420	36	35	60	63	0.8	1.5	6.5	0.34	1.77	0.97	0.41
4T-2578/2523	39	35	61	64	2.3	1.3	9.1	0.27	2.19	1.21	0.483
4T-41125/41286	48	36.5	61	68	4.8	1.5	3.7	0.60	1.00	0.55	0.477
4T-02872/02820	37.5	37	62	68	0.8	3.3	3.9	0.45	1.32	0.73	0.48
4T-L45449/L45410	39.5	33	44.5	48	3.5	1.3	3.5	0.37	1.62	0.89	0.113
4T-2690/2631	41	35	58	60	3.5	1.3	9.3	0.25	2.36	1.30	0.406
4T-17118†/17244	37	34.5	54	57	1.5	1.5	3.3	0.38	1.57	0.86	0.228
4T-15117†/15245	36.5	35	55	58	1.3	1.3	6.0	0.35	1.71	0.94	0.269
4T-14117A/14276	42.5	39.5	60	63	3.5	1.3	4.1	0.38	1.57	0.86	0.369
#4T-JHM88540/JHM88513	44.5	42.5	58	69	1.3	3.3	6.0	0.55	1.10	0.60	0.619
4T-15116/15245	36	35.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.268
4T-17119/17244	37	34.5	54	57	1.5	1.5	3.3	0.38	1.57	0.86	0.226
4T-M86649/M86610	41	38	54	61	1.5	1.5	3.3	0.55	1.10	0.60	0.336
4T-2558/2523	40	36.5	61	64	2.3	1.3	9.1	0.27	2.19	1.21	0.468
4T-3187/3120	39	38.5	61	67	0.8	3.3	9.9	0.33	1.80	0.99	0.621
4T-15118/15245	41.5	35.5	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.265
4T-15119/15245	37.5	35.5	55	58	1.5	1.3	6.0	0.35	1.71	0.94	0.267
4T-15120/15245	36	35.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.267
4T-14116/14274	37	36.5	59	63	0.8	3.3	4.1	0.38	1.57	0.86	0.366
4T-14116/14276	37	36.5	60	63	0.8	1.3	4.1	0.38	1.57	0.86	0.37
4T-LM67048/LM67010	42.5	36	52	56	*	1.3	2.8	0.41	1.46	0.80	0.182
4T-15123/15245	42.5	36.5	55	58	*	1.3	5.1	0.35	1.71	0.94	0.244
4T-15125/15245	42.5	36.5	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.253

Note: 3. Bearing numbers marked " #" designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

4. Chamfer dimensions of bearings marked "*" are shown in drawings.

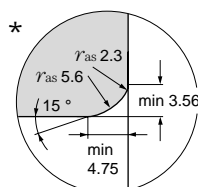
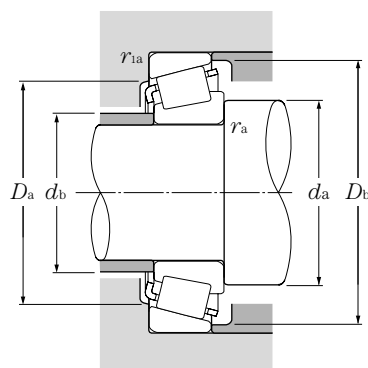
Inch system sizes
J system series



d 31.750 ~ 34.925mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
31.750	62.000	19.050	20.638	14.288	46.5	54.0	4,750	5,500	6,100	8,200
	66.421	25.400	25.357	20.638	69.0	81.5	7,050	8,300	5,700	7,600
	68.262	22.225	22.225	17.462	57.0	67.0	5,800	6,850	5,800	7,700
	68.262	22.225	22.225	17.462	57.0	67.0	5,800	6,850	5,800	7,700
	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
	69.850	23.812	25.357	19.050	69.0	81.5	7,050	8,300	5,700	7,600
	69.850	23.812	25.357	19.050	69.0	81.5	7,050	8,300	5,700	7,600
	72.626	30.162	29.997	23.812	84.5	98.0	8,600	9,950	5,500	7,300
	72.626	30.162	29.997	23.812	84.5	98.0	8,600	9,950	5,500	7,300
	73.025	22.225	22.225	17.462	56.5	68.0	5,750	6,900	5,300	7,000
	73.025	22.225	23.812	17.462	62.5	75.5	6,400	7,700	5,200	7,000
	73.025	29.370	27.783	23.020	72.0	97.0	7,350	9,850	5,400	7,100
	73.812	29.370	27.783	23.020	72.0	97.0	7,350	9,850	5,400	7,100
33.338	76.200	29.370	28.575	23.020	78.0	105	7,950	10,700	5,100	6,800
	79.375	29.370	29.771	23.812	93.0	114	9,450	11,600	4,900	6,600
	68.262	22.225	22.225	17.462	56.5	71.0	5,750	7,250	5,700	7,500
	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
	69.850	23.812	25.357	19.050	69.0	81.5	7,050	8,300	5,700	7,600
	72.626	30.162	29.997	23.812	84.5	98.0	8,600	9,950	5,500	7,300
	73.025	29.370	27.783	23.020	72.0	97.0	7,350	9,850	5,400	7,100
	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
34.925	76.200	29.370	28.575	23.020	78.0	105	7,950	10,700	5,100	6,800
	76.200	29.370	28.575	23.020	78.0	105	7,950	10,700	5,100	6,800
	79.375	25.400	24.074	17.462	65.5	67.0	6,650	6,800	5,200	6,900
	65.088	18.034	18.288	13.970	46.5	56.0	4,750	5,700	5,700	7,600
	65.088	18.034	18.288	13.970	46.5	56.0	4,750	5,700	5,700	7,600
	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
	72.233	25.400	25.400	19.842	65.0	84.5	6,600	8,600	5,400	7,200
	72.238	20.638	20.638	15.875	48.0	58.5	4,900	5,950	5,300	7,000
	73.025	22.225	22.225	17.462	56.5	68.0	5,750	6,900	5,300	7,000
	73.025	22.225	22.225	17.462	56.5	68.0	5,750	6,900	5,300	7,000
	73.025	22.225	23.812	17.462	62.5	75.5	6,400	7,700	5,200	7,000
	73.025	23.812	24.608	19.050	71.0	85.0	7,200	8,700	5,300	7,100
34.925	73.025	23.812	24.608	19.050	71.0	85.0	7,200	8,700	5,300	7,100
	73.025	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{as} and r_{1as} are larger than the maximum value.
2. Chamfer dimensions of bearings marked "*" are shown in drawings.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

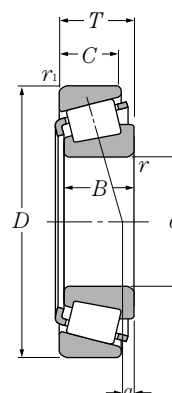
$$P_{or} = 0.5F_r + Y_0F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_0 see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	Y_2
4T-15126/15245	37	36.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.255
4T-2580/2520	38.5	37.5	57	62	0.8	3.3	9.1	0.27	2.19	1.21	0.409
4T-02475/02420	44.5	38.5	59	63	3.5	1.5	5.2	0.42	1.44	0.79	0.38
4T-02476/02420	39	38.5	59	63	0.8	1.5	5.2	0.42	1.44	0.79	0.383
4T-14124/14276	38.5	37.5	60	63	0.8	1.3	4.1	0.38	1.57	0.86	0.359
4T-14125A/14276	44	37.5	60	63	3.5	1.3	4.1	0.38	1.57	0.86	0.356
4T-2580/2523	38.5	37.5	61	64	0.8	1.3	9.1	0.27	2.19	1.21	0.454
4T-2582/2523	44	37.5	61	64	3.5	1.3	9.1	0.27	2.19	1.21	0.451
4T-3188/3120	40	39.5	61	67	0.8	3.3	9.9	0.33	1.80	0.99	0.603
4T-3193/3120	45.5	39.5	61	67	3.5	3.3	9.9	0.33	1.80	0.99	0.601
4T-02875/02820	45.5	39.5	62	68	3.5	3.3	3.9	0.45	1.32	0.73	0.451
4T-2879/2820	39.5	38.5	63	68	0.8	3.3	5.5	0.37	1.63	0.90	0.465
4T-HM88542/HM88510	45.5	42.5	59	70	1.3	3.3	6.0	0.55	1.10	0.60	0.622
4T-HM88542/HM88512	45.5	42.5	60	70	1.3	3.3	6.0	0.55	1.10	0.60	0.638
4T-HM89440/HM89410	45.5	44.5	62	73	0.8	3.3	5.8	0.55	1.10	0.60	0.686
4T-3476/3420	43	41	67	74	1.3	3.3	8.7	0.37	1.64	0.90	0.767
4T-M88048/M88010	42.5	41	58	65	0.8	1.5	2.9	0.55	1.10	0.60	0.378
4T-14130/14276	45	38.5	60	63	3.5	1.3	4.1	0.38	1.57	0.86	0.344
4T-2585/2523	45	39	61	64	3.5	1.3	9.1	0.27	2.19	1.21	0.435
4T-3196/3120	47	40.5	61	67	3.5	3.3	9.9	0.33	1.80	0.99	0.581
4T-HM88547/HM88510	45.5	42.5	59	70	0.8	3.3	6.0	0.55	1.10	0.60	0.604
4T-2785/2720	46	40	66	70	3.5	3.3	7.8	0.30	1.98	1.09	0.551
4T-HM89443/HM89410	46.5	44.5	62	73	0.8	3.3	5.8	0.55	1.10	0.60	0.668
4T-HM89444/HM89410	53	44.5	62	73	3.8	3.3	5.8	0.55	1.10	0.60	0.665
4T-43131/43312	51	42	67	74	3.5	1.5	1.4	0.67	0.90	0.49	0.568
4T-LM48548/LM48510	46	40	58	61	*	1.3	3.7	0.38	1.59	0.88	0.249
4T-LM48548A/LM48510	40.5	42	58	61	0.8	1.3	3.7	0.38	1.59	0.88	0.252
4T-14137A/14276	42	40	60	63	1.5	1.3	4.1	0.38	1.57	0.86	0.333
4T-HM88649/HM88610	48.5	42.5	60	69	2.3	2.3	4.6	0.55	1.10	0.60	0.489
4T-16137/16284	47	40.5	63	67	3.5	1.3	4.2	0.40	1.49	0.82	0.385
4T-02877/02820	48.5	42	62	68	3.5	3.3	3.9	0.45	1.32	0.73	0.422
4T-02878/02820	42.5	42	62	68	0.8	3.3	3.9	0.45	1.32	0.73	0.425
4T-2878/2820	42	41	63	68	0.8	3.3	5.5	0.37	1.63	0.90	0.434
4T-25877/25820	43	40.5	64	68	1.5	2.3	8.1	0.29	2.07	1.14	0.471
4T-25877/25821	43	40.5	65	68	1.5	0.8	8.1	0.29	2.07	1.14	0.474
4T-2793/2735X	42	41	66	69	0.8	0.8	7.8	0.30	1.98	1.09	0.485
4T-2793/2720	42	41	66	70	0.8	3.3	7.8	0.30	1.98	1.09	0.536

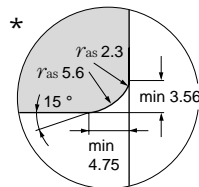
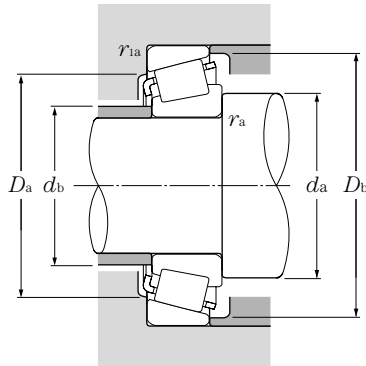
Inch system sizes
J system series



d 34.925 ~ 38.100mm

Boundary dimensions					Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static	rpm	
					kN		kgf			
d	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
34.925	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
	76.200	29.370	28.575	23.020	78.0	105	7,950	10,700	5,100	6,800
	76.200	29.370	28.575	23.812	80.5	97.0	8,200	9,900	5,100	6,800
	76.200	29.370	28.575	23.812	80.5	97.0	8,200	9,900	5,100	6,800
	79.375	29.370	29.771	23.812	93.0	114	9,450	11,600	4,900	6,600
	80.167	29.370	30.391	23.812	95.0	112	9,700	11,400	4,800	6,400
	85.725	30.162	30.162	23.812	105	132	10,700	13,400	4,500	6,000
34.976	69.012	19.845	19.583	15.875	48.5	58.0	4,900	5,900	5,600	7,400
34.988	59.974	15.875	16.764	11.938	35.5	47.5	3,600	4,850	6,100	8,100
	61.973	16.700	17.000	13.600	37.0	48.0	3,800	4,900	5,900	7,900
	61.973	18.000	17.000	15.000	37.0	48.0	3,800	4,900	5,900	7,900
35.000	70.000	24.000	23.500	19.000	62.0	78.0	6,350	7,950	5,500	7,300
	79.375	23.812	25.400	19.050	76.5	97.5	7,800	9,950	4,800	6,400
	80.000	21.000	22.403	17.826	68.0	75.0	6,950	7,650	4,700	6,300
35.717	72.233	25.400	25.400	19.842	65.0	84.5	6,600	8,600	5,400	7,200
	72.626	25.400	25.400	19.842	65.0	84.5	6,600	8,600	5,400	7,200
36.487	73.025	23.812	24.608	19.050	71.0	85.0	7,200	8,700	5,300	7,100
	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
36.512	76.200	29.370	28.575	23.020	78.0	105	7,950	10,700	5,100	6,800
	76.200	29.370	28.575	23.020	78.0	105	7,950	10,700	5,100	6,800
	76.200	29.370	28.575	23.812	80.5	97.0	8,200	9,900	5,100	6,800
	79.375	29.370	28.829	22.664	86.5	104	8,800	10,600	5,000	6,600
	79.375	29.370	29.771	23.812	93.0	114	9,450	11,600	4,900	6,600
	88.500	25.400	23.698	17.462	70.5	78.0	7,200	7,950	4,000	5,300
38.000	63.000	17.000	17.000	13.500	38.5	52.5	3,950	5,350	5,700	7,600
38.100	63.500	12.700	11.908	9.525	25.9	33.5	2,640	3,400	5,500	7,300
	65.088	18.034	18.288	13.970	43.5	57.0	4,400	5,800	5,500	7,400
	69.012	19.050	19.050	15.083	47.5	59.5	4,850	6,050	5,300	7,100
	69.012	19.050	19.050	15.083	47.5	59.5	4,850	6,050	5,300	7,100
	71.438	15.875	16.520	11.908	43.5	51.0	4,400	5,200	5,400	7,200
	72.000	19.000	20.638	14.237	48.0	58.5	4,900	5,950	5,300	7,000

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "+" (inner ring) or "++" (outer ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_0F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

