





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 the tapered vertex of the raceway surfaces of the inner and outer rings and rollers converge at one point on the centerline of the bearing.

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 series.

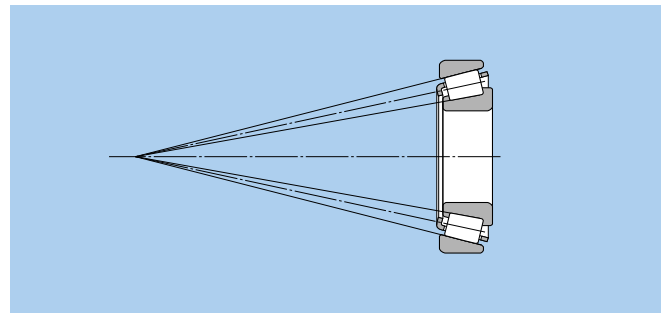



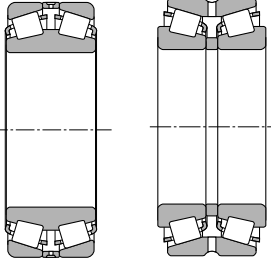
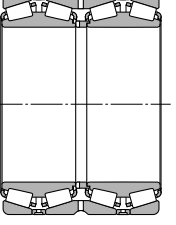
Diagram 1.

Table 1 Tapered roller bearing types and characteristics

Type	Characteristics									
<p><b>Single row tapered roller bearings</b></p>	<p>(1) There are both metric and inch series, and they have been standardized as shown in the following table.</p> <p><b>Dimension series</b></p> <table border="1"> <thead> <tr> <th></th> <th>Metric series</th> <th>Inch series</th> </tr> </thead> <tbody> <tr> <td>Regulations</td> <td> <ul style="list-style-type: none"> <li>• JIS B 1512</li> <li>• ISO 355</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• ABMA (includes metric J-series)</li> </ul> </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> </tbody> </table> <p>* Dimension series previously not covered by 3XX are regulated under JIS B 1512; dimensions previously missing from 3XX will henceforth use the bearing number.</p> <p>(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.</p> <p>(3) Subunits 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. 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 <b>Diagram 2</b>)</p> <div> <p>Subunit dimensions</p> <p><math>E</math>: Outer ring (cup) nominal small-end diameter  <math>\alpha</math>: Nominal contact angle</p> </div> <p style="text-align: center;"><b>Diagram 2.</b></p>		Metric series	Inch series	Regulations	<ul style="list-style-type: none"> <li>• JIS B 1512</li> <li>• ISO 355</li> </ul>	<ul style="list-style-type: none"> <li>• ABMA (includes metric J-series)</li> </ul>	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 series	Inch series								
Regulations	<ul style="list-style-type: none"> <li>• JIS B 1512</li> <li>• ISO 355</li> </ul>	<ul style="list-style-type: none"> <li>• ABMA (includes metric J-series)</li> </ul>								
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.)								

Continued on next page ➔

Table 1 (continued)

Type	Characteristics
<p><b>Single row tapered roller bearings</b></p>	<p>(4) 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>(5) 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>(6) Single row tapered roller bearings are separable, so both the inner and outer rings can be used with tight fits.</p> <p>(7) Tapered roller bearings are also manufactured with flanges attached to the outer rings. For more details, contact NTN Engineering. (Refer to <b>Diagram 3</b>)</p> <div style="text-align: center;">  <p><b>Diagram 3.</b></p> </div>
<p><b>Double row tapered roller bearings</b></p>	<p>(1) Back-to-back arrangement (using double row outer rings) and face-to-face arrangement (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 <b>Diagram 4</b>)</p> <p>(2) The axial internal clearances for double and duplex bearings are listed in <b>Table 8, 9</b> on pages A-58.</p> <p>(3) Pairs of duplex single row tapered roller bearings are also manufactured. For more details, contact NTN Engineering.</p> <div style="text-align: center;">  <p>Face-to-face      Back-to-back</p> <p><b>Diagram 4.</b></p> </div>
<p><b>Four row tapered roller bearings</b></p>	<p>(1) As shown in <b>Diagram 5</b>, four row tapered roller bearings are constructed of two double row inner rings and two double row outer rings.</p> <p>(2) Life of large bearings is extended by using case hardened steel, 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> <div style="text-align: center;">  <p><b>Diagram 5.</b></p> </div>

## 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 arrangement: .....0.001rad ( 3.5' )
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In situations where large displacement is necessary, please consult NTN Engineering.

## 4. Precautions when using

If bearing load is light during operation, or if the ratio of axial to radial load for duplex and double row bearings exceeds the value of  $e$ , slipping develops between the rollers and raceway, sometimes resulting in smearing. The mass of rollers and cages particularly tends to be large for large tapered roller bearings. For details, please contact NTN Engineering.

## 5. ECO-Top tapered roller bearings

In recent years, there has been an increasing demand for small and medium tapered roller bearings that contribute to energy savings, higher output, longer life, higher speed and more efficient assembly, particularly for automobiles. NTN Engineering is responding to this demand by providing bearings with special specifications based on 4Top tapered roller bearings, which are standard bearings.

In order to contribute to the ecology movement, in addition to enhancing existing special specifications, NTN Engineering has developed the next-generation NTN Engineering tapered roller bearing **ECO-Top tapered roller bearing** having improved long life, low torque, anti-seizure, easy assembly specifications. The features are as follows (compared with NTN Engineering standard bearings):

- (1) Ten times longer life using contaminated lubricant
- (2) Two times longer life using clean lubricant
- (3) At least 10% lower torque in practical rotation range
- (4) 25% better anti-seizure performance
- (5) Two times better loss-of-preload resistance
- (6) Half reduced number of revolutions to stable assembled bearing width

For details, please contact NTN Engineering.



Eco-Top tapered roller bearings



## Inch series Tapered Roller Bearings (single row) index

Series number	Cone / cup number	Page of bearing dimension table
335	336 / 332	B-173
335	339 / 332	B-169
335	344 / 332	B-171
355	350A / 354A	B-171
355	355 / 354A	B-173
355	358 / 354A	B-175
355	359A / 354A	B-175
355	359S / 352	B-175
365	365 / 362A	B-177
365	366 / 362A	B-177
365	367 / 362A	B-175
365	368 / 362A	B-177
365	368A / 362	B-177
365	368S / 362A	B-179
365	369A / 362A	B-175
365	370A / 362A	B-177
385	385 / 382A	B-181
385	385A / 382A	B-181
385	386A / 382A	B-175
385	387 / 382A	B-181
385	387A / 382A	B-181
385	387A / 382A	B-181
385	387S / 382A	B-181
385	388A / 382A	B-181
385	389 / 382A	B-181
385	389A / 382A	B-179
395	390 / 394A	B-181
395	390A / 394A	B-183
395	392 / 394A	B-183
395	395A / 394A	B-185
395	396 / 394A	B-177
395	397 / 394A	B-183
395	399A / 394A	B-185
415	418 / 414	B-171
415	420 / 414	B-171
435	436 / 432	B-175
435	438 / 432	B-173
455	455 / 453X	B-179
455	460 / 453X	B-173
455	462 / 453X	B-181
455	463 / 453X	B-175
455	469 / 453A	B-181
455	469 / 453X	B-181
455	469 / 454	B-181
475	477 / 472	B-183
475	480 / 472	B-185
475	482 / 472	B-185
475	483 / 472	B-183
475	484 / 472	B-187
495	495 / 493	B-189
495	495A / 493	B-187
495	495AS / 493	B-189
495	496 / 493	B-189
495	497 / 492A	B-191

Series number	Cone / cup number	Page of bearing dimension table
495	498 / 493	B-191
525	527 / 522	B-173
525	528 / 522	B-175
525	529 / 522	B-179
535	537 / 532X	B-179
535	539 / 532X	B-179
535	543 / 532X	B-171
555	555 / 552A	B-179
555	555S / 552A	B-181
555	557S / 552A	B-179
555	558 / 552A	B-183
555	559 / 552A	B-183
555	560 / 552A	B-185
555	560S / 552A	B-185
565	565 / 563	B-183
565	566 / 563	B-185
565	567 / 563	B-187
565	567A / 563	B-187
565	568 / 563	B-187
575	575 / 572	B-187
575	575S / 572	B-187
575	576 / 572	B-187
575	577 / 572	B-187
575	580 / 572	B-189
575	581 / 572	B-189
575	582 / 572	B-189
595	593 / 592A	B-191
595	594 / 592A	B-193
595	594A / 592XE	B-193
595	595 / 592A	B-189
595	596 / 592A	B-191
595	598A / 592A	B-191
615	619 / 612	B-179
615	621 / 612	B-179
615	623 / 612	B-181
635	639 / 632	B-183
635	641 / 632	B-185
635	641 / 633	B-185
635	643 / 632	B-185
635	644 / 632	B-187
655	655 / 653	B-185
655	659 / 653	B-187
655	661 / 653	B-189
655	663 / 652	B-189
655	663 / 653	B-189
655	665 / 653	B-191
675	681 / 672	B-191
675	683 / 672	B-193
675	685 / 672	B-193
675	687 / 672	B-193
745	740 / 742	B-189
745	744 / 742	B-187
745	745A / 742	B-185
745	748S / 742	B-187

Series number	Cone / cup number	Page of bearing dimension table
745	749 / 742	B-191
745	749A / 742	B-189
755	756A / 752	B-189
755	757 / 752	B-189
755	758 / 752	B-191
755	759 / 752	B-191
755	760 / 752	B-191
775	780 / 772	B-193
775	782 / 772	B-193
795	799 / 792	B-195
795	799A / 792	B-195
835	835 / 832	B-185
835	842 / 832	B-189
835	850 / 832	B-191
855	861 / 854	B-193
895	896 / 892	B-197
895	898 / 892	B-197
935	936 / 932	B-193
935	938 / 932	B-195
935	941 / 932	B-193
1200	1280 / 1220	B-161
1300	1380 / 1328	B-161
1300	1380 / 1329	B-161
1700	1755 / 1729	B-161
1700	1775 / 1729	B-161
1700	1779 / 1729	B-163
1700	1780 / 1729	B-163
1900	1985 / 1930	B-163
1900	1985 / 1931	B-165
1900	1985 / 1932	B-165
2400	2474 / 2420	B-165
2500	2558 / 2523	B-165
2500	2578 / 2523	B-165
2500	2580 / 2520	B-167
2500	2580 / 2523	B-167
2500	2582 / 2523	B-167
2500	2585 / 2523	B-167
2600	2682 / 2631	B-163
2600	2687 / 2631	B-163
2600	2688 / 2631	B-163
2600	2689 / 2631	B-165
2600	2690 / 2631	B-165
2700	2776 / 2720	B-171
2700	2780 / 2720	B-169
2700	2785 / 2720	B-167
2700	2788 / 2720	B-171
2700	2789 / 2720	B-171
2700	2793 / 2720	B-167
2700	2793 / 2729	B-169
2700	2793 / 2735X	B-167
2800	2878 / 2820	B-167
2800	2879 / 2820	B-167
2900	2984 / 2924	B-175
3100	3187 / 3120	B-165

## Inch series Tapered Roller Bearings (single row) index

Series number	Cone / cup number	Page of bearing dimension table	Series number	Cone / cup number	Page of bearing dimension table	Series number	Cone / cup number	Page of bearing dimension table
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3100	3193 / 3120	B-167	6500	6580 / 6535	B-191	15000	15116 / 15245	B-165
3100	3196 / 3120	B-167	02400	02474 / 02420	B-165	15000	15117 / 15245	B-165
3300	3379 / 3320	B-169	02400	02475 / 02420	B-167	15000	15118 / 15245	B-165
3300	3382 / 3321	B-171	02400	02476 / 02420	B-167	15000	15119 / 15245	B-165
3300	3382 / 3339	B-171	02800	02872 / 02820	B-165	15000	15120 / 15245	B-165
3300	3386 / 3320	B-171	02800	02875 / 02820	B-167	15000	15123 / 15245	B-165
3400	3476 / 3420	B-167	02800	02877 / 02820	B-167	15000	15125 / 15245	B-165
3400	3478 / 3420	B-169	02800	02878 / 02820	B-167	15000	15126 / 15245	B-167
3400	3479 / 3420	B-169	03000	03062 / 03162	B-161	15500	15580 / 15523	B-163
3400	3490 / 3420	B-171	05000	05062 / 05185	B-161	15500	15590 / 15520	B-163
3500	3576 / 3525	B-173	05000	05066 / 05185	B-161	15500	15590 / 15523	B-165
3500	3578 / 3520	B-173	05000	05075 / 05185	B-161	16000	16137 / 16284	B-167
3500	3578 / 3525	B-173	05000	05079 / 05185	B-161	17000	16150 / 16282	B-169
3500	3579 / 3525	B-173	07000	07079 / 07196	B-161	17000	17118 / 17244	B-165
3500	3580 / 3525	B-171	07000	07087 / 07196	B-161	17000	17119 / 17244	B-165
3500	3586 / 3525	B-175	07000	07093 / 07196	B-163	17500	17580 / 17520	B-161
JS3500	JS3549A / JS3510	B-169	07000	07096 / 07196	B-163	18500	18590 / 18520	B-171
3700	3767 / 3720	B-179	07000	07097 / 07196	B-163	18600	18685 / 18620	B-173
3700	3775 / 3720	B-177	07000	07098 / 07196	B-163	18600	18690 / 18620	B-175
3700	3776 / 3720	B-175	07000	07100 / 07196	B-163	18700	18790 / 18720	B-177
3700	3777 / 3720	B-175	07000	07100 / 07204	B-163	18700	18790 / 18724	B-177
3700	3778 / 3720	B-175	07000	07100S / 07196	B-163	19000	19150 / 19281	B-169
3700	3780 / 3720	B-177	09000	09062 / 09195	B-161	21000	21075 / 21212	B-161
3700	3780 / 3726	B-177	09000	09067 / 09195	B-161	22700	22780 / 22720	B-173
3700	3780 / 3732	B-177	09000	09067 / 09196	B-161	23000	23100 / 23256	B-163
3700	3781 / 3720	B-177	09000	09078 / 09195	B-161	24700	24780 / 24720	B-171
3700	3782 / 3720	B-173	09000	09081 / 09195	B-161	25500	25572 / 25520	B-171
3800	3872 / 3820	B-169	11000	11162 / 11300	B-171	25500	25577 / 25520	B-173
3800	3875 / 3820	B-171	11000	11162 / 11315	B-171	25500	25578 / 25520	B-173
3800	3880 / 3820	B-173	11500	11590 / 11520	B-161	25500	25580 / 25520	B-173
3900	3975 / 3920	B-179	LM11700	LM11749 / LM11710	B-161	25500	25582 / 25520	B-173
3900	3979 / 3920	B-181	LM11900	LM11949 / LM11910	B-161	25500	25584 / 25520	B-175
3900	3980 / 3920	B-183	12000	12175 / 12303	B-173	25500	25590 / 25519	B-175
3900	3982 / 3920	B-183	12500	12580 / 12520	B-161	25500	25590 / 25520	B-175
3900	3984 / 3925	B-185	M12600	M12648 / M12610	B-161	25500	25590 / 25522	B-175
3900	3994 / 3920	B-185	M12600	M12649 / M12610	B-161	25500	25590 / 25526	B-175
A4000	A4050 / A4138	B-161	LM12700	LM12749 / LM12711	B-161	25500	25592 / 25520	B-175
A4000	A4059 / A4138	B-161	13600	13685 / 13621	B-169	25800	25877 / 25820	B-167
4300	4388 / 4335	B-173	13600	13687 / 13621	B-169	25800	25877 / 25821	B-167
4300	4395 / 4335	B-173	13800	13889 / 13830	B-169	25800	25880 / 25821	B-169
5300	5395 / 5335	B-177	14000	14116 / 14274	B-165	26800	26878 / 26822	B-171
5500	5578 / 5535	B-179	14000	14116 / 14276	B-165	26800	26880 / 26822	B-171
5500	5583 / 5535	B-183	14000	14117A / 14276	B-165	26800	26882 / 26823	B-171
5500	5584 / 5535	B-183	14000	14124 / 14276	B-167	26800	26882 / 26824	B-173
5700	5760 / 5735	B-187	14000	14125A / 14276	B-167	26800	26883 / 26822	B-169
A6000	A6075 / A6157	B-161	14000	14130 / 14276	B-167	26800	26884 / 26822	B-173
6200	6277 / 6220	B-175	14000	14137A / 14276	B-167	26800	26885 / 26822	B-171
6300	6379 / 6320	B-185	14000	14139 / 14276	B-169	27600	27687 / 27620	B-189
6300	6386 / 6320	B-185	15000	15100 / 15245	B-163	27600	27689 / 27620	B-189
6400	6460 / 6420	B-187	15000	15101 / 15243	B-163	27600	27690 / 27620	B-189
6400	6461 / 6420	B-189	15000	15102 / 15245	B-163	27600	27691 / 27620	B-189
6400	6461A / 6420	B-187	15000	15103 / 15245	B-163	27800	27880 / 27820	B-171
6500	6559C / 6535	B-189	15000	15106 / 15245	B-163	28000	28150 / 28300	B-171

## Inch series Tapered Roller Bearings (single row) index

Series number	Cone / cup number	Page of bearing dimension table
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28500	28580 / 28521	B-177
28500	28584 / 28521	B-179
28600	28678 / 28622	B-177
28600	28680 / 28622	B-181
28600	28682 / 28622	B-181
28900	28985 / 28921	B-183
28900	28990 / 28920	B-183
28900	28995 / 28920	B-183
29500	29585 / 29520	B-183
29500	29585 / 29521	B-183
29500	29586 / 29520	B-183
29500	29590 / 29520	B-185
29600	29675 / 29620	B-185
29600	29675 / 29630	B-185
29600	29685 / 29620	B-187
29600	29688 / 29620	B-187
LM29700	LM29748 / LM29710	B-169
31500	31593 / 31520	B-169
31500	31594 / 31520	B-169
31500	31597 / 31520	B-169
33000	33225 / 33462	B-181
33000	33275 / 33462	B-185
33000	33281 / 33462	B-187
33000	33287 / 33462	B-187
33800	33885 / 33821	B-173
33800	33889 / 33821	B-177
33800	33890 / 33821	B-179
33800	33895 / 33822	B-179
34000	34274 / 34478	B-185
34000	34300 / 34478	B-187
34000	34301 / 34478	B-187
34000	34306 / 34478	B-189
36600	36690 / 36620	B-197
36900	36990 / 36920	B-197
37000	37425 / 37625	B-193
37000	37431 / 37625	B-193
39500	39575 / 39520	B-179
39500	39580 / 39520	B-181
39500	39581 / 39520	B-181
39500	39585 / 39520	B-183
39500	39590 / 39520	B-185
41000	41125 / 41286	B-165
42000	42346 / 42584	B-191
42000	42350 / 42584	B-191
42000	42368 / 42584	B-191
42000	42375 / 42584	B-193
42000	42381 / 42584	B-193
42600	42687 / 42620	B-187
42600	42690 / 42620	B-189
43000	43131 / 43312	B-167
44000	44143 / 44348	B-169

Series number	Cone / cup number	Page of bearing dimension table
44000	44150 / 44348	B-171
44000	44158 / 44348	B-171
L44600	L44640 / L44610	B-163
L44600	L44643 / L44610	B-163
L44600	L44649 / L44610	B-163
45200	45280 / 45220	B-175
45200	45282 / 45220	B-177
45200	45284 / 45220	B-179
45200	45287 / 45220	B-179
45200	45289 / 45220	B-181
L45400	L45449 / L45410	B-165
46000	46162 / 46368	B-173
46000	46175 / 46368	B-173
46000	46780 / 46720	B-197
46000	46790 / 46720	B-197
47400	47487 / 47420	B-185
47400	47490 / 47420	B-187
47600	47678 / 47620	B-187
47600	47681 / 47620	B-189
47600	47686 / 47620	B-189
47800	47890 / 47820	B-191
47800	47896 / 47820	B-193
48200	48286 / 48220	B-195
48200	48290 / 48220	B-195
48300	48385 / 48320	B-197
48300	48393 / 48320	B-197
LM48500	LM48548 / LM48510	B-167
LM48500	LM48548A / LM48510	B-167
48600	48684 / 48620	B-197
48600	48685 / 48620	B-197
49500	49585 / 49520	B-179
52000	52375 / 52618	B-193
52000	52387 / 52618	B-193
52000	52393 / 52618	B-193
52000	52400 / 52618	B-193
53000	53162 / 53375	B-173
53000	53177 / 53375	B-173
55000C	55175C / 55437	B-175
55000C	55176C / 55437	B-175
55000C	55187C / 55437	B-177
55000C	55200C / 55443	B-179
56000	56425 / 56650	B-193
59000	59200 / 59412	B-179
64000	64433 / 64700	B-195
64000	64450 / 64700	B-195
65000	65237 / 65500	B-183
65000	65390 / 65320	B-177
66000	66200 / 66462	B-179
66000	66225 / 66462	B-181
66000	66584 / 66520	B-179
66000	66589 / 66520	B-181
LM67000	LM67048 / LM67010	B-165
67300	67388 / 67322	B-195
67300	67389 / 67322	B-195

Series number	Cone / cup number	Page of bearing dimension table
67300	67390 / 67322	B-197
67300	67391 / 67322	B-197
67700	67790 / 67720	B-197
68000	68450 / 68712	B-195
68000	68462 / 68712	B-195
L68100	L68149 / L68111	B-169
L69300	JL69349 / JL69310	B-169
71000	71453 / 71750	B-195
72000	72188 / 72487	B-177
72000C	72200C / 72487	B-179
72000C	72212C / 72487	B-179
72000C	72218C / 72487	B-181
72000C	72225C / 72487	B-181
LM72800	LM72849 / LM72810	B-163
74000	74500 / 74850	B-195
74000	74525 / 74850	B-197
74000	74550 / 74850	B-197
78000	78225 / 78551	B-181
78000	78250 / 78551	B-183
78000C	78214C / 78551	B-179
LM78300	LM78349 / LM78310C	B-169
LM78300	LM78349A / LM78310A	B-169
M84500	M84548 / M84510	B-163
M86600	M86643 / M86610	B-163
M86600	M86647 / M86610	B-165
M86600	M86649 / M86610	B-165
M88000	M88048 / M88010	B-167
HM88500	JHM88540 / JHM88513	B-165
HM88500	HM88542 / HM88510	B-167
HM88500	HM88542 / HM88512	B-167
HM88500	HM88547 / HM88510	B-167
HM88600	HM88648 / HM88610	B-169
HM88600	HM88648 / HM88611AS	B-169
HM88600	HM88649 / HM88610	B-167
HM89400	HM89440 / HM89410	B-167
HM89400	HM89443 / HM89410	B-167
HM89400	HM89444 / HM89410	B-167
HM89400	HM89446 / HM89410	B-169
HM89400	HM89448 / HM89410	B-169
HM89400	HM89449 / HM89410	B-169
HM89400	HM89449 / HM89411	B-169
90000	J90354 / J90748	B-191
90000	90381 / 90744	B-193
95000	95475 / 95925	B-195
95000	95500 / 95905	B-195
95000	95525 / 95925	B-197
97000	97500 / 97900	B-195
99000	99550 / 99100	B-197
99000	99575 / 99100	B-197
LM102900	LM102949 / LM102910	B-175
LM104900	JLM104948 / JLM104910	B-177
LM104900	LM104947A / LM104911	B-177
LM104900	LM104949 / LM104911	B-177
M205100	JM205149 / JM205110	B-177

