WBW BEARINGS

TAPER ROLLER BEARING

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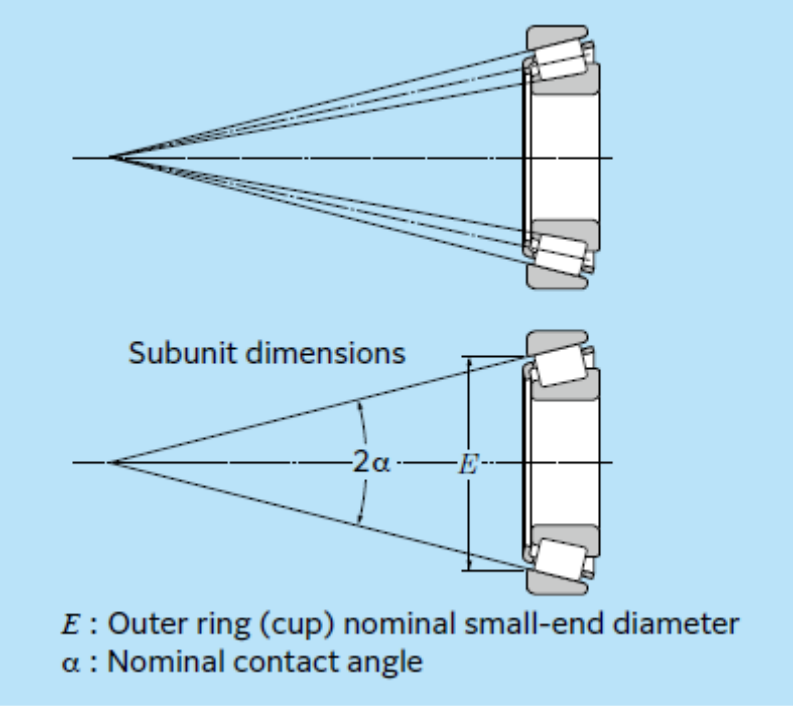
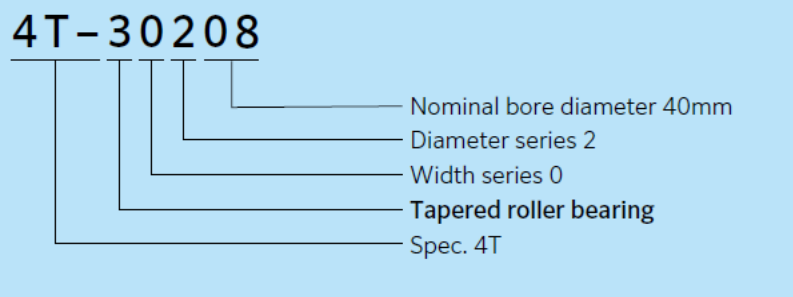
Tapered roller bearings are designed so the inner/outer ring raceway and apex of the tapered rollers intersect at one point on the bearing centerline. By receiving a combined load from the inner and outer ring, the rollers are pushed against the inner ring rib and are guided by the rib. Induced force is produced in the axial direction when a radial load is applied, so it must be handled with a pair of bearings. The inner ring with rollers and outer ring come apart, thus facilitating mounting with clearance or preload. Assembled clearance is however hard to manage and requires special attention. Tapered roller bearings are capable of supporting large loads in both the axial and radial directions.



How to understand the code of metric size taper roller bearing:



Numbers of inch series tapered roller bearings
The composition of numbers of inch series tapered roller bearings is specified by the American Bearing manufacturers Association (ABMA). The inner ring component (CONE) and the outer ring (CUP) each have a

corresponding number. Table below shows the composition of these numbers. Each corresponding code is also described in more detail below.

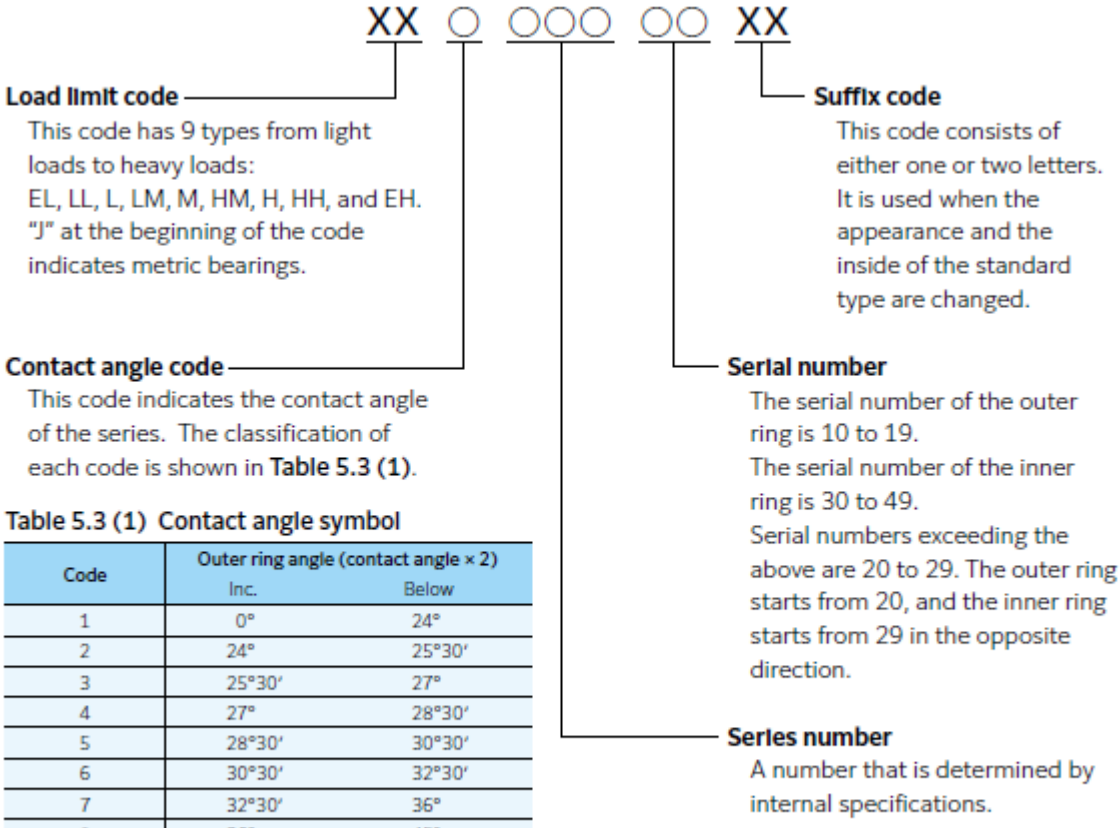


Table 5.3 (1) Contact angle symbol

Code	Outer ring angle (contact angle × 2)	
	Inc.	Below
1	0°	24°
2	24°	25°30′
3	25°30′	27°
4	27°	28°30′
5	28°30′	30°30′
6	30°30′	32°30′
7	32°30′	36°
8	36°	45°
9	45°(Excluding thrust bearings)	

Different types of bearing structures:
WBW offers single row taper roller bearings, double row taper roller bearings and 4 row taper roller bearings.

Tolerance of different types of taper roller bearings:

Table 6.5 Tolerance of tapered roller bearings (metric series)

Table 6.5 (1) Inner rings

Nominal bore diameter d mm		Deviation of mean bore diameter in a single plane Δ_{dmp}						Variation of bore diameter in a single plane V_{dsp}				Variation of mean bore diameter V_{dmp}				Radial runout of inner ring of assembled bearing K_{ia}				Perpendicularity of inner ring face with respect to the bore S_d	
		Class 0		Class 6 [1]				Class 0				Class 0				Class 0					
		Class 6×		Class 5		Class 4 [2]		Class 6x	Class 6 [1]	Class 5	Class 4	Class 6x	Class 6 [1]	Class 5	Class 4	Class 6x	Class 6 [1]	Class 5	Class 4	Class 5	Class 4
Over	Incl.	Upper	Lower	Upper	Lower	Upper	Lower	Max.				Max.				Max.				Max.	
10	18	0	−12	0	−7	0	−5	12	7	5	4	9	5	5	4	15	7	5	3	7	3
18	30	0	−12	0	−8	0	−6	12	8	6	5	9	6	5	4	18	8	5	3	8	4
30	50	0	−12	0	−10	0	−8	12	10	8	6	9	8	5	5	20	10	6	4	8	4
50	80	0	−15	0	−12	0	−9	15	12	9	7	11	9	6	5	25	10	7	4	8	5
80	120	0	−20	0	−15	0	−10	20	15	11	8	15	11	8	5	30	13	8	5	9	5
120	180	0	−25	0	−18	0	−13	25	18	14	10	19	14	9	7	35	18	11	6	10	6
180	250	0	−30	0	−22	0	−15	30	22	17	11	23	16	11	8	50	20	13	8	11	7
250	315	0	−35	—	—	—	—	35	—	—	—	26	—	—	—	60	—	—	—	—	—
315	400	0	−40	—	—	—	—	40	—	—	—	30	—	—	—	70	—	—	—	—	—

1) Class 6 is the **NTN** standard class.
2) The dimensional difference Δ_{ds} of the measured bore diameter applied to Class 4 is the same as the tolerance of dimensional difference Δ_{dmp} of the mean bore diameter within a plane.

Table 6.5 (2) Outer rings

Nominal outside diameter D mm		Deviation of mean outside diameter in a single plane Δ_{Dmp}						Variation of outside diameter in a single plane V_{Dsp}				Variation of mean outside diameter V_{Dmp}				Radial runout of outer ring of assembled bearing K_{ea}				Perpendicularity of outer ring outside surface with respect to the face S_D [3]	
		Class 0		Class 6 [1]				Class 0				Class 0				Class 0					
		Class 6×		Class 5		Class 4 [4]		Class 6x	Class 6 [1]	Class 5	Class 4	Class 6x	Class 6 [1]	Class 5	Class 4	Class 6x	Class 6 [1]	Class 5	Class 4	Class 5	Class 4
Over	Incl.	Upper	Lower	Upper	Lower	Upper	Lower	Max.				Max.				Max.				Max.	
18	30	0	−12	0	−8	0	−6	12	8	6	5	9	6	5	4	18	9	6	4	8	4
30	50	0	−14	0	−9	0	−7	14	9	7	5	11	7	5	5	20	10	7	5	8	4
50	80	0	−16	0	−11	0	−9	16	11	8	7	12	8	6	5	25	13	8	5	8	4
80	120	0	−18	0	−13	0	−10	18	13	10	8	14	10	7	5	35	18	10	6	9	5
120	150	0	−20	0	−15	0	−11	20	15	11	8	15	11	8	6	40	20	11	7	10	5
150	180	0	−25	0	−18	0	−13	25	18	14	10	19	14	9	7	45	23	13	8	10	5
180	250	0	−30	0	−20	0	−15	30	20	15	11	23	15	10	8	50	25	15	10	11	7
250	315	0	−35	0	−25	0	−18	35	25	19	14	26	19	13	9	60	30	18	11	13	8
315	400	0	−40	0	−28	0	−20	40	28	22	15	30	21	14	10	70	35	20	13	13	10
400	500	0	−45	—	—	—	—	45	—	—	—	34	—	—	—	80	—	—	—	—	—
500	630	0	−50	—	—	—	—	60	—	—	—	38	—	—	—	100	—	—	—	—	—

3) Does not apply to bearings with flange.
4) The dimensional difference Δ_{Ds} of the measured outer diameter applied to Class 4 is the same as the tolerance of dimensional difference Δ_{Dmp} of the mean outer diameter within a plane.

Unit: μm

Axial runout of inner ring of assembled bearing S_{ia}	Deviation of a single inner ring width Δ_{Bs}						Deviation of the actual assembled bearing width Δ_{Ts}					
	Class 0 Class 6		Class 6×		Class 5 Class 4		Class 0 Class 6		Class 6×		Class 5 Class 4	
Class 4 Max.	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
3	0	−120	0	−50	0	−200	+200	0	+100	0	+200	−200
4	0	−120	0	−50	0	−200	+200	0	+100	0	+200	−200
4	0	−120	0	−50	0	−240	+200	0	+100	0	+200	−200
4	0	−150	0	−50	0	−300	+200	0	+100	0	+200	−200
5	0	−200	0	−50	0	−400	+200	−200	+100	0	+200	−200
7	0	−250	0	−50	0	−500	+350	−250	+150	0	+350	−250
8	0	−300	0	−50	0	−600	+350	−250	+150	0	+350	−250
—	0	−350	0	−50	—	—	+350	−250	+200	0	—	—
—	0	−400	0	−50	—	—	+400	−400	+200	0	—	—

Unit: μm

Axial runout of outer ring of assembled bearing S_{ea}	Deviation of a single outer ring width Δ_{Cs}			
	Class 0, Class 6 [1] Class 5, Class 4		Class 6×[5]	
Class 4 Max.	Upper	Lower	Upper	Lower
5	Depends on tolerance of Δ_{Bs} in relation to d of the same bearing		0	−100
5			0	−100
5			0	−100
6			0	−100
7			0	−100
8			0	−100
10			0	−100
10			0	−100
13			0	−100
—			0	−100
—			0	−100

5) Applies to bearings with a nominal bore diameter d over 10 mm and 400 mm or less.

Table 6.5 (3) Effective width of inner subunits and outer rings

Unit: μm

Nominal bore diameter d mm		Deviation of the actual effective width of inner subunit assembled with a master outer ring Δ_{T1s}				Deviation of the actual effective width of outer ring assembled with a master inner subunit Δ_{T2s}			
		Class 0		Class 6×		Class 0		Class 6×	
Over	Incl.	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
10	18	+100	0	+50	0	+100	0	+50	0
18	30	+100	0	+50	0	+100	0	+50	0
30	50	+100	0	+50	0	+100	0	+50	0
50	80	+100	0	+50	0	+100	0	+50	0
80	120	+100	−100	+50	0	+100	−100	+50	0
120	180	+150	−150	+50	0	+200	−100	+100	0
180	250	+150	−150	+50	0	+200	−100	+100	0
250	315	+150	−150	+100	0	+200	−100	+100	0
315	400	+200	−200	+100	0	+200	−200	+100	0

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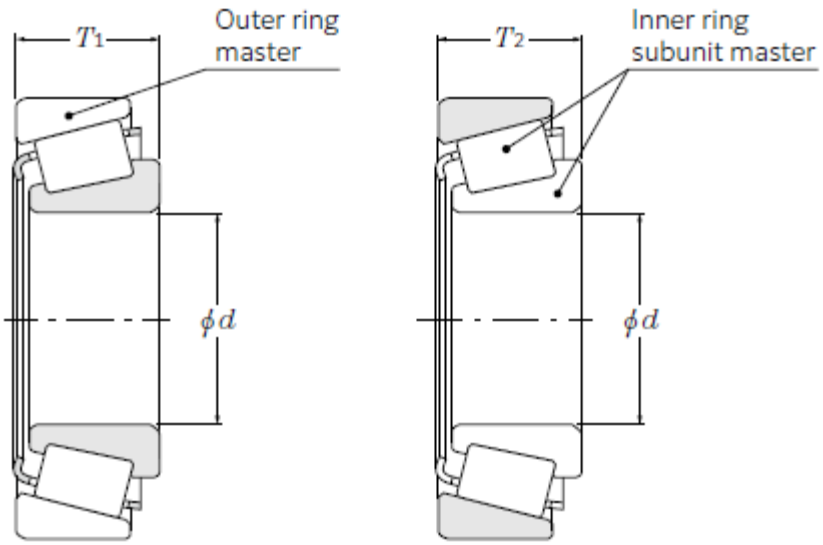

Table 6.6 Tolerance of tapered roller bearings (inch series)

Table 6.6 (1) Inner rings

Unit: μm

Nominal bore diameter d mm (inch)		Deviation of a single bore diameter Δ_{ds}									
		Class 4		Class 2		Class 3		Class 0		Class 00	
Over	Incl.	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
— —	76.2 (3)	+13	0	+13	0	+13	0	+13	0	+8	0
76.2 (3)	266.7 (10.5)	+25	0	+25	0	+13	0	+13	0	+8	0
266.7 (10.5)	304.8 (12)	+25	0	+25	0	+13	0	+13	0	—	—
304.8 (12)	609.6 (24)	+51	0	+51	0	+25	0	—	—	—	—
609.6 (24)	914.4 (36)	+76	0	—	—	+38	0	—	—	—	—
914.4 (36)	1 219.2 (48)	+102	0	—	—	+51	0	—	—	—	—
1 219.2 (48)	— —	+127	0	—	—	+76	0	—	—	—	—

Table 6.6 (2) Outer rings

Unit: μm

Nominal outside diameter D mm (inch)		Deviation of a single outside diameter Δ_{Ds}									
		Class 4		Class 2		Class 3		Class 0		Class 00	
Over	Incl.	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
— —	266.7 (10.5)	+25	0	+25	0	+13	0	+13	0	+8	0
266.7 (10.5)	304.8 (12)	+25	0	+25	0	+13	0	+13	0	—	—
304.8 (12)	609.6 (24)	+51	0	+51	0	+25	0	—	—	—	—
609.6 (24)	914.4 (36)	+76	0	+76	0	+38	0	—	—	—	—
914.4 (36)	1 219.2 (48)	+102	0	—	—	+51	0	—	—	—	—
1 219.2 (48)	— —	+127	0	—	—	+76	0	—	—	—	—

Table 6.6 (3) Assembly width of single-row bearings, combination width of 4-row bearings, effective width of inner ring subunits, effective width of outer rings

Nominal bore diameter d mm (inch)		Nominal outside diameter D mm (inch)		Deviation of the actual assembled single row bearing width Δ_{Ts}								Deviation of four-row bearing overall width Δ_{B2s}, Δ_{C2s}	
				Class 4		Class 2		Class 3		Class 0,00		Class 4,2,3,0	
Over	Incl.	Over	Incl.	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
—	101.6 (4)			+203	0	+203	0	+203	−203	+203	−203	+1 524	−1 524
101.6 (4)	304.8 (12)			+356	−254	+203	0	+203	−203	+203	−203	+1 524	−1 524
304.8 (12)	609.6 (24)	—	508.0 (20)	+381	−381	+381	−381	+203	−203	—	—	+1 524	−1 524
304.8 (12)	609.6 (24)	508.0 (20)	—	+381	−381	+381	−381	+381	−381	—	—	+1 524	−1 524
609.6 (24)	—			+381	−381	—	—	+381	−381	—	—	+1 524	−1 524

Table 6.6 (4) Radial runout of inner and outer rings

Unit: μm

Nominal outside diameter D mm (inch)		Radial runout of inner ring of assembled bearing K_{ia} Radial runout of outer ring of assembled bearing K_{ea}				
		Class 4	Class 2	Class 3	Class 0	Class 00
Over	Incl.	Max.	Max.	Max.	Max.	Max.
—	304.8 (14)	51	38	8	4	2
304.8 (14)	609.6 (24)	51	38	18	—	—
609.6 (24)	914.4 (36)	76	51	51	—	—
914.4 (36)	—	76	—	76	—	—

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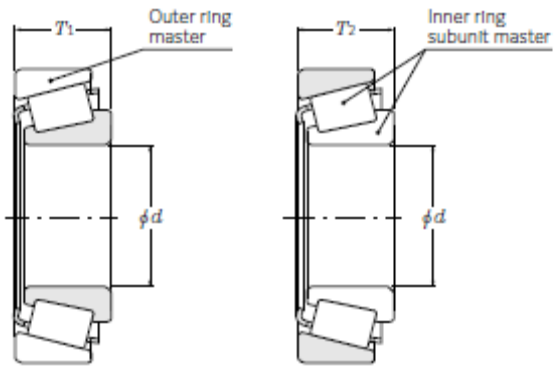


Unit: μm

Deviation of the actual effective width of inner subunit assembled with a master outer ring Δ_{T1s}						Deviation of the actual effective width of outer ring assembled with a master inner subunit Δ_{T2s}					
Class 4		Class 2		Class 3		Class 4		Class 2		Class 3	
Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
+102	0	+102	0	+102	−102	+102	0	+102	0	+102	−102
+152	−152	+102	0	+102	−102	+203	−102	+102	0	+102	−102
—	—	+178	−178 [1)]	+102	−102 [1)]	—	—	+203	−203 [1)]	+102	−102 [1)]
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

1) Applies to nominal bore diameters d of 406.400 mm (16 inch) or less.

Table 6.7 Tolerance of double-row and 4-row tapered roller bearings (metric series)

Table 6.7 (1) Inner rings

Unit: μm

Nominal bore diameter d mm		Deviation of mean bore diameter in a single plane Δ_{dmp}		Variation of bore diameter in a single plane V_{dsp}	Variation of mean bore diameter V_{dmp}	Radial runout of inner ring of assembled bearing K_{ia}	Deviation of a single inner ring width Δ_{Bs}		Deviation of bearing overall width			
									Double row bearing Δ_{B1s}		Four-row bearing Δ_{B2s}	
Over	Incl.	Upper	Lower	Max.	Max.	Max.	Upper	Lower	Upper	Lower	Upper	Lower
30	50	0	−12	12	9	20	0	−120	+240	−240	—	—
50	80	0	−15	15	11	25	0	−150	+300	−300	—	—
80	120	0	−20	20	15	30	0	−200	+400	−400	+500	−500
120	180	0	−25	25	19	35	0	−250	+500	−500	+600	−600
180	250	0	−30	30	23	50	0	−300	+600	−600	+750	−750
250	315	0	−35	35	26	60	0	−350	+700	−700	+900	−900
315	400	0	−40	40	30	70	0	−400	+800	−800	+1 000	−1 000
400	500	0	−45	45	34	80	0	−450	+900	−900	+1 200	−1 200
500	630	0	−60	60	40	90	0	−500	+1 000	−1 000	+1 200	−1 200
630	800	0	−75	75	45	100	0	−750	+1 500	−1 500	+1 500	−1 500
800	1 000	0	−100	100	55	115	0	−1 000	+1 500	−1 500	+1 500	−1 500

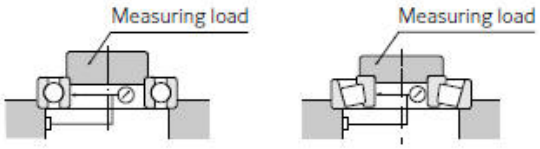
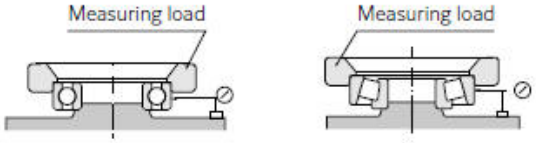
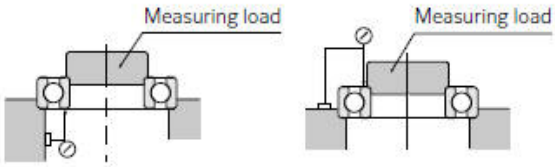
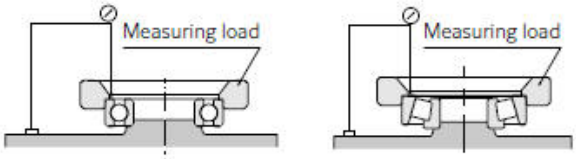
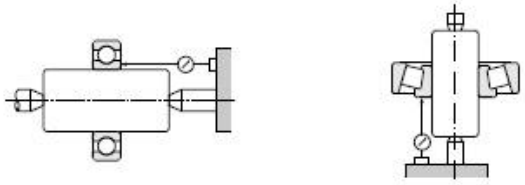
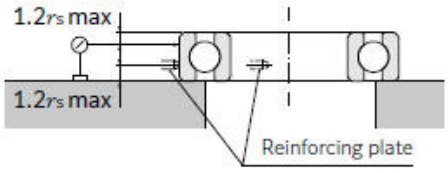
1) Values in dot-line frame are the **NTN** stadard.

Table 6.7 (2) Outer rings

Unit: μm

Nominal outside diameter D mm		Deviation of mean outside diameter in a single plane Δ_{Dmp}		Variation of outside diameter in a single plane V_{Dsp}	Variation of mean outside diameter V_{Dmp}	Radial runout of outer ring of assembled bearing K_{ea}	Deviation of a single outer ring width Δ_{Cs}		Deviation of bearing overall width			
									Double row bearing Δ_{C1s}		Four-row bearing Δ_{C2s}	
Over	Incl.	Upper	Lower	Max.	Max.	Max.	Upper	Lower	Upper	Lower	Upper	Lower
50	80	0	−16	16	12	25	Depends on tolerance of Δ_{Bs} in relation to d of the same bearing		Depends on tolerance of Δ_{B1s} in relation to d of the same bearing		Depends on tolerance of Δ_{B2s} in relation to d of the same bearing	
80	120	0	−18	18	14	35						
120	150	0	−20	20	15	40						
150	180	0	−25	25	19	45						
180	250	0	−30	30	23	50						
250	315	0	−35	35	26	60						
315	400	0	−40	40	30	70						
400	500	0	−45	45	34	80						
500	630	0	−50	60	38	100						
630	800	0	−75	80	55	120						
800	1 000	0	−100	100	75	140						
1 000	1 250	0	−125	130	90	160						
1 250	1 600	0	−160	170	100	180						

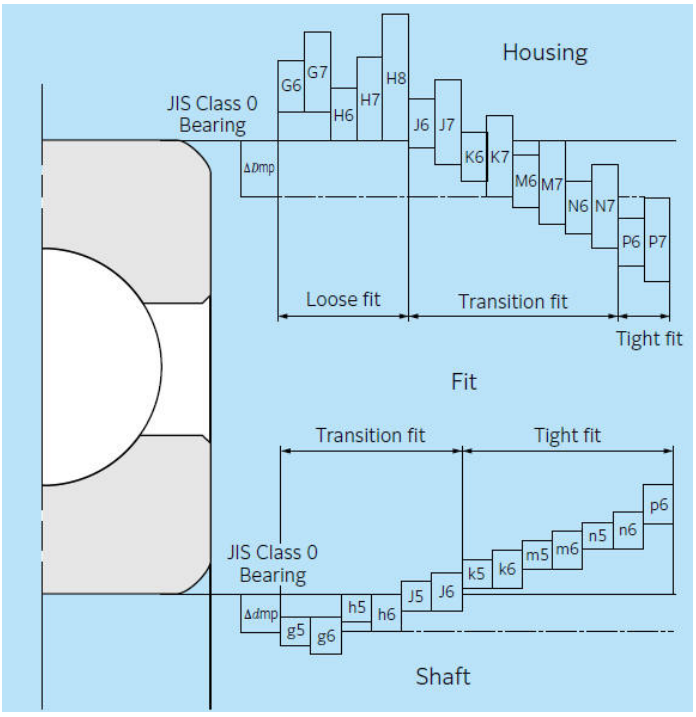
How to measure some critical parameter about the bearing:

Accuracy characteristics	Measurement methods	
Radial runout of inner ring of assembled bearing (K_{ia})		Radial runout of the inner ring is the difference between the maximum and minimum reading of the measuring device when the inner ring is turned one revolution.
Radial runout of outer ring of assembled bearing (K_{ea})		Radial runout of the outer ring is the difference between the maximum and minimum reading of the measuring device when the outer ring is turned one revolution.
Axial runout of inner ring of assembled bearing (S_{ia})		Axial runout of the inner ring is the difference between the maximum and minimum reading of the measuring device when the inner ring is turned one revolution.
Axial runout of outer ring of assembled bearing (S_{ea})		Axial runout of the outer ring is the difference between the maximum and minimum reading of the measuring device when the outer ring is turned one revolution.
Perpendicularity of inner ring face with respect to the bore (S_d)		The squareness of the inner ring side surface is the difference between the maximum and minimum readings of the measuring device when the inner ring is turned one revolution together with the tapered mandrel.
Perpendicularity of outer ring outside surface with respect to the face (S_D)		The squareness of the outer ring outer diameter surface is the difference between the maximum and minimum readings of the measuring device when the outside ring is turned one revolution along the reinforcing plate.

Bearing Precision Level Definitions and Comparison:

Standard	Applicable standard	Accuracy class					Bearing type
Japanese industrial standard (JIS)	JIS B 1514-1	Class 0, 6	Class 6	Class 5	Class 4	Class 2	Radial bearings
	JIS B 1514-2	Class 0	Class 6	Class 5	Class 4	—	Thrust bearings
International Organization for Standardization (ISO)	ISO 492	Normal class Class 6X	Class 6	Class 5	Class 4	Class 2	Radial bearings
	ISO 199	Normal Class	Class 6	Class 5	Class 4	—	Thrust bearings
	ISO 578	Class 4	—	Class 3	Class 0	Class 00	Tapered roller bearings (Inch series)
	ISO 1224	—	—	Class 5A	Class 4A	—	Precision instrument bearings
Deutsches Institut fur Normung (DIN)	DIN 620	P0	P6	P5	P4	P2	All types
American National Standards Institute (ANSI) American Bearing Manufacturer's Association (ABMA)	ANSI/ABMA Std.20 1)	ABEC-1 RBEC-1	ABEC-3 RBEC-3	ABEC-5 RBEC-5	ABEC-7	ABEC-9	Radial bearings (excluding tapered roller bearings)
	ANSI/ABMA Std.19.1	Class K	Class N	Class C	Class B	Class A	Tapered roller bearings (Metric series)
	ANSI/ABMA Std.19	Class 4	Class 2	Class 3	Class 0	Class 00	Tapered roller bearings (Inch series)

How to select bearing – housing tolerance range:



Parameters you often see on a bearing or bearing spare part drawings:

Terms	Quantifiers	Description
Nominal bore diameter	*d*	Reference dimension representing the bore diameter size, and reference value with respect to the dimensional difference of the actual bore diameter surface.
Single bore diameter	*d*s	Distance between two parallel straight lines that are in contact with the intersection line of the actual bearing bore diameter surface and the radial plane.
Deviation of a single bore diameter	Δ *d*s	Difference between *d*s and *d* (difference of nominal diameter serving as the measured bore and standard).
Mean bore diameter in a single plane	*d*mp	Arithmetic mean of the maximum and minimum measured bore diameters within one radial plane. In the model figure, in arbitrary radial plane A*i*, when the maximum bore diameter is *dsi*1 and the minimum bore diameter is *dsi*3, the value is obtained by (*dsi*1 + *dsi*3)/2. There is one value for each plane.
Mean bore diameter	*d*m	Arithmetic mean of the maximum and minimum measured bore diameters obtained from all the cylindrical surfaces. In the model figure, when the maximum measured bore diameter is *d*s11 and the minimum measured bore diameter is *d*s23, which are obtained from the all the planes A1, A2,…Ai, the mean bore diameter is obtained by (*d*s11 + *d*s23)/2. There is one value for one cylindrical surface.
Deviation of mean bore diameter	Δ *d*m	Difference between the mean bore diameter and the nominal bore diameter.
Deviation of mean bore diameter in a single plane	Δ *d*mp	Difference between the arithmetic mean and the nominal bore diameter of the maximum and minimum measured bore diameters within one radial plane. The value is specified in JIS.
Variation of bore diameter in a single plane	*Vd*sp	Difference between the maximum and minimum measured bore diameters within one radial plane. In the model figure, in radial plane A1, when the maximum measured bore diameter is *d*s11 and the minimum measured bore diameter is *d*s13, the difference is *Vd*sp and one value can be obtained for one plane. This characteristic is an index that indicates the roundness. The value is specified in JIS.

Variation of mean bore diameter	*Vd*mp	Difference between the maximum and minimum values of the mean bore diameter within a plane that are obtained from all the planes. A unique value is obtained for each product, and it is near to cylindricity (that is different from geometric cylindricity). The value is specified in JIS.
Nominal inner ring width	*B*	Distance between both theoretical side surfaces of a raceway. This value is a reference dimension that represents the raceway surface (distance between both side surfaces).
Single inner ring width	*B*s	Distance between two intersections. The straight is perpendicular to the plane that is in contact with the inner ring reference side and both actual side surfaces. This value represents the actual width dimension of an inner ring.
Deviation of a single inner ring width	Δ *B*s	Difference between the measured inner ring width and the nominal inner ring width. This value is also the difference between the measured inner ring width dimension and the reference dimension that represents the inner ring width. The value is specified in JIS.
Variation of inner ring width	*VB*s	Difference between the maximum and minimum measured inner ring widths, which are specified in JIS.
Radial runout of inner ring of assembled bearing	*K*ia	Difference between the maximum and minimum values of the radial distance between the inner ring bore diameter at each angle position and one fixed point of the outer ring outer diameter surface with respect to radial runout.
Axial runout of inner ring of assembled bearing	*S*ia	Difference between the maximum and minimum values of the axial distance between the inner ring reference side surface at each angle position and one fixed point of the outer ring outer diameter surface with respect to half the radial distance of the raceway contact diameter from the inner ring central axis and the inner ring of a deep groove ball bearing.