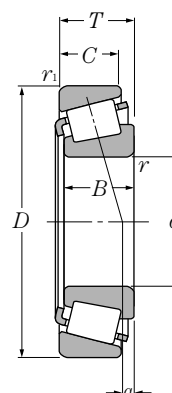
For values of e , Y_2 and Y_0 see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{las} max			a	e	
4T-2793/2729	42	41	68	70	0.8	0.8	7.8	0.30	1.98	1.09	0.541
4T-HM89446/HM89410	53	44.5	62	73	3.5	3.3	5.8	0.55	1.10	0.60	0.646
4T-31593/31520	50	43.5	64	72	3.5	3.3	7.8	0.40	1.49	0.82	0.625
4T-31594/31520	46	43.5	64	72	1.5	3.3	7.8	0.40	1.49	0.82	0.627
4T-3478/3420	50	43.5	67	74	3.5	3.3	8.7	0.37	1.64	0.90	0.725
4T-3379/3320	48	41.5	70	75	3.5	3.3	11.2	0.27	2.20	1.21	0.732
4T-3872/3820	53	46	73	81	3.5	3.3	8.1	0.40	1.49	0.82	0.897
4T-14139/14276	41.5	40	60	63	1.3	1.3	4.1	0.38	1.57	0.86	0.333
4T-L68149†/L68111††	45.5	39	53	56	*	1.3	2.5	0.42	1.44	0.79	0.179
4T-LM78349A†/LM78310A††	42	39.5	54	59	1.5	1.5	2.4	0.44	1.35	0.74	0.209
4T-LM78349†/LM78310C††	46	40	56	59	*	1.5	2.4	0.44	1.35	0.74	0.218
#4T-JS3549A/JS3510	47	42	60	67	2	1.5	3.6	0.55	1.10	0.60	0.42
4T-26883/26822	42.5	42	71	74	0.8	0.8	7.4	0.32	1.88	1.04	0.61
4T-339/332	42.5	41.5	73	75	0.8	1.3	6.6	0.27	2.20	1.21	0.534
4T-HM88648/HM88610	52	43	60	69	3.5	2.3	4.6	0.55	1.10	0.60	0.478
4T-HM88648/HM88611AS	52	43	59	69	3.5	3.3	3.0	0.55	1.10	0.60	0.482
4T-25880/25821	44	42	65	68	1.5	0.8	8.1	0.29	2.07	1.14	0.457
4T-2780/2720	44.5	42.5	66	70	1.5	3.3	7.8	0.30	1.98	1.09	0.518
4T-HM89448/HM89410	48.5	44.5	62	73	0.8	3.3	5.8	0.55	1.10	0.60	0.629
4T-HM89449/HM89411	54	44.5	65	73	3.5	0.8	5.8	0.55	1.10	0.60	0.631
4T-31597/31520	51	44.5	64	72	3.5	3.3	7.8	0.40	1.49	0.82	0.605
4T-HM89249/HM89210	55	44	66	75	3.5	3.3	5.8	0.55	1.10	0.60	0.686
4T-3479/3420	45.5	44.5	67	74	0.8	3.3	8.7	0.37	1.64	0.90	0.707
4T-44143/44348	54	50	75	84	2.3	1.5	-2.9	0.78	0.77	0.42	0.729
#4T-JL69349/JL69310	49	42.5	56	60	*	1.3	2.3	0.42	1.44	0.79	0.198
4T-13889/13830	45	42.5	59	60	1.5	0.8	0.8	0.35	1.73	0.95	0.147
4T-LM29748/LM29710	49	42.5	59	62	*	1.3	4.3	0.33	1.80	0.99	0.233
4T-13685/13621	49.5	43	61	65	3.5	2.3	3.0	0.40	1.49	0.82	0.293
4T-13687/13621	46.5	43	61	65	2	2.3	3.0	0.40	1.49	0.82	0.296
4T-19150/19281	45	43	63	66	1.5	1	1.4	0.44	1.35	0.74	0.273
4T-16150/16282	49.5	43	63	67	3.5	1.5	4.2	0.40	1.49	0.82	0.331

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

4. Chamfer dimensions of bearings marked " * " are shown in drawings.

Inch system sizes

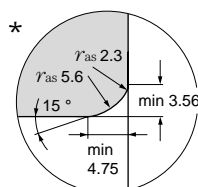
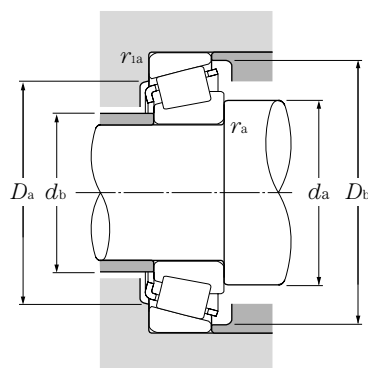


d 38.100 ~ 41.275mm

Boundary dimensions					Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static		
					kN		kgf		rpm	
d	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
38.100	76.200	20.638	20.940	15.507	55.5	63.0	5,650	6,450	5,000	6,700
	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
	79.375	23.812	25.400	19.050	76.5	97.5	7,800	9,950	4,800	6,400
	79.375	29.370	29.771	23.812	93.0	114	9,450	11,600	4,900	6,600
	80.000	21.006	20.940	15.875	55.5	63.0	5,650	6,450	5,000	6,700
	80.035	24.608	23.698	18.512	67.0	82.5	6,850	8,400	4,800	6,400
	82.550	29.370	28.575	23.020	87.0	117	8,850	11,900	4,700	6,200
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	85.725	30.162	30.162	23.812	105	132	10,700	13,400	4,500	6,000
	87.312	30.162	30.886	23.812	94.0	117	9,600	12,000	4,400	5,900
39.688	88.500	25.400	23.698	17.462	70.5	78.0	7,200	7,950	4,000	5,300
	88.500	26.988	29.083	22.225	95.5	107	9,750	10,900	4,600	6,100
	76.200	23.812	25.654	19.050	73.0	90.5	7,450	9,200	5,100	6,800
	77.534	29.370	30.391	23.812	95.0	112	9,700	11,400	4,800	6,400
	79.375	23.812	25.400	19.050	76.5	97.5	7,800	9,950	4,800	6,400
	80.035	29.370	30.391	23.812	95.0	112	9,700	11,400	4,800	6,400
40.000	80.167	29.370	30.391	23.812	95.0	112	9,700	11,400	4,800	6,400
	88.500	25.400	23.698	17.462	70.5	78.0	7,200	7,950	4,000	5,300
	76.200	20.638	20.940	15.507	55.5	63.0	5,650	6,450	5,000	6,700
	80.000	21.000	22.403	17.826	68.0	75.0	6,950	7,650	4,700	6,300
	85.000	20.638	21.692	17.462	69.5	79.5	7,100	8,100	4,400	5,800
40.483	88.500	26.988	29.083	22.225	95.5	107	9,750	10,900	4,600	6,100
	107.950	36.512	36.957	28.575	141	177	14,400	18,100	3,600	4,800
40.988	82.550	29.370	28.575	23.020	87.0	117	8,850	11,900	4,700	6,200
40.988	67.975	17.500	18.000	13.500	46.0	62.5	4,700	6,400	5,300	7,000
41.275	73.025	16.667	17.462	12.700	46.0	55.5	4,700	5,700	5,000	6,600
	73.431	19.558	19.812	14.732	56.0	69.5	5,700	7,100	5,000	6,600
	73.431	21.430	19.812	16.604	56.0	69.5	5,700	7,100	5,000	6,600
	76.200	18.009	17.384	14.288	42.5	51.5	4,350	5,250	4,900	6,500
	76.200	22.225	23.020	17.462	65.0	80.5	6,600	8,200	4,900	6,500
	76.200	25.400	25.400	20.638	76.5	97.5	7,800	9,950	4,800	6,400
	79.375	23.812	25.400	19.050	76.5	97.5	7,800	9,950	4,800	6,400
	80.000	18.009	17.384	14.288	42.5	51.5	4,350	5,250	4,900	6,500

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.

2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring) or "HH" (outer ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_0F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

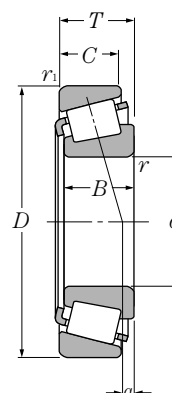
For values of e , Y_2 and Y_0 see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
4T-28150/28300	45.5	43.5	68	71	1.5	1.3	4.8	0.40	1.49	0.82	0.405
4T-2776/2720	52	43.5	66	70	4.3	3.3	7.8	0.30	1.98	1.09	0.495
4T-2788/2720	50	43.5	66	70	3.5	3.3	7.8	0.30	1.98	1.09	0.497
4T-26878/26822	45	44.5	71	74	0.8	0.8	7.4	0.32	1.88	1.04	0.574
4T-3490/3420	52	45.5	67	74	3.5	3.3	8.7	0.37	1.64	0.90	0.683
4T-28150/28315	45.5	43.5	69	73	1.5	1.5	4.8	0.40	1.49	0.82	0.467
4T-27880/27820	48	47	68	75	0.8	1.5	2.5	0.56	1.07	0.59	0.562
4T-HM801346/HM801310	51	49	68	78	0.8	3.3	4.7	0.55	1.10	0.60	0.767
4T-25572/25520	46	46	74	77	0.8	0.8	6.2	0.33	1.79	0.99	0.645
4T-3875/3820	49.5	48.5	73	81	0.8	3.3	8.1	0.40	1.49	0.82	0.857
4T-3580/3525	48	45.5	75	81	1.5	3.3	10.0	0.31	1.96	1.08	0.881
4T-44150/44348	55	51	75	84	2.3	1.5	-2.9 ^①	0.78	0.77	0.42	0.711
4T-418/414	51	44.5	77	80	3.5	1.5	9.1	0.26	2.28	1.25	0.84
4T-2789/2720	52	45	66	70	3.5	3.3	7.8	0.30	1.98	1.09	0.477
4T-3382/3321	52	45.5	68	75	3.5	3.3	11.2	0.27	2.20	1.21	0.669
4T-26880/26822	48	45.5	71	74	1.5	0.8	7.4	0.32	1.88	1.04	0.554
4T-3382/3339	52	45.5	71	75	3.5	1.5	11.2	0.27	2.20	1.21	0.666
4T-3386/3320	46.5	45.5	70	75	0.8	3.3	11.2	0.27	2.20	1.21	0.668
4T-44158/44348	58	51	75	84	3.5	1.5	-2.9 ^①	0.78	0.77	0.42	0.691
4T-28158/28300	47.5	45	68	71	1.5	1.3	4.8	0.40	1.49	0.82	0.386
4T-344/332	52	45.5	73	75	3.5	1.3	6.6	0.27	2.20	1.21	0.479
4T-350A/354A	47.5	46.5	77	80	0.8	1.3	5.1	0.31	1.96	1.08	0.562
4T-420/414	52	46	77	80	3.5	1.5	9.1	0.26	2.28	1.25	0.813
4T-543/532X	57	50	94	100	3.5	3.3	12.3	0.30	2.02	1.11	1.77
4T-HM801349/HM801310	58	49	68	78	3.5	3.3	4.7	0.55	1.10	0.60	0.731
4T-LM300849†/LM300811††	52	45	61	65	*	1.5	3.6	0.35	1.72	0.95	0.239
4T-18590/18520	53	46	66	69	3.5	1.5	2.9	0.35	1.71	0.94	0.281
4T-LM501349/LM501310	53	46.5	67	70	3.5	0.8	3.3	0.40	1.50	0.83	0.335
4T-LM501349/LM501314	53	46.5	66	70	3.5	0.8	3.3	0.40	1.50	0.83	0.355
4T-11162/11300	49	46.5	67	71	1.5	1.5	0.7	0.49	1.23	0.68	0.337
4T-24780/24720	54	47	68	72	3.5	0.8	4.5	0.39	1.53	0.84	0.432
4T-26882/26823	54	47	69	73	3.5	1.5	7.4	0.32	1.88	1.04	0.488
4T-26885/26822	48	47	71	74	0.8	0.8	7.4	0.32	1.88	1.04	0.535
4T-11162/11315	49	46.5	69	73	1.5	1.5	0.7	0.49	1.23	0.68	0.389

Note: 3. Chamfer dimensions of bearings marked "*" are shown in drawings.

① "-" means that load center at outside on end of inner ring.

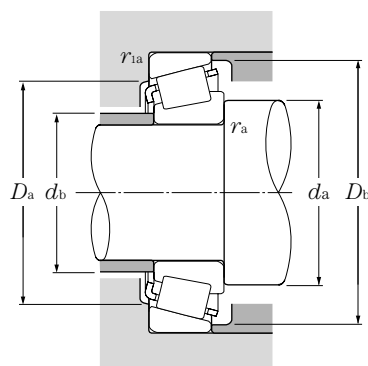
Inch system sizes



d 41.275 ~ 44.450mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static		
	D	T	B	C	kN		kgf		rpm	
					C_r	C_{or}	C_r	C_{or}	grease	oil
41.275	80.000	21.000	22.403	17.826	68.0	75.0	6,950	7,650	4,700	6,300
	80.000	23.812	25.400	19.050	76.5	97.5	7,800	9,950	4,800	6,400
	82.550	26.543	25.654	20.193	80.5	104	8,200	10,600	4,600	6,100
	85.725	30.162	30.162	23.812	105	132	10,700	13,400	4,500	6,000
	87.312	30.162	30.886	23.812	94.0	117	9,600	12,000	4,400	5,900
	88.900	30.162	29.370	23.020	93.5	125	9,550	12,700	4,300	5,800
	90.488	39.688	40.386	33.338	136	175	13,900	17,900	4,300	5,800
	92.075	26.195	23.812	16.670	72.5	81.5	7,400	8,300	3,800	5,000
	93.662	31.750	31.750	26.195	104	131	10,600	13,400	4,100	5,500
	95.250	30.162	29.370	23.020	109	147	11,100	15,000	4,000	5,300
42.070	95.250	30.958	28.300	20.638	82.5	92.0	8,400	9,350	3,700	5,000
	95.250	30.958	28.575	22.225	96.0	116	9,800	11,800	3,700	4,900
42.070	90.488	39.688	40.386	33.338	136	175	13,900	17,900	4,300	5,800
42.862	82.550	26.195	26.988	20.638	75.5	97.0	7,700	9,900	4,600	6,100
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	87.312	30.162	30.886	23.812	94.0	117	9,600	12,000	4,400	5,900
42.875	79.375	23.812	25.400	19.050	76.5	97.5	7,800	9,950	4,800	6,400
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
44.450	76.992	17.462	17.145	11.908	44.0	54.0	4,450	5,550	4,700	6,300
	79.375	17.462	17.462	13.495	45.5	56.0	4,600	5,700	4,600	6,200
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	84.138	30.162	30.886	23.812	94.0	117	9,600	12,000	4,400	5,900
	85.000	20.638	21.692	17.462	69.5	79.5	7,100	8,100	4,400	5,800
	87.312	30.162	30.886	23.812	94.0	117	9,600	12,000	4,400	5,900
	88.900	30.162	29.370	23.020	93.5	125	9,550	12,700	4,300	5,800
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	93.662	31.750	31.750	26.195	103	131	10,600	13,400	4,100	5,500
	95.250	27.783	28.575	22.225	107	139	10,900	14,200	3,900	5,200
	95.250	27.783	29.900	22.225	108	129	11,000	13,200	4,200	5,600
	95.250	30.162	29.370	23.020	109	147	11,100	15,000	4,000	5,300
	95.250	30.958	28.300	20.638	82.5	92.0	8,400	9,350	3,700	5,000
	95.250	30.958	28.575	22.225	96.0	116	9,800	11,800	3,700	4,900
44.450	101.600	34.925	36.068	26.988	135	165	13,800	16,800	3,800	5,000
	104.775	30.162	29.317	24.605	115	148	11,700	15,000	3,500	4,700

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{1s} and r_{1es} are larger than the maximum value.