## Inch series Tapered Roller Bearings (single row) index

Series number	Cone / cup number	Page of bearing dimension table
M207000	JM207049 / JM207010	B-181
H211700	JH211749 / JH211710	B-185
HM212000	HM212044 / HM212011	B-183
HM212000	HM212046 / HM212011	B-183
HM212000	HM212049 / HM21210	B-185
L217800	L217849 / L217810	B-191
LL217800	LL217849 / LL217810	B-191
HM218200	HM218248 / HM218210	B-191
HH221400	HH221430 / HH221410	B-189
HH221400	HH221431 / HH221410	B-189
HH221400	HH221440 / HH221410	B-193
HH221400	HH221449 / HH221410	B-193
HH221400	HH221449A / HH221410	B-193
HH224300	HH224334 / HH224310	B-193
HH224300	HH224335 / HH224310	B-193
HH224300	HH224346 / HH224310	B-195
HH228300	HH228349 / HH228310	B-195
M231600	M231648 / M231610	B-197
LM300800	LM300849 / LM300811	B-171
H307700	JH307749 / JH307710	B-181
HM318400	JHM318448 / JHM318410	B-191
L319200	L319249 / L319210	B-193
L327200	L327249 / L327210	B-195
H414200	H414242 / H414210	B-185
H414200	H414245 / H414210	B-185
H414200	H414249 / H414210	B-187
H415600	JH415647 / JH415610	B-187
L432300	L432349 / L432310	B-197
LM501300	LM501349 / LM501310	B-171
LM501300	LM501349 / LM501314	B-171
LM503300	LM503349A / LM503310	B-175
HH506300	HH506348 / HH506310	B-177
HH506300	HH506349 / HH506310	B-177
LM506800	JLM506849 / JLM506810	B-179
LM508700	JLM508748 / JLM508710	B-181
M511900	JM511946 / JM511910	B-183
M515600	JM515649 / JM515610	B-189
HM516400	HM516442 / HM516410	B-187
HM516400	HM516448 / HM516410	B-189
HM516800	JHM516849 / JHM516810	B-191
LM522500	LM522546 / LM522510	B-193
LM522500	LM522548 / LM522510	B-195
HM522600	JHM522649 / JHM522610	B-195
HM534100	JHM534149 / JHM534110	B-197
LM603000	LM603049 / LM603011	B-175
L610500	L610549 / L610510	B-183
M612900	JM612949 / JM612910	B-185
HM617000	HM617049 / HM617010	B-191
L630300	L630349 / L630310	B-197
LL639200	LL639249 / LL639210	B-197
LM704600	JLM704649 / JLM704610	B-177
LM710900	JLM710949 / JLM710910	B-183
LM714100	JLM714149 / JLM714110	B-187
M714200	JM714249 / JM714210	B-187

Series number	Cone / cup number	Page of bearing dimension table
H715300	H715334 / H715311	B-183
H715300	H715343 / H715311	B-185
H715300	H715345 / H715311	B-187
H715300	H715348 / H715311	B-189
M716600	JM716648 / JM716610	B-191
M718100	JM718149 / JM718110	B-191
M719100	JM719149 / JM719113	B-191
M720200	JM720249 / JM720210	B-193
L724300	JL724348 / JL724314	B-195
M736100	JM736149 / JM736110	B-197
M738200	JM738249 / JM738210	B-197
HM801300	HM801346 / HM801310	B-171
HM801300	HM801349 / HM801310	B-171
M802000	M802048 / M802011	B-173
HM803100	HM803145 / HM803110	B-173
HM803100	HM803149 / HM803110	B-173
M804000	M804048 / M804010	B-175
M804800	M804846 / M804810	B-175
M804800	M804848 / M804810	B-177
M804800	M804849 / M804810	B-177
HM804800	HM804840 / HM804810	B-173
HM804800	HM804842 / HM804810	B-173
LM806600	LM806649 / LM806610	B-179
HM807000	HM807040 / HM807010	B-175
HM807000	HM807044 / HM807010	B-177
HM807000	HM807046 / HM807010	B-177
HM807000	HM807048 / HM807010	B-179
HM807000	HM807049 / HM807010	B-179
HM807000	JHM807045 / JHM807012	B-177
L812100	L812148 / L812111	B-185
LM813000	JLM813049 / JLM813010	B-185
HM813800	HM813840 / HM813810	B-181
HM813800	HM813841 / HM813810	B-183
HM813800	HM813842 / HM813810	B-183
HM813800	HM813844 / HM813810	B-185
L814700	L814749 / L814710	B-187
LM814800	LM814849 / LM814810	B-189
M822000	JM822049 / JM822010	B-195
HM903200	HM903245 / HM903210	B-173
HM903200	HM903249 / HM903210	B-173
M903300	M903345 / M903310	B-173
HM907600	HM907643 / HM907614	B-179
HM911200	HM911242 / HM911210	B-179
HM911200	HM911245 / HM911210	B-183
HM911200	HM911244 / JHM911211	B-183
H913800	H913840 / H913810	B-181
H913800	H913842 / H913810	B-183
H913800	JH913848 / JH913811	B-187
H917800	H917840 / H917810	B-189
H924000	H924045 / H924010	B-195
HM926700	HM926740 / HM926710	B-195
HM926700	HM926747 / HM926710	B-195





## Inch series Tapered Roller Bearings (four row) index

Series number	Cone / cup number	Page of bearing dimension table
8500	T-8576D / 8520 / 8520D	B-219
46700	46791D / 46720 / 46721D	B-217
48200	T-48290D / 48220 / 48220D	B-217
48300	T-48393D / 48320 / 48320D	B-217
48600	T-48680D / 48620 / 48620D	B-217
67700	67791D / 67720 / 67721D	B-217
67800	T-67885D / 67820 / 67820D	B-219
81000	81576D / 81962 / 81963D	B-217
82600	82681D / 82620 / 82620D	B-217
126000	EE126096D / 126150 / 126151D	B-219
127000	EE127097D / 127137 / 127137D	B-219
132000	EE132082D / 132125 / 132126D	B-219
134000	EE134102D / 134143 / 134144D	B-221
L163100	L163149D / L163110 / L163110D	B-223
170000	EE171000D / 171450 / 17145D	B-219
220000	EE221027D / 221575 / 221576D	B-221
M224700	M224749D / M224710 / M224710D	B-217
M231600	T-M231649D / M231610 / M231610D	B-217
M238800	M238849D / M238810 / M238810D	B-217
M241500	M241538D / M241510 / M241510D	B-219
M244200	T-M244249D / M244210 / M244210D	B-219
LM247700	LM247748D / LM247710 / LM247710DA	B-219
M249700	T-M249748D / M249710 / M249710D	B-219
HM252300	HM252349D / HM252310 / HM252310D	B-221
M252300	T-M252349D / M252310 / M252310D	B-221
M255400	M255449D / M255410 / M255410DA	B-221
HM256800	T-HM256849D / HM256810 / HM256810DG2	B-221
M257100	M257149D / M257110 / M257110D	B-221
M257200	M257248D / M257210 / M257210D	B-223
LM258600	LM258649D / LM258610 / LM258610D	B-223
HM259000	T-HM259049D / HM259010 / HM259010D	B-223
HM261000	HM261049D / HM261010 / HM261010DA	B-223
M262400	M262449D / M262410 / M262410D	B-223
HM262700	T-HM262749D / HM262710 / HM262710DG2	B-223
LM263100	LM263149D / LM263110 / LM263110D	B-223

Series number	Cone / cup number	Page of bearing dimension table
M263300	M263349D / M263310 / M263310D	B-223
HM265000	HM265049D / HM265010 / HM265010D	B-225
HM266400	T-HM266449D / HM266410 / HM266410DG2	B-225
M268700	T-M268749D / M268710 / M268710DG2	B-225
M270700	M270749D / M270710 / M270710DAG2	B-225
LM272200	LM272249D / LM272210 / LM272210DG2	B-227
M274100	M274149D / M274110 / M274110DG2	B-227
LM274400	LM274449D / LM274410 / LM274410D	B-227
275000	EE275106D / 275155 / 275156D	B-221
275000	EE275109D / 275160 / 275161D	B-221
M275300	M275349D / M275310 / M275310DG2	B-227
M276400	M276449D / M276410 / M276410DG2	B-227
M278700	M278749D / M278710 / M278710DAG2	B-227
LM278800	LM278849D / LM278710 / LM278710D	B-229
280000	EE280700D / 281200 / 281201D	B-217
M280000	M280049D / M280010 / M280010DG2	B-229
L281100	L281149D / L281110 / L281110DG2	B-229
M281600	M281649D / M281610 / M281610DG2	B-229
LM281800	LM281849D / LM281810 / LM281810DG2	B-229
M282200	M282249D / M282210 / M282210DG2	B-229
M283400	M283449D / M283410 / M283410DG2	B-229
LM283600	LM283649D / LM283610 / LM283610DG2	B-229
M284200	M284249D / M284210 / M284210DG2	B-229
M285800	M285848D / M285810 / M288510DG2	B-229
LM286200	LM286249D / LM286210 / LM286210DG2	B-231
LM287600	LM287649D / LM2876100 / LM287610DG2	B-231
LM288900	LM288949D / LM288910 / LM288910DG2	B-231
290000	EE291202D / 291750 / 291751D	B-221
329000	EE329119D / 329172 / 329173D	B-221
LM377400	LM377449D / LM377410 / LM377410DG2	B-227
LM451300	T-LM451349D / LM451310 / LM451310D	B-221
526000	EE526131D / 526190 / 52619D	B-223
547000	EE547341D / 547480 / 547481DG2	B-231
640000	T-EE640193D / 640260 / 640261DG2	B-227
649000	EE649241D / 649310 / 649311DG2	B-229

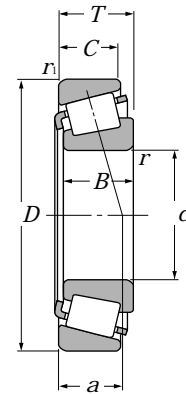
## Inch series Tapered Roller Bearings (four row) index

Series number	Cone / cup number	Page of bearing dimension table
LM654600	T-LM654644D / LM654610 / LM654610D	B-221
LM654600	T-LM654648D / LM654610 / LM654610D	B-221
655000	EE655271D / 655345 / 655346DG2	B-229
LM665900	LM665949D / LM665910 / LM665910D	B-225
M667900	M667947D / M667911 / M667911DG2	B-225
700000	EE700090D / 700167 / 700168D	B-219
LM742700	T-LM742749D / LM742714 / LM742714D	B-219
755000	EE755281D / 755360 / 755361DG2	B-229
M757400	M757448D / M757410 / M757410D	B-221
M757400	M757449D / M757410 / M757410D	B-223
LM761600	LM761648D / LM761610 / LM761610D	B-223
LM761600	LM761649D / LM761610 / LM761610D	B-223
LM763400	LM763449D / LM763410 / LM763410D	B-223
LM765100	LM765149D / LM765110 / LM765110D	B-225
LM767700	LM767745D / LM767710 / LM767710D	B-225
LM767700	LM767749D / LM767710 / LM767710D	B-225
LM769300	LM769349D / LM769310 / LM769310D	B-225
L770800	L770849D / L770810 / L770810DG2	B-227
LM772700	LM772749D / LM772710 / LM772710DA	B-227
LM778500	LM778549D / LM778510 / LM778510DG2	B-229
822000	EE822101D / 822175 / 822176D	B-219
833000	EE833161D / 833232 / 833233D	B-225
843000	EE843221D / 843290 / 843291D	B-227
LM869400	T-LM869449D / LM869410 / LM869410DG2	B-225
910000	EE911603D / 912400 / 912401D	B-225
920000	EE921150D / 921875 / 921876D	B-221
970000	EE971355D / 972100 / 972103D	B-223



# Tapered Roller Bearings

## Metric series

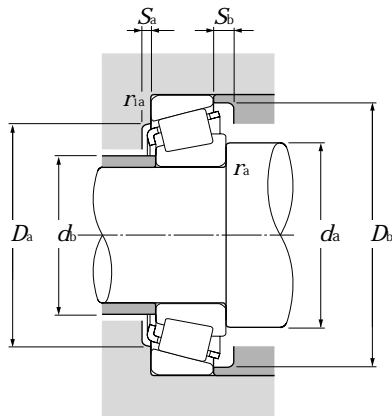


**d** 15 ~ 30 mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm		$r_{s \min}^{1)}$	$r_{b \min}^{1)}$	dynamic	static	dynamic	static	min <sup>-1</sup>		
			B	C			kN	C <sub>or</sub>	kgf	C <sub>or</sub>	grease	oil	
<b>15</b>	42	14.25	13	11	1	1	23.2	20.8	2 370	2 120	9 900	13 000	4T-30302
<b>17</b>	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 <sup>2)</sup>
	47	15.25	14	12	1	1	28.9	26.3	2 940	2 680	9 000	12 000	4T-30303
<b>20</b>	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	
<b>22</b>	44	15	15	11.5	0.6	0.6	27.0	31.5	2 760	3 250	8 900	12 000	4T-320/22X
<b>25</b>	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 <sup>2)</sup>
	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 <sup>2)</sup>
	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	
<b>28</b>	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
<b>30</b>	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 radial load

$$P_r = XF_r + YF_a$$

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

### static

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

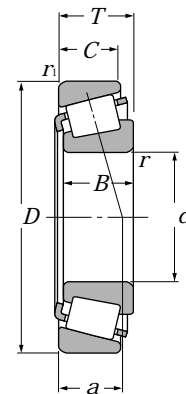
When  $P_{or} < F_r$  use  $P_{or} = F_r$

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 mm	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	$r_{ias}$ max	$a$			$e$	$Y_2$	
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	

# Tapered Roller Bearings

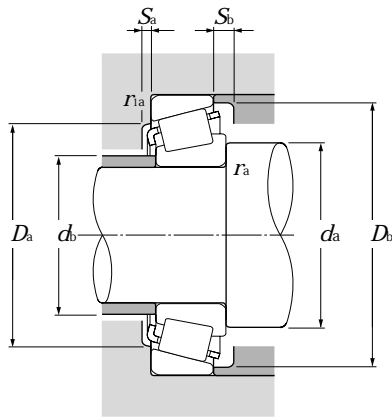
## Metric series



**d** 30 ~ 45 mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm			dynamic	static	dynamic	static	min <sup>-1</sup>			
			B	C	r <sub>s min</sub> <sup>1)</sup>	r <sub>1s min</sub> <sup>1)</sup>	C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	grease	oil	
<b>30</b>	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 <sup>2)</sup>
<b>32</b>	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
<b>35</b>	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 <sup>2)</sup>
	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
<b>40</b>	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
	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
<b>45</b>	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
	68	15	15	12	0.6	0.6	33.5	51.5	3 450	5 250	5 300	7 000	* 32909XU

1 ) Minimal allowable dimension for chamfer dimension  $r$  or  $r_1$ . 2 ) This bearing does not incorporate the subunit dimensions.  
 Note: When selecting bearings with bearing numbers marked with " \* ", please consult NTN Engineering.



### Equivalent radial load

**dynamic**  
 $P_T = XF_T + YF_a$

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

**static**

$P_{Or} = 0.5F_T + Y_0F_a$

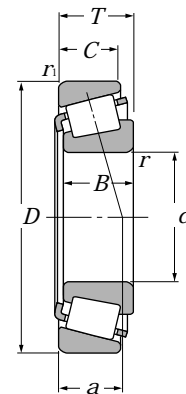
When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

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 e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{bas}$	$Y_2$			$Y_0$		
	min	max	max	min	min	min	max	max						
	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
7FB	38.5	39	63.5	55	68	3	6.5	1.5	1.5	23.5	0.83	0.73	0.40	0.398
2FD	38.5	38	63.5	59	66	3	5.5	1.5	1.5	18.5	0.31	1.90	1.05	0.583
5FD	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	37.5	38	52.5	50	55	3	4	1	1	14.5	0.45	1.32	0.73	0.181
2DE	37.5	38	59.5	55	62	5	5.5	1	1	17	0.35	1.73	0.95	0.395
5FD	40.5	39	66.5	61	71	3	6.5	1.5	1.5	23	0.55	1.10	0.60	0.659
2BD	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
4CC	40.5	40	56.5	54	59	4	4	1	1	15.5	0.45	1.32	0.73	0.224
2CE	40.5	40.5	56.5	52	59	3	4	1	1	14	0.31	1.97	1.08	0.263
3DB	43.5	44	63.5	62	67	3	3	1.5	1.5	15	0.37	1.60	0.88	0.344
3DC	43.5	43	63.5	61	67	3	5	1.5	1.5	17.5	0.37	1.60	0.88	0.457
5DC	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	43.5	42	63.5	61	68	5	6	1.5	1.5	18.5	0.35	1.70	0.93	0.531
2FB	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	45	44	71.5	62	76.5	3	7.5	2	1.5	26	0.83	0.73	0.40	0.530
2FE	45	43	71.5	66	74	3	7.5	2	1.5	20.5	0.31	1.90	1.05	0.787
5FE	45	43	71.5	66	76	3	7.5	2	1.5	25	0.55	1.10	0.60	0.797
2BC	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
3CD	45.5	46	62.5	60	65	4	4.5	1	1	15	0.38	1.58	0.87	0.273
2BE	45.5	46	62.5	60	64	2.5	4	1	1	15	0.28	2.12	1.17	0.312
2CE	48.5	47	66.5	65	71	4	5.5	1.5	1.5	18	0.36	1.69	0.93	0.494
3DB	48.5	49	71.5	69	75	3	3.5	1.5	1.5	16.5	0.37	1.60	0.88	0.435
3DC	48.5	48	71.5	68	75	3	5.5	1.5	1.5	19	0.37	1.60	0.88	0.558
2DE	48.5	47	71.5	67	76	5	7	1.5	1.5	21	0.36	1.68	0.92	0.728
2EE	52	48	75	70	80	5	5	2	2	22.5	0.34	1.74	0.96	0.907
2FB	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	50	50	81.5	71	86.5	3	8	2	1.5	29.5	0.83	0.73	0.40	0.738
2FD	50	50	81.5	73	82	3	8	2	1.5	23	0.35	1.74	0.96	1.08
5FD	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

# Tapered Roller Bearings

## Metric series

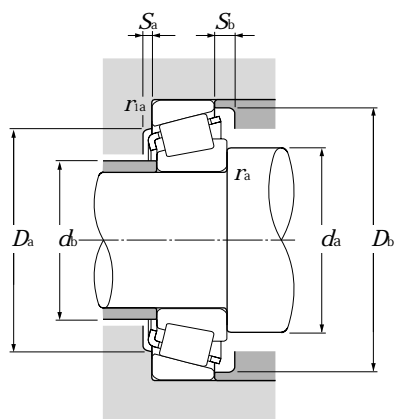


**d** 45 ~ 60 mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm			dynamic	static	dynamic	static	min <sup>-1</sup>			
			B	C	r <sub>s min</sub> <sup>1)</sup>	r <sub>is min</sub> <sup>1)</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	grease	oil	
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 <sup>2)</sup>
	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 <sup>2)</sup>
	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 radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
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.

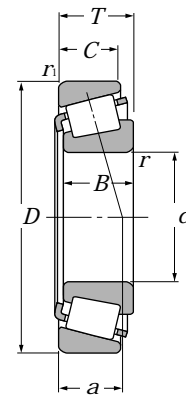
Dimensions series to ISO	Abutment and fillet dimensions										Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{as}$	$Y_2$	$Y_0$					
	min	max	max	min	min	min	max	max							
3CC	50.5	51	69.5	67	72	4	4.5	1	1	16.5	0.39	1.53	0.84	0.346	
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	
	65.5	65.5	79.5	76.5	82	3	3	1	1	15.5	0.33	1.80	0.99	0.296	
4CC	68.5	67	86.5	85	91	4	5.5	1.5	1.5	21	0.43	1.39	0.77	0.576	
2CE	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.



# Tapered Roller Bearings

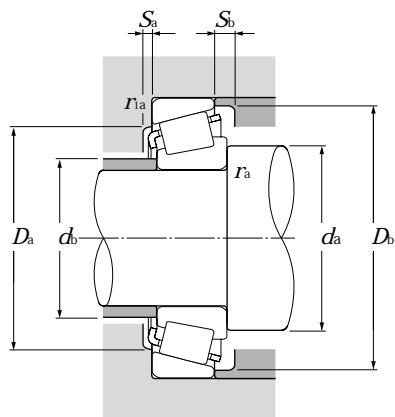
## Metric series



**d** 60 ~ 75 mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm		$r_{s \min}^{1)}$	$r_{1s \min}^{1)}$	dynamic	static	dynamic	static	grease	oil	
			B	C			kN	$C_{or}$	kgf	$C_{or}$			
<b>60</b>	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
<b>65</b>	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
<b>70</b>	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
<b>75</b>	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

1) Minimal allowable dimension for chamfer dimension  $r$  or  $r_1$ .



### Equivalent radial load

**dynamic**  
 $P_T = XF_T + YF_a$

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

**static**

$P_{Or} = 0.5F_T + Y_0F_a$

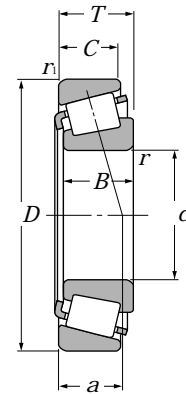
When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

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 mm	Axial load factors		Mass kg (approx.)	
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{bas}$	$a$			$e$	$Y_2$		$Y_0$
	min	max	max	min	min	min	max	max							
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	

# Tapered Roller Bearings

## Metric series

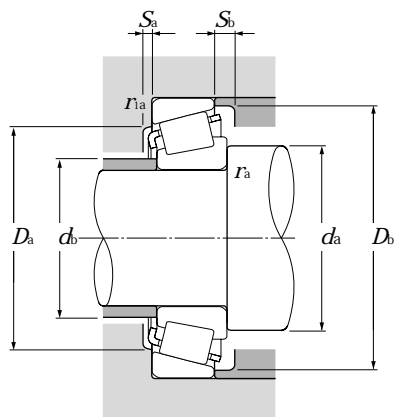


**d** 75 ~ 95 mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm		$r_{s \min}^{1)}$	$r_{is \min}^{1)}$	dynamic	static	dynamic	static	grease	oil	
			B	C			kN	$C_{or}$	kgf	$C_{or}$			
<b>75</b>	160	58	55	45	3	2.5	355	470	36 000	47 500	2 400	3 200	32315U
<b>80</b>	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	
<b>85</b>	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	
<b>90</b>	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	
<b>95</b>	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 <sup>2)</sup>
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 radial load

**dynamic**  
 $P_T = X F_r + Y F_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
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  $P_{Or} = F_r$

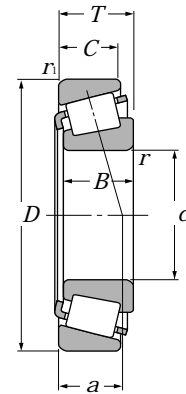
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Dimensions series to ISO	Abutment and fillet dimensions								Load center mm	Constant mm	Axial load factors		Mass kg	
	$d_a$ min	$d_b$ max	$D_a$ max	$D_b$ min	$S_a$ min	$S_b$ min	$r_{as}$ max	$r_{1as}$ max			$a$	$e$		$Y_2$
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.

# Tapered Roller Bearings

## Metric series

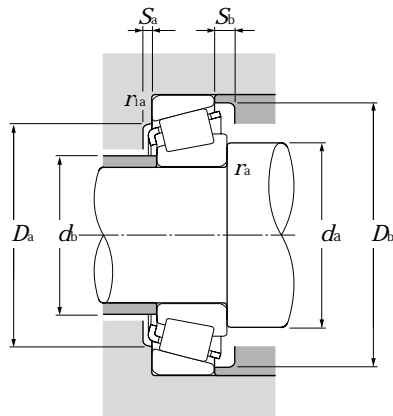


**d** 95 ~ 120 mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm		$r_{s \min}^{1)}$	$r_{ls \min}^{1)}$	dynamic	static	dynamic	static	grease	oil	
			B	C			kN	$C_{or}$	kgf	$C_{or}$			
<b>95</b>	200	71.5	67	55	4	3	505	670	51 500	68 500	1 900	2 500	<b>32319U</b>
<b>100</b>	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 <sup>2)</sup>
	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 <sup>2)</sup>
	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	
<b>105</b>	145	25	25	20	1.5	1.5	126	219	12 800	22 400	2 300	3 000	32921XA <sup>2)</sup>
	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 <sup>2)</sup>
	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	
<b>110</b>	150	25	25	20	1.5	1.5	127	226	13 000	23 100	2 200	2 900	32922XA <sup>2)</sup>
	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 <sup>2)</sup>
	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 <sup>2)</sup>
<b>120</b>	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 <sup>2)</sup>
	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 radial load

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
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  $P_{or} = F_r$

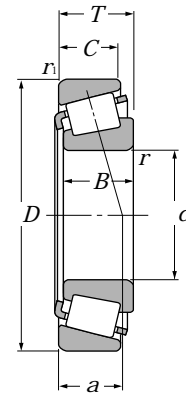
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant mm	Axial load factors		Mass kg (approx.)	
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{bas}$	$a$			$e$	$Y_2$		$Y_0$
	min	max	max	min	min	min	max	max							
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.

