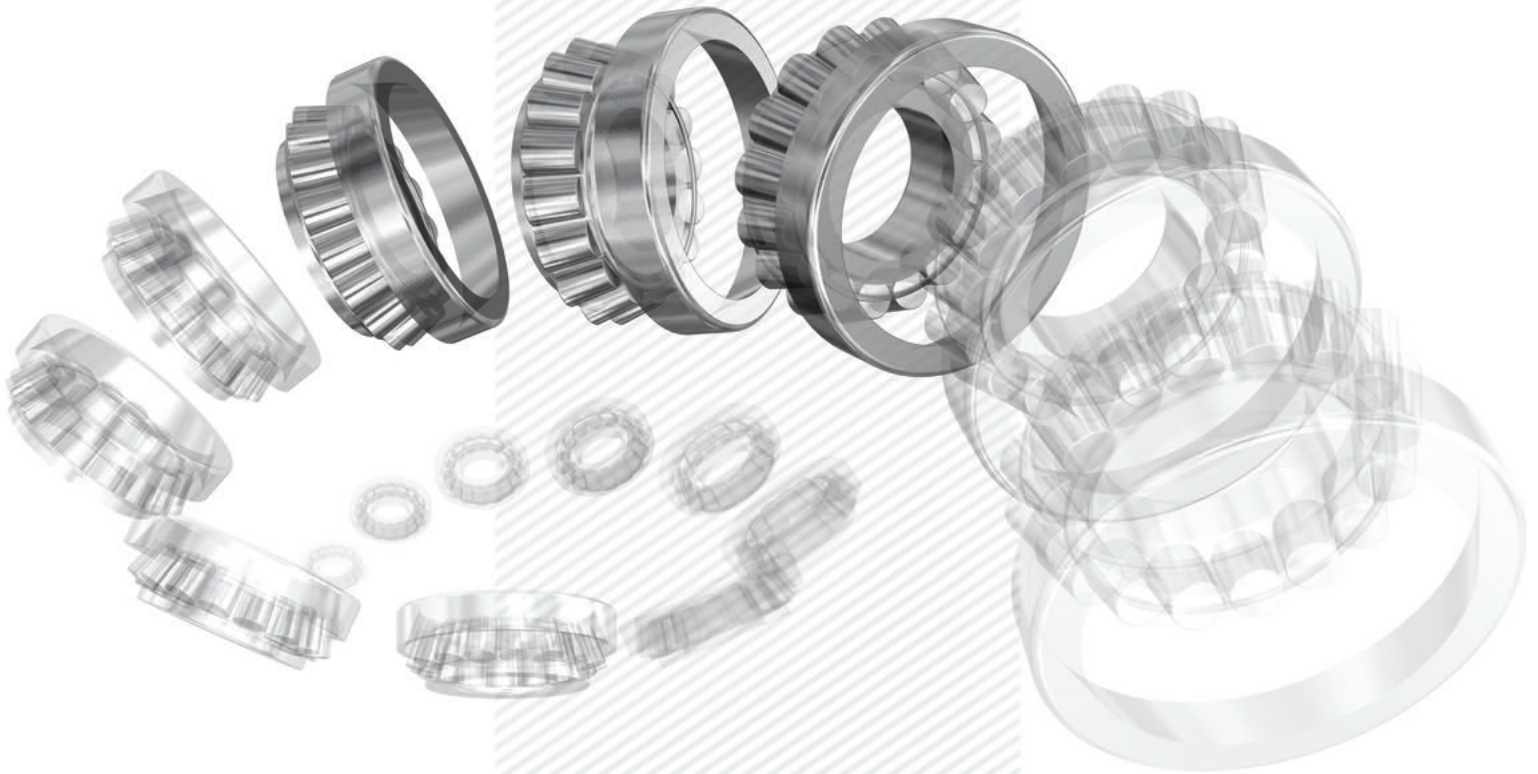




Inch Series

• General Bearings •

TAPERED ROLLER BEARINGS



JTEKT

JTEKT CORPORATION

CAT. NO. B2009E



Inch Series

TAPERED ROLLER BEARINGS

CAT. NO. B2009E

Value & Technology

Publication of New **Koyo** Inch series Tapered Roller Bearing Catalog

Allow us to express our heartfelt appreciation for your valuable patronage.

At this time we are pleased to provide you with our new Koyo Inch Series Tapered Roller Bearing Catalog.

JTEKT Corporation has long enjoyed a strong reputation as a maker of inch-series tapered roller bearings from the time of its predecessor Koyo Seiko, and in recent years we have continued intense R&D activities to make improvements in such areas as the size, weight, and environmental friendliness of these bearings. The fruits of these efforts are reflected in the bearings described in this new catalog.

You will notice that this new catalogue has undergone a thorough revision from the previous version and contains model information based on the latest results.

We believe this catalogue will prove valuable to you in your selection and use of Koyo bearings, and we look forward to your continued patronage.

★The contents of this catalog are subject to change without prior notice. Every possible effort has been made to ensure that the data herein is correct; however, JTEKT cannot assume responsibility for any errors or omissions.

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1 Structure of tapered roller bearings

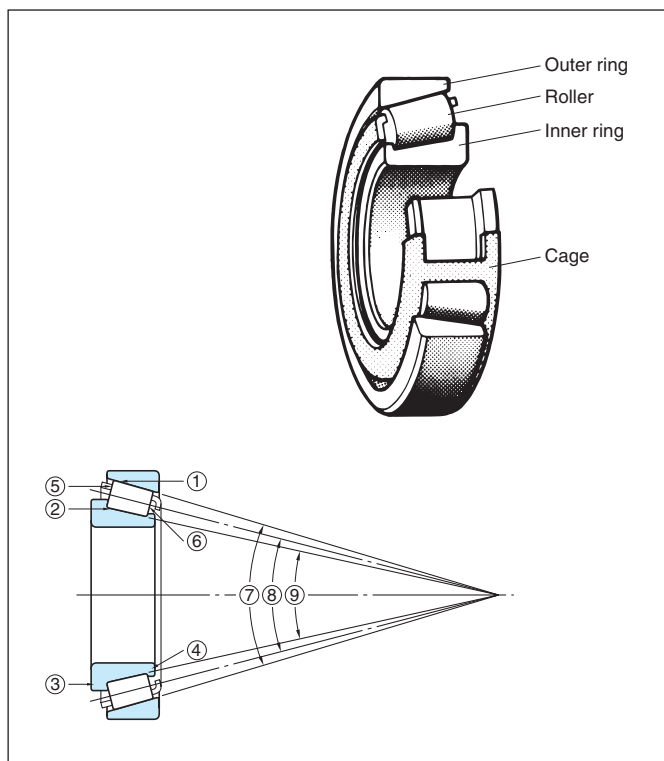
1 Structure of tapered roller bearings

Tapered roller bearings consist of outer ring, inner ring, rollers and a cage. This bearing contains tapered rollers for its rolling element which are guided by the inner ring back-face rib on the roller large end face.

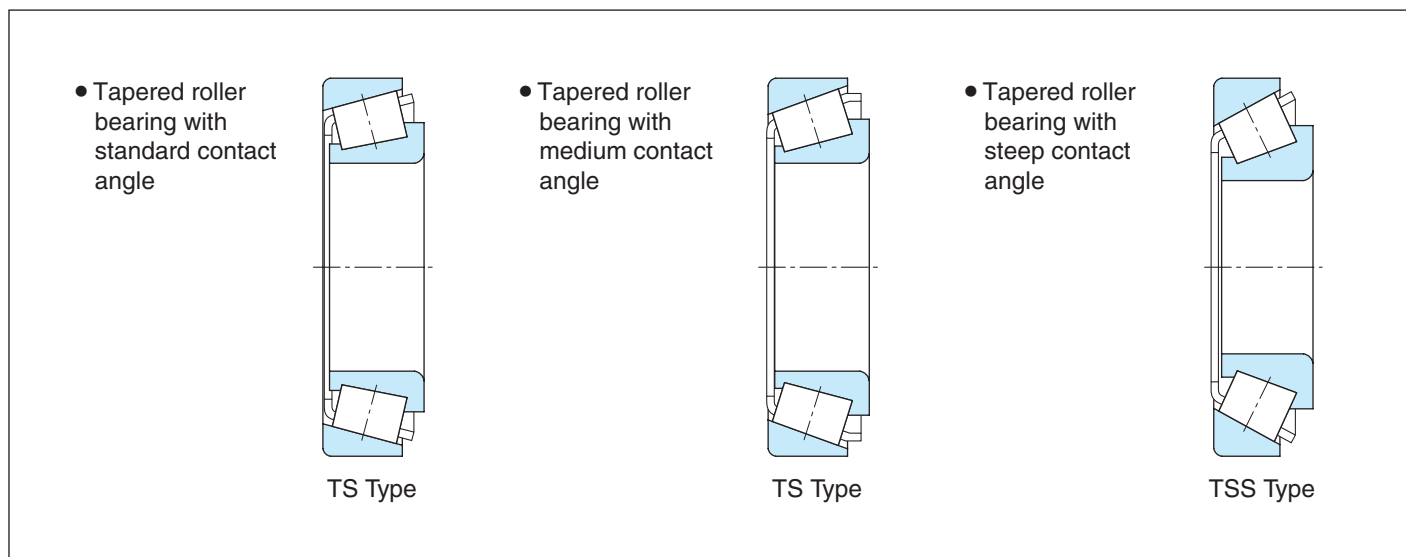
The raceway surfaces of inner ring and outer ring and the rolling contact surface of rollers are designed so that the respective apexes converge at a point on the bearing center line.

Bearings are classified into standard, intermediate and steep types, in accordance with their contact angle (α).

The larger the contact angle is, the greater the bearing resistance to axial load.



- ① Outer ring raceway
- ② Inner ring raceway
- ③ Inner ring backface rib
- ④ Inner ring front face rib
- ⑤ Roller large end face
- ⑥ Roller small end face
- ⑦ Included outer ring angle
- ⑧ Included roller center angle
- ⑨ Included inner ring angle



2 Outstanding features of tapered roller bearings

1) Higher load ratings

Tapered roller bearings with higher load ratings can accept radial loads or axial loads in one direction and combined radial and axial loads.

This type of bearing is suitable for use under heavy load or impact load.

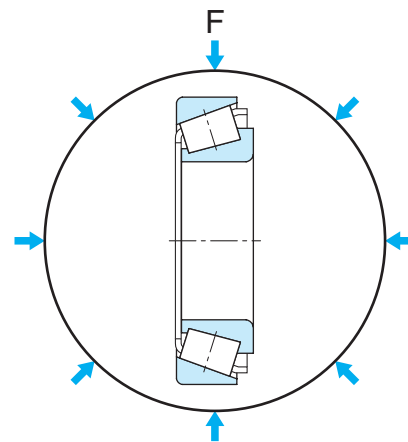
2) The outer ring can be mounted separately from the inner ring assembly

Since the outer ring is separable from the inner ring assembly, the inner ring assembly can be installed on the shaft and the outer ring in the housing, individually.

This feature facilitates mounting of the bearing while making the design of the shaft and housing simpler. In addition, more options regarding the fitting practice employed are available than with any other type of bearing.

3) Mounted clearance is adjustable

In general, bearings of unitized design are supplied with a predetermined radial clearance which will vary according to fitting practice and application. Tapered roller bearings on the other hand can be adjusted at the time of installation by varying the axial location of either the inner ring assembly or outer ring.



3 Bearing service life

3.1 Bearing service life

When bearings rotate under load, material flakes from the surfaces of inner and outer rings or rolling elements by fatigue arising from repeated contact stress.

This phenomenon is called flaking.

The total number of bearing rotations until flaking occurs is regarded as the bearing "(fatigue) service life".

"(Fatigue) service life" differs greatly depending upon bearing structures, dimensions, materials, and processing methods.

Since this phenomenon results from fatigue distribution in bearing materials themselves, differences in bearing service life should be statistically considered.

When a group of identical bearings are rotated under the same conditions, the total number of revolutions until 90 % of the bearings are left without flaking (i.e. a service life of 90 % reliability) is defined as the basic rating life. In operation at a constant speed, the basic rating life can be expressed in terms of time.

3.2 Basic dynamic load ratings

Basic dynamic load ratings, *C*

The basic dynamic load rating is either pure radial (for radial bearings) or central axial load (for thrust bearings) of constant magnitude in a constant direction, under which the basic rating life of 1 million revolutions can be obtained, when the inner ring rotates while the outer ring is stationary, or vice versa. The basic dynamic load rating, which represents the capacity of a bearing under rolling fatigue, is specified as the basic dynamic radial load rating (*C_r*) for radial bearings, and basic dynamic axial load rating (*C_a*) for thrust bearings. These load ratings are listed in the specification table.

These values are prescribed by ISO 281/1990, and are subject to change by conformance to the latest ISO standards.

3.3 Calculation of service life

Generally, the relationship between the dynamic load rating, applied load and basic rating life of the bearing is expressed as follows :

$$L_{10} = \left(\frac{C}{P}\right)^{10/3} \dots\dots\dots (3.1)$$

where :

- L₁₀* : basic rating life ×10⁶ revolutions
- C* : basic dynamic load rating N
- P* : dynamic equivalent radial (or axial) load N

In case the bearing operates at a constant speed, it is often convenient to express the life in terms of hours which can be obtained by the following equation :

$$L_{10h} = \left(\frac{C}{P}\right)^{10/3} \frac{16\,667}{n} \dots\dots\dots (3.2)$$

where :

- L_{10h}* : life in terms of hours h
- $$\left\{ \begin{array}{l} L_{10h} = L_{10} \times \frac{10^6}{60n} \\ = \left(\frac{C}{P}\right)^{10/3} \frac{10^6}{60n} \\ = \left(\frac{C}{P}\right)^{10/3} \frac{16\,667}{n} \end{array} \right\}$$
- n* : rotational speed min⁻¹

Life calculation can be further simplified by the use of service life coefficient (*f_h*) and coefficient of rotational speed (*f_n*) as tabulated in **Tables 3.3** and **3.4**.

$$L_{10h} = 500 \cdot f_h^{10/3} \dots\dots\dots (3.3)$$

$$f_h = f_h \cdot \frac{C}{P} \dots\dots\dots (3.4)$$

$$f_h = \left(\frac{33.3}{P}\right)^{3/10} \dots\dots\dots (3.5)$$

3.4 Corrected rating life

The basic rating life (L_{10}), expressed using **Equation (3.1)**, is (fatigue) life, whose estimate of reliability is 90 %.

A certain application requires a service life whose reliability is more than 90 %.

Special materials help extend bearing life, and lubrication and other operating conditions may also affect bearing service life.

The corrected rating life can be obtained from the basic rating life using **Equation (3.6)**.

$$L_{na} = a_1 a_2 a_3 L_{10} \quad (3.6)$$

where :

L_{na} : corrected rating life 10^6 revolutions

(estimated reliability (100- n) % : the probability of failure occurrence is expressed by n , taking bearing characteristics and operating conditions into consideration.)

L_{10} : basic rating life 10^6 revolutions
(estimated reliability 90 %)

a_1 : reliability coefficient refer to section (1)

a_2 : bearing characteristic coefficient
..... refer to section (2)

a_3 : operating condition coefficient
..... refer to section (3)

[Remark]

When bearing dimensions are to be selected given L_{na} greater than 90 % in reliability, the strength of shaft and housing must be considered.

(1) Reliability coefficient a_1

Table 3.1 describes reliability coefficient, a_1 , which is necessary to obtain the corrected rating life of reliability greater than 90 %.

Table 3.1 Reliability coefficient a_1

| Reliability, % | L_{na} | a_1 |
|----------------|-----------|-------|
| 90 | L_{10a} | 1.00 |
| 95 | L_{5a} | 0.62 |
| 96 | L_{4a} | 0.53 |
| 97 | L_{3a} | 0.44 |
| 98 | L_{2a} | 0.33 |
| 99 | L_{1a} | 0.21 |

(2) Bearing characteristic coefficient a_2

The bearing characteristic in relation to bearing life may differ according to bearing materials (steel types and their quality), and may be altered by production process, design, etc. In such cases, the bearing life calculation can be corrected using the bearing characteristic coefficient a_2 .

JTEKT has employed vacuum-degassed bearing steel as JTEKT standard bearing material. It has a significant effect on bearing life extension which was verified through studies at JTEKT laboratory.

The basic dynamic load rating of bearings made of vacuum-degassed bearing steel is specified in the bearing specification table, taking the bearing characteristic coefficient as $a_2 = 1$.

For bearings made of special materials to extend fatigue life, the bearing characteristic coefficient is treated as $a_2 > 1$.

(3) Operating condition coefficient a_3

When bearings are used under operating conditions which directly affect their service life, including improper lubrication, the service life calculation can be corrected by using a_3 .

Under normal lubrication, the calculation can be performed with $a_3 = 1$; and, under favorable lubrication, with $a_3 > 1$.

In the following cases, the operating condition coefficient is treated as $a_3 < 1$:

- Operation using lubricant of low kinematic viscosity

| | |
|----------------|-------------------------------|
| Ball bearing | 13 mm ² /s or less |
| Roller bearing | 20 mm ² /s or less |
- Operation at very slow rotational speed

| | |
|---|-------------------------------------|
| Product of rolling element pitch diameter and | rotational speed is 10 000 or less. |
| rotational speed | |
- Contamination of lubricant is expected
- Greater misalignment of inner and outer rings is present

[Note] When bearing hardness is diminished by heat, the basic dynamic load rating calculation must be corrected (ref. **Table 3.2**).

Table 3.2 Temperature coefficient values

| Bearing temperature, °C | 125 | 150 | 175 | 200 | 250 |
|-------------------------|-----|-----|------|------|------|
| Temperature coefficient | 1 | 1 | 0.95 | 0.90 | 0.75 |

[Remark]

When $a_2 > 1$ in employing a special material, if lubrication is not proper, $a_2 \times a_3$ is not always > 1 . In such cases, if $a_3 < 1$, bearing characteristic coefficient is normally treated as $a_2 \leq 1$.

As the above explanation shows, since a_2 and a_3 are inter-dependent, some calculations treat them as one coefficient, a_{23} .

Table 3.3 Speed factor

| Rotational speed n (min ⁻¹) | Coefficient of rotational speed f_n | Rotational speed n (min ⁻¹) | Coefficient of rotational speed f_n | Rotational speed n (min ⁻¹) | Coefficient of rotational speed f_n | Rotational speed n (min ⁻¹) | Coefficient of rotational speed f_n |
|---|--|---|--|---|--|---|--|
| 10 | 1.435 | 65 | 0.819 | 650 | 0.410 | 4 000 | 0.238 |
| 11 | 1.395 | 70 | 0.800 | 700 | 0.401 | 4 200 | 0.234 |
| 12 | 1.359 | 75 | 0.784 | 750 | 0.393 | 4 400 | 0.231 |
| 13 | 1.326 | 80 | 0.769 | 800 | 0.385 | 4 600 | 0.228 |
| 14 | 1.297 | 85 | 0.756 | 850 | 0.379 | 4 800 | 0.225 |
| 15 | 1.271 | 90 | 0.742 | 900 | 0.372 | 5 000 | 0.222 |
| 16 | 1.246 | 95 | 0.731 | 950 | 0.366 | 5 200 | 0.220 |
| 17 | 1.224 | 100 | 0.719 | 1 000 | 0.361 | 5 400 | 0.217 |
| 18 | 1.203 | 110 | 0.699 | 1 050 | 0.355 | 5 600 | 0.215 |
| 19 | 1.184 | 120 | 0.681 | 1 100 | 0.350 | 5 800 | 0.213 |
| 20 | 1.166 | 130 | 0.665 | 1 150 | 0.346 | 6 000 | 0.211 |
| 21 | 1.149 | 140 | 0.650 | 1 200 | 0.341 | 6 200 | 0.209 |
| 22 | 1.133 | 150 | 0.637 | 1 250 | 0.337 | 6 400 | 0.207 |
| 23 | 1.118 | 160 | 0.625 | 1 300 | 0.333 | 6 600 | 0.205 |
| 24 | 1.104 | 170 | 0.613 | 1 400 | 0.326 | 6 800 | 0.203 |
| 25 | 1.090 | 180 | 0.603 | 1 500 | 0.319 | 7 000 | 0.201 |
| 26 | 1.077 | 190 | 0.593 | 1 600 | 0.313 | 7 200 | 0.199 |
| 27 | 1.065 | 200 | 0.584 | 1 700 | 0.307 | 7 400 | 0.198 |
| 28 | 1.054 | 220 | 0.568 | 1 800 | 0.302 | 7 600 | 0.196 |
| 29 | 1.043 | 240 | 0.553 | 1 900 | 0.297 | 8 000 | 0.193 |
| 30 | 1.032 | 260 | 0.540 | 2 000 | 0.293 | 8 500 | 0.190 |
| 31 | 1.022 | 280 | 0.528 | 2 100 | 0.289 | 9 000 | 0.187 |
| 32 | 1.012 | 300 | 0.517 | 2 200 | 0.285 | 9 500 | 0.184 |
| 33.3 | 1.000 | 320 | 0.507 | 2 300 | 0.281 | 10 000 | 0.181 |
| 34 | 0.994 | 340 | 0.498 | 2 400 | 0.277 | 11 000 | 0.176 |
| 36 | 0.977 | 360 | 0.490 | 2 500 | 0.274 | 12 000 | 0.171 |
| 38 | 0.962 | 380 | 0.482 | 2 600 | 0.271 | 13 000 | 0.167 |
| 40 | 0.947 | 400 | 0.475 | 2 700 | 0.268 | 14 000 | 0.163 |
| 42 | 0.933 | 420 | 0.467 | 2 800 | 0.265 | 15 000 | 0.160 |
| 44 | 0.920 | 440 | 0.461 | 2 900 | 0.262 | 16 000 | 0.157 |
| 46 | 0.908 | 460 | 0.455 | 3 000 | 0.259 | 17 000 | 0.154 |
| 48 | 0.896 | 480 | 0.449 | 3 200 | 0.254 | 18 000 | 0.152 |
| 50 | 0.886 | 500 | 0.444 | 3 400 | 0.250 | 19 000 | 0.149 |
| 55 | 0.866 | 550 | 0.432 | 3 600 | 0.246 | 20 000 | 0.147 |
| 60 | 0.838 | 600 | 0.420 | 3 800 | 0.242 | | |

3.5 Basic static load rating

Excessive static load or impact load even at very low rotation causes partial permanent deformation of the rolling element and raceway contacting surfaces. This permanent deformation increases with the load; if it exceeds a certain limit, smooth rotation will be hindered.

The basic static load rating is the static load which responds to the calculated contact stress shown below, at the contact center between the raceway and rolling elements which receive the maximum load.

- Roller bearings 4 000 MPa

The total extent of contact stress-caused permanent deformation on surfaces of rolling elements and raceway will

be approximately 0.000 1 times greater than the rolling element diameter.

The basic static load rating for radial bearings is specified as the basic static radial load rating. This load ratings are listed in the bearing specification table, using C_{0r} .

This value is prescribed by ISO 78/1987 and is subject to change by conformance to the latest ISO standards.

3.6 Safety coefficient

The allowable static equivalent load for a bearing is determined by the basic static load rating of the bearing; however, bearing service life, which is affected by permanent deforma-

Table 3.4 Life factor

| Service life coefficient f_h | L_{10} (10^6 rev.) | L_{10h} (h) | Service life coefficient f_h | L_{10} (10^6 rev.) | L_{10h} (h) | Service life coefficient f_h | L_{10} (10^6 rev.) | L_{10h} (h) |
|-----------------------------------|----------------------------|------------------|-----------------------------------|----------------------------|------------------|-----------------------------------|----------------------------|------------------|
| 0.70 | 0.30 | 150 | 2.45 | 19.8 | 9 920 | 4.20 | 120 | 59 800 |
| 0.75 | 0.38 | 190 | 2.50 | 21.2 | 10 600 | 4.25 | 124 | 62 200 |
| 0.80 | 0.48 | 240 | 2.55 | 22.6 | 11 300 | 4.30 | 129 | 64 600 |
| 0.85 | 0.58 | 290 | 2.60 | 24.2 | 12 100 | 4.35 | 134 | 67 200 |
| 0.90 | 0.70 | 350 | 2.65 | 25.8 | 12 900 | 4.40 | 140 | 69 800 |
| 0.95 | 0.84 | 420 | 2.70 | 27.4 | 13 700 | 4.45 | 145 | 72 500 |
| 1.00 | 1.00 | 500 | 2.75 | 29.1 | 14 600 | 4.50 | 150 | 75 200 |
| 1.05 | 1.18 | 590 | 2.80 | 30.9 | 15 500 | 4.55 | 156 | 78 000 |
| 1.10 | 1.37 | 685 | 2.85 | 32.8 | 16 400 | 4.60 | 162 | 80 900 |
| 1.15 | 1.59 | 795 | 2.90 | 34.8 | 17 400 | 4.65 | 168 | 83 900 |
| 1.20 | 1.84 | 920 | 2.95 | 36.8 | 18 400 | 4.70 | 174 | 87 000 |
| 1.25 | 2.10 | 1 050 | 3.00 | 38.9 | 19 500 | 4.75 | 180 | 90 800 |
| 1.30 | 2.40 | 1 200 | 3.05 | 41.1 | 20 600 | 4.80 | 187 | 93 300 |
| 1.35 | 2.72 | 1 360 | 3.10 | 43.4 | 21 700 | 4.85 | 193 | 96 600 |
| 1.40 | 3.07 | 1 530 | 3.15 | 45.8 | 22 900 | 4.90 | 200 | 99 900 |
| 1.45 | 3.45 | 1 730 | 3.20 | 48.3 | 24 100 | 4.95 | 207 | 103 000 |
| 1.50 | 3.86 | 1 930 | 3.25 | 50.8 | 25 400 | 5.00 | 214 | 107 000 |
| 1.55 | 4.31 | 2 160 | 3.30 | 53.5 | 26 800 | 5.10 | 228 | 114 000 |
| 1.60 | 4.79 | 2 400 | 3.35 | 56.3 | 28 100 | 5.20 | 244 | 122 000 |
| 1.65 | 5.31 | 2 650 | 3.40 | 59.1 | 29 600 | 5.30 | 260 | 130 000 |
| 1.70 | 5.86 | 2 930 | 3.45 | 62.0 | 31 000 | 5.40 | 276 | 138 000 |
| 1.75 | 6.46 | 3 230 | 3.50 | 65.1 | 32 500 | 5.50 | 294 | 147 000 |
| 1.80 | 7.09 | 3 550 | 3.55 | 68.2 | 34 100 | 5.60 | 312 | 156 000 |
| 1.85 | 7.77 | 3 890 | 3.60 | 71.5 | 35 800 | 5.70 | 331 | 165 000 |
| 1.90 | 8.50 | 4 250 | 3.65 | 74.9 | 37 400 | 5.80 | 351 | 175 000 |
| 1.95 | 9.26 | 4 630 | 3.70 | 78.3 | 39 200 | 5.90 | 371 | 186 000 |
| 2.00 | 10.1 | 5 040 | 3.75 | 81.9 | 41 000 | 6.00 | 392 | 196 000 |
| 2.05 | 10.9 | 5 470 | 3.80 | 85.6 | 42 800 | 6.50 | 513 | 256 000 |
| 2.10 | 11.9 | 5 930 | 3.85 | 89.4 | 44 700 | 7.00 | 656 | 328 000 |
| 2.15 | 12.8 | 6 420 | 3.90 | 93.4 | 46 700 | 7.50 | 826 | 413 000 |
| 2.20 | 13.8 | 6 920 | 3.95 | 97.4 | 48 700 | 8.00 | 1 020 | 512 000 |
| 2.25 | 14.9 | 7 460 | 4.00 | 102 | 50 800 | 8.50 | 1 250 | 627 000 |
| 2.30 | 16.1 | 8 030 | 4.05 | 106 | 52 900 | 9.00 | 1 520 | 758 000 |
| 2.35 | 17.2 | 8 620 | 4.10 | 110 | 55 200 | 9.50 | 1 820 | 908 000 |
| 2.40 | 18.5 | 9 250 | 4.15 | 115 | 57 400 | 10.00 | 2 150 | 1 080 000 |

tion, differs in accordance with the performance required of the bearing and operating conditions.

Therefore, a safety coefficient is designated, based on empirical data, so as to ensure safety in relation to basic static load rating.

$$f_s = \frac{C_0}{P_0} \dots\dots\dots (3.7)$$

where :

f_s : safety coefficient (ref. **Table 3.5**)

C_0 : basic static load rating N

P_0 : static equivalent load N

Table 3.5 Values of safety coefficient f_s

| Operating condition | | f_s (min.) | |
|--|---|--------------|----------------|
| | | Ball bearing | Roller bearing |
| With bearing rotation | When high accuracy is required | 2 | 3 |
| | Normal operation | 1 | 1.5 |
| | When impact load is applied | 1.5 | 3 |
| Without bearing rotation (occasional oscillation) | Normal operation | 0.5 | 1 |
| | When impact load or uneven distribution load is applied | 1 | 2 |

[Remark] For spherical thrust roller bearings, $f_s \geq 4$.

4 Equivalent load

4 Equivalent load

4.1 Dynamic equivalent load

Bearings are used under various operating conditions; however, in most cases, bearings receive radial and axial load combined, while the load magnitude fluctuates during operation.

Therefore, it is impossible to directly compare the actual load and basic dynamic load rating.

The two are compared by replacing the loads applied to the shaft center with one of a constant magnitude and in a specific direction, that yields the same bearing service life as under actual load and rotational speed.

This theoretical load is referred to as the dynamic equivalent load (P).

4.1.1 Calculation of dynamic equivalent load

Dynamic equivalent loads for radial bearings and thrust bearings ($\alpha \neq 90^\circ$) which receive a combined load of a constant magnitude in a specific direction can be calculated using the following equation,

$$P = XF_r + YF_a \quad (4.1)$$

where :

P : dynamic equivalent load N

$\left(\begin{array}{l} \text{for radial bearings,} \\ P_r : \text{dynamic equivalent radial load} \\ \text{for thrust bearings,} \\ P_a : \text{dynamic equivalent axial load} \end{array} \right)$

F_r : radial load N

F_a : axial load N

X : radial load factor

Y : axial load factor

$\left(\begin{array}{l} \text{values of } X \text{ and } Y \text{ are listed in the bearing} \\ \text{specification table.} \end{array} \right)$

■ When $F_a/F_r \leq e$ for single-row radial bearings, it is taken that $X = 1$, and $Y = 0$.

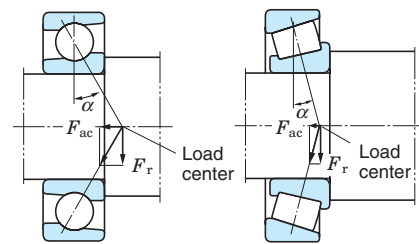
Hence, the dynamic equivalent load rating is $P_r = F_r$.

$\left(\begin{array}{l} \text{Values of } e, \text{ which designates the limit of } F_a/F_r, \text{ are} \\ \text{listed in the bearing specification table.} \end{array} \right)$

■ For single-row tapered roller bearings, axial component forces (F_{ac}) are generated as shown in **Fig. 4.1**, therefore a pair of bearings is arranged face-to-face or back-to-back.

The axial component force can be calculated using the following equation.

$$F_{ac} = \frac{F_r}{2Y} \quad (4.2)$$



(Load center position is listed in the bearing specification table.)

Fig. 4.1 Axial component force

For instance, when radial loads F_{rA} and F_{rB} are on tapered roller bearings A and B as shown in **Table 4.1** and, in addition, a axial load K_a from the outside is on bearing A, the dynamic equivalent loads P_A and P_B on bearings A and B are as follows :

Table 4.1 Dynamic equivalent load calculation : when a pair of tapered roller bearings is arranged face-to-face or back-to-back.

| Paired mounting | | Loading condition | Bearing | Axial load | Dynamic equivalent load |
|--------------------------|--------------------------|--|-----------|-----------------------------|---|
| Back-to-back arrangement | Face-to-face arrangement | | | | |
| | | $\frac{F_{rB}}{2Y_B} + K_a \geq \frac{F_{rA}}{2Y_A}$ | Bearing A | $\frac{F_{rB}}{2Y_B} + K_a$ | $P_A = XF_{rA} + Y_A \left(\frac{F_{rB}}{2Y_B} + K_a \right)$ $P_A = F_{rA}, \text{ where } P_A < F_{rA}$ |
| | | | Bearing B | - | $P_B = F_{rB}$ |
| | | $\frac{F_{rB}}{2Y_B} + K_a < \frac{F_{rA}}{2Y_A}$ | Bearing A | - | $P_A = F_{rA}$ |
| | | | Bearing B | $\frac{F_{rA}}{2Y_A} - K_a$ | $P_B = XF_{rB} + Y_B \left(\frac{F_{rA}}{2Y_A} - K_a \right)$ $P_B = F_{rB}, \text{ where } P_B < F_{rB}$ |

5 Bearing tolerances

5 Bearing tolerances

5.1 Boundary tolerances for tapered roller bearings

Koyo Inch Series tapered roller bearings are manufactured to the five tolerance levels recognized by the ANSI/ABMA, Classes 4, 2, 3, 0 and 00, in order to ascending precision.

Metric J series For "J" prefix Bearing No. tapered roller bearings are produced in Classes PK, PN, PC and PB, in accordance with industry standards. These classes provide

quality levels suitable for all applications. The higher grades have reduced runout tolerances, producing smoother rotation of the bearings with less noise and vibration.

Improved mounting fits are also obtained because of closer tolerances on bore and outside diameter. Tolerances class 4 to class 00 and class PK to class PB are shown in **Table 5.1**, **5.2**. Koyo tapered roller bearings may be supplied in any precision desired.

Table 5.1 Tolerances and permissible values for Inch series tapered roller bearings

(1) Inner ring

Unit : μm

| Nominal bore diameter d | | | | Deviation of a single bore diameter Δ_{ds} | | | | | | | | | |
|---------------------------|-------------|----------------|-------------|---|-------|---------|-------|---------|-------|---------|-------|----------|-------|
| over | | up to | | Class 4 | | Class 2 | | Class 3 | | Class 0 | | Class 00 | |
| mm | inch | mm | inch | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower |
| – | – | 76.2 | 3.0 | + 13 | 0 | +13 | 0 | +13 | 0 | +13 | 0 | +8 | 0 |
| 76.2 | 3.0 | 304.8 | 12.0 | + 25 | 0 | +25 | 0 | +13 | 0 | +13 | 0 | +8 | 0 |
| 304.8 | 12.0 | 609.6 | 24.0 | + 51 | 0 | +51 | 0 | +25 | 0 | – | – | – | – |
| 609.6 | 24.0 | 914.4 | 36.0 | + 76 | 0 | – | – | +38 | 0 | – | – | – | – |
| 914.4 | 36.0 | 1 219.2 | 48.0 | +102 | 0 | – | – | +51 | 0 | – | – | – | – |
| 1 219.2 | 48.0 | – | – | +127 | 0 | – | – | +76 | 0 | – | – | – | – |

(2) Outer ring

Unit : μm

| Nominal outside diameter D | | | | Deviation of a single outside diameter Δ_{Ds} | | | | | | | | | |
|------------------------------|-------------|----------------|-------------|--|-------|---------|-------|---------|-------|---------|-------|----------|-------|
| over | | up to | | Class 4 | | Class 2 | | Class 3 | | Class 0 | | Class 00 | |
| mm | inch | mm | inch | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower |
| – | – | 304.8 | 12.0 | + 25 | 0 | +25 | 0 | +13 | 0 | +13 | 0 | +8 | 0 |
| 304.8 | 12.0 | 609.6 | 24.0 | + 51 | 0 | +51 | 0 | +25 | 0 | – | – | – | – |
| 609.6 | 24.0 | 914.4 | 36.0 | + 76 | 0 | +76 | 0 | +38 | 0 | – | – | – | – |
| 914.4 | 36.0 | 1 219.2 | 48.0 | +102 | 0 | – | – | +51 | 0 | – | – | – | – |
| 1 219.2 | 48.0 | – | – | +127 | 0 | – | – | +76 | 0 | – | – | – | – |

(3) Assembled bearing width

Unit : μm

| Nominal bore diameter d | | | | Deviation of the actual bearing width Δ_{Ts} | | | | | | | | | |
|---------------------------|-------------|--------------|---------------------------|---|-------|---------|-------|---------|-------|---------|-------|----------|-------|
| over | | up to | | Class 4 | | Class 2 | | Class 3 | | Class 0 | | Class 00 | |
| mm | inch | mm | inch | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower |
| – | – | 101.6 | 4.0 | +203 | 0 | +203 | 0 | +203 | –203 | +203 | –203 | +203 | –203 |
| 101.6 | 4.0 | 266.7 | 10.5 | +356 | –254 | +203 | 0 | +203 | –203 | +203 | –203 | +203 | –203 |
| 266.7 | 10.5 | 304.8 | 12.0 | +356 | –254 | +203 | 0 | +203 | –203 | +203 | –203 | – | – |
| 304.8 | 12.0 | 609.6 | 24.0 ¹⁾ | – | – | +381 | –381 | +203 | –203 | – | – | – | – |
| 304.8 | 12.0 | 609.6 | 24.0 ²⁾ | – | – | +381 | –381 | +381 | –381 | – | – | – | – |
| 609.6 | 24.0 | – | – | +381 | –381 | – | – | +381 | –381 | – | – | – | – |

[Note] 1) Nominal outside dia. \leq 508.0 mm (20.0 inches), 2) Nominal outside diameter > 508.0 mm (20.0 inches).

(4) Radial runout of assembled bearing inner ring / outer ring

Unit : μm

| Nominal outside diameter D | | | | Radial runout of assembled bearing K_{ia}, K_{ea} | | | | |
|------------------------------|-------------|--------------|-------------|---|---------|---------|---------|----------|
| over | | up to | | Class 4 | Class 2 | Class 3 | Class 0 | Class 00 |
| mm | inch | mm | inch | max. | max. | max. | max. | max. |
| – | – | 304.8 | 12.0 | 51 | 38 | 8 | 4 | 2 |
| 304.8 | 12.0 | 609.6 | 24.0 | 51 | 38 | 18 | – | – |
| 609.6 | 24.0 | 914.4 | 36.0 | 76 | 51 | 51 | – | – |
| 914.4 | 36.0 | – | – | 76 | – | 76 | – | – |

Table 5.2 Tolerances for metric "J" series tapered roller bearings

(1) Bore diameter and width of inner ring and assembled bearing width

Unit : μm

| Nominal bore diameter d (mm) | | Deviation of a single bore diameter Δ_{ds} | | | | | | | | Deviation of a single inner ring width Δ_{Bs} | | | | | | | | Deviation of the actual bearing width Δ_{Ts} | | | | | | | |
|--------------------------------|-------|---|-------|----------|-------|----------|-------|----------|-------|--|-------|----------|-------|----------|-------|----------|-------|---|-------|----------|-------|----------|-------|----------|-------|
| | | Class PK | | Class PN | | Class PC | | Class PB | | Class PK | | Class PN | | Class PC | | Class PB | | Class PK | | Class PN | | Class PC | | Class PB | |
| over | up to | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower |
| 10 | 18 | 0 | -12 | 0 | -12 | 0 | -7 | 0 | -5 | 0 | -100 | 0 | -50 | 0 | -200 | 0 | -200 | +200 | 0 | +100 | 0 | +200 | -200 | +200 | -200 |
| 18 | 30 | 0 | -12 | 0 | -12 | 0 | -8 | 0 | -6 | 0 | -100 | 0 | -50 | 0 | -200 | 0 | -200 | +200 | 0 | +100 | 0 | +200 | -200 | +200 | -200 |
| 30 | 50 | 0 | -12 | 0 | -12 | 0 | -10 | 0 | -8 | 0 | -100 | 0 | -50 | 0 | -200 | 0 | -200 | +200 | 0 | +100 | 0 | +200 | -200 | +200 | -200 |
| 50 | 80 | 0 | -15 | 0 | -15 | 0 | -12 | 0 | -9 | 0 | -150 | 0 | -50 | 0 | -300 | 0 | -300 | +200 | 0 | +100 | 0 | +200 | -200 | +200 | -200 |
| 80 | 120 | 0 | -20 | 0 | -20 | 0 | -15 | 0 | -10 | 0 | -150 | 0 | -50 | 0 | -300 | 0 | -300 | +200 | -200 | +100 | 0 | +200 | -200 | +200 | -200 |
| 120 | 180 | 0 | -25 | 0 | -25 | 0 | -18 | 0 | -13 | 0 | -200 | 0 | -50 | 0 | -300 | 0 | -300 | +350 | -250 | +150 | 0 | +350 | -250 | +200 | -250 |
| 180 | 250 | 0 | -30 | 0 | -30 | 0 | -22 | 0 | -15 | 0 | -200 | 0 | -50 | 0 | -350 | 0 | -350 | +350 | -250 | +150 | 0 | +350 | -250 | +200 | -300 |
| 250 | 315 | 0 | -35 | 0 | -35 | 0 | -22 | 0 | -15 | 0 | -200 | 0 | -50 | 0 | -350 | 0 | -350 | +350 | -250 | +200 | 0 | +350 | -300 | +200 | -300 |

(2) Outside diameter and width of outer ring and radial runout of assembled bearing inner ring / outer ring

Unit : μm

| Nominal outside diameter D (mm) | | Deviation of a single outside diameter Δ_{Ds} | | | | | | | | Deviation of a single outer ring width Δ_{Cs} | | | | | | | | Radial runout of assembled bearing K_{ia}, K_{ea} | | | |
|-----------------------------------|-------|--|-------|----------|-------|----------|-------|----------|-------|--|-------|----------|-------|----------|-------|----------|-------|---|----------|----------|----------|
| | | Class PK | | Class PN | | Class PC | | Class PB | | Class PK | | Class PN | | Class PC | | Class PB | | Class PK | Class PN | Class PC | Class PB |
| over | up to | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | upper | lower | max. | max. | max. | max. |
| 18 | 30 | 0 | -12 | 0 | -12 | 0 | -8 | 0 | -6 | 0 | -150 | 0 | -100 | 0 | -150 | 0 | -150 | 18 | 18 | 5 | 3 |
| 30 | 50 | 0 | -14 | 0 | -14 | 0 | -9 | 0 | -7 | 0 | -150 | 0 | -100 | 0 | -150 | 0 | -150 | 20 | 20 | 6 | 3 |
| 50 | 80 | 0 | -16 | 0 | -16 | 0 | -11 | 0 | -9 | 0 | -150 | 0 | -100 | 0 | -150 | 0 | -150 | 25 | 25 | 6 | 4 |
| 80 | 120 | 0 | -18 | 0 | -18 | 0 | -13 | 0 | -10 | 0 | -200 | 0 | -100 | 0 | -200 | 0 | -200 | 35 | 35 | 6 | 4 |
| 120 | 150 | 0 | -20 | 0 | -20 | 0 | -15 | 0 | -11 | 0 | -200 | 0 | -100 | 0 | -200 | 0 | -200 | 40 | 40 | 7 | 4 |
| 150 | 180 | 0 | -25 | 0 | -25 | 0 | -18 | 0 | -13 | 0 | -200 | 0 | -100 | 0 | -250 | 0 | -250 | 45 | 45 | 8 | 4 |
| 180 | 250 | 0 | -30 | 0 | -30 | 0 | -20 | 0 | -15 | 0 | -250 | 0 | -100 | 0 | -250 | 0 | -250 | 50 | 50 | 10 | 5 |
| 250 | 315 | 0 | -35 | 0 | -35 | 0 | -25 | 0 | -18 | 0 | -250 | 0 | -100 | 0 | -300 | 0 | -300 | 60 | 60 | 11 | 5 |
| 315 | 400 | 0 | -40 | 0 | -40 | 0 | -28 | – | – | 0 | -250 | 0 | -100 | 0 | -300 | – | – | 70 | 70 | 13 | – |

6 Numbering system

6 Numbering system

The numbering system of the inch series tapered roller bearings is specified by the ABMA Standard as follows.

This will provide a guideline for identification of duty,

angularity and dimensions of the inch series tapered roller bearings.

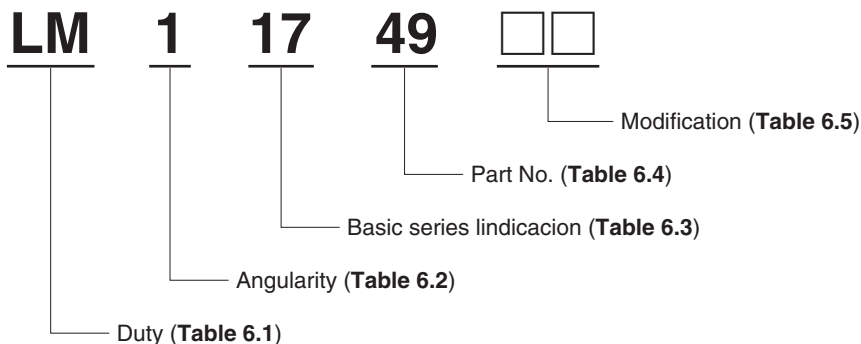


Table 6.1 Duty

Inch series tapered roller bearings will be divided into ten classes according to their duty as follows :

| Code | Details |
|------|--------------------|
| EL | Extra Light |
| LL | Lighter than Light |
| L | Light |
| LM | Light Medium |
| M | Medium |
| HM | Heavy Medium |
| H | Heavy |
| HH | Heavier than Heavy |
| EH | Extra Heavy |
| T | Thrust only |

Table 6.2 Angularity

The first digit following the prefix letters will indicate approximately the included angle (α) of the outer race or the outer ring angle according to the following code.

| Code | Details |
|------|--|
| 1 | 0 $< \alpha < 24^\circ$ |
| 2 | $24^\circ \leq \alpha < 25^\circ 30'$ |
| 3 | $25^\circ 30' \leq \alpha < 27^\circ$ |
| 4 | $27^\circ \leq \alpha < 28^\circ 30'$ |
| 5 | $28^\circ 30' \leq \alpha < 28^\circ 30'$ |
| 6 | $30^\circ 30' < \alpha < 32^\circ 30'$ |
| 7 | $32^\circ 30' \leq \alpha < 36^\circ$ |
| 8 | $36^\circ \leq \alpha < 45^\circ$ |
| 9 | $45^\circ \leq \alpha$, but not thrust only |
| 0 | Thrust bearing only |

Table 6.3 Basic series indication

The selection of the basic series indication in relation to the maximum theoretical bore of the bearing will then be in accord with the following tabulation :

| Series indication | Max. bore range (inch) |
|-------------------|------------------------|
| 00 to 19 incl. | 0 – 1 |
| 20 to 99 incl. | 1 – 2 |
| 000 to 029 incl. | |
| 039 to 129 incl. | 2 – 3 |
| 130 to 189 incl. | 3 – 4 |
| 190 to 239 incl. | 4 – 5 |
| 240 to 289 incl. | 5 – 6 |
| 290 to 339 incl. | 6 – 7 |
| 340 to 389 incl. | 7 – 8 |
| 390 to 429 incl. | 8 – 9 |

Table 6.4 Part No.

The 5th and 6th digits or the last two digits of the bearing number indicate the part number of the individual member of the bearing.

| Bearing member | Code |
|------------------------|---|
| Outer ring : (Cup) | Expressed by 10 to 19, and 10 is used for the outer ring of the minimum outside diameter of the series. |
| Inner ring : (Cone) | Expressed by 30 to 49, and 49 is used for the inner ring of the maximum bore size of the series. |

Table 6.5 Modification

These codes indicate the special design features. Some examples are;

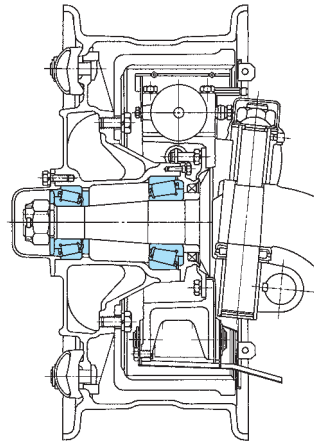
| Code | Details |
|-----------|---|
| A | Bearing limit for overall width or size in master closer than standard. |
| B | Single outer ring with flange. |
| BR | Single or double outer ring or inner ring with snap ring. |
| BW | Single outer ring with flange and slotted. |
| CR | Rib outer ring. |
| CP | Chrome plated inner ring and outer ring. |
| D | Double inner ring or outer ring – minimum length. |
| DA | Spherical O.D. – double outer ring – self-aligning – |

7 Typical applications

Automotive

• Front wheels

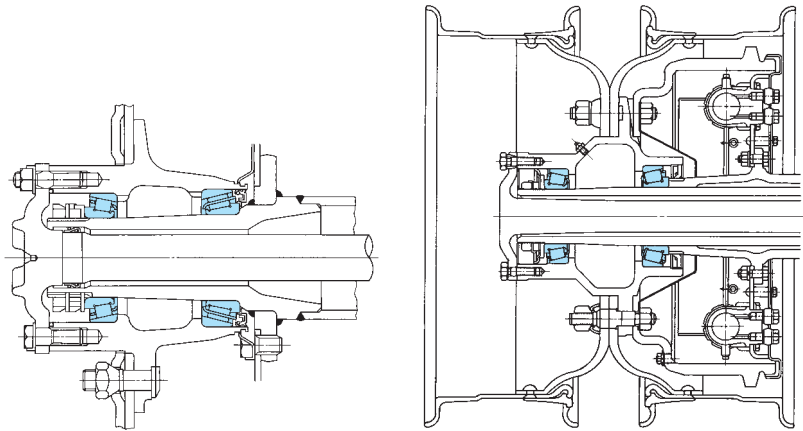
In general, automotive front wheel bearings are primarily subjected to radial loads. However, during cornering or running on bad roads, substantial moment loads can be imposed. Therefore, it is extremely important to select bearings which can absorb these moment loads without difficulty. At the present time, two tapered roller bearings are generally used in each front wheels of trucks.



• Rear wheels

Tapered roller bearings are generally used in rear wheels of trucks and buses over 2 tons in gross vehicle weight.

Since the inner ring and outer ring can misalign during cornering, which can have an adverse affect on service life, bearings which offer superior performance under these conditions should be selected.

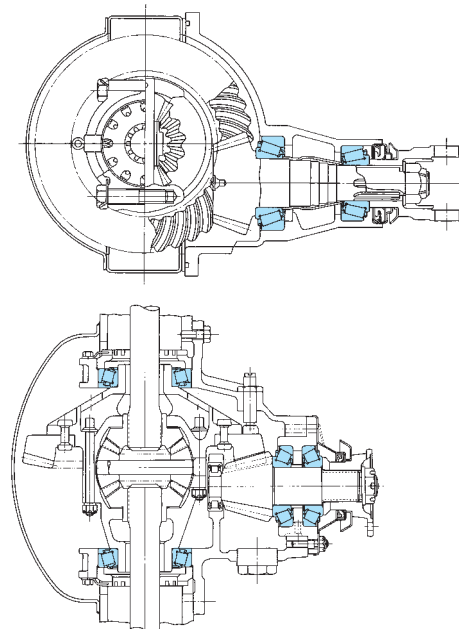


• Differentials

The bearings used in automotive differentials are preloaded to maintain accuracy between the drive pinion and ring gear. The accuracy of gear engagement affects greatly the performance of the differential as well as running noise.