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_0F_a$$

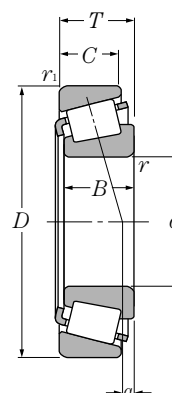
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_0 see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	Y_2
4T-336/332	47	46	73	75	0.8	1.3	6.6	0.27	2.20	1.21	0.468
4T-26882/26824	54	47	70	74	3.5	1.3	7.4	0.32	1.88	1.04	0.542
4T-M802048/M802011	57	51	70	79	3.5	3.3	3.2	0.55	1.10	0.60	0.642
4T-3880/3820	52	50	73	81	0.8	3.3	8.1	0.40	1.49	0.82	0.81
4T-3576/3525	49	48	75	81	0.8	3.3	10.0	0.31	1.96	1.08	0.834
4T-HM803145/HM803110	54	53	74	85	0.8	3.3	4.6	0.55	1.10	0.60	0.901
4T-4388/4335	57	51	77	85	3.5	3.3	15.0	0.28	2.11	1.16	1.25
4T-M903345/M903310	60	54	78	88	3.5	1.5	− 3.6 ^①	0.83	0.72	0.40	0.758
4T-46162/46368	52	51	79	87	0.8	3.3	7.1	0.40	1.49	0.82	1.09
4T-HM804840/HM804810	61	54	81	91	3.5	3.3	3.7	0.55	1.10	0.60	1.08
4T-53162/53375	57	53	81	89	1.5	0.8	0.5	0.74	0.81	0.45	0.975
4T-HM903245/HM903210	63	54	81	91	3.5	0.8	− 0.4 ^①	0.74	0.81	0.45	1.05
4T-4395/4335	58	51	77	85	3.5	3.3	15.0	0.28	2.11	1.16	1.24
4T-22780/22720	56	50	71	77	3.5	3.3	6.4	0.40	1.49	0.82	0.617
4T-25578/25520	53	49.5	74	77	2.3	0.8	6.2	0.33	1.79	0.99	0.584
4T-3579/3525	56	49.5	75	81	3.5	3.3	10.0	0.31	1.96	1.08	0.805
4T-26884/26822	55	48.5	71	74	3.5	0.8	7.4	0.32	1.88	1.04	0.51
4T-25577/25520	55	49	74	77	3.5	0.8	6.2	0.33	1.79	0.99	0.581
4T-12175/12303	52	49.5	68	73	1.5	1.5	− 0.2 ^①	0.51	1.19	0.65	0.308
4T-18685/18620	54	49.5	71	74	2.8	1.5	2.2	0.37	1.60	0.88	0.345
4T-25580/25520	57	50	74	77	3.5	0.8	6.2	0.33	1.79	0.99	0.56
4T-25582/25520	60	50	74	77	5	0.8	6.2	0.33	1.79	0.99	0.556
4T-3578/3520	57	51	74	80	3.5	3.3	10.0	0.31	1.96	1.08	0.699
4T-355/354A	54	50	77	80	2.3	1.3	5.1	0.31	1.96	1.08	0.511
4T-3578/3525	57	51	75	81	3.5	3.3	10.0	0.31	1.96	1.08	0.779
4T-HM803149/HM803110	62	53	74	85	3.5	3.3	4.6	0.55	1.10	0.60	0.849
4T-3782/3720	58	52	82	88	3.5	3.3	8.3	0.34	1.77	0.97	0.961
4T-46175/46368	55	54	79	87	0.8	3.3	7.1	0.40	1.49	0.82	1.04
4T-33885/33821	53	53	85	90	0.8	2.3	8.0	0.33	1.82	1.00	0.987
4T-438/432	57	51	83	87	3.5	2.3	9.2	0.28	2.11	1.16	0.953
4T-HM804842/HM804810	57	57	81	91	0.8	3.3	3.7	0.55	1.10	0.60	1.04
4T-53177/53375	63	53	81	89	3.5	0.8	0.5	0.74	0.81	0.45	0.925
4T-HM903249/HM903210	65	54	81	91	3.5	0.8	− 0.4 ^①	0.74	0.81	0.45	1
4T-527/522	59	53	89	95	3.5	3.3	12.9	0.29	2.10	1.16	1.37
4T-460/453X	60	54	92	98	3.5	3.3	7.1	0.34	1.79	0.98	1.29

① - " means that load center at outside on end of inner ring.

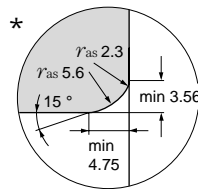
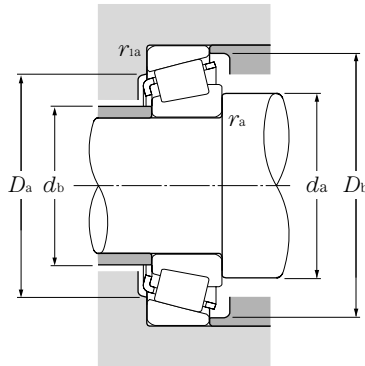
Inch system sizes



d 44.450 ~ 47.625mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static		
	D	T	B	C	kN		kgf		rpm	
					C_r	C_{or}	C_r	C_{or}	grease	oil
44.450	104.775	30.162	30.958	23.812	130	169	13,200	17,300	3,500	4,700
	104.775	36.512	36.512	28.575	138	189	14,000	19,300	3,600	4,800
	111.125	30.162	26.909	20.638	104	136	10,600	13,900	3,200	4,200
	111.125	30.162	26.909	20.638	104	136	10,600	13,900	3,200	4,200
	127.000	50.800	52.388	41.275	250	320	25,500	33,000	3,200	4,300
44.983	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
45.000	85.000	20.638	21.692	17.462	69.5	79.5	7,100	8,100	4,400	5,800
	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
45.237	87.312	30.162	30.886	23.812	94.0	117	9,600	12,000	4,400	5,900
45.242	73.431	19.558	19.812	15.748	54.0	76.0	5,550	7,750	4,800	6,400
	77.788	19.842	19.842	15.080	57.5	73.5	5,850	7,500	4,600	6,200
45.618	82.550	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	83.058	23.876	25.400	19.114	76.0	98.0	7,750	10,000	4,500	6,000
	85.000	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
45.987	74.976	18.000	18.000	14.000	51.0	71.0	5,200	7,250	4,700	6,300
46.038	79.375	17.462	17.462	13.495	45.5	56.0	4,600	5,700	4,600	6,200
	82.931	23.812	25.400	19.050	76.0	98.0	7,750	10,000	4,500	6,000
	85.000	20.638	21.692	17.462	69.5	79.5	7,100	8,100	4,400	5,800
	85.000	25.400	25.608	20.638	79.0	104	8,050	10,600	4,400	5,800
	90.119	23.000	21.692	21.808	69.5	79.5	7,100	8,100	4,400	5,800
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
47.625	95.250	27.783	29.900	22.225	108	129	11,000	13,200	4,200	5,600
	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
	88.900	25.400	25.400	19.050	82.0	101	8,350	10,300	4,200	5,600
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	95.250	30.162	29.370	23.020	109	147	11,100	15,000	4,000	5,300
	96.838	21.000	21.946	15.875	78.0	96.5	7,950	9,850	3,700	5,000
47.625	101.600	34.925	36.068	26.988	135	165	13,800	16,800	3,800	5,000
	104.775	30.162	29.317	24.605	115	148	11,700	15,000	3,500	4,700

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring) or "HT" (outer ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

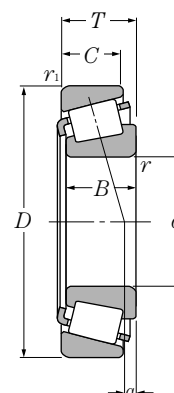
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
									load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	Y_2
4T-45280/45220	55	54	93	99	0.8	3.3	7.9	0.33	1.80	0.99	1.35
4T-HM807040/HM807010	66	59	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.62
4T-55175C/55437	70	64	92	105	3.5	3.3	-7.4 [●]	0.88	0.68	0.37	1.45
4T-55176C/55437	65	65	92	105	0.8	3.3	-7.4 [●]	0.88	0.68	0.37	1.09
4T-6277/6220	67	60	108	117	3.5	3.3	19.5	0.30	2.01	1.11	3.58
4T-25584/25520	53	51	74	77	1.5	0.8	6.2	0.33	1.79	0.99	0.555
4T-3776/3720	59	53	82	88	3.5	3.3	8.3	0.34	1.77	0.97	0.952
4T-358/354A	53	50	77	80	1.5	1.3	5.1	0.31	1.96	1.08	0.505
4T-367/362A	55	51	81	84	2	1.3	4.0	0.32	1.88	1.03	0.595
4T-3586/3525	58	52	75	81	3.5	3.3	10.0	0.31	1.96	1.08	0.765
4T-LM102949/LM102910	56	50	68	70	3.5	0.8	4.7	0.31	1.97	1.08	0.307
4T-LM603049/LM603011	57	50	71	74	3.5	0.8	2.2	0.43	1.41	0.77	0.372
4T-25590/25519	58	51	73	77	3.5	2	6.2	0.33	1.79	0.99	0.534
4T-25590/25520	58	51	74	77	3.5	0.8	6.2	0.33	1.79	0.99	0.543
4T-25590/25522	58	51	73	77	3.5	2	6.2	0.33	1.79	0.99	0.545
4T-25590/25526	58	51	74	78	3.5	2.3	6.2	0.33	1.79	0.99	0.581
4T-LM503349A†/LM503310††	57	51	67	71	*	1.5	1.9	0.40	1.49	0.82	0.296
4T-18690/18620	56	51	71	74	2.8	1.5	2.2	0.37	1.60	0.88	0.329
4T-25592/25520	58	52	74	77	3.5	0.8	6.2	0.33	1.79	0.99	0.538
4T-359A/354A	57	51	77	80	3.5	1.3	5.1	0.31	1.96	1.08	0.489
4T-2984/2924	58	52	76	80	3.5	1.3	6.4	0.35	1.73	0.95	0.615
4T-359S/352	55	51	78	82	2.3	2.3	5.1	0.31	1.96	1.08	0.651
4T-3777/3720	60	53	82	88	3.5	3.3	8.3	0.34	1.77	0.97	0.934
4T-436/432	59	52	83	87	3.5	2.3	9.2	0.28	2.11	1.16	0.927
4T-369A/362A	60	53	81	84	3.5	1.3	4.0	0.32	1.88	1.03	0.559
4T-M804048/M804010	57	56	77	85	0.8	3.3	1.7	0.55	1.10	0.60	0.662
4T-3778/3720	67	55	82	88	6.4	3.3	8.3	0.34	1.77	0.97	0.898
4T-HM804846/HM804810	66	57	81	91	3.5	3.3	3.7	0.55	1.10	0.60	0.978
4T-386A/382A	56	55	89	92	0.8	0.8	3.1	0.35	1.69	0.93	0.72
4T-528/522	62	55	89	95	3.5	3.3	12.9	0.29	2.10	1.16	1.3
4T-463/453X	65	56	92	98	4.8	3.3	7.1	0.34	1.79	0.98	1.24

Note: 3. Chamfer dimensions of bearings marked "*" are shown in drawings.

① " - " means that load center at outside on end of inner ring.

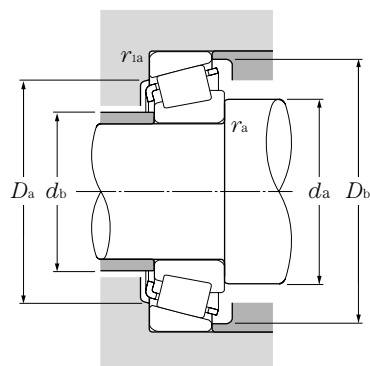
Inch system sizes
J system series



d 47.625 ~ 50.800mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C_r	C_{or}	C_r	C_{or}	grease	oil
47.625	104.775	30.162	30.958	23.812	130	169	13,200	17,300	3,500	4,700
	111.125	30.162	26.909	20.638	104	136	10,600	13,900	3,200	4,200
	123.825	36.512	32.791	25.400	154	188	15,700	19,200	2,900	3,900
48.412	95.250	30.162	29.370	23.020	109	147	11,100	15,000	4,000	5,300
	95.250	30.162	29.370	23.020	109	147	11,100	15,000	4,000	5,300
49.212	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	103.188	43.658	44.475	36.512	174	232	17,700	23,600	3,800	5,000
	104.775	36.512	36.512	28.575	138	189	14,000	19,300	3,600	4,800
	114.300	44.450	44.450	34.925	186	225	19,000	23,000	3,600	4,800
	114.300	44.450	44.450	36.068	203	261	20,700	26,600	3,500	4,700
49.987	82.550	21.590	22.225	16.510	69.5	94.0	7,100	9,600	4,300	5,700
	92.075	24.608	25.400	19.845	83.5	116	8,550	11,800	4,000	5,300
	114.300	44.450	44.450	36.068	203	261	20,700	26,600	3,500	4,700
50.000	82.000	21.500	21.500	17.000	69.5	94.0	7,100	9,600	4,300	5,700
	84.000	22.000	22.000	17.500	69.5	94.5	7,100	9,600	4,300	5,700
	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
	90.000	28.000	28.000	23.000	106	141	10,800	14,400	4,100	5,400
	105.000	37.000	36.000	29.000	138	189	14,000	19,300	3,600	4,800
	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
50.800	82.550	21.590	22.225	16.510	69.5	94.0	7,100	9,600	4,300	5,700
	85.000	17.462	17.462	13.495	49.5	65.0	5,050	6,600	4,200	5,600
	88.900	17.462	17.462	13.495	49.5	65.0	5,050	6,600	4,200	5,600
	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
	90.000	20.000	22.225	15.875	76.5	90.5	7,800	9,250	4,100	5,500
	92.075	24.608	25.400	19.845	83.5	116	8,550	11,800	4,000	5,300
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	95.250	27.783	28.575	22.225	107	139	10,900	14,200	3,900	5,200
	95.250	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	96.838	21.000	21.946	15.875	78.0	96.5	7,950	9,850	3,700	5,000
	97.630	24.608	24.608	19.446	88.5	128	9,000	13,000	3,700	4,900
	98.425	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{1s} and r_{2s} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