# Tapered Roller Bearings

## Metric series

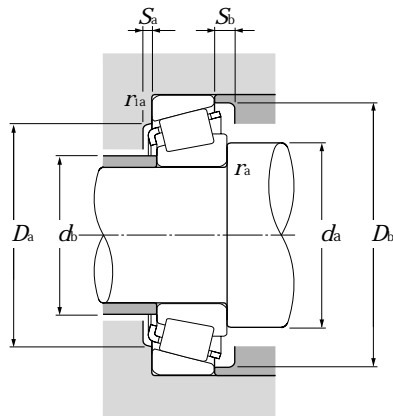


**d** 120 ~ 170mm

	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>r</i> <sub>S min<sup>1)</sup></sub>	<i>r</i> <sub>s min<sup>1)</sup></sub>	dynamic kN	static kN	dynamic kgf	static kgf	grease min <sup>-1</sup>	
<b>120</b>	215	61.5	58	50	3	2.5	460	680	47 000	69 500	1 700	2 200	<b>32224U</b>
	260	59.5	55	46	4	3	560	695	57 000	71 000	1 500	2 000	<b>30324U</b>
	260	59.5	55	46	3	3	465	550	47 500	56 000	1 500	2 000	<b>30324<sup>2)</sup></b>
	260	68	62	42	4	3	515	655	52 500	67 000	1 500	2 000	<b>31324XU</b>
	260	90.5	86	69	4	3	815	1 130	83 000	116 000	1 500	2 000	<b>32324U</b>
<b>130</b>	180	32	32	25	2	1.5	194	350	19 800	36 000	1 800	2 400	* <b>32926XU</b>
	180	32	30	26	2	2	142	252	14 500	25 700	1 800	2 400	<b>32926<sup>2)</sup></b>
	200	45	45	34	2.5	2	320	545	32 500	55 500	1 700	2 200	<b>32026XU</b>
	230	43.75	40	34	4	3	375	505	38 000	51 500	1 500	2 000	<b>30226U</b>
	230	67.75	64	54	4	3	530	815	54 000	83 000	1 500	2 000	<b>32226U</b>
	280	63.75	58	49	5	4	650	830	66 000	84 500	1 400	1 800	<b>30326U</b>
	280	72	66	44	5	4	600	780	61 500	79 500	1 400	1 800	<b>31326XU</b>
<b>140</b>	190	32	32	25	2	1.5	200	375	20 400	38 000	1 700	2 200	<b>32928XU</b>
	210	45	45	34	2.5	2	330	580	33 500	59 500	1 600	2 100	<b>32028XU</b>
	250	45.75	42	36	4	3	420	570	43 000	58 500	1 400	1 900	* <b>30228U</b>
	250	45.75	42	36	3	3	375	485	38 000	49 500	1 400	1 900	<b>30228<sup>2)</sup></b>
	250	71.75	68	58	4	3	610	920	62 500	94 000	1 400	1 900	<b>32228U</b>
	300	67.75	62	53	5	4	735	950	75 000	97 000	1 300	1 700	* <b>30328U</b>
	300	67.75	62	53	4	4	640	780	65 000	80 000	1 300	1 700	<b>30328<sup>2)</sup></b>
300	77	70	47	5	4	685	905	70 000	92 500	1 300	1 700	<b>31328XU</b>	
<b>150</b>	210	38	38	30	2.5	2	268	490	27 300	50 000	1 600	2 100	<b>32930XU</b>
	225	48	48	36	3	2.5	370	655	37 500	67 000	1 400	1 900	<b>32030XU</b>
	270	49	45	38	4	3	450	605	46 000	61 500	1 300	1 700	<b>30230U</b>
	270	77	73	60	4	3	700	1070	71 500	109 000	1 300	1 700	<b>32230U</b>
	320	72	65	55	5	4	825	1070	84 000	109 000	1 200	1 600	* <b>30330U</b>
	320	72	65	55	4	4	680	875	69 500	89 000	1 200	1 600	<b>30330<sup>2)</sup></b>
	320	82	75	50	5	4	775	1 030	79 000	105 000	1 200	1 600	<b>31330XU</b>
<b>160</b>	220	38	38	30	2.5	2	276	520	28 200	53 000	1 500	1 900	<b>32932XU</b>
	240	51	51	38	3	2.5	435	790	44 500	80 500	1 400	1 800	<b>32032XU</b>
	290	52	48	40	4	3	525	720	53 500	73 500	1 200	1 600	<b>30232U</b>
	290	84	80	67	4	3	890	1 420	90 500	145 000	1 200	1 600	<b>32232U</b>
	340	75	68	58	5	4	915	1 200	93 500	122 000	1 100	1 500	* <b>30332U</b>
340	75	68	58	4	4	755	975	77 000	99 500	1 100	1 500	<b>30332<sup>2)</sup></b>	
<b>170</b>	230	38	38	30	2.5	2	286	560	29 200	57 000	1 400	1 800	<b>32934XU</b>

1 ) Minimal allowable dimension for chamfer dimension *r* or *r*<sub>1</sub>.

2 ) This bearing does not incorporate the subunit dimensions.



### Equivalent radial load

**dynamic**  
 $P_T = XF_r + YF_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
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.

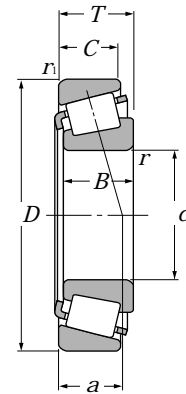
Dimensions series to ISO	Abutment and fillet dimensions									Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{bas}$	$Y_2$			$Y_0$		
	min	max	max	min	min	min	max	max						
4FD	134	136	203	181	204	6	11.5	2.5	2	51.5	0.44	1.38	0.76	9.08
2GB	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
4DC	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
	162	179	282	252	273	9	14.5	4	3	57	0.35	1.73	0.95	20.4
7GB	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
7GB	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.



# Tapered Roller Bearings

## Metric series

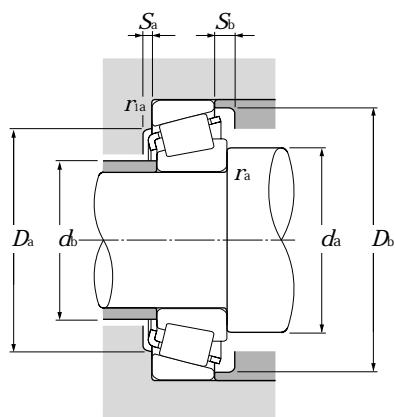


**d** 170 ~ 300mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm		$r_{s \min}^{1)}$	$r_{ls \min}^{1)}$	dynamic	static	dynamic	static	min <sup>-1</sup>		
			B	C			kN	C <sub>or</sub>	kgf	C <sub>or</sub>	grease	oil	
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 <sup>2)</sup>
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 <sup>2)</sup>
	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 <sup>2)</sup>
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 <sup>2)</sup>
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 <sup>2)</sup>
	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 radial load

**dynamic**  
 $P_T = X F_r + Y F_a$

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

**static**

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

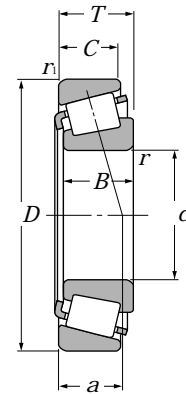
When  $P_{Or} < F_r$  use  $P_{Or} = F_r$

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 mm	Axial load factors		Mass kg (approx.)	
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{1as}$	$a$			$e$	$Y_2$		$Y_0$
	min	max	max	min	min	min	max	max							
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.

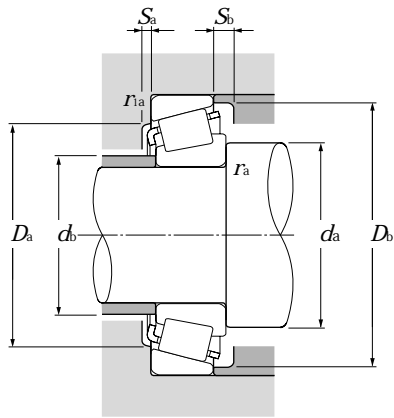
## Metric series



**d** 320 ~ 360mm

d	Boundary dimensions						Basic load ratings				Limiting speeds		Bearing numbers
	D	T	mm		$r_{s \min}^{1)}$	$r_{is \min}^{1)}$	dynamic		static		min <sup>-1</sup>		
			B	C			kN	$C_r$	kgf	$C_{or}$	grease	oil	
<b>320</b>	440	76	76	57	4	3	1 010	2 150	103 000	219 000	670	900	* 32964XUE1 32964E1 <sup>2)</sup> 32064XU
	440	76	72	63	3	3	865	1 880	88 000	192 000	670	900	
	480	100	100	74	5	4	1 520	2 940	155 000	300 000	630	840	
<b>340</b>	460	76	76	57	4	3	1 040	2 270	106 000	232 000	630	840	* 32968XUE1 32968E1 <sup>2)</sup>
	460	76	72	63	3	3	910	1 980	93 000	201 000	630	900	
<b>360</b>	480	76	76	57	4	3	1 050	2 330	107 000	238 000	590	780	32972XUE1

1 ) Minimal allowable dimension for chamfer dimension  $r$  or  $r1$ .  
2 ) This bearing does not incorporate the subunit dimensions.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

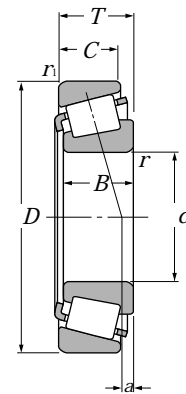
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Dimensions series to ISO	Abutment and fillet dimensions										Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{as}$	$Y_2$	$Y_0$					
	min	max	max	min	min	min	max	max							
3FD	338	344	426	398	426	13	19	3	2.5	85	0.42	1.44	0.79	33.1	
	338	344	426	398	425	13	13	3	2.5	85	0.39	1.55	0.85	31.7	
4GD	342	344.5	462	418.5	463	15	26	4	3	104	0.46	1.31	0.72	60.2	
4FD	358	362	446	417	446	13	19	3	2.5	90.5	0.44	1.37	0.75	34.9	
	358	362	446	414	445.5	13	13	3	2.5	87	0.39	1.55	0.85	36.0	
4FD	378	381	466	436	466	13	19	3	2.5	96.5	0.46	1.31	0.72	36.6	

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

# Tapered Roller Bearings

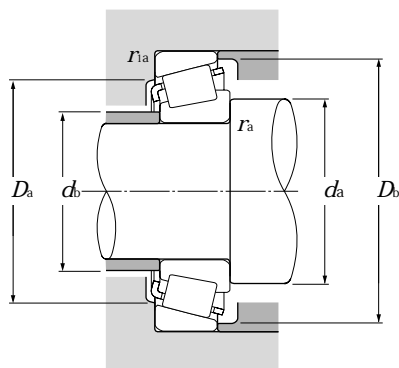
## Inch series



**d** 12.700 ~ 22.225 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
<b>12.700</b>	34.988	10.998	10.988	8.730	12.3	11.6	1 260	1 180	12 000	16 000
<b>14.989</b>	34.988	10.998	10.988	8.730	12.3	11.6	1 260	1 180	12 000	16 000
<b>15.875</b>	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
<b>16.993</b>	47.000	14.381	14.381	11.112	24.0	24.2	2 440	2 460	8 600	11 000
<b>17.462</b>	39.878	13.843	14.605	10.668	23.8	24.2	2 420	2 470	10 000	13 000
<b>19.050</b>	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
56.896	19.368	19.837	15.875	42.5	46.5	4 350	4 750	7 200	9 600	
<b>19.987</b>	47.000	14.381	14.381	11.112	24.0	24.2	2 440	2 460	8 600	11 000
<b>20.000</b>	50.005	13.495	14.260	9.525	26.0	27.9	2 650	2 850	7 500	10 000
<b>20.625</b>	49.225	19.845	21.539	14.288	38.5	39.0	3 900	3 950	8 500	11 000
<b>20.638</b>	49.225	19.845	19.845	15.875	37.5	39.0	3 800	3 950	8 200	11 000
<b>21.430</b>	50.005	17.526	18.288	13.970	38.0	39.0	3 850	3 950	8 000	11 000
<b>21.986</b>	45.974	15.494	16.637	12.065	29.6	34.0	3 000	3 450	8 400	11 000
<b>22.225</b>	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{1as}$  and  $r_{1as}$ .  
 2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

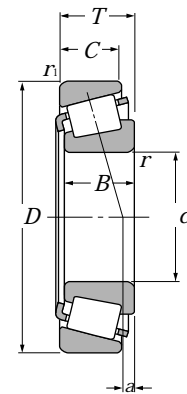
When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

For values of  $e$ ,  $Y_2$  and  $Y_0$  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	$r_{las}$ max			$Y_2$	$Y_0$	
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

# Tapered Roller Bearings

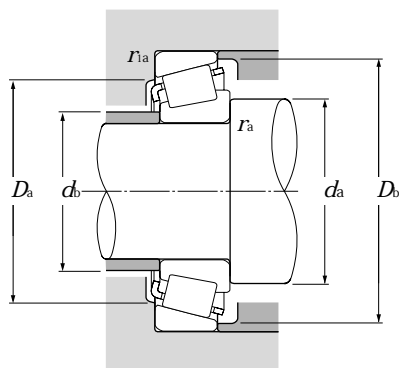
## Inch series



**d** 22.225 ~ 28.575 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
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
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	
26.157	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{1as}$  and  $r_{2as}$ .  
 2. As for the maximum value for inner ring bore diameters of bearings whose bearing numbers are marked with "+" (inner ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

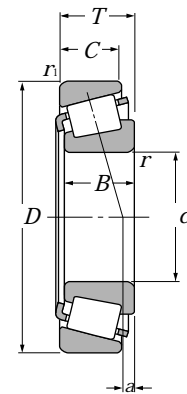
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	mm								$a$	$e$	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max					
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



# Tapered Roller Bearings

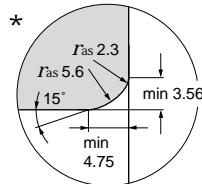
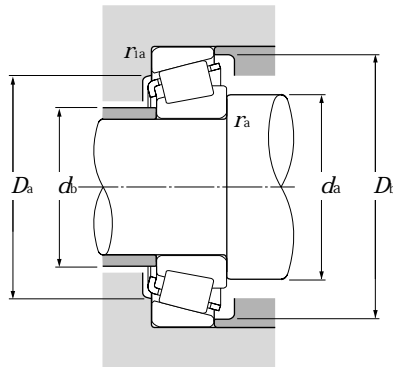
Inch series  
J series



$d$  28.575 ~ 31.750 mm

$d$	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	$D$	$T$	$B$	$C$		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	$D$	$T$	$B$	$C$	$C_r$	$C_{or}$	$C_r$	$C_{or}$	grease	oil
<b>28.575</b>	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
	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	
<b>29.000</b>	50.292	14.224	14.732	10.668	28.0	35.5	2 860	3 600	7 200	9 600
<b>29.367</b>	66.421	23.812	25.433	19.050	64.5	72.5	6 550	7 400	6 200	8 200
<b>29.987</b>	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
<b>30.000</b>	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
<b>30.112</b>	62.000	19.050	20.638	14.288	46.5	54.0	4 750	5 500	6 100	8 200
<b>30.162</b>	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
	72.626	30.162	29.997	23.812	84.5	98.0	8 600	9 950	5 500	7 300
<b>30.213</b>	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
	62.000	19.050	20.638	14.288	46.5	54.0	4 750	5 500	6 100	8 200
<b>30.226</b>	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
<b>31.750</b>	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{ias}$ .  
2. As for the maximum value for inner ring bore diameters of bearings whose bearing numbers are marked with "+" (inner ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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.

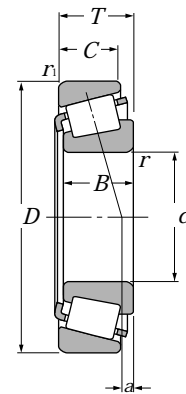
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max			$Y_2$	$Y_0$	
4T-1985/1932	34	33.5	52	54	0.8	1.3	5.9	0.33	1.82	1.00	0.23
4T-15590/15523	39.5	33.5	51	54	3.5	1.5	5.0	0.35	1.73	0.95	0.25
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-42**.

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

# Tapered Roller Bearings

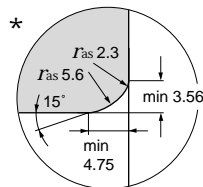
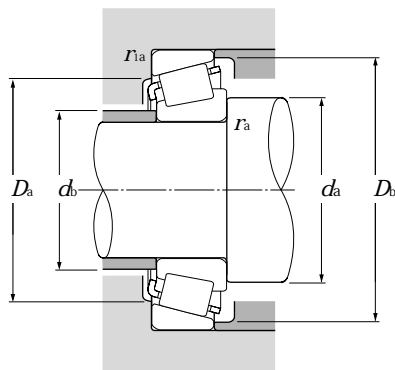
Inch series  
J series



**d** 31.750 ~ 34.925 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
<b>31.750</b>	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
	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
<b>33.338</b>	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
	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
<b>34.925</b>	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
	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{1s}$  and  $r_{1as}$ .  
2. Chamfer dimensions of bearings marked " \* " are shown in drawings.



### Equivalent radial 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

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

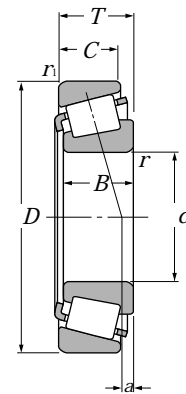
When  $P_{or} < F_r$  use  $P_{or} = F_r$

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

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{1as}$ max			$Y_2$	$Y_0$	
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

# Tapered Roller Bearings

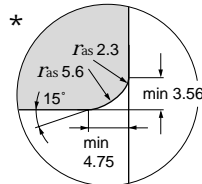
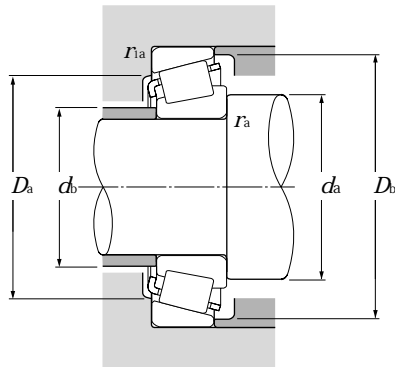
Inch series  
J series



**d** 34.925 ~ 38.100 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	D	T	B	C	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	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	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{as}$  and  $r_{ias}$ .  
2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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.

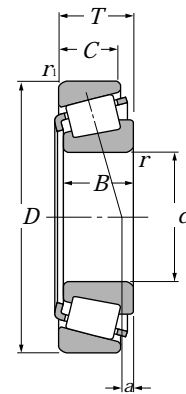
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max			$Y_2$	$Y_0$	
4T-2793/2729	42	41	68	70	0.8	0.8	7.8	0.30	1.98	1.09	0.541
4T-HM89446/HM89410	53	44.5	62	73	3.5	3.3	5.8	0.55	1.10	0.60	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-42**.

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

# Tapered Roller Bearings

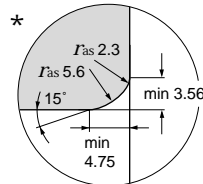
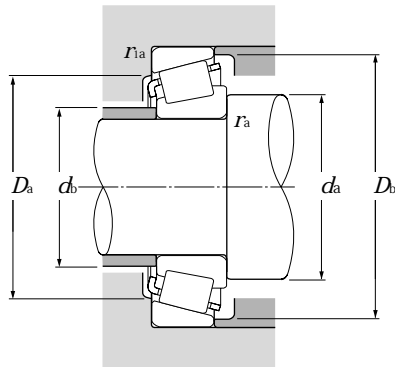
## Inch series



**d** 38.100 ~ 41.275 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	D	T	B	C	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	grease	oil
<b>38.100</b>	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
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	
<b>39.688</b>	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
	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
<b>40.000</b>	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
	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
<b>40.483</b>	82.550	29.370	28.575	23.020	87.0	117	8 850	11 900	4 700	6 200
<b>40.988</b>	67.975	17.500	18.000	13.500	46.0	62.5	4 700	6 400	5 300	7 000
<b>41.275</b>	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{as}$  and  $r_{ias}$ .  
 2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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 e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{1as}$ max			$Y_2$	$Y_0$	
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 <sup>1)</sup>	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 <sup>1)</sup>	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

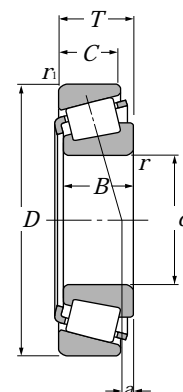
Note: 3. Chamfer dimensions of bearings marked " \* " are shown in drawings.

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



# Tapered Roller Bearings

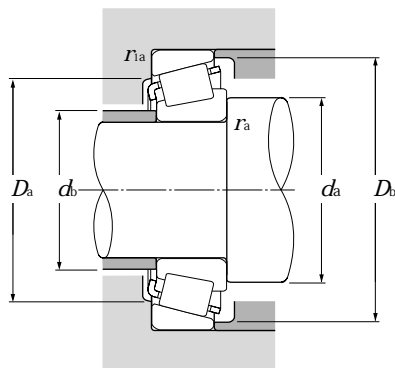
## Inch series



**d** 41.275 ~ 44.450 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
<b>41.275</b>	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
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	
<b>42.070</b>	90.488	39.688	40.386	33.338	136	175	13 900	17 900	4 300	5 800
<b>42.862</b>	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
<b>42.875</b>	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
<b>44.450</b>	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
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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{1as}$  and  $r_{1is}$ .



### Equivalent radial 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  $P_{or} = F_r$

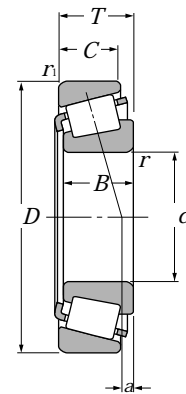
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	mm								$a$	$e$	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max					
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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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.

# Tapered Roller Bearings

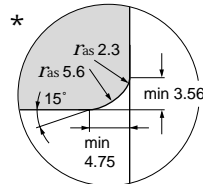
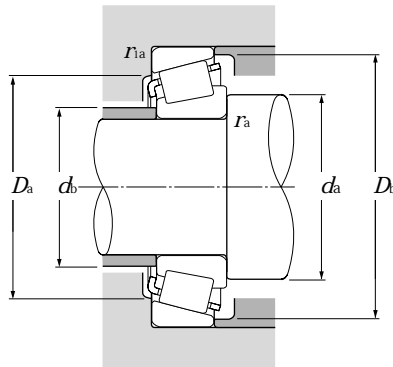
## Inch series



**d** 44.450 ~ 47.625 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm							kgf	min <sup>-1</sup>	
					C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>		
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
	95.250	27.783	29.900	22.225	108	129	11 000	13 200	4 200	5 600
47.625	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
	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
 2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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.

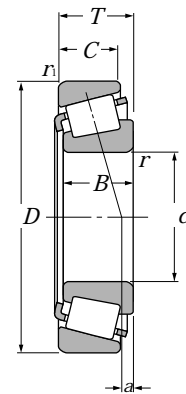
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max			$Y_2$	$Y_0$	
4T-45280/45220	55	54	93	99	0.8	3.3	7.9	0.33	1.80	0.99	1.35
4T-HM807040/HM807010	66	59	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.62
4T-55175C/55437	70	64	92	105	3.5	3.3	-7.4 <sup>1)</sup>	0.88	0.68	0.37	1.45
4T-55176C/55437	65	65	92	105	0.8	3.3	-7.4 <sup>1)</sup>	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.