Bearing Damage and Cause

Bearing damage	Damaged parts	Causes														
		Handling		Bearing periphery			Lubrication		Load			Speed			Bearing selection	
		Poor storage condition/ vibration during transportation	Improper handling/ installation	Insufficient accuracy of shaft/housing	Infiltration of bearing by foreign matter (insufficient sealing performance)	Temperature (heat effect)	Lubricant (insufficient/ improper quality)	Lubrication method (insufficient)	Excessively large impact load/preload	Excessively large moment	Excessively small load	High speed/ rapid acceleration and deceleration	Large vibration	Swinging/vibration/ standstill	Excessively large/ small clearance	Excessively large/ small interference
Flaking (separation)	Raceway surface/ rolling element surface		○	○	○	○	○	○	○	○					○	
Seizure	Raceway/ rolling element/cage		○			○	○	○	○	○		○			○	
Cracks/chips	Raceway/rolling element		○	○			○		○	○						○
Cage damage	Rivets break or become loose		○		○		○	○	○	○		○	○			
Rolling path skewing	Raceway surface		○	○											○	
Smearing/ scuffing	Raceway surface/ rolling element surface/ rib surface/ roller end surface		○		○		○	○	○		○					
Rust/ corrosion	Rust on a part of or the entire surface of the rolling element pitch	○	○		○		○	○								
Fretting	Red rust on fitting surface		○						○				○			
	Brinelling indentations form on the raceway of the rolling element pitch	○					○	○						○		○
Wear	Raceway surface/ rolling element surface/ rib surface/ roller end surface		○		○		○	○								
Electrolytic corrosion	Pits form on the raceway. The pits gradually grow into ripples.		○													
Dents and scratches	Raceway surface/ rolling element surface		○		○				○	○						
Creeping	Fitting surface		○	○		○			○							○
Speckles and discoloration	Raceway surface/ rolling element surface				○		○	○								
Peeling	Raceway surface/ rolling element surface				○		○	○								

Ningbo Amol Machinery Co., Ltd.
Jiangsu Amol Bearing Co., Ltd.
Ningbo Amol Intl. Trade Co., Ltd.

Standard cage type

In general, pressed cages are used in tapered roller bearings. For large sized bearings, machined or pin type cages may also be used, while resin cages may also be used for smaller sized bearings.

Allowable misalignment

In order to avoid edge loading and potential for premature failure, the maximum allowable misalignment based on bearing series can be found below.

The allowable misalignment of combined bearings is influenced by the load center position, so please consult NTN Engineering

- Single row (standard) … …… 1/ 2 000
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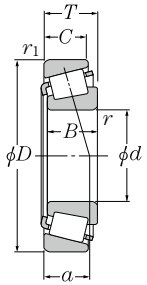
M88000	M88048 / M88010	B-161
HM88500	JHM88540 / JHM88513	B-159
HM88500	HM88542 / HM88510	B-161
HM88500	HM88542 / HM88512	B-161
HM88500	HM88547 / HM88510	B-161
HM88600	HM88648 / HM88610	B-163
HM88600	HM88648 / HM88611AS	B-163
HM88600	HM88649 / HM88610	B-161
HM89200	HM89249 / HM89210	B-163
HM89400	HM89440 / HM89410	B-161
HM89400	HM89443 / HM89410	B-161
HM89400	HM89444 / HM89410	B-161
HM89400	HM89446 / HM89410	B-163
HM89400	HM89448 / HM89410	B-163
HM89400	HM89449 / HM89411	B-163
90000	J90354 / J90748	B-185
90000	90381 / 90744	B-187
95000	95475 / 95925	B-189
95000	95500 / 95905	B-189
95000	95525 / 95925	B-191
97000	97500 / 97900	B-189
99000	99550 / 99100	B-191
99000	99575 / 99100	B-191
LM102900	LM102949 / LM102910	B-169
LM104900	JLM104948 / JLM104910	B-171
LM104900	LM104947A / LM104911	B-171
LM104900	LM104949 / LM104911	B-171

Tapered Roller Bearings
WBW

Inch Series Tapered Roller Bearings (Single Row) Index

Series number	Bearing number CONE / CUP	Page of bearing dimension table
M205100	JM205149 / JM205110	B-171
M207000	JM207049 / JM207010	B-175
H211700	JH211749 / JH211710	B-179
HM212000	HM212044 / HM212011	B-177
HM212000	HM212046 / HM212011	B-177
HM212000	HM212049 / HM21210	B-179
L217800	L217849 / L217810	B-185
LL217800	LL217849 / LL217810	B-185
HM218200	HM218248 / HM218210	B-185
HH221400	HH221430 / HH221410	B-183
HH221400	HH221431 / HH221410	B-183
HH221400	HH221440 / HH221410	B-187
HH221400	HH221449 / HH221410	B-187
HH221400	HH221449A / HH221410	B-187
HH224300	HH224334 / HH224310	B-187
HH224300	HH224335 / HH224310	B-187
HH224300	HH224346 / HH224310	B-189
HH228300	HH228349 / HH228310	B-189
M231600	M231648 / M231610	B-191
LM300800	LM300849 / LM300811	B-165
H307700	JH307749 / JH307710	B-175
HM318400	JHM318448 / JHM318410	B-185
L319200	L319249 / L319210	B-187
L327200	L327249 / L327210	B-189
H414200	H414242 / H414210	B-179
H414200	H414245 / H414210	B-179
H414200	H414249 / H414210	B-181
H415600	JH415647 / JH415610	B-181
L432300	L432349 / L432310	B-191
LM501300	LM501349 / LM501310	B-165
LM501300	LM501349 / LM501314	B-165
LM503300	LM503349A / LM503310	B-169
HH506300	HH506348 / HH506310	B-171
HH506300	HH506349 / HH506310	B-171
LM506800	JLM506849 / JLM506810	B-173
LM508700	JLM508748 / JLM508710	B-175
M511900	JM511946 / JM511910	B-177
M515600	JM515649 / JM515610	B-183
HM516400	HM516442 / HM516410	B-181
HM516400	HM516448 / HM516410	B-183
HM516800	JHM516849 / JHM516810	B-185
LM522500	LM522546 / LM522510	B-187
LM522500	LM522548 / LM522510	B-189
HM522600	JHM522649 / JHM522610	B-189
HM534100	JHM534149 / JHM534110	B-191
LM603000	LM603049 / LM603011	B-169
L610500	L610549 / L610510	B-177
M612900	JM612949 / JM612910	B-179
HM617000	HM617049 / HM617010	B-185
L630300	L630349 / L630310	B-191
LL639200	LL639249 / L639210	B-191
LM704600	JLM704649 / JLM704610	B-171
LM710900	JLM710949 / JLM710910	B-177
LM714100	JLM714149 / JLM714110	B-181
M714200	JM714249 / JM714210	B-181
H715300	H715334 / H715311	B-177
H715300	H715343 / H715311	B-179
H715300	H715345 / H715311	B-181
H715300	H715348 / H715311	B-183
M716600	JM716648 / JM716610	B-185
M718100	JM718149 / JM718110	B-185
M719100	JM719149 / JM719113	B-185
M720200	JM720249 / JM720210	B-187
L724300	JL724348 / JL724314	B-189
M736100	JM736149 / JM736110	B-191
M738200	JM738249 / JM738210	B-191
HM801300	HM801346 / HM801310	B-165
HM801300	HM801349 / HM801310	B-165
M802000	M802048 / M802011	B-167
HM803100	HM803145 / HM803110	B-167
HM803100	HM803149 / HM803110	B-167
M804000	M804048 / M804010	B-169
HM804800	HM804840 / HM804810	B-167
HM804800	HM804842 / HM804810	B-167
HM804800	M804846 / M804810	B-169
HM804800	M804848 / M804810	B-171
HM804800	M804849 / M804810	B-171
LM806600	LM806649 / LM806610	B-173
HM807000	HM807040 / HM807010	B-169
HM807000	HM807044 / HM807010	B-171
HM807000	HM807046 / HM807010	B-173
HM807000	HM807048 / HM807010	B-173
HM807000	HM807049 / HM807010	B-173
HM807000	JHM807045 / JHM807012	B-171
L812100	L812148 / L812111	B-179
LM813000	JLM813049 / JLM813010	B-179
HM813800	HM813840 / HM813810	B-175
HM813800	HM813841 / HM813810	B-177
HM813800	HM813842 / HM813810	B-177
HM813800	HM813844 / HM813810	B-179
L814700	L814749 / L814710	B-181
LM814800	LM814849 / LM814810	B-183
M822000	JM822049 / JM822010	B-189
HM903200	HM903245 / HM903210	B-167
HM903200	HM903249 / HM903210	B-167
M903300	M903345 / M903310	B-167
HM907600	HM907643 / HM907614	B-173
HM911200	HM911242 / HM911210	B-173
HM911200	HM911245 / HM911210	B-177
HM911200	HM911244 / JHM911211	B-177
H913800	H913840 / H913810	B-175
H913800	H913842 / H913810	B-177
H913800	JH913848 / JH913811	B-181
H917800	H917840 / H917810	B-183
H924000	H924045 / H924010	B-189
HM926700	HM926740 / HM926710	B-189
HM926700	HM926747 / HM926710	B-189

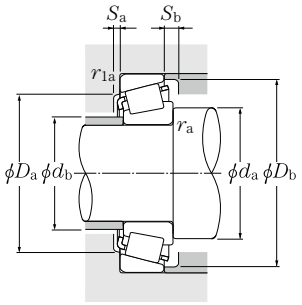
Metric series



d 15 ~ 30mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min-1		Bearing number 2)
d	D	T	B	C	$r_{s\,min}$ 1)	$r_{ls\,min}$ 1)	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
15	42	14.25	13	11	1	1	25.8	20.8	—	9 900	13 000	**4T-30302**
17	40	13.25	12	11	1	1	22.7	20.3	—	9 900	13 000	**4T-30203**
	40	17.25	16	14	1	1	30.5	28.3	—	9 900	13 000	**4T-32203**
	40	17.25	16	14	1	1	29.1	28.2	—	9 900	13 000	○ **4T-32203R**
	47	15.25	14	12	1	1	32.0	26.3	—	9 000	12 000	**4T-30303**
20	42	15	15	12	0.6	0.6	27.6	27.9	—	9 500	13 000	**4T-32004X**
	47	15.25	14	12	1	1	31.0	28.7	—	8 800	12 000	**4T-30204**
	47	19.25	18	15	1	1	40.5	39.5	—	8 800	12 000	**4T-32204**
	52	16.25	16	13	1.5	1.5	39.0	34.0	—	8 000	11 000	**4T-30304A**
	52	16.25	16	12	1.5	1.5	34.5	31.0	—	7 600	10 000	**4T-30304CA**
	52	22.25	21	18	1.5	1.5	51.5	48.5	—	8 000	11 000	**4T-32304**
22	44	15	15	11.5	0.6	0.6	30.0	31.5	—	8 900	12 000	**4T-320/22X**
25	47	15	15	11.5	0.6	0.6	31.0	33.5	—	7 900	11 000	**4T-32005X**
	47	17	17	14	0.6	0.6	36.0	40.5	—	8 000	11 000	**4T-33005**
	52	16.25	15	13	1	1	35.0	34.0	—	7 300	9 800	**4T-30205**
	52	19.25	18	16	1	1	46.5	47.0	—	7 300	9 800	**4T-32205**
	52	19.25	18	15	1	1	42.0	43.0	—	7 300	9 800	○ **4T-32205R**
	52	19.25	18	15	1	1	42.5	46.5	—	7 100	9 400	**4T-32205C**
	52	19.25	18	15	1	1	38.0	42.0	—	7 100	9 400	○ **4T-32205CR**
	52	22	22	18	1	1	52.5	57.5	—	7 300	9 800	**4T-33205**
	62	18.25	17	15	1.5	1.5	54.0	47.5	—	6 700	8 900	**4T-30305**
	62	18.25	17	14	1.5	1.5	46.0	41.5	—	6 400	8 500	**4T-30305C**
	62	18.25	17	13	1.5	1.5	45.0	43.5	—	5 900	7 800	**4T-30305D**
	62	25.25	24	20	1.5	1.5	68.0	64.5	—	6 700	8 900	**4T-32305**
28	52	16	16	12	1	1	37.0	40.5	—	7 300	9 700	**4T-320/28X**
	58	24	24	19	1	1	64.5	69.5	—	6 700	8 900	**4T-332/28**
30	55	17	17	13	1	1	41.5	46.0	—	6 900	9 200	**4T-32006X**
	55	20	20	16	1	1	47.0	54.0	—	6 900	9 200	**4T-33006**
	62	17.25	16	14	1	1	48.5	48.0	—	6 300	8 400	**4T-30206**
	62	21.25	20	17	1	1	60.5	64.0	—	6 300	8 400	**4T-32206**
	62	21.25	20	17	1	1	55.5	60.0	—	6 100	8 100	**4T-32206C**
	62	25	25	19.5	1	1	72.0	77.0	—	6 300	8 400	**4T-33206**
	72	20.75	19	16	1.5	1.5	66.5	61.0	—	5 700	7 600	**4T-30306**

1) Smallest allowable dimension for chamfer dimension r or r_1.
2) Bearings with a ○ mark do not incorporate the subunit dimensions.



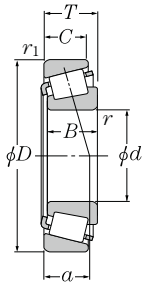
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
2FB	20.5	22	36.5	34.5	38	2	3	1	1	9.5	0.29	2.11	1.16	0.096
2DB	22.5	23	34.5	32.5	37.5	2	2	1	1	9.5	0.35	1.74	0.96	0.08
2DD	22.5	22.5	34.5	32	37.5	2	3	1	1	11.5	0.31	1.92	1.06	0.102
	22.5	22	34.5	31	37.5	2	3	1	1	11	0.35	1.74	0.96	0.105
2FB	22.5	24.5	41.5	38.5	42.5	3	3.5	1	1	10.5	0.29	2.11	1.16	0.132
3CC	24.5	25	37.5	33.5	39.5	3	3	0.6	0.6	10.5	0.37	1.6	0.88	0.097
2DB	25.5	27	41.5	38.5	44	2	3	1	1	11.5	0.35	1.74	0.96	0.124
2DD	25.5	26	41.5	37	43	2	4	1	1	12.5	0.33	1.81	1.00	0.161
2FB	28.5	28	43.5	42.5	47.5	3	3	1.5	1.5	10.5	0.30	2.00	1.10	0.172
	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	41	47.5	3	4	1.5	1.5	14	0.30	2.00	1.10	0.242
3CC	26.5	27	39.5	35.5	41.5	3	3.5	0.6	0.6	11	0.40	1.51	0.83	0.105
4CC	29.5	29.5	42.5	38.5	44.5	3	3.5	0.6	0.6	12	0.43	1.39	0.77	0.113
2CE	29.5	30	42.5	39	44.5	3	3	0.6	0.6	11	0.29	2.07	1.14	0.13
3CC	30.5	31	46.5	42	48.5	2	3	1	1	12.5	0.37	1.60	0.88	0.155
2CD	30.5	31	46.5	42.5	49.5	2	4	1	1	14	0.36	1.67	0.92	0.187
	30.5	30.5	46.5	41.5	49	2	4	1	1	13.5	0.37	1.60	0.88	0.185
5CD	30.5	30	46.5	38.5	50	2	4	1	1	16	0.58	1.03	0.57	0.192
	30.5	30.5	46.5	39.5	49.5	2	4	1	1	16	0.55	1.10	0.60	0.189
2DE	30.5	30.5	46.5	41	49.5	4	4	1	1	14	0.35	1.71	0.94	0.219
2FB	33.5	34	53.5	52	57.5	3	3	1.5	1.5	13	0.30	2.00	1.10	0.268
	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	33.5	53.5	45	59	3	5	1.5	1.5	20	0.83	0.73	0.40	0.266
2FD	33.5	33	53.5	50	57.5	3	5	1.5	1.5	16	0.30	2.00	1.10	0.377
4CC	33.5	33	46.5	43	49.5	3	4	1	1	12.5	0.43	1.39	0.77	0.146
2DE	33.5	33.5	52.5	47	55	5	5	1	1	15.5	0.34	1.77	0.97	0.293
4CC	35.5	35.5	49.5	45.5	52.5	3	4	1	1	13.5	0.43	1.39	0.77	0.172
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	37.5	56.5	51	58	2	3	1	1	13.5	0.37	1.60	0.88	0.236
3DC	35.5	36.5	56.5	50	58	2.5	4	1	1	15.5	0.37	1.60	0.88	0.299
5DC	35.5	36	56.5	48	59.5	2	5	1	1	18.5	0.56	1.07	0.59	0.297
2DE	35.5	36	56.5	50.5	59	5	5.5	1	1	16	0.34	1.76	0.97	0.348
2FB	38.5	40	63.5	60	65.5	3	4.5	1.5	1.5	15	0.31	1.90	1.05	0.404

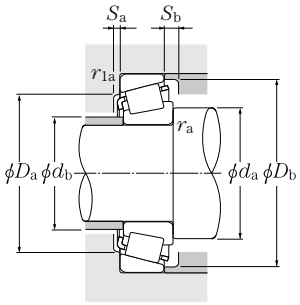
Metric series



d 30 ~ 45mm

d	D	T	B	C	$r_{s\,min}$ [1]	$r_{ls\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication	Bearing number [2]
	72	20.75	19	15	1.5	1.5	65.0	58.5	—	5 500	7 300	**4T-30306CA**
	72	20.75	19	14	1.5	1.5	53.5	51.5	—	5 000	6 700	**4T-30306D**
30	72	28.75	27	23	1.5	1.5	89.5	90.0	—	5 700	7 600	**4T-32306**
	72	28.75	27	23	1.5	1.5	88.0	94.0	—	5 500	7 300	**4T-32306C**
	72	28.75	27	23	1.5	1.5	77.5	88.5	—	5 500	7 300	○ **4T-32306CR**
	58	17	17	13	1	1	41.0	46.5	—	6 600	8 700	**4T-320/32X**
32	65	26	26	20.5	1	1	78.5	85.0	—	6 000	8 000	**4T-332/32**
	75	29.75	28	23	1.5	1.5	93.5	102	—	5 200	6 900	**4T-323/32C**
	55	14	14	11.5	0.6	0.6	30.5	37.5	4.60	6 800	9 000	**32907XU**
	62	18	18	14	1	1	46.0	52.5	—	6 100	8 100	**4T-32007X**
	62	21	21	17	1	1	56.0	66.5	—	6 100	8 100	**4T-33007**
	72	18.25	17	15	1.5	1.5	61.5	61.5	—	5 500	7 400	**4T-30207**
	72	24.25	23	19	1.5	1.5	80.5	87.0	—	5 500	7 400	**4T-32207**
	72	24.25	23	19	1.5	1.5	75.5	85.5	—	5 300	7 100	**4T-32207C**
35	72	24.25	23	18	1.5	1.5	68.5	78.5	—	5 300	7 100	○ **4T-32207CR**
	72	28	28	22	1.5	1.5	97.0	109	—	5 500	7 400	**4T-33207**
	80	22.75	21	18	2	1.5	83.0	77.0	—	5 000	6 600	**4T-30307**
	80	22.75	21	17	2	1.5	73.5	68.5	—	4 800	6 400	**4T-30307C**
	80	22.75	21	15	2	1.5	70.5	70.0	—	4 400	5 800	**4T-30307D**
	80	32.75	31	25	2	1.5	112	115	—	5 000	6 600	**4T-32307**
	80	32.75	31	25	2	1.5	103	117	—	4 800	6 400	**4T-32307C**
	62	15	15	12	0.6	0.6	36.0	48.0	5.85	5 900	7 800	**32908XU**
	68	19	19	14.5	1	1	55.5	65.5	—	5 300	7 100	**4T-32008X**
	68	22	22	18	1	1	66.0	82.5	—	5 300	7 100	**4T-33008**
	75	26	26	20.5	1.5	1.5	88.0	103	—	5 200	6 900	**4T-33108**
	80	19.75	18	16	1.5	1.5	68.0	67.0	—	4 900	6 600	**4T-30208**
	80	24.75	23	19	1.5	1.5	88.0	93.5	—	4 900	6 600	**4T-32208**
40	80	32	32	25	1.5	1.5	115	132	—	4 900	6 600	**4T-33208**
	85	33	32.5	28	2.5	2	131	144	—	4 600	6 200	**4T-T2EE040**
	90	25.25	23	20	2	1.5	101	102	—	4 400	5 900	**4T-30308**
	90	25.25	23	19	2	1.5	92.0	87.0	—	4 200	5 600	**4T-30308C**
	90	25.25	23	17	2	1.5	85.5	85.5	—	3 900	5 200	**4T-30308D**
	90	35.25	33	27	2	1.5	136	150	18.3	4 400	5 900	**32308U**
	90	35.25	33	27	2	1.5	122	140	—	4 200	5 600	**4T-32308C**
45	68	15	15	12	0.6	0.6	37.5	51.5	6.3	5 300	7 000	**32909XU**

1) Smallest allowable dimension for chamfer dimension r or r_1.
2) Bearings with a ○ mark do not incorporate the subunit dimensions.



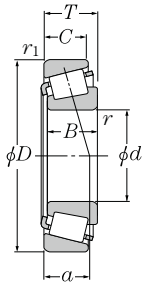
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	Load center a mm	Constant e	Axial load factors Y_2	Axial load factors Y_0	Mass kg (approx.)
	38.5	39.5	63.5	58	67	3	5.5	1.5	1.5	17.5	0.47	1.27	0.70	0.399
7FB	38.5	39.5	63.5	53.5	68	3	6.5	1.5	1.5	23.5	0.83	0.73	0.40	0.394
2FD	38.5	39	63.5	57.5	66.5	3	5.5	1.5	1.5	18.5	0.31	1.90	1.05	0.577
5FD	38.5	38	63.5	52	69	2	5.5	1.5	1.5	23	0.55	1.10	0.60	0.591
	38.5	38	63.5	49.5	67.5	2	5.5	1.5	1.5	23	0.61	0.99	0.54	0.594
4CC	37.5	37.5	52.5	47.5	55.5	3	4	1	1	14.5	0.45	1.32	0.73	0.188
2DE	37.5	38	59.5	53	62	5	5.5	1	1	17	0.35	1.73	0.95	0.394
5FD	40.5	40	66.5	55	71.5	3	6.5	1.5	1.5	23	0.55	1.10	0.60	0.652
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	40.5	56.5	51.5	59.5	4	4	1	1	15.5	0.45	1.32	0.73	0.223
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	43.5	63.5	60.5	67.5	3	3	1.5	1.5	15	0.37	1.60	0.88	0.341
3DC	43.5	42.5	63.5	58.5	67.5	3	5	1.5	1.5	17.5	0.37	1.60	0.88	0.455
5DC	43.5	41.5	63.5	54.5	68.5	3	6	1.5	1.5	21.5	0.58	1.03	0.57	0.461
	43.5	42.5	63.5	55.5	68	3	6	1.5	1.5	20.5	0.55	1.10	0.60	0.462
2DE	43.5	42	63.5	58	68.5	5	6	1.5	1.5	18.5	0.35	1.70	0.93	0.539
2FB	45	45.5	71.5	67.5	75	3	4.5	2	1.5	17	0.31	1.90	1.05	0.535
	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	44.5	71.5	60.5	77	3	7.5	2	1.5	26	0.83	0.73	0.40	0.527
2FE	45	43.5	71.5	65	75	3	7.5	2	1.5	20.5	0.31	1.90	1.05	0.782
5FE	45	43.5	71.5	59	76	3	7.5	2	1.5	25	0.55	1.10	0.60	0.804
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	45.5	62.5	58	65	4	4.5	1	1	15	0.38	1.58	0.87	0.272
2BE	45.5	46	62.5	58.5	65	2.5	4	1	1	15	0.28	2.12	1.17	0.32
2CE	48.5	47	66.5	62.5	71.5	4	5.5	1.5	1.5	18	0.36	1.69	0.93	0.498
3DB	48.5	48.5	71.5	67.5	74.5	3	3.5	1.5	1.5	16.5	0.37	1.60	0.88	0.431
3DC	48.5	48.5	71.5	66.5	75	3	5.5	1.5	1.5	19	0.37	1.60	0.88	0.547
2DE	48.5	47	71.5	64.5	76.5	5	7	1.5	1.5	21	0.36	1.68	0.92	0.738
2EE	52	47.5	75	68	81	5	5	2	2	22.5	0.34	1.74	0.96	0.905
2FB	50	52.5	81.5	74.5	83.5	3	5	2	1.5	19.5	0.35	1.74	0.96	0.765
	50	50	81.5	72	85.5	3.5	6	2	1.5	23	0.55	1.10	0.60	0.726
7FB	50	51	81.5	68.5	86	3	8	2	1.5	29.5	0.83	0.73	0.40	0.727
2FD	50	49.5	81.5	71	83.5	3	8	2	1.5	23	0.35	1.74	0.96	1.08
5FD	50	49	81.5	65.5	84.5	3	8	2	1.5	27.5	0.55	1.10	0.60	1.1
2BC	49.5	51	63.5	59.5	64.5	3	3	0.6	0.6	12	0.32	1.88	1.04	0.187

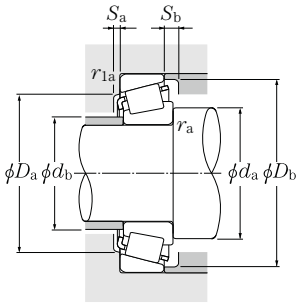
Metric series



d 45 ~ 55mm

d	D	T	B	C	$r_{s\,min}$ [1]	$r_{ls\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication	Bearing number [2]
45	75	20	20	15.5	1	1	64.0	76.5	—	4 800	6 400	**4T-32009X**
	75	24	24	19	1	1	73.5	93.5	—	4 800	6 400	**4T-33009**
	80	26	26	20.5	1.5	1.5	94.0	115	—	4 700	6 200	**4T-33109**
	85	20.75	19	16	1.5	1.5	75.0	78.5	—	4 400	5 900	**4T-30209**
	85	24.75	23	19	1.5	1.5	91.0	100	—	4 400	5 900	**4T-32209**
	85	32	32	25	1.5	1.5	119	141	—	4 400	5 900	**4T-33209**
	95	29	26.5	20	2.5	2.5	99.5	108	—	4 100	5 500	**4T-T7FC045**
	100	27.25	25	22	2	1.5	123	126	—	4 000	5 300	**4T-30309**
	100	27.25	25	18	2	1.5	106	109	—	3 500	4 600	**4T-30309D**
	100	38.25	36	30	2	1.5	170	191	23.3	4 000	5 300	**32309U**
	100	38.25	36	30	2.5	0.6	145	175	21.4	3 800	5 100	**32309CU**
50	72	15	15	12	0.6	0.6	39.5	57.0	6.95	4 700	6 300	**32910XU**
	72	15	14	12	0.6	0.6	35.0	50.5	6.15	4 700	6 300	○**32910**
	80	20	20	15.5	1	1	69.5	88.0	—	4 400	5 800	**4T-32010X**
	80	24	24	19	1	1	77.5	103	—	4 400	5 800	**4T-33010**
	85	26	26	20	1.5	1.5	96.0	121	—	4 200	5 600	**4T-33110**
	90	21.75	20	17	1.5	1.5	85.5	93.0	—	4 000	5 300	**4T-30210**
	90	24.75	23	19	1.5	1.5	97.0	109	—	4 000	5 300	**4T-32210**
	90	32	32	24.5	1.5	1.5	127	158	—	4 000	5 300	**4T-33210**
	100	36	35	30	2.5	2.5	167	190	—	3 800	5 100	**4T-T2ED050**
	105	32	29	22	3	3	119	132	—	3 400	4 500	**4T-T7FC050**
	110	29.25	27	23	2.5	2	147	152	—	3 600	4 800	**4T-30310**
	110	29.25	27	19	2.5	2	126	130	—	3 200	4 200	**4T-30310D**
	110	42.25	40	33	2.5	2	204	232	28.3	3 600	4 800	**32310U**
	110	42.25	40	33	2.5	2.5	178	220	—	3 500	4 600	**4T-32310C**
55	80	17	17	14	1	1	49.5	73.5	8.95	4 300	5 700	**32911XU**
	90	23	23	17.5	1.5	1.5	89.0	118	—	4 000	5 400	**4T-32011X**
	90	27	27	21	1.5	1.5	102	138	—	4 000	5 400	**4T-33011**
	95	30	30	23	1.5	1.5	123	155	—	3 900	5 200	**4T-33111**
	100	22.75	21	18	2	1.5	103	111	—	3 600	4 900	**4T-30211**
	100	26.75	25	21	2	1.5	120	134	—	3 600	4 900	**4T-32211**
	100	35	35	27	2	1.5	153	188	—	3 600	4 900	**4T-33211**
	115	34	31	23.5	3	3	137	156	—	3 300	4 400	**4T-T7FC055**
	120	31.5	29	25	2.5	2	172	179	—	3 300	4 400	**4T-30311**
	120	31.5	29	21	2.5	2	146	154	—	2 900	3 800	**4T-30311D**
	120	45.5	43	35	2.5	2	238	275	33.5	3 300	4 400	**32311U**
	120	45.5	43	35	2.5	2.5	204	252	30.5	3 100	4 200	**32311CU**

1) Smallest allowable dimension for chamfer dimension r or r_1.
2) Bearings with a ○ mark do not incorporate the subunit dimensions.