From this point of view, it is necessary to select bearings which will provide optimum rigidity so that satisfactory engagement of the gears is obtained during operation. The pinion shaft is supported by either two tapered roller bearings (cantilever mount) mounted back to back, or two steep angle tapered roller bearings plus a single cylindrical roller bearing opposite the tapered roller bearings (straddle mount).

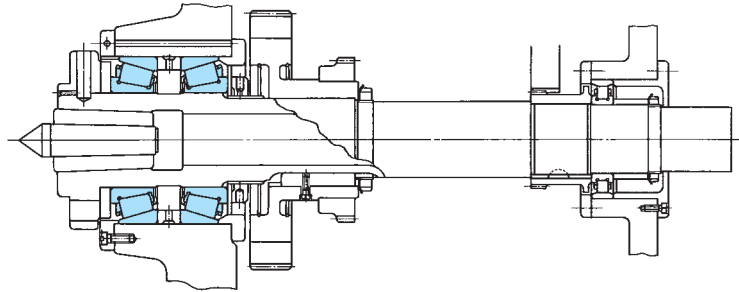
The differential ring gear is supported by tapered roller bearings mounted face to face.



General industries

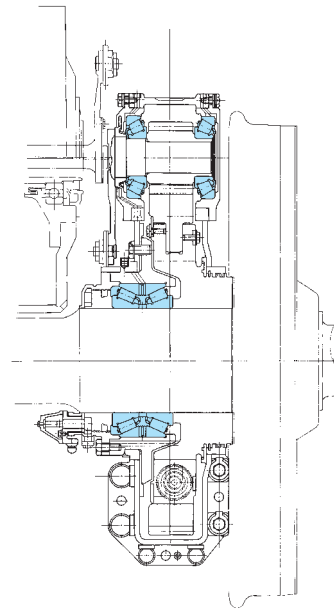
• Machine tool spindles

Tapered roller bearings are widely used to support spindles of various machine tools such as engine lathes and milling machines. Since these spindles require rigidity and accuracy of guidance in both radial and axial directions, a pair of tapered roller bearings are usually mounted in a back-to-back arrangement and adjusted to obtain the proper preload. In addition to providing rigid radial and axial support, tapered roller bearings simplify the machine structure and promote simple preload adjustment.

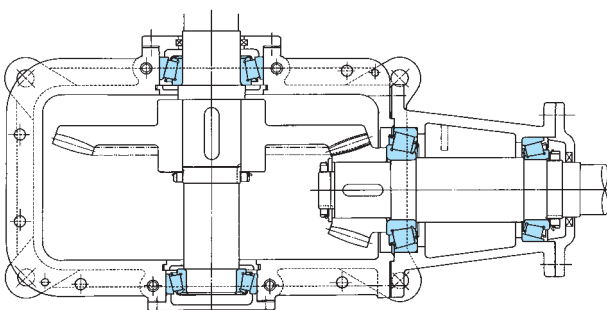


• Electric railway car gear units

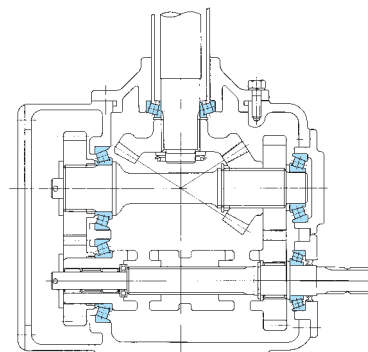
The driving axles of electric cars are equipped with gearing units to transmit the torque and rotation generated by the traction main motors. In the parallel cardan gear units (currently more widely used than square cardan gear units), both the pinion shaft and gear housing are generally fitted with tapered roller bearings.



• Bevel-gear units



• Farm equipment, transmission



Specification tables of tapered roller bearings

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| | 46792R | 95 | | |
| 47400R | 47487R | 77 | 47420 | 77,79 |
| | 47490R | 79 | 47423 | 77 |
| 47600R | 47675R | 79 | 47620 | 81,83,85 |
| | 47678R | 81 | 47620A | 79,81,83,85 |
| | 47679R | 81 | | |
| | 47680R | 81 | | |
| | 47681R | 83 | | |
| | 47685R | 83 | | |
| | 47686R | 85 | | |
| | 47687R | 85 | | |
| | 47688R | 85 | | |
| 47800R | 47880R | 83 | 47820 | 83,87,89 |
| | 47885R | 87 | | |
| | 47890R | 89 | | |
| | 47896R | 89 | | |
| 48100 | 48190 | 91 | 48120 | 91 |
| 48200 | 48286 | 93 | 48220 | 93,95 |
| | 48290 | 95 | | |
| LM48500 | LM48548 | 47 | LM48510 | 47 |
| 48600 | 48684 | 95 | 48620 | 95 |
| | 48685 | 95 | | |

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| 49000 | 49150 | 53 | 49368 | 53,57,59 |
| | 49162 | 57 | | |
| | 49175 | 59 | | |
| | 49176 | 59 | | |
| 49500 | 49576 | 59 | 49520 | 59,63,65 |
| | 49577 | 59 | 49521 | 65 |
| | 49580 | 63 | 49522 | 59 |
| | 49581 | 63 | | |
| | 49585 | 65 | | |
| 52000 | 52375 | 89 | 52618 | 89,91 |
| | 52387 | 89 | 52630X | 89 |
| | 52393 | 91 | 52637 | 89,91 |
| | 52400 | 91 | 52638 | 89 |
| | 52401 | 91 | | |
| 53000 | 53150 | 99 | 53375 | 99 |
| | 53162 | 99 | 53387 | 99 |
| | 53176 | 99 | 53387X | 99 |
| | 53177 | 99 | 53398 | 99 |
| | 53178 | 99 | | |
| 55000 | 55175 | 101 | 55437 | 99,101 |
| | 55187 | 101 | 55443 | 101 |
| | 55196 | 101 | | |
| | 55197 | 101 | | |
| | 55200 | 101 | | |
| | 55206 | 101 | | |
| 55000CR | 55175CR | 99 | 55437 | 99,101 |
| | 55176CR | 99 | | |
| | 55187CR | 101 | | |
| | 55200CR | 101 | | |
| 56000 | 56418 | 91 | 56650 | 91 |
| | 56425 | 91 | | |
| 56000R | 56418R | 91 | 56650 | 91 |
| | 56425R | 91 | 56662 | 91 |
| 59000 | 59162 | 57 | 59412 | 57,59,63,65 |
| | 59175 | 59 | 59413 | 59 |
| | 59176 | 59 | 59425 | 59 |
| | 59187 | 63 | | |
| | 59188 | 63 | | |
| | 59200 | 65 | | |
| 64000R | 64433R | 93 | 64700 | 93 |
| | 64450R | 93 | | |
| 65000 | 65200 | 67 | 65500 | 67,69,71,73 |
| | 65212 | 69 | 65501 | 67 |
| | 65225 | 71 | 65537 | 67 |
| | 65231 | 71 | | |
| | 65235 | 71 | | |
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| 65300 | 65383 | 57 | 65320 | 57,59,63 |
| | 65384 | 59 | 65321 | 59 |
| | 65385 | 59 | | |
| | 65390 | 63 | | |
| 66000R | 66187R | 63 | 66461 | 63,65,71 |
| | 66200R | 65 | 66462 | 63,67 |
| | 66212R | 67 | | |
| | 66225R | 71 | | |
| 66500 | 66583 | 69 | 66520 | 67,69,71,73 |
| | 66584 | 67 | | |
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| | 66586 | 71 | | |
| | 66587 | 71 | | |
| | 66588 | 73 | | |
| | 66589 | 71 | | |
| LM67000 | LM67043 | 39 | LM67010 | 39,43 |
| | LM67048 | 43 | | |
| 67300 | 67388 | 95 | 67320 | 95 |
| | | | 67322 | 95 |
| 68000 | 68450 | 93 | 68709 | 93 |
| | 68462 | 93 | 68712 | 93 |
| | 68463 | 93 | | |
| L68100 | L68149 | 47,49 | L68110 | 47 |
| | | | L68111 | 49 |
| 69000 | 69350X | 87 | 69630 | 87 |
| | 69354 | 87 | | |
| 71000 | 71412 | 91 | 71750 | 91,93 |
| | 71425 | 91 | | |
| | 71432 | 93 | | |
| | 71437 | 93 | | |
| | 71450 | 93 | | |
| | 71453 | 93 | | |
| 72000 | 72187 | 101 | 72487 | 101 |
| | 72200 | 101 | 72500 | 101 |
| | 72212 | 101 | | |
| | 72218 | 101 | | |
| | 72225 | 101 | | |
| 72000C | 72200C | 101 | 72487 | 101 |
| | 72212C | 101 | | |
| | 72225C | 101 | | |
| LM72800 | LM72849 | 37 | LM72810 | 37 |
| 74000 | 74500 | 95 | 74850 | 95 |

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| | 78225 | 101 | | |
| | 78238 | 101 | | |
| | 78250 | 101 | | |
| | 78255X | 101 | | |
| LM78300 | LM78349 | 49 | LM78310 | 49 |
| 80300 | 80385 | 97 | 80325 | 97 |
| HM81600 | HM81649 | 35 | HM81610 | 35 |
| M84200 | M84249 | 37 | M84210 | 37 |
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| | M86647R | 39 | | |
| | M86648R | 43 | | |
| | M86649R | 41 | | |
| M88000 | M88040 | 39,41 | M88010 | 39,41,43,45 |
| | M88043 | 41 | M88011 | 41 |
| | M88046 | 43 | | |
| | M88048 | 45 | | |
| HM88500 | HM88542 | 45 | HM88510 | 45 |
| | HM88547 | 45 | HM88512 | 45 |
| HM88600 | HM88630 | 39 | HM88610 | 39,43,45,47, |
| | HM88638 | 45 | | 49 |
| | HM88644 | 43,45 | HM88611 | 43 |
| | HM88648 | 49 | HM88612 | 45 |
| | HM88649 | 47 | | |
| HM89400 | HM89440 | 45 | HM89410 | 45 |
| | HM89443 | 45 | HM89411 | 45,47,49 |
| | HM89446 | 47 | | |
| | HM89448 | 49 | | |
| | HM89449 | 49 | | |
| 90000 | 90381 | 103 | 90744 | 103 |
| 95000 | 95475 | 93 | 95925 | 93,95 |
| | 95500 | 95 | | |
| 98000 | 98316 | 83 | 98788 | 83,85,87,91 |
| | 98335 | 85 | | |
| | 98350 | 87 | | |
| | 98394X | 91 | | |
| | 98400 | 91 | | |
| L102800 | L102849 | 57 | L102810 | 57 |
| LM102900 | LM102949 | 61 | LM102910 | 61 |
| LM104900 | LM104949 | 63 | LM104911 | 63 |
| L183400 | L183448 | 97 | L183410 | 97 |
| HM212000 | HM212044 | 73 | HM212010 | 73,75,77 |
| | HM212046 | 75 | HM212011 | 75 |
| | HM212047 | 75 | | |
| | HM212049 | 77 | | |

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| | L217849 | 87 | | |
| HM218200 | HM218248 | 87 | HM218210 | 87 |
| HM220100 | HM220149 | 91 | HM220110 | 91 |
| HH221400 | HH221430 | 83 | HH221410 | 83,87,89,91 |
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| | HH221447 | 91 | | |
| HH224300 | HH224332 | 89 | HH224310 | 89,91,93 |
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| | HH224340 | 91 | | |
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| | HH224349 | 93 | | |
| M224700 | M224749 | 93 | M224710 | 93 |
| LL225700 | LL225749 | 95 | LL225710 | 95 |
| L225800 | | 95 | L225810 | 95 |
| | | | L225818 | 95 |
| HH228300 | HH228340 | 93 | HH228310 | 93,95 |
| | HH228349 | 95 | | |
| 243000 | EE243190 | 97 | 243250 | 97 |
| | EE243196 | 97 | | |
| 244000 | EE244180 | 97 | 244235 | 97 |
| LM245800 | LM245833 | 95 | LM245810 | 95 |
| | LM245846 | 95 | | |
| | LM245848 | 95 | | |
| M246900 | M246932 | 95 | M246910 | 95 |
| | M246942 | 95 | | |
| | M246943 | 95 | | |
| | M246949 | 95 | | |
| M249700 | M249732 | 95 | M249710 | 95,97 |
| | M249734 | 95 | | |
| | M249736 | 95 | | |
| | M249747 | 97 | | |
| | M249749 | 95 | | |
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| M276400 | M276449 | 97 | M276410 | 97 |
| L305600R | L305649R | 63 | L305610 | 63 |
| L319200 | L319245 | 89 | L319210 | 89 |
| | L319249 | 89 | | |
| LL319300 | LL319349 | 89 | LL319310 | 89 |
| L327200 | L327249 | 95 | L327210 | 95 |

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| 350000 | EE350701 | 103 | 351687 | 103 |
| | EE350750 | 103 | | |
| 380000 | EE380080 | 103 | 380190 | 103 |
| 390000 | EE390095 | 103 | 390200 | 103 |
| H414200 | H414235 | 75 | H414210 | 75,77,79 |
| | H414242 | 77 | | |
| | H414245 | 77 | | |
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| | H414249 | 79 | | |
| HH421200 | HH421246 | 89 | HH421210 | 89 |
| L435000 | L435049 | 95 | L435010 | 95 |
| L476500 | L476548 | 97 | L476510 | 97 |
| | L476549 | 97 | | |
| LM501300 | LM501349 | 55 | LM501310 | 55 |
| | | | LM501311 | 55 |
| | | | LM501314 | 55 |
| LM503300R | LM503349R | 61 | LM503310 | 61 |
| HH506300 | HH506348 | 63 | HH506310 | 63 |
| | HH506349 | 63 | | |
| HM516400 | HM516447 | 83 | HM516410 | 83,85 |
| | HM516448 | 85 | | |
| | HM516449 | 85 | | |
| HM518400 | HM518445 | 87 | HM518410 | 87 |
| L521900R | L521949R | 91 | L521910 | 91 |
| LM522500 | LM522546 | 91 | LM522510 | 91,93 |
| | LM522548 | 93 | | |
| | LM522549 | 93 | | |
| L540000 | L540049 | 95 | L540010 | 95 |
| L555200 | L555249 | 97 | L555210 | 97 |
| L570600 | L570649 | 97 | L570610 | 97 |
| LL575300 | LL575349 | 97 | LL575310 | 97 |
| LM603000 | LM603049 | 61 | LM603011 | 61 |
| | | | LM603012 | 61 |
| | | | LM603014 | 61 |
| | | | LM603015 | 61 |
| LM613400 | LM613449 | 77 | LM613410 | 77 |
| HM617000 | HM617045 | 85 | HM617010 | 85 |
| | HM617048 | 85 | | |
| | HM617049 | 85 | | |
| L623100 | L623149 | 93 | L623110 | 93 |
| | | | L623114 | 93 |
| HM624700 | HM624749 | 93 | HM624710 | 93 |
| | | | HM624716 | 93 |
| 640000 | EE640192 | 97 | 640260 | 97 |
| 649000 | EE649240 | 97 | 649310 | 97 |

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| LM770900 | LM770945 | 97 | LM770910 | 97 |
| LM772700 | LM772748 | 97 | LM772710 | 97 |
| 776000 | EE776430 | 97 | 776520 | 97 |
| LL778100 | LL778149 | 97 | LL778110 | 97 |
| HM801300 | HM801346 | 51 | HM801310 | 51,55 |
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| HM803100 | HM803145 | 55 | HM803110 | 55,59 |
| | HM803146 | 55 | | |
| | HM803149 | 59 | | |
| M804000 | M804049 | 61 | M804010 | 61 |
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| HM807000 | HM807035 | 57 | HM807010 | 57,59,63,65,67 |
| | HM807040 | 59 | | |
| | HM807044 | 63 | | |
| | HM807046 | 65 | | |
| | HM807049 | 67 | | |
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| HM813800 | HM813836 | 67 | HM813810 | 69,73,75,77,79 |
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| LM814800 | LM814845 | 79 | LM814810 | 79,83 |
| | LM814849 | 83 | | |
| L879900 | L879947 | 97 | L879910 | 97 |

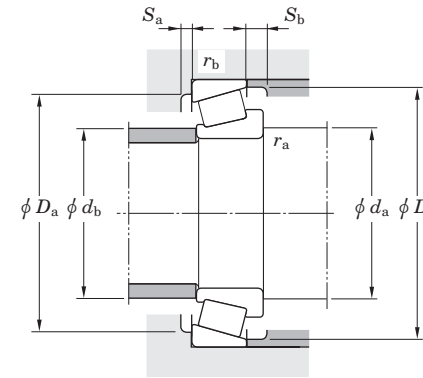
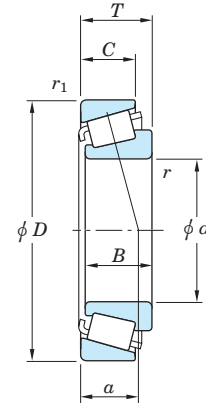
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| | HM907643 | 101 | | |
| HM911200R | HM911242R | 101 | HM911210 | 101 |
| | HM911245R | 101 | | |
| | HM911249R | 101 | | |
| H913800R | H913842R | 101 | H913810 | 101,103 |
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| HH914400 | HH914449 | 101 | HH914412 | 101 |
| HH923600 | HH923649 | 103 | HH923610 | 103 |
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| H924000 | H924045 | 103 | H924010 | 103 |
| HH926700 | HH926744 | 93 | HH926710 | 93 |
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| HM926700 | HM926740 | 103 | HM926710 | 103 |
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| HH932100 | HH932132 | 103 | HH932110 | 103 |
| | HH932145 | 103 | | |
| H936300 | H936340 | 103 | H936310 | 103 |
| | H936349 | 103 | H936316 | 103 |
| HH953700 | HH953749 | 103 | HH953710 | 103 |
| H961600 | H961649 | 103 | H961610 | 103 |
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| JM205100 | JM205149 | 105 | JM205110 | 105 |
| JM207000 | JM207049 | 105 | JM207010 | 105 |
| JH211700 | JH211749 | 105 | JH211710 | 105 |
| | JH211749A | 105 | | |
| JH217200 | JH217249 | 105 | JH217210 | 105 |
| JH307700 | JH307749 | 105 | JH307710 | 105 |
| JHM318400 | JHM318448 | 105 | JHM318410 | 105 |
| JH415600 | JH415647 | 105 | JH415610 | 105 |
| JLM506800 | JLM506849 | 105 | JLM506810 | 105 |
| JLM508700 | JLM508748 | 105 | JLM508710 | 105 |
| JM511900 | JM511946 | 105 | JM511910 | 105 |
| JM515600 | JM515649 | 105 | JM515610 | 105 |
| JHM516800 | JHM516849 | 105 | JHM516810 | 105 |
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| JM718100 | JM718149 | 105 | JM718110 | 105 |
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| JHM720200 | JHM720249 | 105 | JHM720210 | 105 |
| JM720200 | JM720249 | 105 | JM720210 | 105 |
| JM734400 | JM734449 | 105 | JM734410 | 105 |
| JM736100 | JM736149 | 105 | JM736110 | 105 |
| JM738200 | JM738249 | 105 | JM738210 | 105 |
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| JLM813000 | JLM813049 | 105 | JLM813010 | 105 |
| JM822000 | JM822049 | 105 | JM822010 | 105 |
| JHM840400 | JHM840449 | 105 | JHM840410 | 105 |

TS type
 d 7.938 ~ 20.638 mm
 0.3125 ~ 0.8125 inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

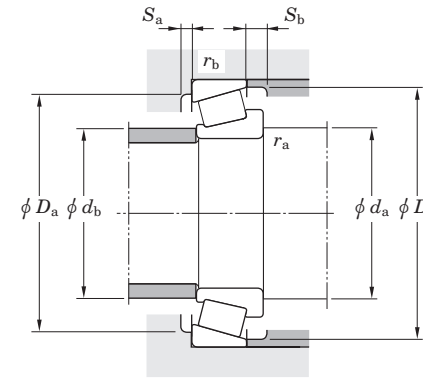
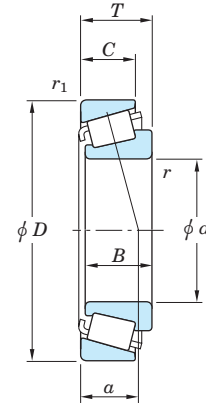
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|-------------|----------|-------------------|------------------|---------------------|-------|------|-------|------|-------|----------|-------|--------------------|------|-----------------------|-------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r_1 (min.) | | C_r | C_{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d_a | | d_b | | D_a | | D_b | | e | Y_1 | Y_0 | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 7.938 | 0.3125 | 31.991 | 1.2595 | 10.008 | 0.3940 | 10.785 | 0.4246 | 7.938 | 0.3125 | 0.5 | 0.02 | 1.2 | 0.05 | 10.7 | 9.30 | A2031 | A2126 | 7.1 | 0.28 | 12.5 | 0.49 | 12.5 | 0.49 | 26.0 | 1.02 | 29.0 | 1.14 | 0.40 | 1.48 | 0.82 | 3.10 | 2.15 | 1.45 |
| 9.525 | 0.3750 | 31.991 | 1.2595 | 10.008 | 0.3940 | 10.785 | 0.4246 | 7.938 | 0.3125 | 1.2 | 0.05 | 1.2 | 0.05 | 10.7 | 9.30 | A2037 | A2126 | 7.1 | 0.28 | 15.0 | 0.59 | 13.5 | 0.53 | 26.0 | 1.02 | 29.0 | 1.14 | 0.40 | 1.48 | 0.82 | 3.10 | 2.15 | 1.45 |
| 11.112 | 0.4375 | 31.991 | 1.2595 | 10.008 | 0.3940 | 14.351 | 0.5650 | 7.938 | 0.3125 | 0.8 | 0.03 | 1.2 | 0.05 | 10.7 | 9.30 | A2043 | A2126 | 7.1 | 0.28 | 15.5 | 0.61 | 14.5 | 0.57 | 26.0 | 1.02 | 29.0 | 1.14 | 0.40 | 1.48 | 0.82 | 3.10 | 2.15 | 1.45 |
| | 0.4375 | 34.988 | 1.3775 | 10.998 | 0.4330 | 10.988 | 0.4326 | 8.730 | 0.3437 | 1.2 | 0.05 | 1.2 | 0.05 | 12.6 | 11.9 | A4044 | A4138 | 8.3 | 0.33 | 17.5 | 0.69 | 15.5 | 0.61 | 29.0 | 1.14 | 32.0 | 1.26 | 0.45 | 1.33 | 0.73 | 3.65 | 2.80 | 1.29 |
| 11.986 | 0.4719 | 31.991 | 1.2595 | 10.008 | 0.3940 | 10.785 | 0.4246 | 7.938 | 0.3125 | 0.8 | 0.03 | 1.2 | 0.05 | 10.7 | 9.30 | A2047 | A2126 | 7.1 | 0.28 | 16.5 | 0.65 | 15.5 | 0.61 | 26.0 | 1.02 | 29.0 | 1.14 | 0.40 | 1.48 | 0.82 | 3.10 | 2.15 | 1.45 |
| 12.700 | 0.5000 | 34.988 | 1.3775 | 10.998 | 0.4330 | 10.988 | 0.4326 | 8.730 | 0.3437 | 1.2 | 0.05 | 1.2 | 0.05 | 12.6 | 11.9 | A4050 | A4138 | 8.3 | 0.33 | 18.5 | 0.73 | 17.0 | 0.67 | 29.0 | 1.14 | 32.0 | 1.26 | 0.45 | 1.33 | 0.73 | 3.65 | 2.80 | 1.29 |
| 14.989 | 0.5901 | 34.988 | 1.3775 | 10.998 | 0.4330 | 10.988 | 0.4326 | 8.730 | 0.3437 | 0.8 | 0.03 | 1.2 | 0.05 | 12.6 | 11.9 | A4059 | A4138 | 8.3 | 0.33 | 19.5 | 0.77 | 19.0 | 0.75 | 29.0 | 1.14 | 32.0 | 1.26 | 0.45 | 1.33 | 0.73 | 3.65 | 2.80 | 1.29 |
| 15.875 | 0.6250 | 34.988 | 1.3775 | 10.998 | 0.4330 | 10.988 | 0.4330 | 8.712 | 0.3430 | 1.2 | 0.05 | 1.2 | 0.05 | 14.5 | 14.3 | L21549 | L21511 | 7.6 | 0.30 | 21.5 | 0.85 | 19.5 | 0.77 | 29.0 | 1.14 | 32.5 | 1.28 | 0.32 | 1.88 | 1.04 | 4.15 | 2.25 | 1.83 |
| | 0.6250 | 39.992 | 1.5745 | 12.014 | 0.4730 | 11.153 | 0.4391 | 9.525 | 0.3750 | 1.2 | 0.05 | 1.2 | 0.05 | 14.5 | 15.1 | A6062 | A6157 | 10.3 | 0.41 | 22.0 | 0.87 | 20.5 | 0.81 | 34.0 | 1.34 | 37.0 | 1.46 | 0.53 | 1.14 | 0.63 | 4.20 | 3.75 | 1.11 |
| | 0.6250 | 41.275 | 1.6250 | 14.288 | 0.5625 | 14.681 | 0.5780 | 11.112 | 0.4375 | 1.2 | 0.05 | 2.0 | 0.08 | 21.8 | 20.5 | 03062 | 03162 | 9.3 | 0.37 | 21.5 | 0.85 | 20.0 | 0.79 | 34.0 | 1.34 | 37.5 | 1.48 | 0.31 | 1.93 | 1.06 | 6.30 | 3.35 | 1.88 |
| | 0.6250 | 42.862 | 1.6875 | 16.670 | 0.6563 | 16.670 | 0.6563 | 13.495 | 0.5313 | 1.6 | 0.06 | 1.6 | 0.06 | 30.6 | 29.5 | 17580R | 17520 | 10.9 | 0.43 | 23.0 | 0.91 | 21.0 | 0.83 | 36.5 | 1.44 | 39.0 | 1.54 | 0.33 | 1.81 | 1.00 | 8.80 | 4.95 | 1.77 |
| | 0.6250 | 49.225 | 1.9380 | 19.845 | 0.7813 | 21.539 | 0.8480 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.2 | 0.05 | 37.7 | 37.7 | 09062 | 09195 | 10.6 | 0.42 | 22.0 | 0.87 | 21.5 | 0.85 | 42.0 | 1.65 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| | 0.6250 | 53.975 | 2.1250 | 22.225 | 0.8750 | 21.839 | 0.8598 | 15.875 | 0.6250 | 0.8 | 0.03 | 2.4 | 0.09 | 42.0 | 41.2 | 21063 | 21212 | 16.6 | 0.65 | 29.0 | 1.14 | 26.5 | 1.04 | 43.0 | 1.69 | 50.0 | 1.97 | 0.59 | 1.02 | 0.56 | 12.2 | 12.3 | 0.99 |
| 16.000 | 0.6299 | 47.000 | 1.8504 | 21.000 | 0.8268 | 21.000 | 0.8268 | 16.000 | 0.6299 | 1.0 | 0.04 | 2.0 | 0.08 | 36.3 | 37.7 | HM81649 | HM81610 | 15.0 | 0.59 | 27.5 | 1.08 | 23.0 | 0.91 | 37.5 | 1.48 | 43.0 | 1.69 | 0.55 | 1.10 | 0.60 | 10.5 | 9.85 | 1.07 |
| 16.993 | 0.6690 | 41.275 | 1.6250 | 11.905 | 0.4687 | 11.153 | 0.4391 | 8.730 | 0.3437 | 0.8 | 0.03 | 1.2 | 0.05 | 14.5 | 15.1 | A6067 | A6162 | 10.2 | 0.40 | 22.0 | 0.87 | 21.0 | 0.83 | 34.5 | 1.36 | 37.0 | 1.46 | 0.53 | 1.14 | 0.63 | 4.20 | 3.75 | 1.11 |
| 17.000 | 0.6693 | 49.225 | 1.9380 | 23.020 | 0.9063 | 21.539 | 0.8480 | 17.462 | 0.6875 | 2.0 | 0.08 | 1.6 | 0.06 | 37.7 | 37.7 | 09099X | 09196 | 13.8 | 0.54 | 27.0 | 1.06 | 24.0 | 0.94 | 41.5 | 1.63 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| 17.462 | 0.6875 | 39.878 | 1.5700 | 13.843 | 0.5450 | 14.605 | 0.5750 | 10.668 | 0.4200 | 1.2 | 0.05 | 1.2 | 0.05 | 25.4 | 26.0 | LM11749R | LM11710 | 8.6 | 0.34 | 23.0 | 0.91 | 21.5 | 0.85 | 34.0 | 1.34 | 37.0 | 1.46 | 0.29 | 2.10 | 1.15 | 7.30 | 3.55 | 2.04 |
| 17.653 | 0.6950 | 49.225 | 1.9380 | 23.020 | 0.9063 | 21.539 | 0.8480 | 17.462 | 0.6875 | 2.4 | 0.09 | 1.6 | 0.06 | 37.7 | 37.7 | 09070 | 09196 | 13.8 | 0.54 | 26.0 | 1.02 | 24.0 | 0.94 | 41.5 | 1.63 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| 18.000 | 0.7087 | 49.225 | 1.9380 | 23.020 | 0.9063 | 21.539 | 0.8480 | 17.462 | 0.6875 | 1.0 | 0.04 | 1.6 | 0.06 | 37.7 | 37.7 | 09073X | 09196 | 13.8 | 0.54 | 23.0 | 0.91 | 24.0 | 0.94 | 41.5 | 1.63 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| 19.004 | 0.7482 | 56.896 | 2.2400 | 19.368 | 0.7625 | 19.837 | 0.7810 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.2 | 0.05 | 40.0 | 43.1 | 1774 | 1729 | 12.5 | 0.49 | 27.0 | 1.06 | 25.0 | 0.98 | 49.0 | 1.93 | 51.0 | 2.01 | 0.31 | 1.95 | 1.07 | 11.6 | 6.10 | 1.90 |
| | 0.7482 | 56.896 | 2.2400 | 19.368 | 0.7625 | 19.837 | 0.7810 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 40.0 | 43.1 | 1774 | 1729X | 12.5 | 0.49 | 27.0 | 1.06 | 25.0 | 0.98 | 49.0 | 1.93 | 52.0 | 2.05 | 0.31 | 1.95 | 1.07 | 11.6 | 6.10 | 1.90 |
| 19.050 | 0.7500 | 39.992 | 1.5745 | 12.014 | 0.4730 | 11.153 | 0.4391 | 9.525 | 0.3750 | 1.0 | 0.04 | 1.2 | 0.05 | 14.5 | 15.1 | A6075 | A6157 | 10.3 | 0.41 | 24.0 | 0.94 | 23.0 | 0.91 | 34.0 | 1.34 | 37.0 | 1.46 | 0.53 | 1.14 | 0.63 | 4.20 | 3.75 | 1.11 |
| | 0.7500 | 45.237 | 1.7810 | 15.494 | 0.6100 | 16.637 | 0.6550 | 12.065 | 0.4750 | 1.2 | 0.05 | 1.2 | 0.05 | 29.4 | 30.1 | LM11949 | LM11910 | 10.0 | 0.39 | 25.0 | 0.98 | 23.5 | 0.93 | 39.5 | 1.56 | 41.5 | 1.63 | 0.30 | 2.00 | 1.10 | 8.45 | 4.35 | 1.95 |
| | 0.7500 | 49.225 | 1.9380 | 19.845 | 0.7813 | 21.539 | 0.8480 | 14.288 | 0.5625 | 1.2 | 0.05 | 1.2 | 0.05 | 37.7 | 37.7 | 09078 | 09195 | 10.6 | 0.42 | 25.5 | 1.00 | 24.0 | 0.94 | 42.0 | 1.65 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| | 0.7500 | 49.225 | 1.9380 | 21.209 | 0.8350 | 19.050 | 0.7500 | 17.462 | 0.6875 | 1.2 | 0.05 | 1.6 | 0.06 | 37.7 | 37.7 | 09067 | 09196 | 13.8 | 0.54 | 25.5 | 1.00 | 24.0 | 0.94 | 41.5 | 1.63 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| | 0.7500 | 49.225 | 1.9380 | 23.020 | 0.9063 | 21.539 | 0.8480 | 17.462 | 0.6875 | SP ¹⁾ | SP ¹⁾ | 3.6 | 0.14 | 37.7 | 37.7 | 09074 | 09194 | 13.8 | 0.54 | 26.0 | 1.02 | 24.0 | 0.94 | 39.0 | 1.54 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| | 0.7500 | 49.225 | 1.9380 | 23.020 | 0.9063 | 21.539 | 0.8480 | 17.462 | 0.6875 | 1.6 | 0.06 | 1.6 | 0.06 | 37.7 | 37.7 | 09078X | 09196 | 13.8 | 0.54 | 25.5 | 1.00 | 24.0 | 0.94 | 41.5 | 1.63 | 44.5 | 1.75 | 0.27 | 2.26 | 1.24 | 10.9 | 4.95 | 2.20 |
| | 0.7500 | 53.975 | 2.1250 | 19.368 | 0.7625 | 19.837 | 0.7810 | 15.875 | 0.6250 | 1.6 | 0.06 | 0.8 | 0.03 | 40.0 | 43.1 | 1775 | 1730 | 12.5 | 0.49 | 27.0 | 1.06 | 25.0 | 0.98 | 48.5 | 1.91 | 50.0 | 1.97 | 0.31 | 1.95 | 1.07 | 11.6 | 6.10 | 1.90 |
| | 0.7500 | 53.975 | 2.1250 | 22.225 | 0.8750 | 21.839 | 0.8598 | 15.875 | 0.6250 | 1.6 | 0.06 | 0.4 | 0.02 | 42.0 | 41.2 | 21075 | 21213 | 16.6 | 0.65 | 31.5 | 1.24 | 26.5 | 1.04 | 43.0 | 1.69 | 50.0 | 1.97 | 0.59 | 1.02 | 0.56 | 12.2 | 12.3 | 0.99 |
| | 0.7500 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 3.6 | 0.14 | 1.2 | 0.05 | 67.0 | 75.2 | 2693X | 2631 | 13.9 | 0.55 | 30.0 | 1.18 | 25.0 | 0.98 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| 20.000 | 0.7874 | 50.005 | 1.9687 | 13.495 | 0.5313 | 14.260 | 0.5614 | 9.525 | 0.3750 | 1.6 | 0.06 | 1.0 | 0.04 | 26.7 | 28.8 | 07079 | 07196 | 10.8 | 0.43 | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
 d 21.430 ~ (25.400) mm
 0.8437 ~ (1.0000) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

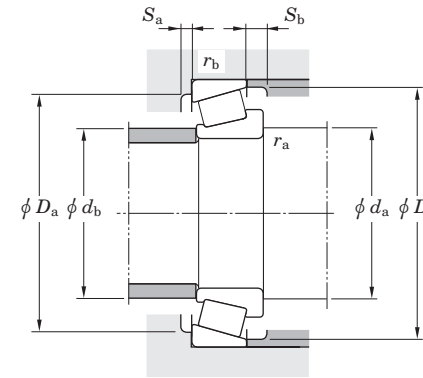
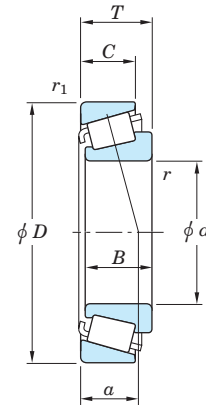
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 21.430 | 0.8437 | 50.005 | 1.9687 | 17.526 | 0.6900 | 18.288 | 0.7200 | 13.970 | 0.5500 | 1.2 | 0.05 | 1.2 | 0.05 | 39.1 | 40.7 | M12649 | M12610 | 11.1 | 0.44 | 27.5 | 1.08 | 25.5 | 1.00 | 44.0 | 1.73 | 46.0 | 1.81 | 0.28 | 2.16 | 1.19 | 11.2 | 5.35 | 2.10 |
| 21.987 | 0.8656 | 45.974 | 1.8100 | 15.494 | 0.6100 | 16.637 | 0.6550 | 12.065 | 0.4750 | 1.2 | 0.05 | 1.2 | 0.05 | 30.1 | 34.6 | LM12749 | LM12711 | 10.0 | 0.39 | 27.5 | 1.08 | 26.0 | 1.02 | 40.0 | 1.57 | 42.5 | 1.67 | 0.31 | 1.96 | 1.08 | 8.65 | 4.50 | 1.91 |
| 22.225 | 0.8750 | 50.005 | 1.9687 | 17.526 | 0.6900 | 18.288 | 0.7200 | 13.970 | 0.5500 | 1.2 | 0.05 | 1.2 | 0.05 | 39.1 | 40.7 | M12648 | M12610 | 11.1 | 0.44 | 28.5 | 1.12 | 26.5 | 1.04 | 44.0 | 1.73 | 46.0 | 1.81 | 0.28 | 2.16 | 1.19 | 11.2 | 5.35 | 2.10 |
| | 0.8750 | 50.005 | 1.9687 | 17.526 | 0.6900 | 18.288 | 0.7200 | 13.970 | 0.5500 | 1.2 | 0.05 | 1.2 | 0.05 | 39.1 | 40.7 | M12648A | M12610 | 11.1 | 0.44 | 28.5 | 1.12 | 26.5 | 1.04 | 44.0 | 1.73 | 46.0 | 1.81 | 0.28 | 2.16 | 1.19 | 11.2 | 5.35 | 2.10 |
| | 0.8750 | 50.800 | 2.0000 | 15.011 | 0.5910 | 14.260 | 0.5614 | 12.700 | 0.5000 | 1.2 | 0.05 | 1.6 | 0.06 | 26.7 | 28.8 | 07087 | 07210X | 12.3 | 0.48 | 28.5 | 1.12 | 27.0 | 1.06 | 44.5 | 1.75 | 47.5 | 1.87 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 0.8750 | 52.388 | 2.0625 | 19.368 | 0.7625 | 20.168 | 0.7940 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 36.7 | 37.9 | 1380 | 1328 | 11.6 | 0.46 | 29.5 | 1.16 | 29.5 | 1.16 | 45.0 | 1.77 | 48.5 | 1.91 | 0.29 | 2.05 | 1.13 | 10.7 | 5.35 | 2.00 |
| | 0.8750 | 53.975 | 2.1250 | 19.368 | 0.7625 | 20.168 | 0.7940 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 36.7 | 37.9 | 1380 | 1329 | 11.6 | 0.46 | 29.5 | 1.16 | 29.5 | 1.16 | 46.0 | 1.81 | 49.0 | 1.93 | 0.29 | 2.05 | 1.13 | 10.7 | 5.35 | 2.00 |
| | 0.8750 | 56.896 | 2.2400 | 19.368 | 0.7625 | 19.837 | 0.7810 | 15.875 | 0.6250 | 1.2 | 0.05 | 1.2 | 0.05 | 40.0 | 43.1 | 1755 | 1729 | 12.5 | 0.49 | 29.0 | 1.14 | 27.5 | 1.08 | 49.0 | 1.93 | 51.0 | 2.01 | 0.31 | 1.95 | 1.07 | 11.6 | 6.10 | 1.90 |
| | 0.8750 | 57.150 | 2.2500 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 1.6 | 0.06 | 1.6 | 0.06 | 37.8 | 42.7 | 15572 | 15520 | 12.7 | 0.50 | 32.5 | 1.28 | 30.5 | 1.20 | 51.0 | 2.01 | 53.0 | 2.09 | 0.35 | 1.73 | 0.95 | 10.8 | 6.40 | 1.69 |
| | 0.8750 | 57.150 | 2.2500 | 19.845 | 0.7813 | 19.355 | 0.7620 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.6 | 0.06 | 48.8 | 57.1 | 1975R | 1922 | 13.9 | 0.55 | 29.0 | 1.14 | 28.0 | 1.10 | 51.0 | 2.01 | 53.5 | 2.11 | 0.33 | 1.82 | 1.00 | 14.0 | 7.90 | 1.77 |
| | 0.8750 | 57.150 | 2.2500 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 1.6 | 0.06 | 52.6 | 55.7 | 1280 | 1220 | 15.3 | 0.60 | 29.5 | 1.16 | 29.0 | 1.14 | 49.0 | 1.93 | 52.0 | 2.05 | 0.35 | 1.73 | 0.95 | 15.2 | 9.00 | 1.69 |
| | 0.8750 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 1.6 | 0.06 | 1.2 | 0.05 | 67.0 | 75.2 | 2684 | 2631 | 13.9 | 0.55 | 31.5 | 1.24 | 29.0 | 1.14 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| 0.8750 | 80.000 | 3.1496 | 20.996 | 0.8266 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 341 | 332 | 15.1 | 0.59 | 33.5 | 1.32 | 32.0 | 1.26 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 | |
| 22.606 | 0.8900 | 47.000 | 1.8504 | 15.500 | 0.6102 | 15.500 | 0.6102 | 12.000 | 0.4724 | 1.6 | 0.06 | 1.0 | 0.04 | 28.0 | 32.8 | LM72849 | LM72810 | 12.3 | 0.48 | 30.0 | 1.18 | 28.0 | 1.10 | 40.5 | 1.59 | 44.0 | 1.73 | 0.47 | 1.27 | 0.70 | 8.05 | 6.50 | 1.24 |
| 23.812 | 0.9375 | 50.292 | 1.9800 | 14.224 | 0.5600 | 14.732 | 0.5800 | 10.668 | 0.4200 | 1.6 | 0.06 | 1.2 | 0.05 | 31.2 | 37.0 | L44640R | L44610 | 10.8 | 0.43 | 30.5 | 1.20 | 28.5 | 1.12 | 44.5 | 1.75 | 47.0 | 1.85 | 0.37 | 1.60 | 0.88 | 8.95 | 5.70 | 1.56 |
| | 0.9375 | 52.000 | 2.0472 | 15.011 | 0.5910 | 14.260 | 0.5614 | 12.700 | 0.5000 | 1.6 | 0.06 | 2.0 | 0.08 | 26.7 | 28.8 | 07093 | 07205 | 12.3 | 0.48 | 30.5 | 1.20 | 28.5 | 1.12 | 44.5 | 1.75 | 48.0 | 1.89 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 0.9375 | 56.896 | 2.2400 | 19.368 | 0.7625 | 19.837 | 0.7810 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.2 | 0.05 | 40.0 | 43.1 | 1779 | 1729 | 12.5 | 0.49 | 29.5 | 1.16 | 28.5 | 1.12 | 49.0 | 1.93 | 51.0 | 2.01 | 0.31 | 1.95 | 1.07 | 11.6 | 6.10 | 1.90 |
| | 0.9375 | 56.896 | 2.2400 | 19.368 | 0.7625 | 19.837 | 0.7810 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.6 | 0.06 | 40.0 | 43.1 | 1779 | 1729X | 12.5 | 0.49 | 29.5 | 1.16 | 28.5 | 1.12 | 49.0 | 1.93 | 52.0 | 2.05 | 0.31 | 1.95 | 1.07 | 11.6 | 6.10 | 1.90 |
| | 0.9375 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 0.8 | 0.03 | 1.2 | 0.05 | 67.0 | 75.2 | 2685 | 2631 | 13.9 | 0.55 | 30.5 | 1.20 | 30.0 | 1.18 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| | 0.9375 | 71.996 | 2.8345 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 2.4 | 0.09 | 1.6 | 0.06 | 47.5 | 49.6 | 26093 | 26283 | 15.3 | 0.60 | 35.0 | 1.38 | 32.0 | 1.26 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| 24.981 | 0.9835 | 50.005 | 1.9687 | 13.495 | 0.5313 | 14.260 | 0.5614 | 9.525 | 0.3750 | 1.6 | 0.06 | 1.0 | 0.04 | 26.7 | 28.8 | 07098 | 07196 | 10.8 | 0.43 | 31.0 | 1.22 | 29.0 | 1.14 | 44.5 | 1.75 | 47.0 | 1.85 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 0.9835 | 62.000 | 2.4409 | 16.002 | 0.6300 | 16.566 | 0.6522 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 38.0 | 40.6 | 17098 | 17244 | 12.7 | 0.50 | 33.0 | 1.30 | 30.5 | 1.20 | 54.0 | 2.13 | 57.0 | 2.24 | 0.38 | 1.57 | 0.86 | 10.9 | 7.15 | 1.53 |
| 25.000 | 0.9842 | 50.005 | 1.9687 | 13.495 | 0.5313 | 14.260 | 0.5614 | 9.525 | 0.3750 | 1.6 | 0.06 | 1.0 | 0.04 | 26.7 | 28.8 | 07097 | 07196 | 10.8 | 0.43 | 31.0 | 1.22 | 29.0 | 1.14 | 44.5 | 1.75 | 47.0 | 1.85 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 0.9842 | 62.000 | 2.4409 | 16.002 | 0.6300 | 16.566 | 0.6522 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 38.0 | 40.6 | 17098X | 17244 | 12.7 | 0.50 | 33.0 | 1.30 | 30.5 | 1.20 | 54.0 | 2.13 | 57.0 | 2.24 | 0.38 | 1.57 | 0.86 | 10.9 | 7.15 | 1.53 |
| | 0.9842 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 2.0 | 0.08 | 1.2 | 0.05 | 67.0 | 75.2 | 2694X | 2631 | 13.9 | 0.55 | 33.0 | 1.30 | 31.0 | 1.22 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| | 0.9842 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 78.8 | 89.3 | 3188X | 3120 | 20.3 | 0.80 | 40.0 | 1.57 | 35.0 | 1.38 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| 25.400 | 1.0000 | 50.005 | 1.9687 | 13.495 | 0.5313 | 14.260 | 0.5614 | 9.525 | 0.3750 | 1.0 | 0.04 | 1.0 | 0.04 | 26.7 | 28.8 | 07100 | 07196 | 10.8 | 0.43 | 30.5 | 1.20 | 29.5 | 1.16 | 44.5 | 1.75 | 47.0 | 1.85 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 1.0000 | 50.005 | 1.9687 | 13.495 | 0.5313 | 14.260 | 0.5614 | 9.525 | 0.3750 | 1.6 | 0.06 | 1.0 | 0.04 | 26.7 | 28.8 | 07100S | 07196 | 10.8 | 0.43 | 31.5 | 1.24 | 29.5 | 1.16 | 44.5 | 1.75 | 47.0 | 1.85 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 1.0000 | 50.005 | 1.9687 | 13.495 | 0.5313 | 14.260 | 0.5614 | 9.525 | 0.3750 | 3.2 | 0.13 | 1.0 | 0.04 | 26.7 | 28.8 | 07100SA | 07196 | 10.8 | 0.43 | 35.0 | 1.38 | 29.5 | 1.16 | 44.5 | 1.75 | 47.0 | 1.85 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 1.0000 | 50.292 | 1.9800 | 14.224 | 0.5600 | 14.732 | 0.5800 | 10.668 | 0.4200 | 1.2 | 0.05 | 1.2 | 0.05 | 31.2 | 37.0 | L44643R | L44610 | 10.8 | 0.43 | 31.5 | 1.24 | 29.5 | 1.16 | 44.5 | 1.75 | 47.0 | 1.85 | 0.37 | 1.60 | 0.88 | 8.95 | 5.70 | 1.56 |
| | 1.0000 | 51.994 | 2.0470 | 15.011 | 0.5910 | 14.260 | 0.5614 | 12.700 | 0.5000 | 1.0 | 0.04 | 1.2 | 0.05 | 26.7 | 28.8 | 07100 | 07204 | 12.3 | 0.48 | 30.5 | 1.20 | 29.5 | 1.16 | 45.0 | 1.77 | 48.0 | 1.89 | 0.40 | 1.49 | 0.82 | 7.65 | 5.25 | 1.46 |
| | 1.0000 | 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
 d (25.400) ~ (28.575) mm
 (1.0000) ~ (1.1250) inch