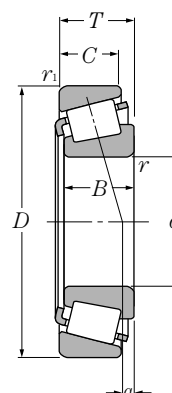
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
4T-45282/45220	63	57	93	99	3.5	3.3	7.9	0.33	1.80	0.99	1.29
4T-55187C/55437	69	62	92	105	3.5	3.3	-7.4 [●]	0.88	0.68	0.37	1.4
4T-72188C/72487	69	67	102	116	0.8	3.3	-1.5 [●]	0.74	0.81	0.45	2.16
4T-HM804848/HM804810	63	57	81	91	2.3	3.3	3.7	0.55	1.10	0.60	0.967
4T-HM804849/HM804810	66	57	81	91	3.5	3.3	3.7	0.55	1.10	0.60	0.964
4T-3781/3720	62	56	82	88	3.5	3.3	8.3	0.34	1.77	0.97	0.877
4T-5395/5335	66	60	89	97	3.5	3.3	16.1	0.30	2.02	1.11	1.75
4T-HM807044/HM807010	69	63	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.52
4T-65390/65320	70	60	97	107	3.5	3.3	12.5	0.43	1.39	0.77	2.23
4T-HH506348/HH506310	71	61	97	107	3.5	3.3	13.3	0.40	1.49	0.82	2.33
4T-LM104947A†/LM104911	55	55	75	78	0.5	1.3	5.8	0.31	1.97	1.08	0.434
4T-28579†/28521	60	56	83	87	2.3	0.8	4.6	0.38	1.59	0.87	0.718
4T-HH506349†/HH506310	72	61	97	107	3.5	3.3	13.3	0.40	1.49	0.82	2.27
#4T-JLM104948/JLM104910	60	55	76	78	3	0.5	5.4	0.31	1.97	1.08	0.42
#4T-JLM704649/JLM704610	62	56	76	80	3.5	1.5	2.3	0.44	1.37	0.75	0.466
4T-365/362A	58	55	81	84	2	1.3	4.0	0.32	1.88	1.03	0.53
4T-366/362A	59	55	81	84	2.3	1.3	4.0	0.32	1.88	1.03	0.529
#4T-JM205149/JM205110	62	57	80	85	3	2.5	7.4	0.33	1.82	1.00	0.752
#4T-JHM807045/JHM807012	69	63	90	100	3	2.5	7.5	0.49	1.23	0.68	1.52
4T-396/394A	61	60	101	104	0.8	1.3	0.7	0.40	1.49	0.82	1.06
4T-LM104949/LM104911	62	55	75	78	3.5	1.3	5.8	0.31	1.97	1.08	0.419
4T-18790/18720	62	56	77	80	3.5	1.5	0.8	0.41	1.48	0.81	0.374
4T-18790/18724	62	56	78	82	3.5	1.3	0.8	0.41	1.48	0.81	0.431
4T-368/362A	58	56	81	84	1.5	1.3	4.0	0.32	1.88	1.03	0.519
4T-370A/362A	65	56	81	84	5	1.3	4.0	0.32	1.88	1.03	0.511
4T-368A/362	62	56	81	84	3.5	2	4.0	0.32	1.88	1.03	0.525
4T-28580/28521	63	57	83	87	3.5	0.8	4.6	0.38	1.59	0.87	0.703
4T-3775/3720	58	58	82	88	0.8	3.3	8.3	0.34	1.77	0.97	0.852
4T-3780/3720	64	58	82	88	3.5	3.3	8.3	0.34	1.77	0.97	0.848
4T-33889/33821	64	58	85	90	3.5	2.3	8.0	0.33	1.82	1.00	0.876
4T-3780/3726	64	58	83	89	3.5	3.3	8.3	0.34	1.77	0.97	0.903
4T-385A/382A	61	60	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.676
4T-28678/28622	65	58	88	92	3.5	0.8	3.3	0.40	1.49	0.82	0.852
4T-3780/3732	64	58	84	90	3.5	3.3	8.3	0.34	1.77	0.97	0.993

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

● " - " means that load center at outside on end of inner ring.

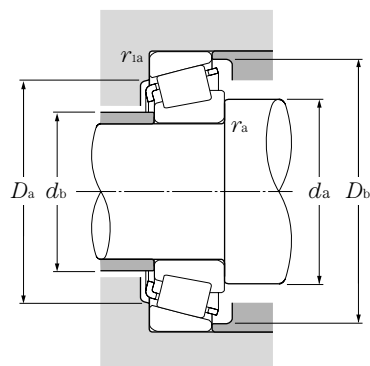
Inch system sizes
J system series



d 50.800 ~ 55.000mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
50.800	101.600	31.750	31.750	25.400	110	136	11,200	13,900	3,700	5,000
	101.600	34.925	36.068	26.988	135	165	13,800	16,800	3,800	5,000
	104.775	30.162	29.317	24.605	115	148	11,700	15,000	3,500	4,700
	104.775	30.162	30.958	23.812	130	169	13,200	17,300	3,500	4,700
	104.775	36.512	36.512	28.575	138	189	14,000	19,300	3,600	4,800
	104.775	36.512	36.512	28.575	143	178	14,500	18,100	3,700	4,900
	107.950	36.512	36.957	28.575	141	177	14,400	18,100	3,600	4,800
	111.125	30.162	28.575	20.638	104	136	10,600	13,900	3,200	4,200
	112.712	30.162	26.909	20.638	104	136	10,600	13,900	3,200	4,200
	112.712	30.162	30.048	23.812	119	174	12,200	17,800	3,200	4,300
	112.712	30.162	30.162	23.812	138	195	14,100	19,800	3,200	4,200
	117.475	33.338	31.750	23.812	130	153	13,200	15,600	3,300	4,400
51.592	120.650	41.275	41.275	31.750	172	213	17,500	21,700	3,300	4,400
	123.825	36.512	32.791	25.400	154	188	15,700	19,200	2,900	3,900
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
52.388	88.900	20.638	22.225	16.513	76.5	90.5	7,800	9,250	4,100	5,500
52.388	92.075	24.608	25.400	19.845	83.5	116	8,550	11,800	4,000	5,300
	93.264	30.162	30.302	23.812	102	134	10,400	13,700	4,000	5,300
	95.250	27.783	28.575	22.225	107	139	10,900	14,200	3,900	5,200
53.975	88.900	19.050	19.050	13.492	61.0	82.5	6,200	8,450	4,000	5,300
	95.250	27.783	28.575	22.225	107	139	10,900	14,200	3,900	5,200
	96.838	21.000	21.946	15.875	78.0	96.5	7,950	9,850	3,700	5,000
	104.775	30.162	30.958	23.812	130	169	13,200	17,300	3,500	4,700
	104.775	36.512	36.512	28.575	138	189	14,000	19,300	3,600	4,800
	107.950	36.512	36.957	28.575	141	177	14,400	18,100	3,600	4,800
	120.650	41.275	41.275	31.750	172	213	17,500	21,700	3,300	4,400
	122.238	33.338	31.750	23.812	134	163	13,700	16,600	3,100	4,200
	122.238	43.658	43.764	36.512	194	283	19,700	28,900	3,100	4,100
	123.825	36.512	32.791	25.400	154	188	15,700	19,200	2,900	3,900
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
54.488	130.175	36.512	33.338	23.812	156	186	15,900	19,000	2,700	3,600
	140.030	36.512	33.236	23.520	171	212	17,400	21,600	2,600	3,400
	104.775	36.512	36.512	28.575	138	189	14,000	19,300	3,600	4,800
55.000	90.000	23.000	23.000	18.500	77.5	109	7,900	11,100	3,900	5,300

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. Bearing numbers marked "*" designate J-series bearings. The tolerances of these bearings is listed in Table 6.6 on page A-40.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

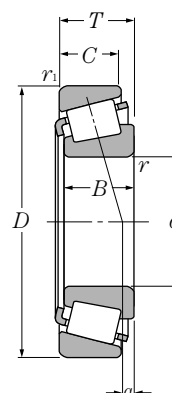
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max	a		Y_2	Y_o	
4T-49585/49520	66	59	88	96	3.5	3.3	7.1	0.40	1.50	0.82	1.13
4T-529/522	59	58	89	95	0.8	3.3	12.9	0.29	2.10	1.16	1.24
4T-455/453X	60	59	92	98	0.8	3.3	7.1	0.34	1.79	0.98	1.19
4T-45284/45220	71	59	93	99	6.4	3.3	7.9	0.33	1.80	0.99	1.22
4T-HM807046/HM807010	70	63	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.49
4T-59200/59412	68	61	92	99	3.5	3.3	9.6	0.40	1.49	0.82	1.44
4T-537/532X	65	59	94	100	3.5	3.3	12.3	0.30	2.02	1.11	1.55
4T-HM907643/HM907614	74	65	91	105	3.5	3.3	-7.2 ^①	0.88	0.68	0.37	1.36
4T-55200C/55443	71	65	92	106	3.5	3.3	-7.4 ^①	0.88	0.68	0.37	1.34
4T-3975/3920	68	61	99	106	3.5	3.3	4.5	0.40	1.49	0.82	1.53
4T-39575/39520	68	61	101	107	3.5	3.3	6.6	0.34	1.77	0.97	1.54
4T-66200/66462	71	65	100	111	3.5	3.3	0.4	0.63	0.96	0.53	1.67
4T-619/612	67	61	105	110	3.5	3.3	14.4	0.31	1.91	1.05	2.3
4T-72200C/72487	77	67	102	116	3.5	3.3	-1.5 ^①	0.74	0.81	0.45	2.1
4T-555/552A	66	62	109	116	2.3	3.3	9.4	0.35	1.73	0.95	2.34
4T-368S/362A	59	56	81	84	2	1.3	4.0	0.32	1.88	1.03	0.507
4T-28584/28521	65	58	83	87	3.5	0.8	4.6	0.38	1.59	0.87	0.677
4T-3767/3720	63	59	82	88	2.3	3.3	8.3	0.34	1.77	0.97	0.819
4T-33890/33821	61	59	85	90	1.5	2.3	8.0	0.33	1.82	1.00	0.851
4T-LM806649/LM806610	63	60	80	85	2.3	2	-2.2 ^①	0.55	1.10	0.60	0.437
4T-33895/33822	63	60	86	90	1.5	0.8	8.0	0.33	1.82	1.00	0.824
4T-389A/382A	61	60	89	92	0.8	0.8	3.1	0.35	1.69	0.93	0.633
4T-45287/45220	62	62	93	99	0.8	3.3	7.9	0.33	1.80	0.99	1.17
4T-HM807049/HM807010	73	63	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.41
4T-539/532X	68	61	94	100	3.5	3.3	12.3	0.30	2.02	1.11	1.47
4T-621/612	70	63	105	110	3.5	3.3	14.4	0.31	1.91	1.05	2.21
4T-66584/66520	75	68	105	116	3.5	3.3	-1.8 ^①	0.67	0.90	0.50	1.79
4T-5578/5535	73	67	106	116	3.5	3.3	13.3	0.36	1.67	0.92	2.64
4T-72212C/72487	79	67	102	116	3.5	3.3	-1.5 ^①	0.74	0.81	0.45	2.03
4T-557S/552A	71	65	109	116	3.5	3.3	9.4	0.35	1.73	0.95	2.26
4T-HM911242/HM911210	79	74	109	124	3.5	3.3	-5.2 ^①	0.82	0.73	0.40	2.27
4T-78214C/78551	79	77	117	132	0.8	2.3	-8.5 ^①	0.87	0.69	0.38	2.77
4T-HM807048/HM807010	73	63	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.40
#4T-JLM506849/JLM506810	63	61	82	86	1.5	0.5	2.8	0.40	1.49	0.82	0.558

① " - " means that load center at outside on end of inner ring.

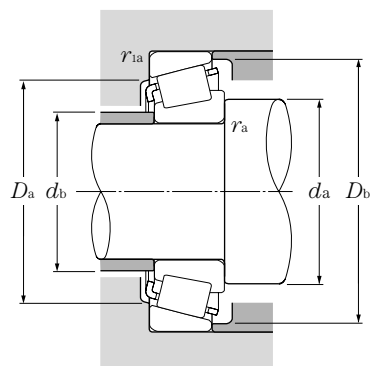
Inch system sizes
J system series



d 55.000 ~ 60.000mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C _r kN	C _{or}	C _r kgf	C _{or}	grease	oil
55.000	95.000	29.000	29.000	23.500	107	144	10,900	14,700	3,800	5,100
	96.838	21.000	21.946	15.875	78.0	96.5	7,950	9,850	3,700	5,000
	110.000	39.000	39.000	32.000	173	219	17,600	22,400	3,500	4,600
55.562	97.630	24.608	24.608	19.446	88.5	128	9,000	13,000	3,700	4,900
	123.825	36.512	32.791	25.400	154	188	15,700	19,200	2,900	3,900
	127.000	36.512	36.512	26.988	163	228	16,600	23,300	2,900	3,800
55.575	96.838	21.000	21.946	15.875	78	96.5	7,950	9,850	3,700	5,000
57.150	96.838	21.000	21.946	15.875	78	96.5	7,950	9,850	3,700	5,000
	96.838	21.000	21.946	15.875	78	96.5	7,950	9,850	3,700	5,000
	96.838	21.000	21.946	15.875	78	96.5	7,950	9,850	3,700	5,000
	96.838	21.000	21.946	15.875	78	96.5	7,950	9,850	3,700	5,000
	97.630	24.608	24.608	19.446	88.5	128	9,000	13,000	3,700	4,900
	104.775	30.162	29.317	24.605	115	148	11,700	15,000	3,500	4,700
	104.775	30.162	29.317	24.605	115	148	11,700	15,000	3,500	4,700
	104.775	30.162	30.958	23.812	130	169	13,200	17,300	3,500	4,700
	107.950	27.783	29.317	22.225	115	148	11,700	15,000	3,500	4,700
	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
	110.000	27.795	29.317	27.000	115	148	11,700	15,000	3,500	4,700
	112.712	30.162	30.048	23.812	119	174	12,200	17,800	3,200	4,300
	112.712	30.162	30.162	23.812	138	195	14,100	19,800	3,200	4,200
	112.712	30.162	30.162	23.812	138	195	14,100	19,800	3,200	4,200
	117.475	30.162	30.162	23.812	117	175	11,900	17,900	3,000	4,000
	117.475	33.338	31.750	23.812	130	153	13,200	15,600	3,300	4,400
	120.650	41.275	41.275	31.750	172	213	17,500	21,700	3,300	4,400
	123.825	36.512	32.791	25.400	154	188	15,700	19,200	2,900	3,900
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
	140.030	36.512	33.236	23.520	171	212	17,400	21,600	2,600	3,400
57.531	96.838	21.000	21.946	15.875	78.0	96.5	7,950	9,850	3,700	5,000
59.972	122.238	33.338	31.750	23.812	134	163	13,700	16,600	3,100	4,200
59.987	146.050	41.275	39.688	25.400	199	234	20,300	23,900	2,400	3,200
60.000	95.000	24.000	24.000	19.000	83.0	122	8,500	12,400	3,700	4,900
	107.950	25.400	25.400	19.050	91.5	140	9,350	14,200	3,200	4,300