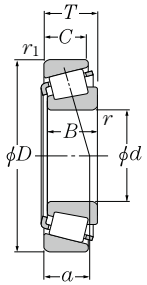
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	Load center mm a	Constant e	Axial load factors Y_2	Y_0	Mass kg (approx.)
3CC	50.5	51	69.5	64	72.5	4	4.5	1	1	16.5	0.39	1.53	0.84	0.341
2CE	50.5	51.5	69.5	64	71.5	4	5	1	1	16	0.29	2.04	1.12	0.405
3CE	53.5	51.5	71.5	67.5	76.5	4	5.5	1.5	1.5	19.5	0.38	1.57	0.86	0.544
3DB	53.5	53.5	76.5	72	80	3	4.5	1.5	1.5	18	0.40	1.48	0.81	0.493
3DC	53.5	53.5	76.5	71	81	3	5.5	1.5	1.5	20	0.40	1.48	0.81	0.604
3DE	53.5	52	76.5	69	82	5	7	1.5	1.5	22	0.39	1.56	0.86	0.795
7FC	57	53	83	69	91	3	9	2	2	33	0.87	0.69	0.38	0.907
2FB	55	58.5	91.5	84	93.5	3	5	2	1.5	21	0.35	1.74	0.96	1.01
7FB	55	56.5	91.5	76	96.5	3	9	2	1.5	32.5	0.83	0.73	0.40	0.966
2FD	55	56.5	91.5	80.5	93.5	3	8	2	1.5	25.5	0.35	1.74	0.96	1.45
5FD	55	55.5	91.5	73.5	95	4	9	2.5	0.6	30	0.55	1.10	0.60	1.47
2BC	54.5	55	67.5	63.5	69	3	3	0.6	0.6	13.5	0.34	1.76	0.97	0.192
	54.5	56.5	67.5	63.5	69.5	3	3	0.6	0.6	14.5	0.36	1.67	0.92	0.193
3CC	55.5	55.5	74.5	68.5	77.5	4	4.5	1	1	17.5	0.42	1.42	0.78	0.373
2CE	55.5	56	74.5	69	76.5	4	5	1	1	17.5	0.32	1.90	1.04	0.44
3CE	58.5	56.5	76.5	71	81.5	4	6	1.5	1.5	20.5	0.41	1.46	0.80	0.583
3DB	58.5	58	81.5	76.5	85.5	3	4.5	1.5	1.5	19.5	0.42	1.43	0.79	0.56
3DC	58.5	57.5	81.5	76	86	3	5.5	1.5	1.5	21	0.42	1.43	0.79	0.639
3DE	58.5	56.5	81.5	73.5	87	5	7.5	1.5	1.5	23.5	0.41	1.45	0.80	0.862
2ED	62	58	88	82	94.5	6	6	2	2	25.5	0.34	1.75	0.96	1.3
7FC	64	59	91	82	94.5	4	10	2.5	2.5	36.5	0.87	0.69	0.38	1.22
2FB	62	64.5	100	92.5	103	3	6	2	2	23	0.35	1.74	0.96	1.31
7FB	62	61.5	100	83.5	104.5	3	10	2	2	35	0.83	0.73	0.40	1.25
2FD	62	61.5	100	88	102.5	3	9	2	2	28.5	0.35	1.74	0.96	1.92
5FD	62	61.5	100	80.5	104	3	9	2	2.5	33.5	0.55	1.1	0.60	1.97
2BC	60.5	61	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	77.5	87	4	5.5	1.5	1.5	20	0.41	1.48	0.81	0.56
2CE	63.5	63	81.5	78	86	5	6	1.5	1.5	19.5	0.31	1.92	1.06	0.654
3CE	63.5	62.5	86.5	80	91	5	7	1.5	1.5	22	0.37	1.60	0.88	0.858
3DB	65	64	91.5	86	95.5	4	4.5	2	1.5	21	0.40	1.48	0.81	0.725
3DC	65	63	91.5	85	96	4	5.5	2	1.5	22.5	0.40	1.48	0.81	0.873
3DE	65	62.5	91.5	82	96.5	6	8	2	1.5	25.5	0.40	1.50	0.83	1.17
7FC	69	65.5	101	83.5	110	4	10.5	2.5	2.5	43.5	0.87	0.69	0.38	1.57
2FB	67	70.5	110	101	112	4	6.5	2	2	24.5	0.35	1.74	0.96	1.65
7FB	67	67	110	91.5	113.5	4	10.5	2	2	38	0.83	0.73	0.40	1.58
2FD	67	67.5	110	96.5	111.5	4	10.5	2	2	30.5	0.35	1.74	0.96	2.44
5FD	67	67	110	88.5	113.5	4	10	2	2.5	36.5	0.55	1.10	0.60	2.47

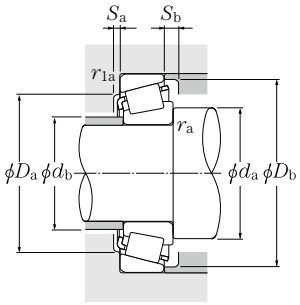
Metric series



d 60 ~ 75mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min⁻¹		Bearing number 2)
d	D	T	B	C	$r_{s\,min}$ 1)	$r_{ls\,min}$ 1)	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
60	85	17	17	14	1	1	56.5	83.0	10.1	4 000	5 300	○32912XA
	95	23	23	17.5	1.5	1.5	91.0	123	—	3 700	4 900	4T-32012X
	95	27	27	21	1.5	1.5	104	145	—	3 700	4 900	4T-33012
	100	30	30	23	1.5	1.5	126	164	—	3 600	4 700	4T-33112
	110	23.75	22	19	2	1.5	116	125	—	3 400	4 500	4T-30212
	110	29.75	28	24	2	1.5	144	164	20.1	3 400	4 500	32212U
	110	38	38	29	2	1.5	179	223	27.1	3 400	4 500	33212U
	115	40	39	33	2.5	2.5	209	249	—	3 200	4 300	4T-T2EE060
	125	37	33.5	26	3	3	161	186	—	2 800	3 700	4T-T7FC060
	130	33.5	31	26	3	2.5	199	210	25.6	3 000	4 000	30312U
	130	33.5	31	22	3	2.5	167	176	—	2 700	3 600	4T-30312D
	130	48.5	46	37	3	2.5	271	315	38.5	3 000	4 000	32312U
	130	48.5	46	37	3	2.5	237	296	—	2 900	3 900	4T-32312C
65	90	17	17	14	1	1	53.5	85.0	10.4	3 700	4 900	32913XU
	100	23	23	17.5	1.5	1.5	92.0	128	—	3 400	4 600	4T-32013X
	100	27	27	21	1.5	1.5	108	156	—	3 400	4 600	4T-33013
	110	34	34	26.5	1.5	1.5	160	211	—	3 300	4 400	4T-33113
	120	24.75	23	20	2	1.5	136	148	—	3 100	4 200	4T-30213
	120	32.75	31	27	2	1.5	176	206	25.1	3 100	4 200	32213U
	120	41	41	32	2	1.5	216	265	32.5	3 100	4 200	33213U
	140	36	33	28	3	2.5	225	238	28.7	2 800	3 700	30313U
	140	36	33	23	3	2.5	192	204	—	2 500	3 300	4T-30313D
	140	51	48	39	3	2.5	305	350	42.5	2 800	3 700	32313U
70	100	20	20	16	1	1	76.0	110	13.4	3 400	4 600	32914XU
	110	25	25	19	1.5	1.5	116	160	—	3 200	4 200	4T-32014X
	110	31	31	25.5	1.5	1.5	140	204	—	3 200	4 200	4T-33014
	120	37	37	29	2.5	0.6	190	251	30.5	3 100	4 100	33114U
	125	26.25	24	21	2	1.5	146	162	—	2 900	3 900	4T-30214
	125	33.25	31	27	2	1.5	184	220	26.8	2 900	3 900	32214U
	125	41	41	32	2	1.5	223	282	34.5	2 900	3 900	33214U
	140	39	35.5	27	3	3	191	231	—	2 400	3 200	4T-T7FC070
	150	38	35	30	3	2.5	255	272	32.0	2 600	3 500	30314U
	150	38	35	25	3	2.5	214	229	—	2 300	3 000	4T-30314D
	150	54	51	42	3	2.5	345	405	48.0	2 600	3 500	32314U
	150	54	51	42	3	2.5	300	380	45.0	2 500	3 300	32314CU
75	105	20	20	16	1	1	77.0	114	13.9	3 200	4 300	32915XU

1) Smallest allowable dimension for chamfer dimension r or r_1.
2) Bearings with a ○ mark do not incorporate the subunit dimensions.



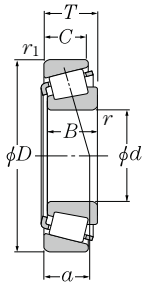
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
	65.5	66	79.5	76.5	82.5	3	3	1	1	15.5	0.33	1.80	0.99	0.281
4CC	68.5	67.5	86.5	81.5	91.5	4	5.5	1.5	1.5	21	0.43	1.39	0.77	0.596
2CE	68.5	67	86.5	82	90	5	6	1.5	1.5	20.5	0.33	1.83	1.01	0.693
3CE	68.5	67	91.5	84.5	96.5	5	7	1.5	1.5	23.5	0.40	1.51	0.83	0.913
3EB	70	69.5	101.5	94	103.5	4	4.5	2	1.5	22	0.40	1.48	0.81	0.929
3EC	70	68.5	101.5	92	105	4	5.5	2	1.5	25	0.40	1.48	0.81	1.18
3EE	70	68.5	101.5	90	105.5	6	9	2	1.5	27.5	0.40	1.48	0.82	1.53
2EE	72	69.5	103	95	109	6	7	2	2	28.5	0.33	1.80	0.99	1.86
7FC	74	71.5	111	92	120	4	11	2.5	2.5	42	0.82	0.73	0.40	2
2FB	74	77	118	109.5	121.5	4	7.5	2.5	2	26.5	0.35	1.74	0.96	2.05
7FB	74	73	118	99	124	4	11.5	2.5	2	40.5	0.83	0.73	0.40	1.95
2FD	74	73.5	118	106	121.5	4	11.5	2.5	2	32	0.35	1.74	0.96	3.01
5FD	74	73	118	96.5	122	5	11	2.5	2	39	0.55	1.10	0.60	3.07
2BC	70.5	70.5	84.5	80	86	3	3	1	1	16.5	0.35	1.70	0.93	0.315
4CC	73.5	72.5	91.5	86	97	4	5.5	1.5	1.5	22.5	0.46	1.31	0.72	0.631
2CE	73.5	72	91.5	87	95.5	5	6	1.5	1.5	21.5	0.35	1.72	0.95	0.742
3DE	73.5	73	101.5	92.5	106.5	6	7.5	1.5	1.5	26	0.39	1.55	0.85	1.27
3EB	75	77	111.5	103	114.5	4	4.5	2	1.5	23.5	0.40	1.48	0.81	1.18
3EC	75	75.5	111.5	101.5	115.5	4	5.5	2	1.5	27	0.40	1.48	0.81	1.57
3EE	75	74	111.5	99	115.5	7	9	2	1.5	29.5	0.39	1.54	0.85	2
2GB	79	83	128	119	131.5	4	8	2.5	2	28.5	0.35	1.74	0.96	2.54
7GB	79	79	128	107.5	133	4	13	2.5	2	44	0.83	0.73	0.40	2.41
2GD	79	79.5	128	115	131.5	4	12	2.5	2	34.5	0.35	1.74	0.96	3.63
2BC	75.5	76.5	94.5	90	96.5	4	4	1	1	18	0.32	1.90	1.05	0.475
4CC	78.5	78	101.5	94.5	105.5	5	6	1.5	1.5	24	0.43	1.38	0.76	0.863
2CE	78.5	79	101.5	96.5	105.5	5	5.5	1.5	1.5	22.5	0.28	2.11	1.16	1.07
3DE	80	79	111.5	101.5	115.5	6	8	2.5	0.6	28	0.38	1.58	0.87	1.68
3EB	80	81	116.5	107.5	119	4	5	2	1.5	25.5	0.42	1.43	0.79	1.3
3EC	80	79.5	116.5	105.5	120.5	4	6	2	1.5	28.5	0.42	1.43	0.79	1.68
3EE	80	78.5	116.5	104	121.5	7	9	2	1.5	31	0.41	1.47	0.81	2.12
7FC	84	81.5	126	104.5	135	5	12	2.5	2.5	47.5	0.87	0.69	0.38	2.62
2GB	84	88.5	138	128	141	4	8	2.5	2	30	0.35	1.74	0.96	3.05
7GB	84	84.5	138	115.5	142.5	4	13	2.5	2	47	0.83	0.73	0.40	2.92
2GD	84	85	138	122.5	141	4	12	2.5	2	36.5	0.35	1.74	0.96	4.44
5GD	84	85	138	112.5	143	5	12	2.5	2	44	0.55	1.10	0.60	4.53
2BC	80.5	81	99.5	94	101	4	4	1	1	19	0.33	1.80	0.99	0.508

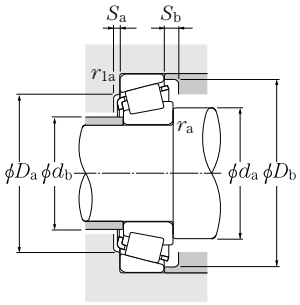
Metric series



d 75 ~ 90mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min^{-1}		Bearing number
d	D	T	B	C	$r_{s\,min}$[1]	$r_{ls\,min}$[1]	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
75	115	25	25	19	1.5	1.5	118	167	20.3	3 000	4 000	**32015XU**
	115	31	31	25.5	1.5	1.5	123	186	22.7	3 000	4 000	**33015U**
	130	27.25	25	22	2	1.5	154	175	—	2 700	3 600	**4T-30215**
	130	33.25	31	27	2	1.5	186	224	27.1	2 700	3 600	**32215U**
	130	41	41	31	2	1.5	231	298	36.0	2 700	3 600	**33215U**
	160	40	37	31	3	2.5	283	305	35.0	2 400	3 200	**30315U**
	160	40	37	26	3	2.5	238	256	29.8	2 100	2 800	**30315DU**
	160	58	55	45	3	2.5	395	470	54.5	2 400	3 200	**32315U**
	160	58	55	45	3	2.5	365	480	56.0	2 300	3 100	**32315CU**
80	110	20	20	16	1	1	79.5	121	14.8	3 000	4 000	**32916XU**
	125	29	29	22	1.5	1.5	154	216	26.1	2 800	3 700	**32016XU**
	125	36	36	29.5	1.5	1.5	192	284	34.5	2 800	3 700	**33016U**
	130	37	37	29	2.5	0.6	199	276	33.0	2 700	3 600	**33116U**
	140	28.25	26	22	2.5	2	177	200	23.7	2 500	3 400	**30216U**
	140	35.25	33	28	2.5	2	221	265	31.5	2 500	3 400	**32216U**
	140	46	46	35	2.5	2	278	365	43.5	2 500	3 400	**33216U**
	160	45	41	31	3	2	238	297	—	2 400	3 200	**4T-T7FC080**
	170	42.5	39	33	3	2.5	325	350	39.5	2 300	3 000	**30316U**
	170	42.5	39	27	3	2.5	262	283	32.5	2 000	2 700	**30316DU**
	170	61.5	58	48	3	2.5	440	525	60.0	2 300	3 000	**32316U**
	170	61.5	58	48	3	2.5	390	505	58.0	2 200	2 900	**32316CU**
85	120	23	23	18	1.5	1.5	104	157	19.1	2 800	3 800	**32917XU**
	130	29	29	22	1.5	1.5	157	224	26.7	2 600	3 500	**32017XU**
	130	36	36	29.5	1.5	1.5	195	296	35.5	2 600	3 500	**33017U**
	140	41	41	32	2.5	2.5	234	330	39.0	2 500	3 400	**33117U**
	150	30.5	28	24	2.5	2	203	232	27.0	2 400	3 200	**30217U**
	150	38.5	36	30	2.5	2	249	300	35.0	2 400	3 200	**32217U**
	150	49	49	37	2.5	2	315	420	49.0	2 400	3 200	**33217U**
	180	44.5	41	34	4	3	335	365	40.5	2 100	2 900	**30317U**
	180	44.5	41	28	4	3	274	293	33.0	1 900	2 500	**30317DU**
	180	63.5	60	49	4	3	445	525	59.0	2 100	2 900	**32317U**
	180	63.5	60	49	4	3	435	575	64.5	2 100	2 700	**32317CU**
90	125	23	23	18	1.5	1.5	108	168	20.0	2 700	3 600	**32918XU**
	140	32	32	24	2	1.5	187	270	31.5	2 500	3 300	**32018XU**
	140	39	39	32.5	2	1.5	238	360	42.0	2 500	3 300	**33018U**
	150	45	45	35	2.5	2.5	280	400	46.0	2 400	3 200	**33118U**

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

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

Static equivalent radial load

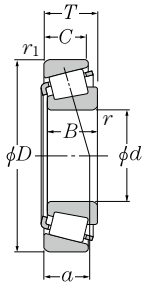
$P_{0r} = 0.5F_r + Y_0F_a$

When $P_{0r} < F_r$ use $P_{0r} = F_r$.

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

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4CC	83.5	83	106.5	99.5	111	5	6	1.5	1.5	25.5	0.46	1.31	0.72	0.912
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	85.5	121.5	112.5	124.5	4	5	2	1.5	27	0.44	1.38	0.76	1.4
4DC	85	84.5	121.5	111	126	4	6	2	1.5	30	0.44	1.38	0.76	1.74
3EE	85	83	121.5	107.5	125	7	10	2	1.5	32	0.43	1.40	0.77	2.23
2GB	89	95	148	137	150.5	4	9	2.5	2	32	0.35	1.74	0.96	3.61
7GB	89	91	148	124	152.5	6	14	2.5	2	50	0.83	0.73	0.40	3.46
2GD	89	91	148	131	150.5	4	13	2.5	2	39	0.35	1.74	0.96	5.4
5GD	89	90	148	119.5	152	6	15	2.5	2	47	0.55	1.10	0.60	5.65
2BC	85.5	86	104.5	99	106.5	4	4	1	1	20	0.35	1.71	0.94	0.54
3CC	88.5	89	116.5	108.5	120.5	6	7	1.5	1.5	27	0.42	1.42	0.78	1.28
2CE	88.5	88.5	116.5	108.5	119.5	6	6.5	1.5	1.5	25	0.28	2.16	1.19	1.61
3DE	90	88.5	121.5	110.5	126	6	15	2.5	2	30.5	0.42	1.44	0.79	1.87
3EB	92	91	130	121	133	4	6	2	2	27.5	0.42	1.43	0.79	1.71
3EC	92	90	130	119.5	134.5	4	7	2	2	31	0.42	1.43	0.79	2.17
3EE	92	89	130	116	135.5	7	11	2	2	35	0.43	1.41	0.78	2.94
7FC	94	94	146	119	153.5	6	15	2	2.5	55	0.87	0.69	0.38	3.92
2GB	94	101.5	158	145	160	4	9.5	2.5	2	34	0.35	1.74	0.96	4.41
7GB	94	97	158	131	160.5	6	15.5	2.5	2	53.5	0.83	0.73	0.40	4.17
2GD	94	97	158	138.5	161.5	4	13.5	2.5	2	41.5	0.35	1.74	0.96	6.48
5GD	94	96	158	127.5	162	4	13.5	2.5	2	50.5	0.55	1.10	0.60	6.61
2BC	93.5	92	111.5	107.5	115.5	4	5	1.5	1.5	21	0.33	1.83	1.01	0.773
4CC	93.5	93.5	121.5	113	126	6	7	1.5	1.5	28.5	0.44	1.36	0.75	1.34
2CE	93.5	94	121.5	114	125.5	6	6.5	1.5	1.5	26	0.29	2.06	1.13	1.69
3DE	97	95	130	118	135.5	7	9	2	2	33	0.41	1.48	0.81	2.44
3EB	97	96.5	140	128.5	141.5	5	6.5	2	2	30	0.42	1.43	0.79	2.13
3EC	97	96	140	127	143.5	5	8.5	2	2	33.5	0.42	1.43	0.79	2.75
3EE	97	95	140	124	144.5	7	12	2	2	37.5	0.42	1.43	0.79	3.61
2GB	103	106.5	166	153.5	168	5	10.5	3	2.5	35.5	0.35	1.74	0.96	5.01
7GB	103	102.5	166	140.5	170	6	16.5	3	2.5	56	0.83	0.73	0.40	4.74
2GD	103	103.5	166	147	169	5	14.5	3	2.5	43	0.35	1.74	0.96	7.22
5GD	103	102	166	135.5	170	7	13	2	2.5	53	0.55	1.10	0.60	7.71
2BC	98.5	97	116.5	112.5	120.5	4	5	1.5	1.5	22	0.34	1.75	0.96	0.815
3CC	100	100	131.5	121	134.5	6	8	2	1.5	30	0.42	1.42	0.78	1.78
2CE	100	100.5	131.5	123.5	135	7	6.5	2	1.5	28	0.27	2.23	1.23	2.22
3DE	102	101	140	127.5	145.5	7	10	2	2	35.5	0.40	1.51	0.83	3.1

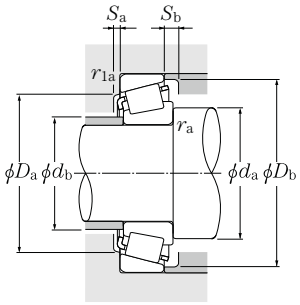
Metric series



d 90 ~ 110mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min⁻¹		Bearing number 2)
d	D	T	B	C	$r_{s\,min}$ 1)	$r_{ls\,min}$ 1)	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
90	160	32.5	30	26	2.5	2	230	267	30.5	2 200	3 000	**30218U**
	160	42.5	40	34	2.5	2	291	360	41.0	2 200	3 000	**32218U**
	160	55	55	42	2.5	2.5	360	490	56.0	2 300	3 000	**33218U**
	190	46.5	43	36	4	3	375	405	44.5	2 000	2 700	**30318U**
	190	46.5	43	30	4	3	300	320	35.5	1 800	2 400	**30318DU**
	190	67.5	64	53	4	3	500	595	65.5	2 000	2 700	**32318U**
95	130	23	23	18	1.5	1.5	112	178	21.0	2 500	3 400	**32919XU**
	145	32	32	24	2	1.5	190	280	32.5	2 300	3 100	**32019XU**
	145	39	39	32.5	2	1.5	243	375	43.0	2 300	3 100	**33019U**
	170	34.5	32	27	3	2.5	250	290	32.5	2 100	2 800	**30219U**
	170	45.5	43	37	3	2.5	330	415	47.0	2 100	2 800	**32219U**
	200	49.5	45	38	4	3	405	445	48.5	1 900	2 500	**30319U**
	200	49.5	45	32	4	3	330	355	38.5	1 700	2 200	**30319DU**
	200	71.5	67	55	4	3	560	670	73.0	1 900	2 500	**32319U**
100	140	25	25	20	1.5	1.5	134	206	23.8	2 400	3 200	**32920XU**
	140	25	24	20	1.5	1.5	108	162	18.6	2 400	3 200	○ **32920**
	145	24	22.5	17.5	3	3	119	153	—	1 800	2 400	**4T-T4CB100**
	150	32	32	24	2	1.5	188	281	32.0	2 200	3 000	**32020XU**
	150	39	39	32.5	2	1.5	248	390	44.5	2 200	3 000	**33020U**
	180	37	34	29	3	2.5	286	335	37.0	2 000	2 700	**30220U**
	180	49	46	39	3	2.5	365	465	51.0	2 000	2 700	**32220U**
	180	63	63	48	3	2.5	465	650	71.5	2 000	2 700	**33220U**
	215	51.5	47	39	4	3	455	500	53.0	1 800	2 400	**30320U**
	215	56.5	51	35	4	3	395	435	46.0	1 800	2 400	**31320XU**
	215	77.5	73	60	4	3	635	770	82.0	1 800	2 400	**32320U**
105	145	25	25	20	1.5	1.5	139	219	25.0	2 300	3 000	○ **32921XA**
	160	35	35	26	2.5	2	223	335	37.5	2 100	2 800	**32021XU**
	160	43	43	34	2.5	2	272	420	47.0	2 100	2 800	**33021U**
	190	39	36	30	3	2.5	320	380	41.0	1 900	2 500	**30221U**
	190	53	50	43	3	2.5	420	540	59.0	1 900	2 500	**32221U**
	225	53.5	49	41	4	3	485	535	56.0	1 700	2 300	**30321U**
	225	58	53	36	4	3	420	470	49.0	1 700	2 300	**31321XU**
	225	81.5	77	63	4	3	680	825	87.0	1 700	2 300	**32321U**
110	150	25	25	20	1.5	1.5	141	226	25.5	2 200	2 900	○ **32922XA**
	170	38	38	29	2.5	2	261	390	43.0	2 000	2 700	**32022XU**

1) Smallest allowable dimension for chamfer dimension r or r_1.
2) Bearings with a ○ mark do not incorporate the subunit dimensions.



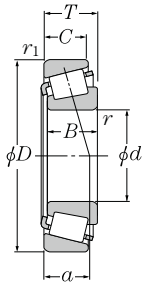
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
3FB	102	103	150	137	151	5	6.5	2	2	32	0.42	1.43	0.79	2.66
3FC	102	101.5	150	134.5	153.5	5	8.5	2	2	36	0.42	1.43	0.79	3.49
3FE	102	101.5	150	131.5	154.5	9	13	2	2.5	41	0.42	1.43	0.78	4.62
2GB	108	112.5	176	162	177.5	5	10.5	3	2.5	37.5	0.35	1.74	0.96	5.83
7GB	108	108.5	176	148.5	180.5	6	16.5	3	2.5	59	0.83	0.73	0.40	5.58
2GD	108	108.5	176	154.5	179	5	14.5	3	2.5	45.5	0.35	1.74	0.96	8.66
2BC	103.5	102	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	126	140	6	8	2	1.5	31.5	0.44	1.36	0.75	1.85
2CE	105	104.5	136.5	127.5	139.5	7	6.5	2	1.5	28.5	0.28	2.16	1.19	2.3
3FB	109	109.5	158	146.5	160.5	5	7.5	2.5	2	34	0.42	1.43	0.79	3.12
3FC	109	107.5	158	142.5	163	5	8.5	2.5	2	39	0.42	1.43	0.79	4.29
2GB	113	118	186	168	185.5	5	11.5	3	2.5	40	0.35	1.74	0.96	6.69
7GB	113	113.5	186	154.5	189	6	17.5	3	2.5	62.5	0.83	0.73	0.40	6.35
2GD	113	114.5	186	163.5	187.5	5	16.5	3	2.5	49	0.35	1.74	0.96	10.1
2CC	108.5	109	131.5	127.5	135.5	4	5	1.5	1.5	24.5	0.33	1.82	1.00	1.12
	108.5	110	131.5	127	135	4	5	1.5	1.5	25	0.35	1.73	0.95	1.08
4CB	114	108.5	131	130	140.5	4	6.5	2.5	2.5	30	0.47	1.27	0.70	1.14
4CC	110	109.5	141.5	130.5	145	6	8	2	1.5	32.5	0.46	1.31	0.72	1.91
2CE	110	108.5	141.5	132.5	144.5	7	6.5	2	1.5	29.5	0.29	2.09	1.15	2.4
3FB	114	115.5	168	154.5	169.5	5	8	2.5	2	36	0.42	1.43	0.79	3.76
3FC	114	113.5	168	151	172	5	10	2.5	2	41.5	0.42	1.43	0.79	5.11
3FE	114	113	168	147	173	10	15	2.5	2	45.5	0.40	1.48	0.82	6.76
2GB	118	126	201	181.5	199.5	5	12.5	3	2.5	41.5	0.35	1.74	0.96	8.3
7GB	118	122.5	201	165.5	203	7	21.5	3	2.5	69	0.83	0.73	0.40	8.7
2GD	118	122.5	201	174.5	201.5	5	17.5	3	2.5	53	0.35	1.74	0.96	12.8
	113.5	113.5	136.5	131.5	140.5	5	5	1.5	1.5	25	0.34	1.76	0.97	1.2
4DC	117	115.5	150	138.5	153.5	6	9	2	2	34.5	0.44	1.35	0.74	2.44
2DE	117	116	150	141.5	153.5	7	9	2	2	31	0.28	2.12	1.17	3
3FB	119	121.5	178	163	178.5	6	9	2.5	2	38	0.42	1.43	0.79	4.45
3FC	119	119	178	158.5	181.5	6	10	2.5	2	44	0.42	1.43	0.79	6.23
2GB	123	132	211	190	208.5	6	12.5	3	2.5	43.5	0.35	1.74	0.96	9.37
7GB	123	128.5	211	173.5	213.5	7	22	3	2.5	71.5	0.83	0.73	0.40	9.65
2GD	123	129	211	182.5	210.5	6	18.5	3	2.5	55	0.35	1.74	0.96	14.7
	118.5	118.5	141.5	136.5	146	5	5	1.5	1.5	26.5	0.36	1.69	0.93	1.24
4DC	122	122	160	147.5	164	7	9	2	2	36.5	0.43	1.39	0.77	3.07

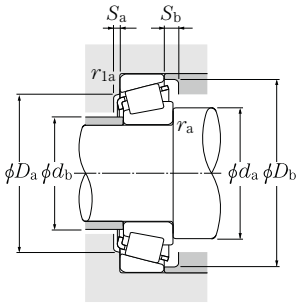
Metric series



d 110 ～ 140mm

d	D	T	B	C	$r_{s\,min}$ [1]	$r_{ls\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication	Bearing number [2] [3]
	170	47	47	37	2.5	2	320	500	55.5	2 000	2 700	**33022U**
	180	56	56	43	2.5	2.5	400	610	66.5	1 900	2 600	**33122UE1**
	200	41	38	32	3	2.5	360	435	46.5	1 800	2 400	**30222U**
110	200	56	53	46	3	2.5	465	605	65.0	1 800	2 400	**32222U**
	240	54.5	50	42	4	3	530	585	60.0	1 600	2 200	**30322U**
	240	63	57	38	4	3	480	535	55.0	1 600	2 200	**31322XU**
	240	84.5	80	65	4	3	785	970	99.5	1 600	2 200	**32322U**
	165	29	29	23	1.5	1.5	180	294	32.0	2 000	2 600	**32924XU**
	165	29	27	23	1.5	1.5	131	205	22.5	2 000	2 600	○**32924**
	170	27	25	19.5	3	2	171	235	—	1 900	2 600	**4T-T4CB120**
	180	38	38	29	2.5	2	272	420	45.5	1 800	2 500	**32024XU**
	180	48	48	38	2.5	2.5	325	520	56.5	1 800	2 500	**33024U**
120	200	62	62	48	2.5	2.5	510	760	80.5	1 800	2 300	**33124U**
	215	43.5	40	34	3	2.5	385	470	49.0	1 700	2 200	**30224U**
	215	61.5	58	50	3	2.5	510	680	71.5	1 700	2 200	**32224U**
	260	59.5	55	46	4	3	620	695	69.5	1 500	2 000	**30324U**
	260	68	62	42	4	3	570	655	66.0	1 500	2 000	**31324XU**
	260	90.5	86	69	4	3	905	1 130	114	1 500	2 000	**32324U**
	180	32	32	25	2	1.5	215	350	37.5	1 800	2 400	**32926XU**
	180	32	30	26	2	2	157	252	26.9	1 800	2 400	○**32926**
	200	45	45	34	2.5	2	350	545	57.0	1 700	2 200	**32026XU**
	200	55	55	43	2.5	2.5	415	660	69.5	1 700	2 300	**33026U**
130	230	43.75	40	34	4	3	415	505	51.5	1 500	2 000	**30226U**
	230	67.75	64	54	4	3	585	815	83.5	1 500	2 000	**32226U**
	280	63.75	58	49	5	4	830	830	81.0	1 400	2 000	＊ **30326UUTG**
	280	72	66	44	5	4	670	780	77.0	1 400	1 800	**31326XU**
	280	98.75	93	78	4	4	1 140	1 240	122	1 400	2 000	＊ **32326UTG**
	190	32	32	25	2	1.5	221	375	39.0	1 700	2 200	**32928XU**
	195	29	27	21	3	3	208	299	—	1 700	2 200	**4T-T4CB140**
	210	45	45	34	2.5	2	365	580	60.0	1 600	2 100	**32028XU**
	210	56	56	44	2.5	2	435	715	74.0	1 600	2 100	**33028U**
140	250	45.75	42	36	4	3	465	570	57.0	1 400	1 900	**30228U**
	250	71.75	68	58	4	3	675	920	92.0	1 400	1 900	**32228U**
	300	67.75	62	53	5	4	945	950	91.5	1 300	1 800	＊ **30328UUTG**
	300	77	70	47	5	4	760	905	87.0	1 300	1 700	**31328XU**
	300	107.75	102	85	4	4	1 270	1 370	132	1 300	1 800	＊ **32328UTG**

1) Smallest allowable dimension for chamfer dimension r or r_1. 2) Bearings with a ○ mark do not incorporate the subunit dimensions.
3) Bearing numbers marked "＊" designate **ULTAGE series** bearings.