# Tapered Roller Bearings

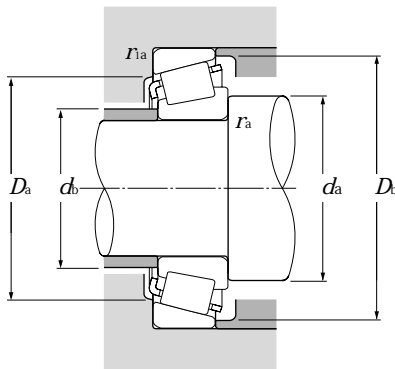
Inch series  
J series



**d** 47.625 ~ 50.800 mm

d	Boundary dimensions				dynamic kN	Basic load ratings		dynamic kgf	static kgf	Limiting speeds	
	D	T	B	C		C <sub>r</sub>	C <sub>or</sub>			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	
49.987	114.300	44.450	44.450	36.068	203	261	20 700	26 600	3 500	4 700	
	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	
50.000	110.000	22.000	21.996	18.824	89.5	120	9 150	12 300	3 200	4 300	
	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	
50.800	105.000	37.000	36.000	29.000	138	189	14 000	19 300	3 600	4 800	
	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{1as}$  and  $r_{1as}$ .  
2. As for the maximum value for inner ring bore diameters of bearings whose bearing numbers are marked with "+" (inner ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

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

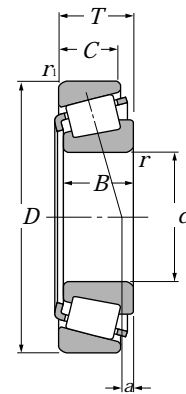
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max			$Y_2$	$Y_0$	
4T-45282/45220	63	57	93	99	3.5	3.3	7.9	0.33	1.80	0.99	1.29
4T-55187C/55437	69	62	92	105	3.5	3.3	-7.4 <sup>1)</sup>	0.88	0.68	0.37	1.4
4T-72188C/72487	69	67	102	116	0.8	3.3	-1.5 <sup>1)</sup>	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-42.

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

# Tapered Roller Bearings

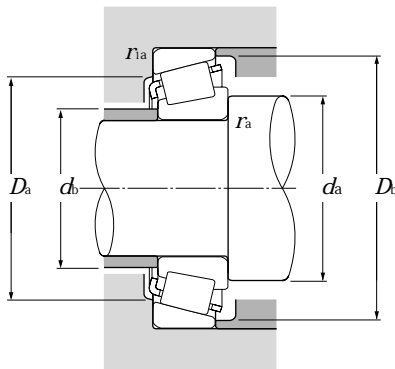
Inch series  
J series



$d$  50.800 ~ 55.000 mm

$d$	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	$D$	$T$	$B$	$C$		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	$D$	$T$	$B$	$C$	$C_r$	$C_{or}$	$C_r$	$C_{or}$	grease	oil
<b>50.800</b>	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
	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	
<b>51.592</b>	88.900	20.638	22.225	16.513	76.5	90.5	7 800	9 250	4 100	5 500
<b>52.388</b>	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
<b>53.975</b>	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
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	
<b>54.488</b>	104.775	36.512	36.512	28.575	138	189	14 000	19 300	3 600	4 800
<b>55.000</b>	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  $r_{1as}$  and  $r_{1is}$  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-42.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

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

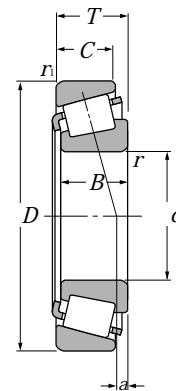
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant mm	Axial load factors		Mass kg (approx.)
	mm								$a$	$e$	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$R_{as}$ max					
4T-49585/49520	66	59	88	96	3.5	3.3	7.1	0.40	1.50	0.82	1.13
4T-529/522	59	58	89	95	0.8	3.3	12.9	0.29	2.10	1.16	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 <sup>1)</sup>	0.88	0.68	0.37	1.36
4T-55200C/55443	71	65	92	106	3.5	3.3	-7.4 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.82	0.73	0.40	2.27
4T-78214C/78551	79	77	117	132	0.8	2.3	-8.5 <sup>1)</sup>	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.



# Tapered Roller Bearings

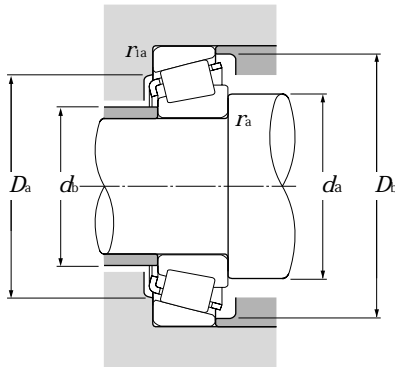
Inch series  
J series



$d$  55.000 ~ 60.000 mm

$d$	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	$D$	$T$	$B$	$C$		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	$D$	$T$	$B$	$C$	$C_r$	$C_{or}$	$C_r$	$C_{or}$	grease	oil
<b>55.000</b>	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
<b>55.562</b>	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
<b>55.575</b>	96.838	21.000	21.946	15.875	78	96.5	7 950	9 850	3 700	5 000
<b>57.150</b>	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	
<b>57.531</b>	96.838	21.000	21.946	15.875	78.0	96.5	7 950	9 850	3 700	5 000
<b>59.972</b>	122.238	33.338	31.750	23.812	134	163	13 700	16 600	3 100	4 200
<b>59.987</b>	146.050	41.275	39.688	25.400	199	234	20 300	23 900	2 400	3 200
<b>60.000</b>	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{ios}$ .  
2. As for the maximum value for inner ring bore diameters of bearings whose bearing numbers are marked with "+" (inner ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

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

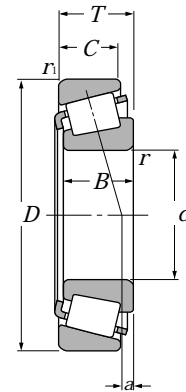
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	mm								a	e	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$R_{as}$ max					
# 4T-JM207049/JM207010	64	62	85	91	1.5	2.5	7.6	0.33	1.79	0.99	0.82
4T-385/382A	65	61	89	92	2.3	0.8	3.1	0.35	1.69	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.67	0.90	0.50	1.66
4T-H913840†/H913810	88	82	124	138	3.5	3.3	-4.3 <sup>1)</sup>	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-42.

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

# Tapered Roller Bearings

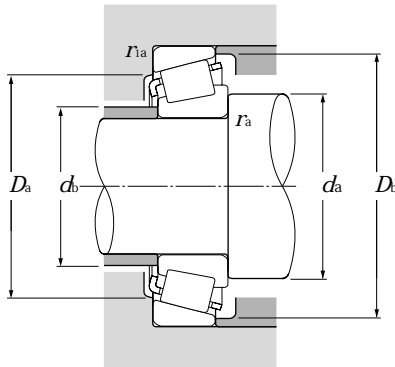
Inch series  
J series



$d$  60.000 ~ 65.000 mm

$d$	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	$D$	$T$	$B$	$C$		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	$D$	$T$	$B$	$C$	$C_r$	$C_{or}$	$C_r$	$C_{or}$	grease	oil
<b>60.000</b>	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
<b>60.325</b>	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
130.175	36.512	33.338	23.812	156	186	15 900	19 000	2 700	3 600	
<b>61.912</b>	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
<b>61.976</b>	101.600	24.608	24.608	19.845	90.5	134	9 200	13 600	3 500	4 700
<b>62.738</b>	101.600	25.400	25.400	19.845	90.5	134	9 200	13 600	3 500	4 700
<b>63.500</b>	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	
<b>65.000</b>	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
2. Bearing numbers marked " # " designate J-series bearings. The accuracy of these bearings is listed in Table 6.6 on page A-42.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

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

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

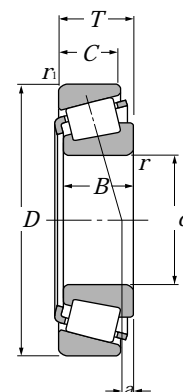
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant mm	Axial load factors		Mass kg
	mm								$a$	$e$	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max					(approx.)
4T-397/394A	69	68	101	104	0.8	1.3	0.7	0.40	1.49	0.82	0.91
# 4T-JHM911244/JHM911211	84	74	109	123	3.5	3.3	-7.6 <sup>1)</sup>	0.82	0.73	0.40	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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.

# Tapered Roller Bearings

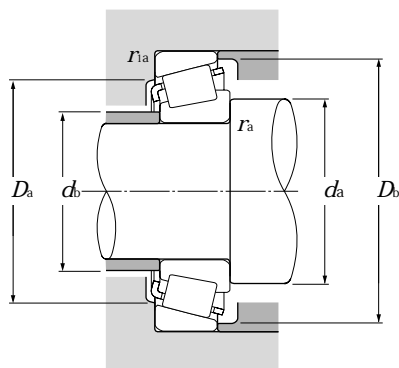
Inch series  
J series



**d** 65.000 ~ 70.000 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
<b>65.000</b>	120.000	39.000	38.500	32.000	185	248	18 800	25 300	3 100	4 100
<b>65.088</b>	135.755	53.975	56.007	44.450	278	380	28 300	38 500	2 900	3 800
<b>66.675</b>	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	
<b>68.262</b>	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
<b>69.850</b>	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
<b>69.952</b>	121.442	24.608	23.012	17.462	91.0	127	9 300	13 000	2 900	3 800
<b>70.000</b>	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{as}$  and  $r_{ias}$ .  
2. Bearing numbers marked " # " designate **J-series** bearings. The accuracy of these bearings is listed in **Table 6.6** on **page A-42**.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

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

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

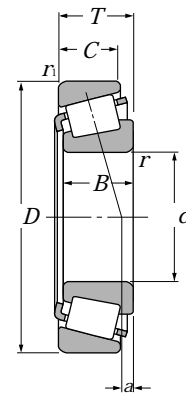
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant mm	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$e$	$Y_2$	
# 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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.45	1.33	0.73	1.11
# 4T-JLM813049/JLM813010	78	77	98	105	1	2.5	-0.3 <sup>1)</sup>	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.

# Tapered Roller Bearings

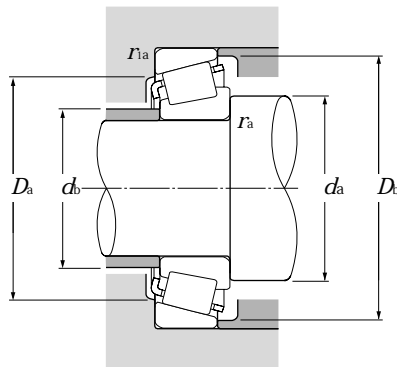
Inch series  
J series



**d** 70.000 ~ 76.200 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static kN	dynamic kgf	static kgf	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	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
	149.225	53.975	54.229	44.450	287	410	29 300	41 500	2 500	3 400
73.817	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
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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
2. Bearing numbers marked " # " designate J-series bearings. The accuracy of these bearings is listed in Table 6.6 on page A-42.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

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

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

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

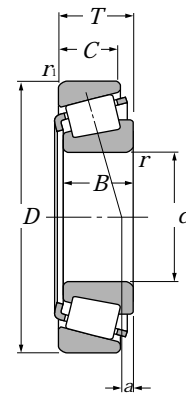
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant mm	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$R_{as}$ max			$e$	$Y_2$	
4T-484/472	80	77	107	114	2	2	3.9	0.38	1.56	0.86	1.33
# 4T-JH913848/JH913811	92	82	126	146	2	3.3	-4.3 <sup>1)</sup>	0.78	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.50	1.20	0.66	0.579
4T-34300/34478	86	83	110	116	2	2	-1.2 <sup>1)</sup>	0.45	1.33	0.73	0.982
4T-34301/34478	89	83	110	116	3.5	2	-1.2 <sup>1)</sup>	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.



# Tapered Roller Bearings

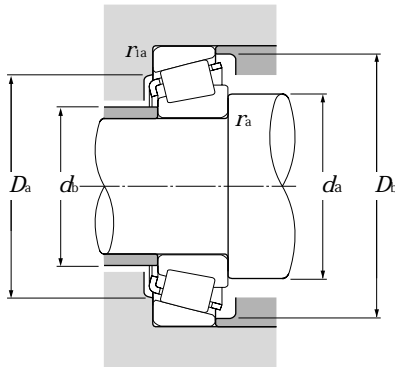
## Inch series J series



**d** 76.200 ~ 83.345 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
					C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>		
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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
 2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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.

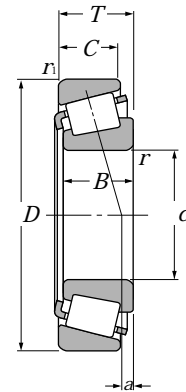
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	mm								a	$Y_2$	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$R_{as}$ max					
4T-6461/6420	96	89	129	140	3.5	3.3	14.8	0.36	1.66	0.91	4.26
4T-6576/6535	99	92	141	154	3.5	3.3	12.8	0.40	1.50	0.82	5.44
4T-H917840/H917810††	110	100	152	170	3.5	3.3	-0.5 <sup>1)</sup>	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 <sup>1)</sup>	0.51	1.18	0.65	0.932
4T-34306/34478	90	84	110	116	3.5	2	-1.2 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.42	1.44	0.79	1.06
4T-27690/27620	96	90	115	120	3.5	1.5	-0.6 <sup>1)</sup>	0.42	1.44	0.79	1.05
4T-27691/27620	102	90	115	120	6.4	1.5	-0.6 <sup>1)</sup>	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-42**.

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

# Tapered Roller Bearings

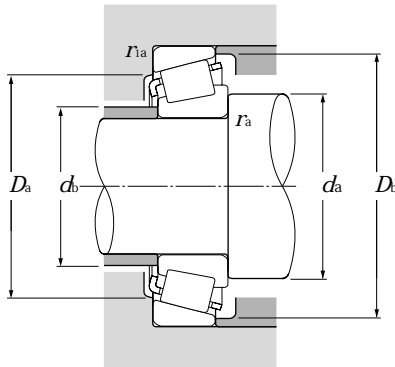
Inch series  
J series



**d** 84.138 ~ 95.000 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
					C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>		
<b>84.138</b>	136.525	30.162	29.769	22.225	129	189	13 200	19 300	2 600	3 500
<b>85.000</b>	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
<b>85.026</b>	150.089	44.450	46.672	36.512	261	360	26 600	37 000	2 400	3 200
<b>85.725</b>	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
<b>87.960</b>	148.430	28.575	28.971	21.433	138	215	14 100	21 900	2 300	3 100
<b>88.900</b>	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
<b>89.974</b>	146.975	40.000	40.000	32.500	227	340	23 200	34 500	2 400	3 200
<b>90.000</b>	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
<b>90.488</b>	161.925	47.625	48.260	38.100	270	385	27 500	39 000	2 300	3 100
<b>92.075</b>	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
<b>93.662</b>	148.430	28.575	28.971	21.433	138	215	14 100	21 900	2 300	3 100
<b>95.000</b>	150.000	35.000	34.000	27.000	180	279	18 300	28 400	2 300	3 100

Note: 1. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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.

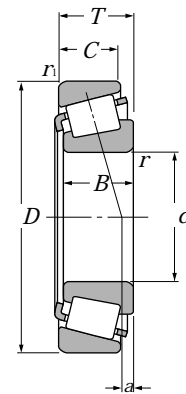
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	mm								a	e	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{bs}$ max					
4T-498/493	98	91	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.6
# 4T-JM716648/JM716610	104	92	117	125	6	2.5	0.2	0.44	1.35	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 <sup>1)</sup>	0.49	1.22	0.67	1.99
4T-LL217849/LL217810	97	94	115	117	1.5	1.5	-2.9 <sup>1)</sup>	0.33	1.81	1.00	0.452
4T-L217849/L217810	97	94	116	119	1.5	1.5	-0.7 <sup>1)</sup>	0.33	1.82	1.00	0.737
4T-42350/42584	104	98	134	142	3	3	-3.0 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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-42**.

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

# Tapered Roller Bearings

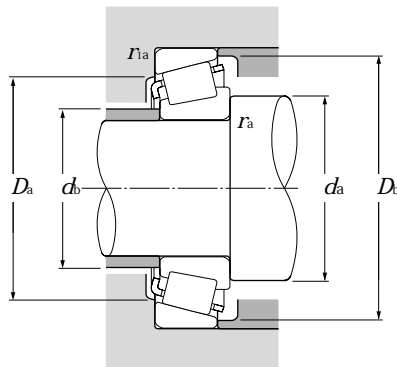
## Inch series J series



**d** 95.250 ~ 109.538 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	D	T	B	C		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
					C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>		
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
190.500	57.150	57.531	46.038	445	610	45 000	62 000	1 900	2 600	
96.838	148.430	28.575	28.971	21.433	138	215	14 100	21 900	2 300	3 100
	188.912	50.800	46.038	31.750	281	365	28 700	37 000	1 800	2 400
98.425	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
99.974	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
212.725	66.675	66.675	53.975	575	810	58 500	82 500	1 700	2 300	
104.775	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. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
 2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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.

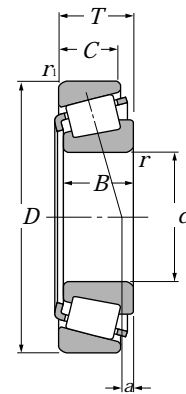
Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant e	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$R_{as}$ max			$Y_2$	$Y_0$	
4T-L319249/L319210	103	101	122	125	1.5	1.5	-1.0 <sup>1)</sup>	0.35	1.72	0.95	0.789
4T-47896/47820	110	103	131	140	3.5	3.3		0.45	1.34	0.74	1.95
4T-594A/592XE	113	104	135	142	5	0.8		0.44	1.36	0.75	2.09
4T-42375/42584	108	103	134	142	3	3	-3.0 <sup>1)</sup>	0.49	1.22	0.67	1.75
4T-594/592A	110	104	135	144	3.5	3.3		0.44	1.36	0.75	2.51
4T-52375/52618	112	105	142	152	3.5	3.3		0.47	1.26	0.69	2.76
4T-683/672	113	106	149	160	3.5	3.3		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 <sup>1)</sup>	0.49	1.22	0.67	1.69
4T-90381/90744	125	113	161	179	3.5	3.3	-12.9 <sup>1)</sup>	0.87	0.69	0.38	5.67
4T-52387/52618	114	108	142	152	3.5	3.3		0.47	1.26	0.69	2.62
4T-685/672	116	109	149	160	3.5	3.3		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 <sup>1)</sup>	0.47	1.27	0.70	2.4
4T-52393/52618	116	109	142	152	3.5	3.3		0.47	1.26	0.69	2.55
4T-52400/52618	117	111	142	152	3.5	3.3		0.47	1.26	0.69	2.48
4T-687/672	118	112	149	160	3.5	3.3		0.47	1.28	0.70	3.4
4T-780/772††	119	113	161	168	3.5	3.3		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 <sup>1)</sup>	0.61	0.99	0.54	1.37
4T-LM522546/LM522510	122	116	146	154	3.5	3.3		0.40	1.49	0.82	2.37
4T-56425/56650	123	117	149	159	3.5	3.3	-2.0 <sup>1)</sup>	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 <sup>1)</sup>	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-42**.

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

# Tapered Roller Bearings

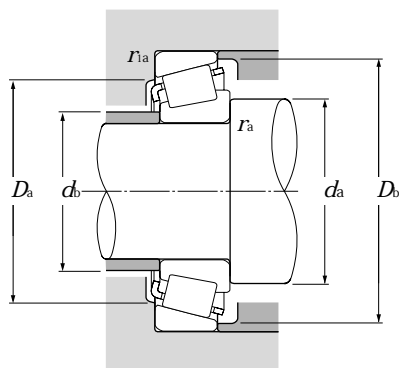
Inch series  
J series



$d$  109.987 ~ 133.350 mm

$d$	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	$D$	$T$	$B$	$C$		static	dynamic	static	grease	oil
	mm							kgf		min <sup>-1</sup>
	$D$	$T$	$B$	$C$	$C_r$	$C_{or}$	$C_r$	$C_{or}$		
<b>109.987</b>	159.987	34.925	34.925	26.988	167	320	17 100	33 000	2 100	2 800
<b>109.992</b>	177.800	41.275	41.275	30.162	232	375	23 600	38 000	1 900	2 600
<b>110.000</b>	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
<b>111.125</b>	214.312	55.562	52.388	39.688	405	560	41 500	57 000	1 500	2 000
<b>114.300</b>	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
<b>115.087</b>	190.500	47.625	49.212	34.925	300	475	30 500	48 500	1 800	2 500
<b>117.475</b>	180.975	34.925	31.750	25.400	169	245	17 200	25 000	1 900	2 500
<b>120.000</b>	170.000	25.400	25.400	19.050	127	210	13 000	21 400	2 000	2 600
<b>120.650</b>	234.950	63.500	63.500	49.212	525	825	53 500	84 000	1 500	2 000
<b>123.825</b>	182.562	39.688	38.100	33.338	224	435	22 900	44 000	1 800	2 400
<b>127.000</b>	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
<b>128.588</b>	206.375	47.625	47.625	34.925	315	520	32 000	53 000	1 700	2 200
<b>130.175</b>	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
<b>133.350</b>	177.008	25.400	26.195	20.638	126	259	12 900	26 400	1 800	2 400

Note: 1. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{ios}$ .  
2. As for the maximum value for inner and outer ring diameters of bearings whose bearing numbers are marked with "+" (inner ring) and "++" (outer ring), the precision class is an integer for class 4 and class 2 bearings only.



### Equivalent radial 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 e	Axial load factors		Mass kg (approx.)
	mm								a	e	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max					
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 <sup>1)</sup>	0.52	1.16	0.64	3.77
# 4T-JM822049/JM822010	124	119	149	159	3	2.5	-3.0 <sup>1)</sup>	0.50	1.21	0.66	2.52
# 4T-JHM522649/JHM522610	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 <sup>1)</sup>	0.67	0.89	0.49	8.18
4T-64450/64700	131	125	160	172	3.5	3.3	-1.1 <sup>1)</sup>	0.52	1.16	0.64	3.52
4T-68450/68712††	130	123	163	172	3.5	3.3	-5.4 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.50	1.21	0.66	2.78
# 4T-JL724348/JL724314	132	127	156	163	3.3	3.3	-7.9 <sup>1)</sup>	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 <sup>1)</sup>	0.49	1.23	0.68	7.05
4T-97500/97900	151	144	197	213	3.5	3.3	-13.4 <sup>1)</sup>	0.74	0.81	0.45	8.43
4T-HM926747/HM926710	156	143	200	219	3.5	3.3	-13.5 <sup>1)</sup>	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 <sup>1)</sup>	0.35	1.72	0.95	1.7

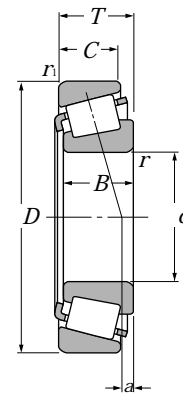
Note: 3. Bearing numbers marked " # " designate J-series bearings. The tolerances of these bearings is listed in Table 6.6 on page A-42.

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



# Tapered Roller Bearings

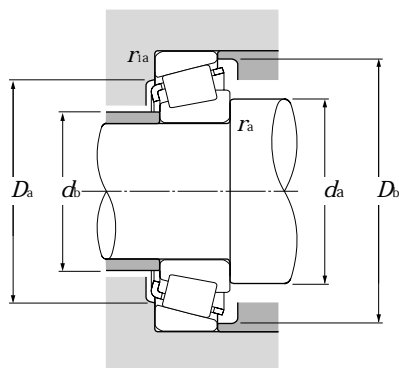
## Inch series J series



**d** 133.350 ~ 196.850 mm

<i>d</i>	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds	
	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>		static	dynamic	static	grease	oil
	mm						kgf		min <sup>-1</sup>	
	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	grease	oil
<b>133.350</b>	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
<b>136.525</b>	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
<b>139.700</b>	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
<b>142.875</b>	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
<b>146.050</b>	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
<b>152.400</b>	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
<b>158.750</b>	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
<b>165.100</b>	225.425	41.275	39.688	33.338	254	555	25 900	56 500	1 400	1 900
<b>170.000</b>	230.000	39.000	38.000	31.000	282	520	28 700	53 000	1 400	1 800
<b>177.800</b>	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
<b>180.000</b>	250.000	47.000	45.000	37.000	370	710	37 500	72 500	1 300	1 700
<b>190.000</b>	260.000	46.000	44.000	36.500	365	720	37 000	73 500	1 200	1 600
<b>196.850</b>	241.300	23.812	23.017	17.462	160	330	16 300	33 500	1 200	1 600

Note: 1. Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than maximum values for installation dimensions  $r_{is}$  and  $r_{os}$ .  
2. Bearing numbers marked " # " designate J-series bearings. The tolerances of these bearings is listed in Table 6.6 on page A-42.