$$P = XF_r + YF_a$$

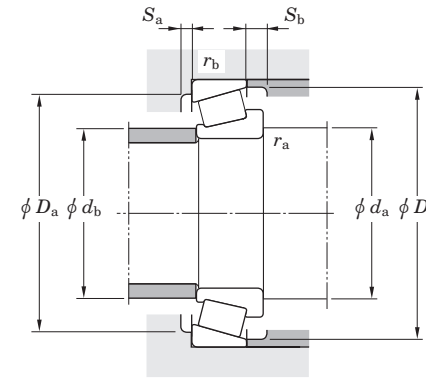
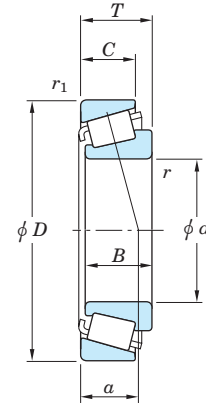
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 25.400 | 1.0000 | 63.500 | 2.5000 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.2 | 0.05 | 44.6 | 50.7 | 15101 | 15250R | 13.2 | 0.52 | 32.5 | 1.28 | 31.5 | 1.24 | 55.0 | 2.17 | 59.0 | 2.32 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.0000 | 63.500 | 2.5000 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.2 | 0.05 | 44.6 | 50.7 | 15100 | 15250 | 15.0 | 0.59 | 38.0 | 1.50 | 31.5 | 1.24 | 55.0 | 2.17 | 59.0 | 2.32 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.0000 | 63.500 | 2.5000 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 44.6 | 50.7 | 15100 | 15250X | 15.0 | 0.59 | 38.0 | 1.50 | 31.5 | 1.24 | 55.0 | 2.17 | 59.0 | 2.32 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.0000 | 63.500 | 2.5000 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 44.6 | 50.7 | 15102 | 15250X | 15.0 | 0.59 | 34.0 | 1.34 | 31.5 | 1.24 | 55.0 | 2.17 | 59.0 | 2.32 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.0000 | 64.292 | 2.5312 | 21.432 | 0.8438 | 21.432 | 0.8438 | 16.670 | 0.6563 | 1.6 | 0.06 | 1.6 | 0.06 | 55.2 | 70.7 | M86643R | M86610 | 18.0 | 0.71 | 38.0 | 1.50 | 36.5 | 1.44 | 54.0 | 2.13 | 61.0 | 2.40 | 0.55 | 1.10 | 0.60 | 16.0 | 14.9 | 1.07 |
| | 1.0000 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 1.2 | 0.05 | 1.2 | 0.05 | 67.0 | 75.2 | 2687 | 2631 | 13.9 | 0.55 | 33.5 | 1.32 | 31.5 | 1.24 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| | 1.0000 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 1.6 | 0.06 | 51.0 | 61.1 | 02473 | 02420 | 17.1 | 0.67 | 34.5 | 1.36 | 33.5 | 1.32 | 59.0 | 2.32 | 63.0 | 2.48 | 0.42 | 1.44 | 0.79 | 14.8 | 10.5 | 1.41 |
| | 1.0000 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 0.8 | 0.03 | 51.0 | 61.1 | 02473 | 02421 | 17.1 | 0.67 | 34.5 | 1.36 | 33.5 | 1.32 | 59.0 | 2.32 | 63.0 | 2.48 | 0.42 | 1.44 | 0.79 | 14.8 | 10.5 | 1.41 |
| | 1.0000 | 72.000 | 2.8346 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 47.5 | 49.6 | 26100 | 26283 | 15.3 | 0.60 | 34.5 | 1.36 | 32.5 | 1.28 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.0000 | 72.233 | 2.8438 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.842 | 0.7812 | 0.8 | 0.03 | 2.4 | 0.09 | 66.9 | 87.4 | HM88630 | HM88610 | 20.7 | 0.81 | 39.5 | 1.56 | 39.5 | 1.56 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| | 1.0000 | 72.626 | 2.8593 | 24.608 | 0.9688 | 24.257 | 0.9550 | 17.462 | 0.6875 | 2.4 | 0.09 | 1.6 | 0.06 | 61.8 | 60.5 | 41100 | 41286 | 20.7 | 0.81 | 41.0 | 1.61 | 36.5 | 1.44 | 61.0 | 2.40 | 68.0 | 2.68 | 0.60 | 1.00 | 0.55 | 17.9 | 18.4 | 0.97 |
| | 1.0000 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 78.8 | 89.3 | 3189 | 3130 | 20.3 | 0.80 | 35.5 | 1.40 | 35.0 | 1.38 | 63.0 | 2.48 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.0000 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 2.0 | 0.08 | 3.2 | 0.13 | 78.8 | 89.3 | 3189X | 3120 | 20.3 | 0.80 | 37.5 | 1.48 | 35.0 | 1.38 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.0000 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 338 | 332 | 15.1 | 0.59 | 36.5 | 1.44 | 35.0 | 1.38 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| 1.0000 | 80.000 | 3.1496 | 24.176 | 0.9518 | 22.403 | 0.8820 | 21.000 | 0.8268 | 0.8 | 0.03 | 2.4 | 0.09 | 68.0 | 74.8 | 338 | 332A | 18.3 | 0.72 | 36.5 | 1.44 | 35.0 | 1.38 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 | |
| 25.987 | 1.0231 | 50.292 | 1.9800 | 14.224 | 0.5600 | 14.732 | 0.5800 | 10.668 | 0.4200 | 3.6 | 0.14 | 1.2 | 0.05 | 31.2 | 37.0 | L44645R | L44610 | 10.8 | 0.43 | 36.5 | 1.44 | 31.0 | 1.22 | 44.5 | 1.75 | 47.0 | 1.85 | 0.37 | 1.60 | 0.88 | 8.95 | 5.70 | 1.56 |
| | 1.0231 | 57.150 | 2.2500 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 3.6 | 0.14 | 1.6 | 0.06 | 37.8 | 42.7 | 15579X | 15520 | 12.7 | 0.50 | 38.5 | 1.52 | 32.0 | 1.26 | 51.0 | 2.01 | 53.0 | 2.09 | 0.35 | 1.73 | 0.95 | 10.8 | 6.40 | 1.69 |
| 26.157 | 1.0298 | 63.500 | 2.5000 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.2 | 0.05 | 44.6 | 50.7 | 15103 | 15250 | 15.0 | 0.59 | 33.5 | 1.32 | 33.0 | 1.30 | 55.0 | 2.17 | 59.0 | 2.32 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| 26.162 | 1.0300 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 1.6 | 0.06 | 1.2 | 0.05 | 67.0 | 75.2 | 2682 | 2631 | 13.9 | 0.55 | 34.5 | 1.36 | 32.0 | 1.26 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| 26.975 | 1.0620 | 57.150 | 2.2500 | 19.845 | 0.7813 | 19.355 | 0.7620 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.6 | 0.06 | 48.8 | 57.1 | 1987R | 1922 | 13.9 | 0.55 | 32.5 | 1.28 | 31.5 | 1.24 | 51.0 | 2.01 | 53.5 | 2.11 | 0.33 | 1.82 | 1.00 | 14.0 | 7.90 | 1.77 |
| 26.987 | 1.0625 | 72.626 | 2.8593 | 24.608 | 0.9688 | 24.257 | 0.9550 | 17.462 | 0.6875 | 2.4 | 0.09 | 1.6 | 0.06 | 61.8 | 60.5 | 41106 | 41286 | 20.7 | 0.81 | 42.0 | 1.65 | 36.5 | 1.44 | 61.0 | 2.40 | 68.0 | 2.68 | 0.60 | 1.00 | 0.55 | 17.9 | 18.4 | 0.97 |
| 26.988 | 1.0625 | 50.292 | 1.9800 | 14.224 | 0.5600 | 14.732 | 0.5800 | 10.668 | 0.4200 | 3.6 | 0.14 | 1.2 | 0.05 | 31.2 | 37.0 | L44649R | L44610 | 10.8 | 0.43 | 37.5 | 1.48 | 31.0 | 1.22 | 44.5 | 1.75 | 47.0 | 1.85 | 0.37 | 1.60 | 0.88 | 8.95 | 5.70 | 1.56 |
| | 1.0625 | 57.150 | 2.2500 | 19.845 | 0.7813 | 19.355 | 0.7620 | 15.875 | 0.6250 | 3.2 | 0.13 | 1.6 | 0.06 | 48.8 | 57.1 | 1997XR | 1922 | 13.9 | 0.55 | 37.5 | 1.48 | 31.5 | 1.24 | 51.0 | 2.01 | 53.5 | 2.11 | 0.33 | 1.82 | 1.00 | 14.0 | 7.90 | 1.77 |
| | 1.0625 | 60.325 | 2.3750 | 19.842 | 0.7812 | 17.462 | 0.6875 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 37.8 | 42.7 | 15580 | 15523 | 15.1 | 0.59 | 38.5 | 1.52 | 32.0 | 1.26 | 51.0 | 2.01 | 54.0 | 2.13 | 0.35 | 1.73 | 0.95 | 10.8 | 6.40 | 1.69 |
| | 1.0625 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.2 | 0.05 | 44.6 | 50.7 | 15106 | 15245 | 13.2 | 0.52 | 33.5 | 1.32 | 33.0 | 1.30 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.0625 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 1.6 | 0.06 | 1.2 | 0.05 | 67.0 | 75.2 | 2688 | 2631 | 13.9 | 0.55 | 35.0 | 1.38 | 33.0 | 1.30 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| 28.575 | 1.1250 | 57.150 | 2.2500 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 3.6 | 0.14 | 1.6 | 0.06 | 37.8 | 42.7 | 15590 | 15520 | 12.7 | 0.50 | 39.0 | 1.54 | 33.5 | 1.32 | 51.0 | 2.01 | 53.0 | 2.09 | 0.35 | 1.73 | 0.95 | 10.8 | 6.40 | 1.69 |
| | 1.1250 | 57.150 | 2.2500 | 19.845 | 0.7813 | 19.355 | 0.7620 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.6 | 0.06 | 48.8 | 57.1 | 1985R | 1922 | 13.9 | 0.55 | 34.0 | 1.34 | 33.5 | 1.32 | 51.0 | 2.01 | 53.5 | 2.11 | 0.33 | 1.82 | 1.00 | 14.0 | 7.90 | 1.77 |
| | 1.1250 | 57.150 | 2.2500 | 19.845 | 0.7813 | 19.355 | 0.7620 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 48.8 | 57.1 | 1988R | 1922 | 13.9 | 0.55 | 39.5 | 1.56 | 33.5 | 1.32 | 51.0 | 2.01 | 53.5 | 2.11 | 0.33 | 1.82 | 1.00 | 14.0 | 7.90 | 1.77 |
| | 1.1250 | 59.131 | 2.3280 | 15.875 | 0.6250 | 16.764 | 0.6600 | 11.811 | 0.4650 | SP ¹⁾ | SP ¹⁾ | 1.2 | 0.05 | 35.8 | 43.1 | LM67043 | LM67010 | 13.0 | 0.51 | 40.5 | 1.59 | 34.0 | 1.34 | 52.0 | 2.05 | 56.0 | 2.20 | 0.41 | 1.46 | 0.80 | 10.3 | 7.25 | 1.42 |
| | 1.1250 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 3.6 | 0.14 | 1.2 | 0.05 | 44.6 | 50.7 | 15112 | 15245 | 13.2 | 0.52 | 40.0 | 1.57 | 34.0 | 1.34 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.1250 | 62. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (28.575) ~ (30.162) mm
(1.1250) ~ (1.1875) inch



$$P = XF_r + YF_a$$

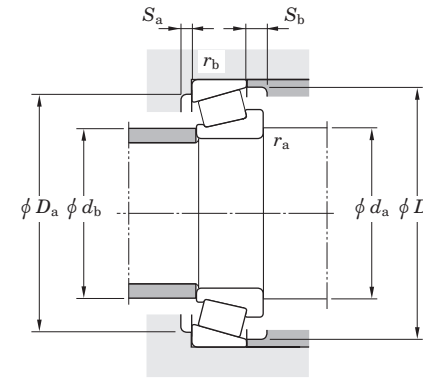
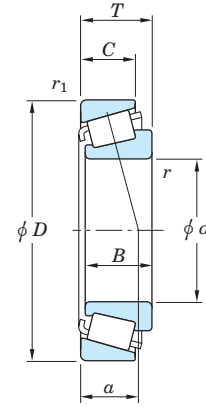
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|------|----------------|------|----------------|------|----------------|------|--------------------|------|-----------------------|----------------|----------------|--------|-------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | |
| 28.575 | 1.1250 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 2.4 | 0.09 | 2.4 | 0.09 | 56.1 | 71.1 | M88040 | M88011 | 19.2 | 0.76 | 42.0 | 1.65 | 39.0 | 1.54 | 58.0 | 2.28 | 65.0 | 2.56 | 0.55 | 1.10 | 0.60 | 16.3 | 15.2 | 1.07 |
| | 1.1250 | 72.000 | 2.8346 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 47.5 | 49.6 | 26112 | 26283 | 15.3 | 0.60 | 37.0 | 1.46 | 35.0 | 1.38 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.1250 | 72.626 | 2.8593 | 24.608 | 0.9688 | 24.257 | 0.9550 | 17.462 | 0.6875 | 4.8 | 0.19 | 1.6 | 0.06 | 61.8 | 60.5 | 41125 | 41286 | 20.7 | 0.81 | 48.0 | 1.89 | 36.5 | 1.44 | 61.0 | 2.40 | 68.0 | 2.68 | 0.60 | 1.00 | 0.55 | 17.9 | 18.4 | 0.97 |
| | 1.1250 | 72.626 | 2.8593 | 24.608 | 0.9688 | 24.257 | 0.9550 | 17.462 | 0.6875 | 1.6 | 0.06 | 1.6 | 0.06 | 61.8 | 60.5 | 41126 | 41286 | 20.7 | 0.81 | 41.5 | 1.63 | 36.5 | 1.44 | 61.0 | 2.40 | 68.0 | 2.68 | 0.60 | 1.00 | 0.55 | 17.9 | 18.4 | 0.97 |
| | 1.1250 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 78.8 | 89.3 | 3192 | 3120 | 20.3 | 0.80 | 42.5 | 1.67 | 37.0 | 1.46 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.1250 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 1.2 | 0.05 | 3.2 | 0.13 | 78.8 | 89.3 | 3198 | 3120 | 20.3 | 0.80 | 39.0 | 1.54 | 37.0 | 1.46 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.1250 | 73.025 | 2.8750 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 3.2 | 0.13 | 55.0 | 65.7 | 02872 | 02820 | 18.4 | 0.72 | 37.5 | 1.48 | 37.0 | 1.46 | 62.0 | 2.44 | 68.0 | 2.68 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 |
| | 1.1250 | 73.025 | 2.8750 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 0.8 | 0.03 | 55.0 | 65.7 | 02872 | 02830 | 18.4 | 0.72 | 37.5 | 1.48 | 37.0 | 1.46 | 64.0 | 2.52 | 69.0 | 2.72 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 |
| 1.1250 | 80.962 | 3.1875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 0.8 | 0.03 | 55.0 | 65.7 | 02872 | 02831 | 18.4 | 0.72 | 37.5 | 1.48 | 37.0 | 1.46 | 67.0 | 2.64 | 69.0 | 2.72 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 | |
| 29.000 | 1.1417 | 50.292 | 1.9800 | 14.224 | 0.5600 | 14.732 | 0.5800 | 10.668 | 0.4200 | 3.6 | 0.14 | 1.2 | 0.05 | 28.9 | 37.2 | L45449 | L45410 | 10.9 | 0.43 | 39.5 | 1.56 | 33.0 | 1.30 | 44.5 | 1.75 | 48.0 | 1.89 | 0.37 | 1.62 | 0.89 | 8.35 | 5.25 | 1.58 |
| | 1.1417 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 1.0 | 0.04 | 1.2 | 0.05 | 67.0 | 75.2 | 2695X | 2631 | 13.9 | 0.55 | 35.0 | 1.38 | 34.0 | 1.34 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| 29.367 | 1.1562 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 3.6 | 0.14 | 1.2 | 0.05 | 67.0 | 75.2 | 2690 | 2631 | 13.9 | 0.55 | 41.0 | 1.61 | 35.0 | 1.38 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| | 1.1562 | 66.421 | 2.6150 | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.050 | 0.7500 | 0.8 | 0.03 | 1.2 | 0.05 | 67.0 | 75.2 | 2691 | 2631 | 13.9 | 0.55 | 35.5 | 1.40 | 35.0 | 1.38 | 58.0 | 2.28 | 60.0 | 2.36 | 0.25 | 2.36 | 1.30 | 19.5 | 8.45 | 2.30 |
| 29.985 | 1.1805 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 78.8 | 89.3 | 3190S | 3120 | 20.3 | 0.80 | 39.0 | 1.54 | 38.0 | 1.50 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| 29.987 | 1.1806 | 62.000 | 2.4409 | 16.002 | 0.6300 | 16.566 | 0.6522 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 38.0 | 40.6 | 17118 | 17244 | 12.7 | 0.50 | 37.0 | 1.46 | 34.5 | 1.36 | 54.0 | 2.13 | 57.0 | 2.24 | 0.38 | 1.57 | 0.86 | 10.9 | 7.15 | 1.53 |
| | 1.1806 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 1.2 | 0.05 | 1.2 | 0.05 | 44.6 | 50.7 | 15117 | 15245 | 13.2 | 0.52 | 36.5 | 1.44 | 35.0 | 1.38 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.1806 | 71.996 | 2.8345 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 2.0 | 0.08 | 47.5 | 49.6 | 26118 | 26283S | 15.3 | 0.60 | 38.0 | 1.50 | 36.0 | 1.42 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.1806 | 72.000 | 2.8346 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 47.5 | 49.6 | 26118 | 26283 | 15.3 | 0.60 | 38.0 | 1.50 | 36.0 | 1.42 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| 30.000 | 1.1811 | 62.000 | 2.4409 | 16.002 | 0.6300 | 16.566 | 0.6522 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 38.0 | 40.6 | 17118S | 17244 | 12.7 | 0.50 | 37.0 | 1.46 | 34.5 | 1.36 | 54.0 | 2.13 | 57.0 | 2.24 | 0.38 | 1.57 | 0.86 | 10.9 | 7.15 | 1.53 |
| | 1.1811 | 68.956 | 2.7148 | 19.845 | 0.7813 | 19.202 | 0.7560 | 15.875 | 0.6250 | 0.8 | 0.03 | 3.2 | 0.13 | 46.1 | 55.0 | 14118 | 14274A | 15.5 | 0.61 | 37.0 | 1.46 | 36.5 | 1.44 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.1811 | 69.012 | 2.7170 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.2 | 0.05 | 46.1 | 55.0 | 14117A | 14276 | 15.5 | 0.61 | 42.5 | 1.67 | 39.5 | 1.56 | 60.0 | 2.36 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.1811 | 69.012 | 2.7170 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 46.1 | 55.0 | 14118A | 14274 | 15.5 | 0.61 | 42.5 | 1.67 | 39.5 | 1.56 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.1811 | 69.850 | 2.7500 | 23.812 | 0.9375 | 25.357 | 0.9983 | 19.050 | 0.7500 | 3.6 | 0.14 | 1.2 | 0.05 | 71.4 | 85.1 | 2586 | 2523 | 14.4 | 0.57 | 42.0 | 1.65 | 35.5 | 1.40 | 61.0 | 2.40 | 64.0 | 2.52 | 0.27 | 2.19 | 1.21 | 20.7 | 9.65 | 2.14 |
| | 1.1811 | 71.996 | 2.8345 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 47.5 | 49.6 | 26118S | 26283 | 15.3 | 0.60 | 38.0 | 1.50 | 36.0 | 1.42 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.1811 | 72.085 | 2.8380 | 29.522 | 1.1623 | 26.721 | 1.0520 | 18.415 | 0.7250 | 3.6 | 0.14 | 2.4 | 0.09 | 46.1 | 55.0 | 14120A | 14283 | 22.6 | 0.89 | 42.5 | 1.67 | 39.5 | 1.56 | 60.0 | 2.36 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.1811 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 78.8 | 89.3 | 3190 | 3120 | 20.3 | 0.80 | 43.0 | 1.69 | 38.0 | 1.50 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.1811 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 348 | 332 | 15.1 | 0.59 | 39.5 | 1.56 | 39.5 | 1.56 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.1811 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 0.8 | 0.03 | 1.6 | 0.06 | 98.2 | 112 | 416 | 414 | 16.9 | 0.67 | 39.5 | 1.56 | 39.5 | 1.56 | 77.0 | 3.03 | 80.0 | 3.15 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| 1.1811 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 0.8 | 0.03 | 3.2 | 0.13 | 98.2 | 112 | 416 | 414A | 16.9 | 0.67 | 39.5 | 1.56 | 39.5 | 1.56 | 76.0 | 2.99 | 79.0 | 3.11 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 | |
| 30.112 | 1.1855 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.2 | 0.05 | 44.6 | 50.7 | 15116 | 15245 | 13.2 | 0.52 | 36.0 | 1.42 | 35.5 | 1.40 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| 30.162 | 1.1875 | 58.738 | 2.3125 | 14.684 | 0.5781 | 15.080 | 0.5937 | 10.716 | 0.4219 | 3.6 | 0.14 | 1.0 | 0.04 | 29.5 | 33.3 | 08118 | 08231 | 13.5 | 0.53 | 41.5 | 1.63 | 35.0 | 1.38 | 52.0 | 2.05 | 55.0 | 2.17 | 0.48 | 1.26 | 0.69 | 8.45 | 6.85 | 1.23 |

TS type
d (30.162) ~ (31.750) mm
(1.1875) ~ (1.2500) inch



$$P = XF_r + YF_a$$

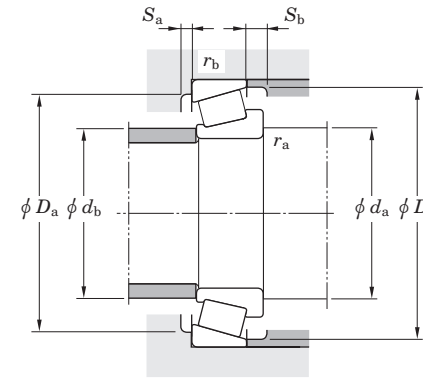
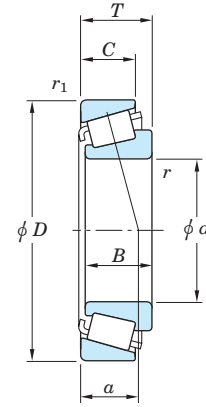
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | Axial load factors | | Reference rating (kN) | | Factor | | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|--------------------|------|-----------------------|----------------|--------|-------|------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 30.162 | 1.1875 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 78.8 | 89.3 | 3187 | 3130 | 20.3 | 0.80 | 39.0 | 1.54 | 38.5 | 1.52 | 63.0 | 2.48 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.1875 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 78.8 | 89.3 | 3191 | 3120 | 20.3 | 0.80 | 44.0 | 1.73 | 38.5 | 1.52 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.1875 | 76.200 | 3.0000 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 78.8 | 89.3 | 3191 | 3129 | 20.3 | 0.80 | 44.0 | 1.73 | 38.5 | 1.52 | 65.0 | 2.56 | 69.0 | 2.72 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.1875 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 87.4 | 105 | 3474 | 3420 | 20.8 | 0.82 | 41.0 | 1.61 | 40.0 | 1.57 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.1875 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 334 | 332 | 15.1 | 0.59 | 39.5 | 1.56 | 39.5 | 1.56 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.1875 | 80.000 | 3.1496 | 24.176 | 0.9518 | 22.403 | 0.8820 | 21.000 | 0.8268 | 0.8 | 0.03 | 2.4 | 0.09 | 68.0 | 74.8 | 334 | 332A | 18.3 | 0.72 | 39.5 | 1.56 | 39.5 | 1.56 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.1875 | 80.035 | 3.1510 | 21.432 | 0.8438 | 20.940 | 0.8244 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 57.3 | 65.9 | 28118 | 28317 | 16.9 | 0.67 | 40.0 | 1.57 | 37.5 | 1.48 | 69.0 | 2.72 | 73.0 | 2.87 | 0.40 | 1.49 | 0.82 | 16.5 | 11.3 | 1.46 |
| 30.213 | 1.1895 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 3.6 | 0.14 | 1.2 | 0.05 | 44.6 | 50.7 | 15118 | 15245 | 13.2 | 0.52 | 41.5 | 1.63 | 35.5 | 1.40 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.1895 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.2 | 0.05 | 44.6 | 50.7 | 15119 | 15245 | 13.2 | 0.52 | 37.5 | 1.48 | 35.5 | 1.40 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.1895 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.2 | 0.05 | 44.6 | 50.7 | 15120 | 15245 | 13.2 | 0.52 | 36.0 | 1.42 | 35.5 | 1.40 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| 30.226 | 1.1900 | 69.012 | 2.7170 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 0.8 | 0.03 | 3.2 | 0.13 | 46.1 | 55.0 | 14116 | 14274 | 15.5 | 0.61 | 37.0 | 1.46 | 36.5 | 1.44 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| 30.955 | 1.2187 | 64.292 | 2.5312 | 21.432 | 0.8438 | 21.432 | 0.8438 | 16.670 | 0.6563 | 2.4 | 0.09 | 1.6 | 0.06 | 55.2 | 70.7 | M86648R | M86610 | 18.0 | 0.71 | 41.0 | 1.61 | 38.0 | 1.50 | 54.0 | 2.13 | 61.0 | 2.40 | 0.55 | 1.10 | 0.60 | 16.0 | 14.9 | 1.07 |
| 31.623 | 1.2450 | 66.675 | 2.6250 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 46.4 | 54.5 | 1674 | 1620 | 15.7 | 0.62 | 45.0 | 1.77 | 38.5 | 1.52 | 58.0 | 2.28 | 61.0 | 2.40 | 0.37 | 1.62 | 0.89 | 13.5 | 8.55 | 1.57 |
| 31.750 | 1.2500 | 58.738 | 2.3125 | 14.684 | 0.5781 | 15.080 | 0.5937 | 10.716 | 0.4219 | 1.0 | 0.04 | 1.0 | 0.04 | 29.5 | 33.3 | 08125 | 08231 | 13.5 | 0.53 | 37.5 | 1.48 | 36.0 | 1.42 | 52.0 | 2.05 | 55.0 | 2.17 | 0.48 | 1.26 | 0.69 | 8.45 | 6.85 | 1.23 |
| | 1.2500 | 59.131 | 2.3280 | 15.875 | 0.6250 | 16.764 | 0.6600 | 11.811 | 0.4650 | SP ¹⁾ | SP ¹⁾ | 1.2 | 0.05 | 35.8 | 43.1 | LM67048 | LM67010 | 13.0 | 0.51 | 42.5 | 1.67 | 36.0 | 1.42 | 52.0 | 2.05 | 56.0 | 2.20 | 0.41 | 1.46 | 0.80 | 10.3 | 7.25 | 1.42 |
| | 1.2500 | 62.000 | 2.4409 | 18.161 | 0.7150 | 19.050 | 0.7500 | 14.288 | 0.5625 | SP ¹⁾ | SP ¹⁾ | 1.2 | 0.05 | 44.6 | 50.7 | 15123 | 15245 | 13.2 | 0.52 | 42.5 | 1.67 | 36.5 | 1.44 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.2500 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 3.6 | 0.14 | 1.2 | 0.05 | 44.6 | 50.7 | 15125 | 15245 | 13.2 | 0.52 | 42.5 | 1.67 | 36.5 | 1.44 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.2500 | 62.000 | 2.4409 | 19.050 | 0.7500 | 20.638 | 0.8125 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.2 | 0.05 | 44.6 | 50.7 | 15126 | 15245 | 13.2 | 0.52 | 37.0 | 1.46 | 36.5 | 1.44 | 55.0 | 2.17 | 58.0 | 2.28 | 0.35 | 1.71 | 0.94 | 12.9 | 7.75 | 1.67 |
| | 1.2500 | 66.421 | 2.6150 | 25.400 | 1.0000 | 25.357 | 0.9983 | 20.638 | 0.8125 | 0.8 | 0.03 | 3.2 | 0.13 | 71.4 | 85.1 | 2580 | 2520 | 16.0 | 0.63 | 38.5 | 1.52 | 37.5 | 1.48 | 57.0 | 2.24 | 62.5 | 2.46 | 0.27 | 2.19 | 1.21 | 20.7 | 9.65 | 2.14 |
| | 1.2500 | 66.421 | 2.6150 | 25.400 | 1.0000 | 25.357 | 0.9983 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 71.4 | 85.1 | 2582 | 2520 | 16.0 | 0.63 | 44.0 | 1.73 | 37.5 | 1.48 | 57.0 | 2.24 | 62.5 | 2.46 | 0.27 | 2.19 | 1.21 | 20.7 | 9.65 | 2.14 |
| | 1.2500 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 3.6 | 0.14 | 1.6 | 0.06 | 51.0 | 61.1 | 02475 | 02420 | 17.1 | 0.67 | 44.5 | 1.75 | 38.5 | 1.52 | 59.0 | 2.32 | 63.0 | 2.48 | 0.42 | 1.44 | 0.79 | 14.8 | 10.5 | 1.41 |
| | 1.2500 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 1.6 | 0.06 | 1.6 | 0.06 | 51.0 | 61.1 | 02475A | 02420 | 17.1 | 0.67 | 42.0 | 1.65 | 38.0 | 1.50 | 59.0 | 2.32 | 63.0 | 2.48 | 0.42 | 1.44 | 0.79 | 14.8 | 10.5 | 1.41 |
| | 1.2500 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 1.6 | 0.06 | 51.0 | 61.1 | 02476 | 02420 | 17.1 | 0.67 | 39.0 | 1.54 | 38.5 | 1.52 | 59.0 | 2.32 | 63.0 | 2.48 | 0.42 | 1.44 | 0.79 | 14.8 | 10.5 | 1.41 |
| | 1.2500 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 1.6 | 0.06 | 1.6 | 0.06 | 56.1 | 71.1 | M88046 | M88010 | 19.2 | 0.76 | 43.0 | 1.69 | 40.5 | 1.59 | 58.0 | 2.28 | 65.0 | 2.56 | 0.55 | 1.10 | 0.60 | 16.3 | 15.2 | 1.07 |
| | 1.2500 | 68.956 | 2.7148 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 46.1 | 55.0 | 14125 | 14274A | 15.5 | 0.61 | 44.0 | 1.73 | 37.5 | 1.48 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.2500 | 69.012 | 2.7170 | 26.982 | 1.0623 | 26.721 | 1.0520 | 15.875 | 0.6250 | 4.3 | 0.17 | 3.2 | 0.13 | 46.1 | 55.0 | 14123A | 14274 | 22.6 | 0.89 | 44.0 | 1.73 | 40.0 | 1.57 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.2500 | 71.973 | 2.8336 | 27.000 | 1.0630 | 25.400 | 1.0000 | 21.443 | 0.8442 | 1.6 | 0.06 | 1.6 | 0.06 | 66.9 | 87.4 | HM88644 | HM88611 | 22.3 | 0.88 | 45.0 | 1.77 | 42.5 | 1.67 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| | 1.2500 | 72.034 | 2.8360 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 2.8 | 0.11 | 78.8 | 89.3 | 3188 | 3126 | 20.3 | 0.80 | 40.0 | 1.57 | 39.5 | 1.56 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.2500 | 72.233 | 2.8438 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.842 | 0.7812 | 1.6 | 0.06 | 2.4 | 0.09 | 66.9 | 87.4 | HM88644 | HM88610 | 20.7 | 0.81 | 45.0 | 1.77 | 42.5 | 1.67 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| | 1.2500 | 72.626 | 2.8593 | 28.575 | 1.1250 | 29.997 | 1.1810 | 22.225 | 0.8750 | 0.8 | 0.03 | 3.2 | 0.13 | 78.8 | 89.3 | 3188 | 3125 | 18.7 | 0.74 | 40.0 | 1.57 | 39.5 | 1.56 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.2500 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 78.8 | 89.3 | 3188 | 3130 | 20.3 | 0.80 | 40.0 | 1.57 | 39.5 | 1.56 | 63.0 | 2.48 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.2500 | 72.626 | 2.8593 | 30.162 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (31.750) ~ 33.338 mm
(1.2500) ~ 1.3125 inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

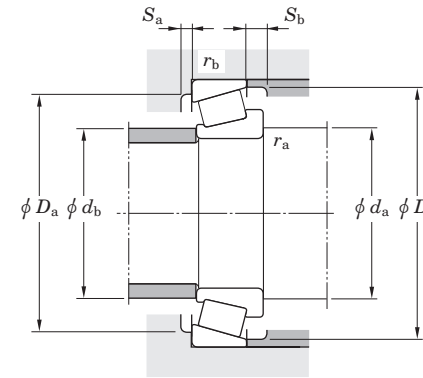
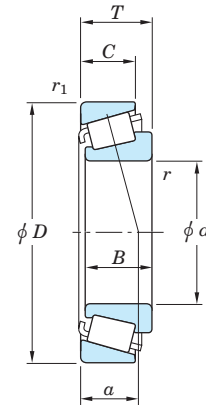
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | mm |
| 31.750 | 1.2500 | 73.025 | 2.8750 | 22.225 | 0.8750 | 23.812 | 0.9375 | 17.462 | 0.6875 | 0.8 | 0.03 | 0.8 | 0.03 | 64.2 | 78.1 | 2879 | 2821 | 16.3 | 0.64 | 39.0 | 1.54 | 39.0 | 1.54 | 65.0 | 2.56 | 68.0 | 2.68 | 0.37 | 1.63 | 0.89 | 18.6 | 11.7 | 1.59 |
| | 1.2500 | 73.025 | 2.8750 | 26.543 | 1.0450 | 25.400 | 1.0000 | 21.000 | 0.8268 | 1.6 | 0.06 | 2.4 | 0.09 | 66.9 | 87.4 | HM88644 | HM88612 | 21.8 | 0.86 | 45.0 | 1.77 | 42.5 | 1.67 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| | 1.2500 | 73.025 | 2.8750 | 26.988 | 1.0625 | 26.975 | 1.0620 | 22.225 | 0.8750 | 3.6 | 0.14 | 1.6 | 0.06 | 77.8 | 94.1 | 23685 | 23620 | 18.8 | 0.74 | 45.0 | 1.77 | 40.0 | 1.57 | 64.0 | 2.52 | 68.0 | 2.68 | 0.37 | 1.62 | 0.89 | 22.6 | 14.2 | 1.58 |
| | 1.2500 | 73.025 | 2.8750 | 29.370 | 1.1563 | 27.783 | 1.0938 | 23.020 | 0.9063 | 1.2 | 0.05 | 3.2 | 0.13 | 74.3 | 101 | HM88542 | HM88510 | 23.4 | 0.92 | 45.5 | 1.79 | 42.5 | 1.67 | 59.0 | 2.32 | 70.0 | 2.76 | 0.55 | 1.10 | 0.60 | 21.7 | 20.3 | 1.07 |
| | 1.2500 | 73.812 | 2.9060 | 29.370 | 1.1563 | 27.783 | 1.0938 | 23.020 | 0.9063 | 1.2 | 0.05 | 3.2 | 0.13 | 74.3 | 101 | HM88542 | HM88512 | 23.4 | 0.92 | 45.5 | 1.79 | 42.5 | 1.67 | 59.0 | 2.32 | 70.0 | 2.76 | 0.55 | 1.10 | 0.60 | 21.7 | 20.3 | 1.07 |
| | 1.2500 | 76.200 | 3.0000 | 29.370 | 1.1563 | 28.575 | 1.1250 | 23.020 | 0.9063 | 0.8 | 0.03 | 0.8 | 0.03 | 79.5 | 107 | HM89440 | HM89411 | 23.9 | 0.94 | 45.5 | 1.79 | 44.5 | 1.75 | 65.0 | 2.56 | 73.0 | 2.87 | 0.55 | 1.10 | 0.60 | 23.2 | 21.7 | 1.07 |
| | 1.2500 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 1.6 | 0.06 | 3.2 | 0.13 | 87.4 | 105 | 3476X | 3420 | 20.8 | 0.82 | 43.0 | 1.69 | 41.0 | 1.61 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.2500 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 346 | 332 | 15.1 | 0.59 | 40.0 | 1.57 | 39.5 | 1.56 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.2500 | 80.167 | 3.1562 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 1.2 | 0.05 | 3.2 | 0.13 | 87.4 | 105 | 3476 | 3422 | 20.8 | 0.82 | 43.0 | 1.69 | 41.0 | 1.61 | 68.0 | 2.68 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.2500 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 0.8 | 0.03 | 0.8 | 0.03 | 103 | 122 | 443 | 432A | 18.4 | 0.72 | 42.0 | 1.65 | 41.0 | 1.61 | 84.0 | 3.31 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| 31.986 | 1.2593 | 72.233 | 2.8438 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.842 | 0.7812 | 3.2 | 0.13 | 2.4 | 0.09 | 66.9 | 87.4 | HM88638 | HM88610 | 20.7 | 0.81 | 48.5 | 1.91 | 42.5 | 1.67 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| 32.004 | 1.2600 | 72.000 | 2.8346 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 47.5 | 49.6 | 26126 | 26283 | 15.3 | 0.60 | 39.5 | 1.56 | 37.5 | 1.48 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| 32.542 | 1.2812 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 78.8 | 89.3 | 3194 | 3120 | 20.3 | 0.80 | 41.0 | 1.61 | 40.0 | 1.57 | 61.0 | 2.40 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| 33.338 | 1.3125 | 66.421 | 2.6150 | 25.400 | 1.0000 | 25.357 | 0.9983 | 20.638 | 0.8125 | 0.8 | 0.03 | 3.2 | 0.13 | 71.4 | 85.1 | 2581 | 2520 | 16.0 | 0.63 | 39.5 | 1.56 | 39.0 | 1.54 | 57.0 | 2.24 | 62.5 | 2.46 | 0.27 | 2.19 | 1.21 | 20.7 | 9.65 | 2.14 |
| | 1.3125 | 66.421 | 2.6150 | 25.400 | 1.0000 | 25.357 | 0.9983 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 71.4 | 85.1 | 2585 | 2520 | 16.0 | 0.63 | 45.0 | 1.77 | 39.0 | 1.54 | 57.0 | 2.24 | 62.5 | 2.46 | 0.27 | 2.19 | 1.21 | 20.7 | 9.65 | 2.14 |
| | 1.3125 | 66.675 | 2.6250 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 46.4 | 54.5 | 1680 | 1620 | 15.7 | 0.62 | 45.0 | 1.77 | 38.5 | 1.52 | 58.0 | 2.28 | 61.0 | 2.40 | 0.37 | 1.62 | 0.89 | 13.5 | 8.55 | 1.58 |
| | 1.3125 | 68.262 | 2.6875 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 1.6 | 0.06 | 56.1 | 71.1 | M88048 | M88010 | 19.2 | 0.76 | 42.5 | 1.67 | 41.0 | 1.61 | 58.0 | 2.28 | 65.0 | 2.56 | 0.55 | 1.10 | 0.60 | 16.3 | 15.2 | 1.07 |
| | 1.3125 | 68.956 | 2.7148 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 46.1 | 55.0 | 14130 | 14274A | 15.5 | 0.61 | 45.0 | 1.77 | 38.5 | 1.52 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.3125 | 68.956 | 2.7148 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 0.8 | 0.03 | 3.2 | 0.13 | 46.1 | 55.0 | 14131 | 14274A | 15.5 | 0.61 | 39.5 | 1.56 | 38.5 | 1.52 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.3125 | 69.012 | 2.7170 | 22.385 | 0.8813 | 19.583 | 0.7710 | 18.415 | 0.7250 | 3.6 | 0.14 | 2.4 | 0.09 | 46.1 | 55.0 | 14130 | 14277 | 18.0 | 0.71 | 45.0 | 1.77 | 38.5 | 1.52 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.3125 | 69.723 | 2.7450 | 19.050 | 0.7500 | 18.923 | 0.7450 | 19.050 | 0.7500 | 3.6 | 0.14 | 1.6 | 0.06 | 47.5 | 49.6 | 26131 | 26274 | 17.7 | 0.70 | 44.5 | 1.75 | 38.5 | 1.52 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.3125 | 72.000 | 2.8346 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 47.5 | 49.6 | 26131 | 26283 | 15.3 | 0.60 | 44.5 | 1.75 | 38.5 | 1.52 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.3125 | 72.000 | 2.8346 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 47.5 | 49.6 | 26132 | 26283 | 15.3 | 0.60 | 40.5 | 1.59 | 38.0 | 1.50 | 62.0 | 2.44 | 65.0 | 2.56 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.3125 | 72.238 | 2.8440 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.2 | 0.05 | 49.7 | 61.3 | 16131 | 16284 | 16.6 | 0.65 | 46.0 | 1.81 | 39.5 | 1.56 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.3125 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 3.6 | 0.14 | 1.8 | 0.07 | 78.8 | 89.3 | 3196 | 3130 | 20.3 | 0.80 | 47.0 | 1.85 | 40.5 | 1.59 | 63.0 | 2.48 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.3125 | 72.626 | 2.8593 | 30.162 | 1.1875 | 29.997 | 1.1810 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 78.8 | 89.3 | 3197 | 3130 | 20.3 | 0.80 | 41.5 | 1.63 | 40.5 | 1.59 | 63.0 | 2.48 | 67.0 | 2.64 | 0.33 | 1.80 | 0.99 | 23.0 | 13.1 | 1.76 |
| | 1.3125 | 73.025 | 2.8750 | 22.225 | 0.8750 | 23.812 | 0.9375 | 17.462 | 0.6875 | 3.6 | 0.14 | 0.8 | 0.03 | 64.2 | 78.1 | 2876 | 2821 | 16.3 | 0.64 | 46.0 | 1.81 | 40.0 | 1.57 | 65.0 | 2.56 | 68.0 | 2.68 | 0.37 | 1.63 | 0.89 | 18.6 | 11.7 | 1.59 |
| | 1.3125 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 1.6 | 0.06 | 0.8 | 0.03 | 74.1 | 92.2 | 2790R | 2735X | 15.9 | 0.63 | 42.0 | 1.65 | 40.0 | 1.57 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.3125 | 73.025 | 2.8750 | 29.370 | 1.1563 | 27.783 | 1.0938 | 23.020 | 0.9063 | 0.8 | 0.03 | 3.2 | 0.13 | 74.3 | 101 | HM88547 | HM88510 | 23.4 | 0.92 | 45.5 | 1.79 | 42.6 | 1.68 | 59.0 | 2.32 | 70.0 | 2.76 | 0.55 | 1.10 | 0.60 | 21.7 | 20.3 | 1.07 |
| | 1.3125 | 74.612 | 2.9375 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 74.1 | 92.2 | 2785R | 2736 | 15.9 | 0.63 | 46.0 | 1.81 | 40.0 | 1.57 | 66.0 | 2.60 | 70.0 | 2.76 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.3125 | 76.200 | 3.0000 | 19.000 | 0.7480 | 18.923 | 0.7450 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 47.5 | 49.6 | 26131 | 26300 | 15.3 | 0.60 | 44.5 | 1.75 | 38.5 | 1.52 | 64.0 | 2.52 | 67.0 | 2.64 | 0.36 | 1.67 | 0.92 | 13.7 | 8.40 | 1.63 |
| | 1.3125 | 76.200 | 3.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
 d 34.925 ~ (34.980) mm
 1.3750 ~ (1.3772) inch

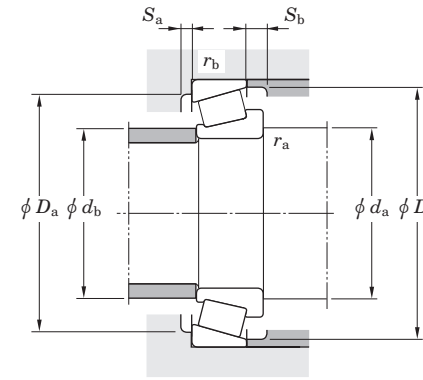
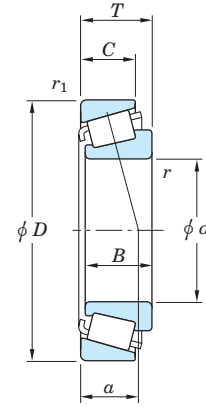


| | | | |
|---|---|-----------------|-------|
| $P = XF_r + YF_a$ $P_0 = 0.5 F_r + Y_0 F_a$ or $P_0 = F_r$ | | | |
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|------|----------------|------|----------------|------|----------------|------|--------------------|------|-----------------------|----------------|----------------|--------------------------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | (500 rpm for 3 000 Hrs.) | | K |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | mm | inch | |
| 34.925 | 1.3750 | 65.088 | 2.5625 | 18.034 | 0.7100 | 18.288 | 0.7200 | 13.970 | 0.5500 | SP ¹⁾ | SP ¹⁾ | 1.2 | 0.05 | 48.0 | 58.5 | LM48548 | LM48510 | 14.3 | 0.56 | 46.0 | 1.81 | 40.0 | 1.57 | 58.0 | 2.28 | 61.0 | 2.40 | 0.38 | 1.59 | 0.88 | 13.8 | 8.90 | 1.55 |
| | 1.3750 | 68.956 | 2.7148 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 1.6 | 0.06 | 3.2 | 0.13 | 46.1 | 55.0 | 14137A | 14274A | 15.5 | 0.61 | 42.0 | 1.65 | 40.0 | 1.57 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.3750 | 68.956 | 2.7148 | 19.845 | 0.7813 | 19.583 | 0.7710 | 15.875 | 0.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 46.1 | 55.0 | 14138A | 14274A | 15.5 | 0.61 | 46.0 | 1.81 | 40.0 | 1.57 | 59.0 | 2.32 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.3750 | 69.012 | 2.7170 | 26.982 | 1.0623 | 26.721 | 1.0520 | 15.875 | 0.6250 | 0.8 | 0.03 | 1.2 | 0.05 | 46.1 | 55.0 | 14136A | 14276 | 22.6 | 0.89 | 40.0 | 1.57 | 38.0 | 1.50 | 60.0 | 2.36 | 63.0 | 2.48 | 0.38 | 1.57 | 0.86 | 13.4 | 8.70 | 1.53 |
| | 1.3750 | 72.233 | 2.8438 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.842 | 0.7812 | 2.4 | 0.09 | 2.4 | 0.09 | 66.9 | 87.4 | HM88649 | HM88610 | 20.7 | 0.81 | 48.5 | 1.91 | 42.5 | 1.67 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| | 1.3750 | 72.238 | 2.8440 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.2 | 0.05 | 49.7 | 61.3 | 16284 | | 16.6 | 0.65 | 46.5 | 1.83 | 40.5 | 1.59 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.3750 | 73.025 | 2.8750 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 55.0 | 65.7 | 02877 | 02820 | 18.4 | 0.72 | 48.5 | 1.91 | 42.0 | 1.65 | 62.0 | 2.44 | 68.0 | 2.68 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 |
| | 1.3750 | 73.025 | 2.8750 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 3.6 | 0.14 | 0.8 | 0.03 | 55.0 | 65.7 | 02877 | 02830 | 18.4 | 0.72 | 48.5 | 1.91 | 42.0 | 1.65 | 64.0 | 2.52 | 69.0 | 2.72 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 |
| | 1.3750 | 73.025 | 2.8750 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 3.2 | 0.13 | 55.0 | 65.7 | 02878 | 02820 | 18.4 | 0.72 | 42.5 | 1.67 | 42.0 | 1.65 | 62.0 | 2.44 | 68.0 | 2.68 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 |
| | 1.3750 | 73.025 | 2.8750 | 22.225 | 0.8750 | 23.812 | 0.9375 | 17.462 | 0.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 64.2 | 78.1 | 2877 | 2820 | 16.3 | 0.64 | 47.5 | 1.87 | 41.0 | 1.61 | 62.0 | 2.44 | 68.0 | 2.68 | 0.37 | 1.63 | 0.89 | 18.6 | 11.7 | 1.59 |
| | 1.3750 | 73.025 | 2.8750 | 22.225 | 0.8750 | 23.812 | 0.9375 | 17.462 | 0.6875 | 0.8 | 0.03 | 0.8 | 0.03 | 64.2 | 78.1 | 2878 | 2821 | 16.3 | 0.64 | 42.5 | 1.67 | 41.0 | 1.61 | 65.0 | 2.56 | 68.0 | 2.68 | 0.37 | 1.63 | 0.89 | 18.6 | 11.7 | 1.59 |
| | 1.3750 | 73.025 | 2.8750 | 23.812 | 0.9375 | 24.608 | 0.9688 | 19.050 | 0.7500 | 1.6 | 0.06 | 0.8 | 0.03 | 72.2 | 87.3 | 25877R | 25821 | 15.8 | 0.62 | 43.0 | 1.69 | 40.5 | 1.59 | 65.0 | 2.56 | 68.0 | 2.68 | 0.29 | 2.07 | 1.14 | 20.9 | 10.4 | 2.02 |
| | 1.3750 | 73.025 | 2.8750 | 23.812 | 0.9375 | 24.608 | 0.9688 | 19.050 | 0.7500 | 3.6 | 0.14 | 2.4 | 0.09 | 72.2 | 87.3 | 25878R | 25820 | 15.8 | 0.62 | 47.0 | 1.85 | 40.5 | 1.59 | 64.0 | 2.52 | 68.0 | 2.68 | 0.29 | 2.07 | 1.14 | 20.9 | 10.4 | 2.02 |
| | 1.3750 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 5.2 | 0.20 | 0.8 | 0.03 | 74.1 | 92.2 | 2786R | 2735X | 15.9 | 0.63 | 51.0 | 2.01 | 41.0 | 1.61 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.3750 | 73.025 | 2.8750 | 26.988 | 1.0625 | 26.975 | 1.0620 | 22.225 | 0.8750 | 3.6 | 0.14 | 1.6 | 0.06 | 77.8 | 94.1 | 23690 | 23620 | 18.8 | 0.74 | 49.0 | 1.93 | 42.0 | 1.65 | 64.0 | 2.52 | 68.0 | 2.68 | 0.37 | 1.62 | 0.89 | 22.6 | 14.2 | 1.58 |
| | 1.3750 | 76.200 | 3.0000 | 20.638 | 0.8125 | 20.940 | 0.8244 | 15.507 | 0.6105 | 1.6 | 0.06 | 1.2 | 0.05 | 57.3 | 65.9 | 28137 | 28300 | 16.5 | 0.65 | 43.5 | 1.71 | 41.0 | 1.61 | 68.0 | 2.68 | 71.0 | 2.80 | 0.40 | 1.49 | 0.82 | 16.5 | 11.3 | 1.46 |
| | 1.3750 | 76.200 | 3.0000 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 0.8 | 0.03 | 1.6 | 0.06 | 74.1 | 92.2 | 2793R | 2729X | 15.9 | 0.63 | 42.0 | 1.65 | 41.0 | 1.61 | 67.0 | 2.64 | 70.0 | 2.76 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.3750 | 76.200 | 3.0000 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 74.1 | 92.2 | 2796R | 2720 | 15.9 | 0.63 | 47.5 | 1.87 | 41.0 | 1.61 | 66.0 | 2.60 | 70.0 | 2.76 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.3750 | 76.200 | 3.0000 | 29.370 | 1.1563 | 28.575 | 1.1250 | 23.020 | 0.9063 | 3.6 | 0.14 | 0.8 | 0.03 | 79.5 | 107 | HM89446 | HM89411 | 23.9 | 0.94 | 53.0 | 2.09 | 44.5 | 1.75 | 65.0 | 2.56 | 73.0 | 2.87 | 0.55 | 1.10 | 0.60 | 23.2 | 21.7 | 1.07 |
| | 1.3750 | 76.200 | 3.0000 | 29.370 | 1.1563 | 28.575 | 1.1250 | 23.812 | 0.9375 | 3.6 | 0.14 | 1.2 | 0.05 | 80.9 | 97.4 | 31593 | 31521 | 21.6 | 0.85 | 50.0 | 1.97 | 43.5 | 1.71 | 66.0 | 2.60 | 72.0 | 2.83 | 0.40 | 1.49 | 0.82 | 23.6 | 16.2 | 1.46 |
| | 1.3750 | 76.200 | 3.0000 | 29.370 | 1.1563 | 28.575 | 1.1250 | 23.812 | 0.9375 | 1.6 | 0.06 | 3.2 | 0.13 | 80.9 | 97.4 | 31594 | 31520 | 21.6 | 0.85 | 46.0 | 1.81 | 43.5 | 1.71 | 64.0 | 2.52 | 72.0 | 2.83 | 0.40 | 1.49 | 0.82 | 23.6 | 16.2 | 1.46 |
| | 1.3750 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 87.4 | 105 | 3478 | 3420 | 20.8 | 0.82 | 50.0 | 1.97 | 43.5 | 1.71 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.3750 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 87.4 | 105 | 3482 | 3420 | 20.8 | 0.82 | 44.0 | 1.73 | 43.5 | 1.71 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.3750 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 335 | 332 | 15.1 | 0.59 | 42.5 | 1.67 | 41.5 | 1.63 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3750 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 1.2 | 0.05 | 1.2 | 0.05 | 68.0 | 74.8 | 340 | 332 | 15.1 | 0.59 | 43.5 | 1.71 | 41.5 | 1.63 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3750 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 3.6 | 0.14 | 1.2 | 0.05 | 68.0 | 74.8 | 343 | 332 | 15.1 | 0.59 | 47.5 | 1.87 | 41.5 | 1.63 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3750 | 80.000 | 3.1496 | 24.176 | 0.9518 | 22.403 | 0.8820 | 21.000 | 0.8268 | 0.8 | 0.03 | 2.4 | 0.09 | 68.0 | 74.8 | 335 | 332A | 18.3 | 0.72 | 42.5 | 1.67 | 41.5 | 1.63 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3750 | 80.000 | 3.1496 | 24.176 | 0.9518 | 22.403 | 0.8820 | 21.000 | 0.8268 | 3.6 | 0.14 | 2.4 | 0.09 | 68.0 | 74.8 | 343 | 332A | 18.3 | 0.72 | 47.5 | 1.87 | 41.5 | 1.63 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3750 | 80.000 | 3.1496 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 91.0 | 106 | 3379 | 3325 | 18.7 | 0.74 | 48.0 | 1.89 | 41.5 | 1.63 | 70.0 | 2.76 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.3750 | 80.035 | 3.1510 | 24.608 | 0.9688 | 23.698 | 0.9330 | 18.512 | 0.7288 | 0.8 | 0.03 | 1.6 | 0.06 | 73.2 | 91.6 | 27875 | 27820 | 22.2 | 0.87 | 45.5 | 1.79 | 44.5 | 1.75 | 68.0 | 2.68 | 75.0 | 2.95 | 0.56 | 1.07 | 0.59 | 21.2 | 20.3 | 1.04 |
| 1.3750 | 85.725 | 3.3750 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 1.2 | 0.05 | 108 | 136 | 3872 | 3821 | 22.9 | 0.90 | 53.0 | 2.09 | 46.0 | 1.81 | 75.0 | 2.95 | 81.0 | 3.19 | 0.40 | 1.49 | 0.82 | 31.5 | 21.7 | 1.46 | |
| 1.3750 | 85.725 | 3.3750 | 30.162 | 1.1875 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (34.980) ~ (36.512) mm
(1.3772) ~ (1.4375) inch