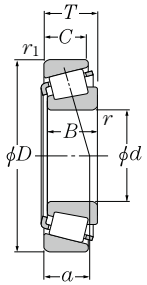
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	Load center mm a	Constant e	Axial load factors Y_2	Y_0	Mass kg (approx.)
2DE	122	121	160	148	162	7	10	2	2	33.5	0.29	2.09	1.15	3.84
3FE	122	121.5	170	150.5	174	9	13	2	2.5	44	0.42	1.43	0.79	5.52
3FB	124	128	188	170.5	188.5	6	9	2.5	2	40	0.42	1.43	0.79	5.19
3FC	124	125.5	188	167	192	6	10	2.5	2	47	0.42	1.43	0.79	7.44
2GB	128	141	226	203	222	6	12.5	3	2.5	45.5	0.35	1.74	0.96	11.1
7GB	128	137	226	184	225.5	7	25	3	2.5	76	0.83	0.73	0.40	11.9
2GD	128	136.5	226	195	224	6	19.5	3	2.5	57.5	0.35	1.74	0.96	17.6
2CC	128.5	129.5	156.5	150	160	6	6	1.5	1.5	29.5	0.35	1.72	0.95	1.76
	128.5	129.5	156.5	147.5	159.5	6	6	1.5	1.5	31	0.37	1.60	0.88	1.65
4CB	134	128.5	156	153	165	7	7.5	2.5	2.5	35	0.47	1.27	0.70	1.69
4DC	132	131	170	156	174.5	7	9	2	2	39	0.46	1.31	0.72	3.29
2DE	132	130	170	157	172	6	10	2	2.5	36	0.31	1.97	1.08	4.14
3FE	132	132.5	190	168	193	9	14	2	2.5	48	0.40	1.51	0.83	7.67
4FB	134	139.5	203	184.5	203	6	9.5	2.5	2	44	0.44	1.38	0.76	6.32
4FD	134	135.5	203	178	206	6	11.5	2.5	2	51.5	0.44	1.38	0.76	9.08
2GB	138	153	246	218	239	6	13.5	3	2.5	49	0.35	1.74	0.96	14.1
7GB	138	147	246	200	245	9	26	3	2.5	82.5	0.83	0.73	0.40	15.2
2GD	138	146.5	246	210	240.5	6	21.5	3	2.5	61.5	0.35	1.74	0.96	22.1
2CC	140	140.5	171.5	163	174	6	7	2	1.5	31.5	0.34	1.77	0.97	2.41
	140	141.5	170	161.5	174	6	6	2	2	34	0.37	1.60	0.88	2.24
4EC	142	144	190	173.5	193.5	8	11	2	2	43.5	0.43	1.38	0.76	5
2FE	142	143	190	173.5	193	8	12	2	2.5	42.5	0.34	1.76	0.97	6.09
4FB	148	151	216	199.5	218	7	9.5	3	2.5	45.5	0.44	1.38	0.76	7.05
4FD	148	147	216	190	220.5	7	13.5	3	2.5	57	0.44	1.38	0.76	11.3
2GB	152	165.5	262	235	257.5	8	14.5	4	3	53.5	0.35	1.74	0.96	17.4
7GB	152	154	262	214.5	263	9	28	4	3	87.5	0.83	0.73	0.40	19
	148	159	262	230	264	2.4	20	3	3	67.5	0.35	1.73	0.95	27.4
2CC	150	150	181.5	172.5	184	6	6	2	1.5	34	0.36	1.67	0.92	2.5
4CB	154	149	181	176	190	5	8	2.5	2.5	40.5	0.50	1.19	0.66	2.35
4DC	152	153	200	182.5	203	8	11	2	2	46	0.46	1.31	0.72	5.32
2DE	152	152	200	182.5	203	7	12	2	2	45.5	0.36	1.67	0.92	6.59
4FB	158	163	236	214	235	7	9.5	3	2.5	48.5	0.44	1.38	0.76	8.73
4FD	158	158.5	236	207	239.5	9	13.5	3	2.5	61	0.44	1.38	0.76	14.2
2GB	162	175.5	282	252	275.5	9	14.5	4	3	56.5	0.35	1.74	0.96	21.1
7GB	162	162.5	282	232	282.5	9	30	4	3	94	0.83	0.73	0.40	22.9
	158	168.5	282	244	281	1.5	20	3	3	74.5	0.35	1.73	0.95	33.5

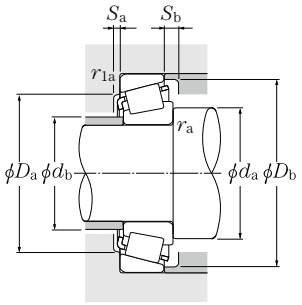
Metric series



d 150 ~ 200mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min-1		Bearing number 2) 3)
d	D	T	B	C	$r_{s\,min}$ 1)	$r_{ls\,min}$ 1)	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
150	210	38	38	30	2.5	2	297	490	50.0	1 600	2 100	32930XU
	225	48	48	36	3	2.5	410	655	66.0	1 400	1 900	32030XU
	270	49	45	38	4	3	500	605	59.0	1 300	1 700	30230U
	270	77	73	60	4	3	775	1 070	105	1 300	1 700	32230U
	320	72	65	55	5	4	1 060	1 070	101	1 200	1 700	＊ 30330UUTG
	320	82	75	50	5	4	860	1 030	97.5	1 200	1 600	31330XU
	320	114	108	90	4	4	1 490	1 750	166	1 200	1 700	＊ 32330UTG
160	220	38	38	30	2.5	2	305	520	52.5	1 500	1 900	32932XU
	240	51	51	38	3	2.5	485	790	78.5	1 400	1 800	32032XU
	290	52	48	40	4	3	675	720	68.5	1 200	1 700	＊ 30232UUTG
	290	84	80	67	4	3	1 140	1 420	136	1 200	1 700	＊ 32232UUTG
	340	75	68	58	5	4	1 170	1 200	110	1 100	1 600	＊ 30332UUTG
	340	121	114	95	4	4	1 580	1 840	170	1 100	1 600	＊ 32332UTG
170	230	38	38	30	2.5	2	315	560	55.0	1 400	1 800	32934XU
	260	57	57	43	3	2.5	555	895	86.5	1 300	1 700	32034XU
	310	57	52	43	5	4	780	845	79.5	1 100	1 600	＊ 30234UUTG
	310	91	86	71	5	4	1 280	1 600	150	1 100	1 600	＊ 32234UUTG
	360	80	72	62	5	4	1 290	1 320	120	1 000	1 500	＊ 30334UUTG
	360	127	120	100	4	4	1 680	1 940	177	1 000	1 500	＊ 32334UTG
180	250	45	45	34	2.5	2	390	700	68.0	1 300	1 700	32936XU
	280	64	64	48	3	2.5	825	1 170	111	1 200	1 700	＊ 32036XUUTG
	320	57	52	43	5	4	805	890	82.5	1 100	1 500	＊ 30236UUTG
	320	91	86	71	5	4	1 320	1 690	157	1 100	1 500	＊ 32236UUTG
	380	83	75	64	4	4	1 170	1 190	107	960	1 400	＊ 30336UTG
	380	134	126	106	4	4	1 850	2 150	192	960	1 400	＊ 32336UTG
190	260	45	45	34	2.5	2	390	710	68.0	1 200	1 600	32938XU
	260	45	42	36	2.5	2.5	310	525	50.5	1 200	1 600	○ 32938
	290	64	64	48	3	2.5	840	1 210	113	1 100	1 600	＊ 32038XUUTG
	340	60	55	46	5	4	920	1 000	91.5	1 000	1 400	＊ 30238UUTG
	340	97	92	75	5	4	1 480	1 850	169	1 000	1 400	＊ 32238UUTG
	400	86	78	65	5	5	1 200	1 200	106	900	1 300	＊ 30338UTG
	400	140	132	109	5	5	2 040	2 390	211	900	1 300	＊ 32338UTG
200	280	51	51	39	3	2.5	620	895	84.0	1 100	1 600	＊ 32940XUUTG
	310	70	70	53	3	2.5	1 030	1 470	135	1 100	1 500	＊ 32040XUUTG

1) Smallest allowable dimension for chamfer dimension r or r_1. 2) Bearings with a ○ mark do not incorporate the subunit dimensions.
3) Bearing numbers marked "＊" designate **ULTAGE series** bearings.



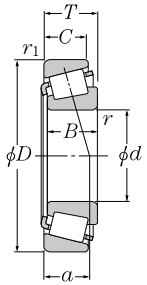
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
2DC	162	162	200	189.5	202	7	8	2	2	36.5	0.33	1.83	1.01	3.93
4EC	164	164	213	195	217.5	8	12	2.5	2	49.5	0.46	1.31	0.72	6.45
4GB	168	175	256	230	251.5	7	11	3	2.5	51.5	0.44	1.38	0.76	11
4GD	168	169	256	222	256	8	17	3	2.5	64.5	0.44	1.38	0.76	18
2GB	172	188.5	302	270	294	8	17	4	3	61	0.35	1.74	0.96	25.4
7GB	172	173.5	302	248	302	9	32	4	3	100.5	0.83	0.73	0.40	27.7
	168	182.5	302	254	298	4.3	24	3	3	80	0.37	1.60	0.88	42.1
2DC	172	172	210	199	213	7	8	2	2	38.5	0.35	1.73	0.95	4.14
4EC	174	174.5	228	208	231.5	8	13	2.5	2	52.5	0.46	1.31	0.72	7.86
4GB	178	188.5	276	248	271	8	12	3	2.5	55.5	0.44	1.38	0.76	13.4
4GD	178	181	276	238	277	10	17	3	2.5	70	0.44	1.38	0.76	23.9
2GB	182	200.5	322	286.5	312.5	10	17	4	3	64	0.35	1.74	0.96	29.8
	178	196.5	322	272	318.5	2.3	26	3	3	85	0.37	1.60	0.88	48.9
3DC	182	181	220	208	223.5	7	8	2	2	42.5	0.38	1.56	0.86	4.4
4EC	184	187	248	224.5	250	10	14	2.5	2	56	0.44	1.35	0.74	10.6
4GB	192	202	292	265.5	290.5	8	14	4	3	60.5	0.44	1.38	0.76	16.9
4GD	192	194	292	255	297	10	20	4	3	75	0.44	1.38	0.76	29.2
2GB	192	212.5	342	305	332.5	10	18	4	3	68	0.35	1.74	0.96	35.2
	188	208	342	287	336	1.5	27	3	3	89.5	0.37	1.60	0.88	56.5
4DC	192	192	240	219.5	241.5	8	11	2	2	54	0.48	1.25	0.69	6.55
3FD	194	199	268	243	269	10	16	2.5	2	59.5	0.42	1.42	0.78	14.5
4GB	202	210.5	302	274	299.5	9	14	4	3	63	0.45	1.33	0.73	17.8
4GD	202	202	302	263	305.5	10	20	4	3	77.5	0.45	1.33	0.73	30.4
	198	227.5	362	314	345	1.5	19	3	3	72.5	0.37	1.60	0.88	38.9
	198	219	362	305	357	2.4	28	3	3	95	0.37	1.60	0.88	67.7
4DC	202	201.5	250	230	251	8	11	2	2	55	0.48	1.26	0.69	6.82
	202	205	248	233	250.5	8	9	2	2	48.5	0.37	1.60	0.88	6.27
4FD	204	206.5	278	252	281	10	16	2.5	2	62.5	0.44	1.36	0.75	15
4GB	212	223	322	293	320.5	9	14	4	3	64	0.44	1.38	0.76	21.5
4GD	212	214	322	283	325.5	11	22	4	3	87.5	0.44	1.38	0.76	36.1
	212	241	378	335	366.5	2.3	21	4	4	74.5	0.37	1.60	0.88	43.6
	212	233	378	320	373.5	1.5	31	4	4	100	0.37	1.60	0.88	77
3EC	214	213.5	268	251.5	272	9	12	2.5	2	53.5	0.39	1.52	0.84	9.28
4FD	214	218.5	298	269	298.5	11	17	2.5	2	66.5	0.43	1.39	0.77	19.2

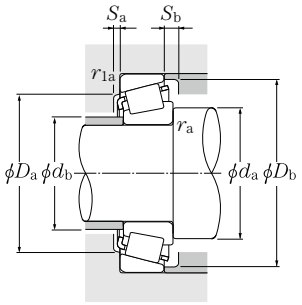
Metric series



d 200 ～ 320mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min⁻¹		Bearing number 2) 3)
d	D	T	B	C	$r_{s\,min}$ 1)	$r_{ls\,min}$ 1)	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
200	360	64	58	48	5	4	1 010	1 110	99.0	950	1 300	＊ 30240UUTG
	360	104	98	82	5	4	1 690	2 130	191	950	1 300	＊ 32240UUTG
	420	89	80	67	5	5	1 340	1 370	119	850	1 200	＊ 30340UTG
	420	146	138	115	5	5	2 240	2 650	230	850	1 200	＊ 32340UTG
220	300	51	51	39	3	2.5	615	950	87.0	1 000	1 500	＊ 32944XUUTG
	300	51	48	41	2.5	2.5	385	670	61.0	1 000	1 400	○ 32944E1
	340	76	76	57	4	3	1 180	1 690	152	960	1 400	＊ 32044XUUTG
	400	72	65	54	4	4	1 050	1 220	106	840	1 200	＊ 30244UTG
	400	114	108	90	4	4	1 780	2 410	209	840	1 200	＊ 32244UTG
	460	97	88	73	5	5	1 620	1 690	142	770	1 100	＊ 30344UTG
	460	154	145	122	5	5	2 590	3 050	259	770	1 100	＊ 32344UTG
240	320	51	51	39	3	2.5	625	1 000	90.0	940	1 300	＊ 32948XUUTG
	360	76	76	57	4	3	1 190	1 760	154	870	1 200	＊ 32048XUUTG
	440	79	72	60	4	4	1 250	1 480	125	760	1 100	＊ 30248UTG
	440	127	120	100	4	4	2 180	2 750	232	760	1 100	＊ 32248UTG
	500	105	95	80	5	5	1 900	2 000	165	690	990	＊ 30348UTG
260	360	63.5	63.5	48	3	2.5	905	1 430	124	860	1 200	＊ 32952XUUTG
	400	87	87	65	5	4	1 540	2 270	193	800	1 100	＊ 32052XUUTG
	480	89	80	67	5	5	1 500	1 810	149	690	990	＊ 30252UTG
	480	137	130	106	5	5	2 410	3 350	275	690	990	＊ 32252UTG
280	380	63.5	63.5	48	3	2.5	930	1 520	129	790	1 100	＊ 32956XUUTG
	420	87	87	65	5	4	1 570	2 350	197	740	1 000	＊ 32056XUUTG
	500	89	80	67	5	5	1 590	1 910	155	630	900	＊ 30256UTG
	500	137	130	106	5	5	2 530	3 500	283	630	900	＊ 32256UTG
300	420	76	76	57	4	3	1 290	2 090	173	720	1 000	＊ 32960XUUTG
	460	100	100	74	5	4	1 920	2 830	232	680	960	＊ 32060XUUTG
	540	96	85	71	5	5	1 820	2 220	176	580	830	＊ 30260UTG
	540	149	140	115	5	5	2 950	4 100	325	580	830	＊ 32260UTG
320	440	76	76	57	4	3	1 300	2 150	176	670	960	＊ 32964XUUTG
	440	76	72	63	3	3	955	1 880	153	670	900	○ 32964E1
	480	100	100	74	5	4	1 940	2 940	237	630	900	＊ 32064XUUTG
	580	104	92	75	5	5	2 130	2 580	201	540	770	＊ 30264UTG
	580	159	150	125	5	5	3 350	4 650	360	540	770	＊ 32264UTG

1) Smallest allowable dimension for chamfer dimension r or r_1. 2) Bearings with a ○ mark do not incorporate the subunit dimensions.
3) Bearing numbers marked "＊" designate **ULTAGE series** bearings.



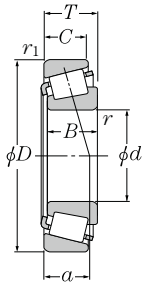
Dynamic equivalent radial load
$P_r = XF_r + YF_a$

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

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4GB	222	235	342	311	338	10	16	4	3	70	0.44	1.38	0.76	25.2
3GD	222	224.5	342	299	342.5	11	22	4	3	85	0.41	1.48	0.81	43.8
	222	251	398	350	382.5	5.3	22	4	4	77	0.37	1.60	0.88	51.5
	222	242	398	335	391.5	3.2	31	4	4	105	0.37	1.60	0.88	89.6
3EC	234	233.5	288	269.5	291	10	12	2.5	2	59.5	0.43	1.41	0.78	9.98
	232	238	288	270	291	10	10	2	2	57	0.39	1.55	0.85	9.47
4FD	238	239.5	326	293.5	326	12	19	3	2.5	72.5	0.43	1.39	0.77	24.9
	238	262.5	382	334	368	3.4	18	3	3	82	0.49	1.23	0.68	34.8
	238	249	382	323	380.5	4.4	24	3	3	102	0.49	1.23	0.68	59.8
	242	270	438	383	418.5	4.2	24	4	4	86.5	0.37	1.60	0.88	66.6
	242	262.5	438	371	431	1.5	32	4	4	112	0.37	1.60	0.88	110
4EC	254	252.5	308	289	312.5	10	12	2.5	2	65.5	0.46	1.31	0.72	10.9
4FD	258	258.5	346	311.5	347	12	19	3	2.5	78	0.46	1.31	0.72	26.5
	258	284.5	422	368	406	3.9	19	3	3	91	0.49	1.23	0.68	47.7
	258	270.5	422	365	421.5	4.1	27	3	3	107	0.43	1.39	0.77	78.9
	262	294.5	478	417	456	8.1	25	4	4	94	0.37	1.60	0.88	88.3
3EC	274	278	348	323	348.5	11	15	2.5	2	69.5	0.41	1.48	0.81	18.7
4FC	282	283.5	382	346	383	14	22	4	3	85.5	0.43	1.38	0.76	39
	282	307	458	396	438.5	4.2	22	4	4	99.5	0.49	1.23	0.68	63.4
	282	297	458	385	453	2.9	31	4	4	121.5	0.49	1.23	0.68	100
4EC	294	297	368	341.5	369.5	11	15	2.5	2	75	0.43	1.39	0.76	19.9
4FC	302	301	402	363	403	14	22	4	3	90.5	0.46	1.31	0.72	40.5
	302	324.5	478	422	464.5	5.9	22	4	4	102	0.49	1.23	0.68	66.5
	302	312	478	405	473	6.4	31	4	4	123.5	0.49	1.23	0.68	110
3FD	318	322	406	377.5	406.5	13	19	3	2.5	80	0.39	1.52	0.84	31.4
4GD	322	324.5	442	398.5	441.5	15	26	4	3	98	0.43	1.38	0.76	57.2
	322	349.5	518	453	498	4.9	25	4	4	111	0.49	1.23	0.68	83.5
	322	339	518	438	511.5	2.6	34	4	4	135.5	0.49	1.23	0.68	140
3FD	338	341	426	395.5	427	13	19	3	2.5	85	0.42	1.44	0.79	32.8
	334	345.5	426	392	424.5	13	13	3	2.5	85	0.39	1.55	0.85	33.2
4GD	342	344.5	462	418.5	463	15	26	4	3	104	0.46	1.31	0.72	60.2
	342	372	558	485	531.5	4.7	29	4	4	118.5	0.47	1.27	0.70	100
	342	363	558	473	551	3.9	34	4	4	142	0.47	1.27	0.70	170

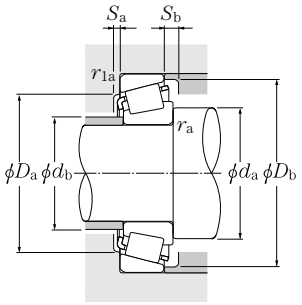
Metric series



d 340 ~ 440mm

Boundary dimensions mm							Basic load rating kN		Fatigue load limit kN	Allowable speed min^{-1}		Bearing number [2) 3)]
d	D	T	B	C	$r_{s\,min}$ [1)]	$r_{ls\,min}$ [1)]	dynamic C_r	static C_{0r}	C_u	Grease lubrication	Oil lubrication	
340	460	76	76	57	4	3	1 340	2 270	183	630	900	∗ **32968XUUTG**
	460	76	72	63	3	3	1 010	1 980	159	630	900	○ **32968E1**
	520	112	106	90	5	5	2 120	3 150	249	590	840	∗ **32068UTG**
360	480	76	76	57	4	3	1 350	2 330	185	590	840	∗ **32972XUUTG**
	540	112	106	90	5	5	2 230	3 300	258	550	780	∗ **32072UTG**
380	520	87	82	72	4	4	1 460	2 500	194	550	790	∗ **32976UTG**
	560	112	106	90	5	5	2 460	3 800	292	520	740	∗ **32076UTG**
400	540	87	82	71	4	4	1 530	2 710	207	520	740	∗ **32980UTG**
	600	125	118	100	5	5	2 790	4 250	320	490	700	∗ **32080UTG**
420	560	87	82	71	4	4	1 570	2 840	215	490	700	∗ **32984UTG**
	620	125	118	100	6	5	2 920	4 550	340	460	660	∗ **32084UTG**
440	600	100	95	82	4	4	2 060	3 450	258	470	670	∗ **32988UTG**
	650	130	122	104	6	6	3 250	5 000	365	440	620	∗ **32088UTG**

1) Smallest allowable dimension for chamfer dimension r or r_1. 2) Bearings with a ○ mark do not incorporate the subunit dimensions.
3) Bearing numbers marked "∗" designate **ULTAGE series** bearings.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

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

Static equivalent radial load

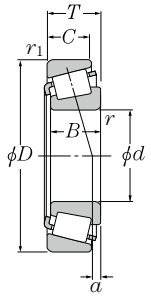
$P_{0r} = 0.5F_r + Y_0F_a$

When $P_{0r} < F_r$ use $P_{0r} = F_r$.

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

ISO Dimension series	Installation-related dimensions mm									Load center mm	Constant	Axial load factors		Mass kg
	d_a Min.	d_b Max.	D_a Max.	D_a Min.	D_b Min.	S_a Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4FD	358	360	446	414	447.5	13	19	3	2.5	90.5	0.44	1.37	0.75	34.5
	354	364	446	413	445.5	13	13	3	2.5	87	0.39	1.55	0.85	34
	362	368.5	498	452	496	3.5	22	4	4	103.5	0.37	1.60	0.88	78.5
4FD	378	379.5	466	431.5	467.5	13	19	3	2.5	96.5	0.46	1.31	0.72	36.3
	382	388	518	476	520	5.5	22	4	4	106	0.37	1.60	0.88	83
	398	404.5	502	464.5	503	4	15	3	3	101	0.40	1.49	0.82	51.3
	402	406.5	538	495	539	6.5	22	4	4	109.5	0.37	1.60	0.88	89.1
	418	422.5	522	482	521.5	4	16	3	3	106	0.42	1.43	0.79	54
	422	428.5	578	526	575	5	25	4	4	119	0.37	1.60	0.88	110
	438	442	542	501.5	543	3.5	16	3	3	111.5	0.44	1.37	0.76	56.2
	448	449.5	598	549	598	6.5	25	4	4	120	0.37	1.60	0.88	120
	458	465.5	582	543	580.5	3.5	18	3	3	106	0.35	1.70	0.93	76
	468	469.5	622	576.5	627.5	5	26	5	5	127	0.37	1.60	0.88	140

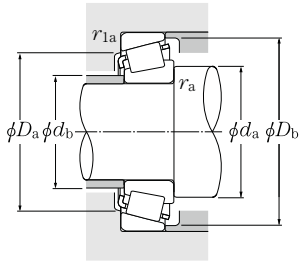
Inch series



d 12.700 ~ 22.225mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
12.700	34.988	10.998	10.988	8.730	13.7	11.6	12 000	16 000
14.989	34.988	10.998	10.988	8.730	13.7	11.6	12 000	16 000
15.875	41.275	14.288	14.681	11.112	22.6	18.7	10 000	13 000
	42.862	14.288	14.288	9.525	19.5	17.5	8 700	12 000
	42.862	16.670	16.670	13.495	29.6	26.0	9 800	13 000
	47.000	14.381	14.381	11.112	26.6	24.2	8 600	11 000
	49.225	19.845	21.539	14.288	42.5	39.0	8 500	11 000
16.993	47.000	14.381	14.381	11.112	26.6	24.2	8 600	11 000
17.462	39.878	13.843	14.605	10.668	26.4	24.2	10 000	13 000
19.050	39.992	12.014	11.153	9.525	14.2	12.8	10 000	13 000
	45.237	15.494	16.637	12.065	31.5	28.6	8 900	12 000
	47.000	14.381	14.381	11.112	26.6	24.2	8 600	11 000
	49.225	18.034	19.050	14.288	42.5	39.0	8 500	11 000
	49.225	19.845	21.539	14.288	42.5	39.0	8 500	11 000
	49.225	21.209	19.050	17.462	42.5	39.0	8 500	11 000
	53.975	22.225	21.839	15.875	44.5	39.0	8 000	11 000
	56.896	19.368	19.837	15.875	47.5	46.5	7 200	9 600
19.987	47.000	14.381	14.381	11.112	26.6	24.2	8 600	11 000
20.000	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
20.625	49.225	19.845	21.539	14.288	42.5	39.0	8 500	11 000
20.638	49.225	19.845	19.845	15.875	41.5	39.0	8 200	11 000
21.430	50.005	17.526	18.288	13.970	42.0	39.0	8 000	11 000
21.986	45.974	15.494	16.637	12.065	33.0	34.0	8 400	11 000
22.225	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
	50.005	17.526	18.288	13.970	42.0	39.0	8 000	11 000
	52.388	19.368	20.168	14.288	45.0	43.0	7 600	10 000
	53.975	19.368	20.168	14.288	45.0	43.0	7 600	10 000

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

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

Static equivalent radial load

$P_{0r} = 0.5F_r + Y_0F_a$

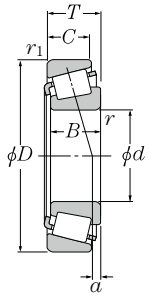
When $P_{0r} < F_r$ use $P_{0r} = F_r$.

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

Bearing number 1)	Installation-related dimensions mm						Load center mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
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	0.093
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	0.123
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	0.13
4T-LM11749/LM11710	24	22	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	25	23.5	39.5	41.5	1.3	1.3	5.6	0.30	2.00	1.10	0.123
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	0.19
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	0.268
4T-05079†/05185	26.5	24	40.5	42.5	1.5	1.3	4.2	0.36	1.68	0.92	0.118
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	25.4	42	44.5	1.5	1.3	9.4	0.27	2.26	1.24	0.18
4T-12580/12520	28.5	26	42.5	45.5	1.5	1.5	7.1	0.32	1.86	1.02	0.183
4T-M12649/M12610	29.5	27.5	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	0.128
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	0.196
4T-1380/1329††	29.5	27	46	49	1.5	1.5	7.4	0.29	2.05	1.13	0.22

1) 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.

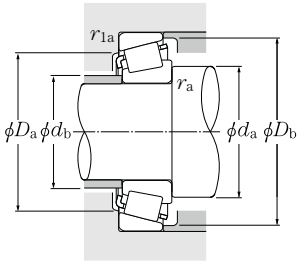
Inch series



d 22.225 ~ 28.575mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
22.225	56.896	19.368	19.837	15.875	47.5	46.5	7 200	9 600
	57.150	22.225	22.225	17.462	52.5	49.5	7 100	9 500
22.606	47.000	15.500	15.500	12.000	30.5	32.5	8 200	11 000
23.812	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
	50.292	14.224	14.732	10.668	32.0	34.0	7 400	9 900
	56.896	19.368	19.837	15.875	47.5	46.5	7 200	9 600
24.981	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
25.000	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
25.159	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
25.400	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
	50.005	13.495	14.260	9.525	28.8	27.9	7 500	10 000
	50.292	14.224	14.732	10.668	32.0	34.0	7 400	9 900
	51.994	15.011	14.260	12.700	28.8	27.9	7 500	10 000
	56.896	19.368	19.837	15.875	47.5	46.5	7 200	9 600
	57.150	19.431	19.431	14.732	47.0	48.5	6 900	9 200
	61.912	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	64.292	21.433	21.433	16.670	57.5	64.5	6 100	8 100
	65.088	22.225	21.463	15.875	52.0	50.5	5 700	7 600
	66.421	23.812	25.433	19.050	71.5	72.5	6 200	8 200
26.157	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
26.162	66.421	23.812	25.433	19.050	71.5	72.5	6 200	8 200
26.988	50.292	14.224	14.732	10.668	32.0	34.0	7 400	9 900
	60.325	19.842	17.462	15.875	44.0	45.5	6 700	8 900
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	66.421	23.812	25.433	19.050	71.5	72.5	6 200	8 200
28.575	56.896	19.845	19.355	15.875	45.0	44.5	6 700	8 900
	57.150	17.462	17.462	13.495	44.0	45.5	6 700	8 900

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

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

Static equivalent radial load

$P_{0r} = 0.5F_r + Y_0F_a$

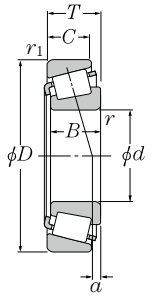
When $P_{0r} < F_r$ use $P_{0r} = F_r$.

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

Bearing number 1)	Installation-related dimensions mm						Load center mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4T-1755/1729	29	27.5	49	51	1.3	1.3	6.5	0.31	1.95	1.07	0.252
4T-1280/1220	29.5	29	49	52	0.8	1.5	7.1	0.35	1.73	0.95	0.287
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	0.40	1.49	0.82	0.121
4T-L44640/L44610	30.5	28.5	44.5	47	1.5	1.3	3.4	0.37	1.60	0.88	0.133
4T-1779/1729	29.5	28.5	49	51	0.8	1.3	6.5	0.31	1.95	1.07	0.244
4T-07098/07196	31	29	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.121
4T-07097/07196	31	29	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.116
4T-07096/07196	31.5	29.5	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.12
4T-07100/07196	30.5	29.5	44.5	47	1	1	3.0	0.40	1.49	0.82	0.114
4T-07100S/07196	31.5	29.5	44.5	47	1.5	1	3.0	0.40	1.49	0.82	0.114
4T-L44643/L44610	32	30	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	0.141
4T-1780/1729	30.5	30	49	51	0.8	1.3	6.5	0.31	1.95	1.07	0.234
4T-M84548/M84510	38.5	33	48.5	54	1.5	1.5	3.4	0.55	1.10	0.60	0.244
4T-15101/15243	32.5	31.5	54	58	0.8	2	6.0	0.35	1.71	0.94	0.301
4T-15100/15245	38	31.5	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.301
4T-15102/15245	34	31.5	55	58	1.5	1.3	6.0	0.35	1.71	0.94	0.303
4T-M86643/M86610	38	36.5	54	60	1.5	1.5	3.3	0.55	1.10	0.60	0.372
4T-23100/23256	39	34.5	53	63	1.5	1.5	2.0	0.73	0.82	0.45	0.363
4T-2687/2631	33.5	31.5	58	60	1.3	1.3	9.3	0.25	2.36	1.30	0.444
4T-15103/15245	33	32.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.3
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	0.261
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	5.9	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	0.197

1) 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.

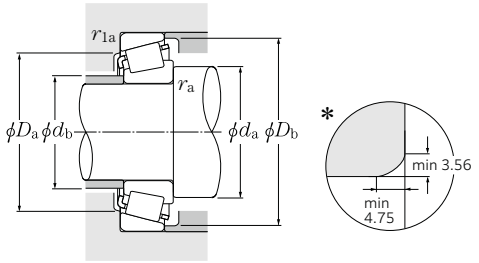
Inch series
J series



d 28.575 ~ 31.750mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
28.575	58.738	19.050	19.355	15.080	45.0	44.5	6 700	8 900
	60.325	19.842	17.462	15.875	44.0	45.5	6 700	8 900
	60.325	19.845	19.355	15.875	45.0	44.5	6 700	8 900
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	64.292	21.433	21.433	16.670	57.5	64.5	6 100	8 100
	66.421	23.812	25.433	19.050	71.5	72.5	6 200	8 200
	68.262	22.225	22.225	17.462	63.0	67.0	5 800	7 700
	68.262	22.225	23.812	17.462	64.0	65.5	5 700	7 700
	69.850	23.812	25.357	19.050	76.5	81.5	5 700	7 600
	72.626	24.608	24.257	17.462	64.5	55.5	5 800	7 700
	73.025	22.225	22.225	17.462	62.5	68.0	5 300	7 000
29.000	50.292	14.224	14.732	10.668	31.0	35.5	7 200	9 600
29.367	66.421	23.812	25.433	19.050	71.5	72.5	6 200	8 200
29.987	62.000	16.002	16.566	14.288	43.0	42.0	6 300	8 400
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
30.000	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
	72.000	29.370	27.783	23.020	80.0	97.0	5 400	7 100
30.112	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
30.162	62.000	16.002	16.566	14.288	43.0	42.0	6 300	8 400
	64.292	21.433	21.433	16.670	57.5	64.5	6 100	8 100
	69.850	23.812	25.357	19.050	76.5	81.5	5 700	7 600
	72.626	30.162	29.997	23.812	93.5	98.0	5 500	7 300
30.213	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
30.226	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
31.750	59.131	15.875	16.764	11.811	38.5	41.0	6 300	8 400
	62.000	18.161	19.050	14.288	52.0	54.0	6 100	8 200
	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

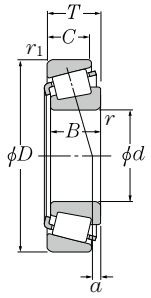
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e,
Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} 3) Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-1985/1932	34	33.5	52	54	0.8	1.3	5.9	0.33	1.82	1.00	0.231
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	0.256
4T-15112/15245	40	34	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.279
4T-M86647/M86610	40	31	54	60	1.5	1.5	3.3	0.55	1.10	0.60	0.348
4T-2689/2631	37.5	36	58	60	1.3	1.3	9.3	0.25	2.36	1.30	0.363
4T-02474/02420	36.5	36	59	63	0.8	1.5	5.2	0.42	1.44	0.79	0.41
4T-2474/2420	36	35	60	63	0.8	1.5	6.5	0.34	1.77	0.97	0.38
4T-2578/2523	39	35	61	64	2.3	1.3	9.1	0.27	2.19	1.21	0.484
4T-41125/41286	48	36.5	61	68	4.8	1.5	3.7	0.60	1.00	0.55	0.475
4T-02872/02820	37.5	37	62	68	0.8	3.3	3.9	0.45	1.32	0.73	0.481
4T-L45449/L45410	40	33.5	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	0.407
4T-17118†/17244	38.5	36	54	57	1.5	1.5	3.3	0.38	1.57	0.86	0.229
4T-15117†/15245	36.5	35	55	58	1.3	1.3	6.0	0.35	1.71	0.94	0.27
4T-14117A/14276	44	41	60	63	3.5	1.3	4.1	0.38	1.57	0.86	0.37
#4T-JHM88540/JHM88513	44.5	42.5	58	69	1.3	3.3	6.0	0.55	1.10	0.60	0.62
4T-15116/15245	36	35.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.27
4T-17119/17244	37	34.5	54	57	1.5	1.5	3.3	0.38	1.57	0.86	0.228
4T-M86649/M86610	44	38	54	60	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	0.467
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	43	36.5	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.266
4T-15119/15245	37.5	35.5	55	58	1.5	1.3	6.0	0.35	1.71	0.94	0.269
4T-15120/15245	36	35.5	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.269
4T-14116/14274	38.5	38	59	63	0.8	3.3	4.1	0.38	1.57	0.86	0.369
4T-14116/14276	38.5	38	60	63	0.8	1.3	4.1	0.38	1.57	0.86	0.371
4T-LM67048/LM67010	42.5	36	52	56	*	1.3	2.8	0.41	1.46	0.80	0.183
4T-15123/15245	44	38	55	58	*	1.3	5.1	0.35	1.71	0.94	0.249
4T-15125/15245	42.5	36.5	55	58	3.5	1.3	6.0	0.35	1.71	0.94	0.254

2) Bearing numbers marked "**#**" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Chamfer dimensions of the bearings marked "*" are shown in the above drawings.