### Equivalent radial load dynamic

$$P_T = XF_T + YF_a$$

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

### static

$$P_{Or} = 0.5F_T + Y_0F_a$$

When  $P_{Or} < F_T$  use  $P_{Or} = F_T$

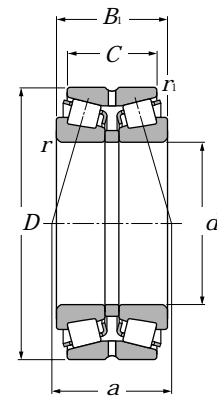
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant mm	Axial load factors		Mass kg (approx.)
	mm								$a$	$e$	
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max					
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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	0.37	1.61	0.88	1.89
4T-46780/46720	176	169	209	218	3.5	3.3	-2.6 <sup>1)</sup>	0.38	1.57	0.86	5.2
4T-46790/46720	181	174	209	218	3.5	3.3	-2.6 <sup>1)</sup>	0.38	1.57	0.86	4.69
# 4T-JHM534149/JHM534110	184	178	217	224	3	2.5	-4.7 <sup>1)</sup>	0.38	1.57	0.86	4.37
4T-36990/36920	188	186	214	221	1.5	1.5	-12.8 <sup>1)</sup>	0.44	1.36	0.75	2.92
4T-67790/67720	194	188	229	240	3.5	3.3	-4.8 <sup>1)</sup>	0.44	1.36	0.75	6.57
# 4T-JM736149/JM736110	196	190	232	243	3	2.5	-9.0 <sup>1)</sup>	0.48	1.25	0.69	6.76
# 4T-JM738249/JM738210	206	200	242	252	3	2.5	-10.9 <sup>1)</sup>	0.48	1.26	0.69	6.85
4T-LL639249/LL639210	205	203	232	236	1.5	1.5	-17.3 <sup>1)</sup>	0.42	1.44	0.79	2.07

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

# Double Row Tapered Roller Bearings

## Back-to-back arrangement

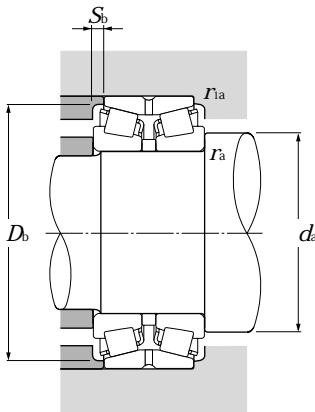


**d** 40 ~ 70 mm

d	Boundary dimensions					dynamic kN	Basic load ratings			Limiting speeds	
	D	B <sub>1</sub>	C	r <sub>s</sub> min <sup>1)</sup>	r <sub>S</sub> min <sup>1)</sup>		static kN	dynamic kgf	static kgf	grease min <sup>-1</sup>	oil min <sup>-1</sup>
40	80	45	37.5	1.5	0.6	105	134	10 700	13 700	4 100	5 500
	80	55	43.5	1.5	0.6	136	187	13 900	19 100	4 100	5 500
	90	56	39.5	2	0.6	132	171	13 500	17 400	3 200	4 200
	90	56	45.5	2	0.6	157	204	16 000	20 800	3 700	4 900
45	85	47	37.5	1.5	0.6	116	157	11 800	16 000	3 700	4 900
	85	55	43.5	1.5	0.6	141	200	14 300	20 400	3 700	4 900
	100	60	41.5	2	0.6	165	218	16 800	22 200	2 800	3 800
	100	60	49.5	2	0.6	191	251	19 500	25 600	3 300	4 400
50	90	49	39.5	1.5	0.6	132	186	13 500	18 900	3 400	4 500
	90	55	43.5	1.5	0.6	150	218	15 300	22 200	3 400	4 500
	110	64	43.5	2.5	0.6	194	260	19 800	26 600	2 600	3 500
	110	64	51.5	2.5	0.6	227	305	23 200	31 000	3 000	4 000
	110	90	71.5	2.5	0.6	315	465	32 000	47 500	3 000	4 000
55	100	51	41.5	2	0.6	160	221	16 300	22 600	3 100	4 100
	100	60	48.5	2	0.6	186	269	18 900	27 400	3 100	4 100
	120	70	49	2.5	0.6	226	305	23 100	31 500	2 400	3 100
	120	70	57	2.5	0.6	266	360	27 100	36 500	2 700	3 700
	120	97	76	2.5	0.6	370	550	37 500	56 000	2 700	3 700
60	110	53	43.5	2	0.6	180	249	18 300	25 400	2 800	3 800
	110	66	54.5	2	0.6	223	330	22 700	33 500	2 800	3 800
	130	74	51	3	1	258	350	26 300	36 000	2 200	2 900
	130	74	59	3	1	310	420	31 500	43 000	2 500	3 400
	130	104	81	3	1	420	625	42 500	64 000	2 500	3 400
65	120	56	46.5	2	0.6	211	295	21 500	30 000	2 600	3 500
	120	73	61.5	2	0.6	273	410	27 800	42 000	2 600	3 500
	140	79	53	3	1	297	410	30 500	41 500	2 000	2 700
	140	79	63	3	1	350	475	35 500	48 500	2 300	3 100
	140	108	84	3	1	470	700	47 500	71 500	2 300	3 100
70	125	59	48.5	2	0.6	225	325	23 000	33 000	2 400	3 200
	125	74	61.5	2	0.6	285	440	29 000	45 000	2 400	3 200
	150	83	57	3	1	330	460	33 500	46 500	1 900	2 500
	150	83	67	3	1	395	545	40 000	55 500	2 200	2 900
	150	116	92	3	1	530	805	54 000	82 500	2 200	2 900

1) Minimum allowable dimension for chamfer dimension *r* or *r<sub>s</sub>*.

# Double Row Tapered Roller Bearings



### Equivalent radial load

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

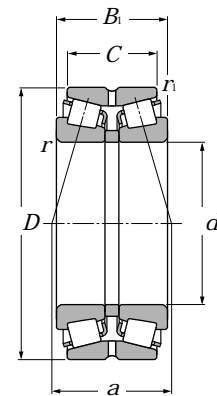
$$P_{0r} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions					Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> min	<i>D<sub>b</sub></i> min	<i>S<sub>b</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>1as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
4T-430208X	48.5	75	3.5	1.5	0.6	38.5	0.37	1.80	2.68	1.76	0.929
4T-432208X	48.5	75	5.5	1.5	0.6	43	0.37	1.80	2.68	1.76	1.18
4T-430308DX	50	86.5	8	2	0.6	64.5	0.83	0.82	1.22	0.80	1.56
4T-430308	50	82	5	2	0.6	44.5	0.35	1.96	2.91	1.91	1.61
4T-430209	53.5	80	4.5	1.5	0.6	42	0.40	1.67	2.48	1.63	1.04
4T-432209	53.5	81	5.5	1.5	0.6	46	0.40	1.67	2.48	1.63	1.27
*4T-430309DX	55	96	9	2	0.6	70	0.83	0.82	1.22	0.80	2.11
4T-430309	55	93	5	2	0.6	47.5	0.35	1.96	2.91	1.91	2.11
4T-430210	58.5	85	4.5	1.5	0.6	44.5	0.42	1.61	2.39	1.57	1.18
432210U	58.5	85	5.5	1.5	0.6	47.5	0.42	1.61	2.39	1.57	1.36
4T-430310DX	62	105	10	2	0.6	75	0.83	0.82	1.22	0.80	2.65
4T-430310	62	102	6	2	0.6	51	0.35	1.96	2.91	1.91	2.72
432310U	62	102	9	2	0.6	62.5	0.35	1.96	2.91	1.91	3.98
4T-430211X	65	94	4.5	2	0.6	47	0.40	1.67	2.48	1.63	1.55
432211U	65	95	5.5	2	0.6	51	0.40	1.67	2.48	1.63	1.85
4T-430311DX	67	113	10.5	2	0.6	83	0.83	0.82	1.22	0.80	3.42
430311XU	67	111	6.5	2	0.6	55.5	0.35	1.96	2.91	1.91	3.48
432311U	67	111	10.5	2	0.6	66.5	0.35	1.96	2.91	1.91	5.05
4T-430212X	70	103	4.5	2	0.6	49.5	0.40	1.67	2.48	1.63	1.99
432212U	70	104	5.5	2	0.6	56	0.40	1.67	2.48	1.63	2.49
4T-430312DX	74	124	11.5	2.5	1	88.5	0.83	0.82	1.22	0.80	4.22
430312U	74	120	7.5	2.5	1	59.5	0.35	1.96	2.91	1.91	4.31
432312U	74	120	11.5	2.5	1	71	0.35	1.96	2.91	1.91	6.29
4T-430213X	75	113	4.5	2	0.6	53.5	0.40	1.67	2.48	1.63	2.49
432213U	75	115	5.5	2	0.6	61.5	0.40	1.67	2.48	1.63	3.33
4T-430313DX	79	133	13	2.5	1	94.5	0.83	0.82	1.22	0.80	5.16
430313XU	79	130	8	2.5	1	64	0.35	1.96	2.91	1.91	5.32
432313U	79	130	12	2.5	1	74.5	0.35	1.96	2.91	1.91	7.55
4T-430214	80	118	5	2	0.6	57	0.42	1.61	2.39	1.57	2.67
432214U	80	119	6	2	0.6	64.5	0.42	1.61	2.39	1.57	3.56
4T-430314DX	84	142	13	2.5	1	101	0.83	0.82	1.22	0.80	6.23
430314XU	84	140	8	2.5	1	67	0.35	1.96	2.91	1.91	6.37
432314U	84	140	12	2.5	1	80.5	0.35	1.96	2.91	1.91	9.28

# Double Row Tapered Roller Bearings

## Back-to-back arrangement



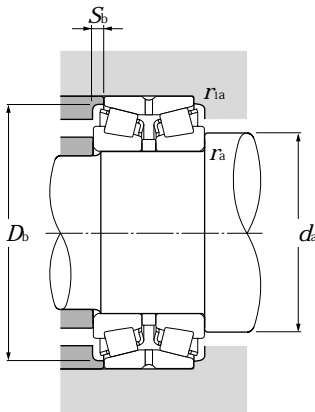
**d** 75 ~ 105 mm

d	Boundary dimensions					dynamic kN	Basic load ratings			Limiting speeds	
	D	B <sub>i</sub>	C	r <sub>s</sub> min <sup>1)</sup>	r <sub>1s</sub> min <sup>1)</sup>		static kN	dynamic kgf	static kgf	grease min <sup>-1</sup>	oil min <sup>-1</sup>
<b>75</b>	130	62	51.5	2	0.6	238	350	24 300	36 000	2 300	3 000
	130	74	61.5	2	0.6	288	445	29 300	45 500	2 300	3 000
	160	87	59	3	1	370	510	37 500	52 000	1 700	2 300
	160	87	69	3	1	435	605	44 500	62 000	2 000	2 700
	160	125	99	3	1	610	935	62 000	95 500	2 000	2 700
<b>80</b>	140	64	51.5	2.5	0.6	274	400	27 900	40 500	2 100	2 800
	140	78	63.5	2.5	0.6	340	530	35 000	54 000	2 100	2 800
	170	92	61	3	1	405	565	41 500	58 000	1 600	2 200
	170	92	73	3	1	500	700	51 000	71 500	1 900	2 500
	170	131	104	3	1	680	1 050	69 000	107 000	1 900	2 500
<b>85</b>	150	70	57	2.5	0.6	315	465	32 000	47 000	2 000	2 700
	150	86	69	2.5	0.6	385	600	39 000	61 500	2 000	2 700
	180	98	65	4	1	425	585	43 000	59 500	1 500	2 100
	180	98	77	4	1	520	725	53 000	74 000	1 800	2 400
	180	137	108	4	1	690	1 050	70 500	107 000	1 800	2 400
<b>90</b>	160	74	61	2.5	0.6	355	535	36 500	54 500	1 900	2 500
	160	94	77	2.5	0.6	450	720	46 000	73 500	1 900	2 500
	190	102	69	4	1	465	645	47 500	65 500	1 500	1 900
	190	102	81	4	1	580	815	59 000	83 000	1 700	2 300
	190	144	115	4	1	770	1 190	78 500	121 000	1 700	2 300
<b>95</b>	170	78	63	3	1	385	580	39 500	59 000	1 800	2 400
	170	100	83	3	1	515	835	52 500	85 000	1 800	2 400
	200	108	85	4	1	630	890	64 000	91 000	1 600	2 100
	200	108	85	3	1	540	735	55 500	75 000	1 600	2 100
	200	151	118	4	1	865	1 340	88 000	137 000	1 600	2 100
<b>100</b>	180	83	67	3	1	440	675	45 000	68 500	1 700	2 200
	180	107	87	3	1	565	925	58 000	94 500	1 700	2 200
	215	112	87	4	1	700	995	71 500	102 000	1 500	2 000
	215	112	87	3	1	590	800	60 000	81 500	1 500	2 000
	215	162	127	4	1	980	1 540	100 000	157 000	1 500	2 000
<b>105</b>	190	88	70	3	1	490	760	50 000	77 500	1 600	2 100
	190	115	95	3	1	650	1 080	66 000	111 000	1 600	2 100
	225	116	91	3	1	625	845	63 500	86 000	1 400	1 900

1) Minimum allowable dimension for chamfer dimension *r* or *r<sub>1</sub>*.

Note: 1. When incorporating bearings with bearing numbers marked with " \* ", please consult NTN Engineering.

# Double Row Tapered Roller Bearings



### Equivalent radial 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	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

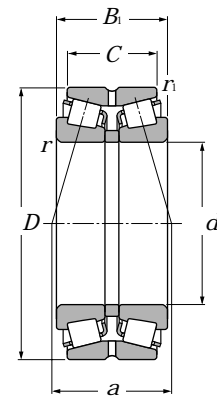
$$P_{0r} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions					Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> min	<i>D<sub>b</sub></i> min	<i>S<sub>b</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>1as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
<b>4T-430215</b>	85	124	5	2	0.6	61.5	0.44	1.55	2.31	1.52	2.99
<b>432215U</b>	85	125	6	2	0.6	67	0.44	1.55	2.31	1.52	3.68
<b>430315DU</b>	89	151	14	2.5	1	107	0.83	0.82	1.22	0.80	7.31
<b>430315XU</b>	89	149	9	2.5	1	70.5	0.35	1.96	2.91	1.91	7.71
<b>432315U</b>	89	149	13	2.5	1	87.5	0.35	1.96	2.91	1.91	11.5
<b>430216XU</b>	92	132	6	2	0.6	63	0.42	1.61	2.39	1.57	3.65
<b>432216XU</b>	92	134	7	2	0.6	69.5	0.42	1.61	2.39	1.57	4.58
<b>430316DU</b>	94	159	15.5	2.5	1	114	0.83	0.82	1.22	0.80	8.99
<b>430316XU</b>	94	159	9.5	2.5	1	75.5	0.35	1.96	2.91	1.91	9.55
<b>432316U</b>	94	159	13.5	2.5	1	90.5	0.35	1.96	2.91	1.91	13.6
<b>430217XU</b>	97	141	6.5	2	0.6	69	0.42	1.61	2.39	1.57	4.59
<b>432217XU</b>	97	142	8.5	2	0.6	76	0.42	1.61	2.39	1.57	5.85
<b>430317DU</b>	103	169	16.5	3	1	121	0.83	0.82	1.22	0.80	10.6
<b>430317XU</b>	103	167	10.5	3	1	80	0.35	1.96	2.91	1.91	11.2
<b>432317U</b>	103	167	14.5	3	1	96	0.35	1.96	2.91	1.91	15.4
<b>430218U</b>	102	150	6.5	2	0.6	73	0.42	1.61	2.39	1.57	5.66
<b>432218U</b>	102	152	8.5	2	0.6	81	0.42	1.61	2.39	1.57	7.35
<b>430318DU</b>	108	180	16.5	3	1	127	0.83	0.82	1.22	0.80	12.5
<b>430318U</b>	108	177	10.5	3	1	84	0.35	1.96	2.91	1.91	12.9
<b>432318U</b>	108	177	14.5	3	1	100	0.35	1.96	2.91	1.91	18.2
<b>430219XU</b>	109	159	7.5	2.5	1	76.5	0.42	1.61	2.39	1.57	8.01
<b>432219XU</b>	109	161	8.5	2.5	1	86.5	0.42	1.61	2.39	1.57	9.04
* <b>430319XU</b>	113	186	11.5	3	1	89	0.35	1.96	2.91	1.91	15.0
<b>430319X</b>	113	186	11.5	3	1	88.5	0.35	1.95	2.90	1.91	14.0
<b>432319U</b>	113	186	16.5	3	1	106	0.35	1.96	2.91	1.91	21.5
<b>430220XU</b>	114	168	8	2.5	1	81.5	0.42	1.61	2.39	1.57	8.11
<b>432220XU</b>	114	171	10	2.5	1	92	0.42	1.61	2.39	1.57	10.7
* <b>430320XU</b>	118	200	12.5	3	1	92	0.35	1.96	2.91	1.91	18.4
<b>430320X</b>	118	200	12.5	3	1	93.5	0.35	1.95	2.90	1.91	16.5
<b>432320U</b>	118	200	17.5	3	1	113	0.35	1.96	2.91	1.91	26.5
<b>430221XU</b>	119	178	9	2.5	1	86	0.42	1.61	2.39	1.57	9.73
<b>432221XU</b>	119	180	10	2.5	1	97.5	0.42	1.61	2.39	1.57	13.1
<b>430321X</b>	123	209	12.5	3	1	96.5	0.35	1.95	2.90	1.91	19.6

# Double Row Tapered Roller Bearings

## Back-to-back arrangement

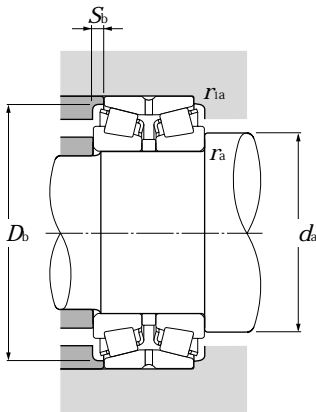


**d** 105 ~ 140mm

d	Boundary dimensions				dynamic kN	Basic load ratings			Limiting speeds		
	D	B <sub>1</sub>	C	r <sub>s</sub> min <sup>1)</sup>		static	dynamic	static	grease	oil	
	mm					kgf		min <sup>-1</sup>			
					C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>			
105	225	116	91	4	1	750	1 060	76 000	109 000	1 400	1 900
	225	170	133	3	1	955	1 470	97 500	150 000	1 400	1 900
110	180	56	50	2.5	0.6	228	340	23 300	35 000	1 600	2 200
	180	70	56	2.5	0.6	298	485	30 500	49 500	1 600	2 200
	200	92	74	3	1	555	865	56 500	88 500	1 500	2 000
	200	121	101	3	1	720	1 210	73 500	124 000	1 500	2 000
	240	118	93	4	1	825	1 180	84 000	120 000	1 400	1 800
	240	118	93	3	1	685	925	69 500	94 500	1 400	1 800
	240	181	142	3	1	1 070	1 660	109 000	169 000	1 400	1 800
120	240	181	142	4	1	1 210	1 940	123 000	197 000	1 400	1 800
	180	46	41	2.5	0.6	193	298	19 700	30 500	1 500	2 100
	180	58	46	2.5	0.6	230	375	23 500	38 000	1 500	2 100
	200	62	55	2.5	0.6	263	435	26 800	44 500	1 500	2 000
	200	78	62	2.5	0.6	370	610	38 000	62 500	1 500	2 000
	215	97	78	3	1	595	940	60 500	96 000	1 400	1 900
	215	132	109	3	1	790	1 360	80 500	139 000	1 400	1 900
	260	128	101	4	1	960	1 390	97 500	142 000	1 200	1 700
130	260	128	101	3	1	800	1 100	81 500	112 000	1 200	1 700
	260	188	145	4	1	1 400	2 270	143 000	231 000	1 200	1 700
	200	52	46	2.5	0.6	224	365	22 900	37 500	1 400	1 900
	200	65	52	2.5	0.6	294	490	29 900	50 000	1 400	1 900
	210	64	57	2.5	0.6	315	485	32 000	49 500	1 400	1 800
	210	80	64	2.5	0.6	410	675	42 000	69 000	1 400	1 800
	230	98	78.5	4	1	640	1 010	65 500	103 000	1 300	1 700
	230	145	117.5	4	1	905	1 630	92 500	166 000	1 300	1 700
140	280	137	107.5	5	1.5	1 110	1 660	113 000	169 000	1 200	1 500
	210	53	47	2.5	0.6	262	415	26 700	42 500	1 300	1 800
	210	66	53	2.5	0.6	300	535	30 500	54 500	1 300	1 800
	225	68	61	3	1	370	580	37 500	59 500	1 200	1 700
	225	84	68	3	1	390	650	40 000	66 000	1 200	1 700
	250	102	82.5	3	1	640	970	65 500	99 000	1 200	1 600
	250	102	82.5	4	1	720	1 140	73 500	117 000	1 200	1 600
	250	153	125.5	4	1	1 050	1 840	107 000	188 000	1 200	1 600
	300	145	115.5	5	1.5	1 260	1 900	129 000	194 000	1 100	1 400
300	145	115.5	4	1.5	1 100	1 560	112 000	160 000	1 100	1 400	

1) Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Note: 1. When incorporating bearings with bearing numbers marked with " \* ", please consult NTN Engineering.