$$P = XF_r + YF_a$$

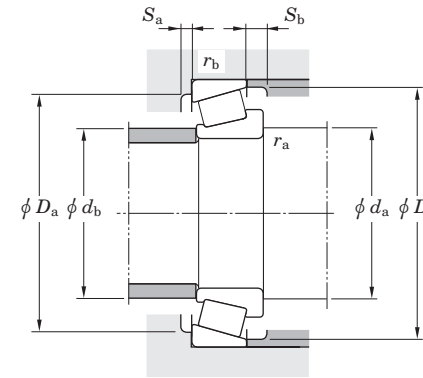
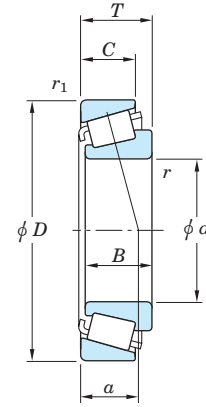
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 34.980 | 1.3772 | 59.975 | 2.3612 | 15.875 | 0.6250 | 16.764 | 0.6600 | 11.938 | 0.4700 | SP ¹⁾ | SP ¹⁾ | 1.2 | 0.05 | 35.7 | 48.5 | L68149 | L68111 | 13.2 | 0.52 | 45.5 | 1.79 | 39.0 | 1.54 | 53.0 | 2.09 | 56.0 | 2.20 | 0.42 | 1.44 | 0.79 | 10.3 | 7.35 | 1.41 |
| 34.988 | 1.3775 | 61.973 | 2.4399 | 16.700 | 0.6575 | 17.000 | 0.6693 | 13.599 | 0.5354 | SP ¹⁾ | SP ¹⁾ | 1.0 | 0.04 | 40.8 | 52.8 | LM78349 | LM78310 | 14.5 | 0.57 | 46.0 | 1.81 | 40.0 | 1.57 | 54.0 | 2.13 | 59.0 | 2.32 | 0.44 | 1.35 | 0.74 | 11.8 | 8.95 | 1.32 |
| | 1.3775 | 65.987 | 2.5979 | 20.638 | 0.8125 | 20.638 | 0.8125 | 16.670 | 0.6563 | 3.6 | 0.14 | 2.4 | 0.09 | 54.1 | 67.0 | M38547 | M38511 | 15.1 | 0.59 | 46.0 | 1.81 | 39.5 | 1.56 | 59.0 | 2.32 | 62.0 | 2.44 | 0.35 | 1.70 | 0.93 | 15.7 | 9.50 | 1.66 |
| 35.000 | 1.3780 | 73.025 | 2.8750 | 26.988 | 1.0625 | 26.975 | 1.0620 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 77.8 | 94.1 | 23691 | 23621 | 18.8 | 0.74 | 49.0 | 1.93 | 42.0 | 1.65 | 63.0 | 2.48 | 68.0 | 2.68 | 0.37 | 1.62 | 0.89 | 22.6 | 14.2 | 1.58 |
| | 1.3780 | 77.788 | 3.0625 | 26.988 | 1.0625 | 26.975 | 1.0620 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 77.8 | 94.1 | 23691 | 23623 | 18.8 | 0.74 | 49.0 | 1.93 | 42.0 | 1.65 | 65.0 | 2.56 | 71.0 | 2.80 | 0.37 | 1.62 | 0.89 | 22.6 | 14.2 | 1.58 |
| | 1.3780 | 79.375 | 3.1250 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 0.8 | 0.03 | 0.8 | 0.03 | 81.1 | 105 | 26883R | 26822 | 16.4 | 0.65 | 42.5 | 1.67 | 42.0 | 1.65 | 71.0 | 2.80 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.3780 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 1.6 | 0.06 | 3.2 | 0.13 | 87.4 | 105 | 3480 | 3420 | 20.8 | 0.82 | 44.5 | 1.75 | 42.5 | 1.67 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.3780 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 87.4 | 105 | 3492X | 3420 | 20.8 | 0.82 | 49.0 | 1.93 | 44.0 | 1.73 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.3780 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 339 | 332 | 15.1 | 0.59 | 42.5 | 1.67 | 41.5 | 1.63 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3780 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 2.0 | 0.08 | 1.2 | 0.05 | 68.0 | 74.8 | 339X | 332 | 15.1 | 0.59 | 45.5 | 1.79 | 41.5 | 1.63 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3780 | 80.000 | 3.1496 | 24.176 | 0.9518 | 22.403 | 0.8820 | 21.000 | 0.8268 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 339 | 332A | 18.3 | 0.72 | 42.5 | 1.67 | 41.5 | 1.63 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.3780 | 80.167 | 3.1562 | 25.400 | 1.0000 | 25.400 | 1.0000 | 20.638 | 0.8125 | 0.8 | 0.03 | 3.2 | 0.13 | 81.1 | 105 | 26883R | 26820 | 18.0 | 0.71 | 42.5 | 1.67 | 42.0 | 1.65 | 69.0 | 2.72 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.3780 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 0.8 | 0.03 | 1.6 | 0.06 | 98.2 | 112 | 421 | 414 | 16.9 | 0.67 | 42.5 | 1.67 | 42.0 | 1.65 | 77.0 | 3.03 | 80.0 | 3.15 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.3780 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 0.8 | 0.03 | 3.2 | 0.13 | 98.2 | 112 | 421 | 414A | 16.9 | 0.67 | 42.5 | 1.67 | 42.0 | 1.65 | 76.0 | 2.99 | 79.0 | 3.11 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.3780 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 3.6 | 0.14 | 2.4 | 0.09 | 103 | 122 | 441 | 432 | 18.4 | 0.72 | 49.0 | 1.93 | 43.5 | 1.71 | 83.0 | 3.27 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| 35.306 | 1.3900 | 73.025 | 2.8750 | 22.225 | 0.8750 | 23.812 | 0.9375 | 17.462 | 0.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 64.2 | 78.1 | 2880 | 2820 | 16.3 | 0.64 | 48.0 | 1.89 | 42.0 | 1.65 | 62.0 | 2.44 | 68.0 | 2.68 | 0.37 | 1.63 | 0.89 | 18.6 | 11.7 | 1.59 |
| 35.717 | 1.4062 | 72.233 | 2.8438 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.842 | 0.7812 | 3.6 | 0.14 | 2.4 | 0.09 | 66.9 | 87.4 | HM88648 | HM88610 | 20.7 | 0.81 | 52.0 | 2.05 | 42.5 | 1.67 | 60.0 | 2.36 | 69.0 | 2.72 | 0.55 | 1.10 | 0.60 | 19.6 | 18.3 | 1.07 |
| 36.449 | 1.4350 | 73.025 | 2.8750 | 22.225 | 0.8750 | 22.225 | 0.8750 | 17.462 | 0.6875 | 0.8 | 0.03 | 3.2 | 0.13 | 55.0 | 65.7 | 02884 | 02820 | 18.4 | 0.72 | 44.5 | 1.75 | 42.0 | 1.65 | 62.0 | 2.44 | 69.0 | 2.72 | 0.45 | 1.32 | 0.73 | 16.0 | 12.4 | 1.29 |
| 36.487 | 1.4365 | 73.025 | 2.8750 | 23.812 | 0.9375 | 24.608 | 0.9688 | 19.050 | 0.7500 | 1.6 | 0.06 | 0.8 | 0.03 | 72.2 | 87.3 | 25880R | 25821 | 15.8 | 0.62 | 44.0 | 1.73 | 42.0 | 1.65 | 65.0 | 2.56 | 68.0 | 2.68 | 0.29 | 2.07 | 1.14 | 20.9 | 10.4 | 2.02 |
| | 1.4365 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 1.6 | 0.06 | 0.8 | 0.03 | 74.1 | 92.2 | 2780R | 2735X | 15.9 | 0.63 | 44.5 | 1.75 | 42.5 | 1.67 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.4365 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 74.1 | 92.2 | 2794R | 2735X | 15.9 | 0.63 | 49.0 | 1.93 | 42.5 | 1.67 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.4365 | 79.375 | 3.1250 | 25.400 | 1.0000 | 25.654 | 1.0100 | 20.638 | 0.8125 | 1.6 | 0.06 | 3.2 | 0.13 | 74.1 | 92.2 | 2780R | 2734 | 17.5 | 0.69 | 44.5 | 1.75 | 42.5 | 1.67 | 68.0 | 2.68 | 70.0 | 2.76 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.4365 | 80.167 | 3.1562 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 91.0 | 106 | 3378 | 3320 | 18.7 | 0.74 | 49.0 | 1.93 | 44.5 | 1.75 | 70.0 | 2.76 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.4365 | 81.755 | 3.2187 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 91.0 | 106 | 3378 | 3329 | 18.7 | 0.74 | 49.0 | 1.93 | 44.5 | 1.75 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| 36.512 | 1.4375 | 68.262 | 2.6875 | 15.875 | 0.6250 | 16.520 | 0.6504 | 11.908 | 0.4688 | 1.6 | 0.06 | 1.6 | 0.06 | 46.1 | 53.8 | 19143R | 19268 | 14.5 | 0.57 | 44.0 | 1.73 | 42.0 | 1.65 | 61.0 | 2.40 | 65.0 | 2.56 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.4375 | 69.012 | 2.7170 | 19.050 | 0.7500 | 19.050 | 0.7500 | 15.083 | 0.5938 | 3.6 | 0.14 | 0.8 | 0.03 | 49.2 | 62.0 | 13682 | 13620 | 16.1 | 0.63 | 48.0 | 1.89 | 41.5 | 1.63 | 62.0 | 2.44 | 65.0 | 2.56 | 0.40 | 1.49 | 0.82 | 14.2 | 9.75 | 1.46 |
| | 1.4375 | 71.438 | 2.8125 | 15.875 | 0.6250 | 16.520 | 0.6504 | 11.908 | 0.4688 | 1.6 | 0.06 | 1.0 | 0.04 | 46.1 | 53.8 | 19143R | 19281 | 14.5 | 0.57 | 44.0 | 1.73 | 42.0 | 1.65 | 63.0 | 2.48 | 66.0 | 2.60 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.4375 | 71.996 | 2.8345 | 17.018 | 0.6700 | 16.520 | 0.6504 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 46.1 | 53.8 | 19143R | 19283 | 15.7 | 0.62 | 44.0 | 1.73 | 42.0 | 1.65 | 63.0 | 2.48 | 66.0 | 2.60 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.4375 | 71.996 | 2.8345 | 19.000 | 0.7480 | 20.638 | 0.8125 | 14.237 | 0.5605 | 3.6 | 0.14 | 1.6 | 0.06 | 49.7 | 61.3 | 16143 | 16282 | 15.0 | 0.59 | 48.5 | 1.91 | 42.0 | 1.65 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.4375 | 72.238 | 2.8440 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.2 | 0.05 | 49.7 | 61.3 | 16143 | 16284 | 16.6 | 0.65 | 48.5 | 1.91 | 42.0 | 1.65 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.4375 | 76.200 | 3.0000 | 29.370 | 1.1563 | 28.575 | 1.1250 | 23.020 | 0.9063 | 0.8 | 0.03 | 0.8 | 0.03 | 79.5 | 107 | HM89448 | HM89411 | 23.9 | 0.94 | 48.5 | 1.91 | 44.5 | 1.75 | 65.0 | 2.56</ | | | | | | | | |

TS type
d (36.512) ~ (38.100) mm
(1.4375) ~ (1.5000) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

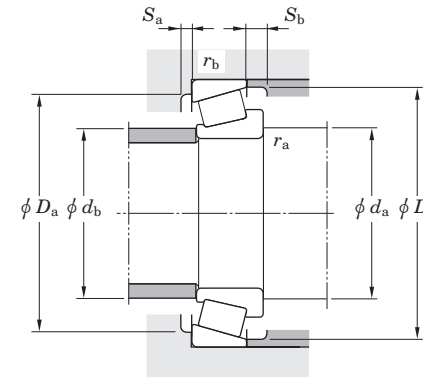
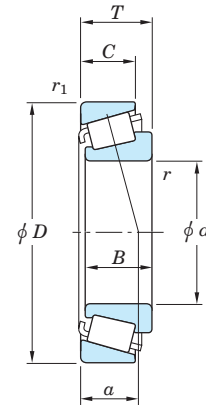
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 36.512 | 1.4375 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 1.6 | 0.06 | 3.2 | 0.13 | 105 | 134 | 46143 | 46368 | 24.0 | 0.94 | 49.0 | 1.93 | 47.5 | 1.87 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.4375 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 1.6 | 0.06 | 1.2 | 0.05 | 105 | 134 | 46143 | 46369 | 24.0 | 0.94 | 49.0 | 1.93 | 47.5 | 1.87 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| 38.100 | 1.5000 | 63.500 | 2.5000 | 12.700 | 0.5000 | 11.908 | 0.4688 | 9.525 | 0.3750 | 1.6 | 0.06 | 0.8 | 0.03 | 25.5 | 33.1 | 13889 | 13830 | 11.9 | 0.47 | 45.0 | 1.77 | 42.5 | 1.67 | 59.0 | 2.32 | 60.0 | 2.36 | 0.35 | 1.73 | 0.95 | 7.30 | 4.30 | 1.69 |
| | 1.5000 | 65.088 | 2.5625 | 12.700 | 0.5000 | 11.908 | 0.4688 | 9.525 | 0.3750 | 1.6 | 0.06 | 0.8 | 0.03 | 25.5 | 33.1 | 13889 | 13836 | 11.9 | 0.47 | 45.0 | 1.77 | 42.5 | 1.67 | 59.0 | 2.32 | 61.0 | 2.40 | 0.35 | 1.73 | 0.95 | 7.30 | 4.30 | 1.69 |
| | 1.5000 | 65.088 | 2.5625 | 18.034 | 0.7100 | 18.288 | 0.7200 | 13.970 | 0.5500 | SP ¹⁾ | SP ¹⁾ | 1.2 | 0.05 | 42.9 | 56.5 | LM29748 | LM29710 | 13.8 | 0.54 | 49.0 | 1.93 | 42.5 | 1.67 | 59.0 | 2.32 | 62.0 | 2.44 | 0.33 | 1.80 | 0.99 | 12.4 | 7.05 | 1.76 |
| | 1.5000 | 65.088 | 2.5625 | 19.812 | 0.7800 | 18.288 | 0.7200 | 15.748 | 0.6200 | 2.4 | 0.09 | 1.2 | 0.05 | 42.9 | 56.5 | LM29749 | LM29711 | 15.6 | 0.61 | 46.0 | 1.81 | 42.5 | 1.67 | 58.0 | 2.28 | 62.0 | 2.44 | 0.33 | 1.80 | 0.99 | 12.4 | 7.05 | 1.76 |
| | 1.5000 | 68.262 | 2.6875 | 19.997 | 0.7873 | 16.520 | 0.6504 | 16.030 | 0.6311 | 1.6 | 0.06 | 1.6 | 0.06 | 46.1 | 53.8 | 19150R | 19269 | 18.6 | 0.73 | 45.0 | 1.77 | 43.0 | 1.69 | 63.0 | 2.48 | 66.0 | 2.60 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.5000 | 68.275 | 2.6880 | 20.000 | 0.7874 | 16.520 | 0.6504 | 16.032 | 0.6312 | 1.6 | 0.06 | 1.6 | 0.06 | 46.1 | 53.8 | 19150R | 19268X | 18.7 | 0.74 | 45.0 | 1.77 | 43.0 | 1.69 | 61.0 | 2.40 | 65.0 | 2.56 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.5000 | 69.012 | 2.7170 | 19.050 | 0.7500 | 19.050 | 0.7500 | 15.083 | 0.5938 | 3.6 | 0.14 | 0.8 | 0.03 | 49.2 | 62.0 | 13685 | 13620 | 16.1 | 0.63 | 49.5 | 1.95 | 43.0 | 1.69 | 62.0 | 2.44 | 65.0 | 2.56 | 0.40 | 1.49 | 0.82 | 14.2 | 9.75 | 1.46 |
| | 1.5000 | 69.012 | 2.7170 | 19.050 | 0.7500 | 19.050 | 0.7500 | 15.083 | 0.5938 | 2.0 | 0.08 | 2.4 | 0.09 | 49.2 | 62.0 | 13687 | 13621 | 16.1 | 0.63 | 46.5 | 1.83 | 43.0 | 1.69 | 61.0 | 2.40 | 65.0 | 2.56 | 0.40 | 1.49 | 0.82 | 14.2 | 9.75 | 1.46 |
| | 1.5000 | 69.012 | 2.7170 | 26.195 | 1.0313 | 26.187 | 1.0310 | 15.083 | 0.5938 | 1.6 | 0.06 | 2.4 | 0.09 | 49.2 | 62.0 | 13686 | 13621 | 16.1 | 0.63 | 46.5 | 1.83 | 43.0 | 1.69 | 61.0 | 2.40 | 65.0 | 2.56 | 0.40 | 1.49 | 0.82 | 14.2 | 9.75 | 1.46 |
| | 1.5000 | 69.012 | 2.7170 | 26.195 | 1.0313 | 26.195 | 1.0313 | 15.083 | 0.5938 | 1.6 | 0.06 | 0.8 | 0.03 | 49.2 | 62.0 | 13686 | 13620 | 16.1 | 0.63 | 46.5 | 1.83 | 43.0 | 1.69 | 62.0 | 2.44 | 65.0 | 2.56 | 0.40 | 1.49 | 0.82 | 14.2 | 9.75 | 1.46 |
| | 1.5000 | 69.969 | 2.7547 | 21.996 | 0.8660 | 19.050 | 0.7500 | 18.029 | 0.7098 | 3.6 | 0.14 | 1.6 | 0.06 | 49.2 | 62.0 | 13685 | 13624 | 16.1 | 0.63 | 49.5 | 1.95 | 43.0 | 1.69 | 61.0 | 2.40 | 65.0 | 2.56 | 0.40 | 1.49 | 0.82 | 14.2 | 9.75 | 1.46 |
| | 1.5000 | 71.438 | 2.8125 | 15.875 | 0.6250 | 16.520 | 0.6504 | 11.908 | 0.4688 | 1.6 | 0.06 | 1.0 | 0.04 | 46.1 | 53.8 | 19150R | 19281 | 14.5 | 0.57 | 45.0 | 1.77 | 43.0 | 1.69 | 63.0 | 2.48 | 66.0 | 2.60 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.5000 | 71.438 | 2.8125 | 17.462 | 0.6875 | 16.520 | 0.6504 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 46.1 | 53.8 | 19150R | 19282 | 16.1 | 0.63 | 45.0 | 1.77 | 43.0 | 1.69 | 63.0 | 2.48 | 66.0 | 2.60 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.5000 | 71.996 | 2.8346 | 17.018 | 0.6700 | 16.520 | 0.6504 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 46.1 | 53.8 | 19150R | 19283 | 15.7 | 0.62 | 45.0 | 1.77 | 43.0 | 1.69 | 63.0 | 2.48 | 66.0 | 2.60 | 0.44 | 1.35 | 0.74 | 13.2 | 10.0 | 1.32 |
| | 1.5000 | 71.996 | 2.8346 | 19.000 | 0.7480 | 20.638 | 0.8125 | 14.237 | 0.5605 | 3.6 | 0.14 | 1.6 | 0.06 | 49.7 | 61.3 | 16150 | 16282 | 15.0 | 0.59 | 49.5 | 1.95 | 43.0 | 1.69 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.5000 | 72.238 | 2.8440 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.2 | 0.05 | 49.7 | 61.3 | 16150 | 16284 | 16.6 | 0.65 | 49.5 | 1.95 | 43.0 | 1.69 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.5000 | 72.238 | 2.8440 | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.6250 | 2.4 | 0.09 | 1.2 | 0.05 | 49.7 | 61.3 | 16151 | 16284 | 16.6 | 0.65 | 49.5 | 1.95 | 43.0 | 1.69 | 63.0 | 2.48 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.5000 | 72.238 | 2.8440 | 23.812 | 0.9375 | 20.638 | 0.8125 | 19.050 | 0.7500 | 3.6 | 0.14 | 2.4 | 0.09 | 49.7 | 61.3 | 16150 | 16283 | 19.8 | 0.78 | 49.5 | 1.95 | 43.0 | 1.69 | 61.0 | 2.40 | 67.0 | 2.64 | 0.40 | 1.49 | 0.82 | 14.4 | 9.90 | 1.46 |
| | 1.5000 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 4.3 | 0.17 | 0.8 | 0.03 | 74.1 | 92.2 | 2776R | 2735X | 15.9 | 0.63 | 52.0 | 2.05 | 43.5 | 1.71 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.5000 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 1.6 | 0.06 | 0.8 | 0.03 | 74.1 | 92.2 | 2788AR | 2735X | 15.9 | 0.63 | 46.0 | 1.81 | 43.5 | 1.71 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.5000 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 74.1 | 92.2 | 2788R | 2735X | 15.9 | 0.63 | 50.0 | 1.97 | 43.5 | 1.71 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.5000 | 76.200 | 3.0000 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 74.1 | 92.2 | 2788R | 2729 | 15.9 | 0.63 | 50.0 | 1.97 | 43.5 | 1.71 | 68.0 | 2.68 | 70.0 | 2.76 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.5000 | 79.375 | 3.1250 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 0.8 | 0.03 | 2.4 | 0.09 | 81.1 | 105 | 26878R | 26822A | 16.4 | 0.65 | 45.0 | 1.77 | 44.5 | 1.75 | 69.0 | 2.72 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.5000 | 79.375 | 3.1250 | 29.370 | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 87.4 | 105 | 3490 | 3420 | 20.8 | 0.82 | 52.0 | 2.05 | 45.9 | 1.81 | 67.0 | 2.64 | 74.0 | 2.91 | 0.37 | 1.64 | 0.90 | 25.5 | 15.9 | 1.60 |
| | 1.5000 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 3.6 | 0.14 | 1.2 | 0.05 | 68.0 | 74.8 | 347 | 332 | 15.1 | 0.59 | 50.0 | 1.97 | 44.0 | 1.73 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.5000 | 80.000 | 3.1496 | 24.176 | 0.9518 | 22.403 | 0.8820 | 21.000 | 0.8268 | 0.8 | 0.03 | 2.4 | 0.09 | 68.0 | 74.8 | 337 | 332A | 18.3 | 0.72 | 44.5 | 1.75 | 44.0 | 1.73 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.5000 | 80.035 | 3.1510 | 21.432 | 0.8438 | 20.940 | 0.8244 | 15.875 | 0.6250 | 1.6 | 0.06 | 1.6 | 0.06 | 57.3 | 65.9 | 28150 | 28317 | 16.9 | 0.67 | 45.5 | 1.79 | 43.5 | 1.71 | 69.0 | 2.72 | 73.0 | 2.87 | 0.40 | 1.49 | 0.82 | 16.5 | 11.3 | 1.46 |
| | 1.5000 | 80.035 | 3.1510 | 21.432 | 0.8438 | 20.940 | 0.8244 | 15.875 | 0.6250 | 3.6 | 0.14 | 1.6 | 0.06 | 57.3 | 65.9 | 28151 | 28317 | 16.9 | 0.67 | 45.5 | 1.79 | 43.5 | 1.71 | 69.0 | 2.72 | 73.0 | 2.87 | 0.40 | 1.49 | 0.82 | 16.5 | 11.3 | 1.46 |
| 1.5000 | 80.035 | 3.1510 | 24.608 | 0.9688 | 23.698 | 0.9330 | 18.512 | 0.7288 | 0.8 | 0.03 | 1.6 | 0.06 | 73.2 | 91.6 | 27880 | 27820 | 22.2 | 0.87 | 48.0 | 1.89 | 47.0 | 1.85 | 68.0 | 2.68 | 75.0 | 2.95 | 0.56 | 1.07 | 0.59 | 21.2 | 20.3 | 1.04 | |
| 1.5000 | 80.035 | 3.1510 | 24.608 | 0.9688 | 23.698 | 0.93 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
d (38.100) ~ (40.000) mm
 (1.5000) ~ (1.5748) inch



$$P = XF_r + YF_a$$

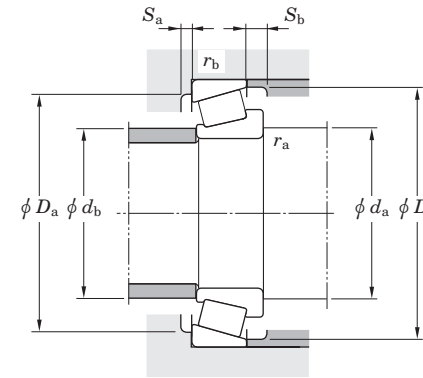
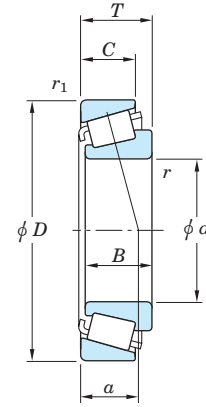
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|----------|--------|----------|--------|----------|--------|----------|--------|-----------------|------|------------------------------|------|-----------------------|------------------------|-------------------|------------------|---------------------|-----------------------|------|-----------------------|------|-----------------------|----------|-----------------------|--------------------|----------|-----------------------|-----------------------|--------|-------|----------|------|
| <i>d</i> | | <i>D</i> | | <i>T</i> | | <i>B</i> | | <i>C</i> | | <i>r</i> (min.) | | <i>r</i> ₁ (min.) | | <i>C</i> _r | <i>C</i> _{0r} | Inner ring (Cone) | Outer ring (Cup) | <i>a</i> | <i>d</i> _a | | <i>d</i> _b | | <i>D</i> _a | | <i>D</i> _b | | <i>e</i> | <i>Y</i> ₁ | <i>Y</i> ₀ | Radial | Axial | <i>K</i> | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 38.100 | 1.5000 | 87.312 | 3.4375 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 95.8 | 120 | 3583R | 3526 | 20.5 | 0.81 | 52.0 | 2.05 | 45.5 | 1.79 | 76.0 | 2.99 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| | 1.5000 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 0.8 | 0.03 | 1.6 | 0.06 | 98.2 | 112 | 415 | 414 | 16.9 | 0.67 | 45.0 | 1.77 | 44.5 | 1.75 | 77.0 | 3.03 | 80.0 | 3.15 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.5000 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 3.6 | 0.14 | 1.6 | 0.06 | 98.2 | 112 | 418 | 414 | 16.9 | 0.67 | 51.0 | 2.01 | 44.5 | 1.75 | 77.0 | 3.03 | 80.0 | 3.15 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.5000 | 88.900 | 3.5000 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 0.8 | 0.03 | 0.8 | 0.03 | 98.2 | 112 | 415 | 414X | 16.9 | 0.67 | 45.0 | 1.77 | 44.5 | 1.75 | 78.0 | 3.07 | 79.0 | 3.11 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.5000 | 90.488 | 3.5625 | 39.688 | 1.5625 | 40.386 | 1.5900 | 33.338 | 1.3125 | 1.6 | 0.06 | 3.2 | 0.13 | 132 | 169 | 4375 | 4335 | 25.6 | 1.01 | 51.0 | 2.01 | 48.5 | 1.91 | 77.0 | 3.03 | 85.0 | 3.35 | 0.28 | 2.11 | 1.16 | 38.8 | 18.9 | 2.06 |
| | 1.5000 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 105 | 123 | 49150 | 49368 | 24.0 | 0.94 | 52.0 | 2.05 | 46.0 | 1.81 | 82.0 | 3.23 | 87.0 | 3.43 | 0.36 | 1.67 | 0.92 | 30.6 | 18.8 | 1.62 |
| | 1.5000 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 0.8 | 0.03 | 3.2 | 0.13 | 105 | 134 | 46150 | 46368 | 24.0 | 0.94 | 49.0 | 1.93 | 47.5 | 1.87 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.5000 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 105 | 134 | 46151 | 46368 | 24.0 | 0.94 | 54.0 | 2.13 | 47.5 | 1.87 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.5000 | 95.250 | 3.7500 | 27.783 | 1.0938 | 28.575 | 1.1250 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 108 | 141 | 33880 | 33822 | 20.4 | 0.80 | 54.0 | 2.13 | 48.0 | 1.89 | 86.0 | 3.39 | 90.0 | 3.54 | 0.33 | 1.82 | 1.00 | 31.4 | 17.7 | 1.77 |
| | 1.5000 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 0.8 | 0.03 | 0.8 | 0.03 | 103 | 122 | 440 | 432A | 18.4 | 0.72 | 46.5 | 1.83 | 45.5 | 1.79 | 84.0 | 3.31 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.5000 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 122 | 444 | 432A | 18.4 | 0.72 | 52.0 | 2.05 | 45.5 | 1.79 | 84.0 | 3.31 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.5000 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 131 | 159 | 525 | 522 | 22.2 | 0.87 | 54.0 | 2.13 | 48.0 | 1.89 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 1.5000 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 0.8 | 0.03 | 3.2 | 0.13 | 131 | 159 | 525X | 522 | 22.2 | 0.87 | 49.0 | 1.93 | 48.0 | 1.89 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 1.5000 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 542 | 532X | 23.9 | 0.94 | 55.0 | 2.17 | 49.0 | 1.93 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 |
| 38.913 | 1.5320 | 122.238 | 4.8125 | 51.595 | 2.0313 | 51.702 | 2.0355 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5561R | 5535 | 39.0 | 1.54 | 57.0 | 2.24 | 52.0 | 2.05 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| 39.624 | 1.5600 | 63.500 | 2.5000 | 12.700 | 0.5000 | 11.908 | 0.4688 | 9.525 | 0.3750 | 1.6 | 0.06 | 0.8 | 0.03 | 25.5 | 33.1 | 13892 | 13830 | 11.9 | 0.47 | 45.0 | 1.77 | 42.5 | 1.67 | 59.0 | 2.32 | 60.0 | 2.36 | 0.35 | 1.73 | 0.95 | 7.30 | 4.30 | 1.69 |
| 39.688 | 1.5625 | 73.025 | 2.8750 | 16.667 | 0.6562 | 17.462 | 0.6875 | 12.700 | 0.5000 | 0.8 | 0.03 | 1.6 | 0.06 | 45.9 | 55.8 | 18587 | 18520 | 14.5 | 0.57 | 46.0 | 1.81 | 46.0 | 1.81 | 66.0 | 2.60 | 69.0 | 2.72 | 0.35 | 1.71 | 0.94 | 13.2 | 7.90 | 1.67 |
| | 1.5625 | 73.025 | 2.8750 | 23.812 | 0.9375 | 25.654 | 1.0100 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 74.1 | 92.2 | 2789R | 2735X | 15.9 | 0.63 | 52.0 | 2.05 | 45.0 | 1.77 | 66.0 | 2.60 | 69.0 | 2.72 | 0.30 | 1.98 | 1.09 | 21.5 | 11.1 | 1.93 |
| | 1.5625 | 80.000 | 3.1496 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 1.6 | 0.06 | 1.2 | 0.05 | 81.1 | 105 | 26880R | 26824 | 16.4 | 0.65 | 48.0 | 1.89 | 45.5 | 1.79 | 70.0 | 2.76 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.5625 | 80.167 | 3.1562 | 25.400 | 1.0000 | 25.400 | 1.0000 | 20.638 | 0.8125 | 3.6 | 0.14 | 0.8 | 0.03 | 81.1 | 105 | 26881R | 26830 | 18.0 | 0.71 | 52.0 | 2.05 | 45.5 | 1.79 | 71.0 | 2.80 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.5625 | 80.167 | 3.1562 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 91.0 | 106 | 3386 | 3320 | 18.7 | 0.74 | 46.5 | 1.83 | 45.5 | 1.79 | 70.0 | 2.76 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.5625 | 81.755 | 3.2187 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 91.0 | 106 | 3382 | 3329 | 18.7 | 0.74 | 52.0 | 2.05 | 45.5 | 1.79 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.5625 | 84.138 | 3.3125 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 91.0 | 106 | 3382 | 3328 | 18.7 | 0.74 | 52.0 | 2.05 | 45.5 | 1.79 | 72.0 | 2.83 | 76.0 | 2.99 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.5625 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 3.6 | 0.14 | 1.6 | 0.06 | 98.2 | 112 | 422 | 414 | 16.9 | 0.67 | 52.0 | 2.05 | 46.5 | 1.83 | 77.0 | 3.03 | 80.0 | 3.15 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.5625 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 98.2 | 112 | 422 | 414A | 16.9 | 0.67 | 52.0 | 2.05 | 46.5 | 1.83 | 76.0 | 2.99 | 79.0 | 3.11 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.5625 | 90.488 | 3.5625 | 39.688 | 1.5625 | 40.386 | 1.5900 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 132 | 169 | 4367 | 4335 | 25.6 | 1.01 | 55.0 | 2.17 | 49.0 | 1.93 | 77.0 | 3.03 | 85.0 | 3.35 | 0.28 | 2.11 | 1.16 | 38.8 | 18.9 | 2.06 |
| | 1.5625 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 103 | 137 | 3774 | 3720 | 22.2 | 0.87 | 55.0 | 2.17 | 51.0 | 2.01 | 82.0 | 3.23 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 1.5625 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 131 | 159 | 525A | 522 | 22.2 | 0.87 | 56.0 | 2.20 | 49.0 | 1.93 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 1.5625 | 120.040 | 4.7260 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 0.8 | 0.03 | 3.2 | 0.13 | 174 | 217 | 620 | 612A | 27.3 | 1.07 | 52.0 | 2.05 | 52.0 | 2.05 | 103.0 | 4.06 | 109.0 | 4.29 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 1.5625 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 0.8 | 0.03 | 3.2 | 0.13 | 174 | 217 | 620 | 612 | 27.3 | 1.07 | 52.0 | 2.05 | 52.0 | 2.05 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| 39.980 | 1.5740 | 76.200 | 3.0000 | 18.009 | 0.7090 | 17.384 | 0.6844 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 51.6 | 63.3 | 11157R | 11300 | 17.5 | 0.69 | 48.5 | 1.91 | 46.0 | 1.81 | 67.0 | 2.64 | 72.0 | 2.83 | 0.49 | 1.23 | 0.68 | 14.9 | 12.4 | 1.20 |
| | 1.5740 | 80.000 | 3.1496 | 18.009 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (40.000) ~ (41.275) mm
(1.5748) ~ (1.6250) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

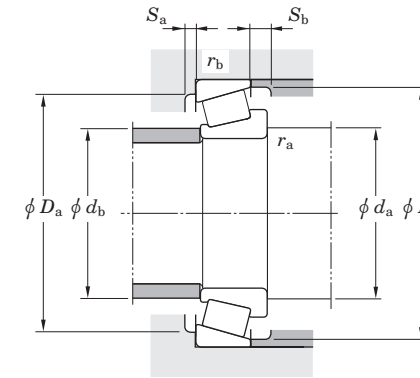
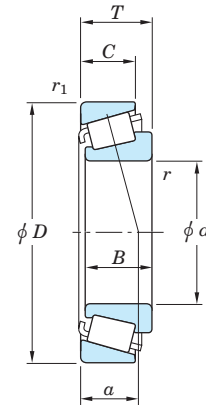
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 40.000 | 1.5748 | 85.725 | 3.3750 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 0.8 | 0.03 | 1.2 | 0.05 | 108 | 136 | 3879 | 3821 | 22.9 | 0.90 | 51.0 | 2.01 | 50.0 | 1.97 | 75.0 | 2.95 | 81.0 | 3.19 | 0.40 | 1.49 | 0.82 | 31.5 | 21.7 | 1.46 |
| | 1.5748 | 87.312 | 3.4375 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 95.8 | 120 | 3582R | 3525 | 20.5 | 0.81 | 53.0 | 2.09 | 48.5 | 1.91 | 75.0 | 2.95 | 81.0 | 3.19 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| | 1.5748 | 88.501 | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.1450 | 22.225 | 0.8750 | 3.6 | 0.14 | 1.6 | 0.06 | 98.2 | 112 | 420 | 414 | 16.9 | 0.67 | 52.0 | 2.05 | 46.0 | 1.81 | 77.0 | 3.03 | 80.0 | 3.15 | 0.26 | 2.28 | 1.25 | 28.6 | 12.9 | 2.22 |
| | 1.5748 | 90.119 | 3.5480 | 23.000 | 0.9055 | 21.692 | 0.8540 | 21.808 | 0.8586 | 4.0 | 0.16 | 2.4 | 0.09 | 71.8 | 81.7 | 350 | 352 | 17.8 | 0.70 | 54.0 | 2.13 | 46.5 | 1.83 | 78.0 | 3.07 | 82.0 | 3.23 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.5748 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 3.6 | 0.14 | 2.4 | 0.09 | 103 | 122 | 442S | 432 | 23.6 | 0.93 | 54.0 | 2.13 | 49.0 | 1.93 | 83.0 | 3.27 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.5748 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 543 | 532X | 23.9 | 0.94 | 57.0 | 2.24 | 50.0 | 1.97 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 |
| 40.483 | 1.5938 | 82.550 | 3.2500 | 29.370 | 1.1563 | 28.575 | 1.1250 | 23.020 | 0.9063 | 3.6 | 0.14 | 3.2 | 0.13 | 87.3 | 117 | HM801349 | HM801310 | 24.4 | 0.96 | 58.0 | 2.28 | 49.0 | 1.93 | 68.0 | 2.68 | 78.0 | 3.07 | 0.55 | 1.10 | 0.60 | 25.5 | 23.8 | 1.07 |
| 41.275 | 1.6250 | 73.025 | 2.8750 | 16.667 | 0.6562 | 17.462 | 0.6875 | 12.700 | 0.5000 | 3.6 | 0.14 | 1.6 | 0.06 | 45.9 | 55.8 | 18590 | 18520 | 14.5 | 0.57 | 53.0 | 2.09 | 46.0 | 1.81 | 66.0 | 2.60 | 69.0 | 2.72 | 0.35 | 1.71 | 0.94 | 13.2 | 7.90 | 1.67 |
| | 1.6250 | 73.025 | 2.8750 | 16.667 | 0.6562 | 17.462 | 0.6875 | 12.700 | 0.5000 | 1.2 | 0.05 | 1.6 | 0.06 | 45.9 | 55.8 | 18591 | 18520 | 14.5 | 0.57 | 47.5 | 1.87 | 46.0 | 1.81 | 66.0 | 2.60 | 69.0 | 2.72 | 0.35 | 1.71 | 0.94 | 13.2 | 7.90 | 1.67 |
| | 1.6250 | 73.431 | 2.8910 | 19.558 | 0.7700 | 19.812 | 0.7800 | 14.732 | 0.5800 | 3.6 | 0.14 | 0.8 | 0.03 | 57.8 | 73.0 | LM501349 | LM501310 | 16.1 | 0.63 | 53.0 | 2.09 | 46.5 | 1.83 | 67.0 | 2.64 | 70.0 | 2.76 | 0.40 | 1.50 | 0.83 | 16.7 | 11.4 | 1.46 |
| | 1.6250 | 73.431 | 2.8910 | 21.430 | 0.8437 | 19.812 | 0.7800 | 16.604 | 0.6537 | 3.6 | 0.14 | 0.8 | 0.03 | 57.8 | 73.0 | LM501349 | LM501314 | 18.0 | 0.71 | 53.0 | 2.09 | 46.5 | 1.83 | 66.0 | 2.60 | 70.0 | 2.76 | 0.40 | 1.50 | 0.83 | 16.7 | 11.4 | 1.46 |
| | 1.6250 | 73.431 | 2.8910 | 23.012 | 0.9060 | 19.812 | 0.7800 | 18.186 | 0.7160 | 3.6 | 0.14 | 2.4 | 0.09 | 57.8 | 73.0 | LM501349 | LM501311 | 16.1 | 0.63 | 53.0 | 2.09 | 46.5 | 1.83 | 64.0 | 2.52 | 70.0 | 2.76 | 0.40 | 1.50 | 0.83 | 16.7 | 11.4 | 1.46 |
| | 1.6250 | 76.200 | 3.0000 | 18.009 | 0.7090 | 17.384 | 0.6844 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 51.6 | 63.3 | 11162R | 11300 | 17.5 | 0.69 | 49.0 | 1.93 | 46.5 | 1.83 | 67.0 | 2.64 | 72.0 | 2.83 | 0.49 | 1.23 | 0.68 | 14.9 | 12.4 | 1.20 |
| | 1.6250 | 76.200 | 3.0000 | 18.009 | 0.7090 | 17.384 | 0.6844 | 14.288 | 0.5625 | 1.6 | 0.06 | 1.6 | 0.06 | 51.6 | 63.3 | 11162UR | 11300 | 17.5 | 0.69 | 49.0 | 1.93 | 46.0 | 1.81 | 67.0 | 2.64 | 72.0 | 2.83 | 0.49 | 1.23 | 0.68 | 14.9 | 12.4 | 1.20 |
| | 1.6250 | 76.200 | 3.0000 | 18.009 | 0.7090 | 17.384 | 0.6844 | 14.288 | 0.5625 | 0.8 | 0.03 | 1.6 | 0.06 | 51.6 | 63.3 | 11163R | 11300 | 17.5 | 0.69 | 47.0 | 1.85 | 46.5 | 1.83 | 67.0 | 2.64 | 72.0 | 2.83 | 0.49 | 1.23 | 0.68 | 14.9 | 12.4 | 1.20 |
| | 1.6250 | 76.200 | 3.0000 | 22.225 | 0.8750 | 23.020 | 0.9063 | 17.462 | 0.6875 | 3.6 | 0.14 | 0.8 | 0.03 | 66.3 | 83.3 | 24780R | 24720 | 17.4 | 0.69 | 54.0 | 2.13 | 47.0 | 1.85 | 68.0 | 2.68 | 72.0 | 2.83 | 0.39 | 1.53 | 0.84 | 19.2 | 12.9 | 1.49 |
| | 1.6250 | 76.200 | 3.0000 | 22.225 | 0.8750 | 23.020 | 0.9063 | 17.462 | 0.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 66.3 | 83.3 | 24780R | 24722 | 17.4 | 0.69 | 54.0 | 2.13 | 47.0 | 1.85 | 66.0 | 2.60 | 72.0 | 2.83 | 0.39 | 1.53 | 0.84 | 19.2 | 12.9 | 1.49 |
| | 1.6250 | 76.200 | 3.0000 | 22.225 | 0.8750 | 23.020 | 0.9063 | 17.462 | 0.6875 | 0.8 | 0.03 | 0.8 | 0.03 | 66.3 | 83.3 | 24781R | 24720 | 17.4 | 0.69 | 47.0 | 1.85 | 47.0 | 1.85 | 68.0 | 2.68 | 72.0 | 2.83 | 0.39 | 1.53 | 0.84 | 19.2 | 12.9 | 1.49 |
| | 1.6250 | 76.200 | 3.0000 | 25.400 | 1.0000 | 23.020 | 0.9063 | 20.638 | 0.8125 | 3.6 | 0.14 | 2.4 | 0.09 | 66.3 | 83.3 | 24780R | 24721 | 20.6 | 0.81 | 54.0 | 2.13 | 47.0 | 1.85 | 66.0 | 2.60 | 72.0 | 2.83 | 0.39 | 1.53 | 0.84 | 19.2 | 12.9 | 1.49 |
| | 1.6250 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 0.8 | 0.03 | 1.2 | 0.05 | 68.0 | 74.8 | 336 | 332 | 15.1 | 0.59 | 47.0 | 1.85 | 46.0 | 1.81 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.6250 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 3.6 | 0.14 | 1.2 | 0.05 | 68.0 | 74.8 | 342 | 332 | 15.1 | 0.59 | 53.0 | 2.09 | 46.0 | 1.81 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.6250 | 80.000 | 3.1496 | 28.575 | 1.1250 | 29.977 | 1.1802 | 17.826 | 0.7018 | 3.6 | 0.14 | 1.2 | 0.05 | 68.0 | 74.8 | 342A | 332 | 22.7 | 0.89 | 53.0 | 2.09 | 46.0 | 1.81 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.6250 | 80.000 | 3.1496 | 31.750 | 1.2500 | 29.977 | 1.1802 | 21.000 | 0.8268 | 3.6 | 0.14 | 2.4 | 0.09 | 68.0 | 74.8 | 342A | 332A | 22.7 | 0.89 | 53.0 | 2.09 | 46.0 | 1.81 | 71.0 | 2.80 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.6250 | 80.167 | 3.1562 | 25.400 | 1.0000 | 25.400 | 1.0000 | 20.638 | 0.8125 | 0.8 | 0.03 | 3.2 | 0.13 | 81.1 | 105 | 26885R | 26820 | 17.9 | 0.70 | 48.0 | 1.89 | 47.0 | 1.85 | 69.0 | 2.72 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.6250 | 80.167 | 3.1562 | 29.370 | 1.1563 | 25.400 | 1.0000 | 24.608 | 0.9688 | 3.6 | 0.14 | 3.2 | 0.13 | 81.1 | 105 | 26882R | 26821 | 17.9 | 0.70 | 54.0 | 2.13 | 47.0 | 1.85 | 68.0 | 2.68 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.6250 | 82.550 | 3.2500 | 26.543 | 1.0450 | 25.654 | 1.0100 | 20.193 | 0.7950 | 3.6 | 0.14 | 3.2 | 0.13 | 83.7 | 105 | M802048 | M802011 | 23.3 | 0.92 | 57.0 | 2.24 | 50.6 | 1.99 | 70.0 | 2.76 | 79.0 | 3.11 | 0.55 | 1.10 | 0.60 | 24.2 | 22.6 | 1.07 |
| | 1.6250 | 84.138 | 3.3125 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 91.0 | 106 | 3383 | 3328 | 18.7 | 0.74 | 52.0 | 2.05 | 46.0 | 1.81 | 72.0 | 2.83 | 76.0 | 2.99 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.6250 | 84.138 | 3.3125 | 29.370 | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 91.0 | 106 | 3384 | 3328 | 18.7 | 0.74 | 48.0 | 1.89 | 41.5 | 1.63 | 72.0 | 2.83 | 76.0 | 2.99 | 0.27 | 2.20 | 1.21 | 26.6 | 12.4 | 2.14 |
| | 1.6250 | 84.138 | 3.3125 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 95.8 | 120 | 3577R | 3520 | 20.5 | 0.81 | 54.0 | 2.13 | 48.0 | 1.89 | 74.0 | 2.91 | 79.5 | 3.13 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| | 1.6250 | 84.138 | 3.3125 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 1.6 | 0.06 | 3.2 | 0.13 | 95.8 | 120 | 3585R | 3520 | 20.5 | 0.81 | 50.0 | 1.97 | 48.0 | 1.89 | 74.0 | 2.91 | 79.5 | 3.13 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| | 1.6250 | 85.725 | 3.3750 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 1.2 | 0.05 | 108 | 136 | 3877 | 3821 | 22.9 | 0.90 | 57.0 | 2.24 | 50.3 | 1.98 | 75.0 | 2.95 | 81.0 | 3.19 | 0.40 | 1.49 | 0.82 | 31.5 | 21.7 | 1.46 |
| | 1.6250 | 85.725 | 3.3750 | 30.162 | 1.1875 | 30.162 | 1.187 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
 d (41.275) ~ (44.450) mm
 (1.6250) ~ (1.7500) inch