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

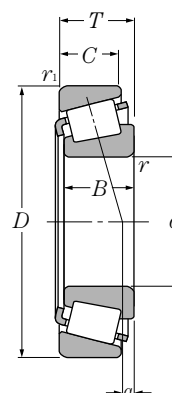
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			Y_2	Y_o	
#4T-JM207049/JM207010	64	62	85	91	1.5	2.5	7.6	0.33	1.79	0.99	0.82
4T-385/382A	65	61	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.616
#4T-JH307749/JH307710	71	64	97	104	3	2.5	11.7	0.35	1.73	0.95	1.71
4T-28680/28622	68	62	88	92	3.5	0.8	3.3	0.40	1.49	0.82	0.774
4T-72218C/72487	80	67	102	116	3.5	3.3	-1.5 [●]	0.74	0.81	0.45	1.99
4T-HM813840/HM813810	76	70	111	121	3.5	3.3	3.7	0.50	1.20	0.66	2.34
4T-389/382A	65	61	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.608
4T-387/382A	66	62	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.583
4T-387A/382A	69	62	89	92	3.5	0.8	3.1	0.35	1.69	0.93	0.581
4T-387AS/382A	72	62	89	92	5	0.8	3.1	0.35	1.69	0.93	0.576
4T-387S/382A	63	62	89	92	0.8	0.8	3.1	0.35	1.69	0.93	0.585
4T-28682/28622	70	63	88	92	3.5	0.8	3.3	0.40	1.49	0.82	0.747
4T-462/453X	67	63	92	98	2.3	3.3	7.1	0.34	1.79	0.98	1.06
4T-469/453X	70	63	92	98	3.5	3.3	7.1	0.34	1.79	0.98	1.06
4T-45289/45220	65	65	93	99	0.8	3.3	7.9	0.33	1.80	0.99	1.1
4T-469/453A	70	63	97	100	3.5	0.8	7.1	0.34	1.79	0.98	1.11
4T-390/394A	70	66	101	104	2.3	1.3	0.7	0.40	1.49	0.82	0.954
4T-469/454	70	63	96	100	3.5	2	7.1	0.34	1.79	0.98	1.24
4T-3979/3920	72	66	99	106	3.5	3.3	4.5	0.40	1.49	0.82	1.4
4T-39580/39520	72	66	101	107	3.5	3.3	6.6	0.34	1.77	0.97	1.41
4T-39581/39520	81	66	101	107	8	3.3	6.6	0.34	1.77	0.97	1.4
4T-33225/33462	74	68	104	112	3.5	3.3	2.6	0.44	1.38	0.76	1.58
4T-66225/66462	76	69	100	111	3.5	3.3	0.4	0.63	0.96	0.53	1.54
4T-623/612	72	66	105	110	3.5	3.3	14.4	0.31	1.91	1.05	2.12
4T-72225C/72487	81	67	102	116	3.5	3.3	-1.5 [●]	0.74	0.81	0.45	1.96
4T-555S/552A	73	67	109	116	3.5	3.3	9.4	0.35	1.73	0.95	2.18
4T-78225/78551	83	77	117	132	3.5	2.3	-8.5 [●]	0.87	0.69	0.38	2.69
4T-388A/382A	69	63	89	92	3.5	0.8	3.1	0.35	1.69	0.93	0.575
4T-66589/66520	74	73	105	116	0.8	3.3	-1.8 [●]	0.67	0.90	0.50	1.66
4T-H913840†/H913810	88	82	124	138	3.5	3.3	-4.3 [●]	0.78	0.77	0.42	3.22
#4T-JLM508748/JLM508710	75	66	85	91	5	2.5	3.0	0.40	1.49	0.82	0.606
4T-29580/29520	75	68	96	103	3.5	3.3	0.6	0.46	1.31	0.72	0.992

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

● " - " means that load center at outside on end of inner ring.

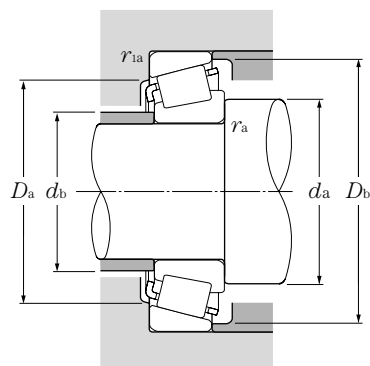
Inch system sizes
J system series



d 60.000 ~ 65.000mm

d	Boundary dimensions				Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C_r	C_{or}	C_r	C_{or}	grease	oil
60.000	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
	130.000	34.100	30.924	22.650	156.0	186	15,900	19,000	2,700	3,600
60.325	100.000	25.400	25.400	19.845	90.5	134	9,200	13,600	3,500	4,700
	112.712	30.162	30.048	23.812	119	174	12,200	17,800	3,200	4,300
	122.238	38.100	38.354	29.718	187	244	19,100	24,900	3,100	4,100
	122.238	43.658	43.764	36.512	194	283	19,700	28,900	3,100	4,100
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
	127.000	36.512	36.512	26.988	163	228	16,600	23,300	2,900	3,800
	127.000	44.450	44.450	34.925	203	263	20,700	26,800	3,100	4,200
61.912	130.175	36.512	33.338	23.812	156	186	15,900	19,000	2,700	3,600
61.912	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
	136.525	46.038	46.038	36.512	224	355	22,800	36,500	2,600	3,500
	146.050	41.275	39.688	25.400	199	234	20,300	23,900	2,400	3,200
61.976	101.600	24.608	24.608	19.845	90.5	134	9,200	13,600	3,500	4,700
62.738	101.600	25.400	25.400	19.845	90.5	134	9,200	13,600	3,500	4,700
63.500	94.458	19.050	19.050	15.083	60.5	103	6,150	10,500	3,600	4,800
	107.950	25.400	25.400	19.050	91.5	140	9,350	14,200	3,200	4,300
	107.950	25.400	25.400	19.050	91.5	140	9,350	14,200	3,200	4,300
	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
	110.000	25.400	25.400	19.050	91.5	140	9,350	14,200	3,200	4,300
	112.712	30.162	30.048	23.812	119	174	12,200	17,800	3,200	4,300
	112.712	30.162	30.162	23.812	138	195	14,100	19,800	3,200	4,200
	120.000	29.794	29.007	24.237	128	177	13,000	18,100	3,000	4,000
	120.000	29.794	29.007	24.237	128	177	13,000	18,100	3,000	4,000
	122.238	38.100	38.354	29.718	187	244	19,100	24,900	3,100	4,100
	122.238	43.658	43.764	36.512	194	283	19,700	28,900	3,100	4,100
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
	127.000	36.512	36.170	28.575	163	229	16,600	23,300	2,900	3,800
	127.000	36.512	36.512	26.988	163	228	16,600	23,300	2,900	3,800
	136.525	41.275	41.275	31.750	194	262	19,800	26,700	2,800	3,800
	140.030	36.512	33.236	23.520	171	212	17,400	21,600	2,600	3,400
65.000	105.000	24.000	23.000	18.500	85.0	117	8,700	11,900	3,300	4,500
	110.000	28.000	28.000	22.500	119	174	12,200	17,800	3,200	4,300

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. Bearing numbers marked "*" designate J-series bearings. The accuracy of these bearings is listed in Table 6.6 on page A-40.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

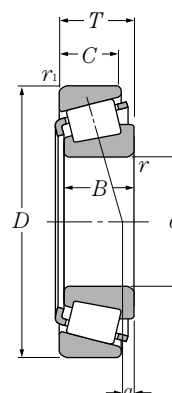
For values of e , Y_2 and Y_o

see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
4T-397/394A #4T-JHM911244/JHM911211	69 84	68 74	101 109	104 123	0.8 3.5	1.3 3.3	0.7 −7.6 ^①	0.40 0.82	1.49 0.73	0.82 0.40	0.91 2.01
4T-28985/28921	73	67	89	96	3.5	3.3	2.5	0.43	1.41	0.78	0.772
4T-3980/3920	75	68	99	106	3.5	3.3	4.5	0.40	1.49	0.82	1.33
4T-HM212044/HM212011	85	70	108	116	8	3.3	11.1	0.34	1.78	0.98	2.02
4T-5583/5535	78	72	106	116	3.5	3.3	13.3	0.36	1.67	0.92	2.44
4T-558/552A	73	69	109	116	2.3	3.3	9.4	0.35	1.73	0.95	2.1
4T-HM813841/HM813810	80	73	111	121	3.5	3.3	3.7	0.50	1.20	0.66	2.21
4T-65237/65500	82	71	107	119	3.5	3.3	9.3	0.49	1.23	0.68	2.65
4T-HM911245/HM911210	87	74	109	124	5	3.3	−5.2 ^①	0.82	0.73	0.40	2.12
4T-392/394A	70	69	101	104	0.8	1.3	0.7	0.40	1.49	0.82	0.879
4T-H715334/H715311	86	79	118	132	3.5	3.3	8.7	0.47	1.27	0.70	3.47
4T-H913842/H913810	90	82	124	138	3.5	3.3	−4.3 ^①	0.78	0.77	0.42	3.17
4T-28990/28920	72	68	90	97	2	3.3	1.7	0.43	1.41	0.78	0.768
4T-28995/28920	75	69	90	97	3.5	3.3	2.5	0.43	1.41	0.78	0.764
4T-L610549/L610510	71	69	86	91	1.5	1.5	−0.6 ^①	0.42	1.41	0.78	0.449
4T-29585/29520	77	71	96	103	3.5	3.3	0.6	0.46	1.31	0.72	0.924
4T-29586/29520	73	71	96	103	1.5	3.3	0.6	0.46	1.31	0.72	0.929
4T-390A/394A	73	70	101	104	1.5	1.3	0.7	0.40	1.49	0.82	0.851
4T-29585/29521	77	71	99	104	3.5	1.3	0.6	0.46	1.31	0.72	0.982
4T-3982/3920	77	71	99	106	3.5	3.3	4.5	0.40	1.49	0.82	1.26
4T-39585/39520	77	71	101	107	3.5	3.3	6.6	0.34	1.77	0.97	1.27
4T-477/472	73	72	107	114	0.8	2	3.9	0.38	1.56	0.86	1.49
4T-483/472	78	72	107	114	3.5	2	3.9	0.38	1.56	0.86	1.48
4T-HM212046/HM212011	80	73	108	116	3.5	3.3	11.1	0.34	1.78	0.98	1.95
4T-5584/5535	81	75	106	116	3.5	3.3	13.3	0.36	1.67	0.92	2.34
4T-559/552A	78	72	109	116	3.5	3.3	9.4	0.35	1.73	0.95	2.01
4T-565/563	80	73	112	120	3.5	3.3	8.3	0.36	1.65	0.91	2.11
4T-HM813842/HM813810	82	76	111	121	3.5	3.3	3.7	0.50	1.20	0.66	2.12
4T-639/632	81	74	118	125	3.5	3.3	11.4	0.36	1.66	0.91	2.85
4T-78250/78551	85	79	117	132	2.3	2.3	−8.5 ^①	0.87	0.69	0.38	2.54
#4T-JLM710949/JLM710910	77	71	96	101	3	1	0.3	0.45	1.32	0.73	0.742
#4T-JM511946/JM511910	78	72	99	105	3	2.5	3.4	0.40	1.49	0.82	1.08

① - " means that load center at outside on end of inner ring.

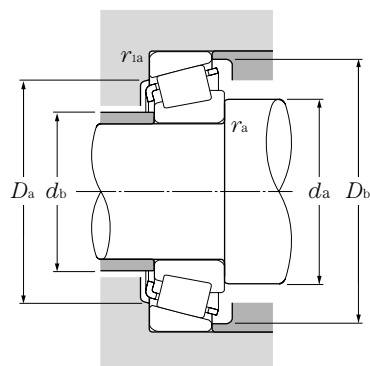
Inch system sizes
J system series



d 65.000 ~ 70.000mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	D	mm			dynamic	static	dynamic	static	grease	oil
					kN		kgf			
		T	B	C	C _r	C _{or}	C _r	C _{or}		
65.000	120.000	39.000	38.500	32.000	185	248	18,800	25,300	3,100	4,100
65.088	135.755	53.975	56.007	44.450	278	380	28,300	38,500	2,900	3,800
66.675	103.213	17.602	17.602	11.989	60.0	78.0	6,100	8,000	3,300	4,400
	107.950	25.400	25.400	19.050	91.5	140	9,350	14,200	3,200	4,300
	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
	112.712	30.162	30.048	23.812	119	174	12,200	17,800	3,200	4,300
	112.712	30.162	30.048	23.812	119	174	12,200	17,800	3,200	4,300
	112.712	30.162	30.162	23.812	138	195	14,100	19,800	3,200	4,200
	122.238	38.100	38.354	29.718	187	244	19,100	24,900	3,100	4,100
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
	127.000	36.512	36.512	26.988	163	228	16,600	23,300	2,900	3,800
	130.175	41.275	41.275	31.750	194	262	19,800	26,700	2,800	3,800
	135.755	53.975	56.007	44.450	278	380	28,300	38,500	2,900	3,800
136.525	41.275	41.275	31.750	194	262	19,800	26,700	2,800	3,800	
136.525	41.275	41.275	31.750	226	293	23,100	29,900	2,700	3,700	
68.262	110.000	22.000	21.996	18.824	89.5	120	9,150	12,300	3,200	4,300
	120.000	29.794	29.007	24.237	128	177	13,000	18,100	3,000	4,000
	123.825	38.100	36.678	30.162	158	216	16,100	22,000	3,000	4,100
	136.525	41.275	41.275	31.750	226	293	23,100	29,900	2,700	3,700
	136.525	46.038	46.038	36.512	224	355	22,800	36,500	2,600	3,500
69.850	112.712	25.400	25.400	19.050	95.5	151	9,750	15,400	3,100	4,100
	117.475	30.162	30.162	23.812	117	175	11,900	17,900	3,000	4,000
	120.000	29.794	29.007	24.237	128	177	13,000	18,100	3,000	4,000
	120.000	32.545	32.545	26.195	147	214	15,000	21,800	3,000	4,000
	120.650	25.400	25.400	19.050	95.5	151	9,750	15,400	3,100	4,100
	127.000	36.512	36.170	28.575	163	229	16,600	23,300	2,900	3,800
	136.525	41.275	41.275	31.750	194	262	19,800	26,700	2,800	3,800
	146.050	41.275	41.275	31.750	206	295	21,000	30,000	2,500	3,300
	150.089	44.450	46.672	36.512	261	360	26,600	37,000	2,400	3,200
168.275	53.975	56.363	41.275	340	460	34,500	46,500	2,200	3,000	
69.952	121.442	24.608	23.012	17.462	91.0	127	9,300	13,000	2,900	3,800
70.000	110.000	26.000	25.000	20.500	97.0	150	9,900	15,300	3,200	4,200
	115.000	29.000	29.000	23.000	124	171	12,700	17,500	3,100	4,100

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. Bearing numbers marked "*" designate J-series bearings. The tolerances of these bearings is listed in Table 6.6 on page A-40.