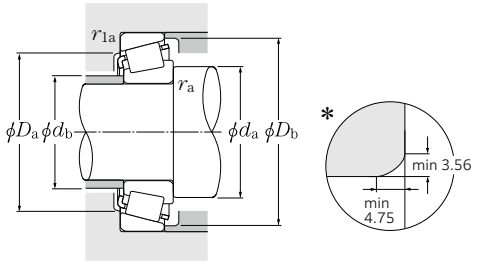
Inch series
J series



d 31.750 ～ 34.925mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
31.750	62.000	19.050	20.638	14.288	52.0	54.0	6 100	8 200
	66.421	25.400	25.357	20.638	76.5	81.5	5 700	7 600
	68.262	22.225	22.225	17.462	63.0	67.0	5 800	7 700
	68.262	22.225	22.225	17.462	63.0	67.0	5 800	7 700
	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
	69.850	23.812	25.357	19.050	76.5	81.5	5 700	7 600
	69.850	23.812	25.357	19.050	76.5	81.5	5 700	7 600
	72.626	30.162	29.997	23.812	93.5	98.0	5 500	7 300
	72.626	30.162	29.997	23.812	93.5	98.0	5 500	7 300
	73.025	22.225	22.225	17.462	62.5	68.0	5 300	7 000
	73.025	22.225	23.812	17.462	69.5	75.5	5 200	7 000
	73.025	29.370	27.783	23.020	80.0	97.0	5 400	7 100
	73.812	29.370	27.783	23.020	80.0	97.0	5 400	7 100
	76.200	29.370	28.575	23.020	86.5	105	5 100	6 800
	79.375	29.370	29.771	23.812	103	114	4 900	6 600
33.338	68.262	22.225	22.225	17.462	62.5	71.0	5 700	7 500
	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
	69.850	23.812	25.357	19.050	76.5	81.5	5 700	7 600
	72.626	30.162	29.997	23.812	93.5	98.0	5 500	7 300
	73.025	29.370	27.783	23.020	80.0	97.0	5 400	7 100
	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800
	76.200	29.370	28.575	23.020	86.5	105	5 100	6 800
	76.200	29.370	28.575	23.020	86.5	105	5 100	6 800
	79.375	25.400	24.074	17.462	72.5	67.0	5 200	6 900
34.925	65.088	18.034	18.288	13.970	51.5	56.0	5 700	7 600
	65.088	18.034	18.288	13.970	51.5	56.0	5 700	7 600
	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
	72.233	25.400	25.400	19.842	72.0	84.5	5 400	7 200
	72.238	20.638	20.638	15.875	53.0	58.5	5 300	7 000
	73.025	22.225	22.225	17.462	62.5	68.0	5 300	7 000
	73.025	22.225	22.225	17.462	62.5	68.0	5 300	7 000
	73.025	22.225	23.812	17.462	69.5	75.5	5 200	7 000
	73.025	23.812	24.608	19.050	78.5	85.0	5 300	7 100
	73.025	23.812	24.608	19.050	78.5	85.0	5 300	7 100
	73.025	23.812	25.654	19.050	81.0	90.5	5 100	6 800
	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

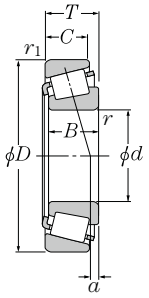
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e,
Y_2 and Y_0 see the table below.

Bearing number 1)	Installation-related dimensions mm						Load center mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} 1) Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4T-15126/15245	38.5	38	55	58	0.8	1.3	6.0	0.35	1.71	0.94	0.257
4T-2580/2520	38.5	37.5	56.9	62.5	0.8	3.3	9.1	0.27	2.19	1.21	0.41
4T-02475/02420	44.5	38.5	59	63	3.5	1.5	5.2	0.42	1.44	0.79	0.382
4T-02476/02420	39	38.5	59	63	0.8	1.5	5.2	0.42	1.44	0.79	0.384
4T-14124/14276	39.5	39	60	63	0.8	1.3	4.1	0.38	1.57	0.86	0.36
4T-14125A/14276	45	39	60	63	3.5	1.3	4.1	0.38	1.57	0.86	0.357
4T-2580/2523	38.5	37.5	61	64	0.8	1.3	9.1	0.27	2.19	1.21	0.455
4T-2582/2523	44	37.5	61	64	3.5	1.3	9.1	0.27	2.19	1.21	0.452
4T-3188/3120	40	39.5	61	67	0.8	3.3	9.9	0.33	1.80	0.99	0.606
4T-3193/3120	45.5	39.5	61	67	3.5	3.3	9.9	0.33	1.80	0.99	0.605
4T-02875/02820	45.5	39.5	62	68	3.5	3.3	3.9	0.45	1.32	0.73	0.453
4T-2879/2820	39.5	38.5	63	68	0.8	3.3	5.5	0.37	1.63	0.90	0.466
4T-HM88542/HM88510	45.5	42.6	59	70	1.3	3.3	6.0	0.55	1.10	0.60	0.622
4T-HM88542/HM88512	45.5	42.6	60	70	1.3	3.3	6.0	0.55	1.10	0.60	0.638
4T-HM89440/HM89410	45.5	44.3	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	0.772
4T-M88048/M88010	42.5	41.2	58	65	0.8	1.5	2.9	0.55	1.10	0.60	0.379
4T-14130/14276	46.5	40	60	63	3.5	1.3	4.1	0.38	1.57	0.86	0.345
4T-2585/2523	45	39	61	64	3.5	1.3	9.1	0.27	2.19	1.21	0.436
4T-3196/3120	47	40.5	61	67	3.5	3.3	9.9	0.33	1.80	0.99	0.584
4T-HM88547/HM88510	45.5	42.6	59	70	0.8	3.3	6.0	0.55	1.10	0.60	0.603
4T-2785/2720	46	40	66	70	3.5	3.3	7.8	0.30	1.98	1.09	0.548
4T-HM89443/HM89410	46.5	44.3	62	73	0.8	3.3	5.8	0.55	1.10	0.60	0.667
4T-HM89444/HM89410	53	44.3	62	73	3.8	3.3	5.8	0.55	1.10	0.60	0.665
4T-43131/43312	51	42.1	67	74	3.5	1.5	1.4	0.67	0.90	0.49	0.568
4T-LM48548/LM48510	48	41.5	58	61	*	1.3	3.7	0.38	1.59	0.88	0.25
4T-LM48548A/LM48510	40.5	42.2	58	61	0.8	1.3	3.7	0.38	1.59	0.88	0.252
4T-14137A/14276	43.5	41.5	60	63	1.5	1.3	4.1	0.38	1.57	0.86	0.334
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	0.37
4T-02877/02820	48.5	42	62	68	3.5	3.3	3.9	0.45	1.32	0.73	0.423
4T-02878/02820	42.5	42	62	68	0.8	3.3	3.9	0.45	1.32	0.73	0.426
4T-2878/2820	42	41	63	68	0.8	3.3	5.5	0.37	1.63	0.90	0.435
4T-25877/25820	43	40.5	64	68	1.5	2.3	8.1	0.29	2.07	1.14	0.47
4T-25877/25821	43	40.5	65	68	1.5	0.8	8.1	0.29	2.07	1.14	0.473
4T-2793/2735X	42	41	66	69	0.8	0.8	7.8	0.30	1.98	1.09	0.444
4T-2793/2720	42	41	66	70	0.8	3.3	7.8	0.30	1.98	1.09	0.534

1) Chamfer dimensions of the bearings marked "＊" are shown in the above drawings.

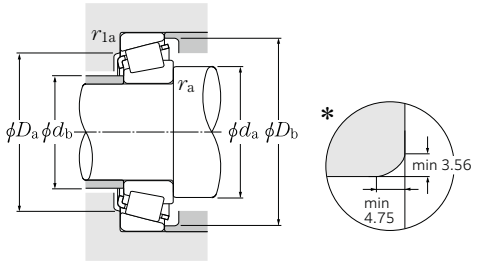
Inch series
J series



d 34.925 ~ 38.100mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
34.925	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800
	76.200	29.370	28.575	23.020	86.5	105	5 100	6 800
	76.200	29.370	28.575	23.812	89.5	97.0	5 100	6 800
	76.200	29.370	28.575	23.812	89.5	97.0	5 100	6 800
	79.375	29.370	29.771	23.812	103	114	4 900	6 600
	80.167	29.370	30.391	23.812	105	112	4 800	6 400
	85.725	30.162	30.162	23.812	116	132	4 500	6 000
34.976	69.012	19.845	19.583	15.875	53.5	58.0	5 600	7 400
34.988	59.974	15.875	16.764	11.938	39.0	47.5	6 100	8 100
	61.973	16.700	17.000	13.600	41.0	48.0	5 900	7 900
	61.973	18.000	17.000	15.000	41.0	48.0	5 900	7 900
35.000	70.000	24.000	23.500	19.000	69.0	78.0	5 500	7 300
	79.375	23.812	25.400	19.050	85.0	97.5	4 800	6 400
	80.000	21.000	22.403	17.826	75.5	75.0	4 700	6 300
35.717	72.233	25.400	25.400	19.842	72.0	84.5	5 400	7 200
	72.626	25.400	25.400	19.842	72.0	84.5	5 400	7 200
36.487	73.025	23.812	24.608	19.050	78.5	85.0	5 300	7 100
	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800
36.512	76.200	29.370	28.575	23.020	86.5	105	5 100	6 800
	76.200	29.370	28.575	23.020	86.5	105	5 100	6 800
	76.200	29.370	28.575	23.812	89.5	97.0	5 100	6 800
	79.375	29.370	28.829	22.664	95.5	104	5 000	6 600
	79.375	29.370	29.771	23.812	103	114	4 900	6 600
	88.500	25.400	23.698	17.462	78.5	78.0	4 000	5 300
38.000	63.000	17.000	17.000	13.500	43.0	52.5	5 700	7 600
38.100	63.500	12.700	11.908	9.525	28.7	33.5	5 500	7 300
	65.088	18.034	18.288	13.970	48.0	57.0	5 500	7 400
	69.012	19.050	19.050	15.083	53.0	59.5	5 300	7 100
	69.012	19.050	19.050	15.083	53.0	59.5	5 300	7 100
	71.438	15.875	16.520	11.908	48.0	51.0	5 400	7 200
	72.000	19.000	20.638	14.237	53.0	58.5	5 300	7 000

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

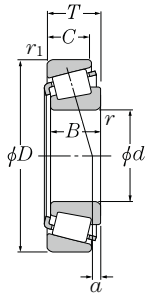
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e,
Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center 4) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} 3) Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-2796/2729	47.5	41	68	70	3.5	0.8	7.8	0.30	1.98	1.09	0.536
4T-HM89446/HM89410	56	44.3	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	0.626
4T-31594/31520	46	43.5	64	72	1.5	3.3	7.8	0.40	1.49	0.82	0.628
4T-3478/3420	50	43.5	67	74	3.5	3.3	8.7	0.37	1.64	0.90	0.731
4T-3379/3320	48	41.5	70	75	3.5	3.3	11.2	0.27	2.20	1.21	0.736
4T-3872/3820	53	46	73	81	3.5	3.3	8.1	0.40	1.49	0.82	0.902
4T-14139/14276	43.5	41.5	60	63	1.3	1.3	4.1	0.38	1.57	0.86	0.33
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	0.206
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	66.5	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	54	42.5	60	69	3.5	2.3	4.6	0.55	1.10	0.60	0.477
4T-HM88648/HM88611AS	54	42.5	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	0.456
4T-2780/2720	44.5	42.5	66	70	1.5	3.3	7.8	0.30	1.98	1.09	0.516
4T-HM89448/HM89410	48.5	44.3	62	73	0.8	3.3	5.8	0.55	1.10	0.60	0.628
4T-HM89449/HM89411	57	44.3	65	73	3.5	0.8	5.8	0.55	1.10	0.60	0.63
4T-31597/31520	51	44.5	64	72	3.5	3.3	7.8	0.40	1.49	0.82	0.606
4T-HM89249/HM89210	55	44	66	75	3.5	3.3	5.8	0.55	1.10	0.60	0.689
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	0.73
#4T-JL69349/JL69310	46.5	42.5	56	60	*	1.3	2.3	0.42	1.44	0.79	0.2
4T-13889/13830	45	42.5	59	60	1.5	0.8	0.8	0.35	1.73	0.95	0.148
4T-LM29748/LM29710	49	42.5	58.9	62	*	1.3	4.3	0.33	1.80	0.99	0.227
4T-13685/13621	49.5	43	61	65	3.5	2.3	3.0	0.40	1.49	0.82	0.294
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	1.5	1.4	0.44	1.35	0.74	0.241
4T-16150/16282	49.5	43	63	67	3.5	1.5	4.2	0.40	1.49	0.82	0.331

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Chamfer dimensions of the bearings marked "∗" are shown in the above drawings. 4) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

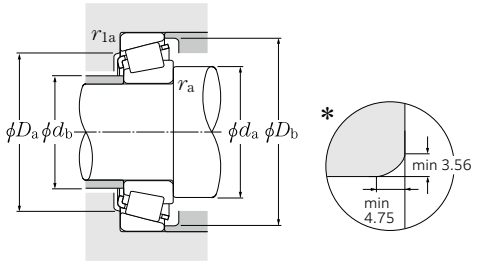
Inch series



d 38.100 ~ 41.275mm

d	D	T	B	C	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Allowable speed min-1 Grease lubrication	Allowable speed min-1 Oil lubrication
	76.200	20.638	20.940	15.507	61.5	63.0	5 000	6 700
	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800
	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800
	79.375	23.812	25.400	19.050	85.0	97.5	4 800	6 400
	79.375	29.370	29.771	23.812	103	114	4 900	6 600
	80.000	21.006	20.940	15.875	61.5	63.0	5 000	6 700
38.100	80.035	24.608	23.698	18.512	74.5	82.5	4 800	6 400
	82.550	29.370	28.575	23.020	96.5	117	4 700	6 200
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	85.725	30.162	30.162	23.812	116	132	4 500	6 000
	87.312	30.162	30.886	23.812	104	117	4 400	5 900
	88.500	25.400	23.698	17.462	78.5	78.0	4 000	5 300
	88.500	26.988	29.083	22.225	106	107	4 600	6 100
	76.200	23.812	25.654	19.050	81.0	90.5	5 100	6 800
	77.534	29.370	30.391	23.812	105	112	4 800	6 400
39.688	79.375	23.812	25.400	19.050	85.0	97.5	4 800	6 400
	80.035	29.370	30.391	23.812	105	112	4 800	6 400
	80.167	29.370	30.391	23.812	105	112	4 800	6 400
	88.500	25.400	23.698	17.462	78.5	78.0	4 000	5 300
	76.200	20.638	20.940	15.507	61.5	63.0	5 000	6 700
	80.000	21.000	22.403	17.826	75.5	75.0	4 700	6 300
40.000	85.000	20.638	21.692	17.462	77.5	79.5	4 400	5 800
	88.500	26.988	29.083	22.225	106	107	4 600	6 100
	107.950	36.512	36.957	28.575	157	177	3 600	4 800
40.483	82.550	29.370	28.575	23.020	96.5	117	4 700	6 200
40.988	67.975	17.500	18.000	13.500	51.0	62.5	5 300	7 000
	73.025	16.667	17.462	12.700	51.0	55.5	5 000	6 600
	73.431	19.558	19.812	14.732	62.0	69.5	5 000	6 600
	73.431	21.430	19.812	16.604	62.0	69.5	5 000	6 600
	76.200	18.009	17.384	14.288	47.0	51.5	4 900	6 500
41.275	76.200	22.225	23.020	17.462	72.0	80.5	4 900	6 500
	76.200	25.400	25.400	20.638	85.0	97.5	4 800	6 400
	79.378	23.812	25.400	19.050	85.0	97.5	4 800	6 400
	80.000	18.009	17.384	14.288	47.0	51.5	4 900	6 500

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

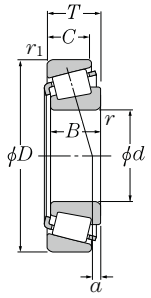
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e,
Y_2 and Y_0 see the table below.

Bearing number 1)	Installation-related dimensions mm d_a	d_b	D_a	D_b	r_{as} 2) Max.	r_{las} Max.	Load center 3) mm a	Constant e	Axial load factors Y_2	Y_0	Mass kg (approx.)
4T-28150/28300	45.5	43.5	68	71	1.5	1.3	4.8	0.40	1.49	0.82	0.406
4T-2776/2720	52	43.5	66	70	4.3	0.8	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	0.494
4T-26878/26822	45	44.5	71	74	0.8	0.8	7.4	0.32	1.88	1.04	0.575
4T-3490/3420	52	45.5	67	74	3.5	3.3	8.7	0.37	1.64	0.90	0.688
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	0.567
4T-HM801346/HM801310	51	49.1	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	0.646
4T-3875/3820	49.5	48.5	73	81	0.8	3.3	8.1	0.40	1.49	0.82	0.861
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	50.8	75	84	2.3	1.5	-2.9	0.78	0.77	0.42	0.714
4T-418/414	51	44.5	77	80	3.5	1.5	9.1	0.26	2.28	1.25	0.843
4T-2789/2720	52	45	66	70	3.5	3.3	7.8	0.30	1.98	1.09	0.475
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	0.556
4T-3382/3339	52	45.5	71	74.8	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	0.672
4T-44158/44348	58	50.8	75	84	3.5	1.5	-2.9	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	0.387
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	0.566
4T-420/414	52	46	77	80	3.5	1.5	9.1	0.26	2.28	1.25	0.817
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	49.1	68	78	3.5	3.3	4.7	0.55	1.10	0.60	0.734
4T-LM300849†/LM300811††	52	45.5	61	65	*	1.5	3.6	0.35	1.72	0.95	0.232
4T-18590/18520	53	46	66	69	3.5	1.5	2.9	0.35	1.71	0.94	0.283
4T-LM501349/LM501310	54	48	67	70	3.5	0.8	3.3	0.40	1.50	0.83	0.334
4T-LM501349/LM501314	54	48	65	70	3.5	0.8	3.3	0.40	1.50	0.83	0.354
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	0.435
4T-26882/26823	54	47	69	73	3.5	1.5	7.4	0.32	1.88	1.04	0.49
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

2) Chamfer dimensions of the bearings marked "*" are shown in the above drawings.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

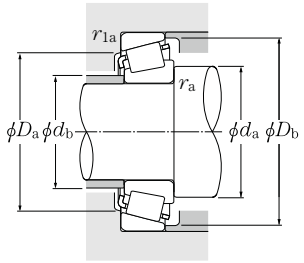
Inch series



d 41.275 ~ 44.450mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
41.275	80.000	21.000	22.403	17.826	75.5	75.0	4 700	6 300
	79.378	23.812	25.400	19.050	85.0	97.5	4 800	6 400
	82.550	26.543	25.654	20.193	89.0	104	4 600	6 100
	85.725	30.162	30.162	23.812	116	132	4 500	6 000
	87.312	30.162	30.886	23.812	104	117	4 400	5 900
	88.900	30.162	29.370	23.020	104	125	4 300	5 800
	90.488	39.688	40.386	33.338	151	175	4 300	5 800
	92.075	26.195	23.812	16.670	80.5	81.5	3 800	5 000
	93.662	31.750	31.750	26.195	115	131	4 100	5 500
	95.250	30.162	29.370	23.020	120	147	4 000	5 300
	95.250	30.958	28.300	20.638	91.5	92.0	3 700	5 000
	95.250	30.958	28.575	22.225	107	116	3 700	4 900
42.070	90.488	39.688	40.386	33.338	151	175	4 300	5 800
42.862	82.550	26.195	26.988	20.638	83.5	97.0	4 600	6 100
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	87.312	30.162	30.886	23.812	104	117	4 400	5 900
42.875	79.375	23.812	25.400	19.050	85.0	97.5	4 800	6 400
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
44.450	76.992	17.462	17.145	11.908	48.5	54.0	4 700	6 300
	79.375	17.462	17.462	13.495	50.5	56.0	4 600	6 200
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	84.138	30.162	30.886	23.812	104	117	4 400	5 900
	85.000	20.638	21.692	17.462	77.5	79.5	4 400	5 800
	87.312	30.162	30.886	23.812	104	117	4 400	5 900
	88.900	30.162	29.370	23.020	104	125	4 300	5 800
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	93.662	31.750	31.750	26.195	115	131	4 100	5 500
	95.250	27.783	28.575	22.225	119	139	3 900	5 200
	95.250	27.783	29.900	22.225	120	129	4 200	5 600
	95.250	30.162	29.370	23.020	120	147	4 000	5 300
	95.250	30.958	28.300	20.638	91.5	92.0	3 700	5 000
	95.250	30.958	28.575	22.225	107	116	3 700	4 900
	101.600	34.925	36.068	26.988	150	165	3 800	5 000
	104.775	30.162	29.317	24.605	127	148	3 500	4 700

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

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

Static equivalent radial load

$P_{0r} = 0.5F_r + Y_0F_a$

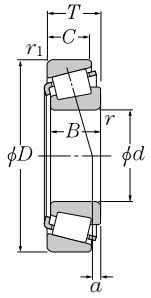
When $P_{0r} < F_r$ use $P_{0r} = F_r$.

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

Bearing number	Installation-related dimensions mm						Load center[1] mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
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	0.8	7.4	0.32	1.88	1.04	0.532
4T-M802048/M802011	57	50.6	70	79	3.5	3.3	3.2	0.55	1.10	0.60	0.641
4T-3880/3820	52	50	73	81	0.8	3.3	8.1	0.40	1.49	0.82	0.814
4T-3576/3525	49	48	75	81	0.8	3.3	10.0	0.31	1.96	1.08	0.83
4T-HM803145/HM803110	54	53	74	85	0.8	3.3	4.6	0.55	1.10	0.60	0.902
4T-4388/4335	60	52	77	85	3.5	3.3	15.0	0.28	2.11	1.16	1.26
4T-M903345/M903310	65	54	78	88	3.5	1.5	-3.6	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	52.7	81	89	1.5	0.8	0.5	0.74	0.81	0.45	0.974
4T-HM903245/HM903210	63	54	81	91	3.5	0.8	-0.4	0.74	0.81	0.45	1.05
4T-4395/4335	60	52	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	0.618
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	0.807
4T-26884/26822	55	48.5	71	74	3.5	0.8	7.4	0.32	1.88	1.04	0.511
4T-25577/25520	55	49	74	77	3.5	0.8	6.2	0.33	1.79	0.99	0.582
4T-12175/12303	52	49.5	68	73	1.5	1.5	-0.2	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	0.347
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	0.564
4T-3578/3520	57	51	74	79.5	3.5	3.3	10.0	0.31	1.96	1.08	0.701
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	0.78
4T-HM803149/HM803110	62	53.4	74	85	3.5	3.3	4.6	0.55	1.10	0.60	0.85
4T-3782/3720	58	52	82	87.9	3.5	3.3	8.3	0.34	1.77	0.97	0.959
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	0.986
4T-438/432	57	51	83	87	3.5	2.3	9.2	0.28	2.11	1.16	0.957
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	52.7	81	89	3.5	0.8	0.5	0.74	0.81	0.45	0.93
4T-HM903249/HM903210	65	54	81	91	3.5	0.8	-0.4	0.74	0.81	0.45	0.999
4T-527/522	59	53	89	95	3.5	3.3	12.9	0.29	2.10	1.16	1.36
4T-460/453X	60	54	92	98	3.5	3.3	7.1	0.34	1.79	0.98	1.29

1) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

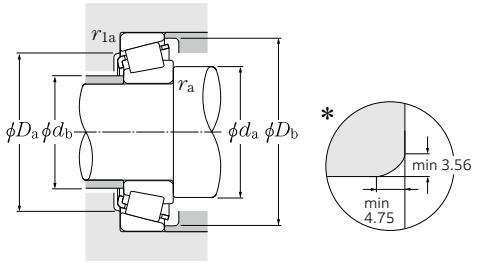
Inch series



d 44.450 ~ 47.625mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
44.450	104.775	30.162	30.958	23.812	144	169	3 500	4 700
	104.775	36.512	36.512	28.575	153	189	3 600	4 800
	111.125	30.162	26.909	20.638	115	136	3 200	4 200
	111.125	30.162	26.909	20.638	115	136	3 200	4 200
	127.000	50.800	52.388	41.275	277	320	3 200	4 300
44.983	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
45.000	85.000	20.638	21.692	17.462	77.5	79.5	4 400	5 800
	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
45.237	87.312	30.162	30.886	23.812	104	117	4 400	5 900
45.242	73.431	19.558	19.812	15.748	60.0	76.0	4 800	6 400
	77.788	19.842	19.842	15.080	63.5	73.5	4 600	6 200
45.618	82.550	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	83.058	23.876	25.400	19.114	84.5	98.0	4 500	6 000
	85.000	23.812	25.400	19.050	84.5	98.0	4 500	6 000
45.987	74.976	18.000	18.000	14.000	56.5	71.0	4 700	6 300
46.038	79.375	17.462	17.462	13.495	50.5	56.0	4 600	6 200
	82.931	23.812	25.400	19.050	84.5	98.0	4 500	6 000
	85.000	20.638	21.692	17.462	77.5	79.5	4 400	5 800
	85.000	25.400	25.608	20.638	87.5	104	4 400	5 800
	90.119	23.000	21.692	21.808	77.5	79.5	4 400	5 800
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	95.250	27.783	29.900	22.225	120	129	4 200	5 600
47.625	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
	88.900	25.400	25.400	19.050	91.0	101	4 200	5 600
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	95.250	30.162	29.370	23.020	120	147	4 000	5 300
	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	101.600	34.925	36.068	26.988	150	165	3 800	5 000
	104.775	30.162	29.317	24.605	127	148	3 500	4 700

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

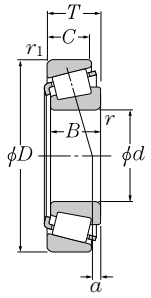
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e,
Y_2 and Y_0 see the table below.

Bearing number 1)	Installation-related dimensions mm						Load center 3) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} 2) Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-45280/45220	55	54	93	99	0.8	3.3	7.9	0.33	1.80	0.99	1.33
4T-HM807040/HM807010	66	59	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.62
4T-55175C/55437	70	64	92	105	3.5	3.3	-7.4	0.88	0.68	0.37	1.45
4T-55176C/55437	71	65	92	105	0.8	3.3	-7.4	0.88	0.68	0.37	1.09
4T-6277/6220	67	60	108	117	3.5	3.3	19.5	0.30	2.01	1.11	3.59
4T-25584/25520	53	51	74	77	1.5	0.8	6.2	0.33	1.79	0.99	0.556
4T-3776/3720	59	53	82	87.9	3.5	3.3	8.3	0.34	1.77	0.97	0.95
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	0.6
4T-3586/3525	58	52	75	81	3.5	3.3	10.0	0.31	1.96	1.08	0.767
4T-LM102949/LM102910	56	50	68	70	3.5	0.8	4.7	0.31	1.97	1.08	0.309
4T-LM603049/LM603011	58	52	71	74	3.5	0.8	2.2	0.43	1.41	0.77	0.371
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	0.544
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	0.298
4T-18690/18620	56	51	71	74	2.8	1.5	2.2	0.37	1.60	0.88	0.331
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	0.616
4T-359S/352	55	51	78	82	2.3	2.3	5.1	0.31	1.96	1.08	0.654
4T-3777/3720	60	53	82	87.9	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	0.93
4T-369A/362A	60	53	81	84	3.5	1.3	4.0	0.32	1.88	1.03	0.564
4T-M804048/M804010	59	56	77	85	0.8	3.3	1.7	0.55	1.10	0.60	0.664
4T-3778/3720	67	55	82	87.9	6.4	3.3	8.3	0.34	1.77	0.97	0.896
4T-HM804846/HM804810	66	57	81	91	3.5	3.3	3.7	0.55	1.10	0.60	0.979
4T-386A/382A	56	55	89	92	0.8	0.8	3.1	0.35	1.69	0.93	0.719
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

2) Chamfer dimensions of the bearings marked "*" are shown in the above drawings.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

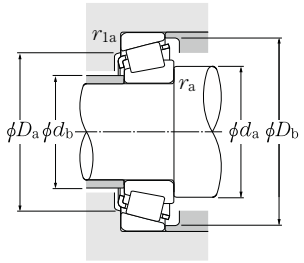
Inch series
J series



d 47.625 ~ 50.800mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
47.625	104.775	30.162	30.958	23.812	144	169	3 500	4 700
	111.125	30.162	26.909	20.638	115	136	3 200	4 200
	123.825	36.512	32.791	25.400	171	188	2 900	3 900
48.412	95.250	30.162	29.370	23.020	120	147	4 000	5 300
	95.250	30.162	29.370	23.020	120	147	4 000	5 300
49.212	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	103.188	43.658	44.475	36.512	193	232	3 800	5 000
	104.775	36.512	36.512	28.575	153	189	3 600	4 800
	114.300	44.450	44.450	34.925	206	225	3 600	4 800
	114.300	44.450	44.450	36.068	226	261	3 500	4 700
49.987	82.550	21.590	22.225	16.510	77.5	94.0	4 300	5 700
	92.075	24.608	25.400	19.845	93.0	116	4 000	5 300
	114.300	44.450	44.450	36.068	226	261	3 500	4 700
50.000	82.000	21.500	21.500	17.000	77.5	94.0	4 300	5 700
	84.000	22.000	22.000	17.500	77.5	94.5	4 300	5 700
	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
	90.000	28.000	28.000	23.000	118	141	4 100	5 400
	105.000	37.000	36.000	29.000	153	189	3 600	4 800
	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
50.800	82.550	21.590	22.225	16.510	77.5	94.0	4 300	5 700
	85.000	17.462	17.462	13.495	55.0	65.0	4 200	5 600
	88.900	17.462	17.462	13.495	55.0	65.0	4 200	5 600
	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
	90.000	20.000	22.225	15.875	85.0	90.5	4 100	5 500
	92.075	24.608	25.400	19.845	93.0	116	4 000	5 300
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	95.250	27.783	28.575	22.225	119	139	3 900	5 200
	95.250	30.162	30.302	23.812	113	134	4 000	5 300
	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	97.630	24.608	24.608	19.446	98.0	128	3 700	4 900
	98.425	30.162	30.302	23.812	113	134	4 000	5 300

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

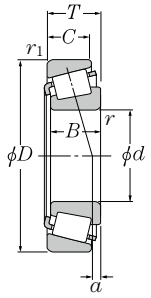
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center 3) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-45282/45220	63	57	93	99	3.5	3.3	7.9	0.33	1.80	0.99	1.33
4T-55187C/55437	69	62	92	105	3.5	3.3	-7.4	0.88	0.68	0.37	1.4
4T-72188C/72487	69	67	102	116	0.8	3.3	-1.5	0.74	0.81	0.45	2.16
4T-HM804848/HM804810	63	57	81	91	2.3	3.3	3.7	0.55	1.10	0.60	0.967
4T-HM804849/HM804810	66	57	81	91	3.5	3.3	3.7	0.55	1.10	0.60	0.965
4T-3781/3720	62	56	82	87.9	3.5	3.3	8.3	0.34	1.77	0.97	0.876
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	2.31
#4T-JLM104948/JLM104910	61	55	76	78	3	0.5	5.4	0.31	1.97	1.08	0.42
#4T-JLM704649/JLM704610	64	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	0.534
4T-366/362A	59	55	81	84	2.3	1.3	4.0	0.32	1.88	1.03	0.53
#4T-JM205149/JM205110	63	57	80	85	3	2.5	7.4	0.33	1.82	1.00	0.755
#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	105	0.8	1.3	0.7	0.40	1.49	0.82	1.07
4T-LM104949/LM104911	63	56	75	78	3.5	1.3	5.8	0.31	1.97	1.08	0.418
4T-18790/18720	62	56	77	80	3.5	1.5	0.8	0.41	1.48	0.81	0.375
4T-18790/18724	62	56	78	82	3.5	1.5	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	0.524
4T-370A/362A	65	56	81	84	5	1.3	4.0	0.32	1.88	1.03	0.516
4T-368A/362	62	56	81	84	3.5	2	4.0	0.32	1.88	1.03	0.53
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	87.9	0.8	3.3	8.3	0.34	1.77	0.97	0.85
4T-3780/3720	64	58	82	87.9	3.5	3.3	8.3	0.34	1.77	0.97	0.846
4T-33889/33821	64	58	85	90	3.5	2.3	8.0	0.33	1.82	1.00	0.878
4T-3780/3726	64	58	83.1	88.9	3.5	3.3	8.3	0.34	1.77	0.97	0.899
4T-385A/382A	61	60	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.675
4T-28678/28622	65	58	88	92	3.5	0.8	3.3	0.40	1.49	0.82	0.854
4T-3780/3732	64	58	84.1	89.9	3.5	3.3	8.3	0.34	1.77	0.97	0.99