$$P = XF_r + YF_a$$

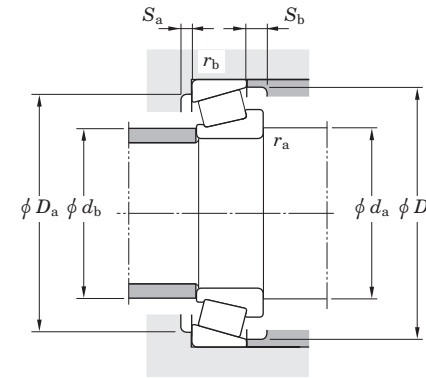
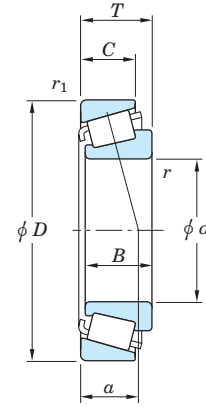
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 41.275 | 1.6250 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 105 | 123 | 49162 | 49368 | 22.9 | 0.90 | 55.0 | 2.17 | 49.0 | 1.93 | 82.0 | 3.23 | 87.0 | 3.43 | 0.36 | 1.67 | 0.92 | 30.6 | 18.8 | 1.62 |
| | 1.6250 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 0.8 | 0.03 | 3.2 | 0.13 | 105 | 134 | 46162 | 46368 | 24.0 | 0.94 | 52.0 | 2.05 | 51.0 | 2.01 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.6250 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 1.2 | 0.05 | 2.4 | 0.09 | 103 | 122 | 439 | 432 | 18.4 | 0.72 | 51.0 | 2.01 | 48.5 | 1.91 | 83.0 | 3.27 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.6250 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 122 | 447 | 432A | 18.4 | 0.72 | 55.0 | 2.17 | 48.5 | 1.91 | 84.0 | 3.31 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.6250 | 95.250 | 3.7500 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 3.6 | 0.14 | 3.2 | 0.13 | 104 | 140 | HM804840 | HM804810 | 26.5 | 1.04 | 61.0 | 2.40 | 54.0 | 2.13 | 81.0 | 3.19 | 91.0 | 3.58 | 0.55 | 1.10 | 0.60 | 30.4 | 28.4 | 1.07 |
| | 1.6250 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 131 | 159 | 526 | 522 | 22.2 | 0.87 | 57.0 | 2.24 | 50.0 | 1.97 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 1.6250 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 0.8 | 0.03 | 3.2 | 0.13 | 131 | 159 | 526A | 522 | 22.2 | 0.87 | 52.0 | 2.05 | 50.0 | 1.97 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 1.6250 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 1.6 | 0.06 | 3.2 | 0.13 | 109 | 144 | 464A | 453X | 23.6 | 0.93 | 54.0 | 2.13 | 52.0 | 2.05 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 1.6250 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 1.6 | 0.06 | 3.2 | 0.13 | 148 | 187 | 59162 | 59412 | 26.9 | 1.06 | 55.0 | 2.17 | 54.0 | 2.13 | 92.0 | 3.62 | 99.0 | 3.90 | 0.40 | 1.49 | 0.82 | 43.2 | 29.6 | 1.46 |
| | 1.6250 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 1.6 | 0.06 | 3.2 | 0.13 | 141 | 195 | HM807035 | HM807010 | 29.3 | 1.15 | 60.0 | 2.36 | 57.0 | 2.24 | 89.0 | 3.50 | 100.0 | 3.94 | 0.49 | 1.23 | 0.68 | 41.3 | 34.4 | 1.20 |
| 1.6250 | 107.950 | 4.2500 | 27.783 | 1.0938 | 29.317 | 1.1542 | 22.225 | 0.8750 | 2.4 | 0.09 | 0.8 | 0.03 | 109 | 144 | 464 | 453A | 23.6 | 0.93 | 56.0 | 2.20 | 52.0 | 2.05 | 97.0 | 3.82 | 100.0 | 3.94 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 | |
| 1.6250 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 541 | 532X | 23.9 | 0.94 | 58.0 | 2.28 | 52.0 | 2.05 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 | |
| 42.000 | 1.6535 | 76.200 | 3.0000 | 18.009 | 0.7090 | 17.384 | 0.6844 | 14.288 | 0.5625 | 2.0 | 0.08 | 1.6 | 0.06 | 51.6 | 63.3 | 11165XR | 11300 | 17.5 | 0.69 | 51.0 | 2.01 | 46.0 | 1.81 | 67.0 | 2.64 | 72.0 | 2.83 | 0.49 | 1.23 | 0.68 | 14.9 | 12.4 | 1.20 |
| | 1.6535 | 76.200 | 3.0000 | 18.009 | 0.7090 | 17.384 | 0.6844 | 14.288 | 0.5625 | 4.3 | 0.17 | 3.6 | 0.14 | 51.6 | 63.3 | 11165XSR | 11300 | 17.5 | 0.69 | 53.0 | 2.09 | 46.0 | 1.81 | 67.0 | 2.64 | 72.0 | 2.83 | 0.49 | 1.23 | 0.68 | 14.9 | 12.4 | 1.20 |
| 42.070 | 1.6563 | 90.488 | 3.5625 | 39.688 | 1.5625 | 40.386 | 1.5900 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 132 | 169 | 4395 | 4335 | 25.6 | 1.01 | 58.0 | 2.28 | 51.0 | 2.01 | 77.0 | 3.03 | 85.0 | 3.35 | 0.28 | 2.11 | 1.16 | 38.8 | 18.9 | 2.06 |
| 42.850 | 1.6870 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 0.8 | 0.03 | 3.2 | 0.13 | 109 | 144 | 461 | 453X | 23.6 | 0.93 | 54.5 | 2.15 | 54.0 | 2.13 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| 42.862 | 1.6875 | 76.992 | 3.0312 | 17.463 | 0.6875 | 17.145 | 0.6750 | 11.908 | 0.4688 | 1.6 | 0.06 | 1.6 | 0.06 | 48.4 | 62.2 | 12168 | 12303 | 17.5 | 0.69 | 51.0 | 2.01 | 48.5 | 1.91 | 68.0 | 2.68 | 73.0 | 2.87 | 0.51 | 1.19 | 0.65 | 13.0 | 11.3 | 1.16 |
| | 1.6875 | 82.931 | 3.2650 | 26.988 | 1.0625 | 25.400 | 1.0000 | 22.225 | 0.8750 | 2.4 | 0.09 | 2.4 | 0.09 | 77.2 | 100 | 25578 | 25523 | 20.7 | 0.81 | 53.0 | 2.09 | 49.5 | 1.95 | 72.0 | 2.83 | 77.0 | 3.03 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| | 1.6875 | 83.058 | 3.2700 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 77.2 | 100 | 25576 | 25521 | 17.5 | 0.69 | 55.0 | 2.17 | 49.0 | 1.93 | 72.0 | 2.83 | 77.0 | 3.03 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| | 1.6875 | 84.138 | 3.3125 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 95.8 | 120 | 3579R | 3520 | 20.5 | 0.81 | 56.0 | 2.20 | 49.5 | 1.95 | 74.0 | 2.91 | 79.5 | 3.13 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| | 1.6875 | 85.000 | 3.3464 | 25.400 | 1.0000 | 25.608 | 1.0082 | 20.638 | 0.8125 | 3.6 | 0.14 | 1.2 | 0.05 | 80.0 | 106 | 2973 | 2924 | 18.9 | 0.74 | 55.0 | 2.17 | 49.0 | 1.93 | 76.0 | 2.99 | 80.0 | 3.15 | 0.35 | 1.73 | 0.95 | 23.3 | 13.8 | 1.69 |
| | 1.6875 | 114.300 | 4.5000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 2.0 | 0.08 | 3.2 | 0.13 | 189 | 230 | 65383 | 65320 | 31.7 | 1.25 | 60.0 | 2.36 | 56.0 | 2.20 | 97.0 | 3.82 | 107.0 | 4.21 | 0.43 | 1.40 | 0.77 | 55.4 | 40.7 | 1.36 |
| 42.875 | 1.6880 | 76.200 | 3.0000 | 25.400 | 1.0000 | 25.400 | 1.0000 | 20.638 | 0.8125 | 1.6 | 0.06 | 1.6 | 0.06 | 81.1 | 105 | 26886R | 26823 | 18.0 | 0.71 | 51.0 | 2.01 | 48.5 | 1.91 | 69.0 | 2.72 | 73.0 | 2.87 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.6880 | 79.375 | 3.1250 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 81.1 | 105 | 26884R | 26822 | 16.1 | 0.63 | 55.0 | 2.17 | 48.5 | 1.91 | 71.0 | 2.80 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.6880 | 80.000 | 3.1496 | 21.000 | 0.8268 | 22.403 | 0.8820 | 17.826 | 0.7018 | 3.6 | 0.14 | 1.2 | 0.05 | 68.0 | 74.8 | 342S | 332 | 15.1 | 0.59 | 54.0 | 2.13 | 47.5 | 1.87 | 73.0 | 2.87 | 75.0 | 2.95 | 0.27 | 2.20 | 1.21 | 19.6 | 9.15 | 2.14 |
| | 1.6880 | 80.167 | 3.1562 | 25.400 | 1.0000 | 25.400 | 1.0000 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 81.1 | 105 | 26884R | 26820 | 18.0 | 0.71 | 55.0 | 2.17 | 48.5 | 1.91 | 69.0 | 2.72 | 74.0 | 2.91 | 0.32 | 1.88 | 1.04 | 23.5 | 12.8 | 1.83 |
| | 1.6880 | 82.931 | 3.2650 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 77.2 | 100 | 25577 | 25520 | 17.5 | 0.69 | 55.0 | 2.17 | 49.0 | 1.93 | 74.0 | 2.91 | 77.0 | 3.03 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| | 1.6880 | 83.058 | 3.2700 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 77.2 | 100 | 25577 | 25521 | 17.5 | 0.69 | 55.0 | 2.17 | 49.0 | 1.93 | 72.0 | 2.83 | 77.0 | 3.03 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| 44.450 | 1.7500 | 73.025 | 2.8750 | 18.258 | 0.7188 | 18.258 | 0.7188 | 15.083 | 0.5938 | 1.6 | 0.06 | 1.6 | 0.06 | 47.2 | 65.5 | L102849 | L102810 | 14.6 | 0.57 | 51.0 | 2.01 | 49.0 | 1.93 | 66.0 | 2.60 | 69.0 | 2.72 | 0.32 | 1.88 | 1.04 | 13.7 | 7.45 | 1.84 |
| | 1.7500 | 76.992 | 3.0312 | 17.463 | 0.6875 | 17.145 | 0.6750 | 11.908 | 0.4688 | 1.6 | 0.06 | 1.6 | 0.06 | 48.4 | 62.2 | 12175 | 12303 | 17.5 | 0.69 | 52.0 | 2.05 | 49.5 | 1.95 | 68.0 | 2.68 | 73.0 | 2.87 | 0.51 | 1.19 | 0.65 | 13.0 | 11.3 | 1.16 |
| | 1.7500 | 79.375 | 3.1250 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 2.8 | 0.11 | 1.6 | 0.06 | 47.1 | 59.1 | 18685 | 18620 | 16.0 | 0.63 | 54.0 | 2.13 | 49.5 | 1.95 | 71.0 | 2.80 | 74.0 | 2.91 | 0.37 | 1.60 | 0.88 | 13.6 | 8.70 | 1.56 |
| | 1.7500 | 82.931 | 3.2650 | 23.812 | 0.9375 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (44.450) mm
(1.7500) inch



$$P = XF_r + YF_a$$

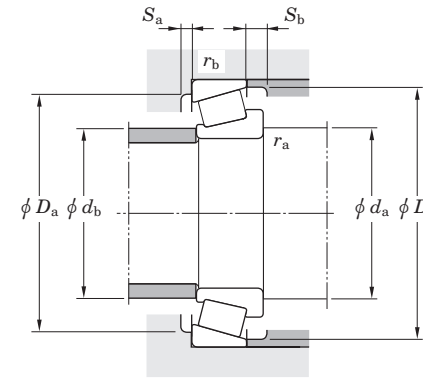
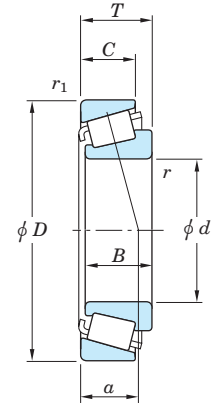
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 44.450 | 1.7500 | 85.000 | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.8540 | 17.462 | 0.6875 | 0.8 | 0.03 | 1.2 | 0.05 | 71.8 | 81.7 | 355A | 354A | 15.5 | 0.61 | 51.0 | 2.01 | 50.0 | 1.97 | 77.0 | 3.03 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.7500 | 85.000 | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.8540 | 17.462 | 0.6875 | 3.6 | 0.14 | 1.2 | 0.05 | 71.8 | 81.7 | 355X | 354A | 15.5 | 0.61 | 56.0 | 2.20 | 50.0 | 1.97 | 77.0 | 3.03 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.7500 | 85.000 | 3.3465 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 2.4 | 0.09 | 77.2 | 100 | 25580 | 25526 | 17.5 | 0.69 | 57.0 | 2.24 | 50.0 | 1.97 | 74.0 | 2.91 | 78.0 | 3.07 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| | 1.7500 | 85.000 | 3.3465 | 25.400 | 1.0000 | 25.608 | 1.0082 | 20.638 | 0.8125 | 3.6 | 0.14 | 1.2 | 0.05 | 80.0 | 106 | 2975 | 2924 | 18.9 | 0.74 | 54.0 | 2.13 | 51.0 | 2.01 | 76.0 | 2.99 | 80.0 | 3.15 | 0.35 | 1.73 | 0.95 | 23.3 | 13.8 | 1.69 |
| | 1.7500 | 87.312 | 3.4375 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 5.6 | 0.22 | 3.2 | 0.13 | 95.8 | 120 | 3578AR | 3525 | 20.5 | 0.81 | 57.0 | 2.24 | 51.0 | 2.01 | 75.0 | 2.95 | 81.0 | 3.19 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| | 1.7500 | 88.900 | 3.5000 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 3.6 | 0.14 | 3.2 | 0.13 | 99.6 | 125 | HM803149 | HM803110 | 26.1 | 1.03 | 62.0 | 2.44 | 53.4 | 2.10 | 74.0 | 2.91 | 85.0 | 3.35 | 0.55 | 1.10 | 0.60 | 28.8 | 26.9 | 1.07 |
| | 1.7500 | 90.000 | 3.5433 | 23.000 | 0.9055 | 21.692 | 0.8540 | 23.000 | 0.9055 | 2.4 | 0.09 | 2.0 | 0.08 | 71.8 | 81.7 | 355 | 353 | 17.8 | 0.70 | 54.0 | 2.13 | 50.0 | 1.97 | 78.0 | 3.07 | 81.0 | 3.19 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.7500 | 90.488 | 3.5625 | 39.688 | 1.5625 | 40.386 | 1.5900 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 132 | 169 | 4370 | 4335 | 25.6 | 1.01 | 57.0 | 2.24 | 51.0 | 2.01 | 77.0 | 3.03 | 85.0 | 3.35 | 0.28 | 2.11 | 1.16 | 38.8 | 18.9 | 2.06 |
| | 1.7500 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 137 | 3782 | 3730 | 22.2 | 0.87 | 58.0 | 2.28 | 52.0 | 2.05 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 1.7500 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 6.4 | 0.25 | 3.2 | 0.13 | 103 | 137 | 3783 | 3720 | 22.2 | 0.87 | 64.0 | 2.52 | 54.0 | 2.13 | 82.0 | 3.23 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 1.7500 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 6.4 | 0.25 | 0.8 | 0.03 | 103 | 137 | 3783 | 3730 | 22.2 | 0.87 | 64.0 | 2.52 | 54.0 | 2.13 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 1.7500 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 105 | 123 | 49175 | 49368 | 22.9 | 0.90 | 59.0 | 2.32 | 53.0 | 2.09 | 82.0 | 3.23 | 87.0 | 3.43 | 0.36 | 1.67 | 0.92 | 30.6 | 18.8 | 1.62 |
| | 1.7500 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 0.8 | 0.03 | 3.2 | 0.13 | 105 | 123 | 49176 | 49368 | 22.9 | 0.90 | 54.0 | 2.13 | 53.0 | 2.09 | 82.0 | 3.23 | 87.0 | 3.43 | 0.36 | 1.67 | 0.92 | 30.6 | 18.8 | 1.62 |
| | 1.7500 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 0.8 | 0.03 | 3.2 | 0.13 | 105 | 134 | 46175 | 46368 | 24.0 | 0.94 | 55.0 | 2.17 | 54.0 | 2.13 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.7500 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 105 | 134 | 46176 | 46368 | 24.0 | 0.94 | 60.0 | 2.36 | 54.0 | 2.13 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.7500 | 93.662 | 3.6875 | 31.750 | 1.2500 | 31.750 | 1.2500 | 26.195 | 1.0313 | 3.6 | 0.14 | 1.2 | 0.05 | 105 | 134 | 46176 | 46369 | 24.0 | 0.94 | 60.0 | 2.36 | 54.0 | 2.13 | 79.0 | 3.11 | 87.0 | 3.43 | 0.40 | 1.49 | 0.82 | 30.8 | 21.1 | 1.46 |
| | 1.7500 | 95.250 | 3.7500 | 27.783 | 1.0938 | 28.575 | 1.1250 | 22.225 | 0.8750 | 0.8 | 0.03 | 2.4 | 0.09 | 108 | 141 | 33885 | 33821 | 20.4 | 0.80 | 53.0 | 2.09 | 53.0 | 2.09 | 85.0 | 3.35 | 90.0 | 3.54 | 0.33 | 1.82 | 1.00 | 31.4 | 17.7 | 1.77 |
| | 1.7500 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 0.8 | 0.03 | 2.4 | 0.09 | 103 | 122 | 435 | 432 | 18.4 | 0.72 | 52.0 | 2.05 | 51.0 | 2.01 | 83.0 | 3.27 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.7500 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 122 | 438 | 432A | 18.4 | 0.72 | 57.0 | 2.24 | 51.0 | 2.01 | 84.0 | 3.31 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| | 1.7500 | 95.250 | 3.7500 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 0.8 | 0.03 | 2.4 | 0.09 | 104 | 140 | HM804842 | HM804810 | 26.5 | 1.04 | 57.0 | 2.24 | 57.0 | 2.24 | 81.0 | 3.19 | 91.0 | 3.58 | 0.55 | 1.10 | 0.60 | 30.4 | 28.4 | 1.07 |
| | 1.7500 | 95.250 | 3.7500 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 3.6 | 0.14 | 2.4 | 0.09 | 104 | 140 | HM804843 | HM804810 | 26.5 | 1.04 | 63.0 | 2.48 | 57.0 | 2.24 | 81.0 | 3.19 | 91.0 | 3.58 | 0.55 | 1.10 | 0.60 | 30.4 | 28.4 | 1.07 |
| | 1.7500 | 95.250 | 3.7500 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 3.6 | 0.14 | 0.8 | 0.03 | 104 | 140 | HM804843 | HM804811 | 26.5 | 1.04 | 63.0 | 2.48 | 57.0 | 2.24 | 83.0 | 3.27 | 91.0 | 3.58 | 0.55 | 1.10 | 0.60 | 30.4 | 28.4 | 1.07 |
| | 1.7500 | 98.425 | 3.8750 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 6.4 | 0.25 | 3.2 | 0.13 | 103 | 137 | 3783 | 3732 | 22.2 | 0.87 | 64.0 | 2.52 | 54.0 | 2.13 | 84.0 | 3.31 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 1.7500 | 98.425 | 3.8750 | 30.162 | 1.1875 | 31.750 | 1.2500 | 25.400 | 1.0000 | 0.8 | 0.03 | 3.2 | 0.13 | 114 | 143 | 49576 | 49520 | 24.1 | 0.95 | 55.0 | 2.17 | 54.0 | 2.13 | 88.0 | 3.46 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 |
| | 1.7500 | 101.600 | 4.0000 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 0.8 | 0.03 | 0.8 | 0.03 | 114 | 143 | 49576 | 49522 | 24.1 | 0.95 | 55.0 | 2.17 | 54.0 | 2.13 | 90.0 | 3.54 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 |
| | 1.7500 | 101.600 | 4.0000 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 114 | 143 | 49577 | 49520 | 24.1 | 0.95 | 60.0 | 2.36 | 54.0 | 2.13 | 88.0 | 3.46 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 |
| | 1.7500 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 131 | 159 | 527 | 522 | 22.2 | 0.87 | 59.0 | 2.32 | 53.0 | 2.09 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 1.7500 | 104.775 | 4.1250 | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 126 | 165 | 45280 | 45221 | 22.2 | 0.87 | 55.0 | 2.17 | 54.0 | 2.13 | 95.0 | 3.74 | 99.0 | 3.90 | 0.33 | 1.80 | 0.99 | 36.6 | 20.8 | 1.76 |
| | 1.7500 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 1.0 | 0.04 | 148 | 187 | 59175 | 59413 | 26.9 | 1.06 | 63.0 | 2.48 | 56.0 | 2.20 | 92.0 | 3.62 | 99.0 | 3.90 | 0.40 | 1.49 | 0.82 | 43.2 | 29.6 | 1.46 |
| | 1.7500 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 0.8 | 0.03 | 3.2 | 0.13 | 148 | 187 | 59176 | 59412 | 26.9 | 1.06 | 57.0 | 2.24 | 56.0 | 2.20 | 92.0 | 3.62 | 99.0 | 3.90 | 0.40 | 1.49 | 0.82 | 43.2 | 29.6 | 1.46 |
| | 1.7500 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 195 | HM807040 | HM807010 | 29.3 | 1.15 | 66.0 | 2.60 | 59.0 | 2.32 | 89.0 | 3.50 | 100.0 | 3.94 | 0.49 | 1.23 | 0.68 | 41.3 | 34.4 | 1.20 |
| | 1.7500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d 44.869 ~ (47.625) mm
1.7665 ~ (1.8750) inch



$$P = XF_r + YF_a$$

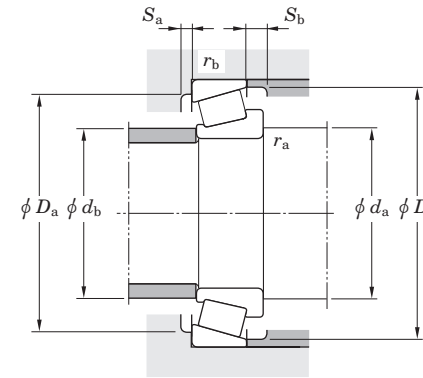
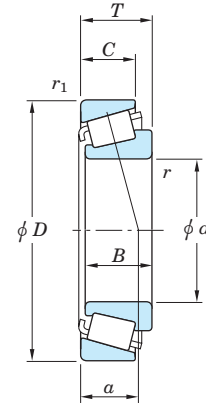
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|------|----------------|----------------|----------------|----------------|----------|----------------|--------------------|--------|-----------------------|------|--------|------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | | d _a | d _b | D _a | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | | | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 44.869 | 1.7665 | 92.075 | 3.6250 | 24.608 | 0.9688 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 0.8 | 0.03 | 84.8 | 119 | 28576R | 28521 | 19.9 | 0.78 | 59.0 | 2.32 | 53.0 | 2.09 | 83.0 | 3.27 | 87.0 | 3.43 | 0.38 | 1.59 | 0.87 | 24.7 | 15.9 | 1.55 |
| 44.983 | 1.7710 | 85.000 | 3.3465 | 26.988 | 1.0625 | 25.400 | 1.0000 | 22.225 | 0.8750 | 1.6 | 0.06 | 2.4 | 0.09 | 77.2 | 100 | 25584 | 25527 | 20.7 | 0.81 | 53.0 | 2.09 | 51.0 | 2.01 | 73.0 | 2.87 | 78.0 | 3.07 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| | 1.7710 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 103 | 137 | 3776 | 3720 | 22.2 | 0.87 | 59.0 | 2.32 | 53.0 | 2.09 | 82.0 | 3.23 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 1.7710 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 4.3 | 0.17 | 3.2 | 0.13 | 131 | 159 | 527S | 522 | 22.2 | 0.87 | 61.0 | 2.40 | 53.0 | 2.09 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| 45.000 | 1.7717 | 85.000 | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.8540 | 17.462 | 0.6875 | 1.6 | 0.06 | 1.2 | 0.05 | 71.8 | 81.7 | 358 | 354A | 15.5 | 0.61 | 52.5 | 2.07 | 50.0 | 1.97 | 77.0 | 3.03 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.7717 | 85.000 | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.8540 | 17.462 | 0.6875 | 3.6 | 0.14 | 1.2 | 0.05 | 71.8 | 81.7 | 358A | 354A | 15.5 | 0.61 | 56.5 | 2.22 | 50.0 | 1.97 | 77.0 | 3.03 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.7717 | 90.000 | 3.5433 | 20.000 | 0.7874 | 22.225 | 0.8750 | 15.875 | 0.6250 | 2.0 | 0.08 | 2.0 | 0.08 | 74.3 | 87.3 | 367 | 362 | 15.4 | 0.61 | 55.0 | 2.17 | 51.0 | 2.01 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 |
| | 1.7717 | 90.119 | 3.5480 | 23.000 | 0.9055 | 21.692 | 0.8540 | 21.808 | 0.8586 | 1.6 | 0.06 | 2.4 | 0.09 | 71.8 | 81.7 | 358 | 352 | 17.8 | 0.70 | 52.5 | 2.07 | 50.0 | 1.97 | 78.0 | 3.07 | 82.0 | 3.23 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.7717 | 100.000 | 3.9370 | 25.000 | 0.9842 | 22.225 | 0.8750 | 21.824 | 0.8592 | 0.8 | 0.03 | 2.0 | 0.08 | 84.4 | 98.5 | 376 | 372 | 21.5 | 0.85 | 57.0 | 2.24 | 54.0 | 2.13 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| | 1.7717 | 100.000 | 3.9370 | 25.000 | 0.9842 | 22.225 | 0.8750 | 21.824 | 0.8592 | 2.4 | 0.09 | 2.0 | 0.08 | 84.4 | 98.5 | 376A | 372 | 21.5 | 0.85 | 57.0 | 2.24 | 54.0 | 2.13 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| | 1.7717 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 2.4 | 0.09 | 3.2 | 0.13 | 109 | 144 | 458S | 453X | 23.6 | 0.93 | 59.0 | 2.32 | 55.0 | 2.17 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| 1.7717 | 104.775 | 4.1250 | 39.688 | 1.5625 | 40.157 | 1.5810 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 151 | 211 | 4559 | 4535 | 27.3 | 1.07 | 62.0 | 2.44 | 59.0 | 2.32 | 90.0 | 3.54 | 99.0 | 3.90 | 0.34 | 1.79 | 0.98 | 44.4 | 25.4 | 1.74 | |
| 45.230 | 1.7807 | 79.985 | 3.1490 | 19.842 | 0.7812 | 20.638 | 0.8125 | 15.080 | 0.5937 | 2.0 | 0.08 | 1.2 | 0.05 | 55.1 | 70.8 | 17887 | 17831 | 15.9 | 0.63 | 52.0 | 2.05 | 49.5 | 1.95 | 72.0 | 2.83 | 76.0 | 2.99 | 0.37 | 1.64 | 0.90 | 15.9 | 9.95 | 1.60 |
| 45.237 | 1.7810 | 84.138 | 3.3125 | 30.162 | 1.1875 | 30.886 | 1.2160 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 95.8 | 120 | 3586R | 3520 | 20.5 | 0.81 | 58.0 | 2.28 | 52.0 | 2.05 | 74.0 | 2.91 | 79.5 | 3.13 | 0.31 | 1.96 | 1.08 | 27.9 | 14.6 | 1.91 |
| 45.242 | 1.7812 | 73.431 | 2.8910 | 19.558 | 0.7700 | 19.812 | 0.7800 | 15.748 | 0.6200 | 3.6 | 0.14 | 0.8 | 0.03 | 55.6 | 78.1 | LM102949 | LM102910 | 14.7 | 0.58 | 56.0 | 2.20 | 50.0 | 1.97 | 68.0 | 2.68 | 70.0 | 2.76 | 0.31 | 1.97 | 1.08 | 16.1 | 8.40 | 1.92 |
| | 1.7812 | 77.788 | 3.0625 | 19.842 | 0.7812 | 19.842 | 0.7812 | 15.080 | 0.5937 | 3.6 | 0.14 | 0.8 | 0.03 | 57.1 | 73.5 | LM603049 | LM603011 | 17.5 | 0.69 | 57.0 | 2.24 | 50.0 | 1.97 | 71.0 | 2.80 | 74.0 | 2.91 | 0.43 | 1.41 | 0.77 | 16.5 | 12.1 | 1.37 |
| | 1.7812 | 77.788 | 3.0625 | 21.430 | 0.8437 | 19.842 | 0.7812 | 16.667 | 0.6562 | 3.6 | 0.14 | 0.8 | 0.03 | 57.1 | 73.5 | LM603049 | LM603012 | 19.1 | 0.75 | 57.0 | 2.24 | 50.0 | 1.97 | 71.0 | 2.80 | 74.0 | 2.91 | 0.43 | 1.41 | 0.77 | 16.5 | 12.1 | 1.37 |
| | 1.7812 | 79.974 | 3.1486 | 19.842 | 0.7812 | 19.842 | 0.7812 | 15.080 | 0.5937 | 3.6 | 0.14 | 0.8 | 0.03 | 57.1 | 73.5 | LM603049 | LM603014 | 17.5 | 0.69 | 57.0 | 2.24 | 50.0 | 1.97 | 71.0 | 2.80 | 74.0 | 2.91 | 0.43 | 1.41 | 0.77 | 16.5 | 12.1 | 1.37 |
| | 1.7812 | 79.974 | 3.1486 | 21.430 | 0.8437 | 19.842 | 0.7812 | 16.667 | 0.6562 | 3.6 | 0.14 | 0.8 | 0.03 | 57.1 | 73.5 | LM603049 | LM603015 | 19.1 | 0.75 | 57.0 | 2.24 | 50.0 | 1.97 | 71.0 | 2.80 | 74.0 | 2.91 | 0.43 | 1.41 | 0.77 | 16.5 | 12.1 | 1.37 |
| 45.618 | 1.7960 | 85.000 | 3.3465 | 23.812 | 0.9375 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 2.4 | 0.09 | 77.2 | 100 | 25590 | 25526 | 17.5 | 0.69 | 58.0 | 2.28 | 51.0 | 2.01 | 74.0 | 2.91 | 78.0 | 3.07 | 0.33 | 1.79 | 0.99 | 22.5 | 12.9 | 1.75 |
| 45.987 | 1.8105 | 74.976 | 2.9518 | 18.000 | 0.7087 | 18.000 | 0.7087 | 14.000 | 0.5512 | 2.4 | 0.09 | 1.6 | 0.06 | 52.6 | 74.6 | LM503349R | LM503310 | 16.0 | 0.63 | 53.0 | 2.09 | 51.0 | 2.01 | 67.0 | 2.64 | 72.0 | 2.83 | 0.40 | 1.49 | 0.82 | 15.2 | 10.4 | 1.46 |
| 46.038 | 1.8125 | 79.375 | 3.1250 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 2.8 | 0.11 | 1.6 | 0.06 | 47.1 | 59.1 | 18690 | 18620 | 16.0 | 0.63 | 56.0 | 2.20 | 51.0 | 2.01 | 71.0 | 2.80 | 74.0 | 2.91 | 0.37 | 1.60 | 0.88 | 13.6 | 8.70 | 1.56 |
| | 1.8125 | 85.000 | 3.3465 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 2.4 | 0.09 | 1.6 | 0.06 | 49.7 | 65.5 | 18780 | 18720 | 17.4 | 0.69 | 56.0 | 2.20 | 52.0 | 2.05 | 77.0 | 3.03 | 80.0 | 3.15 | 0.41 | 1.48 | 0.81 | 14.4 | 9.95 | 1.44 |
| | 1.8125 | 85.000 | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.8540 | 17.462 | 0.6875 | 3.6 | 0.14 | 1.2 | 0.05 | 71.8 | 81.7 | 359A | 354A | 15.5 | 0.61 | 57.0 | 2.24 | 51.0 | 2.01 | 77.0 | 3.03 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.8125 | 85.000 | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.8540 | 17.462 | 0.6875 | 2.4 | 0.09 | 1.2 | 0.05 | 71.8 | 81.7 | 359S | 354A | 15.5 | 0.61 | 55.0 | 2.17 | 51.0 | 2.01 | 77.0 | 3.03 | 80.0 | 3.15 | 0.31 | 1.96 | 1.08 | 20.7 | 10.8 | 1.91 |
| | 1.8125 | 85.000 | 3.3465 | 25.400 | 1.0000 | 25.608 | 1.0082 | 20.638 | 0.8125 | 3.6 | 0.14 | 1.2 | 0.05 | 80.0 | 106 | 2984 | 2924 | 18.9 | 0.74 | 58.0 | 2.28 | 52.0 | 2.05 | 76.0 | 2.99 | 80.0 | 3.15 | 0.35 | 1.73 | 0.95 | 23.3 | 13.8 | 1.69 |
| | 1.8125 | 87.312 | 3.4375 | 26.988 | 1.0625 | 25.608 | 1.0082 | 22.225 | 0.8750 | 3.6 | 0.14 | 2.4 | 0.09 | 80.0 | 106 | 2984 | 2925 | 18.6 | 0.73 | 58.0 | 2.28 | 52.0 | 2.05 | 76.0 | 2.99 | 80.0 | 3.15 | 0.35 | 1.73 | 0.95 | 23.3 | 13.8 | 1.69 |
| | 1.8125 | 95.250 | 3.7500 | 27.783 | 1.0938 | 29.901 | 1.1772 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 122 | 436 | 432A | 18.4 | 0.72 | 59.0 | 2.32 | 52.0 | 2.05 | 84.0 | 3.31 | 87.0 | 3.43 | 0.28 | 2.11 | 1.16 | 30.0 | 14.6 | 2.06 |
| 1.8125 | 95.250 | 3.7500 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 103 | 137 | 3777 | 3726 | 22.2 | 0.87 | 60.0 | 2.36 | 53.0 | 2.09 | 83.0 | 3.27 | 89.0 | 3.50 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 | |
| 47.625 | 1.8750 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 3.6 | 0.14 | 1.2 | 0.05 | 74.3 | 87.3 | 369A | 362A | 16.1 | 0.63 | 60.0 | 2.36 | 53.0 | 2.09 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 |
| | 1.8750 | 88.900 | 3.5000 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 87.1 | 112 | M804049 | M804010 | 23.6 | 0.93 | 62.0 | 2.44 | 55.0 | 2.17 | 76.0 | 2.99 | 85.0 | 3.35 | 0.55 | 1.10 | 0.60 | 25.3 | 23.6 | 1.07 |
| | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (47.625) ~ (50.800) mm
(1.8750) ~ (2.0000) inch



$$P = XF_r + YF_a$$

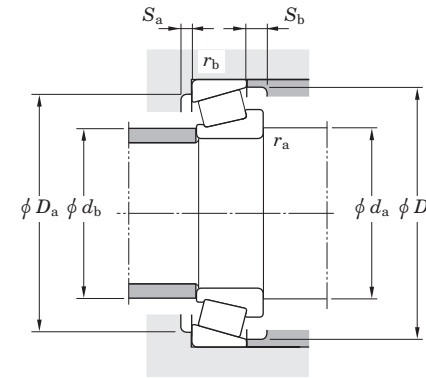
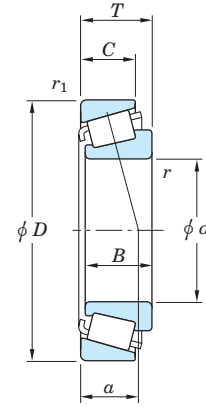
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | | |
|---------------------|--------|---------|---------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | | |
| 47.625 | 1.8750 | 101.600 | 4.0000 | 31.750 | 1.2500 | 29.370 | 1.1563 | 23.020 | 0.9063 | 3.6 | 0.14 | 3.2 | 0.13 | 114 | 143 | 49580 | 49520 | 24.1 | 0.95 | 62.0 | 2.44 | 59.0 | 2.32 | 88.0 | 3.46 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 | |
| | 1.8750 | 101.600 | 4.0000 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 6.4 | 0.25 | 3.2 | 0.13 | 114 | 143 | 49581 | 49520 | 24.1 | 0.95 | 68.0 | 2.68 | 59.0 | 2.32 | 88.0 | 3.46 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 | |
| | 1.8750 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 131 | 159 | 528 | 522 | 22.2 | 0.87 | 62.0 | 2.44 | 55.0 | 2.17 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 | |
| | 1.8750 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 1.6 | 0.06 | 3.2 | 0.13 | 131 | 159 | 528A | 522 | 22.2 | 0.87 | 58.0 | 2.28 | 55.0 | 2.17 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 | |
| | 1.8750 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 4.8 | 0.19 | 3.2 | 0.13 | 109 | 144 | 463 | 453X | 23.6 | 0.93 | 65.0 | 2.56 | 56.0 | 2.20 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 | |
| | 1.8750 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 0.8 | 0.03 | 3.2 | 0.13 | 109 | 144 | 467 | 453X | 23.6 | 0.93 | 57.0 | 2.24 | 56.0 | 2.20 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 | |
| | 1.8750 | 104.775 | 4.1250 | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 126 | 165 | 45282 | 45220 | 22.2 | 0.87 | 64.0 | 2.52 | 59.0 | 2.32 | 93.0 | 3.66 | 99.0 | 3.90 | 0.33 | 1.80 | 0.99 | 36.6 | 20.8 | 1.76 | |
| | 1.8750 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 148 | 187 | 59187 | 59412 | 26.9 | 1.06 | 65.0 | 2.56 | 59.0 | 2.32 | 92.0 | 3.62 | 99.0 | 3.90 | 0.40 | 1.49 | 0.82 | 43.2 | 29.6 | 1.46 | |
| | 1.8750 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 1.6 | 0.06 | 3.2 | 0.13 | 148 | 187 | 59188 | 59412 | 26.9 | 1.06 | 60.0 | 2.36 | 58.0 | 2.28 | 92.0 | 3.62 | 99.0 | 3.90 | 0.40 | 1.49 | 0.82 | 43.2 | 29.6 | 1.46 | |
| | 1.8750 | 107.950 | 4.2500 | 27.783 | 1.0938 | 29.317 | 1.1542 | 22.225 | 0.8750 | 4.8 | 0.19 | 0.8 | 0.03 | 109 | 144 | 463 | 453A | 23.6 | 0.93 | 65.0 | 2.56 | 56.0 | 2.20 | 97.0 | 3.82 | 100.0 | 3.94 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 | |
| | 1.8750 | 107.950 | 4.2500 | 27.783 | 1.0938 | 29.317 | 1.1542 | 22.225 | 0.8750 | 0.8 | 0.03 | 0.8 | 0.03 | 109 | 144 | 467 | 453A | 21.2 | 0.83 | 57.0 | 2.24 | 56.0 | 2.20 | 97.0 | 3.82 | 100.0 | 3.94 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 | |
| | 1.8750 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 536 | 532X | 23.9 | 0.94 | 62.0 | 2.44 | 56.0 | 2.20 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 | |
| | 1.8750 | 117.475 | 4.6250 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 129 | 152 | 66187R | 66461 | 33.2 | 1.31 | 67.0 | 2.64 | 64.0 | 2.52 | 102.0 | 4.02 | 111.0 | 4.37 | 0.63 | 0.96 | 0.53 | 37.5 | 40.1 | 0.93 | |
| | 1.8750 | 117.475 | 4.6250 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 129 | 152 | 66187R | 66462 | 33.2 | 1.31 | 67.0 | 2.64 | 64.0 | 2.52 | 100.0 | 3.94 | 111.0 | 4.37 | 0.63 | 0.96 | 0.53 | 37.5 | 40.1 | 0.93 | |
| | 1.8750 | 120.040 | 4.7260 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 174 | 217 | 617 | 612A | 27.3 | 1.07 | 65.0 | 2.56 | 59.0 | 2.32 | 103.0 | 4.06 | 109.0 | 4.29 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 | |
| | 1.8750 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 174 | 217 | 617 | 612 | 27.3 | 1.07 | 65.0 | 2.56 | 59.0 | 2.32 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 | |
| 48.412 | 1.9060 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 103 | 137 | 3781A | 3720 | 22.2 | 0.87 | 62.0 | 2.44 | 56.0 | 2.20 | 82.0 | 3.23 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 | |
| | 1.9060 | 95.250 | 3.7500 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 2.4 | 0.09 | 3.2 | 0.13 | 104 | 140 | HM804848 | HM804810 | 26.5 | 1.04 | 63.0 | 2.48 | 57.5 | 2.26 | 81.0 | 3.19 | 91.0 | 3.58 | 0.55 | 1.10 | 0.60 | 30.4 | 28.4 | 1.07 | |
| | 1.9060 | 95.250 | 3.7500 | 30.162 | 1.1875 | 29.370 | 1.1563 | 23.020 | 0.9063 | 3.6 | 0.14 | 3.2 | 0.13 | 104 | 140 | HM804849 | HM804810 | 26.5 | 1.04 | 66.0 | 2.60 | 57.5 | 2.26 | 81.0 | 3.19 | 91.0 | 3.58 | 0.55 | 1.10 | 0.60 | 30.4 | 28.4 | 1.07 | |
| 49.212 | 1.9375 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 0.8 | 0.03 | 1.2 | 0.05 | 74.3 | 87.3 | 365S | 362A | 16.1 | 0.63 | 55.0 | 2.17 | 54.0 | 2.13 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 | |
| | 1.9375 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 137 | 3781 | 3730 | 22.2 | 0.87 | 62.0 | 2.44 | 56.0 | 2.20 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 | |
| | 1.9375 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 195 | HM807044 | HM807010 | 29.3 | 1.15 | 69.0 | 2.72 | 63.0 | 2.48 | 89.0 | 3.50 | 100.0 | 3.94 | 0.49 | 1.23 | 0.68 | 41.3 | 34.4 | 1.20 | |
| | 1.9375 | 111.125 | 4.3750 | 38.100 | 1.5000 | 36.957 | 1.4550 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 545 | 532 | 25.5 | 1.00 | 65.0 | 2.56 | 59.0 | 2.32 | 95.0 | 3.74 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 | |
| | 1.9375 | 114.300 | 4.5000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 189 | 230 | 65390 | 65320 | 31.7 | 1.25 | 70.0 | 2.76 | 60.0 | 2.36 | 97.0 | 3.82 | 107.0 | 4.21 | 0.43 | 1.40 | 0.77 | 55.4 | 40.7 | 1.36 | |
| | 1.9375 | 114.300 | 4.5000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 36.068 | 1.4200 | 3.6 | 0.14 | 3.2 | 0.13 | 212 | 263 | HH506348 | HH506310 | 30.6 | 1.20 | 71.0 | 2.80 | 61.0 | 2.40 | 97.0 | 3.82 | 107.0 | 4.21 | 0.40 | 1.49 | 0.82 | 62.0 | 42.6 | 1.46 | |
| | 1.9375 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 1.2 | 0.05 | 3.2 | 0.13 | 221 | 318 | 5562R | 5535 | 31.1 | 1.22 | 63.0 | 2.48 | 60.0 | 2.36 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 | |
| 49.982 | 1.9678 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 546 | 532X | 23.9 | 0.94 | 65.0 | 2.56 | 59.0 | 2.32 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 | |
| | 49.987 | 1.9680 | 92.075 | 3.6250 | 24.608 | 0.9688 | 25.400 | 1.0000 | 19.845 | 0.7813 | 2.4 | 0.09 | 0.8 | 0.03 | 84.8 | 119 | 28579R | 28521 | 19.9 | 0.78 | 60.0 | 2.36 | 56.0 | 2.20 | 83.0 | 3.27 | 87.0 | 3.43 | 0.38 | 1.59 | 0.87 | 24.7 | 15.9 | 1.55 |
| | | 1.9680 | 100.000 | 3.9370 | 25.000 | 0.9842 | 22.225 | 0.8750 | 21.824 | 0.8592 | 2.4 | 0.09 | 2.0 | 0.08 | 84.4 | 98.5 | 378A | 372 | 21.5 | 0.85 | 60.0 | 2.36 | 56.0 | 2.20 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| 1.9680 | | 114.300 | 4.5000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 36.068 | 1.4200 | 3.6 | 0.14 | 0.8 | 0.03 | 212 | 263 | HH506349 | HH506311 | 30.6 | 1.20 | 71.0 | 2.80 | 61.0 | 2.40 | 99.0 | 3.90 | 107.0 | 4.21 | 0.40 | 1.49 | 0.82 | 62.0 | 42.6 | 1.46 | |
| 50.000 | 1.9685 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 2.0 | 0.08 | 1.2 | 0.05 | 74.3 | 87.3 | 365 | 362A | 16.1 | 0.63 | 58.0 | 2.28 | 55.0 | 2.17 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 | |
| | 1.9685 | 88.900 | 3.5000 | 20.638 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (50.800) mm
(2.0000) inch



| | | | |
|---|---|-----------------|-------|
| $P = XF_r + YF_a$ $P_0 = 0.5 F_r + Y_0 F_a$ or $P_0 = F_r$ | | | |
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

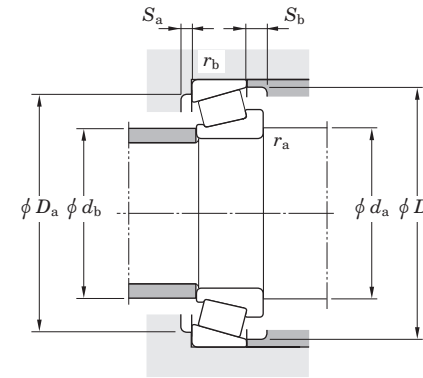
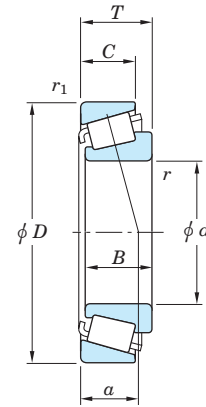
Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|------|----------------|------|----------------|------|----------------|------|--------------------|------|-----------------------|----------------|----------------|--------------------------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | (500 rpm for 3 000 Hrs.) | | K |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | mm | inch | |
| 50.800 | 2.0000 | 83.312 | 3.2800 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 3.6 | 0.14 | 0.8 | 0.03 | 49.7 | 65.5 | 18790 | 18721 | 17.4 | 0.69 | 62.0 | 2.44 | 56.0 | 2.20 | 73.0 | 2.87 | 78.0 | 3.07 | 0.41 | 1.48 | 0.81 | 14.4 | 9.95 | 1.44 |
| | 2.0000 | 85.725 | 3.3750 | 19.050 | 0.7500 | 18.263 | 0.7190 | 12.700 | 0.5000 | 1.6 | 0.06 | 1.6 | 0.06 | 50.7 | 66.4 | 18200 | 18337 | 22.7 | 0.89 | 59.0 | 2.32 | 56.0 | 2.20 | 76.0 | 2.99 | 81.0 | 3.19 | 0.57 | 1.06 | 0.58 | 14.6 | 14.2 | 1.03 |
| | 2.0000 | 88.900 | 3.5000 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 3.6 | 0.14 | 1.2 | 0.05 | 49.7 | 65.5 | 18790 | 18724 | 17.4 | 0.69 | 62.0 | 2.44 | 56.0 | 2.20 | 78.0 | 3.07 | 82.0 | 3.23 | 0.41 | 1.48 | 0.81 | 14.4 | 9.95 | 1.44 |
| | 2.0000 | 88.900 | 3.5000 | 20.638 | 0.8125 | 17.462 | 0.6875 | 16.670 | 0.6563 | 3.6 | 0.14 | 1.2 | 0.05 | 49.7 | 65.5 | 18790 | 18723 | 22.7 | 0.89 | 62.0 | 2.44 | 56.0 | 2.20 | 78.0 | 3.07 | 82.0 | 3.23 | 0.41 | 1.48 | 0.81 | 14.4 | 9.95 | 1.44 |
| | 2.0000 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 1.6 | 0.06 | 1.2 | 0.05 | 74.3 | 87.3 | 368 | 362A | 16.1 | 0.63 | 58.0 | 2.28 | 56.0 | 2.20 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 |
| | 2.0000 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 3.6 | 0.14 | 1.2 | 0.05 | 74.3 | 87.3 | 368A | 362A | 16.1 | 0.63 | 62.0 | 2.44 | 56.0 | 2.20 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 |
| | 2.0000 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 5.2 | 0.20 | 1.2 | 0.05 | 74.3 | 87.3 | 370A | 362A | 16.1 | 0.63 | 65.0 | 2.56 | 56.0 | 2.20 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 |
| | 2.0000 | 89.980 | 3.5425 | 24.750 | 0.9744 | 25.400 | 1.0000 | 19.987 | 0.7869 | 3.6 | 0.14 | 2.4 | 0.09 | 84.8 | 119 | 28580R | 28520 | 20.0 | 0.79 | 63.0 | 2.48 | 57.0 | 2.24 | 81.0 | 3.19 | 86.0 | 3.39 | 0.38 | 1.59 | 0.87 | 24.7 | 15.9 | 1.55 |
| | 2.0000 | 92.075 | 3.6250 | 24.608 | 0.9688 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 0.8 | 0.03 | 84.8 | 119 | 28580R | 28521 | 19.9 | 0.78 | 63.0 | 2.48 | 57.0 | 2.24 | 83.0 | 3.27 | 87.0 | 3.43 | 0.38 | 1.59 | 0.87 | 24.7 | 15.9 | 1.55 |
| | 2.0000 | 92.075 | 3.6250 | 27.780 | 1.0937 | 25.400 | 1.0000 | 23.017 | 0.9062 | 3.6 | 0.14 | 2.4 | 0.09 | 84.8 | 119 | 28580R | 28523 | 23.1 | 0.91 | 63.0 | 2.48 | 57.0 | 2.24 | 81.0 | 3.19 | 86.0 | 3.39 | 0.38 | 1.59 | 0.87 | 24.7 | 15.9 | 1.55 |
| | 2.0000 | 93.264 | 3.6718 | 20.638 | 0.8125 | 22.225 | 0.8750 | 15.083 | 0.5938 | 2.4 | 0.09 | 1.2 | 0.05 | 84.4 | 98.5 | 375 | 374 | 17.1 | 0.67 | 60.0 | 2.36 | 57.0 | 2.24 | 85.0 | 3.35 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 24.2 | 14.0 | 1.73 |
| | 2.0000 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 103 | 137 | 3775 | 3730 | 22.2 | 0.87 | 58.0 | 2.28 | 58.0 | 2.28 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 2.0000 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 103 | 137 | 3780 | 3720 | 22.2 | 0.87 | 64.0 | 2.52 | 58.0 | 2.28 | 82.0 | 3.23 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 2.0000 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 103 | 137 | 3780 | 3730 | 22.2 | 0.87 | 64.0 | 2.52 | 58.0 | 2.28 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 2.0000 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 6.4 | 0.25 | 0.8 | 0.03 | 103 | 137 | 3784 | 3730 | 22.2 | 0.87 | 70.0 | 2.76 | 58.0 | 2.28 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 2.0000 | 95.250 | 3.7500 | 27.783 | 1.0938 | 28.575 | 1.1250 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 108 | 141 | 33889 | 33822 | 20.4 | 0.80 | 64.0 | 2.52 | 58.0 | 2.28 | 86.0 | 3.39 | 90.0 | 3.54 | 0.33 | 1.82 | 1.00 | 31.4 | 17.7 | 1.77 |
| | 2.0000 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 1.6 | 0.06 | 0.8 | 0.03 | 80.4 | 101 | 385AS | 382A | 17.4 | 0.69 | 60.0 | 2.36 | 58.0 | 2.28 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.0000 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 0.8 | 0.03 | 0.8 | 0.03 | 80.4 | 101 | 385AX | 382A | 17.4 | 0.69 | 59.0 | 2.32 | 58.0 | 2.28 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.0000 | 96.838 | 3.8125 | 22.225 | 0.8750 | 22.225 | 0.8750 | 19.050 | 0.7500 | 3.6 | 0.14 | 1.6 | 0.06 | 84.4 | 98.5 | 375S | 372A | 21.5 | 0.85 | 63.0 | 2.48 | 57.0 | 2.24 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| | 2.0000 | 96.838 | 3.8125 | 25.400 | 1.0000 | 21.946 | 0.8640 | 20.274 | 0.7982 | 2.4 | 0.09 | 2.4 | 0.09 | 80.4 | 101 | 385A | 382S | 21.8 | 0.86 | 61.0 | 2.40 | 60.0 | 2.36 | 87.0 | 3.43 | 91.0 | 3.58 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.0000 | 97.630 | 3.8437 | 24.608 | 0.9688 | 24.608 | 0.9688 | 19.446 | 0.7656 | 3.6 | 0.14 | 0.8 | 0.03 | 89.6 | 131 | 28678 | 28622 | 21.2 | 0.83 | 65.0 | 2.56 | 58.0 | 2.28 | 88.0 | 3.46 | 92.0 | 3.62 | 0.40 | 1.49 | 0.82 | 26.1 | 17.9 | 1.45 |
| | 2.0000 | 98.425 | 3.8750 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 103 | 137 | 3780 | 3732 | 22.2 | 0.87 | 64.0 | 2.52 | 58.0 | 2.28 | 84.0 | 3.31 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 2.0000 | 101.600 | 4.0000 | 31.750 | 1.2500 | 31.750 | 1.2500 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 114 | 143 | 49585 | 49520 | 24.1 | 0.95 | 66.0 | 2.60 | 59.0 | 2.32 | 88.0 | 3.46 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 |
| | 2.0000 | 101.600 | 4.0000 | 34.925 | 1.3750 | 31.750 | 1.2500 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 114 | 143 | 49585 | 49521 | 27.3 | 1.07 | 66.0 | 2.60 | 59.0 | 2.32 | 88.0 | 3.46 | 96.0 | 3.78 | 0.40 | 1.50 | 0.82 | 33.4 | 22.8 | 1.46 |
| | 2.0000 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 0.8 | 0.03 | 3.2 | 0.13 | 131 | 159 | 529 | 522 | 22.2 | 0.87 | 59.0 | 2.32 | 58.0 | 2.28 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 2.0000 | 101.600 | 4.0000 | 34.925 | 1.3750 | 36.068 | 1.4200 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 131 | 159 | 529X | 522 | 22.2 | 0.87 | 65.0 | 2.56 | 58.0 | 2.28 | 89.0 | 3.50 | 95.0 | 3.74 | 0.29 | 2.10 | 1.16 | 38.4 | 18.7 | 2.05 |
| | 2.0000 | 104.775 | 4.1250 | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 6.4 | 0.25 | 3.2 | 0.13 | 126 | 165 | 45284 | 45220 | 22.2 | 0.87 | 71.0 | 2.80 | 59.0 | 2.32 | 93.0 | 3.66 | 99.0 | 3.90 | 0.33 | 1.80 | 0.99 | 36.6 | 20.8 | 1.76 |
| | 2.0000 | 104.775 | 4.1250 | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 6.4 | 0.25 | 0.8 | 0.03 | 126 | 165 | 45284 | 45221 | 22.2 | 0.87 | 71.0 | 2.80 | 59.0 | 2.32 | 95.0 | 3.74 | 99.0 | 3.90 | 0.33 | 1.80 | 0.99 | 36.6 | 20.8 | 1.76 |
| | 2.0000 | 104.775 | 4.1250 | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 2.4 | 0.09 | 0.8 | 0.03 | 126 | 165 | 45285 | 45221 | 22.2 | 0.87 | 63.0 | 2.48 | 59.0 | 2.32 | 95.0 | 3.74 | 99.0 | 3.90 | 0.33 | 1.80 | 0.99 | 36.6 | 20.8 | 1.76 |
| | 2.0000 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 148 | 187 | 59200 | 59412 | 26.9 | 1.06 | 68.0 | 2.68 | 61.0 | 2.40 | 92.0 | 3.62 | 99.0 | 3.90 | 0.40 | 1.49 | 0.82 | 43.2 | 29.6 | 1.46 |
| | 2.0000 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 195 | HM807046 | HM807010 | 29.3 | 1.15 | 70.0 | 2.76 | 63.0 | 2.48 | 89.0 | 3.50 | 100.0 | 3.94 | 0.49 | 1.23 | 0.68 | 41.3 | 34. | |