Equivalent bearing load dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

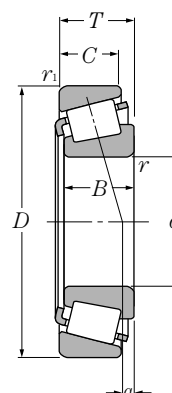
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
#4T-JH211749/JH211710	80	74	107	114	3	2.5	10.9	0.34	1.78	0.98	1.90
4T-6379/6320	84	77	117	126	3.5	3.3	18.8	0.32	1.85	1.02	3.71
4T-L812148/L812111	74	72	96	99	1.5	0.8	-3.7 ^①	0.49	1.23	0.68	0.48
4T-29590/29520	80	73	96	103	3.5	3.3	0.6	0.46	1.31	0.72	0.86
4T-395A/394A	73	73	101	104	0.8	1.3	0.7	0.40	1.49	0.82	0.796
4T-3984/3925	80	74	101	106	3.5	0.8	4.5	0.40	1.49	0.82	1.19
4T-3994/3920	84	74	99	106	5.5	3.3	4.5	0.40	1.49	0.82	1.18
4T-39590/39520	80	74	101	107	3.5	3.3	6.6	0.34	1.77	0.97	1.19
4T-HM212049/HM212010	82	75	110	116	3.5	1.5	11.1	0.34	1.78	0.98	1.86
4T-560/552A	81	75	109	116	3.5	3.3	9.4	0.35	1.73	0.95	1.92
4T-HM813844/HM813810	85	78	111	121	3.5	3.3	3.7	0.50	1.20	0.66	2.03
4T-641/633	83	77	116	124	3.5	3.3	11.4	0.36	1.66	0.91	2.41
4T-6386/6320	87	77	117	126	4.3	3.3	18.8	0.32	1.85	1.02	3.64
4T-641/632	83	77	118	125	3.5	3.3	11.4	0.36	1.66	0.91	2.74
4T-H414242/H414210	85	81	121	129	3.5	3.3	11.0	0.36	1.67	0.92	2.75
4T-399A/394A	78	74	101	104	2.3	1.3	0.7	0.40	1.49	0.82	0.764
4T-480/472	82	75	107	114	3.5	2	3.9	0.38	1.56	0.86	1.37
4T-560S/552A	83	76	109	116	3.5	3.3	9.4	0.35	1.73	0.95	1.87
4T-H414245/H414210	86	82	121	129	3.5	3.3	11.0	0.36	1.67	0.92	2.7
4T-H715343/H715311	90	84	118	132	3.5	3.3	8.7	0.47	1.27	0.70	3.24
4T-29675/29620	80	77	101	109	1.5	3.3	-0.9 ^①	0.49	1.23	0.68	0.949
4T-33275/33462	84	77	104	112	3.5	3.3	2.6	0.44	1.38	0.76	1.28
4T-482/472	83	77	107	114	3.5	2	3.9	0.38	1.56	0.86	1.33
4T-47487/47420	84	78	107	114	3.5	3.3	6.1	0.36	1.67	0.92	1.47
4T-29675/29630	80	77	104	113	1.5	3.3	-0.9 ^①	0.49	1.23	0.68	1.17
4T-566/563	85	78	112	120	3.5	3.3	8.3	0.36	1.65	0.91	1.92
4T-643/632	86	80	118	125	3.5	3.3	11.4	0.36	1.66	0.91	2.63
4T-655/653	88	82	131	139	3.5	3.3	8.0	0.41	1.47	0.81	3.28
4T-745A/742	88	82	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.92
4T-835/832	91	84	149	155	3.5	3.3	18.5	0.30	2.00	1.10	6.13
4T-34274/34478	81	78	110	116	2	2	-1.2 ^①	0.45	1.33	0.73	1.11
#4T-JLM813049/JLM813010	78	77	98	105	1	2.5	-0.3 ^①	0.49	1.23	0.68	0.889
#4T-JM612949/JM612910	83	77	103	110	3	2.5	2.5	0.43	1.39	0.77	1.13

① - " means that load center at outside on end of inner ring.

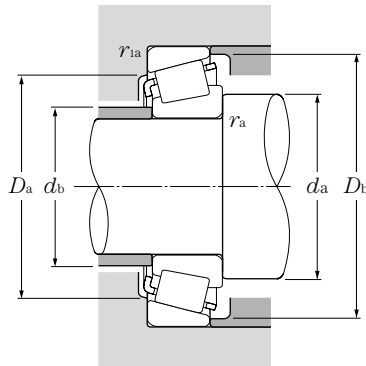
Inch system sizes
J system series



d 70.000 ~ 76.200mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C_r	C_{or}	C_r	C_{or}	grease	oil
70.000	120.000	29.794	29.007	24.237	128	177	13,000	18,100	3,000	4,000
	150.000	41.275	39.688	25.400	199	234	20,300	23,900	2,400	3,200
71.438	117.475	30.162	30.162	23.812	117	175	11,900	17,900	3,000	4,000
	120.000	32.545	32.545	26.195	147	214	15,000	21,800	3,000	4,000
	127.000	36.512	36.170	28.575	163	229	16,600	23,300	2,900	3,800
	136.525	41.275	41.275	31.750	194	262	19,800	26,700	2,800	3,800
	136.525	41.275	41.275	31.750	226	293	23,100	29,900	2,700	3,700
73.025	136.525	46.038	46.038	36.512	224	355	22,800	36,500	2,600	3,500
	112.712	25.400	25.400	19.050	95.5	151	9,750	15,400	3,100	4,100
	117.475	30.162	30.162	23.812	117	175	11,900	17,900	3,000	4,000
	127.000	36.512	36.170	28.575	163	229	16,600	23,300	2,900	3,800
	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
73.817	149.225	53.975	54.229	44.450	287	410	29,300	41,500	2,500	3,400
	150.089	44.450	46.672	36.512	261	360	26,600	37,000	2,400	3,200
	112.712	25.400	25.400	19.050	95.5	151	9,750	15,400	3,100	4,100
	127.000	36.512	36.170	28.575	163	229	16,600	23,300	2,900	3,800
	127.000	36.512	36.170	28.575	163	229	16,600	23,300	2,900	3,800
74.612	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
75.000	115.000	25.000	25.000	19.000	94.5	143	9,650	14,600	3,000	4,000
	120.000	31.000	29.500	25.000	131	197	13,300	20,100	2,900	3,900
	145.000	51.000	51.000	42.000	287	410	29,300	41,500	2,500	3,400
76.200	109.538	19.050	19.050	15.083	63.0	115	6,450	11,700	3,100	4,100
	121.442	24.608	23.012	17.462	91.0	127	9,300	13,000	2,900	3,800
	121.442	24.608	23.012	17.462	91.0	127	9,300	13,000	2,900	3,800
	127.000	30.162	31.000	22.225	135	194	13,800	19,800	2,800	3,700
	133.350	33.338	33.338	26.195	153	235	15,600	24,000	2,600	3,500
	133.350	39.688	39.688	32.545	177	305	18,000	31,000	2,600	3,500
	135.733	44.450	46.100	34.925	211	330	21,600	34,000	2,700	3,500
	136.525	30.162	29.769	22.225	129	189	13,200	19,300	2,600	3,500
	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
	146.050	41.275	41.275	31.750	206	295	21,000	30,000	2,500	3,300
	149.225	53.975	54.229	44.450	287	410	29,300	41,500	2,500	3,400
	150.089	44.450	46.672	36.512	261	360	26,600	37,000	2,400	3,200

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. Bearing numbers marked "#" designate J-series bearings. The tolerances of these bearings is listed in Table 6.6 on page A-40.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

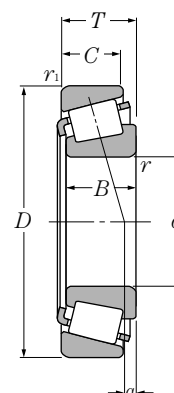
When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			Y_2	Y_o	
4T-484/472	80	77	107	114	2	2	3.9	0.38	1.56	0.86	1.33
#4T-JH913848/JH913811	92	82	126	146	2	3.3	-4.3 ^①	0.78	0.77	0.42	3.08
4T-33281/33462	85	79	104	112	3.5	3.3	2.6	0.44	1.38	0.76	1.24
4T-47490/47420	86	79	107	114	3.5	3.3	6.1	0.36	1.67	0.92	1.42
4T-567A/563	86	80	112	120	3.5	3.3	8.3	0.36	1.65	0.91	1.87
4T-644/632	87	81	118	125	3.5	3.3	11.4	0.36	1.66	0.91	2.57
4T-H414249/H414210	89	83	121	129	3.5	3.3	11.0	0.36	1.67	0.92	2.58
4T-H715345/H715311	93	87	118	132	3.5	3.3	8.7	0.47	1.27	0.70	3.11
4T-29685/29620	86	80	101	109	3.5	3.3	-0.9 ^①	0.49	1.23	0.68	0.873
4T-33287/33462	87	80	104	112	3.5	3.3	2.6	0.44	1.38	0.76	1.19
4T-567/563	88	81	112	120	3.5	3.3	8.3	0.36	1.65	0.91	1.82
4T-576/572	90	83	125	133	3.5	3.3	5.5	0.40	1.49	0.82	2.53
4T-6460/6420	93	87	129	140	3.5	3.3	14.8	0.36	1.66	0.91	4.42
4T-744/742	91	85	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.79
4T-29688/29620	83	80	101	109	1.5	3.3	-0.9 ^①	0.49	1.23	0.68	0.86
4T-568/563	83	82	112	120	0.8	3.3	8.3	0.36	1.65	0.91	1.80
4T-577/572	91	85	125	133	3.5	3.3	5.5	0.40	1.49	0.82	2.48
#4T-JLM714149/JLM714110	87	81	104	110	3	2.5	-0.3 ^①	0.46	1.31	0.72	0.875
#4T-JM714249/JM714210	88	83	108	115	3	2.5	1.9	0.44	1.35	0.74	1.29
#4T-JH415647/JH415610	94	89	129	139	3	2.5	14.1	0.36	1.66	0.91	3.81
4T-L814749/L814710	84	82	100	105	1.5	1.5	-5.0 ^①	0.50	1.20	0.66	0.579
4T-34300/34478	86	83	110	116	2	2	-1.2 ^①	0.45	1.33	0.73	0.982
4T-34301/34478	89	83	110	116	3.5	2	-1.2 ^①	0.45	1.33	0.73	0.977
4T-42687/42620	90	84	114	121	3.5	3.3	2.8	0.42	1.43	0.79	1.46
4T-47678/47620	97	85	119	128	6.4	3.3	3.9	0.40	1.48	0.82	1.92
4T-HM516442/HM516410	93	87	118	128	3.5	3.3	7.5	0.40	1.49	0.82	2.43
4T-5760/5735	94	88	119	130	3.5	3.3	11.0	0.41	1.48	0.81	2.75
4T-495A/493	92	86	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.83
4T-575/572	92	86	125	133	3.5	3.3	5.5	0.40	1.49	0.82	2.43
4T-575S/572	99	86	125	133	6.8	3.3	5.5	0.40	1.49	0.82	2.41
4T-659/653	93	87	131	139	3.5	3.3	8.0	0.41	1.47	0.81	3.04
4T-6461A/6420	108	89	129	140	9.7	3.3	14.8	0.36	1.66	0.91	4.23
4T-748S/742	93	87	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.66

① - " means that load center at outside on end of inner ring.

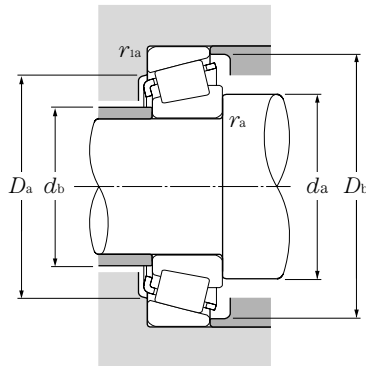
Inch system sizes
J system series



d 76.200 ~ 83.345mm

Boundary dimensions					Basic load ratings				Limiting speeds	
mm					dynamic	static	dynamic	static	rpm	
					kN		kgf			
d	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
76.200	149.225	53.975	54.229	44.450	287	410	29,300	41,500	2,500	3,400
	161.925	53.975	55.100	42.862	310	460	31,500	47,000	2,300	3,000
	180.975	53.975	53.183	35.720	325	415	33,000	42,500	1,900	2,600
	190.500	57.150	57.531	46.038	445	610	45,000	62,000	1,900	2,600
77.788	117.475	25.400	25.400	19.050	99.5	162	10,200	16,500	2,900	3,900
	121.442	24.608	23.012	17.462	91.0	127	9,300	13,000	2,900	3,800
	127.000	30.162	31.000	22.225	135	194	13,800	19,800	2,800	3,700
	136.525	30.162	29.769	22.225	129	189	13,200	19,300	2,600	3,500
	136.525	46.038	46.038	36.512	224	355	22,800	36,500	2,600	3,500
79.375	146.050	41.275	41.275	31.750	206	295	21,000	30,000	2,500	3,300
	161.925	47.625	48.260	38.100	270	385	27,500	39,000	2,300	3,100
	190.500	57.150	57.531	46.038	445	610	45,000	62,000	1,900	2,600
80.000	130.000	35.000	34.000	28.500	166	249	16,900	25,400	2,700	3,600
80.962	133.350	33.338	33.338	26.195	153	235	15,600	24,000	2,600	3,500
	136.525	30.162	29.769	22.225	129	189	13,200	19,300	2,600	3,500
	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
	150.089	44.450	46.672	36.512	261	360	26,600	37,000	2,400	3,200
82.550	125.412	25.400	25.400	19.845	102	163	10,400	16,600	2,700	3,600
	133.350	33.338	33.338	26.195	153	235	15,600	24,000	2,600	3,500
	133.350	39.688	39.688	32.545	177	305	18,000	31,000	2,600	3,500
	136.525	30.162	29.769	22.225	129	189	13,200	19,300	2,600	3,500
	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
	139.992	36.512	36.098	28.575	178	265	18,100	27,100	2,600	3,400
	146.050	41.275	41.275	31.750	206	295	21,000	30,000	2,500	3,300
	150.089	44.450	46.672	36.512	261	360	26,600	37,000	2,400	3,200
	152.400	39.688	36.322	30.162	180	279	18,300	28,400	2,300	3,100
	152.400	41.275	41.275	31.750	206	295	21,000	30,000	2,500	3,300
	161.925	47.625	48.260	38.100	270	385	27,500	39,000	2,300	3,100
	161.925	53.975	55.100	42.862	310	460	31,500	47,000	2,300	3,000
	168.275	53.975	56.363	41.275	340	460	34,500	46,500	2,200	3,000
83.345	125.412	25.400	25.400	19.845	102	163	10,400	16,600	2,700	3,600
	125.412	25.400	25.400	19.845	102	163	10,400	16,600	2,700	3,600
	125.412	25.400	25.400	19.845	102	163	10,400	16,600	2,700	3,600

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring) or "HT" (outer ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