**Equivalent radial 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	Y <sub>1</sub>	0.67	Y <sub>2</sub>

**static**

$$P_{0r} = F_r + Y_0 F_a$$

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

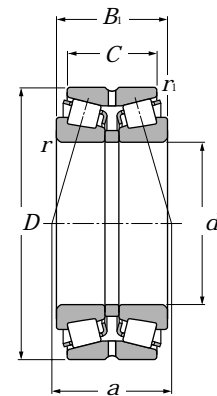
Bearing numbers	Abutment and fillet dimensions					Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> min	<i>D<sub>b</sub></i> min	<i>S<sub>b</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>1as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
* 430321XU 432321	123 119	209 208	12.5 18.5	3 2.5	1 1	96.5 117.5	0.35 0.35	1.96 1.96	2.91 2.90	1.91 1.91	21.0 30.2
413122 423122 430222XU 432222XU	122 122 124 124	169 166 188 190	3 7 9 10	2 2 2.5 2.5	0.6 0.6 1 1	66.5 66.5 90 102	0.40 0.33 0.42 0.42	1.68 2.03 1.61 1.61	2.50 3.02 2.39 2.39	1.64 1.98 1.57 1.57	5.20 6.38 11.4 15.5
* 430322U 430322 432322 * 432322U	128 128 128 128	222 222 222 222	12.5 12.5 19.5 19.5	3 3 3 3	1 1 1 1	100 97.5 124 127	0.35 0.35 0.35 0.35	1.96 1.95 1.95 1.96	2.91 2.90 2.90 2.91	1.91 1.91 1.91 1.91	24.5 22.1 35.6 38.2
413024 423024 413124 423124 430224XU 432224XU 430324XU 430324X 432324U	132 132 132 132 134 134 138 138 138	171 170 184 188 203 204 239 239 239	2.5 6 3.5 8 9.5 11.5 13.5 13.5 21.5	2 2 2 2 2.5 2.5 3 3 3	0.6 0.6 0.6 0.6 1 1 1 1 1	59 66 76.5 76.5 98 112 107 106 130	0.37 0.37 0.43 0.37 0.44 0.44 0.35 0.35 0.35	1.80 1.80 1.57 1.80 1.55 1.55 1.96 1.95 1.96	2.69 2.69 2.34 2.69 2.31 2.31 2.91 2.90 2.91	1.76 1.76 1.53 1.76 1.52 1.52 1.91 1.91 1.91	3.85 4.41 7.24 8.96 13.6 18.9 30.5 29.4 47.0
413026 423026 413126 423126 430226XU 432226XU 430326XU	142 142 142 142 148 148 152	186 189 196 198 218 219 255	3 6.5 3.5 8 9.5 13.5 14.5	2 2 2 2 3 3 4	0.6 0.6 0.6 0.6 1 1 1.5	66 71.5 69 79.5 102 124 116	0.37 0.37 0.33 0.37 0.44 0.44 0.35	1.80 1.80 2.03 1.80 1.55 1.55 1.96	2.69 2.69 3.02 2.69 2.31 2.31 2.91	1.76 1.76 1.98 1.76 1.52 1.52 1.91	5.55 6.62 7.83 9.77 15.9 24.1 37.9
413028 423028 413128 423128 430228X * 430228XU 432228XU * 430328XU 430328X	152 152 154 154 158 158 158 162 162	199 197 210 209 237 237 238 273 272	3 6.5 3.5 8 9.5 9.5 13.5 14.5 14.5	2 2 2.5 2.5 3 3 3 4 4	0.6 0.6 1 1 1 1 1 1.5 1.5	68.5 75 73.5 88 106 107 131 123 123	0.37 0.37 0.33 0.37 0.43 0.44 0.44 0.35 0.35	1.80 1.84 2.03 1.80 1.57 1.55 1.55 1.96 1.95	2.69 2.74 3.02 2.69 2.34 2.31 2.31 2.91 2.90	1.76 1.80 1.98 1.76 1.53 1.52 1.52 1.91 1.91	5.88 7.11 9.18 11.8 18.0 19.9 30.1 46.6 44.4





# Double Row Tapered Roller Bearings

## Back-to-back arrangement



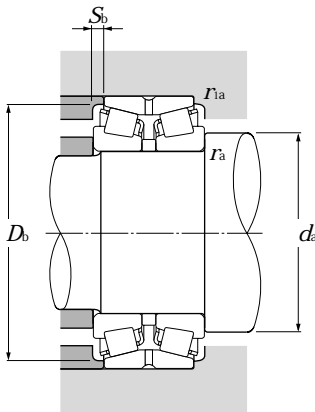
$d$  150 ~ 190mm

$d$	Boundary dimensions				$r_s \text{ min}^{-1}$	$r_{1s} \text{ min}^{-1}$	Basic load ratings			Limiting speeds	
	$D$	$B_i$	$C$	mm			dynamic kN	static	dynamic	static	grease
150	225	56	50	3	1	274	430	27 900	44 000	1 200	1 600
	225	70	56	3	1	355	630	36 000	64 500	1 200	1 600
	250	80	71	3	1	485	805	49 500	82 000	1 200	1 500
	250	100	80	3	1	600	1 040	61 500	106 000	1 200	1 500
	270	109	87	4	1	770	1 210	78 500	123 000	1 100	1 500
	270	164	130	4	1	1 200	2 140	122 000	218 000	1 100	1 500
	320	154	120	5	1.5	1 410	2 140	144 000	218 000	990	1 300
	320	154	120	4	1.5	1 170	1 750	119 000	178 000	990	1 300
160	240	60	53	3	1	330	535	34 000	54 500	1 100	1 500
	240	75	60	3	1	430	765	44 000	78 000	1 100	1 500
	270	86	76	3	1	595	965	60 500	98 000	1 100	1 400
	270	108	86	3	1	675	1 180	69 000	120 000	1 100	1 400
	290	115	91	4	1	900	1 440	92 000	147 000	1 000	1 400
	290	178	144	4	1	1 530	2 840	156 000	290 000	1 000	1 400
	340	160	126	5	1.5	1 570	2 390	160 000	244 000	920	1 200
	340	160	126	4	1.5	1 290	1 950	132 000	199 000	920	1 200
170	260	67	60	3	1	365	620	37 000	63 500	1 100	1 400
	260	84	67	3	1	490	865	50 000	88 000	1 100	1 400
	280	88	78	3	1	550	900	56 000	92 000	1 000	1 300
	280	110	88	3	1	725	1 270	74 000	130 000	1 000	1 300
	310	125	97	5	1.5	1 050	1 690	107 000	173 000	950	1 300
	310	192	152	5	1.5	1 710	3 200	174 000	325 000	950	1 300
180	280	74	66	3	1	425	735	43 000	75 000	1 000	1 300
	280	93	74	3	1	580	1 050	59 500	107 000	1 000	1 300
	300	96	85	4	1.5	705	1 190	72 000	121 000	940	1 300
	300	120	96	4	1.5	885	1 530	90 500	156 000	940	1 300
	320	127	99	5	1.5	1 080	1 780	110 000	182 000	890	1 200
	320	192	152	5	1.5	1 760	3 350	180 000	345 000	890	1 200
190	290	75	67	3	1	430	740	44 000	75 500	940	1 300
	290	94	75	3	1	615	1 110	63 000	113 000	940	1 300
	320	104	92	4	1.5	780	1 280	79 500	131 000	890	1 200
	320	130	104	4	1.5	985	1 710	100 000	174 000	890	1 200
	340	133	105	5	1.5	1 230	2 010	125 000	205 000	840	1 100
	340	204	160	5	1.5	1 970	3 700	201 000	380 000	840	1 100
	340	204	160	4	1.5	1 710	3 350	175 000	340 000	840	1 100

1 ) Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Note: 1. When incorporating bearings with bearing numbers marked with " \* ", please consult NTN Engineering.

# Double Row Tapered Roller Bearings



### Equivalent radial load

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

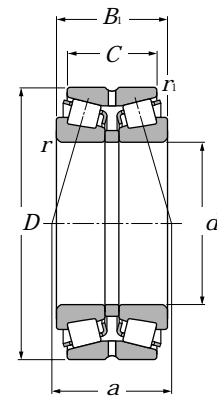
$$P_{0r} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions					Load center mm	Constant	Axial load factors			Mass kg (approx.)
	$d_a$ min	$D_b$ min	$S_b$ min	$r_{as}$ max	$r_{1as}$ max			$a$	$e$	$Y_1$	
* 413030	164	213	3	2.5	1	73.5	0.37	1.80	2.69	1.76	6.66
423030	164	212	7	2.5	1	79.5	0.37	1.80	2.69	1.76	8.76
413130	164	231	4.5	2.5	1	82.5	0.33	2.03	3.02	1.98	14.3
423130	164	234	10	2.5	1	96.5	0.37	1.80	2.69	1.76	18.0
430230U	168	255	11	3	1	114	0.44	1.55	2.31	1.52	24.4
432230XU	168	254	17	3	1	139	0.44	1.55	2.31	1.52	37.3
* 430330U	172	292	17	4	1.5	132	0.35	1.96	2.91	1.91	55.4
430330	172	292	17	4	1.5	135	0.37	1.80	2.69	1.76	52.8
413032	174	227	3.5	2.5	1	79	0.37	1.80	2.69	1.76	8.29
423032	174	227	7.5	2.5	1	85.5	0.37	1.80	2.69	1.76	10.7
413132E1	174	254	5	2.5	1	98.5	0.40	1.68	2.50	1.64	18.2
423132E1	174	250	11	2.5	1	106	0.37	1.80	2.69	1.76	22.8
430232U	178	272	12	3	1	122	0.44	1.55	2.31	1.52	31.9
432232U	178	275	17	3	1	150	0.44	1.55	2.31	1.52	46.9
* 430332XU	182	310	17	4	1.5	138	0.35	1.96	2.91	1.91	65.5
430332X	182	311	17	4	1.5	141	0.37	1.80	2.69	1.76	62.4
413034	184	242	3.5	2.5	1	86.5	0.37	1.80	2.69	1.76	11.6
423034	184	244	8.5	2.5	1	93.5	0.37	1.80	2.69	1.76	14.3
413134E1	184	260	5	2.5	1	104	0.40	1.68	2.50	1.64	19.5
423134E1	184	260	11	2.5	1	109	0.37	1.80	2.69	1.76	24.7
430234U	192	288	14	4	1.5	132	0.44	1.55	2.31	1.52	38.0
432234XU	192	293	20	4	1.5	160	0.44	1.55	2.31	1.52	58.2
413036E1	194	260	4	2.5	1	94	0.37	1.80	2.69	1.76	15.9
423036E1	194	262	9.5	2.5	1	102	0.37	1.80	2.69	1.76	19.0
413136E1	198	280	5.5	3	1.5	111	0.40	1.68	2.50	1.64	24.6
423136E1	198	279	12	3	1.5	119	0.37	1.80	2.69	1.76	31.4
430236U	202	297	14	4	1.5	139	0.45	1.50	2.23	1.47	39.4
432236U	202	305	20	4	1.5	165	0.45	1.50	2.23	1.47	60.6
413038E1	204	271	4	2.5	1	96	0.37	1.80	2.69	1.76	16.2
423038E1	204	272	9.5	2.5	1	104	0.37	1.80	2.69	1.76	19.6
413138	208	300	6	3	1.5	119	0.40	1.68	2.50	1.64	30.8
423138	208	299	13	3	1.5	126	0.37	1.80	2.69	1.76	38.6
430238U	212	316	14	4	1.5	141	0.44	1.55	2.31	1.52	45.4
* 432238U	212	323	22	4	1.5	174	0.44	1.55	2.31	1.52	73.3
432238	212	323	22	4	1.5	185	0.49	1.38	2.06	1.35	69.8

# Double Row Tapered Roller Bearings

## Back-to-back arrangement

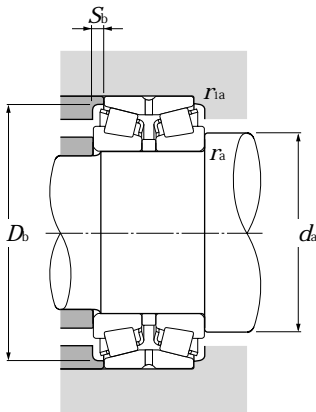


**d** 200 ~ 340mm

d	Boundary dimensions				r <sub>s</sub> min <sup>1)</sup>	r <sub>1s</sub> min <sup>1)</sup>	Basic load ratings				Limiting speeds	
	D	B <sub>i</sub>	C	mm			dynamic	static	dynamic	static	grease	oil
						kN			kgf		min <sup>-1</sup>	
200	310	82	73	3	1	530	940	54 000	96 000	900	1 200	
	310	103	82	3	1	720	1 320	73 000	135 000	900	1 200	
	340	112	100	4	1.5	965	1 660	98 500	169 000	840	1 100	
	340	140	112	4	1.5	1 090	1 910	111 000	195 000	840	1 100	
	360	142	110	5	1.5	1 350	2 210	137 000	226 000	800	1 100	
	360	218	174	5	1.5	2 260	4 250	230 000	435 000	800	1 100	
	360	218	174	4	1.5	1 980	3 950	201 000	400 000	800	1 100	
220	340	90	80	4	1.5	595	1 060	61 000	108 000	810	1 100	
	340	113	90	4	1.5	880	1 650	89 500	168 000	810	1 100	
	370	120	107	5	1.5	1 110	1 920	113 000	196 000	760	1 000	
	370	150	120	5	1.5	1 220	2 260	125 000	230 000	760	1 000	
240	360	92	82	4	1.5	655	1 160	66 500	118 000	730	980	
	360	115	92	4	1.5	910	1 770	92 500	181 000	730	980	
	400	128	114	5	1.5	1 230	2 130	126 000	217 000	690	920	
	400	160	128	5	1.5	1 400	2 600	142 000	265 000	690	920	
260	400	104	92	5	1.5	840	1 540	85 500	157 000	670	900	
	400	130	104	5	1.5	1 150	2 190	117 000	223 000	670	900	
	440	144	128	5	1.5	1 500	2 630	152 000	268 000	630	840	
	440	180	144	5	1.5	1 940	3 750	198 000	380 000	630	840	
280	420	106	94	5	1.5	890	1 630	91 000	166 000	620	820	
	420	133	106	5	1.5	1 200	2 340	123 000	238 000	620	820	
	460	146	130	6	2	1 640	2 900	167 000	296 000	580	770	
	460	183	146	6	2	1 940	3 650	198 000	375 000	580	770	
300	460	118	105	5	1.5	1 070	1 990	109 000	203 000	570	760	
	460	148	118	5	1.5	1 610	3 150	165 000	320 000	570	760	
	500	160	142	6	2	2 010	3 600	205 000	370 000	530	710	
	500	200	160	6	2	2 100	4 050	214 000	415 000	530	710	
320	480	121	108	5	1.5	1 190	2 250	121 000	229 000	530	710	
	480	151	121	5	1.5	1 580	3 100	162 000	315 000	530	710	
	540	176	157	6	2	2 240	4 100	228 000	415 000	500	660	
	540	220	176	6	2	2 500	4 900	255 000	500 000	500	660	
340	520	133	118	6	2	1 480	2 870	150 000	293 000	500	660	

1) Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Note: 1. When incorporating bearings with bearing numbers marked with " \* ", please consult NTN Engineering.



### Equivalent radial load

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

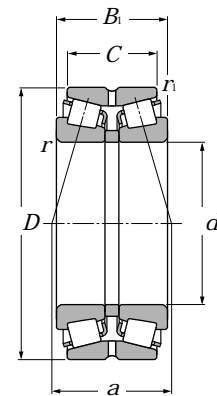
$$P_{0r} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions					Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> min	<i>D<sub>b</sub></i> min	<i>S<sub>b</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>1as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
<b>413040E1</b>	214	288	4.5	2.5	1	101	0.37	1.80	2.69	1.76	20.6
<b>423040E1</b>	214	291	10.5	2.5	1	112	0.37	1.80	2.69	1.76	25.7
<b>413140</b>	218	320	6	3	1.5	125	0.40	1.68	2.50	1.64	38.6
<b>423140</b>	218	316	14	3	1.5	134	0.37	1.80	2.69	1.76	47.5
<b>430240U</b>	222	336	16	4	1.5	154	0.44	1.55	2.31	1.52	62.8
* <b>432240U</b>	222	340	22	4	1.5	180	0.41	1.66	2.47	1.62	95.2
<b>432240</b>	222	340	22	4	1.5	193	0.49	1.38	2.06	1.35	90.7
<b>413044E1</b>	238	318	5	3	1.5	112	0.37	1.80	2.69	1.76	26.7
<b>423044E1</b>	238	319	11.5	3	1.5	125	0.37	1.80	2.69	1.76	33.3
<b>413144</b>	242	346	6.5	4	1.5	135	0.40	1.68	2.50	1.64	47.8
<b>423144</b>	242	341	15	4	1.5	154	0.40	1.68	2.50	1.64	59.6
<b>413048E1</b>	258	339	5	3	1.5	117	0.37	1.80	2.69	1.76	30.2
<b>423048E1</b>	258	340.5	11.5	3	1.5	131	0.37	1.80	2.69	1.76	36.3
<b>413148</b>	262	375	7	4	1.5	144	0.40	1.68	2.50	1.64	58.9
<b>423148</b>	262	373	16	4	1.5	164	0.40	1.68	2.50	1.64	71.7
<b>413052</b>	282	372	6	4	1.5	131	0.37	1.80	2.69	1.76	41.5
<b>423052</b>	282	374	13	4	1.5	143	0.37	1.80	2.69	1.76	53.0
<b>413152</b>	282	412	8	4	1.5	161	0.40	1.68	2.50	1.64	82.2
<b>423152</b>	282	413	18	4	1.5	176	0.40	1.68	2.50	1.64	101
<b>413056</b>	302	394	6	4	1.5	136	0.37	1.80	2.69	1.76	47.2
<b>423056</b>	302	397	13.5	4	1.5	148	0.37	1.80	2.69	1.76	57.3
<b>413156</b>	308	435	8	5	2	168	0.40	1.68	2.50	1.64	87.4
<b>423156</b>	308	433	18.5	5	2	177	0.40	1.68	2.50	1.64	109
<b>413060</b>	322	428	6.5	4	1.5	151	0.37	1.80	2.69	1.76	65.6
<b>423060</b>	322	434	15	4	1.5	163	0.37	1.80	2.69	1.76	80.2
<b>413160</b>	328	471	9	5	2	182	0.40	1.68	2.50	1.64	115
<b>423160</b>	328	464	20	5	2	202	0.40	1.68	2.50	1.64	144
<b>413064</b>	342	449	6.5	4	1.5	157	0.37	1.80	2.69	1.76	70.9
<b>423064</b>	342	455	15	4	1.5	170	0.37	1.80	2.69	1.76	85.4
<b>413164</b>	348	505	9.5	5	2	197	0.40	1.68	2.50	1.64	150
<b>423164</b>	348	502	22	5	2	217	0.40	1.68	2.50	1.64	188
<b>413068</b>	368	488	7.5	5	2	170	0.37	1.8	2.69	1.76	89.2

# Double Row Tapered Roller Bearings

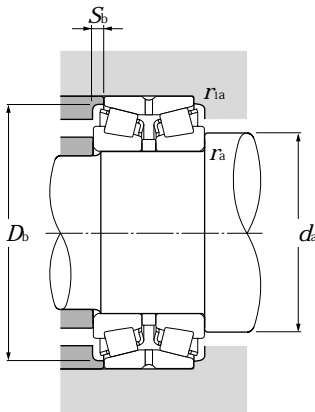
## Back-to-back arrangement



$d$  340 ~ 480 mm

$d$	Boundary dimensions				Basic load ratings						Limiting speeds	
	$D$	$B_i$	$C$	$r$ (mm)	$r_1$ (mm)	dynamic kN	static kN	dynamic kgf	static kgf	grease min <sup>-1</sup>	oil min <sup>-1</sup>	
340	520	165	133	6	2	1 890	3 750	193 000	380 000	500	660	
	580	190	169	6	2	2 690	4 900	274 000	500 000	460	620	
	580	238	190	6	2	3 350	6 500	345 000	660 000	460	620	
360	540	134	120	6	2	1 470	2 810	150 000	287 000	460	620	
	540	169	134	6	2	2 050	4 200	209 000	430 000	460	620	
	600	192	171	6	2	2 720	5 050	277 000	515 000	430	580	
	600	240	192	6	2	3 200	6 500	325 000	660 000	430	580	
380	560	135	122	6	2	1 690	3 350	172 000	340 000	440	580	
	560	171	135	6	2	2 080	4 350	213 000	445 000	440	580	
	620	194	173	6	2	2 840	5 250	289 000	535 000	410	540	
	620	243	194	6	2	3 350	6 700	340 000	685 000	410	540	
400	600	148	132	6	2	1 860	3 700	190 000	375 000	410	550	
	600	185	148	6	2	2 530	5 450	258 000	555 000	410	550	
	650	200	178	6	3	3 000	5 800	305 000	590 000	380	510	
	650	250	200	6	3	3 750	7 850	385 000	800 000	380	510	
420	620	150	134	6	2	2 110	4 250	215 000	435 000	390	520	
	620	188	150	6	2	2 650	5 900	270 000	600 000	390	520	
	700	224	200	6	3	3 700	7 200	375 000	735 000	360	480	
	700	280	224	6	3	4 800	9 700	490 000	990 000	360	480	
440	650	157	140	6	3	2 470	5 150	252 000	525 000	370	490	
	650	196	157	6	3	2 600	5 450	266 000	560 000	370	490	
	720	226	201	6	3	4 000	7 800	410 000	795 000	340	460	
	720	283	226	6	3	5 000	10 300	510 000	1 050 000	340	460	
460	680	163	145	6	3	2 600	5 350	265 000	550 000	350	470	
	680	204	163	6	3	3 050	6 600	310 000	670 000	350	470	
	760	240	214	7.5	4	4 550	9 150	465 000	930 000	320	430	
	760	300	240	7.5	4	4 900	10 300	500 000	1 050 000	320	430	
480	700	165	147	6	3	2 490	5 000	254 000	510 000	330	450	
	700	206	165	6	3	3 050	6 700	310 000	685 000	330	450	
	790	248	221	7.5	4	4 800	9 600	490 000	975 000	310	410	
	790	310	248	7.5	4	5 300	11 100	540 000	1 130 000	310	410	

1) Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



**Equivalent radial 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	Y <sub>1</sub>	0.67	Y <sub>2</sub>

**static**

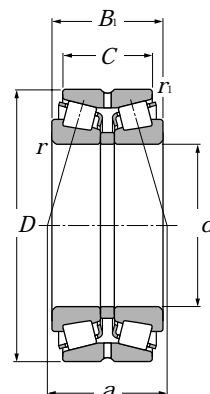
$$P_{0r} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions					Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> min	<i>D<sub>b</sub></i> min	<i>S<sub>b</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>1as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
<b>423068</b>	368	489	16	5	2	184	0.37	1.80	2.69	1.76	113
<b>413168</b>	368	548	10.5	5	2	213	0.40	1.68	2.50	1.64	188
<b>423168</b>	368	542	24	5	2	237	0.40	1.68	2.50	1.64	235
<b>413072</b>	388	507	7	5	2	176	0.37	1.80	2.69	1.76	92.7
<b>423072</b>	388	509	17.5	5	2	192	0.37	1.80	2.69	1.76	120
<b>413172</b>	388	561	10.5	5	2	219	0.40	1.68	2.50	1.64	199
<b>423172</b>	388	560	24	5	2	240	0.40	1.68	2.50	1.64	248
<b>413076</b>	408	528	6.5	5	2	183	0.37	1.80	2.69	1.76	95.9
<b>423076</b>	408	529	18	5	2	196	0.37	1.80	2.69	1.76	126
<b>413176</b>	408	583	10.5	5	2	225	0.40	1.68	2.50	1.64	210
<b>423176</b>	408	578	24.5	5	2	249	0.40	1.68	2.50	1.64	262
<b>413080</b>	428	564	8	5	2	194	0.37	1.80	2.69	1.76	105
<b>423080</b>	428	564	18.5	5	2	210	0.37	1.80	2.69	1.76	163
<b>413180</b>	428	610	11	5	2.5	232	0.40	1.68	2.50	1.64	236
<b>423180</b>	428	610	25	5	2.5	256	0.40	1.68	2.50	1.64	294
<b>413084</b>	448	586	8	5	2	200	0.37	1.80	2.69	1.76	135
<b>423084</b>	448	583	19	5	2	220	0.37	1.80	2.69	1.76	172
<b>413184</b>	448	655	12	5	2.5	258	0.40	1.68	2.50	1.64	317
<b>423184</b>	448	659	28	5	2.5	287	0.40	1.68	2.50	1.64	394
<b>413088</b>	468	614	8.5	5	2.5	208	0.37	1.80	2.69	1.76	160
<b>423088</b>	468	614	19.5	5	2.5	229	0.37	1.80	2.69	1.76	198
<b>413188</b>	468	675	12.5	5	2.5	263	0.40	1.68	2.50	1.64	330
<b>423188</b>	468	678	28.5	5	2.5	288	0.40	1.68	2.50	1.64	412
<b>413092</b>	488	646	9	5	2.5	217	0.37	1.80	2.69	1.76	179
<b>423092</b>	488	644	20.5	5	2.5	239	0.37	1.80	2.69	1.76	225
<b>413192</b>	496	714	13	6	3	276	0.40	1.68	2.50	1.64	395
<b>423192</b>	496	712	30	6	3	305	0.40	1.68	2.50	1.64	493
<b>413096</b>	508	665	9	5	2.5	223	0.37	1.80	2.69	1.76	189
<b>423096</b>	508	664	20.5	5	2.5	246	0.37	1.80	2.69	1.76	236
<b>413196</b>	516	743	13.5	6	3	281	0.40	1.68	2.50	1.64	442
<b>423196</b>	516	738	31	6	3	329	0.40	1.68	2.50	1.64	548

# Double Row Tapered Roller Bearings

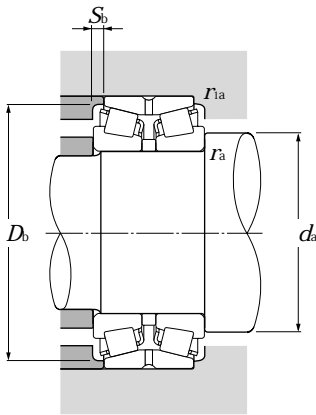
## Back-to-back arrangement



**d** 500 mm

d	Boundary dimensions					Basic load ratings				Limiting speeds	
	D	B <sub>i</sub>	C	r <sub>s</sub> min <sup>1)</sup>	r <sub>1s</sub> min <sup>1)</sup>	dynamic kN	static kN	dynamic kgf	static kgf	grease min <sup>-1</sup>	oil min <sup>-1</sup>
<b>500</b>	720	167	149	6	3	2 610	5 400	266 000	550 000	320	420
	720	209	167	6	3	3 050	6 900	315 000	700 000	320	420
	830	264	235	7.5	4	5 200	10 500	530 000	1 070 000	290	390
	830	330	264	7.5	4	6 400	14 000	650 000	1 420 000	290	390

1) Minimum allowable dimension for chamfer dimension r or r<sub>1</sub>.