Tapered roller bearings

TS type

d (50.800) ~ (53.975) mm
(2.0000) ~ (2.1250) inch

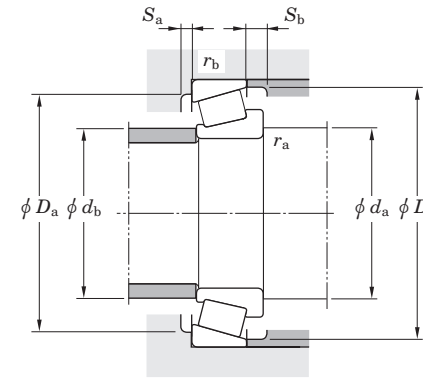
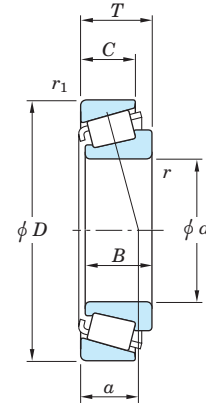


| | | | |
|---|---|-----------------|-------|
| $P = XF_r + YF_a$ $P_0 = 0.5 F_r + Y_0 F_a$ or $P_0 = F_r$ | | | |
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|------------|------|-------------------------|------|-------------|----------|-------------------|------------------|---------------------|-------|------|-------|------|-------|----------|-------|--------------------|------|-----------------------|-------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r_1 (min.) | | C_r | C_{or} | Inner ring (Cone) | Outer ring (Cup) | a | d_a | | d_b | | D_a | | D_b | | e | Y_1 | Y_0 | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 50.800 | 2.0000 | 120.000 | 4.7244 | 40.023 | 1.5757 | 41.275 | 1.6250 | 30.988 | 1.2200 | 3.6 | 0.14 | 3.0 | 0.12 | 174 | 217 | 619 | 613X | 27.3 | 1.07 | 67.0 | 2.64 | 61.0 | 2.40 | 104.0 | 4.09 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 2.0000 | 120.040 | 4.7260 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 1.6 | 0.06 | 174 | 217 | 619 | 612A | 27.3 | 1.07 | 67.0 | 2.64 | 61.0 | 2.40 | 103.0 | 4.06 | 109.0 | 4.29 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 2.0000 | 120.251 | 4.7343 | 44.450 | 1.7500 | 43.764 | 1.7230 | 36.512 | 1.4375 | 1.2 | 0.05 | 3.2 | 0.13 | 221 | 318 | 5565R | 5520 | 31.9 | 1.26 | 67.0 | 2.64 | 65.0 | 2.56 | 110.0 | 4.33 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.0000 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 174 | 217 | 619 | 612 | 27.3 | 1.07 | 67.0 | 2.64 | 61.0 | 2.40 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 2.0000 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 2.4 | 0.09 | 3.2 | 0.13 | 162 | 223 | 555 | 553X | 28.7 | 1.13 | 66.0 | 2.60 | 62.0 | 2.44 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.0000 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 1.2 | 0.05 | 3.2 | 0.13 | 221 | 318 | 5565R | 5535 | 31.1 | 1.22 | 67.0 | 2.64 | 65.0 | 2.56 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.0000 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813836 | HM813811 | 32.9 | 1.30 | 72.0 | 2.83 | 66.0 | 2.60 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.0000 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65200 | 65500 | 35.2 | 1.39 | 75.0 | 2.95 | 69.0 | 2.72 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| | 2.0000 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 1.2 | 0.05 | 208 | 269 | 65200 | 65501 | 35.2 | 1.39 | 75.0 | 2.95 | 69.0 | 2.72 | 110.0 | 4.33 | 120.0 | 4.72 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| 2.0000 | 136.525 | 5.3750 | 46.038 | 1.8125 | 44.450 | 1.7500 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65200 | 65537 | 36.7 | 1.44 | 75.0 | 2.95 | 69.0 | 2.72 | 110.0 | 4.33 | 120.0 | 4.72 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 | |
| 51.592 | 2.0312 | 88.900 | 3.5000 | 20.638 | 0.8125 | 22.225 | 0.8750 | 16.513 | 0.6501 | 2.0 | 0.08 | 1.2 | 0.05 | 74.3 | 87.3 | 368S | 362A | 16.1 | 0.63 | 59.0 | 2.32 | 56.0 | 2.20 | 81.0 | 3.19 | 84.0 | 3.31 | 0.32 | 1.88 | 1.03 | 21.4 | 11.7 | 1.83 |
| | 2.0312 | 100.000 | 3.9370 | 25.000 | 0.9842 | 22.225 | 0.8750 | 21.824 | 0.8592 | 1.6 | 0.06 | 2.0 | 0.08 | 84.4 | 98.5 | 377S | 372 | 21.5 | 0.85 | 60.0 | 2.36 | 58.0 | 2.28 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| 52.388 | 2.0625 | 92.075 | 3.6250 | 24.608 | 0.9688 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 0.8 | 0.03 | 84.8 | 119 | 28584R | 28521 | 19.9 | 0.78 | 65.0 | 2.56 | 58.0 | 2.28 | 83.0 | 3.27 | 87.0 | 3.43 | 0.38 | 1.59 | 0.87 | 24.7 | 15.9 | 1.55 |
| | 2.0625 | 93.264 | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.1930 | 23.812 | 0.9375 | 2.4 | 0.09 | 0.8 | 0.03 | 103 | 137 | 3767 | 3730 | 22.2 | 0.87 | 63.0 | 2.48 | 59.0 | 2.32 | 84.0 | 3.31 | 88.0 | 3.46 | 0.34 | 1.77 | 0.97 | 30.1 | 17.4 | 1.73 |
| | 2.0625 | 95.250 | 3.7500 | 27.783 | 1.0938 | 28.575 | 1.1250 | 22.225 | 0.8750 | 1.6 | 0.06 | 0.8 | 0.03 | 108 | 141 | 33890 | 33822 | 20.4 | 0.80 | 61.0 | 2.40 | 59.0 | 2.32 | 86.0 | 3.39 | 90.0 | 3.54 | 0.33 | 1.82 | 1.00 | 31.4 | 17.7 | 1.77 |
| | 2.0625 | 95.250 | 3.7500 | 27.783 | 1.0938 | 28.575 | 1.1250 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 108 | 141 | 33891 | 33822 | 20.4 | 0.80 | 66.0 | 2.60 | 59.0 | 2.32 | 86.0 | 3.39 | 90.0 | 3.54 | 0.33 | 1.82 | 1.00 | 31.4 | 17.7 | 1.77 |
| | 2.0625 | 100.000 | 3.9370 | 25.000 | 0.9842 | 22.225 | 0.8750 | 21.824 | 0.8592 | 2.4 | 0.09 | 2.0 | 0.08 | 84.4 | 98.5 | 377 | 372 | 21.5 | 0.85 | 62.0 | 2.44 | 58.0 | 2.28 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| | 2.0625 | 100.000 | 3.9370 | 25.000 | 0.9842 | 22.225 | 0.8750 | 21.824 | 0.8592 | 4.8 | 0.19 | 2.0 | 0.08 | 84.4 | 98.5 | 377A | 372 | 21.5 | 0.85 | 67.0 | 2.64 | 58.0 | 2.28 | 86.0 | 3.39 | 90.0 | 3.54 | 0.34 | 1.77 | 0.97 | 24.1 | 14.0 | 1.73 |
| | 2.0625 | 103.188 | 4.0625 | 38.100 | 1.5000 | 36.957 | 1.4550 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 540 | 533A | 23.9 | 0.94 | 71.0 | 2.80 | 60.0 | 2.36 | 95.0 | 3.74 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 |
| | 2.0625 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 1.6 | 0.06 | 3.2 | 0.13 | 109 | 144 | 468 | 453X | 23.6 | 0.93 | 62.0 | 2.44 | 60.0 | 2.36 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.0625 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 1.6 | 0.06 | 138 | 172 | 540 | 532X | 23.9 | 0.94 | 71.0 | 2.80 | 60.0 | 2.36 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 |
| 53.975 | 2.1250 | 88.900 | 3.5000 | 19.050 | 0.7500 | 19.050 | 0.7500 | 13.492 | 0.5312 | 2.4 | 0.09 | 2.0 | 0.08 | 62.9 | 86.8 | LM806649 | LM806610 | 21.5 | 0.85 | 63.0 | 2.48 | 60.0 | 2.36 | 80.0 | 3.15 | 85.0 | 3.35 | 0.55 | 1.10 | 0.60 | 18.1 | 16.9 | 1.07 |
| | 2.1250 | 95.250 | 3.7500 | 27.783 | 1.0938 | 28.575 | 1.1250 | 22.225 | 0.8750 | 1.6 | 0.06 | 0.8 | 0.03 | 108 | 141 | 33895 | 33822 | 20.4 | 0.80 | 63.0 | 2.48 | 60.0 | 2.36 | 86.0 | 3.39 | 90.0 | 3.54 | 0.33 | 1.82 | 1.00 | 31.4 | 17.7 | 1.77 |
| | 2.1250 | 100.000 | 3.9370 | 21.000 | 0.8268 | 21.946 | 0.8640 | 17.826 | 0.7018 | 1.6 | 0.06 | 2.0 | 0.08 | 80.4 | 101 | 389AS | 383A | 17.4 | 0.69 | 62.0 | 2.44 | 60.0 | 2.36 | 89.0 | 3.50 | 93.0 | 3.66 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.1250 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 3.6 | 0.14 | 3.2 | 0.13 | 109 | 144 | 456 | 453X | 23.6 | 0.93 | 68.0 | 2.68 | 61.0 | 2.40 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.1250 | 104.775 | 4.1250 | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 0.8 | 0.03 | 0.8 | 0.03 | 126 | 165 | 45287 | 45221 | 22.2 | 0.87 | 62.0 | 2.44 | 62.0 | 2.44 | 95.0 | 3.74 | 99.0 | 3.90 | 0.33 | 1.80 | 0.99 | 36.6 | 20.8 | 1.76 |
| | 2.1250 | 104.775 | 4.1250 | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 195 | HM807049 | HM807010 | 29.3 | 1.15 | 73.0 | 2.87 | 63.0 | 2.48 | 89.0 | 3.50 | 100.0 | 3.94 | 0.49 | 1.23 | 0.68 | 41.3 | 34.4 | 1.20 |
| | 2.1250 | 104.775 | 4.1250 | 39.688 | 1.5625 | 40.157 | 1.5810 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 151 | 211 | 4595 | 4535 | 27.3 | 1.07 | 70.0 | 2.76 | 63.0 | 2.48 | 90.0 | 3.54 | 99.0 | 3.90 | 0.34 | 1.79 | 0.98 | 44.4 | 25.4 | 1.74 |
| | 2.1250 | 107.950 | 4.2500 | 27.795 | 1.0943 | 29.317 | 1.1542 | 27.000 | 1.0630 | 3.6 | 0.14 | 0.8 | 0.03 | 109 | 144 | 456 | 453 | 23.6 | 0.93 | 68.0 | 2.68 | 61.0 | 2.40 | 99.0 | 3.90 | 100.0 | 3.94 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.1250 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 138 | 172 | 539 | 532X | 23.9 | 0.94 | 68.0 | 2.68 | 61.0 | 2.40 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 |
| | 2.1250 | 107.950 | 4.2500 | 36.512 | 1.4375 | 36.957 | 1.4550 | 28.575 | 1.1250 | 5.6 | 0.22 | 3.2 | 0.13 | 138 | 172 | 539A | 532X | 23.9 | 0.94 | 72.0 | 2.83 | 61.0 | 2.40 | 94.0 | 3.70 | 100.0 | 3.94 | 0.30 | 2.03 | 1.11 | 40.4 | 20.5 | 1.97 |
| | 2.1250 | 117.475 | 4.6250 | 33.338 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (53.975) ~ (57.150) mm
(2.1250) ~ (2.2500) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

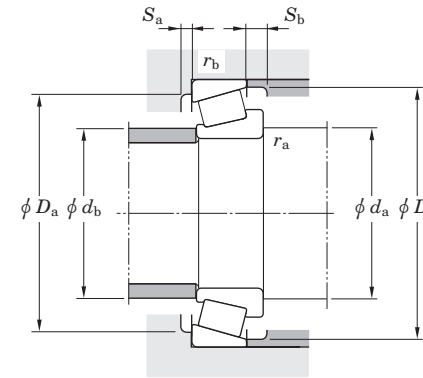
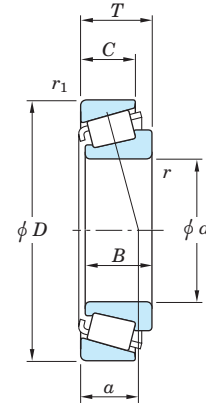
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 53.975 | 2.1250 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65212 | 65500 | 35.2 | 1.39 | 77.0 | 3.03 | 71.0 | 2.80 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| | 2.1250 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 636 | 633 | 30.3 | 1.19 | 73.0 | 2.87 | 67.0 | 2.64 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| 54.813 | 2.1580 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 0.8 | 0.03 | 3.2 | 0.13 | 266 | 357 | 6380 | 6320 | 34.8 | 1.37 | 70.0 | 2.76 | 68.0 | 2.68 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 |
| 54.986 | 2.1648 | 97.630 | 3.8437 | 24.608 | 0.9688 | 24.608 | 0.9688 | 19.446 | 0.7656 | 2.4 | 0.09 | 0.8 | 0.03 | 89.6 | 131 | 28680X | 28622 | 21.2 | 0.83 | 65.0 | 2.56 | 58.0 | 2.28 | 88.0 | 3.46 | 92.0 | 3.62 | 0.40 | 1.49 | 0.82 | 26.1 | 17.9 | 1.45 |
| 54.988 | 2.1649 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 2.4 | 0.09 | 3.2 | 0.13 | 109 | 144 | 466 | 453X | 23.6 | 0.93 | 67.0 | 2.64 | 61.0 | 2.40 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.1649 | 107.950 | 4.2500 | 27.783 | 1.0938 | 29.317 | 1.1542 | 22.225 | 0.8750 | 2.4 | 0.09 | 0.8 | 0.03 | 109 | 144 | 466 | 453A | 23.6 | 0.93 | 67.0 | 2.64 | 61.0 | 2.40 | 97.0 | 3.82 | 100.0 | 3.94 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.1649 | 110.000 | 4.3307 | 27.795 | 1.0943 | 29.317 | 1.1542 | 27.000 | 1.0630 | 2.4 | 0.09 | 2.0 | 0.08 | 109 | 144 | 466 | 454 | 25.7 | 1.01 | 67.0 | 2.64 | 61.0 | 2.40 | 96.0 | 3.78 | 100.0 | 3.94 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| 54.991 | 2.1650 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 266 | 357 | 6381 | 6320 | 34.8 | 1.37 | 76.0 | 2.99 | 70.0 | 2.76 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 |
| 55.000 | 2.1654 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 385 | 382A | 17.4 | 0.69 | 65.0 | 2.56 | 61.0 | 2.40 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.1654 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 3.6 | 0.14 | 0.8 | 0.03 | 80.4 | 101 | 385X | 382A | 17.4 | 0.69 | 67.0 | 2.64 | 61.0 | 2.40 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.1654 | 98.425 | 3.8750 | 21.000 | 0.8268 | 21.946 | 0.8640 | 17.826 | 0.7018 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 385 | 382 | 17.4 | 0.69 | 65.0 | 2.56 | 61.0 | 2.40 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.1654 | 100.000 | 3.9370 | 25.400 | 1.0000 | 21.946 | 0.8640 | 22.225 | 0.8750 | 2.4 | 0.09 | 1.2 | 0.05 | 80.4 | 101 | 385 | 383X | 21.8 | 0.86 | 65.0 | 2.56 | 61.0 | 2.40 | 87.0 | 3.43 | 93.0 | 3.66 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.1654 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 0.8 | 0.03 | 3.2 | 0.13 | 118 | 161 | 475 | 472A | 24.9 | 0.98 | 67.0 | 2.64 | 66.0 | 2.60 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.1654 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.0 | 0.08 | 3.2 | 0.13 | 118 | 161 | 475X | 472A | 24.9 | 0.98 | 69.0 | 2.72 | 66.0 | 2.60 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.1654 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 0.8 | 0.03 | 3.2 | 0.13 | 174 | 217 | 622X | 612 | 27.3 | 1.07 | 66.0 | 2.60 | 64.0 | 2.52 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| 55.006 | 2.1656 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 0.8 | 0.03 | 3.2 | 0.13 | 174 | 217 | 622A | 612 | 27.3 | 1.07 | 66.0 | 2.60 | 64.0 | 2.52 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| 55.474 | 2.1840 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 386 | 382A | 17.4 | 0.69 | 65.0 | 2.56 | 61.0 | 2.40 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| 55.562 | 2.1875 | 97.630 | 3.8437 | 24.608 | 0.9688 | 24.608 | 0.9688 | 19.446 | 0.7656 | 3.6 | 0.14 | 0.8 | 0.03 | 89.6 | 131 | 28680 | 28622 | 21.2 | 0.83 | 68.0 | 2.68 | 62.0 | 2.44 | 88.0 | 3.46 | 92.0 | 3.62 | 0.40 | 1.49 | 0.82 | 26.1 | 17.9 | 1.45 |
| | 2.1875 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 2.4 | 0.09 | 3.2 | 0.13 | 109 | 144 | 466S | 453X | 23.6 | 0.93 | 67.0 | 2.64 | 61.0 | 2.40 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.1875 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 1.2 | 0.05 | 3.2 | 0.13 | 221 | 318 | 5566R | 5535 | 31.1 | 1.22 | 70.0 | 2.76 | 68.0 | 2.68 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.1875 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 166 | 235 | HM813840 | HM813810 | 32.9 | 1.30 | 76.0 | 2.99 | 70.0 | 2.76 | 111.0 | 4.37 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| 55.575 | 2.1880 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 389 | 382A | 17.4 | 0.69 | 65.0 | 2.56 | 61.0 | 2.40 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.1880 | 96.838 | 3.8125 | 21.000 | 0.8268 | 26.256 | 1.0337 | 15.875 | 0.6250 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 389S | 382A | 17.4 | 0.69 | 65.0 | 2.56 | 61.0 | 2.40 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| 55.753 | 2.1950 | 122.238 | 4.8125 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | SP ¹⁾ | SP ¹⁾ | 3.2 | 0.13 | 128 | 153 | 66583 | 66520 | 35.4 | 1.39 | 70.0 | 2.76 | 63.0 | 2.48 | 105.0 | 4.13 | 116.0 | 4.57 | 0.67 | 0.90 | 0.50 | 37.1 | 42.2 | 0.88 |
| 57.150 | 2.2500 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 387 | 382A | 17.4 | 0.69 | 66.0 | 2.60 | 62.0 | 2.44 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.2500 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 3.6 | 0.14 | 0.8 | 0.03 | 80.4 | 101 | 387A | 382A | 17.4 | 0.69 | 69.0 | 2.72 | 62.0 | 2.44 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.2500 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 5.2 | 0.20 | 0.8 | 0.03 | 80.4 | 101 | 387AS | 382A | 17.4 | 0.69 | 72.0 | 2.83 | 62.0 | 2.44 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.2500 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 0.8 | 0.03 | 0.8 | 0.03 | 80.4 | 101 | 387S | 382A | 17.4 | 0.69 | 63.0 | 2.48 | 62.0 | 2.44 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.2500 | 98.425 | 3.8750 | 21.000 | 0.8268 | 21.946 | 0.8640 | 17.826 | 0.7018 | 2.4 | 0.09 | 0.8 | 0.03 | 80.4 | 101 | 387 | 382 | 17.4 | 0.69 | 66.0 | 2.60 | 62.0 | 2.44 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| | 2.2500 | 98.425 | 3.8750 | 24.608 | 0.9688 | 24.608 | 0.9688 | 19.446 | 0.7656 | 3.6 | 0.14 | 0.8 | 0.03 | 89.6 | 131 | 28682 | 28623 | 21.2 | 0.83 | 70.0 | 2.76 | 63.0 | 2.48 | 88.0 | 3.46 | 93.0 | 3.66 | 0.40 | 1.49 | 0.82 | 26.1 | 17.9 | 1.45 |
| | 2.2500 | 104.775 | 4.1250 | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 2.4 | 0.09 | 3.2 | 0.13 | 109 | 144 | 462 | 453X | 23.6 | 0.93 | 67.0 | 2.64 | 63.0 | 2.48 | 92.0 | 3.62 | 98.0 | 3.86 | 0.34 | 1.79 | 0.98 | 31.7 | 18.2 | 1.74 |
| | 2.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
 d (57.150) ~ (60.000) mm
 (2.2500) ~ (2.3622) inch



$$P = XF_r + YF_a$$

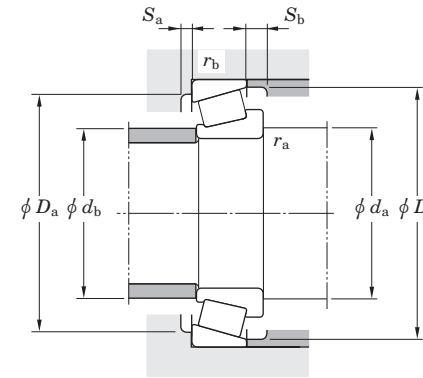
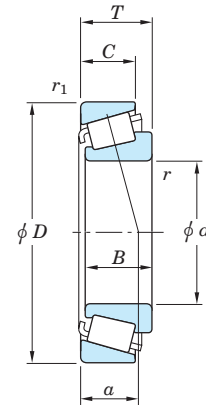
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|------|----------------|------|----------------|-------|----------------|-------|--------------------|------|-----------------------|----------------|----------------|--------|-------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | |
| 57.150 | 2.2500 | 110.000 | 4.3307 | 22.000 | 0.8661 | 21.996 | 0.8660 | 22.000 | 0.8661 | 2.4 | 0.09 | 0.8 | 0.03 | 86.4 | 116 | 390 | 394 | 21.3 | 0.84 | 70.0 | 2.76 | 66.0 | 2.60 | 102.0 | 4.02 | 104.5 | 4.11 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| | 2.2500 | 111.125 | 4.3750 | 22.000 | 0.8661 | 21.996 | 0.8660 | 18.824 | 0.7411 | 2.4 | 0.09 | 1.2 | 0.05 | 86.4 | 116 | 390 | 393AS | 21.3 | 0.84 | 70.0 | 2.76 | 66.0 | 2.60 | 101.0 | 3.98 | 105.0 | 4.13 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| | 2.2500 | 112.712 | 4.4375 | 22.225 | 0.8750 | 21.996 | 0.8660 | 15.875 | 0.6250 | 2.4 | 0.09 | 3.2 | 0.13 | 86.4 | 116 | 390 | 393A | 21.5 | 0.85 | 70.0 | 2.76 | 66.0 | 2.60 | 100.0 | 3.94 | 105.0 | 4.13 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| | 2.2500 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 111 | 164 | 3979 | 3920 | 25.9 | 1.02 | 72.0 | 2.83 | 66.0 | 2.60 | 99.0 | 3.90 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 |
| | 2.2500 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 147 | 207 | 39580 | 39520 | 23.3 | 0.92 | 72.0 | 2.83 | 66.0 | 2.60 | 101.0 | 3.98 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 |
| | 2.2500 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 7.9 | 0.31 | 3.2 | 0.13 | 147 | 207 | 39581 | 39520 | 23.3 | 0.92 | 81.0 | 3.19 | 66.0 | 2.60 | 101.0 | 3.98 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 |
| | 2.2500 | 112.712 | 4.4375 | 36.512 | 1.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 147 | 207 | 39580 | 39522 | 29.7 | 1.17 | 72.0 | 2.83 | 66.0 | 2.60 | 101.0 | 3.98 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 |
| | 2.2500 | 117.475 | 4.6250 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 118 | 179 | 33225 | 33461 | 27.8 | 1.09 | 74.0 | 2.91 | 68.0 | 2.68 | 106.0 | 4.17 | 112.0 | 4.41 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 |
| | 2.2500 | 117.475 | 4.6250 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 179 | 33225 | 33462 | 27.8 | 1.09 | 74.0 | 2.91 | 68.0 | 2.68 | 104.0 | 4.09 | 112.0 | 4.41 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 |
| | 2.2500 | 117.475 | 4.6250 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 129 | 152 | 66225R | 66461 | 33.2 | 1.31 | 76.0 | 2.99 | 69.0 | 2.72 | 102.0 | 4.02 | 111.0 | 4.37 | 0.63 | 0.96 | 0.53 | 37.5 | 40.1 | 0.93 |
| | 2.2500 | 120.040 | 4.7260 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 174 | 217 | 623 | 612A | 27.3 | 1.07 | 72.0 | 2.83 | 66.0 | 2.60 | 103.0 | 4.06 | 109.0 | 4.29 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 2.2500 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 174 | 217 | 623 | 612 | 27.3 | 1.07 | 72.0 | 2.83 | 66.0 | 2.60 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 2.2500 | 120.650 | 4.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 174 | 217 | 623A | 612 | 27.3 | 1.07 | 78.0 | 3.07 | 66.0 | 2.60 | 105.0 | 4.13 | 110.0 | 4.33 | 0.31 | 1.91 | 1.05 | 50.9 | 27.4 | 1.86 |
| | 2.2500 | 122.238 | 4.8125 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 128 | 153 | 66587 | 66520 | 35.4 | 1.39 | 77.0 | 3.03 | 71.0 | 2.80 | 105.0 | 4.13 | 116.0 | 4.57 | 0.67 | 0.90 | 0.50 | 37.1 | 42.2 | 0.88 |
| | 2.2500 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 555S | 553X | 28.7 | 1.13 | 73.0 | 2.87 | 67.0 | 2.64 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.2500 | 123.825 | 4.8750 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 7.9 | 0.31 | 3.2 | 0.13 | 162 | 223 | 555SA | 552A | 28.7 | 1.13 | 82.0 | 3.23 | 67.0 | 2.64 | 109.0 | 4.29 | 116.0 | 4.57 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.2500 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65225 | 65500 | 35.2 | 1.39 | 80.0 | 3.15 | 71.0 | 2.80 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| | 2.2500 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 4.3 | 0.17 | 3.2 | 0.13 | 266 | 357 | 6375 | 6320 | 34.8 | 1.37 | 78.0 | 3.07 | 70.0 | 2.76 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 |
| | 2.2500 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 0.8 | 0.03 | 3.2 | 0.13 | 266 | 357 | 6387 | 6320 | 34.8 | 1.37 | 71.0 | 2.80 | 70.0 | 2.76 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 |
| | 2.2500 | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 635 | 632 | 30.3 | 1.19 | 75.0 | 2.95 | 69.0 | 2.72 | 118.0 | 4.65 | 125.0 | 4.92 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| 2.2500 | 149.225 | 5.8750 | 53.975 | 2.1250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 6.4 | 0.25 | 3.2 | 0.13 | 285 | 404 | 6465 | 6420 | 39.3 | 1.55 | 86.0 | 3.39 | 81.0 | 3.19 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 | |
| 2.2500 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 285 | 404 | 6455 | 6420 | 39.3 | 1.55 | 81.0 | 3.19 | 75.0 | 2.95 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 | |
| 57.531 | 2.2650 | 96.838 | 3.8125 | 21.000 | 0.8268 | 21.946 | 0.8640 | 15.875 | 0.6250 | 3.6 | 0.14 | 0.8 | 0.03 | 80.4 | 101 | 388A | 382A | 17.4 | 0.69 | 69.0 | 2.72 | 63.0 | 2.48 | 89.0 | 3.50 | 92.0 | 3.62 | 0.35 | 1.69 | 0.93 | 23.2 | 14.1 | 1.65 |
| 58.738 | 2.3125 | 112.712 | 4.4375 | 33.338 | 1.3125 | 30.048 | 1.1830 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 111 | 164 | 3981 | 3926 | 29.1 | 1.15 | 73.0 | 2.87 | 67.0 | 2.64 | 98.0 | 3.86 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 |
| | 2.3125 | 122.238 | 4.8125 | 51.595 | 2.0313 | 51.702 | 2.0355 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5558R | 5535 | 39.0 | 1.54 | 77.0 | 3.03 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.3125 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65231 | 65500 | 35.2 | 1.39 | 81.0 | 3.19 | 71.0 | 2.80 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| 59.530 | 2.3437 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 1.6 | 0.06 | 3.2 | 0.13 | 111 | 164 | 3978 | 3920 | 25.9 | 1.02 | 70.0 | 2.76 | 68.0 | 2.68 | 99.0 | 3.90 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 |
| 59.880 | 2.3575 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65235 | 65500 | 35.2 | 1.39 | 82.0 | 3.23 | 71.0 | 2.80 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| 59.972 | 2.3611 | 122.238 | 4.8125 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 128 | 153 | 66589 | 66520 | 35.4 | 1.39 | 74.0 | 2.91 | 73.0 | 2.87 | 105.0 | 4.13 | 116.0 | 4.57 | 0.67 | 0.90 | 0.50 | 37.1 | 42.2 | 0.88 |
| 59.977 | 2.3613 | 101.600 | 4.0000 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 3.2 | 0.13 | 91.4 | 137 | 28980 | 28920 | 22.8 | 0.90 | 73.0 | 2.87 | 67.0 | 2.64 | 89.0 | 3.50 | 96.0 | 3.78 | 0.43 | 1.41 | 0.78 | 26.6 | 19.3 | 1.38 |
| | 2.3613 | 122.238 | 4.8125 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 1.6 | 0.06 | 3.2 | 0.13 | 128 | 153 | 66586 | 66520 | 35.4 | 1.39 | 75.0 | 2.95 | 68.0 | 2.68 | 105.0 | 4.13 | 116.0 | 4.57 | 0.67 | 0.90 | 0.50 | 37.1 | 42.2 | 0.88 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (60.000) ~ (63.500) mm
(2.3622) ~ (2.5000) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

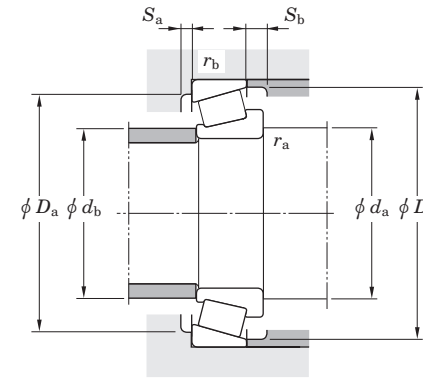
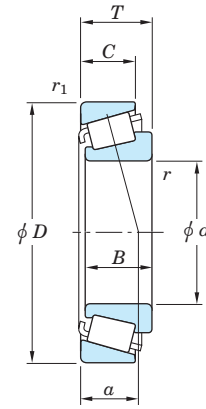
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 60.000 | 2.3622 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 111 | 164 | 3977 | 3925 | 25.9 | 1.02 | 74.0 | 2.91 | 68.0 | 2.68 | 101.0 | 3.98 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 |
| | 2.3622 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.0 | 0.08 | 3.2 | 0.13 | 118 | 161 | 476 | 472A | 24.9 | 0.98 | 73.0 | 2.87 | 69.0 | 2.72 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.3622 | 120.000 | 4.7244 | 29.794 | 1.1730 | 29.007 | 1.1420 | 24.237 | 0.9542 | 1.6 | 0.06 | 2.0 | 0.08 | 118 | 161 | 476A | 472 | 25.7 | 1.01 | 72.0 | 2.83 | 69.0 | 2.72 | 107.0 | 4.21 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.3622 | 122.238 | 4.8125 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 128 | 153 | 66585 | 66520 | 35.4 | 1.39 | 79.0 | 3.11 | 73.0 | 2.87 | 105.0 | 4.13 | 116.0 | 4.57 | 0.67 | 0.90 | 0.50 | 37.1 | 42.2 | 0.88 |
| | 2.3622 | 122.238 | 4.8125 | 33.338 | 1.3125 | 31.750 | 1.2500 | 23.812 | 0.9375 | 0.8 | 0.03 | 3.2 | 0.13 | 128 | 153 | 66588 | 66520 | 35.4 | 1.39 | 72.0 | 2.83 | 65.0 | 2.56 | 105.0 | 4.13 | 116.0 | 4.57 | 0.67 | 0.90 | 0.50 | 37.1 | 42.2 | 0.88 |
| 60.325 | 2.3750 | 100.000 | 3.9370 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 3.2 | 0.13 | 91.4 | 137 | 28985 | 28921 | 22.8 | 0.90 | 73.0 | 2.87 | 67.0 | 2.64 | 89.0 | 3.50 | 96.0 | 3.78 | 0.43 | 1.41 | 0.78 | 26.6 | 19.3 | 1.38 |
| | 2.3750 | 100.000 | 3.9370 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 0.8 | 0.03 | 91.4 | 137 | 28985 | 28921A | 22.8 | 0.90 | 73.0 | 2.87 | 67.0 | 2.64 | 92.0 | 3.62 | 96.0 | 3.78 | 0.43 | 1.41 | 0.78 | 26.6 | 19.3 | 1.38 |
| | 2.3750 | 101.600 | 4.0000 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 3.2 | 0.13 | 91.4 | 137 | 28985 | 28920 | 22.8 | 0.90 | 73.0 | 2.87 | 67.0 | 2.64 | 89.0 | 3.50 | 96.0 | 3.78 | 0.43 | 1.41 | 0.78 | 26.6 | 19.3 | 1.38 |
| | 2.3750 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 111 | 164 | 3980 | 3925 | 25.9 | 1.02 | 75.0 | 2.95 | 68.0 | 2.68 | 101.0 | 3.98 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 |
| | 2.3750 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 7.9 | 0.31 | 3.2 | 0.13 | 162 | 223 | 557A | 553X | 28.7 | 1.13 | 84.0 | 3.31 | 69.0 | 2.72 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.3750 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 2.4 | 0.09 | 3.2 | 0.13 | 162 | 223 | 558 | 553X | 28.7 | 1.13 | 73.0 | 2.87 | 69.0 | 2.72 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.3750 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 558A | 553X | 28.7 | 1.13 | 76.0 | 2.99 | 69.0 | 2.72 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.3750 | 122.238 | 4.8125 | 38.100 | 1.5000 | 38.354 | 1.5100 | 29.718 | 1.1700 | 7.9 | 0.31 | 1.6 | 0.06 | 191 | 249 | HM212044 | HM212010 | 27.3 | 1.07 | 85.0 | 3.35 | 70.0 | 2.76 | 110.0 | 4.33 | 116.0 | 4.57 | 0.34 | 1.78 | 0.98 | 55.5 | 32.0 | 1.73 |
| | 2.3750 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 0.8 | 0.03 | 3.2 | 0.13 | 221 | 318 | 5582R | 5535 | 31.1 | 1.22 | 73.0 | 2.87 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.3750 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5583R | 5535 | 31.1 | 1.22 | 78.0 | 3.07 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.3750 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813841 | HM813811 | 32.9 | 1.30 | 80.0 | 3.15 | 73.0 | 2.87 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.3750 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 1.6 | 0.06 | 3.2 | 0.13 | 166 | 235 | HM813841A | HM813810 | 32.9 | 1.30 | 74.0 | 2.91 | 71.0 | 2.80 | 110.0 | 4.33 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.3750 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 269 | 65237 | 65500 | 35.2 | 1.39 | 82.0 | 3.23 | 71.0 | 2.80 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| | 2.3750 | 127.000 | 5.0000 | 44.450 | 1.7500 | 44.450 | 1.7500 | 34.925 | 1.3750 | 1.6 | 0.06 | 3.2 | 0.13 | 208 | 269 | 65237A | 65500 | 35.2 | 1.39 | 78.0 | 3.07 | 71.0 | 2.80 | 107.0 | 4.21 | 119.0 | 4.69 | 0.49 | 1.23 | 0.68 | 60.6 | 50.5 | 1.20 |
| | 2.3750 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 637 | 633 | 30.3 | 1.19 | 78.0 | 3.07 | 72.0 | 2.83 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| 2.3750 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 266 | 357 | 6376 | 6320 | 34.8 | 1.37 | 81.0 | 3.19 | 74.0 | 2.91 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 | |
| 2.3750 | 136.525 | 5.3750 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715332 | H715311 | 37.0 | 1.46 | 84.0 | 3.31 | 78.0 | 3.07 | 118.0 | 4.65 | 132.0 | 5.20 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 | |
| 61.912 | 2.4375 | 110.000 | 4.3307 | 22.000 | 0.8661 | 21.996 | 0.8660 | 18.824 | 0.7411 | 0.8 | 0.03 | 1.2 | 0.05 | 86.4 | 116 | 392 | 394A | 21.3 | 0.84 | 70.0 | 2.76 | 69.0 | 2.72 | 101.0 | 3.98 | 104.5 | 4.11 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| | 2.4375 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 554 | 553X | 28.7 | 1.13 | 77.0 | 3.03 | 71.0 | 2.80 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.4375 | 123.825 | 4.8750 | 38.100 | 1.5000 | 36.678 | 1.4440 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 554 | 552 | 28.7 | 1.13 | 77.0 | 3.03 | 71.0 | 2.80 | 109.0 | 4.29 | 116.0 | 4.57 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.4375 | 125.000 | 4.9213 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 554 | 553 | 28.7 | 1.13 | 77.0 | 3.03 | 71.0 | 2.80 | 109.0 | 4.29 | 116.0 | 4.57 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.4375 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813843 | HM813811 | 32.9 | 1.30 | 81.0 | 3.19 | 75.0 | 2.95 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.4375 | 139.700 | 5.5000 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715334 | H715310 | 37.0 | 1.46 | 86.0 | 3.39 | 79.0 | 3.11 | 120.0 | 4.72 | 133.0 | 5.24 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 |
| | 2.4375 | 152.400 | 6.0000 | 47.625 | 1.8750 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 244 | 278 | 9180 | 9121 | 44.5 | 1.75 | 90.0 | 3.54 | 81.0 | 3.19 | 130.0 | 5.12 | 145.0 | 5.71 | 0.66 | 0.91 | 0.50 | 71.3 | 79.9 | 0.89 |
| 2.4375 | 158.750 | 6.2500 | 50.800 | 2.0000 | 46.038 | 1.8125 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 244 | 278 | 9180 | 9120 | 47.6 | 1.87 | 90.0 | 3.54 | 81.0 | 3.19 | 134.0 | 5.28 | 145.0 | 5.71 | 0.66 | 0.91 | 0.50 | 71.3 | 79.9 | 0.89 | |
| 2.4375 | 158.750 | 6.2500 | 50.800 | 2.0000 | 46.038 | 1.8125 | 34.925 | 1.3750 | 0.8 | 0.03 | 3.2 | 0.13 | 244 | 278 | 9181 | 9120 | 47.6 | 1.87 | 85.0 | 3.35 | 78.0 | 3.07 | 134.0 | 5.28 | 145.0 | 5.71 | 0.66 | 0.91 | 0.50 | 71.3 | 79.9 | 0.89 | |
| 62.738 | 2.4700 | 100.000 | 3.9370 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tapered roller bearings

TS type
 d (63.500) ~ (66.675) mm
 (2.5000) ~ (2.6250) inch



$$P = XF_r + YF_a$$

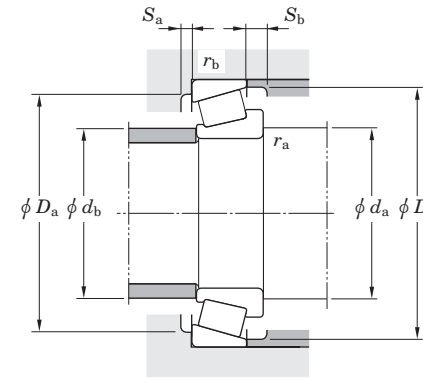
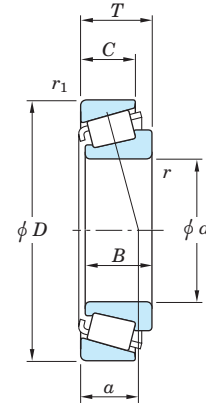
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|----------|-----------------------|----------------|-----------------|-------------------|------------------|------|-------------------------|----------------|----------------|----------------|-------------|----------------|---------------------|--------|-------|------|------|-------|----------|-------|--------------------|------|-----------------------|------|--------|------|------|------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | d _b | D _a | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | | | | | | | | | | | |
| mm | inch | mm | inch | mm | inch | mm | inch | inch | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | | | |
| 63.500 | 2.5000 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 111 | 164 | 3982 | 3925 | 25.9 | 1.02 | 77.0 | 3.03 | 71.0 | 2.80 | 101.0 | 3.98 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 |
| | 2.5000 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 147 | 207 | 39585 | 39520 | 23.3 | 0.92 | 77.0 | 3.03 | 71.0 | 2.80 | 101.0 | 3.98 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 |
| | 2.5000 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 0.8 | 0.03 | 3.2 | 0.13 | 118 | 161 | 477 | 472A | 24.9 | 0.98 | 73.0 | 2.87 | 72.0 | 2.83 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.5000 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 161 | 483 | 472A | 24.9 | 0.98 | 78.0 | 3.07 | 72.0 | 2.83 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.5000 | 120.000 | 4.7244 | 29.794 | 1.1730 | 29.007 | 1.1420 | 24.237 | 0.9542 | 0.8 | 0.03 | 2.0 | 0.08 | 118 | 161 | 477 | 472 | 25.7 | 1.01 | 73.0 | 2.87 | 72.0 | 2.83 | 108.0 | 4.25 | 113.0 | 4.45 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.5000 | 120.000 | 4.7244 | 29.794 | 1.1730 | 30.162 | 1.1875 | 23.444 | 0.9230 | 0.8 | 0.03 | 0.8 | 0.03 | 118 | 179 | 33251 | 33472 | 27.4 | 1.08 | 73.0 | 2.87 | 72.0 | 2.83 | 107.0 | 4.21 | 113.0 | 4.45 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 |
| | 2.5000 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 559 | 553X | 28.7 | 1.13 | 78.0 | 3.07 | 72.0 | 2.83 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 |
| | 2.5000 | 122.238 | 4.8125 | 38.354 | 1.5100 | 38.100 | 1.5000 | 29.718 | 1.1700 | 3.6 | 0.14 | 3.2 | 0.13 | 191 | 249 | HM212046 | HM212011 | 27.6 | 1.09 | 80.0 | 3.15 | 73.0 | 2.87 | 108.0 | 4.25 | 116.0 | 4.57 | 0.34 | 1.78 | 0.98 | 55.5 | 32.0 | 1.73 |
| | 2.5000 | 122.238 | 4.8125 | 38.354 | 1.5100 | 38.100 | 1.5000 | 29.718 | 1.1700 | 7.1 | 0.28 | 1.6 | 0.06 | 191 | 249 | HM212047 | HM212010 | 27.6 | 1.09 | 87.0 | 3.43 | 73.0 | 2.87 | 110.0 | 4.33 | 116.0 | 4.57 | 0.34 | 1.78 | 0.98 | 55.5 | 32.0 | 1.73 |
| | 2.5000 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 5.2 | 0.20 | 3.2 | 0.13 | 221 | 318 | 5564R | 5535 | 31.1 | 1.22 | 79.0 | 3.11 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.5000 | 122.238 | 4.8125 | 43.658 | 1.7188 | 43.764 | 1.7230 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5584R | 5535 | 31.1 | 1.22 | 81.0 | 3.19 | 75.0 | 2.95 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.5000 | 122.238 | 4.8125 | 51.595 | 2.0313 | 51.702 | 2.0355 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5552R | 5535 | 39.0 | 1.54 | 81.0 | 3.19 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.5000 | 123.825 | 4.8750 | 30.162 | 1.1875 | 29.007 | 1.1420 | 24.605 | 0.9687 | 0.8 | 0.03 | 3.2 | 0.13 | 118 | 161 | 477 | 472X | 26.0 | 1.02 | 73.0 | 2.87 | 72.0 | 2.83 | 109.0 | 4.29 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.5000 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 226 | 565 | 563 | 28.6 | 1.13 | 80.0 | 3.15 | 73.0 | 2.87 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| | 2.5000 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 6.4 | 0.25 | 3.2 | 0.13 | 156 | 226 | 565S | 563 | 28.6 | 1.13 | 86.0 | 3.39 | 73.0 | 2.87 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| | 2.5000 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813842 | HM813811 | 32.9 | 1.30 | 82.0 | 3.23 | 76.0 | 2.99 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.5000 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 639 | 633 | 30.3 | 1.19 | 81.0 | 3.19 | 74.0 | 2.91 | 116.0 | 4.57 | 124.0 | 4.88 | 0.32 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| | 2.5000 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 4.3 | 0.17 | 3.2 | 0.13 | 266 | 357 | 6382 | 6320 | 34.8 | 1.37 | 84.0 | 3.31 | 77.0 | 3.03 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 |
| | 2.5000 | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 241 | 308 | H414235 | H414210 | 30.3 | 1.19 | 82.0 | 3.23 | 78.0 | 3.07 | 121.0 | 4.76 | 129.0 | 5.08 | 0.36 | 1.67 | 0.92 | 70.0 | 43.1 | 1.62 |
| | 2.5000 | 136.525 | 5.3750 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715336 | H715311 | 37.0 | 1.46 | 87.0 | 3.43 | 80.0 | 3.15 | 118.0 | 4.65 | 132.0 | 5.20 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 |
| 2.5000 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 285 | 404 | 6475 | 6420 | 39.3 | 1.55 | 86.0 | 3.39 | 81.0 | 3.19 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 | |
| 2.5000 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 368 | 745SR | 742 | 32.4 | 1.28 | 84.0 | 3.31 | 77.0 | 3.03 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 | |
| 64.960 | 2.5575 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 656 | 653 | 33.4 | 1.31 | 86.0 | 3.39 | 79.0 | 3.11 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 2.5575 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 285 | 404 | 6464 | 6420 | 39.3 | 1.55 | 87.0 | 3.43 | 81.0 | 3.19 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 |
| | 2.5575 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 368 | 747SR | 742 | 32.4 | 1.28 | 86.0 | 3.39 | 81.0 | 3.19 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| 64.963 | 2.5576 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 226 | 569 | 563 | 28.6 | 1.13 | 81.0 | 3.19 | 74.0 | 2.91 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| 64.986 | 2.5585 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.924 | 1.2175 | 23.812 | 0.9375 | 2.4 | 0.09 | 3.2 | 0.13 | 147 | 207 | 39586 | 39520 | 23.3 | 0.92 | 76.0 | 2.99 | 72.0 | 2.83 | 101.0 | 3.98 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 |
| 64.988 | 2.5586 | 107.950 | 4.2500 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 0.8 | 0.03 | 92.8 | 143 | 29588 | 29522 | 24.7 | 0.97 | 78.0 | 3.07 | 72.0 | 2.83 | 98.0 | 3.86 | 103.0 | 4.06 | 0.46 | 1.31 | 0.72 | 26.9 | 21.1 | 1.28 |
| 65.000 | 2.5591 | 110.000 | 4.3307 | 22.000 | 0.8661 | 21.996 | 0.8660 | 18.824 | 0.7411 | 2.0 | 0.08 | 1.2 | 0.05 | 86.4 | 116 | 399 | 394A | 21.3 | 0.84 | 76.0 | 2.99 | 73.0 | 2.87 | 101.0 | 3.98 | 104.5 | 4.11 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| | 2.5591 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.4 | 0.09 | 3.2 | 0.13 | 118 | 161 | 478 | 472A | 24.9 | 0.98 | 77.0 | 3.03 | 73.0 | 2.87 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| 65.088 | 2.5625 | 122.238 | 4.8125 | 51.595 | 2.0313 | 51.702 | 2.0355 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5554R | 5535 | 39.0 | 1.54 | 83.0 | 3.27 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | 2.5625 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 3.6 | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (66.675) ~ (69.850) mm
(2.6250) ~ (2.7500) inch