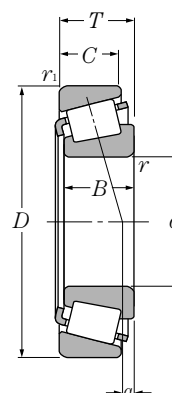
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{las} max			a	e	
4T-6461/6420	96	89	129	140	3.5	3.3	14.8	0.36	1.66	0.91	4.26
4T-6576/6535	99	92	141	154	3.5	3.3	12.8	0.40	1.50	0.82	5.44
4T-H917840/H917810††	110	100	152	170	3.5	3.3	−0.5 [●]	0.73	0.82	0.45	6.57
4T-HH221430/HH221410	101	95	171	179	3.5	3.3	14.4	0.33	1.79	0.99	8.69
4T-LM814849/LM814810	91	85	105	113	3.5	3.3	−2.3 [●]	0.51	1.18	0.65	0.932
4T-34306/34478	90	84	110	116	3.5	2	−1.2 [●]	0.45	1.33	0.73	0.943
4T-42690/42620	91	85	114	121	3.5	3.3	2.8	0.42	1.43	0.79	1.41
4T-495AS/493	93	87	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.78
4T-H715348/H715311	98	88	118	132	3.5	3.3	8.7	0.47	1.27	0.70	2.84
4T-661/653	96	90	131	139	3.5	3.3	8.0	0.41	1.47	0.81	2.91
4T-756A/752	106	91	144	150	8	3.3	12.0	0.34	1.76	0.97	4.55
4T-HH221431/HH221410	103	97	171	179	3.5	3.3	14.4	0.33	1.79	0.99	8.52
#4T-JM515649/JM515610	94	88	117	125	3	2.5	4.9	0.39	1.54	0.85	1.73
4T-47681/47620	95	89	119	128	3.5	3.3	3.9	0.40	1.48	0.82	1.78
4T-496/493	95	89	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.69
4T-581/572	96	90	125	133	3.5	3.3	5.5	0.40	1.49	0.82	2.26
4T-740/742	101	91	134	142	5	3.3	12.0	0.33	1.84	1.01	3.43
4T-27687/27620	96	89	115	120	3.5	1.5	−0.6 [●]	0.42	1.44	0.79	1.07
4T-47686/47620	97	90	119	128	3.5	3.3	3.9	0.40	1.48	0.82	1.72
4T-HM516448/HM516410	105	92	118	128	6.8	3.3	7.5	0.40	1.49	0.82	2.16
4T-495/493	97	90	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.64
4T-580/572	98	91	125	133	3.5	3.3	5.5	0.40	1.49	0.82	2.2
4T-582/572	104	91	125	133	6.8	3.3	5.5	0.40	1.49	0.82	2.19
4T-663/653	99	92	131	139	3.5	3.3	8.0	0.41	1.47	0.81	2.78
4T-749A/742	99	93	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.37
4T-595/592A	100	93	135	144	3.5	3.3	2.6	0.44	1.36	0.75	3.02
4T-663/652	99	92	134	141	3.5	3.3	8.0	0.41	1.47	0.81	3.15
4T-757/752	100	94	144	150	3.5	3.3	12.0	0.34	1.76	0.97	4.42
4T-6559C/6535	104	98	141	154	3.5	3.3	12.8	0.40	1.50	0.82	5.09
4T-842/832	101	94	149	155	3.5	3.3	18.5	0.30	2.00	1.10	5.46
4T-27689/27620	90	90	115	120	0.8	1.5	−0.6 [●]	0.42	1.44	0.79	1.06
4T-27690/27620	96	90	115	120	3.5	1.5	−0.6 [●]	0.42	1.44	0.79	1.05
4T-27691/27620	102	90	115	120	6.4	1.5	−0.6 [●]	0.42	1.44	0.79	1.04

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

① " - " means that load center at outside on end of inner ring.

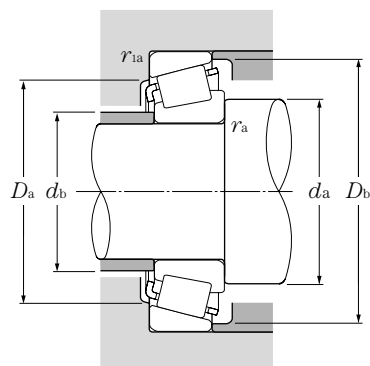
Inch system sizes
J system series



d 84.138 ~ 95.000mm

d	Boundary dimensions				Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
84.138	136.525	30.162	29.769	22.225	129	189	13,200	19,300	2,600	3,500
85.000	130.000	30.000	29.000	24.000	135	214	13,700	21,900	2,600	3,500
	140.000	39.000	38.000	31.500	197	297	20,100	30,500	2,500	3,400
85.026	150.089	44.450	46.672	36.512	261	360	26,600	37,000	2,400	3,200
85.725	133.350	30.162	29.769	22.225	129	189	13,200	19,300	2,600	3,500
	142.138	42.862	42.862	34.133	216	350	22,000	35,500	2,500	3,300
	146.050	41.275	41.275	31.750	206	295	21,000	30,000	2,500	3,300
	152.400	39.688	36.322	30.162	180	279	18,300	28,400	2,300	3,100
	161.925	47.625	48.260	38.100	270	385	27,500	39,000	2,300	3,100
87.960	148.430	28.575	28.971	21.433	138	215	14,100	21,900	2,300	3,100
88.900	121.442	15.083	15.083	11.112	56.5	88.0	5,750	9,000	2,700	3,600
	123.825	20.638	20.638	16.670	80.0	141	8,150	14,400	2,700	3,500
	148.430	28.575	28.971	21.433	138	215	14,100	21,900	2,300	3,100
	152.400	39.688	36.322	30.162	180	279	18,300	28,400	2,300	3,100
	161.925	47.625	48.260	38.100	270	385	27,500	39,000	2,300	3,100
	161.925	53.975	55.100	42.862	310	460	31,500	47,000	2,300	3,000
	168.275	53.975	56.363	41.275	340	460	34,500	46,500	2,200	3,000
89.974	146.975	40.000	40.000	32.500	227	340	23,200	34,500	2,400	3,200
90.000	145.000	35.000	34.000	27.000	189	279	19,300	28,400	2,400	3,200
	155.000	44.000	44.000	35.500	270	385	27,500	39,000	2,300	3,100
	190.000	50.800	46.038	31.750	281	365	28,700	37,000	1,800	2,400
90.488	161.925	47.625	48.260	38.100	270	385	27,500	39,000	2,300	3,100
92.075	146.050	33.338	34.925	26.195	163	266	16,700	27,100	2,400	3,100
	152.400	39.688	36.322	30.162	180	279	18,300	28,400	2,300	3,100
	168.275	41.275	41.275	30.162	222	340	22,700	35,000	2,100	2,800
93.662	148.430	28.575	28.971	21.433	138	215	14,100	21,900	2,300	3,100
95.000	150.000	35.000	34.000	27.000	180	279	18,300	28,400	2,300	3,100

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "+" (inner ring) or "++" (outer ring), this value applies only to high precision types, Class 4 and 2.
B-186



Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

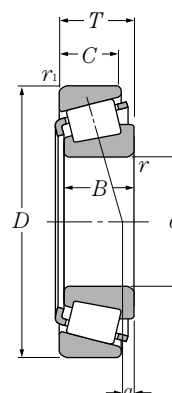
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
											(approx.)
4T-498/493	98	91	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.6
#4T-JM716648/JM716610	104	92	117	125	6	2.5	0.2	0.44	1.35	0.74	1.37
#4T-JHM516849/JHM516810	100	94	125	134	3	2.5	5.9	0.41	1.47	0.81	2.3
4T-749/742	101	95	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.25
4T-497/492A	99	93	120	128	3.5	3.3	0.7	0.44	1.35	0.74	1.43
4T-HM617049/HM617010	106	95	125	137	4.8	3.3	6.9	0.43	1.39	0.76	2.69
4T-665/653	102	95	131	139	3.5	3.3	8.0	0.41	1.47	0.81	2.65
4T-596/592A	102	96	135	144	3.5	3.3	2.6	0.44	1.36	0.75	2.9
4T-758/752	103	97	144	150	3.5	3.3	12.0	0.34	1.76	0.97	4.26
4T-42346/42584	103	98	134	142	3	3	-3.0 ^①	0.49	1.22	0.67	1.99
4T-LL217849/LL217810	97	94	115	117	1.5	1.5	-2.9 ^①	0.33	1.81	1.00	0.452
4T-L217849/L217810	97	94	116	119	1.5	1.5	-0.7 ^①	0.33	1.82	1.00	0.737
4T-42350/42584	104	98	134	142	3	3	-3.0 ^①	0.49	1.22	0.67	1.96
4T-593/592A	104	98	135	144	3.5	3.3	2.6	0.44	1.36	0.75	2.78
4T-759/752	106	99	144	150	3.5	3.3	12.0	0.34	1.76	0.97	4.09
4T-6580/6535	109	102	141	154	3.5	3.3	12.8	0.40	1.50	0.82	4.73
4T-850/832	106	100	149	155	3.5	3.3	18.5	0.30	2.00	1.10	5.08
4T-HM218248†/HM218210††	112	99	133	141	7	3.5	8.6	0.33	1.80	0.99	2.55
#4T-JM718149/JM718110	105	99	131	139	3	2.5	2.0	0.44	1.35	0.74	2.14
#4T-JHM318448/JHM318410	106	100	140	148	3	2.5	10.1	0.34	1.76	0.97	3.32
#4T-J90354/J90748	120	112	162	179	3.5	3.3	-12.9 ^①	0.87	0.69	0.38	6.32
4T-760/752	107	101	144	150	3.5	3.3	12.0	0.34	1.76	0.97	4.01
4T-47890/47820	107	101	131	140	3.5	3.3	0.6	0.45	1.34	0.74	2.08
4T-598A/592A	113	101	135	144	6.4	3.3	2.6	0.44	1.36	0.75	2.63
4T-681/672	110	104	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.87
4T-42368/42584	107	102	134	142	3	3	-3.0 ^①	0.49	1.22	0.67	1.8
#4T-JM719149/JM719113	109	104	135	143	3	2.5	1.7	0.44	1.36	0.75	2.19

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

① " - " means that load center at outside on end of inner ring.

Inch system sizes
J system series

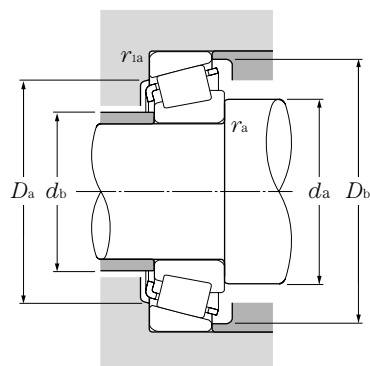


d 95.250 ~

109.538mm

Boundary dimensions					Basic load ratings				Limiting speeds	
mm					dynamic	static	dynamic	static	rpm	
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C_r</i>	<i>C_{or}</i>	<i>C_r</i>	<i>C_{or}</i>	grease	oil
					kN		kgf			
95.250	130.175	20.638	21.433	16.670	81.0	147	8,300	15,000	2,500	3,300
	146.050	33.338	34.925	26.195	163	266	16,700	27,100	2,400	3,100
	147.638	35.717	36.322	26.192	180	279	18,300	28,400	2,300	3,100
	148.430	28.575	28.971	21.433	138	215	14,100	21,900	2,300	3,100
	152.400	39.688	36.322	30.162	180	279	18,300	28,400	2,300	3,100
	157.162	36.512	36.116	26.195	188	305	19,200	31,000	2,200	2,900
	168.275	41.275	41.275	30.162	222	340	22,700	35,000	2,100	2,800
96.838	190.500	57.150	57.531	46.038	445	610	45,000	62,000	1,900	2,600
	148.430	28.575	28.971	21.433	138	215	14,100	21,900	2,300	3,100
98.425	188.912	50.800	46.038	31.750	281	365	28,700	37,000	1,800	2,400
	157.162	36.512	36.116	26.195	188	305	19,200	31,000	2,200	2,900
99.974	168.275	41.275	41.275	30.162	222	340	22,700	35,000	2,100	2,800
	212.725	66.675	66.675	53.975	575	810	58,500	82,500	1,700	2,300
100.000	155.000	36.000	35.000	28.000	192	310	19,600	31,500	2,200	2,900
100.012	157.162	36.512	36.116	26.195	188	305	19,200	31,000	2,200	2,900
101.600	157.162	36.512	36.116	26.195	188	305	19,200	31,000	2,200	2,900
	168.275	41.275	41.275	30.162	222	340	22,700	35,000	2,100	2,800
	180.975	47.625	48.006	38.100	285	430	29,100	44,000	2,000	2,700
	190.500	57.150	57.531	44.450	380	555	38,500	56,500	2,000	2,600
	190.500	57.150	57.531	46.038	445	610	45,000	62,000	1,900	2,600
	190.500	57.150	57.531	46.038	445	610	45,000	62,000	1,900	2,600
	212.725	66.675	66.675	53.975	475	695	48,500	71,000	1,800	2,300
104.775	212.725	66.675	66.675	53.975	575	810	58,500	82,500	1,700	2,300
	180.975	47.625	48.006	38.100	285	430	29,100	44,000	2,000	2,700
107.950	158.750	23.020	21.438	15.875	102	166	10,400	17,000	2,100	2,800
	159.987	34.925	34.925	26.988	167	320	17,100	33,000	2,100	2,800
	165.100	36.512	36.512	26.988	191	315	19,500	32,000	2,100	2,700
	212.725	66.675	66.675	53.975	475	695	48,500	71,000	1,800	2,300
109.538	158.750	23.020	21.438	15.875	102	166	10,400	17,000	2,100	2,800

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "H" (inner ring) or "HT" (outer ring), this value applies only to high precision class types, Class 4 and 2.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

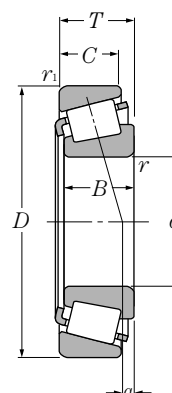
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
4T-L319249/L319210	103	101	122	125	1.5	1.5	−1.0 [●]	0.35	1.72	0.95	0.789
4T-47896/47820	110	103	131	140	3.5	3.3	0.6	0.45	1.34	0.74	1.95
4T-594A/592XE	113	104	135	142	5	0.8	2.6	0.44	1.36	0.75	2.09
4T-42375/42584	108	103	134	142	3	3	−3.0 [●]	0.49	1.22	0.67	1.75
4T-594/592A	110	104	135	144	3.5	3.3	2.6	0.44	1.36	0.75	2.51
4T-52375/52618	112	105	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.76
4T-683/672	113	106	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.72
4T-HH221440/HH221410	125	110	171	179	8	3.3	14.4	0.33	1.79	0.99	7.5
4T-42381/42584	110	104	134	142	3.5	3	−3.0 [●]	0.49	1.22	0.67	1.69
4T-90381/90744	125	113	161	179	3.5	3.3	−12.9 [●]	0.87	0.69	0.38	5.67
4T-52387/52618	114	108	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.62
4T-685/672	116	109	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.56
4T-HH224334†/HH224310	124	120	192	202	3.5	3.3	18.9	0.33	1.84	1.01	11.5
#4T-JM720249/JM720210	115	109	140	149	3	2.5	−0.3 [●]	0.47	1.27	0.70	2.4
4T-52393/52618	116	109	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.55
4T-52400/52618	117	111	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.48
4T-687/672	118	112	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.4
4T-780/772††	119	113	161	168	3.5	3.3	8.1	0.39	1.56	0.86	5.11
4T-861/854	129	114	170	174	8	3.3	15.3	0.33	1.79	0.99	7
4T-HH221449/HH221410	131	116	171	179	8	3.3	14.4	0.33	1.79	0.99	7.06
4T-HH221449A/HH221410	122	116	171	179	3.5	3.3	14.4	0.33	1.79	0.99	7.06
4T-941/932	130	117	187	193	7	3.3	19.7	0.33	1.84	1.01	11.2
4T-HH224335/HH224310	132	121	192	202	7	3.3	18.9	0.33	1.84	1.01	11.3
4T-782/772††	122	116	161	168	3.5	3.3	8.1	0.39	1.56	0.86	4.92
4T-37425/37625	122	115	143	152	3.5	3.3	−14.0 [●]	0.61	0.99	0.54	1.37
4T-LM522546/LM522510	122	116	146	154	3.5	3.3	1.4	0.40	1.49	0.82	2.37
4T-56425/56650	123	117	149	159	3.5	3.3	−2.0 [●]	0.50	1.21	0.66	2.69
4T-936/932	137	122	187	193	8	3.3	19.7	0.33	1.84	1.01	10.7
4T-37431/37625	123	116	143	152	3.5	3.3	−14.0 [●]	0.61	0.99	0.54	1.33

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

① " - " means that load center at outside on end of inner ring.