**Equivalent radial 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	$Y_1$	0.67	$Y_2$

**static**

$$P_{0r} = F_r + Y_0 F_a$$

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

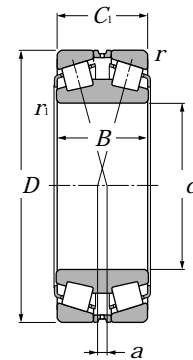
Bearing numbers	Abutment and fillet dimensions					Load center mm $a$	Constant $e$	Axial load factors			Mass kg (approx.)
	$d_a$ min	$D_b$ min	$S_b$ min	$r_{as}$ max	$r_{1as}$ max			$Y_1$	$Y_2$	$Y_0$	
<b>4130/500</b>	528	686	9	5	2.5	230	0.37	1.80	2.69	1.76	202
<b>4230/500</b>	528	683	21	5	2.5	250	0.37	1.80	2.69	1.76	247
<b>4131/500</b>	536	780	14.5	6	3	296	0.40	1.68	2.50	1.64	528
<b>5E-4231/500G2</b>	536	773	33	6	3	331	0.40	1.68	2.50	1.64	678





# Double Row Tapered Roller Bearings

## Face-to-face arrangement

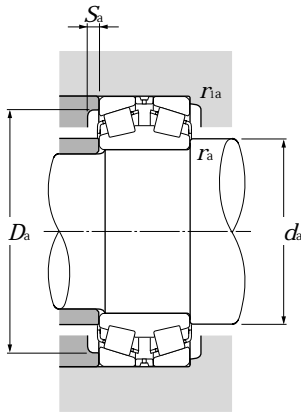


**d** 110 ~ 280 mm

d	Boundary dimensions					dynamic kN	Basic load ratings			Limiting speeds	
	D	B	C <sub>i</sub>	r <sub>1s</sub> min <sup>1)</sup>	r <sub>2s</sub> min <sup>1)</sup>		static	dynamic	static	grease	oil
	mm						C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	min <sup>-1</sup>	
								kgf			
<b>110</b>	180	56	56	2.5	2	298	485	30 500	49 500	1 600	2 200
<b>120</b>	180	46	46	2.5	2	230	375	23 500	38 000	1 500	2 100
	200	62	62	2.5	2	370	610	38 000	62 500	1 500	2 000
<b>130</b>	200	52	52	2.5	2	294	490	29 900	50 000	1 400	1 900
	210	64	64	2.5	2	410	675	42 000	69 000	1 400	1 800
<b>140</b>	210	53	53	2.5	2	300	535	30 500	54 500	1 300	1 800
	225	68	68	3	2.5	390	650	40 000	66 000	1 200	1 700
<b>150</b>	225	56	56	3	2.5	355	630	36 000	64 500	1 200	1 600
	250	80	80	3	2.5	600	1 040	61 500	106 000	1 200	1 500
<b>160</b>	240	60	60	3	2.5	430	765	44 000	78 000	1 100	1 500
	270	86	86	3	2.5	675	1 180	69 000	120 000	1 100	1 400
<b>170</b>	260	67	67	3	2.5	490	865	50 000	88 000	1 100	1 400
	280	88	88	3	2.5	725	1 270	74 000	130 000	1 000	1 300
<b>180</b>	280	74	74	3	2.5	580	1 050	59 500	107 000	1 000	1 300
	300	96	96	4	3	885	1 530	90 500	156 000	940	1 300
<b>190</b>	290	75	75	3	2.5	615	1 110	63 000	113 000	940	1 300
	320	104	104	4	3	985	1 710	100 000	174 000	890	1 200
<b>200</b>	310	82	82	3	2.5	720	1 320	73 000	135 000	900	1 200
	340	112	112	4	3	1 090	1 910	111 000	195 000	840	1 100
<b>220</b>	340	90	90	4	3	880	1 650	89 500	168 000	810	1 100
	370	120	120	5	4	1 220	2 260	125 000	230 000	760	1 000
<b>240</b>	360	92	92	4	3	910	1 770	92 500	181 000	730	980
	400	128	128	5	4	1 400	2 600	142 000	265 000	690	920
<b>260</b>	400	104	104	5	4	1 150	2 190	117 000	223 000	670	900
	440	144	144	5	4	1 960	3 750	200 000	380 000	630	840
<b>280</b>	420	106	106	5	4	1 200	2 340	123 000	238 000	620	820

1) Minimum allowable dimension for chamfer dimension r or r<sub>1</sub>.

# Double Row Tapered Roller Bearings



### Equivalent radial 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	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

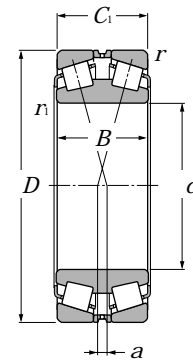
$$P_{or} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions						Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> max	<i>D<sub>a</sub></i> max	mm		<i>r<sub>as</sub></i> max	<i>r<sub>as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
		min	<i>S<sub>a</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>as</sub></i> max							
<b>323122</b>	124	170	160	8	2	2	1	0.33	2.03	3.02	1.98	5.6
<b>323024</b>	134	170	164	8	2	2	12	0.37	1.80	2.69	1.76	4.08
<b>323124</b>	134	190	175	8	2	2	6.5	0.37	1.80	2.69	1.76	7.82
<b>323026</b>	144	190	184	8	2	2	13.5	0.37	1.80	2.69	1.76	5.92
<b>323126</b>	144	200	185	8	2	2	7.5	0.37	1.80	2.69	1.76	8.58
<b>323028</b>	155	200	190	8	2	2	10	0.37	1.84	2.74	1.80	6.4
<b>323128</b>	156	213	200	10	2.5	2	8	0.37	1.80	2.69	1.76	10.7
<b>323030</b>	165	213	205	10	2.5	2	15.5	0.37	1.80	2.69	1.76	7.76
<b>323130</b>	168	238	220	10	2.5	2	6.5	0.37	1.80	2.69	1.76	15.7
<b>323032</b>	175	228	215	10	2.5	2	17.5	0.37	1.80	2.69	1.76	9.46
<b>323132E1</b>	178	258	240	10	2.5	2	8	0.37	1.80	2.69	1.76	20
<b>323034</b>	185	248	235	10	2.5	2	18	0.37	1.80	2.69	1.76	12.8
<b>323134E1</b>	188	268	250	10	2.5	2	8.5	0.37	1.80	2.69	1.76	21.5
<b>323036E1</b>	198	268	250	10	2.5	2	17	0.37	1.80	2.69	1.76	16.5
<b>323136E1</b>	200	286	265	12	3	2.5	8	0.37	1.80	2.69	1.76	27.2
<b>323038E1</b>	208	278	260	12	2.5	2	17.5	0.37	1.80	2.69	1.76	17.9
<b>323138</b>	212	306	285	12	3	2.5	8.5	0.37	1.80	2.69	1.76	34
<b>323040E1</b>	218	298	280	12	2.5	2	19	0.37	1.80	2.69	1.76	21.7
<b>323140</b>	222	326	300	12	3	2.5	8.5	0.37	1.80	2.69	1.76	41.7
<b>323044E1</b>	242	326	310	12	3	2.5	21.5	0.37	1.80	2.69	1.76	29.8
<b>323144</b>	248	352	325	14	4	3	14	0.40	1.68	2.50	1.64	52.2
<b>323048E1</b>	269	346	321.5	14	3	2.5	25.5	0.37	1.80	2.69	1.76	32.6
<b>323148</b>	268	382	355	14	4	3	17	0.40	1.68	2.50	1.64	64.6
<b>323052</b>	285	382	365	14	4	3	25	0.37	1.80	2.69	1.76	47.3
<b>323152</b>	290	422	385	16	4	3	16.5	0.40	1.68	2.50	1.64	90
<b>323056</b>	305	402	385	16	4	3	29.5	0.37	1.80	2.69	1.76	51.2

# Double Row Tapered Roller Bearings

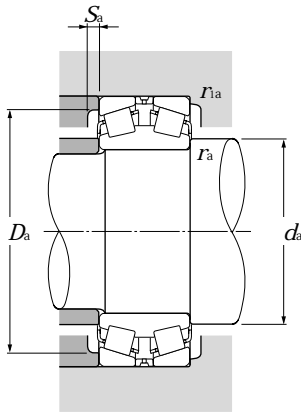
## Face-to-face arrangement



**d** 280 ~ 500 mm

d	Boundary dimensions					Basic load ratings				Limiting speeds	
	D	B	C <sub>i</sub>	r <sub>1s</sub> min <sup>1)</sup>	r <sub>2s</sub> min <sup>1)</sup>	dynamic kN	static kN	dynamic kgf	static kgf	grease min <sup>-1</sup>	oil min <sup>-1</sup>
<b>280</b>	460	146	146	6	5	1 940	3 650	198 000	375 000	580	770
	500	160	160	6	5	2 100	4 050	214 000	415 000	530	710
<b>300</b>	460	118	118	5	4	1 610	3 150	165 000	320 000	570	760
	500	160	160	6	5	2 100	4 050	214 000	415 000	530	710
<b>320</b>	480	121	121	5	4	1 580	3 100	162 000	315 000	530	710
	540	176	176	6	5	2 500	4 900	255 000	500 000	500	660
<b>340</b>	520	133	133	6	5	1 890	3 750	193 000	380 000	500	660
	580	190	190	6	5	3 350	6 500	345 000	660 000	460	620
<b>360</b>	540	134	134	6	5	2 050	4 200	209 000	430 000	460	620
	600	192	192	6	5	3 200	6 500	325 000	660 000	430	580
<b>380</b>	560	135	135	6	5	2 080	4 350	213 000	445 000	440	580
	620	194	194	6	5	3 350	6 700	340 000	685 000	410	540
<b>400</b>	600	148	148	6	5	2 530	5 450	258 000	555 000	410	550
	650	200	200	6	6	3 750	7 850	385 000	800 000	380	510
<b>420</b>	620	150	150	6	5	2 650	5 900	270 000	600 000	390	520
	700	224	224	6	6	4 800	9 700	490 000	990 000	360	480
<b>440</b>	650	157	157	6	6	2 600	5 450	266 000	560 000	370	490
	720	226	226	6	6	5 000	10 300	510 000	1 050 000	340	460
<b>460</b>	680	163	163	6	6	3 050	6 600	310 000	670 000	350	470
	760	240	240	7.5	7.5	4 900	10 300	500 000	1 050 000	320	430
<b>480</b>	700	165	165	6	6	3 050	6 700	310 000	685 000	330	450
	790	248	248	7.5	7.5	5 300	11 100	540 000	1 130 000	310	410
<b>500</b>	720	167	167	6	6	3 050	6 900	315 000	700 000	320	420
	830	264	264	7.5	7.5	6 400	14 000	650 000	1 420 000	290	390

1) Minimum allowable dimension for chamfer dimension r or r<sub>1</sub>.



### Equivalent radial 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	Y <sub>1</sub>	0.67	Y <sub>2</sub>

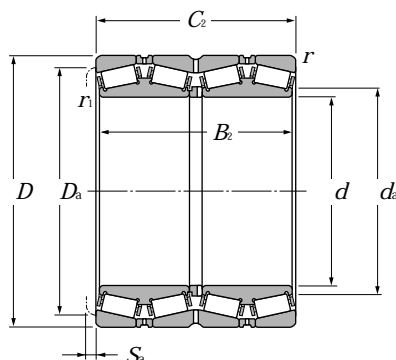
### static

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

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

Bearing numbers	Abutment and fillet dimensions						Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> max	<i>D<sub>a</sub></i> max	mm		<i>r<sub>as</sub></i> max	<i>r<sub>as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>0</sub></i>	
		min	<i>S<sub>a</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>as</sub></i> max							
<b>323156</b>	315	438	400	16	5	4	16	0.40	1.68	2.50	1.64	95.8
<b>323060</b>	330	442	425	16	4	3	31	0.37	1.80	2.69	1.76	70.7
<b>323160</b>	335	478	440	16	5	4	18	0.40	1.68	2.50	1.64	126
<b>323064</b>	350	462	440	16	4	3	34	0.37	1.80	2.69	1.76	76.3
<b>323164</b>	355	518	480	18	5	4	18.5	0.40	1.68	2.50	1.64	164
<b>323068</b>	370	498	480	18	5	4	36	0.37	1.80	2.69	1.76	101
<b>323168</b>	380	558	515	18	5	4	35.5	0.40	1.68	2.50	1.64	207
<b>323072</b>	395	518	495	18	5	4	41	0.37	1.80	2.69	1.76	107
<b>323172</b>	400	578	535	18	5	4	25.5	0.40	1.68	2.50	1.64	218
<b>323076</b>	415	538	515	18	5	4	44.5	0.37	1.80	2.69	1.76	113
<b>323176</b>	420	598	550	20	5	4	29	0.40	1.68	2.50	1.64	229
<b>323080</b>	440	578	550	18	5	4	45	0.37	1.80	2.69	1.76	146
<b>323180</b>	445	622	580	20	5	5	32.5	0.40	1.68	2.50	1.64	259
<b>323084</b>	460	598	570	20	5	4	48.5	0.37	1.80	2.69	1.76	154
<b>323184</b>	465	672	625	25	5	5	60	0.40	1.68	2.50	1.64	346
<b>323088</b>	480	622	600	20	5	5	53.5	0.37	1.80	2.69	1.76	177
<b>323188</b>	485	692	645	25	5	5	44	0.40	1.68	2.50	1.64	361
<b>323092</b>	500	652	620	25	5	5	56.5	0.37	1.80	2.69	1.76	201
<b>323192</b>	510	724	680	25	6	6	34.5	0.40	1.68	2.50	1.64	433
<b>323096</b>	520	672	640	25	5	5	63	0.37	1.80	2.69	1.76	211
<b>323196</b>	530	754	705	30	6	6	36	0.40	1.68	2.50	1.64	481
<b>3230/500</b>	540	692	655	25	5	5	61.5	0.37	1.80	2.69	1.76	221
<b>5E-3231/500G2</b>	550	794	740	30	6	6	37.5	0.40	1.68	2.50	1.64	570

# Four Row Tapered Roller Bearings



**d** 120 ~ 187.325 mm

d	Boundary dimensions				dynamic kN	Basic load ratings			
	mm					static	dynamic	static	
	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s</sub> min <sup>1)</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
<b>120</b>	170	124	124	2.5	2	390	1 020	40 000	104 000
	210	174	174	2.5	2.5	855	1 710	87 500	174 000
<b>120.650</b>	174.625	141.288	139.703	0.8	1.5	510	1 220	52 000	124 000
<b>127</b>	182.562	158.750	158.750	1.5	3.3	660	1 730	67 000	177 000
<b>130</b>	184	134	134	2.5	2	480	1 190	49 000	122 000
<b>135</b>	180	160	160	1	2	500	1 360	51 000	138 000
<b>136.525</b>	190.500	161.925	161.925	1.5	3.3	695	1 900	71 000	193 000
<b>139.700</b>	200.025	157.165	160.340	0.8	3.3	700	1 950	71 500	199 000
<b>140</b>	198	144	144	2.5	2	575	1 460	58 500	149 000
<b>146.050</b>	244.475	192.088	187.325	1.5	3.3	955	1 980	97 000	202 000
<b>150</b>	212	155	155	3	2.5	660	1 700	67 500	173 000
<b>152.400</b>	222.250	174.625	174.625	1.5	1.5	930	2 350	94 500	239 000
<b>160</b>	226	165	165	3	2.5	775	2 030	79 000	207 000
	265	173	173	2.5	2.5	1 100	2 270	112 000	231 000
<b>165.100</b>	225.425	165.100	168.275	0.8	3.3	745	2 220	76 000	226 000
<b>170</b>	240	175	175	3	2.5	835	2 200	85 500	224 000
	280	181	181	2.5	2.5	1 150	2 420	117 000	247 000
<b>177.800</b>	247.650	192.088	192.088	1.5	3.3	1 000	2 760	102 000	281 000
	279.400	234.950	234.947	1.5	3.3	1 420	3 400	145 000	345 000
	304.800	238.227	233.365	3.3	3.3	1 580	3 100	161 000	320 000
<b>180</b>	254	185	185	3	2.5	910	2 390	93 000	244 000
	300	280	280	3	3	2 160	4 800	220 000	490 000
<b>187.325</b>	269.875	211.138	211.138	1.5	3.3	1 240	3 400	127 000	345 000

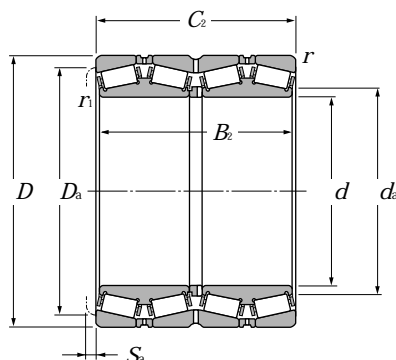
1) Minimum allowable dimension for chamfer dimension r or r<sub>s</sub>.

Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
E-625924	135	155.5	5	8.97
E-CRO-2418	140	190	4.5	22.2
* E-M224749D/M224710/M224710D	129	163	3	11.5
* T-E-48290D/48220/48220D	137	168	4.5	14.3
E-625926	144.5	169	5	11.3
E-CRO-2701	143	165	2	13.5
* T-E-48393D/48320/48320D	144	177	4	14.8
* T-E-48680D/48620/48620D	150	185	3	17.3
E-625928	156	183	5	14
* E-81576D/81962/81963D	163	225	6.5	36.8
E-625930	167.5	195	5.5	16.9
* T-E-M231649D/M231610/M231610D	165	207	4	24.7
E-625932	177.5	208.5	5.5	20.2
E-CRO-3209	184	247	4.5	33.6
* T-E-46791D/46720/46721D	175	209	3	20.7
E-625934	187.5	220	5.5	24.4
E-CRO-3409	192	255	5	44
* E-67791D/67720/67721D	190	229	5	29.4
* E-82681D/82620/82620D	195	251	5	55.3
* E-EE280700D/281200/281201D	198	279	7	69.9
E-625936	200.5	233.5	5.5	28.9
E-CRO-3617	201	274	5	69.4
* E-M238849D/M238810/M238810D	199.9	250	4	41.8

Note: 1. Bearing numbers marked " \* " designate inch series bearings.



# Four Row Tapered Roller Bearings



**d** 190 ~ 260 mm

d	Boundary dimensions				dynamic		Basic load ratings			
	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s</sub> min <sup>1)</sup>	r <sub>s</sub> min <sup>1)</sup>	C <sub>r</sub>	static	dynamic	static	
	mm				kN			kgf		
<b>190</b>	268	196	196	3	2.5	1 060	2 850	108 000	291 000	
	270	190	190	2.5	2.5	1 080	2 940	111 000	300 000	
	292.100	225.425	225.425	1.5	3.3	1 570	4 150	160 000	425 000	
<b>190.500</b>	266.700	187.325	188.912	1.5	3.3	1 040	2 990	106 000	305 000	
<b>200</b>	282	206	206	3	2.5	1 200	3 300	122 000	335 000	
	290	160	160	2.5	2.5	925	2 210	94 500	226 000	
	310	200	200	3	3	1 360	2 980	138 000	305 000	
<b>203.200</b>	317.500	215.900	209.550	3.3	3.3	1 270	2 820	129 000	288 000	
<b>215.900</b>	288.925	177.800	177.800	0.8	3.3	1 090	3 100	111 000	315 000	
<b>220</b>	310	226	226	4	3	1 380	3 800	141 000	385 000	
<b>220.662</b>	314.325	239.712	239.712	1.5	3.3	1 840	4 900	187 000	500 000	
<b>228.600</b>	425.450	349.250	361.950	3.5	6.4	3 450	8 250	355 000	845 000	
<b>234.950</b>	327.025	196.850	196.850	1.5	3.3	1 370	3 700	140 000	380 000	
<b>240</b>	338	248	248	4	3	1 870	4 950	191 000	505 000	
<b>241.478</b>	350.838	228.600	228.600	1.5	3.3	1 770	4 550	180 000	465 000	
<b>244.475</b>	327.025	193.675	193.675	1.5	3.3	1 430	4 100	146 000	415 000	
	381.000	304.800	304.800	3.3	4.8	2 220	5 750	227 000	590 000	
<b>250</b>	365	270	270	1.5	3	2 150	6 150	219 000	630 000	
	370	220	220	4	4	2 050	5 750	209 000	590 000	
<b>254</b>	358.775	269.875	269.875	3.3	3.3	2 390	6 550	244 000	670 000	
	368.300	204.622	204.470	1.5	3.3	1 350	3 250	138 000	330 000	
	444.500	279.400	279.400	3.3	6.4	2 890	5 900	294 000	600 000	
<b>260</b>	368	268	268	5	4	1 990	5 700	203 000	580 000	
	400	255	255	4	7.5	2 210	5 300	225 000	540 000	

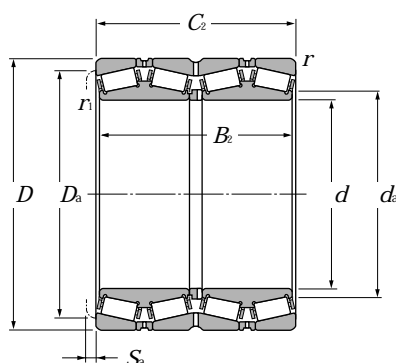
1) Minimum allowable dimension for chamfer dimension r or r<sub>s</sub>.

Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
E-625938	209	245.5	6	34.7
E-CRO-3812	205	250	6	34.7
* E-M241538D/M241510/M241510D	222	271	5	59.6
* T-E-67885D/67820/67820D	204	246	3	33.6
E-625940	219.5	258	6	40.5
E-CRO-4013	221	271	5	35.1
E-CRO-4014	222	284	6	48.4
* E-EE132082D/132125/132126D	224	294	9.5	62.5
* E-LM742749D/LM742714/LM742714D	227	267	5	34.3
E-625944	242	284.5	6	53.5
* T-E-M244249D/M244210/M244210D	235	293	4	60.2
* E-EE700090D/700167/700168D	263	381	3	232
* T-E-8576D/8520/8520D	250	305	5	53.6
E-625948A	260.5	312	6	70
* E-EE127097D/127137/127137D	262	325	6.5	76.4
* E-LM247748D/LM247710/LM247710DA	257	310	5	46.1
* E-EE126096D/126150/126151D	262	343	6.5	132
E-CRO-5004	275	339	5	82.1
E-CRO-5001	276	344	6	87
* T-E-M249748D/M249710/M249710D	272.5	335	5	85.6
* E-EE171000D/171450/171451D	269	340	6	71.8
* E-EE822101D/822175/822176D	289	406	8	185
E-625952	287	338.5	6	90.3
E-CRO-5215	290	359	8	106

Note: 1. Bearing numbers marked " \* " designate inch series bearings.