$$P = XF_r + YF_a$$

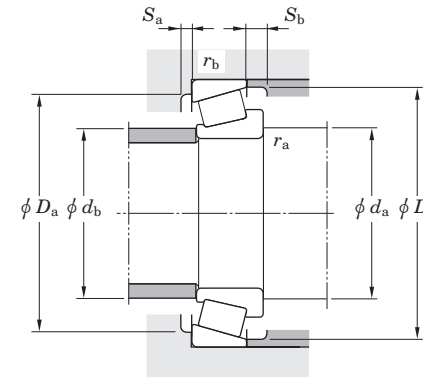
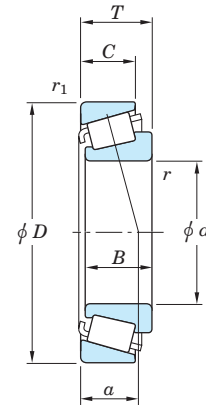
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | | |
|---------------------|--------|---------|---------|--------|----------|-----------------------|----------------|-----------------|-------------------|------------------|------|-------------------------|----------------|----------------|----------------|-------------|----------------|---------------------|--------|-------|------|------|------|----------|-------|--------------------|-------|-----------------------|------|--------|------|------|------|------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | d _b | D _a | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | | | | | | | | | | | | |
| mm | inch | mm | inch | mm | inch | mm | inch | inch | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | | | | |
| 66.675 | 2.6250 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 111 | 164 | 3984 | 3925 | 25.9 | 1.02 | 80.0 | 3.15 | 74.0 | 2.91 | 101.0 | 3.98 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 | |
| | 2.6250 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.1830 | 23.812 | 0.9375 | 5.6 | 0.22 | 0.8 | 0.03 | 111 | 164 | 3994 | 3925 | 25.9 | 1.02 | 84.0 | 3.31 | 74.0 | 2.91 | 101.0 | 3.98 | 106.0 | 4.17 | 0.40 | 1.49 | 0.82 | 32.4 | 22.3 | 1.46 | |
| | 2.6250 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 147 | 207 | 39590 | 39520 | 23.3 | 0.92 | 80.0 | 3.15 | 74.0 | 2.91 | 101.0 | 3.98 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 | |
| | 2.6250 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 0.8 | 0.03 | 147 | 207 | 39590 | 39521 | 23.3 | 0.92 | 80.0 | 3.15 | 74.0 | 2.91 | 103.0 | 4.06 | 107.0 | 4.21 | 0.34 | 1.77 | 0.97 | 42.6 | 24.7 | 1.72 | |
| | 2.6250 | 117.475 | 4.6250 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 5.6 | 0.22 | 3.2 | 0.13 | 118 | 179 | 33261 | 33462 | 27.8 | 1.09 | 86.0 | 3.39 | 76.0 | 2.99 | 104.0 | 4.09 | 112.0 | 4.41 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 | |
| | 2.6250 | 117.475 | 4.6250 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 179 | 33262 | 33462 | 27.8 | 1.09 | 81.0 | 3.19 | 75.0 | 2.95 | 104.0 | 4.09 | 112.0 | 4.41 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 | |
| | 2.6250 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.0 | 0.08 | 3.2 | 0.13 | 118 | 161 | 478S | 472A | 24.9 | 0.98 | 78.0 | 3.07 | 74.0 | 2.91 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 | |
| | 2.6250 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.4 | 0.09 | 3.2 | 0.13 | 118 | 161 | 479 | 472A | 24.9 | 0.98 | 78.0 | 3.07 | 74.0 | 2.91 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 | |
| | 2.6250 | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 560 | 553X | 28.7 | 1.13 | 81.0 | 3.19 | 75.0 | 2.95 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 | |
| | 2.6250 | 122.238 | 4.8125 | 38.100 | 1.5000 | 38.354 | 1.5100 | 29.718 | 1.1700 | 3.6 | 0.14 | 1.6 | 0.06 | 191 | 249 | HM212049 | HM212010 | 27.3 | 1.07 | 82.0 | 3.23 | 75.5 | 2.97 | 110.0 | 4.33 | 116.0 | 4.57 | 0.34 | 1.78 | 0.98 | 55.5 | 32.0 | 1.73 | |
| | 2.6250 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813844 | HM813811 | 32.9 | 1.30 | 85.0 | 3.35 | 78.0 | 3.07 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 | |
| | 2.6250 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 641 | 633 | 30.3 | 1.19 | 83.0 | 3.27 | 77.0 | 3.03 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 | |
| | 2.6250 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 4.3 | 0.17 | 3.2 | 0.13 | 266 | 357 | 6386 | 6320 | 34.8 | 1.37 | 87.0 | 3.43 | 77.5 | 3.05 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 | |
| | 2.6250 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 8.6 | 0.34 | 3.2 | 0.13 | 266 | 357 | 6386A | 6320 | 34.8 | 1.37 | 92.0 | 3.62 | 77.0 | 3.03 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 | |
| | 2.6250 | 135.755 | 5.3447 | 53.975 | 2.1250 | 56.007 | 2.2050 | 44.450 | 1.7500 | 6.4 | 0.25 | 3.2 | 0.13 | 266 | 357 | 6389 | 6320 | 34.8 | 1.37 | 91.0 | 3.58 | 77.5 | 3.05 | 117.0 | 4.61 | 126.0 | 4.96 | 0.32 | 1.85 | 1.02 | 78.4 | 43.5 | 1.80 | |
| | 2.6250 | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 241 | 308 | H414242 | H414210 | 30.3 | 1.19 | 85.0 | 3.35 | 81.0 | 3.19 | 121.0 | 4.76 | 129.0 | 5.08 | 0.36 | 1.67 | 0.92 | 70.0 | 43.1 | 1.62 | |
| | 2.6250 | 136.525 | 5.3750 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715341 | H715311 | 37.0 | 1.46 | 89.0 | 3.50 | 83.0 | 3.27 | 118.0 | 4.65 | 132.0 | 5.20 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 | |
| | 68.262 | 2.6875 | 103.188 | 4.0625 | 43.658 | 1.7188 | 51.702 | 2.0355 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 221 | 318 | 5557R | 5535 | 31.1 | 1.22 | 86.0 | 3.39 | 72.0 | 2.83 | 106.0 | 4.17 | 116.0 | 4.57 | 0.36 | 1.67 | 0.92 | 64.5 | 39.5 | 1.63 |
| | | 2.6875 | 110.000 | 4.3307 | 22.000 | 0.8661 | 21.996 | 0.8660 | 18.824 | 0.7411 | 2.4 | 0.09 | 1.2 | 0.05 | 86.4 | 116 | 399A | 394A | 21.3 | 0.84 | 78.0 | 3.07 | 74.0 | 2.91 | 101.0 | 3.98 | 104.5 | 4.11 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| | | 2.6875 | 110.000 | 4.3307 | 22.000 | 0.8661 | 21.996 | 0.8660 | 18.824 | 0.7411 | 5.2 | 0.20 | 1.2 | 0.05 | 86.4 | 116 | 399AS | 394A | 21.3 | 0.84 | 83.0 | 3.27 | 74.0 | 2.91 | 101.0 | 3.98 | 104.5 | 4.11 | 0.40 | 1.49 | 0.82 | 25.0 | 17.2 | 1.46 |
| 2.6875 | | 117.475 | 4.6250 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 179 | 33269 | 33462 | 27.8 | 1.09 | 82.0 | 3.23 | 76.0 | 2.99 | 104.0 | 4.09 | 112.0 | 4.41 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 | |
| 2.6875 | | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 161 | 480 | 472A | 24.9 | 0.98 | 82.0 | 3.23 | 75.0 | 2.95 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 | |
| 2.6875 | | 122.238 | 4.8125 | 38.100 | 1.5000 | 36.678 | 1.4440 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 162 | 223 | 560S | 553X | 28.7 | 1.13 | 83.0 | 3.27 | 76.0 | 2.99 | 108.0 | 4.25 | 115.0 | 4.53 | 0.35 | 1.73 | 0.95 | 47.1 | 27.9 | 1.69 | |
| 2.6875 | | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 226 | 570 | 563 | 28.6 | 1.13 | 83.0 | 3.27 | 77.0 | 3.03 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 | |
| 2.6875 | | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 642 | 633 | 30.3 | 1.19 | 84.0 | 3.31 | 79.0 | 3.11 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 | |
| 2.6875 | | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 642 | 632 | 30.3 | 1.19 | 84.0 | 3.31 | 79.0 | 3.11 | 118.0 | 4.65 | 125.0 | 4.92 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 | |
| 2.6875 | | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 241 | 308 | H414245 | H414210 | 30.3 | 1.19 | 86.0 | 3.39 | 82.0 | 3.23 | 121.0 | 4.76 | 129.0 | 5.08 | 0.36 | 1.67 | 0.92 | 70.0 | 43.1 | 1.62 | |
| 2.6875 | | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 7.1 | 0.28 | 3.2 | 0.13 | 241 | 308 | H414245A | H414210 | 30.3 | 1.19 | 89.0 | 3.50 | 83.0 | 3.27 | 121.0 | 4.76 | 129.0 | 5.08 | 0.36 | 1.67 | 0.92 | 70.0 | 43.1 | 1.62 | |
| 2.6875 | | 136.525 | 5.3750 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715343 | H715311 | 37.0 | 1.46 | 90.0 | 3.54 | 84.0 | 3.31 | 118.0 | 4.65 | 132.0 | 5.20 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 | |
| 2.6875 | | 152.400 | 6.0000 | 47.625 | 1.8750 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 244 | 278 | 9185 | 9121 | 44.5 | 1.75 | 94.0 | 3.70 | 81.5 | 3.21 | 130.0 | 5.12 | 145.0 | 5.71 | 0.66 | 0.91 | 0.50 | 71.3 | 79.9 | 0.89 | |
| 69.850 | | 2.7500 | 98.425 | 3.8750 | 13.495 | 0.5313 | 13.495 | 0.5313 | 9.525 | 0.3750 | 1.6 | 0.06 | 1.6 | 0.06 | 39.3 | 59.8 | LL713049 | LL713010 | 18.4 | 0.72 | 77.0 | 3.03 | 74.0 | 2.91 | 92.0 | 3.62 | 94.0 | 3.70 | 0.44 | 1.37 | 0.75 | 11.1 | 8.35 | 1.33 |
| | 2.7500 | 112.712 | 4.4375 | 22.225 | 0.8750 | 21.996 | 0.8660 | 15.875 | 0.6250 | 1.6 | 0.06 | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (69.850) ~ (73.025) mm
(2.7500) ~ (2.8750) inch



$$P = XF_r + YF_a$$

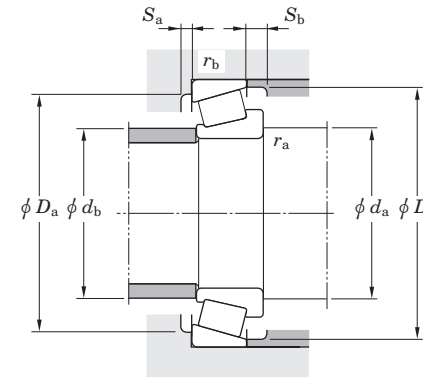
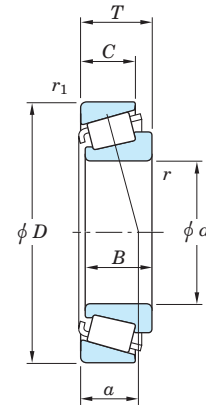
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 69.850 | 2.7500 | 123.825 | 4.8750 | 30.162 | 1.1875 | 29.007 | 1.1420 | 24.605 | 0.9687 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 161 | 482 | 472X | 26.0 | 1.02 | 83.0 | 3.27 | 77.0 | 3.03 | 109.0 | 4.29 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.7500 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 226 | 566 | 563 | 28.6 | 1.13 | 85.0 | 3.35 | 78.0 | 3.07 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| | 2.7500 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 0.8 | 0.03 | 3.2 | 0.13 | 156 | 226 | 566S | 563 | 28.6 | 1.13 | 79.0 | 3.11 | 78.0 | 3.07 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| | 2.7500 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813846 | HM813811 | 32.9 | 1.30 | 88.0 | 3.46 | 81.0 | 3.19 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.7500 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 643 | 633 | 30.3 | 1.19 | 86.0 | 3.39 | 80.0 | 3.15 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| | 2.7500 | 136.525 | 5.3750 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715344 | H715311 | 37.0 | 1.46 | 92.0 | 3.62 | 85.0 | 3.35 | 118.0 | 4.65 | 132.0 | 5.20 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 |
| | 2.7500 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 655 | 653 | 33.4 | 1.31 | 88.0 | 3.46 | 82.0 | 3.23 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 2.7500 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 5.2 | 0.20 | 3.2 | 0.13 | 285 | 404 | 6454 | 6420 | 39.3 | 1.55 | 94.0 | 3.70 | 85.0 | 3.35 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 |
| | 2.7500 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 6.4 | 0.25 | 3.2 | 0.13 | 285 | 404 | 6484 | 6420 | 39.3 | 1.55 | 95.0 | 3.74 | 85.0 | 3.35 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 |
| | 2.7500 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 5.2 | 0.20 | 3.2 | 0.13 | 264 | 368 | 744AR | 742 | 32.4 | 1.28 | 92.0 | 3.62 | 82.0 | 3.23 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| 2.7500 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 368 | 745AR | 742 | 32.4 | 1.28 | 88.0 | 3.46 | 82.0 | 3.23 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 | |
| 2.7500 | 168.275 | 6.6250 | 53.975 | 2.1250 | 56.363 | 2.2190 | 41.275 | 1.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 344 | 467 | 835R | 832 | 35.0 | 1.38 | 91.0 | 3.58 | 84.0 | 3.31 | 149.0 | 5.87 | 155.0 | 6.10 | 0.30 | 2.00 | 1.10 | 101 | 51.6 | 1.95 | |
| 69.952 | 2.7540 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 2.0 | 0.08 | 2.0 | 0.08 | 90.0 | 127 | 34274 | 34478 | 26.8 | 1.06 | 81.0 | 3.19 | 78.0 | 3.07 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| 70.000 | 2.7559 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.0 | 0.08 | 3.2 | 0.13 | 118 | 161 | 484 | 472A | 24.9 | 0.98 | 80.0 | 3.15 | 77.0 | 3.03 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| | 2.7559 | 125.052 | 4.9233 | 23.731 | 0.9343 | 23.012 | 0.9060 | 16.401 | 0.6457 | 2.0 | 0.08 | 2.0 | 0.08 | 90.0 | 127 | 34275 | 34492A | 25.9 | 1.02 | 82.0 | 3.23 | 78.0 | 3.07 | 112.0 | 4.41 | 118.0 | 4.65 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| 70.637 | 2.7810 | 112.712 | 4.4375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 97.0 | 155 | 29681 | 29620 | 26.2 | 1.03 | 84.0 | 3.31 | 79.0 | 3.11 | 101.0 | 3.98 | 109.0 | 4.29 | 0.49 | 1.23 | 0.68 | 28.1 | 23.4 | 1.20 |
| | 2.7810 | 120.650 | 4.7500 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 1.2 | 0.05 | 3.2 | 0.13 | 97.0 | 155 | 29680 | 29630 | 26.2 | 1.03 | 80.0 | 3.15 | 78.0 | 3.07 | 104.0 | 4.09 | 113.0 | 4.45 | 0.49 | 1.23 | 0.68 | 28.1 | 23.4 | 1.20 |
| 71.438 | 2.8125 | 117.475 | 4.6250 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 118 | 179 | 33281 | 33462 | 27.8 | 1.09 | 85.0 | 3.35 | 79.0 | 3.11 | 104.0 | 4.09 | 112.0 | 4.41 | 0.44 | 1.38 | 0.76 | 34.4 | 25.6 | 1.34 |
| | 2.8125 | 120.000 | 4.7244 | 32.545 | 1.2813 | 32.545 | 1.2813 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 150 | 218 | 47490R | 47420 | 26.6 | 1.05 | 86.0 | 3.39 | 79.0 | 3.11 | 107.0 | 4.21 | 114.0 | 4.49 | 0.36 | 1.67 | 0.92 | 43.7 | 26.9 | 1.62 |
| | 2.8125 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 226 | 567A | 563 | 28.6 | 1.13 | 86.0 | 3.39 | 80.0 | 3.15 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| | 2.8125 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 6.4 | 0.25 | 3.2 | 0.13 | 156 | 226 | 567S | 563 | 28.6 | 1.13 | 92.0 | 3.62 | 80.0 | 3.15 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| | 2.8125 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 1.6 | 0.06 | 166 | 235 | HM813849 | HM813811 | 32.9 | 1.30 | 89.0 | 3.50 | 81.9 | 3.22 | 113.0 | 4.45 | 121.0 | 4.76 | 0.50 | 1.20 | 0.66 | 48.6 | 41.7 | 1.17 |
| | 2.8125 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 197 | 267 | 644 | 633 | 30.3 | 1.19 | 87.0 | 3.43 | 81.0 | 3.19 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| | 2.8125 | 130.175 | 5.1250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 6.4 | 0.25 | 3.2 | 0.13 | 197 | 267 | 645 | 633 | 30.3 | 1.19 | 93.0 | 3.66 | 81.0 | 3.19 | 116.0 | 4.57 | 124.0 | 4.88 | 0.36 | 1.66 | 0.91 | 57.4 | 35.5 | 1.62 |
| | 2.8125 | 133.350 | 5.2500 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 495S | 492A | 29.8 | 1.17 | 88.0 | 3.46 | 82.0 | 3.23 | 120.0 | 4.72 | 128.0 | 5.04 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 2.8125 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 3.6 | 0.14 | 0.8 | 0.03 | 154 | 245 | 47675R | 47620A | 29.2 | 1.15 | 88.0 | 3.46 | 82.0 | 3.23 | 121.0 | 4.76 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 2.8125 | 136.525 | 5.3750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 241 | 308 | H414249 | H414210 | 30.3 | 1.19 | 89.0 | 3.50 | 83.3 | 3.28 | 121.0 | 4.76 | 129.0 | 5.08 | 0.36 | 1.67 | 0.92 | 70.0 | 43.1 | 1.62 |
| 2.8125 | 136.525 | 5.3750 | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 231 | 369 | H715345 | H715311 | 37.0 | 1.46 | 93.0 | 3.66 | 87.0 | 3.43 | 118.0 | 4.65 | 132.0 | 5.20 | 0.47 | 1.27 | 0.70 | 67.8 | 54.8 | 1.24 | |
| 73.000 | 2.8740 | 120.000 | 4.7244 | 29.002 | 1.1418 | 29.007 | 1.1420 | 23.444 | 0.9230 | 2.0 | 0.08 | 3.2 | 0.13 | 118 | 161 | 486X | 472A | 24.9 | 0.98 | 83.0 | 3.27 | 78.0 | 3.07 | 106.0 | 4.17 | 114.0 | 4.49 | 0.38 | 1.56 | 0.86 | 34.5 | 22.7 | 1.52 |
| 73.025 | 2.8750 | 112.712 | 4.4375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 97.0 | 155 | 29685 | 29620 | 26.2 | 1.03 | 86.0 | 3.39 | 80.0 | 3.15 | 101.0 | 3.98 | 109.0 | 4.29 | 0.49 | 1.23 | 0.68 | 28.1 | 23.4 | 1.20 |
| | 2.8750 | 117.475 | 4.6250 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 101 | 166 | LM814845 | LM814810 | 27.6 | 1.09 | 87.0 | 3.43 | 81.0 | 3.19 | 105.0 | 4.13 | 113.0 | 4.45 | 0.51 | 1.18 | 0.65 | 29.2 | 25.4 | 1.15 |

TS type
d (73.025) ~ (76.200) mm
(2.8750) ~ (3.0000) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

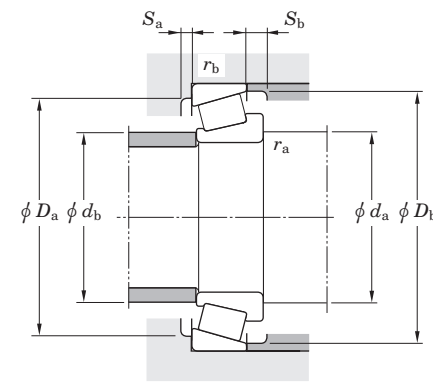
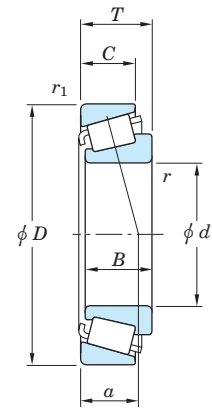
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) | | Factor | | | |
|---------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|----------------|------|----------------|------|----------------|----------|----------------|--------------------|------|-----------------------|----------------|--------|-------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | Radial | Axial | K | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 73.025 | 2.8750 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 285 | 404 | 6460 | 6420 | 39.3 | 1.55 | 93.0 | 3.66 | 87.0 | 3.43 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | 1.62 |
| | 2.8750 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 368 | 744R | 742 | 32.4 | 1.28 | 91.0 | 3.58 | 85.0 | 3.35 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| | 2.8750 | 152.400 | 6.0000 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 657 | 652 | 33.4 | 1.31 | 90.0 | 3.54 | 85.0 | 3.35 | 134.0 | 5.28 | 141.0 | 5.55 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 2.8750 | 159.995 | 6.2990 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 0.8 | 0.03 | 273 | 391 | 762 | 752A | 35.5 | 1.40 | 92.0 | 3.62 | 97.0 | 3.82 | 146.0 | 5.75 | 149.0 | 5.87 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 2.8750 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 273 | 391 | 762 | 752 | 35.5 | 1.40 | 92.0 | 3.62 | 97.0 | 3.82 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| 73.817 | 2.9062 | 112.712 | 4.4375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 1.6 | 0.06 | 3.2 | 0.13 | 97.0 | 155 | 29688 | 29620 | 26.2 | 1.03 | 83.0 | 3.27 | 81.0 | 3.19 | 101.0 | 3.98 | 109.0 | 4.29 | 0.49 | 1.23 | 0.68 | 28.1 | 23.4 | 1.20 |
| | 2.9062 | 127.000 | 5.0000 | 36.512 | 1.4375 | 36.170 | 1.4240 | 28.575 | 1.1250 | 0.8 | 0.03 | 3.2 | 0.13 | 156 | 226 | 568 | 563 | 28.6 | 1.13 | 83.0 | 3.27 | 82.0 | 3.23 | 112.0 | 4.41 | 120.0 | 4.72 | 0.36 | 1.65 | 0.91 | 45.8 | 28.5 | 1.61 |
| 74.612 | 2.9375 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 175 | 262 | 577R | 572 | 31.0 | 1.22 | 91.0 | 3.58 | 85.0 | 3.35 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 2.9375 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 658 | 653 | 33.4 | 1.31 | 92.0 | 3.62 | 86.0 | 3.39 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 2.9375 | 150.000 | 5.9055 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.0 | 0.12 | 208 | 301 | 658 | 653X | 33.4 | 1.31 | 92.0 | 3.62 | 86.0 | 3.39 | 133.0 | 5.24 | 141.0 | 5.55 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| 74.976 | 2.9518 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 2.0 | 0.08 | 2.0 | 0.08 | 90.0 | 127 | 34294 | 34478 | 26.8 | 1.06 | 85.0 | 3.35 | 83.0 | 3.27 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| 74.986 | 2.9522 | 127.000 | 5.0000 | 30.162 | 1.1875 | 31.000 | 1.2205 | 22.225 | 0.8750 | 2.4 | 0.09 | 3.2 | 0.13 | 143 | 225 | 42686X | 42620 | 27.1 | 1.07 | 85.0 | 3.35 | 81.0 | 3.19 | 114.0 | 4.49 | 121.0 | 4.76 | 0.42 | 1.43 | 0.79 | 41.4 | 29.6 | 1.40 |
| 74.988 | 2.9523 | 127.000 | 5.0000 | 30.162 | 1.1875 | 31.000 | 1.2205 | 22.225 | 0.8750 | 6.4 | 0.25 | 3.2 | 0.13 | 143 | 225 | 42686 | 42620 | 27.1 | 1.07 | 95.0 | 3.74 | 84.0 | 3.31 | 114.0 | 4.49 | 121.0 | 4.76 | 0.42 | 1.43 | 0.79 | 41.4 | 29.6 | 1.40 |
| 75.000 | 2.9528 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 2.4 | 0.09 | 2.0 | 0.08 | 90.0 | 127 | 34295 | 34478 | 26.8 | 1.06 | 86.0 | 3.39 | 83.0 | 3.27 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| | 2.9528 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.0 | 0.12 | 3.2 | 0.13 | 316 | 471 | 6555R | 6535 | 41.0 | 1.61 | 95.0 | 3.74 | 85.0 | 3.35 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| 76.200 | 3.0000 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 3.6 | 0.14 | 2.0 | 0.08 | 90.0 | 127 | 34301 | 34478 | 26.8 | 1.06 | 89.0 | 3.50 | 83.0 | 3.27 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| | 3.0000 | 125.412 | 4.9375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 1.6 | 0.06 | 101 | 162 | 27684 | 27620 | 24.7 | 0.97 | 91.0 | 3.58 | 84.0 | 3.31 | 115.0 | 4.53 | 120.0 | 4.72 | 0.42 | 1.44 | 0.79 | 29.2 | 20.8 | 1.41 |
| | 3.0000 | 127.000 | 5.0000 | 26.988 | 1.0625 | 23.012 | 0.9060 | 19.842 | 0.7812 | 2.0 | 0.08 | 3.2 | 0.13 | 90.0 | 127 | 34300 | 34500 | 29.2 | 1.15 | 86.0 | 3.39 | 83.0 | 3.27 | 112.0 | 4.41 | 118.0 | 4.65 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| | 3.0000 | 127.000 | 5.0000 | 30.162 | 1.1875 | 31.000 | 1.2205 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 143 | 225 | 42687 | 42620 | 27.1 | 1.07 | 90.0 | 3.54 | 84.0 | 3.31 | 114.0 | 4.49 | 121.0 | 4.76 | 0.42 | 1.43 | 0.79 | 41.4 | 29.6 | 1.40 |
| | 3.0000 | 127.000 | 5.0000 | 30.162 | 1.1875 | 31.000 | 1.2205 | 22.225 | 0.8750 | 6.4 | 0.25 | 3.2 | 0.13 | 143 | 225 | 42688 | 42620 | 27.1 | 1.07 | 96.0 | 3.78 | 84.0 | 3.31 | 114.0 | 4.49 | 121.0 | 4.76 | 0.42 | 1.43 | 0.79 | 41.4 | 29.6 | 1.40 |
| | 3.0000 | 129.975 | 5.1171 | 33.249 | 1.3090 | 31.000 | 1.2205 | 27.000 | 1.0630 | 3.6 | 0.14 | 2.4 | 0.09 | 143 | 225 | 42687 | 42624 | 30.1 | 1.19 | 90.0 | 3.54 | 84.0 | 3.31 | 114.0 | 4.49 | 121.0 | 4.76 | 0.42 | 1.43 | 0.79 | 41.4 | 29.6 | 1.40 |
| | 3.0000 | 133.350 | 5.2500 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 6.4 | 0.25 | 3.2 | 0.13 | 133 | 198 | 495AX | 492A | 29.8 | 1.17 | 98.0 | 3.86 | 86.0 | 3.39 | 120.0 | 4.72 | 128.0 | 5.04 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.0000 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 6.4 | 0.25 | 3.2 | 0.13 | 154 | 245 | 47678R | 47620 | 29.2 | 1.15 | 97.0 | 3.82 | 90.0 | 3.54 | 119.0 | 4.69 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.0000 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 3.6 | 0.14 | 0.8 | 0.03 | 154 | 245 | 47679R | 47620A | 29.2 | 1.15 | 91.0 | 3.58 | 85.0 | 3.35 | 121.0 | 4.76 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.0000 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 0.8 | 0.03 | 3.2 | 0.13 | 154 | 245 | 47680R | 47620 | 29.2 | 1.15 | 86.0 | 3.39 | 85.0 | 3.35 | 119.0 | 4.69 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.0000 | 135.733 | 5.3438 | 44.450 | 1.7500 | 46.101 | 1.8150 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 213 | 337 | 5760 | 5735 | 33.0 | 1.30 | 94.0 | 3.70 | 88.0 | 3.46 | 119.0 | 4.69 | 130.0 | 5.12 | 0.41 | 1.48 | 0.81 | 62.5 | 43.4 | 1.44 |
| | 3.0000 | 136.525 | 5.3750 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 495A | 493 | 29.8 | 1.17 | 92.0 | 3.62 | 86.0 | 3.39 | 122.0 | 4.80 | 130.0 | 5.12 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.0000 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 175 | 262 | 575R | 572 | 31.0 | 1.22 | 92.0 | 3.62 | 86.0 | 3.39 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.0000 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 6.7 | 0.26 | 3.2 | 0.13 | 175 | 262 | 575SR | 572 | 31.0 | 1.22 | 99.0 | 3.90 | 86.0 | 3.39 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.0000 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.6 | 0.14 | 0.8 | 0.03 | 183 | 287 | 590A | 592XE | 33.4 | 1.31 | 95.0 | 3.74 | 89.0 | 3.50 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.0000 | 149.225 | 5.8750 | 53.975 | 2.1250 | 54.229 | 2.1350 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 285 | 404 | 6461 | 6420 | 39.3 | 1.55 | 96.0 | 3.78 | 89.5 | 3.52 | 129.0 | 5.08 | 141.0 | 5.55 | 0.36 | 1.66 | 0.91 | 83.9 | 51.9 | |

Tapered roller bearings

TS type
d (76.200) ~ (82.550) mm
(3.0000) ~ (3.2500) inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

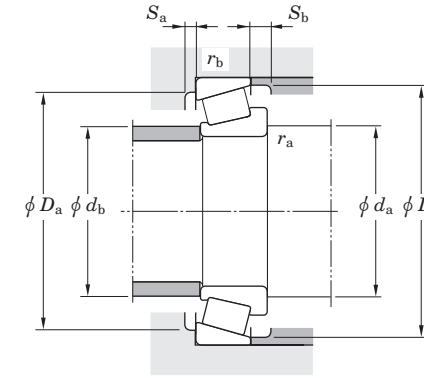
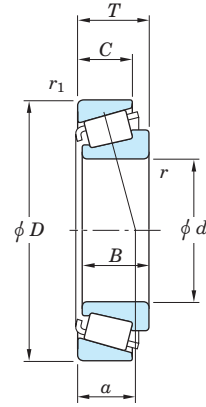
| | | | |
|--------------------|---|-----------------|-------|
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | Axial load factors | | Reference rating (kN) | | Factor | | | | |
|---------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|----------|------|-------------------------|------|----------------|-----------------|-------------------|------------------|---------------------|------|----------------|------|----------------|------|----------------|--------------------|----------------|-----------------------|------|----------------|----------------|--------------------------|------|------|
| d | | D | | T | | B | | C | | r (min.) | | r ₁ (min.) | | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | | d _a | | d _b | | D _a | | D _b | | e | Y ₁ | Y ₀ | (500 rpm for 3 000 Hrs.) | | K |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | mm | inch | |
| 76.200 | 3.0000 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6576R | 6535 | 41.0 | 1.61 | 99.0 | 3.90 | 89.0 | 3.50 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.0000 | 168.275 | 6.6250 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 273 | 391 | 755 | 753 | 35.5 | 1.40 | 95.0 | 3.74 | 88.0 | 3.46 | 147.0 | 5.79 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.0000 | 169.850 | 6.6870 | 62.705 | 2.4687 | 63.830 | 2.5130 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6554R | 6520 | 41.0 | 1.61 | 99.0 | 3.90 | 89.0 | 3.50 | 147.0 | 5.79 | 162.0 | 6.38 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.0000 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 440 | 602 | HH221430 | HH221410 | 42.5 | 1.67 | 101.0 | 3.98 | 95.0 | 3.74 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| 77.356 | 3.0455 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 3.6 | 0.14 | 2.0 | 0.08 | 90.0 | 127 | 34304 | 34478 | 26.8 | 1.06 | 90.0 | 3.54 | 85.0 | 3.35 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| 77.788 | 3.0625 | 117.475 | 4.6250 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.050 | 0.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 101 | 166 | LM814849 | LM814810 | 27.6 | 1.09 | 91.0 | 3.58 | 85.0 | 3.35 | 105.0 | 4.13 | 113.0 | 4.45 | 0.51 | 1.18 | 0.65 | 29.2 | 25.4 | 1.15 |
| | 3.0625 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 3.6 | 0.14 | 2.0 | 0.08 | 90.0 | 127 | 34306 | 34478 | 26.8 | 1.06 | 90.0 | 3.54 | 84.0 | 3.31 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| | 3.0625 | 121.442 | 4.7812 | 24.608 | 0.9688 | 23.012 | 0.9060 | 17.462 | 0.6875 | 6.4 | 0.25 | 2.0 | 0.08 | 90.0 | 127 | 34307 | 34478 | 26.8 | 1.06 | 96.0 | 3.78 | 84.0 | 3.31 | 110.0 | 4.33 | 116.0 | 4.57 | 0.45 | 1.33 | 0.73 | 26.0 | 20.0 | 1.30 |
| | 3.0625 | 127.000 | 5.0000 | 30.162 | 1.1875 | 31.000 | 1.2205 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 143 | 225 | 42690 | 42620 | 27.1 | 1.07 | 91.0 | 3.58 | 85.0 | 3.35 | 114.0 | 4.49 | 121.0 | 4.76 | 0.42 | 1.43 | 0.79 | 41.4 | 29.6 | 1.40 |
| | 3.0625 | 133.350 | 5.2500 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 495AS | 492A | 29.8 | 1.17 | 93.0 | 3.66 | 87.0 | 3.43 | 120.0 | 4.72 | 128.0 | 5.04 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.0625 | 135.733 | 5.3438 | 44.450 | 1.7500 | 46.101 | 1.8150 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 213 | 337 | 5795 | 5735 | 33.0 | 1.30 | 96.0 | 3.78 | 89.0 | 3.50 | 119.0 | 4.69 | 130.0 | 5.12 | 0.41 | 1.48 | 0.81 | 62.5 | 43.4 | 1.44 |
| 79.375 | 3.1250 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 661 | 653 | 33.4 | 1.31 | 96.0 | 3.78 | 90.0 | 3.54 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 3.1250 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.6 | 0.14 | 3.2 | 0.13 | 183 | 287 | 595A | 592XS | 33.4 | 1.31 | 98.0 | 3.86 | 91.0 | 3.58 | 133.0 | 5.24 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.1250 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 368 | 750R | 742 | 32.4 | 1.28 | 96.0 | 3.78 | 90.0 | 3.54 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| | 3.1250 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 7.9 | 0.31 | 3.2 | 0.13 | 273 | 391 | 756A | 752 | 35.5 | 1.40 | 106.0 | 4.17 | 91.0 | 3.58 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.1250 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 440 | 602 | HH221431 | HH221410 | 42.5 | 1.67 | 103.0 | 4.06 | 97.0 | 3.82 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| | 3.1250 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 440 | 602 | HH221431 | HH221410 | 42.5 | 1.67 | 103.0 | 4.06 | 97.0 | 3.82 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| 79.985 | 3.1490 | 136.525 | 5.3750 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 496X | 493 | 29.8 | 1.17 | 94.0 | 3.70 | 88.0 | 3.46 | 122.0 | 4.80 | 130.0 | 5.12 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.1490 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 175 | 262 | 578R | 572 | 31.0 | 1.22 | 95.0 | 3.74 | 89.0 | 3.50 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.1490 | 152.400 | 6.0000 | 39.688 | 1.5625 | 36.322 | 1.4300 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 183 | 287 | 590 | 592A | 37.1 | 1.46 | 98.0 | 3.86 | 92.0 | 3.62 | 135.0 | 5.31 | 144.0 | 5.67 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| 80.000 | 3.1496 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.0 | 0.12 | 3.2 | 0.13 | 264 | 368 | 748R | 742 | 32.4 | 1.28 | 95.0 | 3.74 | 91.0 | 3.58 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| | 3.1496 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.0 | 0.12 | 3.2 | 0.13 | 316 | 471 | 6556R | 6535 | 41.0 | 1.61 | 99.0 | 3.90 | 89.0 | 3.50 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.1496 | 168.275 | 6.6250 | 53.975 | 2.1250 | 56.363 | 2.2190 | 41.275 | 1.6250 | 3.0 | 0.12 | 3.2 | 0.13 | 344 | 467 | 838XR | 832 | 35.0 | 1.38 | 93.0 | 3.66 | 92.0 | 3.62 | 149.0 | 5.87 | 155.0 | 6.10 | 0.30 | 2.00 | 1.10 | 101 | 51.6 | 1.95 |
| | 3.1496 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 3.0 | 0.12 | 3.2 | 0.13 | 385 | 565 | 864XR | 854 | 39.9 | 1.57 | 100.0 | 3.94 | 95.0 | 3.74 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 3.1496 | 200.000 | 7.8740 | 52.761 | 2.0772 | 49.212 | 1.9375 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 347 | 471 | 98316 | 98788 | 54.5 | 2.15 | 111.0 | 4.37 | 105.0 | 4.13 | 174.0 | 6.85 | 188.0 | 7.40 | 0.63 | 0.95 | 0.52 | 101 | 109 | 0.93 |
| 80.962 | 3.1875 | 133.350 | 5.2500 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 496 | 492A | 29.8 | 1.17 | 95.0 | 3.74 | 89.0 | 3.50 | 120.0 | 4.72 | 128.0 | 5.04 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.1875 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 154 | 245 | 47681R | 47620 | 29.2 | 1.15 | 95.0 | 3.74 | 89.0 | 3.50 | 119.0 | 4.69 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.1875 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 3.6 | 0.14 | 0.8 | 0.03 | 154 | 245 | 47681R | 47620A | 29.2 | 1.15 | 95.0 | 3.74 | 89.0 | 3.50 | 121.0 | 4.76 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.1875 | 133.350 | 5.2500 | 39.688 | 1.5625 | 39.688 | 1.5625 | 32.545 | 1.2813 | 3.6 | 0.14 | 3.2 | 0.13 | 177 | 306 | HM516447 | HM516410 | 32.2 | 1.27 | 97.0 | 3.82 | 91.0 | 3.58 | 118.0 | 4.65 | 128.0 | 5.04 | 0.40 | 1.49 | 0.82 | 51.8 | 35.6 | 1.46 |
| | 3.1875 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 175 | 262 | 581R | 572 | 31.0 | 1.22 | 96.0 | 3.78 | 90.0 | 3.54 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.1875 | 146.050 | 5.7500 | 38.100 | 1.5000 | 38.100 | 1.5000 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 662 | 653 | 30.2 | 1.19 | 97.0 | 3.82 | 90.0 | 3.54 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60. | | |

TS type

d (82.550) ~ (85.725) mm
(3.2500) ~ (3.3750) inch



$$P = XF_r + YF_a$$

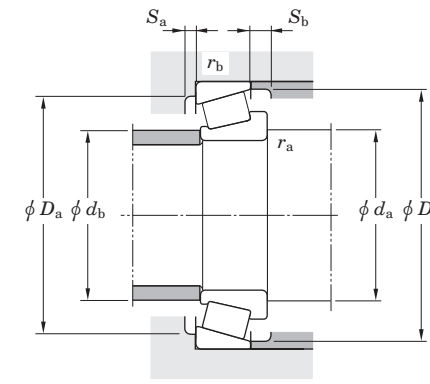
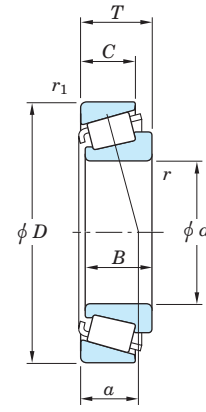
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Inner ring (Cone) | Outer ring (Cup) | Load center a | Mounting dimensions | | | | | | Constant e | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor K | | | | | |
|---------------------|--------|---------|--------|--------|----------|-----------------------|----------------|-----------------|--------|-----|------|-------------------------|----------------|----------------------|---------------------|------------------|---------------------|--------|-------|-------|------|-------|---------------|--------------------|------|---|------|-------------|------|------|------|------|------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | da | db | Da | Db | Y ₁ | | | | Y ₀ | Radial | Axial | | | | | | | | | | | | | | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | | | | | |
| 82.550 | 3.2500 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 3.6 | 0.14 | 0.8 | 0.03 | 154 | 245 | 47686R | 47620A | 29.2 | 1.15 | 97.0 | 3.82 | 90.0 | 3.54 | 121.0 | 4.76 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.2500 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 6.7 | 0.26 | 0.8 | 0.03 | 154 | 245 | 47687R | 47620A | 29.2 | 1.15 | 103.0 | 4.06 | 90.0 | 3.54 | 121.0 | 4.76 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| | 3.2500 | 133.350 | 5.2500 | 39.688 | 1.5625 | 39.688 | 1.5625 | 32.545 | 1.2813 | 6.7 | 0.26 | 3.2 | 0.13 | 177 | 306 | HM516448 | HM516410 | 32.2 | 1.27 | 105.0 | 4.13 | 92.0 | 3.62 | 118.0 | 4.65 | 128.0 | 5.04 | 0.40 | 1.49 | 0.82 | 51.8 | 35.6 | 1.46 |
| | 3.2500 | 133.350 | 5.2500 | 39.688 | 1.5625 | 39.688 | 1.5625 | 32.545 | 1.2813 | 3.6 | 0.14 | 3.2 | 0.13 | 177 | 306 | HM516449 | HM516410 | 32.2 | 1.27 | 99.0 | 3.90 | 92.0 | 3.62 | 118.0 | 4.65 | 128.0 | 5.04 | 0.40 | 1.49 | 0.82 | 51.8 | 35.6 | 1.46 |
| | 3.2500 | 139.700 | 5.5000 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 175 | 262 | 580R | 572X | 31.0 | 1.22 | 98.0 | 3.86 | 91.0 | 3.58 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.2500 | 139.700 | 5.5000 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 6.7 | 0.26 | 3.2 | 0.13 | 175 | 262 | 582R | 572X | 31.0 | 1.22 | 104.0 | 4.09 | 91.0 | 3.58 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.2500 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 175 | 262 | 580R | 572 | 31.0 | 1.22 | 98.0 | 3.86 | 91.0 | 3.58 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.2500 | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.1250 | 6.7 | 0.26 | 3.2 | 0.13 | 175 | 262 | 582R | 572 | 31.0 | 1.22 | 104.0 | 4.09 | 91.0 | 3.58 | 125.0 | 4.92 | 133.0 | 5.24 | 0.40 | 1.49 | 0.82 | 51.2 | 35.3 | 1.45 |
| | 3.2500 | 142.138 | 5.5960 | 42.862 | 1.6875 | 42.862 | 1.6875 | 34.133 | 1.3438 | 3.6 | 0.14 | 3.2 | 0.13 | 219 | 351 | HM617045 | HM617010 | 35.2 | 1.39 | 100.0 | 3.94 | 93.0 | 3.66 | 125.0 | 4.92 | 137.0 | 5.39 | 0.43 | 1.39 | 0.76 | 64.4 | 47.5 | 1.35 |
| | 3.2500 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 663 | 653 | 33.4 | 1.31 | 99.0 | 3.90 | 92.0 | 3.62 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 3.2500 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 6.7 | 0.26 | 3.2 | 0.13 | 208 | 301 | 663A | 653 | 33.4 | 1.31 | 105.0 | 4.13 | 92.0 | 3.62 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 3.2500 | 150.000 | 5.9055 | 35.992 | 1.4170 | 36.322 | 1.4300 | 27.000 | 1.0630 | 3.6 | 0.14 | 3.0 | 0.12 | 183 | 287 | 595 | 593X | 33.4 | 1.31 | 100.0 | 3.94 | 93.0 | 3.66 | 134.0 | 5.28 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.2500 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 368 | 749AR | 742 | 32.4 | 1.28 | 99.0 | 3.90 | 93.0 | 3.66 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| | 3.2500 | 150.089 | 5.9090 | 44.450 | 1.7500 | 46.672 | 1.8375 | 36.512 | 1.4375 | 6.7 | 0.26 | 3.2 | 0.13 | 264 | 368 | 750AR | 742 | 32.4 | 1.28 | 106.0 | 4.17 | 93.0 | 3.66 | 134.0 | 5.28 | 142.0 | 5.59 | 0.33 | 1.84 | 1.01 | 77.3 | 43.0 | 1.80 |
| | 3.2500 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 273 | 391 | 757 | 752 | 35.5 | 1.40 | 100.0 | 3.94 | 94.0 | 3.70 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.2500 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6559R | 6535 | 41.0 | 1.61 | 104.0 | 4.09 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.2500 | 168.275 | 6.6250 | 53.975 | 2.1250 | 56.363 | 2.2190 | 41.275 | 1.6250 | 0.8 | 0.03 | 3.2 | 0.13 | 344 | 467 | 839R | 832 | 35.0 | 1.38 | 95.0 | 3.74 | 94.0 | 3.70 | 149.0 | 5.87 | 155.0 | 6.10 | 0.30 | 2.00 | 1.10 | 101 | 51.6 | 1.95 |
| | 3.2500 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 3.2 | 0.13 | 3.2 | 0.13 | 385 | 565 | 867XR | 854 | 39.9 | 1.57 | 103.0 | 4.06 | 98.0 | 3.86 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| 83.345 | 3.2813 | 125.412 | 4.9375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 0.8 | 0.03 | 1.6 | 0.06 | 101 | 162 | 27689 | 27620 | 24.7 | 0.97 | 90.0 | 3.54 | 90.0 | 3.54 | 115.0 | 4.53 | 120.0 | 4.72 | 0.42 | 1.44 | 0.79 | 29.2 | 20.8 | 1.41 |
| | 3.2813 | 125.412 | 4.9375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 3.6 | 0.14 | 1.6 | 0.06 | 101 | 162 | 27690 | 27620 | 24.7 | 0.97 | 96.0 | 3.78 | 90.0 | 3.54 | 115.0 | 4.53 | 120.0 | 4.72 | 0.42 | 1.44 | 0.79 | 29.2 | 20.8 | 1.41 |
| | 3.2813 | 125.412 | 4.9375 | 25.400 | 1.0000 | 25.400 | 1.0000 | 19.845 | 0.7813 | 6.4 | 0.25 | 1.6 | 0.06 | 101 | 162 | 27691 | 27620 | 24.7 | 0.97 | 102.0 | 4.02 | 90.0 | 3.54 | 115.0 | 4.53 | 120.0 | 4.72 | 0.42 | 1.44 | 0.79 | 29.2 | 20.8 | 1.41 |
| | 3.2813 | 133.350 | 5.2500 | 33.338 | 1.3125 | 33.338 | 1.3125 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 154 | 245 | 47688R | 47620 | 29.2 | 1.15 | 97.0 | 3.82 | 90.0 | 3.54 | 119.0 | 4.69 | 128.0 | 5.04 | 0.40 | 1.48 | 0.82 | 44.7 | 30.9 | 1.45 |
| 84.138 | 3.3125 | 133.350 | 5.2500 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 498 | 492A | 29.8 | 1.17 | 98.0 | 3.86 | 91.0 | 3.58 | 120.0 | 4.72 | 128.0 | 5.04 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.3125 | 149.225 | 5.8750 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 664 | 652A | 33.4 | 1.31 | 100.0 | 3.94 | 95.0 | 3.74 | 132.0 | 5.20 | 141.0 | 5.55 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 3.3125 | 152.400 | 6.0000 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 664 | 652 | 33.4 | 1.31 | 100.0 | 3.94 | 95.0 | 3.74 | 134.0 | 5.28 | 141.0 | 5.55 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| 84.963 | 3.3450 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6578R | 6535 | 41.0 | 1.61 | 109.0 | 4.29 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| 84.976 | 3.3455 | 136.525 | 5.3750 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 499A | 493 | 29.8 | 1.17 | 98.0 | 3.86 | 92.0 | 3.62 | 122.0 | 4.80 | 130.0 | 5.12 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| 85.000 | 3.3465 | 152.400 | 6.0000 | 39.688 | 1.5625 | 36.322 | 1.4300 | 30.162 | 1.1875 | 3.2 | 0.13 | 3.2 | 0.13 | 183 | 287 | 596X | 592A | 37.1 | 1.46 | 101.0 | 3.98 | 96.0 | 3.78 | 135.0 | 5.31 | 144.0 | 5.67 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.3465 | 152.400 | 6.0000 | 39.688 | 1.5625 | 36.322 | 1.4300 | 30.162 | 1.1875 | 3.0 | 0.12 | 3.2 | 0.13 | 183 | 287 | 599X | 592A | 37.1 | 1.46 | 100.0 | 3.94 | 96.0 | 3.78 | 135.0 | 5.31 | 144.0 | 5.67 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.3465 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.0 | 0.12 | 3.2 | 0.13 | 316 | 471 | 6557R | 6535 | 41.0 | 1.61 | 95.0 | 3.74 | 85.0 | 3.35 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.3465 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 3.0 | 0.12 | 3.2 | 0.13 | 385 | 565 | 865XR | 854 | 39.9 | 1.57 | 105.0 | 4.13 | 100.0 | 3.94 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 3.3465 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TS type
d (85.725) ~ 89.992 mm
 (3.3750) ~ 3.5430 inch



$$P = XF_r + YF_a$$

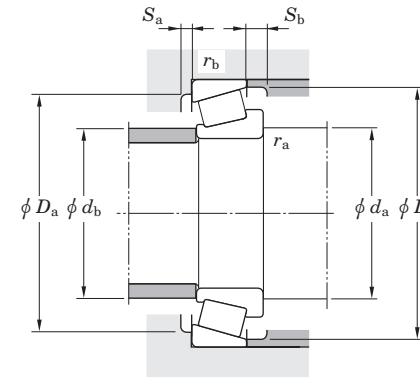
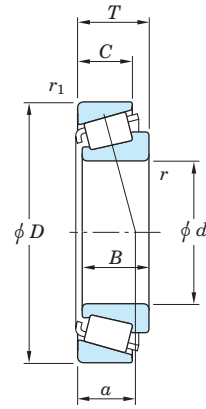
$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|----------------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y ₁ |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor | | | |
|---------------------|---------|----------|--------|----------|--------|----------|--------|----------|--------|-----------------|------|-----------------------------|------|----------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|-------|----------------------|-------|----------------------|----------|----------------------|--------------------|----------|--|----------------------|--------|-------|----------|------|
| <i>d</i> | | <i>D</i> | | <i>T</i> | | <i>B</i> | | <i>C</i> | | <i>r</i> (min.) | | <i>r₁</i> (min.) | | <i>C_r</i> | <i>C_{0r}</i> | Inner ring (Cone) | Outer ring (Cup) | <i>a</i> | <i>d_a</i> | | <i>d_b</i> | | <i>D_a</i> | | <i>D_b</i> | | <i>e</i> | <i>Y₁</i> | <i>Y₀</i> | Radial | Axial | <i>K</i> | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 85.725 | 3.3750 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 208 | 301 | 665 | 653 | 33.4 | 1.31 | 102.0 | 4.02 | 95.0 | 3.74 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 3.3750 | 146.050 | 5.7500 | 41.275 | 1.6250 | 41.275 | 1.6250 | 31.750 | 1.2500 | 6.4 | 0.25 | 3.2 | 0.13 | 208 | 301 | 665A | 653 | 33.4 | 1.31 | 107.0 | 4.21 | 95.0 | 3.74 | 131.0 | 5.16 | 139.0 | 5.47 | 0.41 | 1.47 | 0.81 | 60.9 | 42.6 | 1.43 |
| | 3.3750 | 152.400 | 6.0000 | 39.688 | 1.5625 | 36.322 | 1.4300 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 183 | 287 | 596 | 592A | 37.1 | 1.46 | 102.0 | 4.02 | 96.0 | 3.78 | 135.0 | 5.31 | 144.0 | 5.67 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.3750 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 273 | 391 | 758 | 752 | 35.5 | 1.40 | 103.0 | 4.06 | 97.0 | 3.82 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.3750 | 161.925 | 6.3750 | 62.705 | 2.4687 | 63.830 | 2.5130 | 42.862 | 1.6875 | 6.7 | 0.26 | 3.2 | 0.13 | 316 | 471 | 6553R | 6535 | 49.8 | 1.96 | 113.0 | 4.45 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.3750 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 224 | 349 | 677 | 672 | 38.6 | 1.52 | 105.0 | 4.13 | 99.0 | 3.90 | 149.0 | 5.87 | 160.0 | 6.30 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| | 3.3750 | 168.275 | 6.6250 | 53.975 | 2.1250 | 56.363 | 2.2190 | 41.275 | 1.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 344 | 467 | 841R | 832 | 35.0 | 1.38 | 104.0 | 4.09 | 97.0 | 3.82 | 149.0 | 5.87 | 155.0 | 6.10 | 0.30 | 2.00 | 1.10 | 101 | 51.6 | 1.95 |
| | 3.3750 | 170.045 | 6.6947 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 2.4 | 0.09 | 224 | 349 | 677 | 673SA | 38.6 | 1.52 | 105.0 | 4.13 | 99.0 | 3.90 | 151.0 | 5.94 | 160.0 | 6.30 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| 87.312 | 3.4375 | 123.825 | 4.8750 | 20.638 | 0.8125 | 20.638 | 0.8125 | 16.670 | 0.6563 | 1.6 | 0.06 | 1.6 | 0.06 | 81.8 | 145 | L217847 | L217810 | 20.7 | 0.81 | 96.0 | 3.78 | 93.0 | 3.66 | 116.0 | 4.57 | 119.0 | 4.69 | 0.33 | 1.82 | 1.00 | 23.5 | 13.2 | 1.77 |
| | 3.4375 | 136.525 | 5.3750 | 30.162 | 1.1875 | 29.769 | 1.1720 | 22.225 | 0.8750 | 3.6 | 0.14 | 3.2 | 0.13 | 133 | 198 | 495X | 493 | 29.8 | 1.17 | 100.0 | 3.94 | 94.0 | 3.70 | 122.0 | 4.80 | 130.0 | 5.12 | 0.44 | 1.35 | 0.74 | 38.8 | 29.4 | 1.32 |
| | 3.4375 | 152.400 | 6.0000 | 39.688 | 1.5625 | 36.322 | 1.4300 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 183 | 287 | 596S | 592A | 37.1 | 1.46 | 103.0 | 4.06 | 97.0 | 3.82 | 135.0 | 5.31 | 144.0 | 5.67 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.4375 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 7.9 | 0.31 | 3.2 | 0.13 | 385 | 565 | 869R | 854 | 39.9 | 1.57 | 117.0 | 4.61 | 102.0 | 4.02 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 3.4375 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 7.9 | 0.31 | 3.2 | 0.13 | 440 | 602 | HH221432 | HH221410 | 42.5 | 1.67 | 118.0 | 4.65 | 103.0 | 4.06 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| 88.824 | 3.4970 | 161.925 | 6.3750 | 62.705 | 2.4687 | 63.830 | 2.5130 | 42.862 | 1.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6552XR | 6535 | 49.8 | 1.96 | 109.0 | 4.29 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| 88.900 | 3.5000 | 123.825 | 4.8750 | 20.638 | 0.8125 | 20.638 | 0.8125 | 16.670 | 0.6563 | 1.6 | 0.06 | 1.6 | 0.06 | 81.8 | 145 | L217849 | L217810 | 20.7 | 0.81 | 97.0 | 3.82 | 94.0 | 3.70 | 116.0 | 4.57 | 119.0 | 4.69 | 0.33 | 1.82 | 1.00 | 23.5 | 13.2 | 1.77 |
| | 3.5000 | 146.050 | 5.7500 | 33.338 | 1.3125 | 34.925 | 1.3750 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 178 | 293 | 47885R | 47820 | 32.6 | 1.28 | 104.0 | 4.09 | 98.0 | 3.86 | 131.0 | 5.16 | 140.0 | 5.51 | 0.45 | 1.34 | 0.74 | 51.6 | 39.5 | 1.31 |
| | 3.5000 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.6 | 0.14 | 0.8 | 0.03 | 183 | 287 | 593 | 592XE | 33.4 | 1.31 | 104.0 | 4.09 | 98.0 | 3.86 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.5000 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 6.4 | 0.25 | 0.8 | 0.03 | 183 | 287 | 593A | 592XE | 33.4 | 1.31 | 110.0 | 4.33 | 98.0 | 3.86 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.5000 | 152.400 | 6.0000 | 39.688 | 1.5625 | 36.322 | 1.4300 | 33.338 | 1.3125 | 3.6 | 0.14 | 3.2 | 0.13 | 183 | 287 | 593 | 592 | 37.1 | 1.46 | 104.0 | 4.09 | 98.0 | 3.86 | 135.0 | 5.31 | 144.0 | 5.67 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.5000 | 152.400 | 6.0000 | 39.688 | 1.5625 | 39.688 | 1.5625 | 30.162 | 1.1875 | 6.4 | 0.25 | 3.2 | 0.13 | 248 | 359 | HM518445 | HM518410 | 33.1 | 1.30 | 110.0 | 4.33 | 98.0 | 3.86 | 135.0 | 5.31 | 114.0 | 4.49 | 0.40 | 1.49 | 0.82 | 72.3 | 49.6 | 1.46 |
| | 3.5000 | 159.995 | 6.2990 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 7.1 | 0.28 | 0.8 | 0.03 | 273 | 391 | 766 | 752A | 35.5 | 1.40 | 113.0 | 4.45 | 99.0 | 3.90 | 146.0 | 5.75 | 149.0 | 5.87 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.5000 | 160.096 | 6.3030 | 30.124 | 1.1860 | 30.162 | 1.1875 | 22.301 | 0.8780 | 2.4 | 0.09 | 3.2 | 0.13 | 165 | 221 | 69350X | 69630 | 30.6 | 1.20 | 103.0 | 4.06 | 97.0 | 3.82 | 143.0 | 5.63 | 149.0 | 5.87 | 0.42 | 1.42 | 0.78 | 47.7 | 34.5 | 1.38 |
| | 3.5000 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 273 | 391 | 759 | 752 | 35.5 | 1.40 | 106.0 | 4.17 | 99.0 | 3.90 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.5000 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 7.1 | 0.28 | 3.2 | 0.13 | 273 | 391 | 766 | 752 | 35.5 | 1.40 | 113.0 | 4.45 | 99.0 | 3.90 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| | 3.5000 | 161.925 | 6.3750 | 53.975 | 2.4687 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6580R | 6535 | 49.8 | 1.96 | 109.0 | 4.29 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.5000 | 161.925 | 6.3750 | 62.705 | 2.4687 | 63.830 | 2.5130 | 42.862 | 1.6875 | 3.6 | 0.14 | 3.2 | 0.13 | 316 | 471 | 6552R | 6535 | 49.8 | 1.96 | 109.0 | 4.29 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.5000 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 224 | 349 | 679 | 672 | 38.6 | 1.52 | 107.0 | 4.21 | 101.0 | 3.98 | 149.0 | 5.87 | 160.0 | 6.30 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| | 3.5000 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 4.8 | 0.19 | 3.2 | 0.13 | 288 | 438 | 775 | 772 | 39.5 | 1.56 | 111.0 | 4.37 | 103.0 | 4.06 | 161.0 | 6.34 | 168.0 | 6.61 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 3.5000 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 7.9 | 0.31 | 3.2 | 0.13 | 385 | 565 | 855R | 854 | 40.0 | 1.57 | 118.0 | 4.65 | 103.0 | 4.06 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 3.5000 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 7.9 | 0.31 | 3.2 | 0.13 | 440 | 602 | HH221434 | HH221410 | 42.5 | 1.67 | 120.0 | 4.72 | 105.0 | 4.13 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| 3.5000 | 200.000 | 7.8740 | 52.761 | 2.0772 | 49.212 | 1.9375 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 347 | 471 | 98350 | 98788 | 54.5 | 2.15 | 118.0 | 4.65 | 112.0 | 4.41 | 174.0 | 6.85 | 188.0 | 7.40 | 0 | | | | | | |