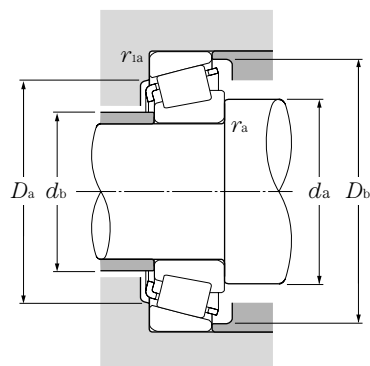
Inch system sizes
J system series



d 109.987 ~ 133.350mm

Boundary dimensions					Basic load ratings				Limiting speeds	
d	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C_r	C_{or}	C_r	C_{or}	grease	oil
109.987	159.987	34.925	34.925	26.988	167	320	17,100	33,000	2,100	2,800
109.992	177.800	41.275	41.275	30.162	232	375	23,600	38,000	1,900	2,600
110.000	165.000	35.000	35.000	26.500	191	315	19,500	32,000	2,100	2,700
	180.000	47.000	46.000	38.000	305	480	31,000	49,000	1,900	2,600
111.125	214.312	55.562	52.388	39.688	405	560	41,500	57,000	1,500	2,000
114.300	177.800	41.275	41.275	30.162	232	375	23,600	38,000	1,900	2,600
	180.975	34.925	31.750	25.400	169	245	17,200	25,000	1,900	2,500
	212.725	66.675	66.675	53.975	475	695	48,500	71,000	1,800	2,300
	212.725	66.675	66.675	53.975	575	810	58,500	82,500	1,700	2,300
	228.600	53.975	49.428	38.100	430	620	44,000	63,500	1,400	1,900
115.087	190.500	47.625	49.212	34.925	300	475	30,500	48,500	1,800	2,500
117.475	180.975	34.925	31.750	25.400	169	245	17,200	25,000	1,900	2,500
120.000	170.000	25.400	25.400	19.050	127	210	13,000	21,400	2,000	2,600
120.650	234.950	63.500	63.500	49.212	525	825	53,500	84,000	1,500	2,000
123.825	182.562	39.688	38.100	33.338	224	435	22,900	44,000	1,800	2,400
127.000	182.562	39.688	38.100	33.338	224	435	22,900	44,000	1,800	2,400
	196.850	46.038	46.038	38.100	310	550	31,500	56,500	1,700	2,200
	215.900	47.625	47.625	34.925	320	540	32,500	55,000	1,600	2,100
	228.600	53.975	49.428	38.100	320	445	32,500	45,000	1,400	1,900
	228.600	53.975	49.428	38.100	430	620	44,000	63,500	1,400	1,900
	230.000	63.500	63.500	49.212	525	825	53,500	84,000	1,500	2,000
	254.000	77.788	82.550	61.912	740	1,070	75,500	109,000	1,400	1,900
128.588	206.375	47.625	47.625	34.925	315	520	32,000	53,000	1,700	2,200
130.175	196.850	46.038	46.038	38.100	310	550	31,500	56,500	1,700	2,200
	206.375	47.625	47.625	34.925	315	520	32,000	53,000	1,700	2,200
133.350	177.008	25.400	26.195	20.638	126	259	12,900	26,400	1,800	2,400

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. For the inner bore diameter of bearings with bearing numbers marked "+" (inner ring) or "++" (outer ring), this value applies only to high precision types, Class 4 and 2.
B-190



Equivalent bearing load dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5 F_r + Y_o F_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

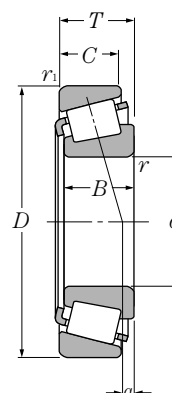
For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant	Axial		Mass
	mm								load factors		
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			a	e	
4T-LM522548/LM522510	133	118	146	154	8	3.3	1.4	0.40	1.49	0.82	2.24
4T-64433/64700	128	121	160	172	3.5	3.3	-1.1 [●]	0.52	1.16	0.64	3.77
#4T-JM822049/JM822010 #4T-JHM522649/JHM522610	124	119	149	159	3	2.5	-3.0 [●]	0.50	1.21	0.66	2.52
	127	122	162	172	3	2.5	6.0	0.41	1.48	0.81	4.61
4T-H924045/H924010	139	131	186	205	3.5	3.3	-6.8 [●]	0.67	0.89	0.49	8.18
4T-64450/64700	131	125	160	172	3.5	3.3	-1.1 [●]	0.52	1.16	0.64	3.52
4T-68450/68712††	130	123	163	172	3.5	3.3	-5.4 [●]	0.50	1.21	0.66	2.93
4T-938/932	141	128	187	193	7	3.3	19.7	0.33	1.84	1.01	10.1
4T-HH224346/HH224310	143	131	192	202	7	3.3	18.9	0.33	1.84	1.01	10.2
4T-HM926740/HM926710	146	142	200	219	3.5	3.3	-13.5 [●]	0.74	0.81	0.45	9.76
4T-71453/71750	133	126	171	181	3.5	3.3	6.7	0.42	1.44	0.79	5.11
4T-68462/68712††	132	125	163	172	3.5	3.3	-5.4 [●]	0.50	1.21	0.66	2.78
#4T-JL724348/JL724314	132	127	156	163	3.3	3.3	-7.9 [●]	0.46	1.31	0.72	1.67
4T-95475/95925	149	137	209	217	6.4	3.3	14.0	0.37	1.62	0.89	12.6
4T-48286/48220	139	133	168	176	3.5	3.3	5.7	0.31	1.97	1.08	3.52
4T-48290/48220	141	135	168	176	3.5	3.3	5.7	0.31	1.97	1.08	3.33
4T-67388/67322	144	138	180	189	3.5	3.3	6.3	0.34	1.74	0.96	5.1
4T-74500/74850	148	141	196	208	3.5	3.3	-2.2 [●]	0.49	1.23	0.68	7.05
4T-97500/97900	151	144	197	213	3.5	3.3	-13.4 [●]	0.74	0.81	0.45	8.43
4T-HM926747/HM926710	156	143	200	219	3.5	3.3	-13.5 [●]	0.74	0.81	0.45	8.83
4T-95500/95905	154	142	207	217	6.4	3.3	14.0	0.37	1.62	0.89	12.9
4T-HH228349/HH228310	164	148	223	234	9.7	6.4	23.4	0.32	1.87	1.03	19.5
4T-799/792	146	140	186	198	3.3	3.3	1.9	0.46	1.31	0.72	5.77
4T-67389/67322	146	141	180	189	3.5	3.3	6.3	0.34	1.74	0.96	4.87
4T-799A/792	148	142	186	198	3.5	3.3	1.9	0.46	1.31	0.72	5.65
4T-L327249/L327210	142	140	167	171	1.5	1.5	-3.7 [●]	0.35	1.72	0.95	1.7

Note: 3. Bearing numbers marked " # " designate **J-series** bearings. The tolerances of these bearings is listed in **Table 6.6** on **page A-40**.

① " - " means that load center at outside on end of inner ring.

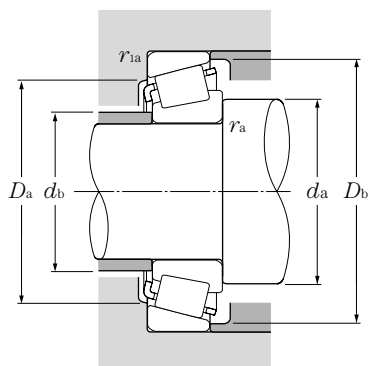
Inch system sizes
J system series



d 133.350 ~ 196.850mm

d	Boundary dimensions				Basic load ratings				Limiting speeds	
	mm				dynamic	static	dynamic	static	rpm	
	D	T	B	C	C _r	C _{or}	C _r	C _{or}	grease	oil
133.350	190.500	39.688	39.688	33.338	236	475	24,100	48,500	1,700	2,300
	196.850	46.038	46.038	38.100	310	550	31,500	56,500	1,700	2,200
	196.850	46.038	46.038	38.100	310	550	31,500	56,500	1,700	2,200
	215.900	47.625	47.625	34.925	320	540	32,500	55,000	1,600	2,100
	234.950	63.500	63.500	49.212	525	825	53,500	84,000	1,500	2,000
136.525	190.500	39.688	39.688	33.338	236	475	24,100	48,500	1,700	2,300
	228.600	57.150	57.150	44.450	445	735	45,500	75,000	1,500	2,000
139.700	215.900	47.625	47.625	34.925	320	540	32,500	55,000	1,600	2,100
	228.600	57.150	57.150	44.450	445	735	45,500	75,000	1,500	2,000
	254.000	66.675	66.675	47.625	550	910	56,000	92,500	1,400	1,800
142.875	200.025	41.275	39.688	34.130	239	490	24,300	50,000	1,600	2,100
	200.025	41.275	39.688	34.130	239	490	24,300	50,000	1,600	2,100
146.050	193.675	28.575	28.575	23.020	165	340	16,800	35,000	1,600	2,200
	254.000	66.675	66.675	47.625	550	910	56,000	92,500	1,400	1,800
152.400	192.088	25.000	24.000	19.000	130	261	13,200	26,700	1,600	2,100
	222.250	46.830	46.830	34.925	315	585	32,000	60,000	1,500	2,000
158.750	205.583	23.812	23.812	18.258	126	247	12,900	25,200	1,500	2,000
	225.425	41.275	39.688	33.338	254	555	25,900	56,500	1,400	1,900
165.100	225.425	41.275	39.688	33.338	254	555	25,900	56,500	1,400	1,900
170.000	230.000	39.000	38.000	31.000	282	520	28,700	53,000	1,400	1,800
177.800	227.012	30.162	30.162	23.020	181	415	18,500	42,000	1,300	1,800
	247.650	47.625	47.625	38.100	340	690	35,000	70,500	1,300	1,700
180.000	250.000	47.000	45.000	37.000	370	710	37,500	72,500	1,300	1,700
190.000	260.000	46.000	44.000	36.500	365	720	37,000	73,500	1,200	1,600
196.850	241.300	23.812	23.017	17.462	160	330	16,300	33,500	1,200	1,600

Note: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions r_{is} and r_{os} are larger than the maximum value.
2. Bearing numbers marked "*" designate J-series bearings. The tolerances of these bearings is listed in Table 6.6 on page A-40.



Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$$P_{or} = 0.5F_r + Y_oF_a$$

When $P_{or} < F_r$ use $P_{or} = F_r$

For values of e , Y_2 and Y_o see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	d_a	d_b	D_a	D_b	r_{as} max	r_{1as} max			Y_2	Y_o	
4T-48385/48320	148	142	177	184	3.5	3.3	4.0	0.32	1.87	1.03	3.64
4T-67390/67322	149	143	180	189	3.5	3.3	6.3	0.34	1.74	0.96	4.63
4T-67391/67322	157	143	180	189	8	3.3	6.3	0.34	1.74	0.96	4.59
4T-74525/74850	152	146	196	208	3.5	3.3	-2.2 ^①	0.49	1.23	0.68	6.56
4T-95525/95925	166	148	209	217	9.7	3.3	14.0	0.37	1.62	0.89	11.3
4T-48393/48320	151	144	177	184	3.5	3.3	4.0	0.32	1.87	1.03	3.43
4T-896/892	156	150	205	216	3.5	3.3	6.0	0.42	1.43	0.78	9.07
4T-74550/74850	158	151	196	208	3.5	3.3	-2.2 ^①	0.49	1.23	0.68	6.05
4T-898/892	160	153	205	216	3.5	3.3	6.0	0.42	1.43	0.78	8.76
4T-99550/99100	170	156	227	238	7	3.3	12.1	0.41	1.47	0.81	14.3
4T-48684/48620	166	151	185	193	8	3.3	3.1	0.34	1.78	0.98	3.85
4T-48685/48620	158	151	185	193	3.5	3.3	3.1	0.34	1.78	0.98	3.89
4T-36690/36620	155	153	182	188	1.5	1.5	-5.0 ^①	0.37	1.63	0.90	2.27
4T-99575/99100	175	162	227	238	7	3.3	12.1	0.41	1.47	0.81	13.5
4T-L630349/L630310	162	158	183	187	2	2	-10.0 ^①	0.42	1.44	0.79	1.53
4T-M231648/M231610	178	163	207	213	8	1.5	5.9	0.33	1.8	0.99	5.72
4T-L432349/L432310	168	166	195	199	1.5	1.5	-9.8 ^①	0.37	1.61	0.88	1.89
4T-46780/46720	176	169	209	218	3.5	3.3	-2.6 ^①	0.38	1.57	0.86	5.2
4T-46790/46720	181	174	209	218	3.5	3.3	-2.6 ^①	0.38	1.57	0.86	4.69
#4T-JHM534149/JHM534110	184	178	217	224	3	2.5	-4.7 ^①	0.38	1.57	0.86	4.37
4T-36990/36920	188	186	214	221	1.5	1.5	-12.8 ^①	0.44	1.36	0.75	2.92
4T-67790/67720	194	188	229	240	3.5	3.3	-4.8 ^①	0.44	1.36	0.75	6.57
#4T-JM736149/JM736110	196	190	232	243	3	2.5	-9.0 ^①	0.48	1.25	0.69	6.76
#4T-JM738249/JM738210	206	200	242	252	3	2.5	-10.9 ^①	0.48	1.26	0.69	6.85
4T-LL639249/LL639210	205	203	232	236	1.5	1.5	-17.3 ^①	0.42	1.44	0.79	2.07

① " - " means that load center at outside on end of inner ring.