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

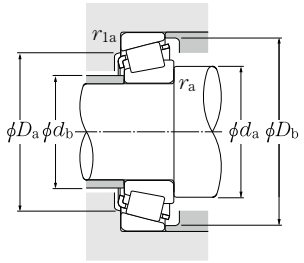
Inch series
J series



d 50.800 ~ 55.000mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
50.800	101.600	31.750	31.750	25.400	122	136	3 700	5 000
	101.600	34.925	36.068	26.988	150	165	3 800	5 000
	104.775	30.162	29.317	24.605	127	148	3 500	4 700
	104.775	30.162	30.958	23.812	144	169	3 500	4 700
	104.775	36.512	36.512	28.575	153	189	3 600	4 800
	104.775	36.512	36.512	28.575	158	178	3 700	4 900
	107.950	36.512	36.957	28.575	157	177	3 600	4 800
	111.125	30.162	28.575	20.638	115	136	3 200	4 200
	112.712	30.162	26.909	20.638	115	136	3 200	4 200
	112.712	30.162	30.048	23.812	132	174	3 200	4 300
	112.712	30.162	30.162	23.812	153	195	3 200	4 200
	117.475	33.338	31.750	23.812	144	153	3 300	4 400
	120.650	41.275	41.275	31.750	190	213	3 300	4 400
	123.825	36.512	32.791	25.400	171	188	2 900	3 900
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
51.592	88.900	20.638	22.225	16.513	85.0	90.5	4 100	5 500
52.388	92.075	24.608	25.400	19.845	93.0	116	4 000	5 300
	93.264	30.162	30.302	23.812	113	134	4 000	5 300
	95.250	27.783	28.575	22.225	119	139	3 900	5 200
53.975	88.900	19.050	19.050	13.492	67.5	82.5	4 000	5 300
	95.250	27.783	28.575	22.225	119	139	3 900	5 200
	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	104.775	30.162	30.958	23.812	144	169	3 500	4 700
	104.775	36.512	36.512	28.575	153	189	3 600	4 800
	107.950	36.512	36.957	28.575	157	177	3 600	4 800
	120.650	41.275	41.275	31.750	190	213	3 300	4 400
	122.238	33.338	31.750	23.812	149	163	3 100	4 200
	122.238	43.658	43.764	36.512	215	283	3 100	4 100
	123.825	36.512	32.791	25.400	171	188	2 900	3 900
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
	130.175	36.512	33.338	23.812	173	186	2 700	3 600
	140.030	36.512	33.236	23.520	190	212	2 600	3 400
54.488	104.775	36.512	36.512	28.575	153	189	3 600	4 800
55.000	90.000	23.000	23.000	18.500	86.0	109	3 900	5 300

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

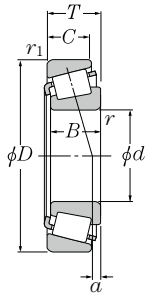
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number [1]	Installation-related dimensions mm						Load center [2] mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4T-49585/49520	66	59	88	96	3.5	3.3	7.1	0.40	1.50	0.82	1.13
4T-529/522	61	60	89	95	0.8	3.3	12.9	0.29	2.10	1.16	1.23
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	1.24
4T-HM807046/HM807010	70	63.1	89	100	3.5	3.3	7.4	0.49	1.23	0.68	1.48
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	65.3	91	105	3.5	3.3	-7.2	0.88	0.68	0.37	1.36
4T-55200C/55443	71	64.4	92	106	3.5	3.3	-7.4	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	1.68
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	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	0.512
4T-28584/28521	65	58	83	87	3.5	0.8	4.6	0.38	1.59	0.87	0.703
4T-3767/3720	63	59	82	87.9	2.3	3.3	8.3	0.34	1.77	0.97	0.817
4T-33890/33821	61	59	85	90	1.5	2.3	8.0	0.33	1.82	1.00	0.851
4T-LM806649/LM806610	65	61	80	85	2.3	2	-2.2	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	0.823
4T-389A/382A	61	60	89	92	0.8	0.8	3.1	0.35	1.69	0.93	0.632
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	63.1	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	2.22
4T-66584/66520	75	68	105	116	3.5	3.3	-1.8	0.67	0.90	0.50	1.81
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	0.74	0.81	0.45	2.03
4T-557S/552A	73	67	109	116	3.5	3.3	9.4	0.35	1.73	0.95	2.25
4T-HM911242/HM911210	79	74	109	123.6	3.5	3.3	-5.2	0.82	0.73	0.40	2.28
4T-78214C/78551	79	77.5	117	132	0.8	2.3	-8.5	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	1.4
#4T-JLM506849/JLM506810	63	61	82	86	1.5	0.5	2.8	0.40	1.49	0.82	0.556

1) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
2) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

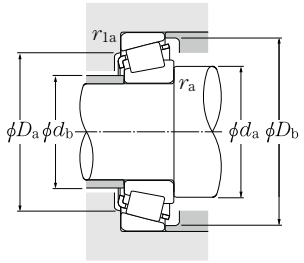
Inch series
J series



d 55.000 ~ 60.000mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
55.000	95.000	29.000	29.000	23.500	119	144	3 800	5 100
	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	110.000	39.000	39.000	32.000	192	219	3 500	4 600
55.562	97.630	24.608	24.608	19.446	98.0	128	3 700	4 900
	123.825	36.512	32.791	25.400	171	188	2 900	3 900
	127.000	36.512	36.512	26.988	181	228	2 900	3 800
55.575	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
57.150	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
	97.630	24.608	24.608	19.446	98.0	128	3 700	4 900
	104.775	30.162	29.317	24.605	127	148	3 500	4 700
	104.775	30.162	29.317	24.605	127	148	3 500	4 700
	104.775	30.162	30.958	23.812	144	169	3 500	4 700
	107.950	27.783	29.317	22.225	127	148	3 500	4 700
	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
	110.000	27.795	29.317	27.000	127	148	3 500	4 700
	112.712	30.162	30.048	23.812	132	174	3 200	4 300
	112.712	30.162	30.162	23.812	153	195	3 200	4 200
	112.712	30.162	30.162	23.812	153	195	3 200	4 200
	117.475	30.162	30.162	23.812	129	175	3 000	4 000
	117.475	33.338	31.750	23.812	144	153	3 300	4 400
	120.650	41.275	41.275	31.750	190	213	3 300	4 400
	123.825	36.512	32.791	25.400	171	188	2 900	3 900
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
	140.030	36.512	33.236	23.520	190	212	2 600	3 400
57.531	96.838	21.000	21.946	15.875	86.5	96.5	3 700	5 000
59.972	122.238	33.338	31.750	23.812	149	163	3 100	4 200
59.987	146.050	41.275	39.688	25.400	220	234	2 400	3 200
60.000	95.000	24.000	24.000	19.000	92.5	122	3 700	4 900
	107.950	25.400	25.400	19.050	101	140	3 200	4 300

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

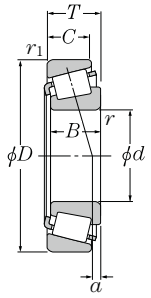
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center 3) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
#4T-JM207049/JM207010	64	62	85	91	1.5	2.5	7.6	0.33	1.79	0.99	0.823
4T-385/382A	65	61	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.615
#4T-JH307749/JH307710	71	64	97	104	3	2.5	11.7	0.35	1.73	0.95	1.7
4T-28680/28622	68	62	88	92	3.5	0.8	3.3	0.40	1.49	0.82	0.776
4T-72218C/72487	80	67	102	116	3.5	3.3	-1.5	0.74	0.81	0.45	2
4T-HM813840/HM813810	78	72	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	0.606
4T-387/382A	67	63	89	92	2.3	0.8	3.1	0.35	1.69	0.93	0.582
4T-387A/382A	70	63	89	92	3.5	0.8	3.1	0.35	1.69	0.93	0.58
4T-387AS/382A	73	63	89	92	5	0.8	3.1	0.35	1.69	0.93	0.575
4T-387S/382A	64	63	89	92	0.8	0.8	3.1	0.35	1.69	0.93	0.584
4T-28682/28622	70	63	88	92	3.5	0.8	3.3	0.40	1.49	0.82	0.749
4T-462/453X	67	63	92	98	2.3	3.3	7.1	0.34	1.79	0.98	1.06
4T-469/453X	72	68	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	72	68	97	100	3.5	0.8	7.1	0.34	1.79	0.98	1.11
4T-390/394A	70	66	101	105	2.3	1.3	0.7	0.40	1.49	0.82	0.961
4T-469/454	72	68	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	1.41
4T-39580/39520	74	68	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	68.9	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	2.13
4T-72225C/72487	81	67	102	116	3.5	3.3	-1.5	0.74	0.81	0.45	1.96
4T-555S/552A	76	70	109	116	3.5	3.3	9.4	0.35	1.73	0.95	2.17
4T-78225/78551	83	77	117	132	3.5	2.3	-8.5	0.87	0.69	0.38	2.69
4T-388A/382A	70	63	89	92	3.5	0.8	3.1	0.35	1.69	0.93	0.574
4T-66589/66520	74	73	105	116	0.8	3.3	-1.8	0.67	0.90	0.50	1.66
4T-H913840†/H913810	97	82	124	138	3.5	3.3	-4.3	0.78	0.77	0.42	3.22
#4T-JLM508748/JLM508710	75	66	85	91	5	2.5	3.0	0.40	1.49	0.82	0.609
4T-29580/29520	75	68	96	103	3.5	3.3	0.6	0.46	1.31	0.72	0.992

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

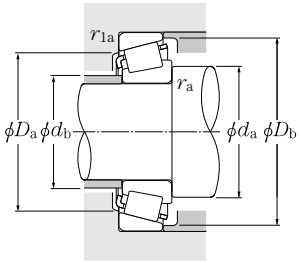
Inch series
J series



d 60.000 ~ 65.000mm

d	Boundary dimensions mm D	T	B	C	Basic load rating dynamic C_r kN	static C_{0r}	Allowable speed min-1 Grease lubrication	Oil lubrication
60.000	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
	130.000	34.100	30.924	22.650	173	186	2 700	3 600
60.325	100.000	25.400	25.400	19.845	100	134	3 500	4 700
	112.712	30.162	30.048	23.812	132	174	3 200	4 300
	122.238	38.100	38.354	29.718	208	244	3 100	4 100
	122.238	43.658	43.764	36.512	215	283	3 100	4 100
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
	127.000	36.512	36.512	26.988	181	228	2 900	3 800
	127.000	44.450	44.450	34.925	226	263	3 100	4 200
	130.175	36.512	33.338	23.812	173	186	2 700	3 600
61.912	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
	136.525	46.038	46.038	36.512	248	355	2 600	3 500
	146.050	41.275	39.688	25.400	220	234	2 400	3 200
61.976	101.600	24.608	24.608	19.845	100	134	3 500	4 700
62.738	101.600	25.400	25.400	19.845	100	134	3 500	4 700
63.500	94.458	19.050	19.050	15.083	67.0	103	3 600	4 800
	107.950	25.400	25.400	19.050	101	140	3 200	4 300
	107.950	25.400	25.400	19.050	101	140	3 200	4 300
	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
	110.000	25.400	25.400	19.050	101	140	3 200	4 300
	112.712	30.162	30.048	23.812	132	174	3 200	4 300
	112.712	30.162	30.162	23.812	153	195	3 200	4 200
	120.000	29.794	29.007	24.237	142	177	3 000	4 000
	120.000	29.794	29.007	24.237	142	177	3 000	4 000
	122.238	38.100	38.354	29.718	208	244	3 100	4 100
	122.238	43.658	43.764	36.512	215	283	3 100	4 100
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
	127.000	36.512	36.170	28.575	181	229	2 900	3 800
	127.000	36.512	36.512	26.988	181	228	2 900	3 800
	136.525	41.275	41.275	31.750	215	262	2 800	3 800
	140.030	36.512	33.236	23.520	190	212	2 600	3 400
65.000	105.000	24.000	23.000	18.500	94.5	117	3 300	4 500
	110.000	28.000	28.000	22.500	132	174	3 200	4 300

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

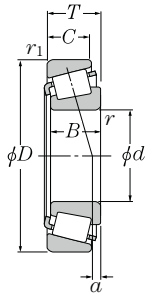
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1)	Installation-related dimensions mm d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	Load center 2) mm a	Constant e	Axial load factors Y_2	Y_0	Mass kg (approx.)
4T-397/394A	69	68	101	105	0.8	1.3	0.7	0.40	1.49	0.82	0.918
#4T-JHM911244/JHM911211	84	74	109	123	3.5	3.3	-7.6	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	0.769
4T-3980/3920	75	68	99	106	3.5	3.3	4.5	0.40	1.49	0.82	1.34
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	2.45
4T-558/552A	76	72	109	116	2.3	3.3	9.4	0.35	1.73	0.95	2.09
4T-HM813841/HM813810	83	77	111	121	3.5	3.3	3.7	0.50	1.20	0.66	2.21
4T-65237/65500	87	71	107	119	3.5	3.3	9.3	0.49	1.23	0.68	2.59
4T-HM911245/HM911210	93	74	109	123.6	5	3.3	-5.2	0.82	0.73	0.40	2.12
4T-392/394A	70	69	101	105	0.8	1.3	0.7	0.40	1.49	0.82	0.88
4T-H715334/H715311	87	81	118	132	3.5	3.3	8.7	0.47	1.27	0.70	3.47
4T-H913842/H913810	90	82.4	124	138	3.5	3.3	-4.3	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	0.766
4T-28995/28920	75	69	90	97	3.5	3.3	2.5	0.43	1.41	0.78	0.762
4T-L610549/L610510	71	69	86	91	1.5	1.5	-0.6	0.42	1.41	0.78	0.453
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	0.93
4T-390A/394A	73	70	101	105	1.5	1.3	0.7	0.40	1.49	0.82	0.858
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	1.27
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	1.6
4T-483/472	78	72	107	114	3.5	2	3.9	0.38	1.56	0.86	1.43
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	81	75	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	84	78	111	121	3.5	3.3	3.7	0.50	1.20	0.66	2.13
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	0.87	0.69	0.38	2.54
#4T-JLM710949/JLM710910	77	71	96	100.5	3	1	0.3	0.45	1.32	0.73	0.744
#4T-JM511946/JM511910	78	72	99	105	3	2.5	3.4	0.40	1.49	0.82	1.09

1) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
2) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

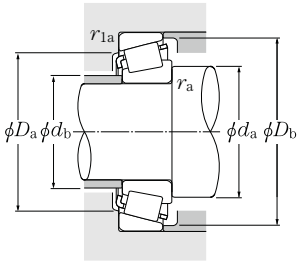
Inch series
J series



d 65.000 ~ 70.000mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
65.000	120.000	39.000	38.500	32.000	205	248	3 100	4 100
65.088	135.755	53.975	56.007	44.450	310	380	2 900	3 800
66.675	103.213	17.602	17.602	11.989	66.5	78.0	3 300	4 400
	107.950	25.400	25.400	19.050	101	140	3 200	4 300
	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
	112.712	30.162	30.048	23.812	132	174	3 200	4 300
	112.712	30.162	30.048	23.812	132	174	3 200	4 300
	112.712	30.162	30.162	23.812	153	195	3 200	4 200
	122.238	38.100	38.354	29.718	208	244	3 100	4 100
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
	127.000	36.512	36.512	26.988	181	228	2 900	3 800
	130.175	41.275	41.275	31.750	215	262	2 800	3 800
	135.755	53.975	56.007	44.450	310	380	2 900	3 800
	136.525	41.275	41.275	31.750	215	262	2 800	3 800
	136.525	41.275	41.275	31.750	251	293	2 700	3 700
68.262	110.000	22.000	21.996	18.824	99.5	120	3 200	4 300
	120.000	29.794	29.007	24.237	142	177	3 000	4 000
	123.825	38.100	36.678	30.162	175	216	3 000	4 100
	136.525	41.275	41.275	31.750	251	293	2 700	3 700
	136.525	46.038	46.038	36.512	248	355	2 600	3 500
69.850	112.712	25.400	25.400	19.050	106	151	3 100	4 100
	117.475	30.162	30.162	23.812	129	175	3 000	4 000
	120.000	29.794	29.007	24.237	142	177	3 000	4 000
	120.000	32.545	32.545	26.195	163	214	3 000	4 000
	120.650	25.400	25.400	19.050	106	151	3 100	4 100
	127.000	36.512	36.170	28.575	181	229	2 900	3 800
	136.525	41.275	41.275	31.750	215	262	2 800	3 800
	146.050	41.275	41.275	31.750	228	295	2 500	3 300
	150.089	44.450	46.672	36.512	289	360	2 400	3 200
	168.275	53.975	56.363	41.275	375	460	2 200	3 000
69.952	121.442	24.608	23.012	17.462	101	127	2 900	3 800
70.000	110.000	26.000	25.000	20.500	108	150	3 200	4 200
	115.000	29.000	29.000	23.000	138	171	3 100	4 100

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

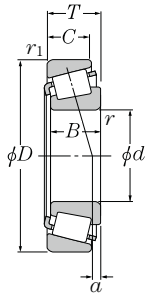
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1)	Installation-related dimensions mm						Load center 2) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
#4T-JH211749/JH211710	80	74	107	114	3	2.5	10.9	0.34	1.78	0.98	1.9
4T-6379/6320	84	77	117	126	3.5	3.3	18.8	0.32	1.85	1.02	3.71
4T-L812148/L812111	75	72	96	99	1.5	0.8	-3.7	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	105	0.8	1.3	0.7	0.40	1.49	0.82	0.803
4T-3984/3925	80	74	101	106	3.5	0.8	4.5	0.40	1.49	0.82	1.19
4T-3994/3920	86	75	99	106	5.5	3.3	4.5	0.40	1.49	0.82	1.18
4T-39590/39520	82	75	101	107	3.5	3.3	6.6	0.34	1.77	0.97	1.28
4T-HM212049/HM212010	82	75.5	110	116	3.5	1.5	11.1	0.34	1.78	0.98	1.84
4T-560/552A	84	77	109	116	3.5	3.3	9.4	0.35	1.73	0.95	1.9
4T-HM813844/HM813810	88	82	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	2.75
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	105	2.3	1.3	0.7	0.40	1.49	0.82	0.772
4T-480/472	82	75	107	114	3.5	2	3.9	0.38	1.56	0.86	1.13
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	92	86	118	132	3.5	3.3	8.7	0.47	1.27	0.70	3.23
4T-29675/29620	80	77	101	109	1.5	3.3	-0.9	0.49	1.23	0.68	0.95
4T-33275/33462	85	79	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	1.63
4T-29675/29630	80	77	104	113	1.5	3.3	-0.9	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	1.91
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	3.93
4T-835/832	91	84	149	155	3.5	3.3	18.5	0.30	2.00	1.10	6.14
4T-34274/34478	81	78	110	116	2	2	-1.2	0.45	1.33	0.73	1.11
#4T-JLM813049/JLM813010	78	77	98	105	1	2.5	-0.3	0.49	1.23	0.68	0.888
#4T-JM612949/JM612910	83	77	103	110	3	2.5	2.5	0.43	1.39	0.77	1.12

1) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
2) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

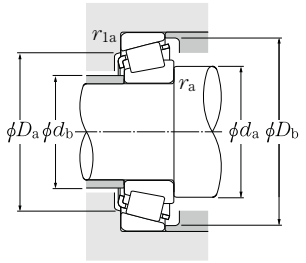
Inch series
J series



d 70.000 ~ 76.200mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static	Grease lubrication	Oil lubrication
d	D	T	B	C	C_r	C_{0r}		
70.000	120.000	29.794	29.007	24.237	142	177	3 000	4 000
	150.000	41.275	39.688	25.400	220	234	2 400	3 200
71.438	117.475	30.162	30.162	23.812	129	175	3 000	4 000
	120.000	32.545	32.545	26.195	163	214	3 000	4 000
	127.000	36.512	36.170	28.575	181	229	2 900	3 800
	136.525	41.275	41.275	31.750	215	262	2 800	3 800
	136.525	41.275	41.275	31.750	251	293	2 700	3 700
	136.525	46.038	46.038	36.512	248	355	2 600	3 500
73.025	112.712	25.400	25.400	19.050	106	151	3 100	4 100
	117.475	30.162	30.162	23.812	129	175	3 000	4 000
	127.000	36.512	36.170	28.575	181	229	2 900	3 800
	139.992	36.512	36.098	28.575	197	265	2 600	3 400
	149.225	53.975	54.229	44.450	320	410	2 500	3 400
	150.089	44.450	46.672	36.512	289	360	2 400	3 200
73.817	112.712	25.400	25.400	19.050	106	151	3 100	4 100
	127.000	36.512	36.170	28.575	181	229	2 900	3 800
74.612	139.992	36.512	36.098	28.575	197	265	2 600	3 400
75.000	115.000	25.000	25.000	19.000	105	143	3 000	4 000
	120.000	31.000	29.500	25.000	145	197	2 900	3 900
	145.000	51.000	51.000	42.000	320	410	2 500	3 400
76.200	109.538	19.050	19.050	15.083	70.0	115	3 100	4 100
	121.442	24.608	23.012	17.462	101	127	2 900	3 800
	121.442	24.608	23.012	17.462	101	127	2 900	3 800
	127.000	30.162	31.000	22.225	150	194	2 800	3 700
	133.350	33.338	33.338	26.195	170	235	2 600	3 500
	133.350	39.688	39.688	32.545	196	305	2 600	3 500
	135.733	44.450	46.100	34.925	235	330	2 700	3 500
	136.525	30.162	29.769	22.225	143	189	2 600	3 500
	139.992	36.512	36.098	28.575	197	265	2 600	3 400
	139.992	36.512	36.098	28.575	197	265	2 600	3 400
	146.050	41.275	41.275	31.750	228	295	2 500	3 300
	149.225	53.975	54.229	44.450	320	410	2 500	3 400
	150.089	44.450	46.672	36.512	289	360	2 400	3 200

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

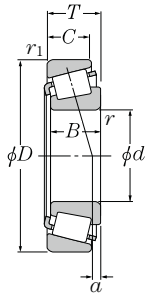
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number [1]	Installation-related dimensions mm						Load center [2] mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4T-484/472	80	77	107	114	2	2	3.9	0.38	1.56	0.86	1.33
#4T-JH913848/JH913811	92	82.3	126	146	2	3.3	-4.3	0.78	0.77	0.42	3.09
4T-33281/33462	87	80	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	2.58
4T-H414249/H414210	89	83.3	121	129	3.5	3.3	11.0	0.36	1.67	0.92	2.58
4T-H715345/H715311	94	88	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	0.49	1.23	0.68	0.874
4T-33287/33462	88	81	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	2.52
4T-6460/6420	93	87	129	140	3.5	3.3	14.8	0.36	1.66	0.91	4.43
4T-744/742	91	85	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.8
4T-29688/29620	83	80	101	109	1.5	3.3	-0.9	0.49	1.23	0.68	0.862
4T-568/563	83	82	112	120	0.8	3.3	8.3	0.36	1.65	0.91	1.8
4T-577/572	91	85	125	133	3.5	3.3	5.5	0.40	1.49	0.82	2.47
#4T-JLM714149/JLM714110	88	82	104	110.5	3	2.5	-0.3	0.46	1.31	0.72	0.88
#4T-JM714249/JM714210	88	82.9	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	3.82
4T-L814749/L814710	84	82	100	105	1.5	1.5	-5.0	0.50	1.20	0.66	0.579
4T-34300/34478	86	83	110	116	2	2	-1.2	0.45	1.33	0.73	0.978
4T-34301/34478	89	83	110	116	3.5	2	-1.2	0.45	1.33	0.73	0.976
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	2.42
4T-575S/572	99	86	125	133	6.8	3.3	5.5	0.40	1.49	0.82	2.4
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	4.24
4T-748S/742	93	87	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.65

1) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
2) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

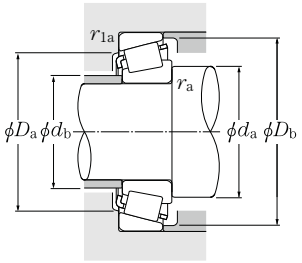
Inch series
J series



d 76.200 ~ 83.345mm

d	Boundary dimensions mm D	T	B	C	Basic load rating kN dynamic C_r	static C_{0r}	Allowable speed min-1 Grease lubrication	Oil lubrication
76.200	149.225	53.975	54.229	44.450	320	410	2 500	3 400
	161.925	53.975	55.100	42.862	340	460	2 300	3 000
	180.975	53.975	53.183	35.720	360	415	1 900	2 600
	190.500	57.150	57.531	46.038	490	610	1 900	2 600
77.788	117.475	25.400	25.400	19.050	110	162	2 900	3 900
	121.442	24.608	23.012	17.462	101	127	2 900	3 800
	127.000	30.162	31.000	22.225	150	194	2 800	3 700
	136.525	30.162	29.769	22.225	143	189	2 600	3 500
	136.525	46.038	46.038	36.512	248	355	2 600	3 500
79.375	146.050	41.275	41.275	31.750	228	295	2 500	3 300
	161.925	47.625	48.260	38.100	299	385	2 300	3 100
	190.500	57.150	57.531	46.038	490	610	1 900	2 600
80.000	130.000	35.000	34.000	28.500	184	249	2 700	3 600
80.962	133.350	33.338	33.338	26.195	170	235	2 600	3 500
	136.525	30.162	29.769	22.225	143	189	2 600	3 500
	139.992	36.512	36.098	28.575	197	265	2 600	3 400
	150.089	44.450	46.672	36.512	289	360	2 400	3 200
82.550	125.412	25.400	25.400	19.845	113	163	2 700	3 600
	133.350	33.338	33.338	26.195	170	235	2 600	3 500
	133.350	39.688	39.688	32.545	196	305	2 600	3 500
	136.525	30.162	29.769	22.225	143	189	2 600	3 500
	139.992	36.512	36.098	28.575	197	265	2 600	3 400
	139.992	36.512	36.098	28.575	197	265	2 600	3 400
	146.050	41.275	41.275	31.750	228	295	2 500	3 300
	150.089	44.450	46.672	36.512	289	360	2 400	3 200
	152.400	39.688	36.322	30.162	199	279	2 300	3 100
	152.400	41.275	41.275	31.750	228	295	2 500	3 300
	161.925	47.625	48.260	38.100	299	385	2 300	3 100
	161.925	53.975	55.100	42.862	340	460	2 300	3 000
	168.275	53.975	56.363	41.275	375	460	2 200	3 000
83.345	125.412	25.400	25.400	19.845	113	163	2 700	3 600
	125.412	25.400	25.400	19.845	113	163	2 700	3 600
	125.412	25.400	25.400	19.845	113	163	2 700	3 600

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

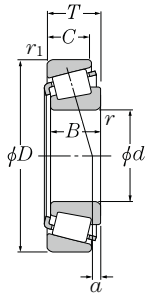
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm d_a	d_b	D_a	D_b	r_{as} Max.	r_{las} Max.	Load center 3) mm a	Constant e	Axial load factors Y_2	Y_0	Mass kg (approx.)
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	5.43
4T-H917840/H917810††	110	100.1	152	170	3.5	3.3	-0.5	0.73	0.82	0.45	6.57
4T-HH221430/HH221410	101	95	171	179	3.5	3.3	14.4	0.33	1.79	0.99	8.71
4T-LM814849/LM814810	91	85	105	113	3.5	3.3	-2.3	0.51	1.18	0.65	0.929
4T-34306/34478	91	84	110	116	3.5	2	-1.2	0.45	1.33	0.73	0.94
4T-42690/42620	91	85	114	121	3.5	3.3	2.8	0.42	1.43	0.79	1.24
4T-495AS/493	93	87	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.78
4T-H715348/H715311	99	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	2.92
4T-756A/752	109	94	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	1.74
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	2.25
4T-740/742	101	91	134	142	5	3.3	12.0	0.33	1.84	1.01	3.44
4T-27687/27620	96	89	115	120	3.5	1.5	-0.6	0.42	1.44	0.79	1.05
4T-47686/47620	98	92	119	128	3.5	3.3	3.9	0.40	1.48	0.82	1.72
4T-HM516448/HM516410	106	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	2.19
4T-582/572	104	91	125	133	6.8	3.3	5.5	0.40	1.49	0.82	2.18
4T-663/653	99	92	131	139	3.5	3.3	8.0	0.41	1.47	0.81	2.79
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	3.16
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	5.1
4T-842/832	101	94	149	155	3.5	3.3	18.5	0.30	2.00	1.10	5.47
4T-27689/27620	90	90	115	120	0.8	1.5	-0.6	0.42	1.44	0.79	1.06
4T-27690/27620	96	89	115	120	3.5	1.5	-0.6	0.42	1.44	0.79	1.03
4T-27691/27620	102	90	115	120	6.4	1.5	-0.6	0.42	1.44	0.79	1.04

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

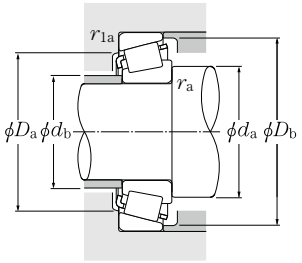
Inch series
J series



d 84.138 ~ 95.000mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
84.138	136.525	30.162	29.769	22.225	143	189	2 600	3 500
85.000	130.000	30.000	29.000	24.000	149	214	2 600	3 500
	140.000	39.000	38.000	31.500	218	297	2 500	3 400
85.026	150.089	44.450	46.672	36.512	289	360	2 400	3 200
85.725	133.350	30.162	29.769	22.225	143	189	2 600	3 500
	142.138	42.862	42.862	34.133	240	350	2 500	3 300
	146.050	41.275	41.275	31.750	228	295	2 500	3 300
	152.400	39.688	36.322	30.162	199	279	2 300	3 100
	161.925	47.625	48.260	38.100	299	385	2 300	3 100
87.960	148.430	28.575	28.971	21.433	153	215	2 300	3 100
88.900	121.442	15.083	15.083	11.112	63.0	88.0	2 700	3 600
	123.825	20.638	20.638	16.670	89.0	141	2 700	3 500
	148.430	28.575	28.971	21.433	153	215	2 300	3 100
	152.400	39.688	36.322	30.162	199	279	2 300	3 100
	161.925	47.625	48.260	38.100	299	385	2 300	3 100
	161.925	53.975	55.100	42.862	340	460	2 300	3 000
	168.275	53.975	56.363	41.275	375	460	2 200	3 000
89.974	146.975	40.000	40.000	32.500	252	340	2 400	3 200
90.000	145.000	35.000	34.000	27.000	210	279	2 400	3 200
	155.000	44.000	44.000	35.500	299	385	2 300	3 100
	190.000	50.800	46.038	31.750	310	365	1 800	2 400
90.488	161.925	47.625	48.260	38.100	299	385	2 300	3 100
92.075	146.050	33.338	34.925	26.195	181	266	2 400	3 100
	152.400	39.688	36.322	30.162	199	279	2 300	3 100
	168.275	41.275	41.275	30.162	247	340	2 100	2 800
93.662	148.430	28.575	28.971	21.433	153	215	2 300	3 100
95.000	150.000	35.000	34.000	27.000	199	279	2 300	3 100

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

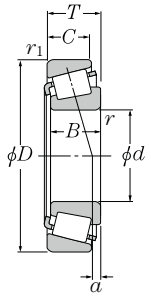
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center 3) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-498/493	98	91	122	130	3.5	3.3	0.7	0.44	1.35	0.74	1.6
#4T-JM716648/JM716610	104	92	117	125	6	2.5	0.2	0.44	1.35	0.74	1.37
#4T-JHM516849/JHM516810	100	94	125	134	3	2.5	5.9	0.41	1.47	0.81	2.3
4T-749/742	101	95	134	142	3.5	3.3	12.0	0.33	1.84	1.01	3.24
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	95.2	125	137	4.8	3.3	6.9	0.43	1.39	0.76	2.71
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	106	100	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	0.49	1.22	0.67	1.98
4T-LL217849/LL217810	97	94	115	117	1.5	1.5	-2.9	0.33	1.81	1.00	0.452
4T-L217849/L217810	97	94	116	119	1.5	1.5	-0.7	0.33	1.82	1.00	0.737
4T-42350/42584	104	98	134	142	3	3	-3.0	0.49	1.22	0.67	1.95
4T-593/592A	104	98	135	144	3.5	3.3	2.6	0.44	1.36	0.75	2.77
4T-759/752	108	101	144	150	3.5	3.3	12.0	0.34	1.76	0.97	4.1
4T-6580/6535	117	102	141	154	3.5	3.3	12.8	0.40	1.50	0.82	4.72
4T-850/832	106	100	149	155	3.5	3.3	18.5	0.30	2.00	1.10	5.09
4T-HM218248†/HM218210††	112	99	133	141	7	3.5	8.6	0.33	1.8	0.99	2.55
#4T-JM718149/JM718110	106	99	131	138.8	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	3.33
#4T-J90354/J90748	120	111.8	162	179.3	3.5	3.3	-12.9	0.87	0.69	0.38	6.32
4T-760/752	110	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	0.7	3.87
4T-42368/42584	107	102	134	142	3	3	-3.0	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