# Four Row Tapered Roller Bearings



**d** 260.350 ~ 304.800mm

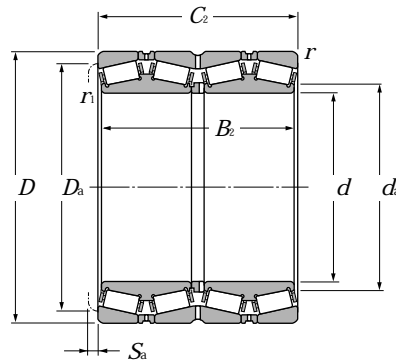
d	Boundary dimensions						Basic load ratings			
	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s</sub> min <sup>1)</sup>	r <sub>s</sub> min <sup>1)</sup>	dynamic kN	static	dynamic kgf	static	
260.350	365.125	228.600	228.600	3.3	6.4	1 750	4 550	178 000	465 000	
	400.050	255.588	253.995	1.5	6.4	2 090	4 950	213 000	505 000	
	422.275	314.325	317.500	6.4	3.3	2 980	7 100	305 000	725 000	
266.700	355.600	230.188	228.600	1.5	3.3	1 840	5 350	188 000	545 000	
	393.700	269.878	269.878	3.3	6.4	2 110	6 000	216 000	610 000	
269.875	381.000	282.575	282.575	3.3	3.3	2 470	6 850	252 000	700 000	
270	410	222	222	4	4	1 910	4 550	195 000	465 000	
275	385	200	200	3	3	1 610	4 250	165 000	435 000	
276.225	406.400	268.290	260.355	1.5	6.4	2 110	6 000	216 000	610 000	
279.400	469.900	346.075	349.250	6.4	3.3	3 500	8 700	355 000	885 000	
279.578	380.898	244.475	244.475	1.5	3.3	1 950	6 200	199 000	635 000	
280	395	288	288	5	4	2 560	7 100	261 000	725 000	
285.750	380.898	244.475	244.475	1.5	3.3	1 950	6 200	199 000	635 000	
288.925	406.400	298.450	298.450	3.3	3.3	2 980	8 300	305 000	850 000	
292.100	476.250	296.047	292.100	1.5	3.3	3 050	6 800	310 000	695 000	
300	424	310	310	5	4	2 570	7 450	262 000	760 000	
	460	360	360	4	4	4 050	10 100	415 000	1 030 000	
	470	270	270	4	4	3 200	7 250	325 000	740 000	
	470	292	292	4	4	3 500	8 300	360 000	845 000	
300.038	422.275	311.150	311.150	3.3	3.3	3 350	9 600	340 000	980 000	
304.648	438.048	279.400	279.400	3.3	3.3	2 470	6 500	252 000	665 000	
	438.048	280.990	279.400	3.3	4.8	2 630	6 900	268 000	700 000	
304.800	419.100	269.875	269.875	1.5	6.4	2 390	6 850	244 000	695 000	
	444.500	247.650	241.300	8	1.5	1 850	4 600	188 000	470 000	

1) Minimum allowable dimension for chamfer dimension r or r<sub>s</sub>.

Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
* E-EE134102D/134143/134144D	282	340	6.5	76.5
* E-EE221027D/221575/221576D	292	367	8	117
* E-HM252349D/HM252310/HM252310D	290	392	5.5	180
* T-E-LM451349D/LM451310/LM451310D	281	335	6.5	62
* E-EE275106D/275155/275156D	292	367	5	116
* E-M252349D/M252310/M252310D	290	356	6	97.5
E-CRO-5403	305	382	6	91
E-CRO-5501	300	355	6	62.5
* E-EE275109D/275160/275161D	293.6	366	8	122
* E-EE722111D/722185/722186D	316	432	5	258
* T-E-LM654644D/LM654610/LM654610D	297	356	5	83.2
E-625956	304.5	363.5	7	111
* T-E-LM654648D/LM654610/LM654610D	302	356	5	77.9
* E-M255449D/M255410/M255410D	310	379	5	125
* E-EE921150D/921875/921876D	321	441	7	208
E-625960	329	389.5	7	138
E-CRO-6015	330	427	10	180
E-CRO-6012	338	438	7	152
E-CRO-6013	336	437	7	164
* T-E-HM256849D/HM256810/HM256810DG2	322	394	6	143
* E-EE329119D/329172/329173D	328	409	8	143
* E-M757448D/M757410/M757410D	328	407	7	140
* E-M257149D/M257110/M257110D	322	392	5	115
* E-EE291202D/291750/291751D	328	416	9.5	127

Note: 1. Bearing numbers marked " \* " designate inch series bearings.  
 2. Bearing numbers marked " " designate bearing with hollow rollers and pin type cages.

# Four Row Tapered Roller Bearings



**d** 304.800 ~ 360 mm

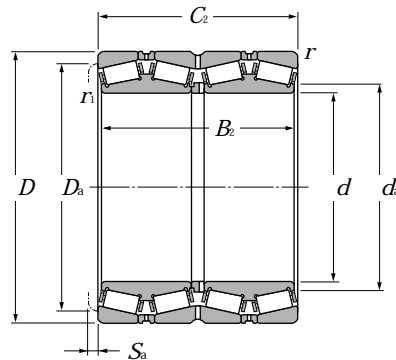
d	Boundary dimensions				dynamic		Basic load ratings		
	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> <sup>1)</sup>	r <sub>s min</sub> <sup>1)</sup>	kN	static	dynamic	static
	mm							kgf	
						C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>304.800</b>	495.300	342.900	349.250	3.3	6.4	3 650	9 400	370 000	960 000
<b>304.902</b>	412.648	266.700	266.700	3.3	3.3	2 610	7 450	267 000	760 000
<b>305.003</b>	438.048	280.990	279.400	3.3	4.8	2 630	6 900	268 000	700 000
<b>317.500</b>	422.275	269.875	269.875	1.5	3.3	2 260	7 050	231 000	715 000
	447.675	327.025	327.025	3.3	3.3	3 400	9 550	345 000	975 000
<b>320</b>	460	338	338	5	4	2 940	8 650	300 000	880 000
<b>330</b>	470	340	340	2.5	2.5	3 150	10 200	320 000	1 040 000
	510	340	340	6	6	3 900	9 650	395 000	985 000
<b>330.200</b>	482.600	306.388	311.150	1.5	3.3	2 810	7 900	287 000	805 000
<b>333.375</b>	469.900	342.900	342.900	3.3	3.3	4 000	11 000	405 000	1 130 000
<b>340</b>	480	350	350	6	5	3 450	10 400	350 000	1 060 000
<b>341.312</b>	457.098	254.000	254.000	1.5	3.3	2 370	6 900	241 000	705 000
<b>342.900</b>	533.400	307.985	301.625	3.3	3.3	3 150	6 900	320 000	705 000
<b>343.052</b>	457.098	254.000	254.000	1.5	3.3	2 370	6 900	241 000	705 000
<b>346.075</b>	488.950	358.775	358.775	3.3	3.3	4 350	12 800	445 000	1 300 000
<b>347.662</b>	469.900	292.100	292.100	3.3	3.3	3 200	9 100	325 000	925 000
<b>355</b>	490	316	316	1.5	3.3	3 500	10 000	355 000	1 020 000
<b>355.600</b>	444.500	241.300	241.300	1.5	3.3	1 760	6 200	180 000	635 000
	457.200	252.412	252.412	1.5	3.3	2 470	7 850	251 000	800 000
	482.600	265.112	269.875	1.5	3.3	2 790	7 650	285 000	780 000
	488.950	317.500	317.500	1.5	3.3	3 500	10 000	355 000	1 020 000
<b>360</b>	508	370	370	6	5	3 700	11 200	380 000	1 140 000
	600	540	540	5	5	6 700	18 100	685 000	1 840 000

1) Minimum allowable dimension for chamfer dimension r or r<sub>s</sub>.

Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
* E-EE724121D/724195/724196D	330	450	3	273
* E-M257248D/M257210/M257210D	325	388	5	107
* E-M757449D/M757410/M757410D	328	407	7	139
* E-LM258649D/LM258610/LM258610D	333.3	398	7	110
* T-E-HM259049D/HM259010/HM259010D	339.6	418	5	161
E-625964	355	420.5	7	183
E-CRO-6604	366	440	5.5	141
E-CRO-6602	366	469	5	221
* E-EE526131D/526190/526191D	351	448	3	197
* E-HM261049D/HM261010/HM261010D	357	439	5	187
E-625968	373	440	7	200
* E-LM761648D/LM761610/LM761610D	359	432	5	125
* E-EE971355D/972100/972103D	378	502	11	252
* E-LM761649D/LM761610/LM761610D	361	432	5	117
* T-E-HM262749D/HM262710/HM262710DG2	371	456	6	227
* E-M262449D/M262410/M262410D	369	443	8	148
E-CRO-7105	378	450	7	170
* E-L163149D/L163110/L163110D	370	422	6.5	89.5
* E-LM263149D/LM263110/LM263110D	372	434	6	106
* E-LM763449D/LM763410/LM763410D	375	453	3	145
* E-M263349D/M263310/M263310D	374	459	5	173
E-625972	394	466.5	7	236
E-CRO-7210	400	550	8	520

Note: 1. Bearing numbers marked " \* " designate inch series bearings.  
 2. Bearing numbers marked " " designate bearing with hollow rollers and pin type cages.

# Four Row Tapered Roller Bearings



**d** 368.300 ~ 447.675 mm

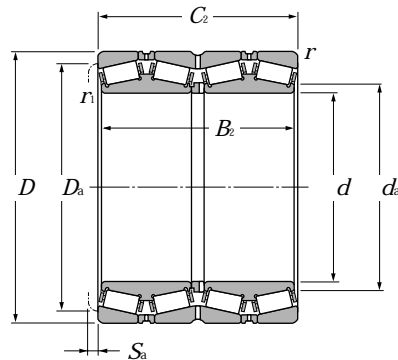
<i>d</i>	Boundary dimensions						Basic load ratings			
	<i>D</i>	<i>B</i> <sub>2</sub>	<i>C</i> <sub>2</sub>	<i>r</i> <sub>s min</sub> <sup>1)</sup>	<i>r</i> <sub>S min</sub> <sup>1)</sup>	dynamic kN	static	dynamic kgf	static	
<b>368.300</b>	523.875	382.588	382.588	3.3	6.4	4 450	13 100	455 000	1 330 000	
<b>374.650</b>	501.650	250.825	260.350	1.5	3.3	2 360	6 250	241 000	640 000	
<b>380</b>	536	390	390	6	5	4 900	14 100	500 000	1 440 000	
	560	285	285	5	5	3 250	7 700	330 000	785 000	
<b>384.175</b>	546.100	400.050	400.050	3.3	6.4	5 400	16 100	560 000	1 640 000	
<b>385.762</b>	514.350	317.500	317.500	3.3	3.3	3 650	11 100	370 000	1 130 000	
<b>393.700</b>	546.100	288.925	288.925	1.5	6.4	3 200	10 200	325 000	1 040 000	
<b>395</b>	545	268.7	288.7	4	7.5	2 970	8 650	305 000	880 000	
<b>400</b>	560	380	380	5	5	4 800	14 100	490 000	1 440 000	
	564	412	412	6	5	4 850	14 700	495 000	1 500 000	
<b>406.400</b>	546.100	288.925	288.925	1.5	6.4	3 200	10 200	325 000	1 040 000	
	590.550	400.050	400.050	3.3	6.4	4 850	13 600	490 000	1 380 000	
	609.600	309.562	317.500	3.5	6.4	3 700	9 600	380 000	980 000	
<b>409.575</b>	546.100	334.962	334.962	1.5	6.4	4 100	12 700	415 000	1 290 000	
<b>415.925</b>	590.550	434.975	434.975	3.3	6.4	6 300	18 900	640 000	1 930 000	
<b>420</b>	592	432	432	6	5	5 350	16 300	545 000	1 660 000	
	650	460	460	5	5	6 950	18 300	710 000	1 870 000	
<b>431.800</b>	571.500	279.400	279.400	1.5	3.3	3 100	9 300	315 000	950 000	
	571.500	336.550	336.550	1.5	6.4	3 700	11 800	380 000	1 200 000	
<b>432.003</b>	609.524	317.500	317.500	3.5	6.4	4 350	11 500	445 000	1 170 000	
<b>440</b>	620	454	454	6	6	6 500	19 900	665 000	2 030 000	
	650	355	355	4	7.5	5 350	13 400	545 000	1 370 000	
	650	460	460	6	6	6 750	20 700	690 000	2 110 000	
<b>447.675</b>	635.000	463.550	463.550	3.3	6.4	7 100	22 100	725 000	2 260 000	

1) Minimum allowable dimension for chamfer dimension *r* or *r*<sub>s</sub>.

Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
* E-HM265049D/HM265010/HM265010DG2	393.7	487	6	280
* E-LM765149D/LM765110/LM765110D	393	472	2	145
E-625976	410	495	8	277
E-CRO-7612	417	525	7	208
* T-E-HM266449D/HM266410/HM266410DG2	411	507	6.5	312
* E-LM665949D/LM665910/LM665910D	409	482	7	240
* E-LM767745D/LM767710/LM767710D	418	510	6.5	219
E-CRO-7901	434	508	3	200
E-CRO-8005	426	510	8	300
E-625980	434	518.5	7	324
* E-LM767749D/LM767710/LM767710D	427	510	6.5	201
* E-EE833161D/833232/833233D	448	549	6.5	395
* E-EE911603D/912400/912401D	441	568	1.5	332
* E-M667947D/M667911/M667911DG2	431	510	5.5	226
* T-E-M268749D/M268710/M268710DG2	444	549	9	396
E-625984	457	545	7	374
E-CRO-8402	455	593	8	600
* E-LM869449D/LM869410/LM869410D	453	537	8	198
* E-LM769349D/LM769310/LM769310D	453	534	6.5	232
* E-EE736173D/736238/736239D	464	572	6.5	297
E-625988	479	572.5	8	430
E-CRO-8807	484	607	9	400
E-CRO-8806	483	595	11	600
* E-M270749D/M270710/M270710DAG2	478	591	8	509

Note: 1. Bearing numbers marked " \* " designate inch series bearings.  
 2. Bearing numbers marked " " designate bearing with hollow rollers and pin type cages.

# Four Row Tapered Roller Bearings



**d** 457.200 ~ 571.500mm

<i>d</i>	Boundary dimensions						Basic load ratings			
	<i>D</i>	<i>B</i> <sub>2</sub>	<i>C</i> <sub>2</sub>	<i>r</i> <sub>s min</sub> <sup>1)</sup>	<i>r</i> <sub>S min</sub> <sup>1)</sup>	dynamic kN	static	dynamic kgf	static	
<b>457.200</b>	596.900	276.225	279.400	1.5	3.3	3 350	10 300	360 000	1 060 000	
	660.400	323.850	323.847	3.3	6.4	4 150	11 200	425 000	1 140 000	
<b>460</b>	650	474	474	6	6	6 500	19 900	665 000	2 030 000	
<b>475</b>	660	450	450	3	5	6 300	20 400	645 000	2 080 000	
<b>480</b>	678	494	494	6	6	6 250	19 600	640 000	2 000 000	
	700	390	390	6	6	4 700	13 400	480 000	1 370 000	
<b>482.600</b>	615.950	330.200	330.200	3.3	6.4	4 000	13 400	405 000	1 370 000	
<b>488.950</b>	660.400	365.125	361.950	8	6.4	5 350	16 100	550 000	1 640 000	
<b>489.026</b>	634.873	320.675	320.675	3.3	3.3	3 650	12 000	370 000	1 220 000	
<b>500</b>	670	515	515	1.5	5	6 900	24 600	700 000	2 510 000	
	690	480	480	5	5	6 000	19 900	610 000	2 020 000	
	705	515	515	6	6	8 450	27 100	860 000	2 760 000	
	730	440	440	6	6	7 200	20 600	735 000	2 100 000	
<b>501.650</b>	711.200	520.700	520.700	3.3	6.4	8 650	27 300	885 000	2 790 000	
<b>514.350</b>	673.100	422.275	422.275	3.3	6.4	5 950	20 500	605 000	2 090 000	
<b>519.112</b>	736.600	536.575	536.575	3.3	6.4	9 100	28 700	925 000	2 930 000	
<b>520</b>	735	535	535	7	5	9 100	28 700	925 000	2 930 000	
<b>536.575</b>	761.873	558.800	558.800	3.3	6.4	10 100	30 500	1 030 000	3 100 000	
<b>558.800</b>	736.600	322.265	322.268	3.3	6.4	4 300	13 500	435 000	1 380 000	
	736.600	409.575	409.575	3.3	6.4	6 100	20 500	625 000	2 090 000	
<b>570</b>	780	515	515	6	6	9 200	31 000	935 000	3 150 000	
	810	590	590	6	6	11 000	35 500	1 120 000	3 600 000	
<b>571.500</b>	812.800	593.725	593.725	3.3	6.4	11 900	36 500	1 220 000	3 750 000	

1) Minimum allowable dimension for chamfer dimension *r* or *r*<sub>s</sub>.

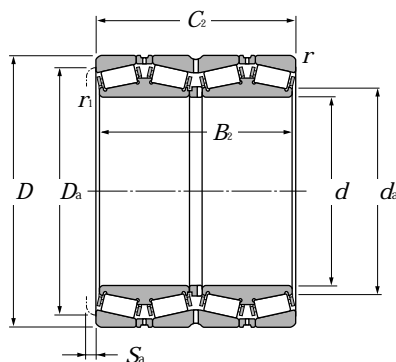
Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
* E-L770849D/L770810/L770810DG2	478	567	5.5	209
* E-EE737179D/737260/737260D	495	616	6.5	379
E-625992A	499	598.5	7	493
E-CRO-9501	506	614	10	465
E-625996	525	623	7	563
E-CRO-9602	517	645	8	436
* E-LM272249D/LM272210/LM272210DG2	504	585	6.5	250
* T-E-EE640193D/640260/640261DG2	519	624	9	364
* E-LM772749D/LM772710/LM772710D	513	600	6.5	268
E-CRO-10008	520	616	8	598
E-CRO-10005	530	640	7	600
E-6259/500	553	649.5	7.5	632
E-CRO-10003	550	683	11	535
* E-M274149D/M274110/M274110DG2	534	663	9.5	726
* E-LM274449D/LM274410/LM274410D	540	648	8	390
* E-M275349D/M275310/M275310DG2	552	684	9.5	761
E-CRO-10402	558	688	11	750
* E-M276449D/M276410/M276410DG2	564	711	9.5	890
* E-EE843221D/843290/843291D	585	699	8.5	388
* E-LM377449D/LM377410/LM377410DG2	588	696	8	502
E-CRO-11402	609	733	7.5	625
E-CRO-11403	620	760	10	845
* E-M278749D/M278710/M278710DAG2	609	756	11	1 080

Note: 1. Bearing numbers marked " \* " designate inch series bearings.  
 2. Bearing numbers marked " " designate bearing with hollow rollers and pin type cages.





# Four Row Tapered Roller Bearings



**d** 584.200 ~ 840 mm

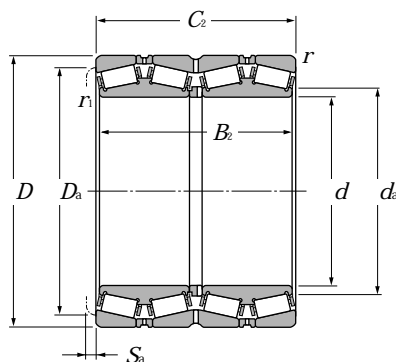
d	Boundary dimensions				dynamic		Basic load ratings		
	D	Bz	C2	$r_{1s} \text{ min}^{-1}$	$r_{3s} \text{ min}^{-1}$	kN	static	dynamic	static
	mm							kgf	kgf
						$C_r$	$C_{or}$	$C_r$	$C_{or}$
<b>584.200</b>	762.000	396.875	401.638	3.3	6.4	6 550	22 300	670 000	2 280 000
<b>585.788</b>	771.525	479.425	479.425	3.3	6.4	7 350	25 700	750 000	2 620 000
<b>595.312</b>	844.550	615.950	615.950	3.3	6.4	12 600	40 500	1 290 000	4 100 000
<b>609.600</b>	787.400	361.950	361.950	3.3	6.4	6 450	20 300	655 000	2 070 000
<b>657.225</b>	933.450	676.275	676.275	3.3	6.4	15 300	48 000	1 560 000	4 900 000
<b>660</b>	1 070	642	642	7.5	7.5	15 400	43 500	1 570 000	4 450 000
<b>660.400</b>	812.800	365.125	365.125	3.3	6.4	6 200	23 200	630 000	2 360 000
<b>679.450</b>	901.700	552.450	552.450	3.3	6.4	11 200	38 000	1 140 000	3 900 000
<b>680</b>	870	460	460	3	6	7 500	27 400	765 000	2 790 000
<b>682.625</b>	965.200	701.675	701.675	3.3	6.4	16 100	50 500	1 640 000	5 150 000
<b>685.800</b>	876.300	352.425	355.600	3.3	6.4	6 050	21 800	615 000	2 220 000
<b>710</b>	900	410	410	2.5	5	7 650	26 900	780 000	2 740 000
<b>711.200</b>	914.400	317.500	317.500	3.3	6.4	5 350	17 900	545 000	1 820 000
<b>730</b>	1 070	642	642	7.5	7.5	15 400	46 500	1 570 000	4 750 000
<b>730.250</b>	1 035.050	755.650	755.650	3.3	6.4	18 100	59 500	1 850 000	6 050 000
<b>749.300</b>	990.600	605.000	605.000	3.3	6.4	12 600	45 500	1 290 000	4 650 000
<b>762.000</b>	1 079.500	787.400	787.400	4.8	12.7	19 200	65 000	1 960 000	6 600 000
<b>800</b>	1 120	820	820	7	7.5	21 000	72 500	2 140 000	7 400 000
<b>825.500</b>	1 168.400	844.550	844.550	4.8	12.7	22 300	76 500	2 270 000	7 800 000
<b>840</b>	1 170	840	840	6	6	21 900	76 500	2 230 000	7 800 000

1) Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Bearing numbers	Abutment and fillet dimensions			Mass kg (approx.)
	mm			
	$d_a$	$D_a$	$S_a$	
* E-LM778549D/LM778510/LM778510DG2	615	717	7	511
* E-LM278849D/LM278810/LM278810D	615	726	10	750
* E-M280049D/M280010/M280010DG2	633	786	11	1 160
* E-EE649241D/649310/649311DG2	636	747	9.5	458
* E-M281649D/M281610/M281610DG2	699	870	11	1 630
E-CRO-13202	760	991	9	1 950
* E-L281149D/L281110/L281110DG2	682.8	777	9	448
* E-LM281849D/LM281810/LM281810DG2	714	852	11	1 040
E-CRO-13602	713	824	8	582
* E-M282249D/M282210/M282210DG2	723	900	13	1 770
* E-EE655271D/655345/655346DG2	717	831	8	539
E-CRO-14208	745	850	10	620
* E-EE755281D/755360/755361DG2	744	873	9.5	527
E-CRO-14601	780	1 020	7	1 900
* E-M283449D/M283410/M283410DG2	774	966	13	2 210
* E-LM283649D/LM283610/LM283610DG2	786	936	10.5	1 310
* E-M284249D/M284210/M284210DG2	810	1 005	13	2 480
E-CRO-16001	858	1 052	10	3 960
* E-M285848D/M285810/M285810DG2	879	1 085	13	3 010
E-CRO-16803	897	1 099	12	3 970

Note: 1. Bearing numbers marked " \* " designate inch series bearings.  
 2. Bearing numbers marked " " designate bearing with hollow rollers and pin type cages.





**d** 863.600 ~ 1 200.150mm

<i>d</i>	Boundary dimensions				Basic load ratings					
	<i>D</i>	<i>B<sub>2</sub></i>	<i>C<sub>2</sub></i>	mm		dynamic	static	dynamic	static	
				<i>r</i> <sub>s min<sup>1)</sup></sub>	<i>r</i> <sub>S min<sup>1)</sup></sub>	kN		kgf		
<b>863.600</b>	1 130.300	669.925	669.925	4.8	12.7	15 800	59 500	1 610 000	6 050 000	
	1 219.200	876.300	889.000	4.8	12.7	24 100	83 000	2 450 000	8 450 000	
<b>938.212</b>	1 270.000	825.500	825.500	4.8	12.7	22 500	80 000	2 300 000	8 150 000	
<b>950</b>	1 360	880	880	4	7.5	27 000	89 000	2 750 000	9 050 000	
<b>1 200.150</b>	1 593.850	990.600	990.600	4.8	12.7	33 500	132 000	3 400 000	13 500 000	

1 ) Minimum allowable dimension for chamfer dimension *r* or *r<sub>s</sub>*.

Bearing numbers	Abutment and fillet dimensions			Mass
	mm			kg
	$d_a$	$D_a$	$S_a$	(approx.)
* E-LM286249D/LM286210/LM286210DG2	906	1 065	11	1 950
* E-EE547341D/547480/547481DG2	918	1 135	6.5	3 640
* E-LM287649D/LM287610/LM287610DG2	990	1 190	10	4 100
E-CRO-19001	1 030	1 278	12	4 100
* E-LM288949D/LM288910/LM288910DG2	1 260	1 500	13	6 130

Note: 1. Bearing numbers marked " \* " designate inch series bearings.  
 2. Bearing numbers marked " " designate bearing with hollow rollers and pin type cages.