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

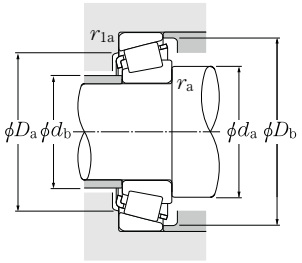
Inch series
J series



d 95.250 ~ 109.538mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
95.250	130.175	20.638	21.433	16.670	90.0	147	2 500	3 300
	146.050	33.338	34.925	26.195	181	266	2 400	3 100
	147.638	35.717	36.322	26.192	199	279	2 300	3 100
	148.430	28.575	28.971	21.433	153	215	2 300	3 100
	152.400	39.688	36.322	30.162	199	279	2 300	3 100
	157.162	36.512	36.116	26.195	208	305	2 200	2 900
	168.275	41.275	41.275	30.162	247	340	2 100	2 800
	190.500	57.150	57.531	46.038	490	610	1 900	2 600
96.838	148.430	28.575	28.971	21.433	153	215	2 300	3 100
	188.912	50.800	46.038	31.750	310	365	1 800	2 400
98.425	157.162	36.512	36.116	26.195	208	305	2 200	2 900
	168.275	41.275	41.275	30.162	247	340	2 100	2 800
99.974	212.725	66.675	66.675	53.975	635	810	1 700	2 300
100.000	155.000	36.000	35.000	28.000	213	310	2 200	2 900
100.012	157.162	36.512	36.116	26.195	208	305	2 200	2 900
101.600	157.162	36.512	36.116	26.195	208	305	2 200	2 900
	168.275	41.275	41.275	30.162	247	340	2 100	2 800
	180.975	47.625	48.006	38.100	315	430	2 000	2 700
	190.500	57.150	57.531	44.450	420	555	2 000	2 600
	190.500	57.150	57.531	46.038	490	610	1 900	2 600
	190.500	57.150	57.531	46.038	490	610	1 900	2 600
	212.725	66.675	66.675	53.975	525	695	1 800	2 300
	212.725	66.675	66.675	53.975	635	810	1 700	2 300
104.775	180.975	47.625	48.006	38.100	315	430	2 000	2 700
107.950	158.750	23.020	21.438	15.875	114	166	2 100	2 800
	159.987	34.925	34.925	26.988	186	320	2 100	2 800
	165.100	36.512	36.512	26.988	212	315	2 100	2 700
	212.725	66.675	66.675	53.975	525	695	1 800	2 300
109.538	158.750	23.020	21.438	15.875	114	166	2 100	2 800

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

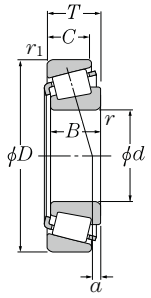
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center 3) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-L319249/L319210	103	101	122	125	1.5	1.5	-1.0	0.35	1.72	0.95	0.786
4T-47896/47820	110	103	131	140	3.5	3.3	0.6	0.45	1.34	0.74	1.95
4T-594A/592XE	113	104	135	142	5	0.8	2.6	0.44	1.36	0.75	2.09
4T-42375/42584	108	103	134	142	3	3	-3.0	0.49	1.22	0.67	1.74
4T-594/592A	110	104	135	144	3.5	3.3	2.6	0.44	1.36	0.75	2.51
4T-52375/52618	112	105	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.76
4T-683/672	113	106	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.72
4T-HH221440/HH221410	125	110	171	179	8	3.3	14.4	0.33	1.79	0.99	7.5
4T-42381/42584	112	105	134	142	3.5	3	-3.0	0.49	1.22	0.67	1.69
4T-90381/90744	125	113	161	179	3.5	3.3	-12.9	0.87	0.69	0.38	5.46
4T-52387/52618	114	108	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.62
4T-685/672	116	109	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.57
4T-HH224334†/HH224310	124	120	192	201.7	3.5	3.3	18.9	0.33	1.84	1.01	11.5
#4T-JM720249/JM720210	115	109	140	149	3	2.5	-0.3	0.47	1.27	0.70	2.4
4T-52393/52618	116	109	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.55
4T-52400/52618	117	111	142	152	3.5	3.3	0.6	0.47	1.26	0.69	2.48
4T-687/672	118	112	149	160	3.5	3.3	3.0	0.47	1.28	0.70	3.4
4T-780/772††	119	113	161	168	3.5	3.3	8.1	0.39	1.56	0.86	5.12
4T-861/854	129	114	170	174	8	3.3	15.3	0.33	1.79	0.99	7
4T-HH221449/HH221410	131	115.9	171	179	8	3.3	14.4	0.33	1.79	0.99	7.07
4T-HH221449A/HH221410	122	115.9	171	179	3.5	3.3	14.4	0.33	1.79	0.99	7.06
4T-941/932	130	117	187	193.1	7	3.3	19.7	0.33	1.84	1.01	11.2
4T-HH224335/HH224310	132	121	192	201.7	7	3.3	18.9	0.33	1.84	1.01	11.3
4T-782/772††	122	116	161	168	3.5	3.3	8.1	0.39	1.56	0.86	4.92
4T-37425/37625	122	115	143	152	3.5	3.3	-14.0	0.61	0.99	0.54	1.37
4T-LM522546/LM522510	122	116	146	154	3.5	3.3	1.4	0.40	1.49	0.82	2.37
4T-56425/56650	123	117	149	159	3.5	3.3	-2.0	0.50	1.21	0.66	2.69
4T-936/932	137	122	187	193.1	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	0.61	0.99	0.54	1.32

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

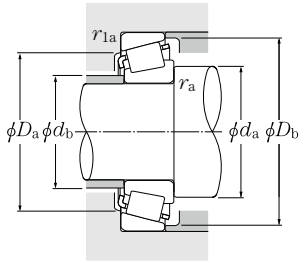
Inch series
J series



d 109.987 ~ 133.350mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
d	D	T	B	C	dynamic C_r	static C_{0r}	Grease lubrication	Oil lubrication
109.987	159.987	34.925	34.925	26.988	186	320	2 100	2 800
109.992	177.800	41.275	41.275	30.162	257	375	1 900	2 600
110.000	165.000	35.000	35.000	26.500	212	315	2 100	2 700
	180.000	47.000	46.000	38.000	340	480	1 900	2 600
111.125	214.312	55.562	52.388	39.688	450	560	1 500	2 000
114.300	177.800	41.275	41.275	30.162	257	375	1 900	2 600
	180.975	34.925	31.750	25.400	187	245	1 900	2 500
	212.725	66.675	66.675	53.975	525	695	1 800	2 300
	212.725	66.675	66.675	53.975	635	810	1 700	2 300
	228.600	53.975	49.428	38.100	475	620	1 400	1 900
115.087	190.500	47.625	49.212	34.925	335	475	1 800	2 500
117.475	180.975	34.925	31.750	25.400	187	245	1 900	2 500
120.000	170.000	25.400	25.400	19.050	141	210	2 000	2 600
120.650	234.950	63.500	63.500	49.212	580	825	1 500	2 000
123.825	182.562	39.688	38.100	33.338	249	435	1 800	2 400
127.000	182.562	39.688	38.100	33.338	249	435	1 800	2 400
	196.850	46.038	46.038	38.100	340	550	1 700	2 200
	215.900	47.625	47.625	34.925	355	540	1 600	2 100
	228.600	53.975	49.428	38.100	355	445	1 400	1 900
	228.600	53.975	49.428	38.100	475	620	1 400	1 900
	230.000	63.500	63.500	49.212	580	825	1 500	2 000
	254.000	77.788	82.550	61.912	820	1 070	1 400	1 900
128.588	206.375	47.625	47.625	34.925	350	520	1 700	2 200
130.175	196.850	46.038	46.038	38.100	340	550	1 700	2 200
	206.375	47.625	47.625	34.925	350	520	1 700	2 200
133.350	177.008	25.400	26.195	20.638	140	259	1 800	2 400

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{las}.
1) 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.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

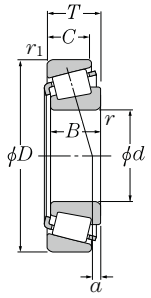
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number 1) 2)	Installation-related dimensions mm						Load center 3) mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{las} Max.	a	e	Y_2	Y_0	(approx.)
4T-LM522548/LM522510	133	118	146	154	8	3.3	1.4	0.40	1.49	0.82	2.24
4T-64433/64700	128	121	160	172	3.5	3.3	-1.1	0.52	1.16	0.64	3.77
#4T-JM822049/JM822010	125	119	149	159	3	2.5	-3.0	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	131.2	186	205	3.5	3.3	-6.8	0.67	0.89	0.49	8.47
4T-64450/64700	131	125	160	172	3.5	3.3	-1.1	0.52	1.16	0.64	3.52
4T-68450/68712††	130	123	163	172	3.5	3.3	-5.4	0.50	1.21	0.66	2.93
4T-938/932	141	128	187	193.1	7	3.3	19.7	0.33	1.84	1.01	10.1
4T-HH224346/HH224310	143	131	192	201.7	7	3.3	18.9	0.33	1.84	1.01	10.1
4T-HM926740/HM926710	146	142	200	219.3	3.5	3.3	-13.5	0.74	0.81	0.45	9.76
4T-71453/71750	133	126	171	181	3.5	3.3	6.7	0.42	1.44	0.79	5.11
4T-68462/68712††	132	125	163	172	3.5	3.3	-5.4	0.50	1.21	0.66	2.78
#4T-JL724348/JL724314	132	127	156	163	3.3	3.3	-7.9	0.46	1.31	0.72	1.67
4T-95475/95925	149	137	209	217	6.4	3.3	14.0	0.37	1.62	0.89	12.6
4T-48286/48220	139	133	168	176	3.5	3.3	5.7	0.31	1.97	1.08	3.52
4T-48290/48220	141	135	168	176	3.5	3.3	5.7	0.31	1.97	1.08	3.33
4T-67388/67322	144	138	180	189	3.5	3.3	6.3	0.34	1.74	0.96	5.1
4T-74500/74850	148	141	196	208	3.5	3.3	-2.2	0.49	1.23	0.68	7.04
4T-97500/97900	151	144	197	213	3.5	3.3	-13.4	0.74	0.81	0.45	8.43
4T-HM926747/HM926710	156	143	200	219.3	3.5	3.3	-13.5	0.74	0.81	0.45	8.83
4T-95500/95905	154	142	207	217	6.4	3.3	14.0	0.37	1.62	0.89	12.9
4T-HH228349/HH228310	164	148	223	233.6	9.7	6.4	23.4	0.32	1.87	1.03	18
4T-799/792	146	140	186	196	3.3	3.3	1.9	0.46	1.31	0.72	5.77
4T-67389/67322	147	141	180	189	3.5	3.3	6.3	0.34	1.74	0.96	4.87
4T-799A/792	148	142	186	196	3.5	3.3	1.9	0.46	1.31	0.72	5.65
4T-L327249/L327210	142	140	167	171	1.5	1.5	-3.7	0.35	1.72	0.95	1.7

2) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
3) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

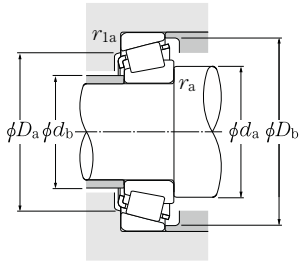
Inch series
J series



d 133.350 ~ 196.850mm

Boundary dimensions mm					Basic load rating kN		Allowable speed min-1	
					dynamic	static		
d	D	T	B	C	C_r	C_{0r}	Grease lubrication	Oil lubrication
133.350	190.500	39.688	39.688	33.338	262	475	1 700	2 300
	196.850	46.038	46.038	38.100	340	550	1 700	2 200
	196.850	46.038	46.038	38.100	340	550	1 700	2 200
	215.900	47.625	47.625	34.925	355	540	1 600	2 100
	234.950	63.500	63.500	49.212	580	825	1 500	2 000
136.525	190.500	39.688	39.688	33.338	262	475	1 700	2 300
	228.600	57.150	57.150	44.450	495	735	1 500	2 000
139.700	215.900	47.625	47.625	34.925	355	540	1 600	2 100
	228.600	57.150	57.150	44.450	495	735	1 500	2 000
	254.000	66.675	66.675	47.625	610	910	1 400	1 800
142.875	200.025	41.275	39.688	34.130	265	490	1 600	2 100
	200.025	41.275	39.688	34.130	265	490	1 600	2 100
146.050	193.675	28.575	28.575	23.020	183	340	1 600	2 200
	254.000	66.675	66.675	47.625	610	910	1 400	1 800
152.400	192.088	25.000	24.000	19.000	144	261	1 600	2 100
	222.250	46.830	46.830	34.925	350	585	1 500	2 000
158.750	205.583	23.812	23.812	18.258	140	247	1 500	2 000
	225.425	41.275	39.688	33.338	282	555	1 400	1 900
165.100	225.425	41.275	39.688	33.338	282	555	1 400	1 900
170.000	230.000	39.000	38.000	31.000	310	520	1 400	1 800
177.800	227.012	30.162	30.162	23.020	201	415	1 300	1 800
	247.650	47.625	47.625	38.100	380	690	1 300	1 700
180.000	250.000	47.000	45.000	37.000	410	710	1 300	1 700
190.000	260.000	46.000	44.000	36.500	405	720	1 200	1 600
196.850	241.300	23.812	23.017	17.462	177	330	1 200	1 600

Note: Chamfer dimensions on the back face of the inner and outer rings of the bearing are larger than the maximum values of installation-related dimensions r_{as} and r_{1as}.



Dynamic equivalent radial load
$P_r = XF_r + YF_a$

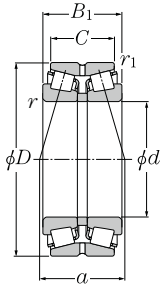
$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

Static equivalent radial load
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$.
For values of e, Y_2 and Y_0 see the table below.

Bearing number [1]	Installation-related dimensions mm						Load center [2] mm	Constant	Axial load factors		Mass kg
	d_a	d_b	D_a	D_b	r_{as} Max.	r_{1as} Max.	a	e	Y_2	Y_0	(approx.)
4T-48385/48320	148	142	177	184	3.5	3.3	4.0	0.32	1.87	1.03	3.64
4T-67390/67322	150	144	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	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	9.12
4T-74550/74850	158	151	196	208	3.5	3.3	-2.2	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	8.81
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	0.37	1.63	0.90	2.26
4T-99575/99100	175	162	227	238	7	3.3	12.1	0.41	1.47	0.81	13.6
4T-L630349/L630310	162	158	183	187	2	2	-10.0	0.42	1.44	0.79	1.57
4T-M231648/M231610	178	163	207	213	8	1.5	5.9	0.33	1.80	0.99	5.7
4T-L432349/L432310	168	166	195	199	1.5	1.5	-9.8	0.37	1.61	0.88	1.89
4T-46780/46720	176	169	209	218	3.5	3.3	-2.6	0.38	1.57	0.86	5.19
4T-46790/46720	181	174	209	218	3.5	3.3	-2.6	0.38	1.57	0.86	4.68
#4T-JHM534149/JHM534110	184	178	217	224	3	2.5	-4.7	0.38	1.57	0.86	4.37
4T-36990/36920	188	186	214	221	1.5	1.5	-12.8	0.44	1.36	0.75	2.91
4T-67790/67720	194	188	229	240	3.5	3.3	-4.8	0.44	1.36	0.75	6.72
#4T-JM736149/JM736110	196	190.5	232	242.6	3	2.5	-9.0	0.48	1.25	0.69	6.74
#4T-JM738249/JM738210	206	200	242	252	3	2.5	-10.9	0.48	1.26	0.69	6.84
4T-LL639249/LL639210	205	203	232	236	1.5	1.5	-17.3	0.42	1.44	0.79	2.07

1) Bearing numbers marked "#" designate **J-series** bearings. The tolerance of these bearings is listed in **Table 6.8** on page **A-66** to **A-67**.
2) Dimensions with "–" indicate a load center at the outside on the end of an inner ring.

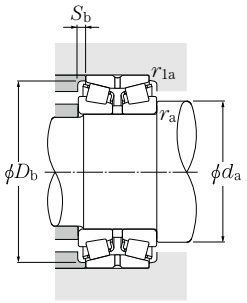
Back-to-back arrangement



d 40 ~ 70mm

d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication
	Boundary dimensions mm									
40	80	45	37.5	1.5	0.6	116	134	—	4 100	5 500
	80	55	43.5	1.5	0.6	151	187	—	4 100	5 500
	90	56	39.5	2	0.6	147	171	—	3 200	4 200
	90	56	45.5	2	0.6	174	204	—	3 700	4 900
45	85	47	37.5	1.5	0.6	129	157	—	3 700	4 900
	85	55	43.5	1.5	0.6	156	200	—	3 700	4 900
	100	60	41.5	2	0.6	183	218	—	2 800	3 800
	100	60	49.5	2	0.6	212	251	—	3 300	4 400
50	90	49	39.5	1.5	0.6	147	186	—	3 400	4 500
	90	55	43.5	1.5	0.6	166	218	26.6	3 400	4 500
	110	64	43.5	2.5	0.6	216	260	—	2 600	3 500
	110	64	51.5	2.5	0.6	252	305	—	3 000	4 000
	110	90	71.5	2.5	0.6	350	465	56.5	3 000	4 000
55	100	51	41.5	2	0.6	177	221	—	3 100	4 100
	100	60	48.5	2	0.6	206	269	33.0	3 100	4 100
	120	70	49	2.5	0.6	251	305	—	2 400	3 100
	120	70	57	2.5	0.6	295	360	43.5	2 700	3 700
	120	97	76	2.5	0.6	410	550	67.0	2 700	3 700
60	110	53	43.5	2	0.6	199	249	—	2 800	3 800
	110	66	54.5	2	0.6	247	330	40.0	2 800	3 800
	130	74	51	3	1	286	350	—	2 200	2 900
	130	74	59	3	1	340	420	51.0	2 500	3 400
	130	104	81	3	1	465	625	76.5	2 500	3 400
65	120	56	46.5	2	0.6	234	295	—	2 600	3 500
	120	73	61.5	2	0.6	300	410	50.0	2 600	3 500
	140	79	53	3	1	330	410	—	2 000	2 700
	140	79	63	3	1	385	475	57.5	2 300	3 100
	140	108	84	3	1	520	700	85.0	2 300	3 100
70	125	59	48.5	2	0.6	250	325	—	2 400	3 200
	125	74	61.5	2	0.6	315	440	53.5	2 400	3 200
	150	83	57	3	1	365	460	—	1 900	2 500
	150	83	67	3	1	435	545	64.0	2 200	2 900
	150	116	92	3	1	590	805	95.5	2 200	2 900

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

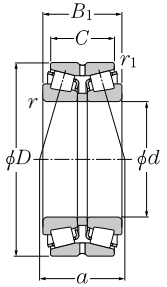
Static equivalent radial load

$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number	Abutment and fillet dimensions mm d_a Min.	D_b Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	Load center mm a	Constant e	Axial load factors Y_1	Y_2	Y_0	Mass kg (approx.)
4T-430208X	48.5	75	3.5	1.5	0.6	38.5	0.37	1.80	2.68	1.76	0.956
4T-432208X	48.5	75	5.5	1.5	0.6	43.5	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	1.59
4T-430308	50	83.5	5	2	0.6	44.5	0.35	1.96	2.91	1.91	1.7
4T-430209	53.5	80	4.5	1.5	0.6	42	0.40	1.67	2.48	1.63	1.08
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	96.5	9	2	0.6	70	0.83	0.82	1.22	0.80	2.11
4T-430309	55	93.5	5	2	0.6	47.5	0.35	1.96	2.91	1.91	2.17
4T-430210	58.5	85	4.5	1.5	0.6	45	0.42	1.61	2.39	1.57	1.23
432210U	58.5	86	5.5	1.5	0.6	47.5	0.42	1.61	2.39	1.57	1.4
4T-430310DX	62	104.5	10	2	0.6	75	0.83	0.82	1.22	0.80	2.7
4T-430310	62	103	6	2	0.6	51	0.35	1.96	2.91	1.91	2.81
432310U	62	102.5	9	2	0.6	62.5	0.35	1.96	2.91	1.91	3.98
4T-430211X	65	95	4.5	2	0.6	47.5	0.40	1.67	2.48	1.63	1.57
432211U	65	96	5.5	2	0.6	47.5	0.40	1.67	2.48	1.63	1.89
4T-430311DX	67	113.5	10.5	2	0.6	83	0.83	0.82	1.22	0.80	3.42
430311XU	67	112.5	6.5	2	0.6	56	0.35	1.96	2.91	1.91	3.57
432311U	67	111.5	10.5	2	0.6	66.5	0.35	1.96	2.91	1.91	5.05
4T-430212X	70	104	4.5	2	0.6	49.5	0.40	1.67	2.48	1.63	1.99
432212U	70	105	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	4.3
430312U	74	122	7.5	2.5	1	60	0.35	1.96	2.91	1.91	4.31
432312U	74	121.5	11.5	2.5	1	71	0.35	1.96	2.91	1.91	6.39
4T-430213X	75	114.5	4.5	2	0.6	54	0.40	1.67	2.48	1.63	2.56
432213U	75	115.5	5.5	2	0.6	62	0.40	1.67	2.48	1.63	3.41
4T-430313DX	79	133.5	13	2.5	1	94.5	0.83	0.82	1.22	0.80	5.26
430313XU	79	131.5	8	2.5	1	64	0.35	1.96	2.91	1.91	5.41
432313U	79	131.5	12	2.5	1	74.5	0.35	1.96	2.91	1.91	7.55
4T-430214	80	119	5	2	0.6	57.5	0.42	1.61	2.39	1.57	2.83
432214U	80	120.5	6	2	0.6	65	0.42	1.61	2.39	1.57	3.65
4T-430314DX	84	142.5	13	2.5	1	101.5	0.83	0.82	1.22	0.80	6.32
430314XU	84	141	8	2.5	1	67	0.35	1.96	2.91	1.91	6.53
432314U	84	141	12	2.5	1	80.5	0.35	1.96	2.91	1.91	9.28

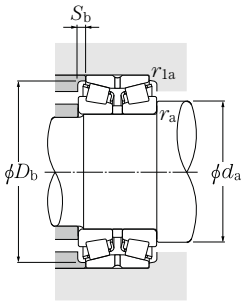
Back-to-back arrangement



d 75 ~ 105mm

Boundary dimensions mm						Basic load rating kN dynamic	kN static	Fatigue load limit kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication
d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	C_r	C_{0r}	C_u		
75	130	62	51.5	2	0.6	264	350	—	2 300	3 000
	130	74	61.5	2	0.6	320	445	54.0	2 300	3 000
	160	87	59	3	1	410	510	59.5	1 700	2 300
	160	87	69	3	1	485	605	70.0	2 000	2 700
	160	125	99	3	1	675	935	109	2 000	2 700
80	140	64	51.5	2.5	0.6	305	400	47.5	2 100	2 800
	140	78	63.5	2.5	0.6	380	530	63.0	2 100	2 800
	170	92	61	3	1	450	565	64.5	1 600	2 200
	170	92	73	3	1	555	700	79.5	1 900	2 500
	170	131	104	3	1	755	1 050	120	1 900	2 500
85	150	70	57	2.5	0.6	345	465	54.0	2 000	2 700
	150	86	69	2.5	0.6	425	600	70.0	2 000	2 700
	180	98	65	4	1	470	585	66.0	1 500	2 100
	180	98	77	4	1	580	725	81.0	1 800	2 400
	180	137	108	4	1	765	1 050	118	1 800	2 400
90	160	74	61	2.5	0.6	395	535	61.0	1 900	2 500
	160	94	77	2.5	0.6	500	720	82.5	1 900	2 500
	190	102	69	4	1	515	645	71.0	1 500	1 900
	190	102	81	4	1	640	815	89.0	1 700	2 300
	190	144	115	4	1	855	1 190	131	1 700	2 300
95	170	78	63	3	1	430	580	65.0	1 800	2 400
	170	100	83	3	1	570	835	93.5	1 800	2 400
	200	108	85	4	1	700	890	96.5	1 600	2 100
	200	151	118	4	1	955	1 340	146	1 600	2 100
100	180	83	67	3	1	490	675	74.5	1 700	2 200
	180	107	87	3	1	630	925	102	1 700	2 200
	215	112	87	4	1	780	995	106	1 500	2 000
	215	162	127	4	1	1 090	1 540	164	1 500	2 000
105	190	88	70	3	1	545	760	82.5	1 600	2 100
	190	115	95	3	1	720	1 080	118	1 600	2 100

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

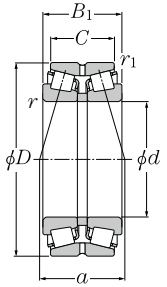
Static equivalent radial load

$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number	Abutment and fillet dimensions mm					Load center mm	Constant	Axial load factors			Mass kg
	d_a Min.	D_b Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_1	Y_2	Y_0	(approx.)
4T-430215	85	125	5	2	0.6	61.5	0.44	1.55	2.31	1.52	3.1
432215U	85	125.5	6	2	0.6	67	0.44	1.55	2.31	1.52	3.68
430315DU	89	152.5	14	2.5	1	107	0.83	0.82	1.22	0.80	7.31
430315XU	89	150.5	9	2.5	1	70.5	0.35	1.96	2.91	1.91	7.71
432315U	89	150.5	13	2.5	1	87.5	0.35	1.96	2.91	1.91	11.5
430216XU	92	133	6	2	0.6	63	0.42	1.61	2.39	1.57	3.76
432216XU	92	135	7	2	0.6	69.5	0.42	1.61	2.39	1.57	4.7
430316DU	94	160.5	15.5	2.5	1	113.5	0.83	0.82	1.22	0.80	8.99
430316XU	94	160	9.5	2.5	1	75.5	0.35	1.96	2.91	1.91	9.4
432316U	94	161.5	13.5	2.5	1	91	0.35	1.96	2.91	1.91	13.6
430217XU	97	141.5	6.5	2	0.6	69	0.42	1.61	2.39	1.57	4.76
432217XU	97	143.5	8.5	2	0.6	76.5	0.42	1.61	2.39	1.57	5.99
430317DU	103	170	16.5	3	1	121.5	0.83	0.82	1.22	0.80	10.4
430317XU	103	168	10.5	3	1	80	0.35	1.96	2.91	1.91	10.8
432317U	103	169	14.5	3	1	96	0.35	1.96	2.91	1.91	15.4
430218U	102	151	6.5	2	0.6	73	0.42	1.61	2.39	1.57	5.85
432218U	102	153.5	8.5	2	0.6	81	0.42	1.61	2.39	1.57	7.35
430318DU	108	180.5	16.5	3	1	127	0.83	0.82	1.22	0.80	12.2
430318U	108	177.5	10.5	3	1	84	0.35	1.96	2.91	1.91	12.5
432318U	108	179	14.5	3	1	100	0.35	1.96	2.91	1.91	18.3
430219XU	109	160.5	7.5	2.5	1	76.5	0.42	1.61	2.39	1.57	6.85
432219XU	109	163	8.5	2.5	1	86.5	0.42	1.61	2.39	1.57	9.2
430319XU	113	185.5	11.5	3	1	89	0.35	1.96	2.91	1.91	14.6
432319U	113	187.5	16.5	3	1	106	0.35	1.96	2.91	1.91	21
430220XU	114	169.5	8	2.5	1	81.5	0.42	1.61	2.39	1.57	8.27
432220XU	114	172	10	2.5	1	92	0.42	1.61	2.39	1.57	11
430320XU	118	198.5	12.5	3	1	92	0.35	1.96	2.91	1.91	17.9
432320U	118	201.5	17.5	3	1	112.5	0.35	1.96	2.91	1.91	26.8
430221XU	119	178.5	9	2.5	1	86	0.42	1.61	2.39	1.57	9.8
432221XU	119	181.5	10	2.5	1	97.5	0.42	1.61	2.39	1.57	13.3

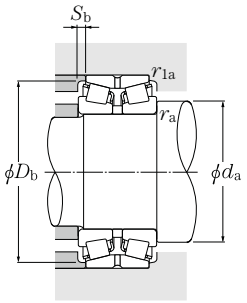
Back-to-back arrangement



d 110 ~ 150mm

Boundary dimensions mm						Basic load rating kN dynamic	static	Fatigue load limit kN	Allowable speed min^{-1} Grease lubrication	Oil lubrication
d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	C_r	C_{0r}	C_u		
110	180	56	50	2.5	0.6	253	340	37.5	1 600	2 200
	180	70	56	2.5	0.6	330	485	53.0	1 600	2 200
	200	92	74	3	1	615	865	92.5	1 500	2 000
	200	121	101	3	1	800	1 210	130	1 500	2 000
	240	118	93	4	1	910	1 170	120	1 400	1 800
	240	181	142	4	1	1 340	1 940	199	1 400	1 800
120	180	46	41	2.5	0.6	214	298	32.0	1 500	2 100
	180	58	46	2.5	0.6	255	375	40.0	1 500	2 100
	200	62	55	2.5	0.6	291	435	46.0	1 500	2 000
	200	78	62	2.5	0.6	415	610	64.5	1 500	2 000
	215	97	78	3	1	660	940	98.5	1 400	1 900
	215	132	109	3	1	875	1 360	143	1 400	1 900
	260	128	101	4	1	1 060	1 390	139	1 200	1 700
	260	188	145	4	1	1 550	2 270	228	1 200	1 700
130	200	52	46	2.5	0.6	249	365	38.5	1 400	1 900
	200	65	52	2.5	0.6	325	490	51.5	1 400	1 900
	210	64	57	2.5	0.6	350	485	50.5	1 400	1 800
	210	80	64	2.5	0.6	455	675	70.5	1 400	1 800
	230	98	78.5	4	1	710	1 010	103	1 300	1 700
	230	145	117.5	4	1	1 010	1 630	167	1 300	1 700
	280	137	107.5	5	1.5	1 430	1 660	162	1 200	1 600
	280	205	163.5	4	1.5	1 960	2 470	243	1 200	1 600
140	210	53	47	2.5	0.6	291	415	43.0	1 300	1 800
	210	66	53	2.5	0.6	335	535	55.0	1 300	1 800
	225	68	61	3	1	410	580	59.0	1 200	1 700
	225	84	68	3	1	435	650	66.0	1 200	1 700
	250	102	82.5	4	1	800	1 140	114	1 200	1 600
	250	153	125.5	4	1	1 160	1 840	184	1 200	1 600
	300	145	115.5	5	1.5	1 620	1 900	183	1 100	1 500
	300	145	115.5	4	1.5	1 220	1 560	150	1 100	1 400
	300	223	177.5	4	1.5	2 170	2 740	264	1 100	1 500
150	225	56	50	3	1	305	430	43.5	1 200	1 600
	225	70	56	3	1	395	630	64.0	1 200	1 600
	250	80	71	3	1	540	805	79.5	1 200	1 500
	250	100	80	3	1	670	1 040	103	1 200	1 500

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

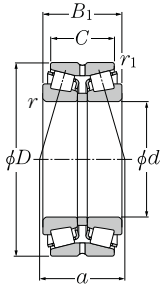
$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number [2]	Abutment and fillet dimensions mm					Load center mm	Constant	Axial load factors			Mass kg
	d_a Min.	D_b Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_1	Y_2	Y_0	(approx.)
413122	122	170.5	3	2	0.6	66.5	0.40	1.68	2.50	1.64	4.93
423122	122	167.5	7	2	0.6	66.5	0.33	2.03	3.02	1.98	6.38
430222XU	124	188.5	9	2.5	1	90	0.42	1.61	2.39	1.57	11.4
432222XU	124	192	10	2.5	1	102.5	0.42	1.61	2.39	1.57	15.8
430322U	128	222	12.5	3	1	99	0.35	1.96	2.91	1.91	23.9
432322U	128	224	19.5	3	1	127	0.35	1.96	2.91	1.91	37.4
413024	132	172	2.5	2	0.6	59	0.37	1.80	2.69	1.76	3.85
423024	132	171.5	6	2	0.6	66	0.37	1.80	2.69	1.76	4.35
413124	132	185.5	3.5	2	0.6	76.5	0.43	1.57	2.34	1.53	7.24
423124	132	189.5	8	2	0.6	76.5	0.37	1.80	2.69	1.76	8.69
430224XU	134	203	9.5	2.5	1	98	0.44	1.55	2.31	1.52	13.8
432224XU	134	206	11.5	2.5	1	112.5	0.44	1.55	2.31	1.52	19.2
430324XU	138	239	13.5	3	1	107	0.35	1.96	2.91	1.91	30.3
432324U	138	240.5	21.5	3	1	129.5	0.35	1.96	2.91	1.91	47
413026	142	188	3	2	0.6	66	0.37	1.80	2.69	1.76	5.55
423026	142	190.5	6.5	2	0.6	71.5	0.37	1.80	2.69	1.76	6.62
413126	142	197	3.5	2	0.6	69	0.33	2.03	3.02	1.98	7.83
423126	142	199.5	8	2	0.6	79.5	0.37	1.80	2.69	1.76	9.4
430226XU	148	218	9.5	3	1	101.5	0.44	1.55	2.31	1.52	15.3
432226XU	148	220.5	13.5	3	1	123.5	0.44	1.55	2.31	1.52	24
∗ **430326XUUTG**	152	257.5	14.5	4	1.5	116.5	0.35	1.96	2.91	1.91	37.9
∗ **432326UTG**	148	264	20.5	3	1.5	143	0.35	1.95	2.90	1.91	56.6
413028	152	200	3	2	0.6	68.5	0.37	1.80	2.69	1.76	5.73
423028	152	198	6.5	2	0.6	75	0.37	1.84	2.74	1.80	7.07
413128	154	212	3.5	2.5	1	73.5	0.33	2.03	3.02	1.98	9.29
423128	154	211	8	2.5	1	88	0.37	1.80	2.69	1.76	11.1
430228XU	158	235	9.5	3	1	107.5	0.44	1.55	2.31	1.52	19.2
432228XU	158	239.5	13.5	3	1	131.5	0.44	1.55	2.31	1.52	30
∗ **430328XUUTG**	162	275.5	14.5	4	1.5	122.5	0.35	1.96	2.91	1.91	45.3
430328X	158	275.5	14.5	4	1.5	123.5	0.35	1.95	2.90	1.91	43.2
∗ **432328UTG**	158	280.5	22.5	3	1.5	156	0.35	1.95	2.90	1.91	68.9
413030	164	213.5	3	2.5	1	73.5	0.37	1.80	2.69	1.76	6.66
423030	164	213	7	2.5	1	79.5	0.37	1.80	2.69	1.76	8.48
413130	164	232.5	4.5	2.5	1	83.5	0.33	2.03	3.02	1.98	14.6
423130	164	236	10	2.5	1	96.5	0.37	1.80	2.69	1.76	17.6

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.

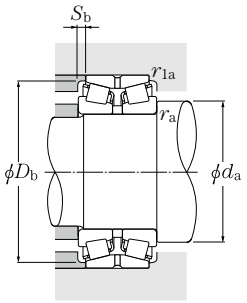
Back-to-back arrangement



d 150 ～ 200mm

d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed Grease lubrication min^{-1}	Allowable speed Oil lubrication min^{-1}
	270	109	87	4	1	855	1 210	118	1 100	1 500
150	270	164	130	4	1	1 330	2 140	209	1 100	1 500
	320	154	120	5	1.5	1 810	2 140	201	990	1 400
	240	60	53	3	1	370	535	53.0	1 100	1 500
	240	75	60	3	1	475	765	76.0	1 100	1 500
	270	86	76	3	1	760	965	93.0	1 100	1 600
160	270	108	86	3	1	865	1 180	114	1 100	1 600
	290	115	91	4	1	1 150	1 440	137	1 000	1 400
	290	178	144	4	1	1 960	2 840	272	1 000	1 400
	340	160	126	5	1.5	2 010	2 390	221	920	1 300
	260	67	60	3	1	405	620	60.0	1 100	1 400
	260	84	67	3	1	545	865	83.5	1 100	1 400
170	280	88	78	3	1	705	900	86.0	1 000	1 500
	280	110	88	3	1	930	1 270	122	1 000	1 500
	310	125	97	5	1.5	1 340	1 690	159	950	1 400
	310	192	152	5	1.5	2 190	3 200	300	950	1 400
	280	74	66	3	1	545	735	69.5	1 000	1 400
	280	93	74	3	1	745	1 050	99.5	1 000	1 400
180	300	96	85	4	1.5	910	1 190	111	940	1 400
	300	120	96	4	1.5	1 130	1 530	144	940	1 400
	320	127	99	5	1.5	1 380	1 780	165	890	1 300
	320	192	152	5	1.5	2 260	3 350	315	890	1 300
	290	75	67	3	1	555	740	69.5	940	1 400
	290	94	75	3	1	790	1 110	104	940	1 400
190	320	104	92	4	1.5	1 000	1 280	118	890	1 300
	320	130	104	4	1.5	1 260	1 710	157	890	1 300
	340	133	105	5	1.5	1 570	2 010	183	840	1 200
	340	204	160	5	1.5	2 530	3 700	335	840	1 200
	310	82	73	3	1	680	940	87.0	900	1 300
	310	103	82	3	1	920	1 320	121	900	1 300
200	340	112	100	4	1.5	1 240	1 660	150	840	1 200
	340	140	112	4	1.5	1 400	1 910	173	840	1 200
	360	142	110	5	1.5	1 730	2 210	198	800	1 100
	360	218	174	5	1.5	2 900	4 250	380	800	1 100

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

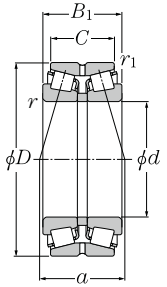
$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number [2]	d_a Min.	D_b Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	Load center a mm	Constant e	Axial load factors Y_1	Y_2	Y_0	Mass (approx.) kg
430230U	168	251.5	11	3	1	114	0.44	1.55	2.31	1.52	24.1
432230XU	168	256	17	3	1	139	0.44	1.55	2.31	1.52	38
∗ **430330UUTG**	172	294.5	17	4	1.5	131.5	0.35	1.96	2.91	1.91	54.6
413032	174	228.5	3.5	2.5	1	79	0.37	1.80	2.69	1.76	8.39
423032	174	228.5	7.5	2.5	1	85.5	0.37	1.80	2.69	1.76	10.7
∗ **413132UTG**	174	256	5	2.5	1	98.5	0.40	1.68	2.50	1.64	18.2
∗ **423132UTG**	174	252	11	2.5	1	106	0.37	1.80	2.69	1.76	22.5
∗ **430232UUTG**	178	271	12	3	1	122	0.44	1.55	2.31	1.52	29.3
∗ **432232UUTG**	178	277	17	3	1	149.5	0.44	1.55	2.31	1.52	49.9
∗ **430332XUUTG**	182	312.5	17	4	1.5	137.5	0.35	1.96	2.91	1.91	63.8
413034	184	243.5	3.5	2.5	1	86.5	0.37	1.80	2.69	1.76	11.6
423034	184	245.5	8.5	2.5	1	93.5	0.37	1.80	2.69	1.76	14.3
∗ **413134UTG**	184	262	5	2.5	1	104	0.40	1.68	2.50	1.64	19.2
∗ **423134UTG**	184	262	11	2.5	1	108.5	0.37	1.80	2.69	1.76	24.2
∗ **430234UUTG**	192	290.5	14	4	1.5	132.5	0.44	1.55	2.31	1.52	37.1
∗ **432234XUUTG**	192	296	20	4	1.5	160	0.44	1.55	2.31	1.52	61.3
∗ **413036UTG**	194	262	4	2.5	1	94	0.37	1.80	2.69	1.76	15.2
∗ **423036UTG**	194	264	9.5	2.5	1	102	0.37	1.80	2.69	1.76	19
∗ **413136UTG**	198	282	5.5	3	1.5	110.5	0.40	1.68	2.50	1.64	25
∗ **423136UTG**	198	281	12	3	1.5	119	0.37	1.80	2.69	1.76	30.1
∗ **430236UUTG**	202	300	14	4	1.5	139	0.45	1.50	2.23	1.47	39.1
∗ **432236UUTG**	202	305.5	20	4	1.5	165	0.45	1.50	2.23	1.47	63.8
∗ **413038UTG**	204	272.5	4	2.5	1	96	0.37	1.80	2.69	1.76	15.9
∗ **423038UTG**	204	274	9.5	2.5	1	104.5	0.37	1.80	2.69	1.76	16.1
∗ **413138UTG**	208	303	6	3	1.5	118.5	0.40	1.68	2.50	1.64	30.3
∗ **423138UTG**	208	302	13	3	1.5	126.5	0.37	1.80	2.69	1.76	37.7
∗ **430238UUTG**	212	321	14	4	1.5	141.5	0.44	1.55	2.31	1.52	47
∗ **432238UUTG**	212	325.5	22	4	1.5	173.5	0.44	1.55	2.31	1.52	75.6
∗ **413040UTG**	214	289.5	4.5	2.5	1	103	0.37	1.80	2.69	1.76	20.9
∗ **423040UTG**	214	293	10.5	2.5	1	112	0.37	1.80	2.69	1.76	26.6
∗ **413140UTG**	218	320	6	3	1.5	125.5	0.40	1.68	2.50	1.64	38.6
∗ **423140UTG**	218	319	14	3	1.5	134.5	0.37	1.80	2.69	1.76	47.3
∗ **430240UUTG**	222	338	16	4	1.5	154	0.44	1.55	2.31	1.52	55.8
∗ **432240UUTG**	222	342.5	22	4	1.5	180	0.41	1.66	2.47	1.62	91.5

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.

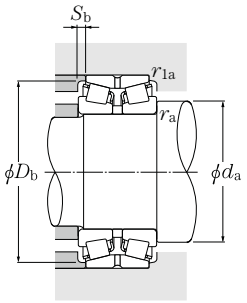
Back-to-back arrangement



d 220 ~ 340mm

d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed Grease lubrication min^{-1}	Allowable speed Oil lubrication min^{-1}
	340	90	80	4	1.5	765	1 060	94.5	810	1 200
	340	113	90	4	1.5	1 130	1 650	148	810	1 200
220	370	120	107	5	1.5	1 420	1 920	169	760	1 100
	370	150	120	5	1.5	1 570	2 260	199	760	1 100
	400	158	122	4	1.5	1 790	2 440	212	710	1 000
	360	92	82	4	1.5	840	1 160	101	730	1 000
	360	115	92	4	1.5	1 170	1 770	155	730	1 000
240	400	128	114	5	1.5	1 580	2 130	183	690	1 000
	400	160	128	5	1.5	1 790	2 600	223	690	1 000
	440	165	127	4	1.5	2 150	2 960	250	640	900
	440	266	212	4	1.5	3 750	5 500	465	640	900
	400	104	92	5	1.5	1 070	1 540	131	670	1 000
260	400	130	104	5	1.5	1 470	2 190	187	670	1 000
	440	144	128	5	1.5	1 920	2 630	220	630	910
	440	180	144	5	1.5	2 510	3 750	310	630	910
	420	106	94	5	1.5	1 140	1 630	137	620	880
280	420	133	106	5	1.5	1 540	2 340	196	620	880
	460	146	130	6	2	2 100	2 900	239	580	830
	460	183	146	6	2	2 480	3 650	300	580	830
	460	118	105	5	1.5	1 370	1 990	163	570	810
300	460	148	118	5	1.5	2 070	3 150	257	570	810
	500	160	142	6	2	2 580	3 600	290	530	770
	500	200	160	6	2	2 690	4 050	325	530	770
	480	121	108	5	1.5	1 520	2 250	181	530	750
320	480	151	121	5	1.5	2 030	3 100	247	530	750
	540	176	157	6	2	2 870	4 100	320	500	710
	540	220	176	6	2	3 200	4 900	385	500	710
	520	133	118	6	2	1 890	2 870	226	500	700
340	520	165	133	6	2	2 420	3 750	295	500	700
	580	190	169	6	2	3 450	4 900	380	460	660
	580	238	190	6	2	4 300	6 500	500	460	660

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

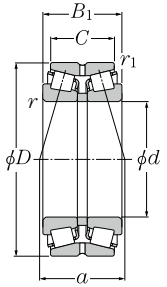
$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number [2]	Abutment and fillet dimensions d_a Min. mm	D_b Min. mm	S_b Min. mm	r_{as} Max. mm	r_{1as} Max. mm	Load center a mm	Constant e	Axial load factors Y_1	Y_2	Y_0	Mass (approx.) kg
∗ **413044UTG**	238	320	5	3	1.5	111.5	0.37	1.80	2.69	1.76	27.1
∗ **423044UTG**	238	321	11.5	3	1.5	124.5	0.37	1.80	2.69	1.76	33
∗ **413144UTG**	242	349	6.5	4	1.5	135	0.40	1.68	2.50	1.64	47.8
∗ **423144UTG**	242	344	15	4	1.5	154	0.40	1.68	2.50	1.64	58.1
∗ **430244UTG**	238	368	18	3	1.5	178.5	0.49	1.38	2.06	1.35	77
∗ **413048UTG**	258	341	5	3	1.5	117.5	0.37	1.80	2.69	1.76	29.1
∗ **423048UTG**	258	340.5	11.5	3	1.5	130.5	0.37	1.80	2.69	1.76	36.3
∗ **413148UTG**	262	378	7	4	1.5	144.5	0.40	1.68	2.50	1.64	58.5
∗ **423148UTG**	262	376	16	4	1.5	164	0.40	1.68	2.50	1.64	71.4
∗ **430248UTG**	258	406	19	3	1.5	189	0.49	1.38	2.06	1.35	100
∗ **432248UTG**	258	421.5	27	3	1.5	226	0.43	1.57	2.34	1.53	160
∗ **413052UTG**	282	375	6	4	1.5	130.5	0.37	1.80	2.69	1.76	43.4
∗ **423052UTG**	282	377	13	4	1.5	143	0.37	1.80	2.69	1.76	53
∗ **413152UTG**	282	415	8	4	1.5	161	0.40	1.68	2.50	1.64	82
∗ **423152UTG**	282	416	18	4	1.5	176.5	0.40	1.68	2.50	1.64	100
∗ **413056UTG**	302	396.5	6	4	1.5	136.5	0.37	1.80	2.69	1.76	46
∗ **423056UTG**	302	399.5	13.5	4	1.5	148.5	0.37	1.80	2.69	1.76	56.8
∗ **413156UTG**	308	438	8	5	2	168	0.40	1.68	2.50	1.64	85.5
∗ **423156UTG**	308	435.5	18.5	5	2	182.5	0.40	1.68	2.50	1.64	110
∗ **413060UTG**	322	431	6.5	4	1.5	151	0.37	1.80	2.69	1.76	65.6
∗ **423060UTG**	322	436.5	15	4	1.5	163	0.37	1.80	2.69	1.76	77.8
∗ **413160UTG**	328	475	9	5	2	182	0.40	1.68	2.50	1.64	110
∗ **423160UTG**	328	467	20	5	2	201.5	0.40	1.68	2.50	1.64	140
∗ **413064UTG**	342	452	6.5	4	1.5	156.5	0.37	1.80	2.69	1.76	69.2
∗ **423064UTG**	342	457.5	15	4	1.5	170	0.37	1.80	2.69	1.76	82
∗ **413164UTG**	348	509	9.5	5	2	197.5	0.40	1.68	2.50	1.64	150
∗ **423164UTG**	348	504.5	22	5	2	216.5	0.40	1.68	2.50	1.64	190
∗ **413068UTG**	368	491	7.5	5	2	169.5	0.37	1.80	2.69	1.76	93.1
∗ **423068UTG**	368	492	16	5	2	184	0.37	1.80	2.69	1.76	110
∗ **413168UTG**	368	548	10.5	5	2	213	0.40	1.68	2.50	1.64	190
∗ **423168UTG**	368	546	24	5	2	237	0.40	1.68	2.50	1.64	240

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.

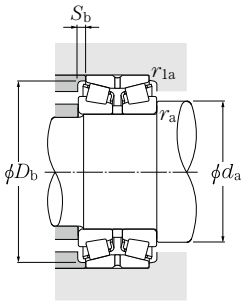
Back-to-back arrangement



d 360 ~ 500mm

d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	Basic load rating dynamic C_r kN	Basic load rating static C_{0r} kN	Fatigue load limit C_u kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication
		Boundary dimensions mm								
360	540	134	120	6	2	1 880	2 810	218	460	660
	540	169	134	6	2	2 630	4 200	325	460	660
	600	192	171	6	2	3 500	5 050	385	430	620
	600	240	192	6	2	4 100	6 500	495	430	620
380	560	135	122	6	2	2 170	3 350	255	440	620
	560	171	135	6	2	2 670	4 350	335	440	620
	620	194	173	6	2	3 650	5 250	395	410	580
	620	243	194	6	2	4 250	6 700	505	410	580
400	600	148	132	6	2	2 390	3 700	276	410	580
	600	185	148	6	2	3 250	5 450	410	410	580
	650	200	178	6	3	3 850	5 800	430	380	540
	650	250	200	6	3	4 800	7 850	580	380	540
420	620	150	134	6	2	2 710	4 250	315	390	550
	620	188	150	6	2	3 400	5 900	435	390	550
	700	224	200	6	3	4 750	7 200	525	360	510
	700	280	224	6	3	6 150	9 700	705	360	510
440	650	157	140	6	3	3 150	5 150	375	370	520
	650	196	157	6	3	3 350	5 450	400	370	520
	720	226	201	6	3	5 150	7 800	560	340	480
	720	283	226	6	3	6 400	10 300	740	340	480
460	680	163	145	6	3	3 350	5 350	390	350	500
	680	204	163	6	3	3 950	6 750	485	350	500
	760	300	240	7.5	4	6 300	10 300	725	320	450
480	700	165	147	6	3	3 200	5 000	360	330	470
	700	206	165	6	3	3 900	6 700	480	330	470
	790	310	248	7.5	4	6 750	11 100	775	310	430
500	720	167	149	6	3	3 350	5 400	380	320	450
	720	209	167	6	3	3 950	6 900	485	320	450
	830	264	235	7.5	4	6 700	10 500	725	290	410

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

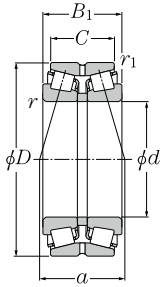
$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number [2]	Abutment and fillet dimensions mm d_a Min.	D_b Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	Load center mm a	Constant e	Axial load factors Y_1	Y_2	Y_0	Mass kg (approx.)
∗ 413072UTG	388	510	7	5	2	176	0.37	1.80	2.69	1.76	98.2
∗ 423072UTG	388	512	17.5	5	2	192	0.37	1.80	2.69	1.76	120
∗ 413172UTG	388	565	10.5	5	2	218.5	0.40	1.68	2.50	1.64	200
∗ 423172UTG	388	563.5	24	5	2	239.5	0.40	1.68	2.50	1.64	250
∗ 413076UTG	408	532	6.5	5	2	183	0.37	1.80	2.69	1.76	100
∗ 423076UTG	408	532	18	5	2	196.5	0.37	1.80	2.69	1.76	130
∗ 413176UTG	408	587	10.5	5	2	224.5	0.40	1.68	2.50	1.64	210
∗ 423176UTG	408	582	24.5	5	2	249	0.40	1.68	2.50	1.64	260
∗ 413080UTG	428	567	8	5	2	194	0.37	1.80	2.69	1.76	130
∗ 423080UTG	428	567	18.5	5	2	210	0.37	1.80	2.69	1.76	170
∗ 413180UTG	428	614	11	5	2.5	232	0.40	1.68	2.50	1.64	240
∗ 423180UTG	428	613.5	25	5	2.5	256.5	0.40	1.68	2.50	1.64	290
∗ 413084UTG	448	589	8	5	2	199.5	0.37	1.80	2.69	1.76	140
∗ 423084UTG	448	586	19	5	2	220	0.37	1.80	2.69	1.76	180
∗ 413184UTG	448	658.5	12	5	2.5	258	0.40	1.68	2.50	1.64	320
∗ 423184UTG	448	663	28	5	2.5	287	0.40	1.68	2.50	1.64	380
∗ 413088UTG	468	618	8.5	5	2.5	208	0.37	1.80	2.69	1.76	160
∗ 423088UTG	468	617.5	19.5	5	2.5	229.5	0.37	1.80	2.69	1.76	190
∗ 413188UTG	468	675	12.5	5	2.5	263	0.40	1.68	2.50	1.64	330
∗ 423188UTG	468	681.5	28.5	5	2.5	288.5	0.40	1.68	2.50	1.64	460
∗ 413092UTG	488	650	9	5	2.5	217.5	0.37	1.80	2.69	1.76	180
∗ 423092UTG	488	647.5	20.5	5	2.5	239.5	0.37	1.80	2.69	1.76	230
∗ 423192UTG	496	715.5	30	6	3	305	0.40	1.68	2.50	1.64	480
∗ 413096UTG	508	669	9	5	2.5	222.5	0.37	1.80	2.69	1.76	190
∗ 423096UTG	508	667.5	20.5	5	2.5	245.5	0.37	1.80	2.69	1.76	240
∗ 423196UTG	516	761.5	31	6	3	328.5	0.40	1.68	2.50	1.64	540
∗ 4130/500UTG	528	690	9	5	2.5	230	0.37	1.80	2.69	1.76	200
∗ 4230/500UTG	528	687	21	5	2.5	249.5	0.37	1.80	2.69	1.76	250
∗ 4131/500UTG	536	784	14.5	6	3	296	0.40	1.68	2.50	1.64	530

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.

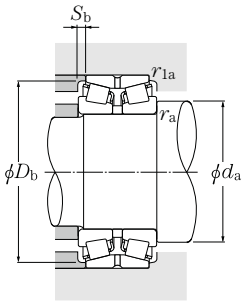
Back-to-back arrangement



d 530 ~ 710mm

Bearing number	Boundary dimensions mm					Basic load rating kN dynamic	kN static	Fatigue load limit kN	Allowable speed min^{-1} Grease lubrication	Allowable speed min^{-1} Oil lubrication
d	D	B_1	C	$r_{s\,min}$ [1]	$r_{1s\,min}$ [1]	C_r	C_{0r}	C_u		
530	780	185	163	6	3	3 750	5 900	410	290	420
600	870	200	176	6	3	5 000	8 550	570	250	360

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

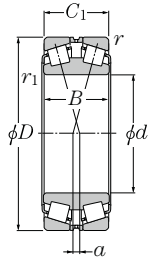
$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number [2]	Abutment and fillet dimensions mm					Load center mm	Constant	Axial load factors			Mass kg
	d_a Min.	D_b Min.	S_b Min.	r_{as} Max.	r_{1as} Max.	a	e	Y_1	Y_2	Y_0	(approx.)
∗ **4130/530UTG**	558	740	11	5	2.5	249.5	0.37	1.80	2.69	1.76	270
∗ **4130/600UTG**	628	828	12	5	2.5	277	0.37	1.80	2.69	1.76	350

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.

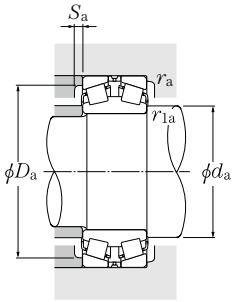
Face-to-face arrangement



d 110 ~ 280mm

Boundary dimensions mm						Basic load rating kN		Fatigue load limit kN	Allowable speed min^{-1}	
d	D	B	C_1	$r_{1s\,min}$ 1)	$r_{s\,min}$ 1)	dynamic C_r	static C_{0r}	C_r	Grease lubrication	Oil lubrication
110	180	56	56	2.5	2	330	485	53.0	1 600	2 200
120	180	46	46	2.5	2	255	375	40.0	1 500	2 100
	200	62	62	2.5	2	415	610	64.5	1 500	2 000
130	200	52	52	2.5	2	325	490	51.5	1 400	1 900
	210	64	64	2.5	2	455	675	70.5	1 400	1 800
140	210	53	53	2.5	2	335	535	55.0	1 300	1 800
	225	68	68	3	2.5	435	650	66.0	1 200	1 700
150	225	56	56	3	2.5	395	630	64.0	1 200	1 600
	250	80	80	3	2.5	670	1 040	103.0	1 200	1 500
160	240	60	60	3	2.5	475	765	76.0	1 100	1 500
	270	86	86	3	2.5	865	1 180	114	1 100	1 600
170	260	67	67	3	2.5	545	865	83.5	1 100	1 400
	280	88	88	3	2.5	930	1 270	122	1 000	1 500
180	280	74	74	3	2.5	745	1 050	99.5	1 000	1 400
	300	96	96	4	3	1 130	1 530	144	960	1 400
190	290	75	75	3	2.5	790	1 110	104	950	1 400
	320	104	104	4	3	1 260	1 710	157	900	1 300
200	310	82	82	3	2.5	920	1 320	121	900	1 300
	340	112	112	4	3	1 400	1 910	173	850	1 200
220	340	90	90	4	3	1 130	1 650	148	810	1 200
	370	120	120	5	4	1 570	2 260	199	770	1 100
240	360	92	92	4	3	1 170	1 770	155	730	1 000
	400	128	128	5	4	1 790	2 600	223	700	1 000
260	400	104	104	5	4	1 470	2 190	187	670	1 000
	440	144	144	5	4	2 510	3 750	310	640	910
280	420	106	106	5	4	1 540	2 340	196	610	880

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

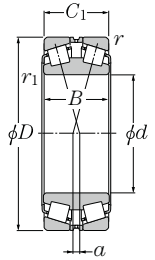
$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number 2)	Installation-related dimensions mm						Load center mm	Constant	Axial load factors			Mass kg
	d_a Max.	D_a Max.	D_a Min.	S_a Min.	r_{1as} Max.	r_{as} Max.	a	e	Y_1	Y_2	Y_0	(approx.)
323122	126.5	170	157.5	8	2	2	1	0.33	2.03	3.02	1.98	5.54
323024	134	168	162.5	8	2	2	12	0.37	1.80	2.69	1.76	4.08
323124	141.5	190	176	8	2	2	6.5	0.37	1.80	2.69	1.76	7.82
323026	148.5	190	178.5	8	2	2	13.5	0.37	1.80	2.69	1.76	5.74
323126	147.5	200	185	8	2	2	7.5	0.37	1.80	2.69	1.76	8.38
323028	157.5	200	187.5	8	2	2	14	0.37	1.84	2.74	1.80	6.36
323128	161	213	197.5	10	2.5	2	8	0.37	1.80	2.69	1.76	9.82
323030	167.5	213	200	10	2.5	2	15.5	0.37	1.80	2.69	1.76	7.63
323130	175.5	238	219	10	2.5	2	6.5	0.37	1.80	2.69	1.76	15.7
323032	179	228	215.5	10	2.5	2	17.5	0.37	1.80	2.69	1.76	9.42
∗ **323132UTG**	187.5	258	233.5	10	2.5	2	8	0.37	1.80	2.69	1.76	20
323034E1	192	248	231	10	2.5	2	18	0.37	1.80	2.69	1.76	12.8
∗ **323134UTG**	195.5	268	244	10	2.5	2	8.5	0.37	1.80	2.69	1.76	21.8
∗ **323036UTG**	205	268	248.5	10	2.5	2	17	0.37	1.80	2.69	1.76	16.5
∗ **323136UTG**	206	286	262	12	3	2.5	8	0.37	1.80	2.69	1.76	27.2
∗ **323038UTG**	213	278	258	12	2.5	2	17.5	0.37	1.80	2.69	1.76	17.9
∗ **323138UTG**	220.5	306	279.5	12	3	2.5	8.5	0.37	1.80	2.69	1.76	33.2
∗ **323040UTG**	225.5	298	275	12	2.5	2	19	0.37	1.80	2.69	1.76	22.3
∗ **323140UTG**	233	326	294.5	12	3	2.5	8.5	0.37	1.80	2.69	1.76	41.8
∗ **323044UTG**	249	326	302.5	12	3	2.5	21.5	0.37	1.80	2.69	1.76	29.8
∗ **323144UTG**	254.5	352	317	14	4	3	14	0.40	1.68	2.50	1.64	52.2
∗ **323048UTG**	269	346	322	14	3	2.5	25.5	0.37	1.80	2.69	1.76	32.5
∗ **323148UTG**	277.5	382	347	14	4	3	17	0.40	1.68	2.50	1.64	63.4
∗ **323052UTG**	291.5	382	354.5	14	4	3	25	0.37	1.80	2.69	1.76	47.7
∗ **323152UTG**	300.5	422	381.5	16	4	3	16.5	0.40	1.68	2.50	1.64	90.5
∗ **323056UTG**	311.5	402	376	16	4	3	29.5	0.37	1.80	2.69	1.76	50.5

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.

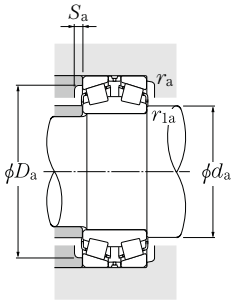
Face-to-face arrangement



d 280 ~ 710mm

d	Boundary dimensions mm D	B	C_1	$r_{1s\,min}$ 1)	$r_{s\,min}$ 1)	Basic load rating kN dynamic C_r	static C_{0r}	Fatigue load limit kN C_r	Allowable speed min^{-1} Grease lubrication	Oil lubrication
280	460	146	146	6	5	2 480	3 650	300	590	830
300	460	118	118	5	4	2 070	3 150	257	570	810
	500	160	160	6	5	2 690	4 050	325	540	770
320	480	121	121	5	4	2 030	3 100	247	530	750
	540	176	176	6	5	3 200	4 900	385	500	710
340	520	133	133	6	5	2 420	3 750	295	490	700
	580	190	190	6	5	4 300	6 500	500	460	660
360	540	134	134	6	5	2 630	4 200	325	460	660
	600	192	192	6	5	4 100	6 500	495	430	620
380	560	135	135	6	5	2 310	4 350	335	440	580
	620	194	194	6	5	3 700	6 700	505	410	540
400	600	148	148	6	5	3 250	5 450	410	410	580
	650	200	200	6	6	4 800	7 850	580	380	540
420	620	150	150	6	5	3 400	5 900	435	390	550
	700	224	224	6	6	6 150	9 700	705	360	510
440	650	157	157	6	6	3 350	5 450	400	370	520
	720	226	226	6	6	6 400	10 300	740	340	480
460	680	163	163	6	6	3 950	6 750	485	350	500
	760	240	240	7.5	7.5	6 300	10 300	725	320	450
480	700	165	165	6	6	3 900	6 700	480	330	470
	790	248	248	7.5	7.5	6 750	11 100	775	300	430
500	720	167	167	6	6	3 950	6 900	485	320	450

1) Smallest allowable dimension for chamfer dimension r or r_1.



Dynamic equivalent radial load

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Static equivalent radial load

$P_{0r} = F_r + Y_0F_a$

For values of e, Y_1, Y_2 and Y_0 see the table below.

Bearing number 2)	Installation-related dimensions mm d_a Max.	D_a Max.	D_a Min.	S_a Min.	r_{1as} Max.	r_{as} Max.	Load center mm a	Constant e	Axial load factors Y_1	Y_2	Y_0	Mass kg (approx.)
∗ **323156UTG**	318.5	438	402	16	5	4	19.5	0.40	1.68	2.50	1.64	93.6
∗ **323060UTG**	337	442	566	16	4	3	31	0.37	1.80	2.69	1.76	69.2
∗ **323160UTG**	344.5	478	432	16	5	4	16.5	0.40	1.68	2.50	1.64	130
∗ **323064UTG**	354	462	432	16	4	3	34	0.37	1.80	2.69	1.76	73.4
∗ **323164UTG**	369.5	518	464	18	5	4	18.5	0.40	1.68	2.50	1.64	170
∗ **323068UTG**	379	498	463.5	18	5	4	36	0.37	1.80	2.69	1.76	100
∗ **323168UTG**	388.5	558	500	18	5	4	20.5	0.40	1.68	2.50	1.64	210
∗ **323072UTG**	398	518	483.5	18	5	4	41	0.37	1.80	2.69	1.76	110
∗ **323172UTG**	412.5	578	518.5	18	5	4	25.5	0.40	1.68	2.50	1.64	220
323076	418	538	504	18	5	4	42.5	0.37	1.80	2.69	1.76	110
323176	428	598	537.5	20	5	4	27	0.40	1.68	2.50	1.64	230
∗ **323080UTG**	444	578	535.5	18	5	4	45	0.37	1.80	2.69	1.76	150
∗ **323180UTG**	452.5	622	566	20	5	5	32.5	0.40	1.68	2.50	1.64	260
∗ **323084UTG**	464.5	598	555	20	5	4	50	0.37	1.80	2.69	1.76	150
∗ **323184UTG**	475	672	611	25	5	5	35	0.40	1.68	2.50	1.64	350
∗ **323088UTG**	485.5	622	584	20	5	5	52.5	0.37	1.80	2.69	1.76	180
∗ **323188UTG**	493.5	692	629	25	5	5	33	0.40	1.68	2.50	1.64	360
∗ **323092UTG**	507.5	652	612.5	25	5	5	56.5	0.37	1.80	2.69	1.76	200
∗ **323192UTG**	525	724	660	25	6	6	31	0.40	1.68	2.50	1.64	430
∗ **323096UTG**	527	672	632.5	25	5	5	60.5	0.37	1.80	2.69	1.76	210
∗ **323196UTG**	547.5	754	688.5	30	6	6	34.5	0.40	1.68	2.50	1.64	480
∗ **3230/500UTG**	548.5	692	652	25	5	5	61.5	0.37	1.80	2.69	1.76	220

2) Bearing numbers marked "∗" designate **ULTAGE series** bearings.