TS type
d 90.000 ~ 98.425 mm
 3.5433 ~ 3.8750 inch



| | | | |
|---|---|-----------------|-------|
| $P = XF_r + YF_a$ $P_0 = 0.5 F_r + Y_0 F_a$ or $P_0 = F_r$ | | | |
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

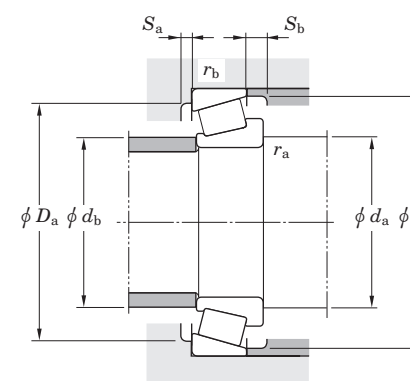
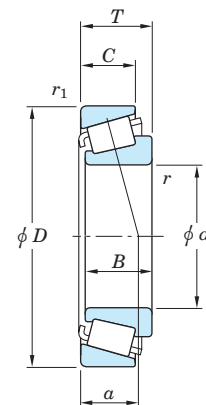
Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor | | | |
|---------------------|---------|----------|--------|----------|--------|----------|--------|----------|--------|-----------------|------|------------------------------|----------------------------|----------------------|-----------------------|----------------------|---------------------|----------|-----------------------|-------|-----------------------|-------|-----------------------|-------|-----------------------|--------------------|----------|--|-----------------------|--------|-------|----------|------|
| <i>d</i> | | <i>D</i> | | <i>T</i> | | <i>B</i> | | <i>C</i> | | <i>r</i> (min.) | | <i>r</i> ₁ (min.) | | <i>C_r</i> | <i>C_{0r}</i> | Inner ring (Cone) | Outer ring (Cup) | <i>a</i> | <i>d</i> _a | | <i>d</i> _b | | <i>D</i> _a | | <i>D</i> _b | | <i>e</i> | <i>Y</i> ₁ | <i>Y</i> ₀ | Radial | Axial | <i>K</i> | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 90.000 | 3.5433 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.0 | 0.12 | 0.8 | 0.03 | 183 | 287 | 597X | 592XE | 33.4 | 1.31 | 104.0 | 4.09 | 99.0 | 3.90 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.5433 | 160.000 | 6.2992 | 53.975 | 2.1250 | 55.100 | 2.1693 | 44.450 | 1.7500 | 3.0 | 0.12 | 3.0 | 0.12 | 316 | 471 | 6581XR | 6525X | 41.0 | 1.61 | 102.0 | 4.02 | 98.0 | 3.86 | 141.0 | 5.55 | 153.5 | 6.04 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| | 3.5433 | 161.925 | 6.3750 | 53.975 | 2.1250 | 55.100 | 2.1693 | 42.862 | 1.6875 | 3.0 | 0.12 | 3.2 | 0.13 | 316 | 471 | 6581XR | 6535 | 41.0 | 1.61 | 102.0 | 4.02 | 98.0 | 3.86 | 141.0 | 5.55 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 92.9 | 63.5 | 1.46 |
| 90.488 | 3.5625 | 161.925 | 6.3750 | 47.625 | 1.8750 | 48.260 | 1.9000 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 273 | 391 | 760 | 752 | 35.5 | 1.40 | 107.0 | 4.21 | 101.0 | 3.98 | 144.0 | 5.67 | 150.0 | 5.91 | 0.34 | 1.76 | 0.97 | 80.0 | 46.6 | 1.72 |
| 92.075 | 3.6250 | 130.175 | 5.1250 | 20.638 | 0.8125 | 21.432 | 0.8438 | 16.670 | 0.6563 | 3.6 | 0.14 | 1.6 | 0.06 | 97.0 | 167 | L319245 | L319210 | 22.2 | 0.87 | 107.0 | 4.21 | 101.0 | 3.98 | 122.0 | 4.80 | 125.0 | 4.92 | 0.35 | 1.72 | 0.95 | 27.7 | 16.5 | 1.68 |
| | 3.6250 | 146.050 | 5.7500 | 33.338 | 1.3125 | 34.925 | 1.3750 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 178 | 293 | 47890R | 47820 | 32.6 | 1.28 | 107.0 | 4.21 | 101.0 | 3.98 | 131.0 | 5.16 | 140.0 | 5.51 | 0.45 | 1.34 | 0.74 | 51.6 | 39.5 | 1.31 |
| | 3.6250 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.6 | 0.14 | 0.8 | 0.03 | 183 | 287 | 598 | 592XE | 33.4 | 1.31 | 107.0 | 4.21 | 101.0 | 3.98 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.6250 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 6.4 | 0.25 | 0.8 | 0.03 | 183 | 287 | 598A | 592XE | 33.4 | 1.31 | 113.0 | 4.45 | 101.0 | 3.98 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.6250 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 224 | 349 | 681 | 672 | 38.6 | 1.52 | 110.0 | 4.33 | 104.0 | 4.09 | 149.0 | 5.87 | 160.0 | 6.30 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| | 3.6250 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 6.4 | 0.25 | 3.2 | 0.13 | 224 | 349 | 681A | 672 | 38.6 | 1.52 | 116.0 | 4.57 | 104.0 | 4.09 | 149.0 | 5.87 | 160.0 | 6.30 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| | 3.6250 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 288 | 438 | 778 | 772 | 39.5 | 1.56 | 111.0 | 4.37 | 105.0 | 4.13 | 161.0 | 6.34 | 168.0 | 6.61 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 3.6250 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 7.9 | 0.31 | 3.2 | 0.13 | 385 | 565 | 857R | 854 | 39.9 | 1.57 | 121.0 | 4.76 | 106.0 | 4.17 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| 3.6250 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 7.9 | 0.31 | 3.2 | 0.13 | 440 | 602 | HH221438 | HH221410 | 42.5 | 1.67 | 121.0 | 4.76 | 106.0 | 4.17 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 | |
| 93.662 | 3.6875 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.6 | 0.14 | 0.8 | 0.03 | 183 | 287 | 597 | 592XE | 33.4 | 1.31 | 109.0 | 4.29 | 102.0 | 4.02 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| 94.976 | 3.7392 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 3.6 | 0.14 | 3.2 | 0.13 | 385 | 565 | 867AR | 854 | 39.9 | 1.57 | 114.0 | 4.49 | 108.0 | 4.25 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| 95.000 | 3.7402 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 6.4 | 0.25 | 3.2 | 0.13 | 385 | 565 | 862R | 854 | 39.9 | 1.57 | 120.0 | 4.72 | 108.0 | 4.25 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| 95.250 | 3.7500 | 128.588 | 5.0625 | 15.875 | 0.6250 | 15.083 | 0.5938 | 11.908 | 0.4688 | 1.6 | 0.06 | 1.6 | 0.06 | 58.0 | 93.0 | LL319349 | LL319310 | 20.3 | 0.80 | 103.0 | 4.06 | 100.0 | 3.94 | 122.0 | 4.80 | 124.0 | 4.88 | 0.35 | 1.71 | 0.94 | 16.4 | 9.85 | 1.67 |
| | 3.7500 | 130.175 | 5.1250 | 20.638 | 0.8125 | 21.432 | 0.8438 | 16.670 | 0.6563 | 1.6 | 0.06 | 1.6 | 0.06 | 97.0 | 167 | L319249 | L319210 | 22.2 | 0.87 | 107.0 | 4.21 | 101.0 | 3.98 | 122.0 | 4.80 | 125.0 | 4.92 | 0.35 | 1.72 | 0.95 | 27.7 | 16.5 | 1.68 |
| | 3.7500 | 146.050 | 5.7500 | 33.338 | 1.3125 | 34.925 | 1.3750 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 178 | 293 | 47896R | 47820 | 32.6 | 1.28 | 110.0 | 4.33 | 103.0 | 4.06 | 131.0 | 5.16 | 140.0 | 5.51 | 0.45 | 1.34 | 0.74 | 51.6 | 39.5 | 1.31 |
| | 3.7500 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 3.6 | 0.14 | 0.8 | 0.03 | 183 | 287 | 594 | 592XE | 33.4 | 1.31 | 110.0 | 4.33 | 104.0 | 4.09 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.7500 | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.4300 | 26.192 | 1.0312 | 5.2 | 0.20 | 0.8 | 0.03 | 183 | 287 | 594A | 592XE | 33.4 | 1.31 | 113.0 | 4.45 | 104.0 | 4.09 | 135.0 | 5.31 | 142.0 | 5.59 | 0.44 | 1.36 | 0.75 | 53.5 | 40.4 | 1.32 |
| | 3.7500 | 157.162 | 6.1875 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 180 | 288 | 52375 | 52618 | 36.0 | 1.42 | 112.0 | 4.41 | 105.0 | 4.13 | 142.0 | 5.59 | 152.0 | 5.98 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 3.7500 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 224 | 349 | 683 | 672 | 38.6 | 1.52 | 113.0 | 4.45 | 106.0 | 4.17 | 149.0 | 5.87 | 160.0 | 6.30 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| | 3.7500 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 288 | 438 | 776 | 772 | 39.5 | 1.56 | 114.0 | 4.49 | 107.0 | 4.21 | 161.0 | 6.34 | 168.0 | 6.61 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 3.7500 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 7.9 | 0.31 | 3.2 | 0.13 | 385 | 565 | 864R | 854 | 39.9 | 1.57 | 123.0 | 4.84 | 108.0 | 4.25 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| 3.7500 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 7.9 | 0.31 | 3.2 | 0.13 | 440 | 602 | HH221440 | HH221410 | 42.5 | 1.67 | 125.0 | 4.92 | 110.0 | 4.33 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 | |
| 96.838 | 3.8125 | 148.430 | 5.8437 | 28.575 | 1.1250 | 28.971 | 1.1406 | 21.433 | 0.8438 | 3.6 | 0.14 | 3 | 0.12 | 143 | 225 | 42381 | 42584 | 31.9 | 1.26 | 110.0 | 4.33 | 104.0 | 4.09 | 134.0 | 5.28 | 142.0 | 5.59 | 0.49 | 1.22 | 0.67 | 41.4 | 34.8 | 1.19 |
| 98.425 | 3.8750 | 160.000 | 6.2992 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.0 | 0.12 | 180 | 288 | 52387 | 52630X | 36.0 | 1.42 | 114.0 | 4.49 | 108.0 | 4.25 | 144.0 | 5.67 | 154.0 | 6.06 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 3.8750 | 161.925 | 6.3750 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 180 | 288 | 52387 | 52637 | 36.0 | 1.42 | 114.0 | 4.49 | 108.0 | 4.25 | 144.0 | 5.67 | 154.0 | 6.06 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 3.8750 | 161.925 | 6.3750 | 39.688 | 1.5625 | 36.116 | 1.4219 | 29.370 | 1.1563 | 3.6 | 0.14 | 3.2 | 0.13 | 180 | 288 | 52387 | 52638 | 39.2 | 1.54 | 114.0 | 4.49 | 108.0 | 4.25 | 144.0 | 5.67 | 154.0 | 6.06 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 3.8750 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 224 | 349 | 685 | 672 | 38.6 | 1.52 | 116.0 | | | | | | | | | | | | | |

Tapered roller bearings

TS type

d 99.975 ~ 107.950 mm
3.9360 ~ 4.2500 inch



| | | | |
|--|---|-----------------|----------------|
| $P = XF_r + YF_a$ | | | |
| $P_0 = 0.5 F_r + Y_0 F_a$ or $P_0 = F_r$ | | | |
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y ₁ |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

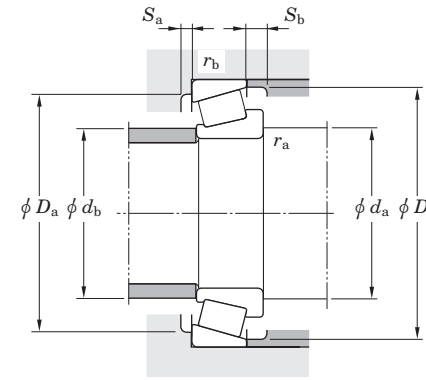
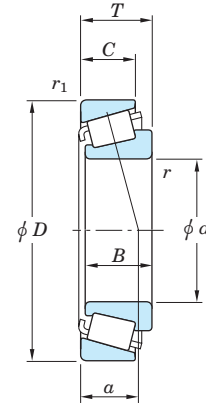
| Boundary dimensions | | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor | | | |
|---------------------|---------|---------|--------|--------|----------|-----------------------|----------------|-----------------|----------------------|---------------------|------|----------------|----------------------------|----------------|----------------|----------|----------------|----------------|---------------------|-------|-------|-------|-------|-------|----------|--------------------|------|--|------|--------|------|------|------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | d _b | D _a | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | | | | | | | | | | | |
| mm | inch | mm | inch | mm | inch | mm | inch | inch | inch | mm | inch | mm | inch | mm | inch | | | | | | | | | | | | | | | | | | |
| 99.975 | 3.9360 | 156.975 | 6.1801 | 42.000 | 1.6535 | 42.000 | 1.6535 | 34.000 | 1.3386 | 7.9 | 0.31 | 3.6 | 0.14 | 245 | 396 | HM220149 | HM220110 | 32.4 | 1.28 | 123.0 | 4.84 | 108.0 | 4.25 | 142.0 | 5.59 | 151.0 | 5.94 | 0.33 | 1.80 | 0.99 | 71.8 | 40.8 | 1.76 |
| | 3.9360 | 212.725 | 8.3750 | 66.675 | 2.6250 | 66.675 | 2.6250 | 53.975 | 2.1250 | 3.6 | 0.14 | 3.2 | 0.13 | 513 | 699 | HH224334 | HH224310 | 47.6 | 1.87 | 122.0 | 4.80 | 117.0 | 4.61 | 192.0 | 7.56 | 202.0 | 7.95 | 0.33 | 1.84 | 1.01 | 151 | 84.2 | 1.80 |
| 99.982 | 3.9363 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 6.4 | 0.25 | 3.2 | 0.13 | 385 | 565 | 863R | 854 | 39.9 | 1.57 | 125.0 | 4.92 | 103.0 | 4.06 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 3.9363 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 6.4 | 0.25 | 3.2 | 0.13 | 440 | 602 | HH221447 | HH221410 | 42.5 | 1.67 | 126.0 | 4.96 | 114.0 | 4.49 | 171.0 | 6.73 | 179.0 | 7.05 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| 100.000 | 3.9370 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 288 | 438 | 783 | 772 | 39.5 | 1.56 | 118.0 | 4.65 | 111.0 | 4.37 | 161.0 | 6.34 | 168.0 | 6.61 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 3.9370 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 6.0 | 0.24 | 3.2 | 0.13 | 385 | 565 | 863XR | 854 | 39.9 | 1.57 | 122.0 | 4.80 | 117.0 | 4.61 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 3.9370 | 200.000 | 7.8740 | 52.761 | 2.0772 | 49.213 | 1.9375 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 347 | 471 | 98394X | 98788 | 54.7 | 2.15 | 126.0 | 4.96 | 120.5 | 4.75 | 174.0 | 6.85 | 188.0 | 7.40 | 0.63 | 0.95 | 0.52 | 101 | 109 | 0.93 |
| 100.012 | 3.9375 | 157.162 | 6.1875 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 180 | 288 | 52393 | 52618 | 36.0 | 1.42 | 113.0 | 4.45 | 115.0 | 4.53 | 142.0 | 5.59 | 150.0 | 5.91 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| 101.600 | 4.0000 | 157.162 | 6.1875 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 180 | 288 | 52400 | 52618 | 36.0 | 1.42 | 114.0 | 4.49 | 115.0 | 4.53 | 142.0 | 5.59 | 150.0 | 5.91 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 4.0000 | 157.162 | 6.1875 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 7.9 | 0.31 | 3.2 | 0.13 | 180 | 288 | 52401 | 52618 | 36.0 | 1.42 | 126.0 | 4.96 | 111.0 | 4.37 | 142.0 | 5.59 | 152.0 | 5.98 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 4.0000 | 161.925 | 6.3750 | 36.513 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.6 | 0.14 | 3.2 | 0.13 | 180 | 288 | 52400 | 52637 | 36.0 | 1.42 | 117.0 | 4.61 | 111.0 | 4.37 | 144.0 | 5.67 | 154.0 | 6.06 | 0.47 | 1.26 | 0.69 | 52.7 | 42.8 | 1.23 |
| | 4.0000 | 168.275 | 6.6250 | 41.275 | 1.6250 | 41.275 | 1.6250 | 30.162 | 1.1875 | 3.6 | 0.14 | 3.2 | 0.13 | 224 | 349 | 687 | 672 | 38.6 | 1.52 | 114.0 | 4.49 | 115.0 | 4.53 | 146.0 | 5.75 | 156.0 | 6.14 | 0.47 | 1.28 | 0.70 | 65.8 | 52.9 | 1.24 |
| | 4.0000 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 288 | 438 | 780 | 772 | 39.5 | 1.56 | 114.0 | 4.49 | 120.0 | 4.72 | 156.0 | 6.14 | 165.0 | 6.50 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 4.0000 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 9.5 | 0.37 | 3.2 | 0.13 | 385 | 565 | 860R | 854 | 39.9 | 1.57 | 126.0 | 4.96 | 114.0 | 4.49 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 4.0000 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 44.450 | 1.7500 | 7.9 | 0.31 | 3.2 | 0.13 | 385 | 565 | 861R | 854 | 39.9 | 1.57 | 129.0 | 5.08 | 114.0 | 4.49 | 170.0 | 6.69 | 174.0 | 6.85 | 0.33 | 1.79 | 0.99 | 113 | 64.6 | 1.75 |
| | 4.0000 | 190.500 | 7.5000 | 57.150 | 2.2500 | 57.531 | 2.2650 | 46.038 | 1.8125 | 7.9 | 0.31 | 3.2 | 0.13 | 440 | 602 | HH221449 | HH221410 | 42.5 | 1.67 | 123.0 | 4.84 | 119.0 | 4.69 | 168.0 | 6.61 | 178.0 | 7.01 | 0.33 | 1.79 | 0.99 | 129 | 73.6 | 1.75 |
| | 4.0000 | 200.000 | 7.8740 | 52.761 | 2.0772 | 49.212 | 1.9375 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 347 | 471 | 98400 | 98788 | 54.5 | 2.15 | 114.0 | 4.49 | 123.0 | 4.84 | 170.0 | 6.69 | 185.0 | 7.28 | 0.63 | 0.95 | 0.52 | 101 | 109 | 0.93 |
| | 4.0000 | 212.725 | 8.3750 | 66.675 | 2.6250 | 66.675 | 2.6250 | 53.975 | 2.1250 | 7.1 | 0.28 | 3.2 | 0.13 | 450 | 674 | 941 | 932 | 47.6 | 1.87 | 121.0 | 4.76 | 135.0 | 5.31 | 181.0 | 7.13 | 192.0 | 7.56 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.80 |
| 4.0000 | 212.725 | 8.3750 | 66.675 | 2.6250 | 66.675 | 2.6250 | 53.975 | 2.1250 | 7.1 | 0.28 | 3.2 | 0.13 | 513 | 699 | HH224335 | HH224310 | 47.6 | 1.87 | 121.0 | 4.76 | 134.0 | 5.28 | 189.0 | 7.44 | 201.0 | 7.91 | 0.33 | 1.84 | 1.01 | 151 | 84.2 | 1.80 | |
| 104.775 | 4.1250 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 288 | 438 | 782 | 772 | 39.5 | 1.56 | 117.0 | 4.61 | 120.0 | 4.72 | 156.0 | 6.14 | 165.0 | 6.50 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 4.1250 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 6.4 | 0.25 | 3.2 | 0.13 | 288 | 438 | 786 | 772 | 39.5 | 1.56 | 123.0 | 4.84 | 120.0 | 4.72 | 156.0 | 6.14 | 165.0 | 6.50 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 4.1250 | 180.975 | 7.1250 | 47.625 | 1.8750 | 48.006 | 1.8900 | 38.100 | 1.5000 | 7.1 | 0.28 | 3.2 | 0.13 | 288 | 438 | 787 | 772 | 39.5 | 1.56 | 129.0 | 5.08 | 116.0 | 4.57 | 161.0 | 6.34 | 168.0 | 6.61 | 0.39 | 1.56 | 0.86 | 84.5 | 55.7 | 1.52 |
| | 4.1250 | 190.500 | 7.5000 | 47.625 | 1.8750 | 49.212 | 1.9375 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 303 | 483 | 71412 | 71750 | 40.9 | 1.61 | 117.0 | 4.61 | 131.0 | 5.16 | 167.0 | 6.57 | 177.0 | 6.97 | 0.42 | 1.44 | 0.79 | 89.0 | 63.3 | 1.41 |
| 106.362 | 4.1875 | 165.100 | 6.5000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 195 | 325 | 56418R | 56650 | 38.6 | 1.52 | 122.0 | 4.80 | 116.0 | 4.57 | 149.0 | 5.87 | 159.0 | 6.26 | 0.50 | 1.21 | 0.66 | 56.7 | 48.2 | 1.18 |
| | 4.1875 | 165.100 | 6.5000 | 36.513 | 1.4375 | 36.513 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 184 | 300 | 56418 | 56650 | 38.5 | 1.52 | 122.0 | 4.80 | 116.0 | 4.57 | 149.0 | 5.87 | 159.0 | 6.26 | 0.50 | 1.21 | 0.66 | 53.7 | 45.7 | 1.18 |
| 107.950 | 4.2500 | 146.050 | 5.7500 | 21.432 | 0.8438 | 21.432 | 0.8438 | 16.670 | 0.6563 | 1.6 | 0.06 | 1.6 | 0.06 | 86.4 | 167 | L521949R | L521910 | 26.2 | 1.03 | 116.0 | 4.57 | 114.0 | 4.49 | 136.0 | 5.35 | 141.0 | 5.55 | 0.39 | 1.53 | 0.84 | 24.8 | 16.7 | 1.49 |
| | 4.2500 | 158.750 | 6.2500 | 23.020 | 0.9063 | 21.438 | 0.8440 | 15.875 | 0.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 104 | 169 | 37425 | 37625 | 36.5 | 1.44 | 121.0 | 4.76 | 121.0 | 4.76 | 141.0 | 5.55 | 148.0 | 5.83 | 0.61 | 0.99 | 0.54 | 29.7 | 30.8 | 1.97 |
| | 4.2500 | 159.987 | 6.2987 | 34.925 | 1.3750 | 34.925 | 1.3750 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 184 | 319 | LM522546 | LM522510 | 32.9 | 1.30 | 122.0 | 4.80 | 116.0 | 4.57 | 146.0 | 5.75 | 154.0 | 6.06 | 0.40 | 1.50 | 0.82 | 53.4 | 36.5 | 1.46 |
| | 4.2500 | 161.925 | 6.3750 | 23.020 | 0.9063 | 21.438 | 0.8440 | 15.875 | 0.6250 | 3.6 | 0.14 | 3.2 | 0.13 | 104 | 169 | 37425 | 37637 | 36.5 | 1.44 | 122.0 | 4.80 | 115.0 | 4.53 | 145.0 | 5.71 | 152.0 | 5.98 | 0.61 | 0.99 | 0.54 | 29.7 | 30.8 | 0.97 |
| | 4.2500 | 161.925 | 6.3750 | 34.925 | 1.3750 | 34.925 | 1.3750 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 173 | 293 | 48190 | 48120 | 39.1 | 1.54 | 121.0 | 4.76 | 120.0 | 4.72 | 145.0 | 5.71 | 154.0 | 6.06 | 0.51 | 1.19 | 0.65 | 50.3 | 43.4 | 1.16 |
| | 4.2500 | 165.100 | 6.5000 | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.6 | 0.14 | 3.2 | 0.13 | 195 | 325 | 56425R | 56650 | 38.6 | 1.52 | 123.0 | 4.84 | 117.0 | 4.61 | 149.0 | 5.87 | 159.0 | 6.26 | 0.50 | 1.21 | 0.66 | 56.7 | 48.2 | |

Tapered roller bearings

TS type

d 109.538 ~ 123.825 mm

4.3125 ~ 4.8750 inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|----------------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y ₁ |

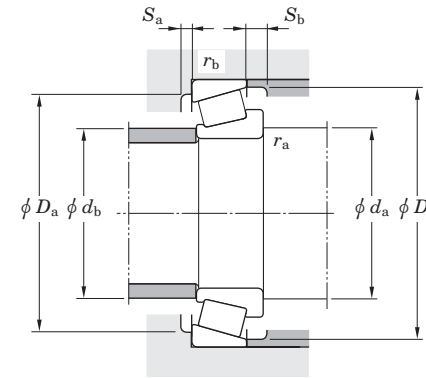
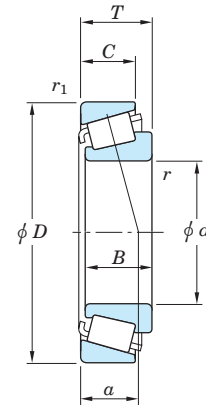
Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor |
|---------------------|---------|--------|--------|--------|----------|-----------------------|----------------|-----------------|----------------------|---------------------|------|----------------|-------------------------|----------------|----------------|------|----------------|----------------|---------------------|-------|------|----|------|----|----------|--------------------|------|---|------|--------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | d _b | D _a | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | mm | inch | mm | inch | mm | inch | mm | inch | mm |
| 109.538 | 158.750 | 23.020 | 21.438 | 15.875 | 6.4 | 6.4 | 104 | 169 | 37431 | 37625 | 36.5 | 123.0 | 116.0 | 143.0 | 152.0 | 0.61 | 0.99 | 0.54 | 29.7 | 30.8 | 0.97 | | | | | | | | | |
| 109.952 | 190.500 | 47.625 | 49.212 | 34.925 | 3.6 | 3.2 | 303 | 483 | 71432 | 71750 | 40.9 | 129.0 | 123.0 | 171.0 | 181.0 | 0.42 | 1.44 | 0.79 | 89.0 | 63.3 | 1.41 | | | | | | | | | |
| 109.987 | 159.987 | 34.925 | 34.925 | 26.988 | 7.9 | 3.2 | 184 | 319 | LM522548 | LM522510 | 32.9 | 131.0 | 121.0 | 146.0 | 153.0 | 0.40 | 1.50 | 0.82 | 53.4 | 36.5 | 1.46 | | | | | | | | | |
| 109.992 | 177.800 | 41.275 | 41.275 | 30.162 | 3.6 | 3.2 | 234 | 380 | 64433R | 64700 | 42.8 | 128.0 | 121.0 | 160.0 | 172.6 | 0.52 | 1.16 | 0.64 | 68.4 | 60.3 | 1.13 | | | | | | | | | |
| 110.000 | 212.725 | 66.675 | 66.675 | 53.975 | 6.4 | 3.2 | 450 | 674 | 942 | 932 | 47.6 | 136.0 | 124.0 | 187.0 | 193.0 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.80 | | | | | | | | | |
| 111.125 | 190.500 | 47.625 | 49.212 | 34.925 | 3.6 | 3.2 | 303 | 483 | 71437 | 71750 | 40.9 | 129.0 | 123.0 | 171.0 | 181.0 | 0.42 | 1.44 | 0.79 | 89.0 | 63.3 | 1.41 | | | | | | | | | |
| 111.917 | 212.725 | 66.675 | 66.675 | 53.975 | 13.5 | 3.2 | 450 | 674 | 947 | 932 | 47.6 | 151.0 | 125.0 | 187.0 | 193.0 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.80 | | | | | | | | | |
| 114.046 | 212.725 | 66.675 | 66.675 | 53.975 | 7.1 | 3.2 | 450 | 674 | 938S | 932 | 47.6 | 141.0 | 128.0 | 187.0 | 193.0 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.80 | | | | | | | | | |
| 114.300 | 152.400 | 21.433 | 21.433 | 16.670 | 1.6 | 1.6 | 96.4 | 197 | L623149 | L623110 | 27.7 | 130.0 | 120.0 | 143.0 | 148.0 | 0.41 | 1.45 | 0.80 | 27.5 | 19.4 | 1.42 | | | | | | | | | |
| 4.5000 | 155.575 | 21.433 | 21.433 | 21.433 | 1.6 | 1.6 | 96.4 | 197 | L623149 | L623114 | 27.7 | 130.0 | 120.0 | 143.0 | 149.0 | 0.41 | 1.45 | 0.80 | 27.5 | 19.4 | 1.42 | | | | | | | | | |
| 4.5000 | 177.800 | 41.275 | 41.275 | 30.162 | 3.6 | 3.2 | 234 | 380 | 64450R | 64700 | 42.8 | 131.0 | 125.0 | 160.0 | 172.0 | 0.52 | 1.16 | 0.64 | 68.4 | 60.3 | 1.13 | | | | | | | | | |
| 4.5000 | 180.975 | 34.925 | 31.750 | 25.400 | 3.6 | 3.2 | 171 | 247 | 68450 | 68712 | 40.6 | 127.0 | 131.0 | 161.0 | 169.0 | 0.50 | 1.21 | 0.66 | 49.7 | 42.2 | 1.18 | | | | | | | | | |
| 4.5000 | 190.500 | 47.625 | 49.212 | 34.925 | 3.6 | 3.2 | 303 | 483 | 71450 | 71750 | 40.9 | 127.0 | 131.0 | 167.0 | 177.0 | 0.42 | 1.44 | 0.79 | 89.0 | 63.3 | 1.41 | | | | | | | | | |
| 4.5000 | 206.375 | 66.675 | 66.675 | 53.975 | 7.1 | 3.2 | 450 | 674 | 938 | 930 | 47.6 | 141.0 | 128.0 | 184.0 | 193.0 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.79 | | | | | | | | | |
| 4.5000 | 212.725 | 66.675 | 66.675 | 53.975 | 7.1 | 3.2 | 450 | 674 | 938 | 932 | 47.6 | 141.0 | 128.0 | 187.0 | 193.0 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.80 | | | | | | | | | |
| 4.5000 | 212.725 | 66.675 | 66.675 | 53.975 | 13.5 | 3.2 | 450 | 674 | 939 | 932 | 47.6 | 153.0 | 127.0 | 187.0 | 193.0 | 0.33 | 1.84 | 1.01 | 133 | 73.9 | 1.80 | | | | | | | | | |
| 4.5000 | 212.725 | 66.675 | 66.675 | 53.975 | 7.1 | 3.2 | 513 | 699 | HH224346 | HH224310 | 47.6 | 134.0 | 134.0 | 189.0 | 201.0 | 0.33 | 1.84 | 1.01 | 151 | 84.2 | 1.80 | | | | | | | | | |
| 4.5000 | 273.050 | 82.550 | 82.550 | 53.975 | 6.4 | 6.4 | 707 | 898 | HH926744 | HH926710 | 76.1 | 133.0 | 151.0 | 230.0 | 252.0 | 0.63 | 0.95 | 0.52 | 208 | 225 | 0.93 | | | | | | | | | |
| 114.976 | 212.725 | 66.675 | 66.675 | 53.975 | 7.1 | 3.2 | 513 | 699 | HH224349 | HH224310 | 47.6 | 135.0 | 134.0 | 189.0 | 201.0 | 0.33 | 1.84 | 1.01 | 151 | 84.2 | 1.80 | | | | | | | | | |
| 115.087 | 190.500 | 47.625 | 49.212 | 34.925 | 3.6 | 3.2 | 303 | 483 | 71453 | 71750 | 40.9 | 133.0 | 126.0 | 171.0 | 181.0 | 0.42 | 1.44 | 0.79 | 89.0 | 63.3 | 1.41 | | | | | | | | | |
| 4.5310 | 190.500 | 47.625 | 49.212 | 34.925 | 7.9 | 3.2 | 303 | 483 | 71455 | 71750 | 40.9 | 136.0 | 131.0 | 167.0 | 177.0 | 0.42 | 1.44 | 0.79 | 89.0 | 63.3 | 1.41 | | | | | | | | | |
| 117.475 | 179.975 | 34.925 | 31.750 | 25.400 | 3.6 | 0.8 | 171 | 247 | 68462 | 68709 | 40.7 | 132.0 | 125.0 | 165.0 | 172.0 | 0.50 | 1.21 | 0.66 | 49.7 | 42.2 | 1.18 | | | | | | | | | |
| 4.6250 | 180.975 | 34.925 | 31.750 | 25.400 | 3.6 | 3.2 | 171 | 247 | 68462 | 68712 | 40.6 | 130.0 | 131.0 | 161.0 | 169.0 | 0.50 | 1.21 | 0.66 | 49.7 | 42.2 | 1.18 | | | | | | | | | |
| 4.6250 | 180.975 | 34.925 | 31.750 | 25.400 | 7.9 | 3.2 | 171 | 247 | 68463 | 68712 | 40.6 | 141.0 | 125.0 | 163.0 | 172.0 | 0.50 | 1.21 | 0.66 | 49.7 | 42.2 | 1.18 | | | | | | | | | |
| 120.650 | 174.625 | 35.720 | 36.513 | 27.783 | 3.6 | 1.6 | 208 | 362 | M224749 | M224710 | 32.1 | 135.0 | 129.0 | 162.0 | 168.0 | 0.33 | 1.80 | 0.99 | 60.1 | 34.2 | 1.76 | | | | | | | | | |
| 4.7500 | 190.500 | 46.038 | 46.038 | 34.925 | 3.6 | 1.6 | 313 | 512 | HM624749 | HM624710 | 41.6 | 146.0 | 132.0 | 174.0 | 184.0 | 0.43 | 1.41 | 0.77 | 91.4 | 66.7 | 1.37 | | | | | | | | | |
| 4.7500 | 199.974 | 46.038 | 46.038 | 34.925 | 3.6 | 1.6 | 313 | 512 | HM624749 | HM624716 | 41.6 | 146.0 | 132.0 | 174.0 | 184.0 | 0.43 | 1.41 | 0.77 | 91.4 | 66.7 | 1.37 | | | | | | | | | |
| 4.7500 | 206.375 | 47.625 | 47.625 | 34.925 | 3.2 | 3.2 | 326 | 548 | 795 | 792 | 45.7 | 139.0 | 134.0 | 186.0 | 198.0 | 0.46 | 1.31 | 0.72 | 95.2 | 74.6 | 1.27 | | | | | | | | | |
| 4.7500 | 234.950 | 63.500 | 63.500 | 49.213 | 6.4 | 3.2 | 523 | 826 | 95475 | 95925 | 49.9 | 149.0 | 137.0 | 209.0 | 217.0 | 0.37 | 1.62 | 0.89 | 154 | 97.1 | 1.58 | | | | | | | | | |
| 4.7500 | 254.000 | 77.788 | 82.550 | 61.912 | 9.5 | 6.4 | 717 | 1050 | HH228340 | HH228310 | 54.3 | 158.0 | 142.0 | 223.0 | 234.0 | 0.32 | 1.87 | 1.03 | 211 | 116 | 1.82 | | | | | | | | | |
| 4.7500 | 273.050 | 82.550 | 82.550 | 53.975 | 6.4 | 6.4 | 707 | 898 | HH926749 | HH926710 | 76.2 | 168.0 | 147.5 | 230.0 | 253.0 | 0.63 | 0.95 | 0.52 | 208 | 225 | 0.92 | | | | | | | | | |
| 4.7500 | 279.400 | 82.550 | 82.550 | 53.975 | 6.4 | 6.4 | 707 | 898 | HH926749 | HH926716 | 76.1 | 168.0 | 147.0 | 233.0 | 253.0 | 0.63 | 0.95 | 0.52 | 208 | 225 | 0.93 | | | | | | | | | |
| 123.825 | 182.563 | 39.688 | 38.100 | 33.338 | 3.6 | 3.2 | 227 | 429 | 48286 | 48220 | 34.1 | 139.0 | 133.0 | 168.0 | 176.0 | 0.31 | 1.97 | 1.08 | 65.8 | 34.3 | 1.92 | | | | | | | | | |

Note 1) SP indicates the specially chamfered from.

TS type

d 257.175 ~ 1 092.200 mm
10.1250 ~ 43.0000 inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

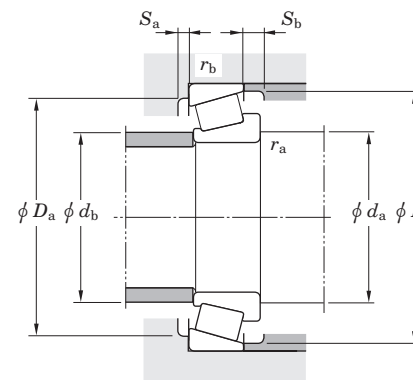
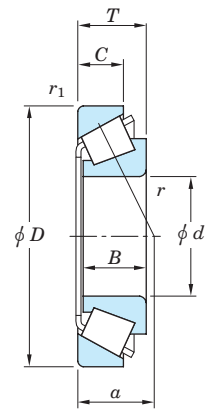
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant e | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor K |
|-------------------------------|--|--------------------------------------|--|--------------------------------------|----------------------------|----------------------------|----------------|----------------|----------------------|---------------------|--------------------------------------|--------------------------------------|----------------------------------|----------------------------------|----------------------------------|--------------|--------------|---------------------|------------|------------|--------------|----------------|--------------------|-----------------|----------------------------------|----------------------------------|---|-------------|---------------|
| d mm inch | D mm inch | T mm inch | B mm inch | C mm inch | r (min.) mm inch | r_1 (min.) mm inch | C_r | C_{or} | Inner ring (Cone) | Outer ring (Cup) | a mm inch | d_a mm inch | d_b mm inch | D_a mm inch | D_b mm inch | Y_1 | Y_0 | Radial | Axial | | | | | | | | | | |
| 257.175 10.1250 10.1250 | 342.900 13.5000 358.775 14.1250 | 57.150 2.2500 71.438 2.8125 | 57.150 2.2500 76.200 3.0000 | 44.450 1.7500 53.975 2.1250 | 6.4 0.25 1.6 0.06 | 3.2 0.13 3.2 0.13 | 612 773 | 1 280 1 590 | M349549 M249747 | M349510 M249710 | 60.1 2.37 64.4 2.54 | 276.0 10.87 276.0 10.87 | 276.0 10.87 272.0 10.71 | 320.0 12.60 335.0 13.19 | 330.0 12.99 343.0 13.50 | 0.35 0.33 | 1.73 1.80 | 0.95 0.99 | 177 225 | 105 128 | 1.68 1.76 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 468 971 | L555249 L555210 | 64.7 2.55 | 306.0 12.05 309.0 12.17 | 351.0 13.82 360.0 14.17 | 0.40 1.49 0.82 | 136 93.2 | 1.46 |
| 431.800 17.0000 | 533.400 21.0000 | 46.038 1.8125 | 46.038 1.8125 34.925 1.3750 | 34.925 1.3750 | 3.2 0.13 | 3.2 0.13 | 557 1 380 | | 80385 80325 | 69.1 2.72 | 450.0 17.72 446.0 17.56 | 510.0 20.08 510.0 20.08 | 0.31 1.96 1.08 | 160 83.3 | 1.91 | | | | | | | | | | | | | | |
| 450.850 17.7500 | 603.250 23.7500 | 85.725 3.3750 | 84.138 3.3125 60.325 2.3750 | 60.325 2.3750 | 6.4 0.25 3.2 0.13 | 3.2 0.13 | 1 380 3 170 | | LM770945 LM770910 | 116.0 4.57 | 484.0 19.06 474.0 18.66 | 570.0 22.44 584.0 22.99 | 0.45 1.32 0.73 | 401 311 | 1.29 | | | | | | | | | | | | | | |
| 457.200 18.0000 18.0000 | 573.088 22.5625 596.900 23.5000 | 74.613 2.9375 76.200 3.0000 | 74.613 2.9375 73.025 2.8750 | 57.150 2.2500 53.975 2.1250 | 6.4 0.25 9.5 0.37 | 6.4 0.25 3.2 0.13 | 1 100 1 120 | 2 930 2 620 | L570649 EE244180 | L570610 244235 | 100.4 3.95 103.1 4.06 | 485.0 19.09 494.0 19.45 | 475.0 18.70 478.0 18.82 | 543.0 21.38 567.0 22.32 | 558.0 21.97 570.5 22.47 | 0.40 0.40 | 1.49 1.48 | 0.82 0.82 | 319 325 | 219 225 | 1.45 1.44 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 2 470 5 550 | M272749 M272710 | 122.2 4.81 | 516.0 20.31 507.0 19.96 | 633.0 24.92 649.5 25.57 | 0.33 1.80 0.99 | 726 413 | 1.76 |
| 482.600 19.0000 | 634.873 24.9950 | 80.963 3.1875 | 80.963 3.1875 63.500 2.5000 | 63.500 2.5000 | 6.4 0.25 3.2 0.13 | 3.2 0.13 | 1 320 3 290 | | EE243190 243250 | 100.0 3.94 | 516.0 20.31 510.0 20.08 | 603.0 23.74 609.5 24.00 | 0.34 1.75 0.96 | 382 224 | 1.70 | | | | | | | | | | | | | | |
| 488.950 19.2500 19.2500 | 634.873 24.9950 660.400 26.0000 | 84.138 3.3125 93.663 3.6875 | 84.138 3.3125 94.458 3.7188 | 61.913 2.4375 69.850 2.7500 | 6.4 0.25 6.4 0.25 | 3.2 0.13 6.4 0.25 | 1 440 1 810 | 3 420 3 960 | LM772748 EE640192 | LM772710 640260 | 124.5 4.90 98.4 3.87 | 522.0 20.55 522.0 20.55 | 510.0 20.08 513.0 20.20 | 600.0 23.62 624.0 24.57 | 613.5 24.15 630.5 24.82 | 0.47 0.31 | 1.27 1.95 | 0.70 1.07 | 418 524 | 338 275 | 1.24 1.91 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 1 320 3 290 | EE243196 243250 | 100.0 3.94 | 528.0 20.79 522.0 20.55 | 603.0 23.74 609.5 24.00 | 0.34 1.75 0.96 | 382 224 | 1.70 |
| 536.575 21.1250 | 761.873 29.9950 | 146.050 5.7500 | 146.050 5.7500 114.300 4.5000 | 114.300 4.5000 | 6.4 0.25 6.4 0.25 | 6.4 0.25 | 3 290 7 190 | | M276449 M276410 | 135.7 5.34 | 576.0 22.68 570.0 22.44 | 711.0 27.99 725.5 28.57 | 0.33 1.80 0.99 | 966 549 | 1.76 | | | | | | | | | | | | | | |
| 539.750 21.2500 | 635.000 25.0000 | 50.800 2.0000 | 50.800 2.0000 38.100 1.5000 | 38.100 1.5000 | 6.4 0.25 6.4 0.25 | 6.4 0.25 | 752 1 970 | | LL575349 LL575310 | 101.4 3.99 | 564.0 22.20 555.0 21.85 | 612.0 24.09 621.0 24.45 | 0.41 1.48 0.81 | 215 149 | 1.44 | | | | | | | | | | | | | | |
| 549.097 21.6180 | 692.150 27.2500 | 80.963 3.1875 | 80.962 3.1875 61.913 2.4375 | 61.913 2.4375 | 6.4 0.25 6.4 0.25 | 6.4 0.25 | 1 410 3 700 | | L476548 L476510 | 113.6 4.47 | 579.0 22.80 570.0 22.44 | 657.0 25.87 666.0 26.22 | 0.38 1.59 0.88 | 407 262 | 1.55 | | | | | | | | | | | | | | |
| 549.275 21.6250 | 692.150 27.2500 | 80.963 3.1875 | 80.963 3.1875 61.913 2.4375 | 61.913 2.4375 | 6.4 0.25 6.4 0.25 | 6.4 0.25 | 1 410 3 700 | | L476549 L476510 | 113.6 4.47 | 579.0 22.80 570.0 22.44 | 657.0 25.87 666.0 26.22 | 0.38 1.59 0.88 | 407 262 | 1.55 | | | | | | | | | | | | | | |
| 584.200 23.0000 | 685.800 27.0000 | 49.213 1.9375 | 49.213 1.9375 34.925 1.3750 | 34.925 1.3750 | 3.6 0.14 3.2 0.13 | 3.2 0.13 | 723 1 930 | | LL778149 LL778110 | 113.8 4.48 | 603.0 23.74 600.0 23.62 | 663.0 26.10 669.0 26.34 | 0.44 1.36 0.75 | 206 155 | 1.33 | | | | | | | | | | | | | | |
| 609.600 24.0000 24.0000 | 762.000 30.0000 787.400 31.0000 | 95.250 3.7500 93.663 3.6875 | 92.075 3.6250 93.663 3.6875 | 71.438 2.8125 69.850 2.7500 | 6.4 0.25 6.4 0.25 | 6.4 0.25 6.4 0.25 | 1 700 1 980 | 4 510 4 970 | L879947 EE649240 | L879910 649310 | 153.0 6.02 126.9 5.00 | 642.0 25.28 642.0 25.28 | 633.0 24.92 633.0 24.92 | 720.0 28.35 747.0 29.41 | 743.0 29.25 756.0 29.76 | 0.49 0.37 | 1.23 1.61 | 0.67 0.89 | 496 574 | 416 365 | 1.19 1.57 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 1 860 5 630 | L183448 L183410 | 123.1 4.85 | 783.0 30.83 780.0 30.71 | 864.0 34.02 872.0 34.33 | 0.31 1.97 1.08 | 537 280 | 1.91 |
| 1 092.200 43.0000 | 1 320.800 52.0000 | 95.250 3.7500 | 88.900 3.5000 69.850 2.7500 | 69.850 2.7500 | 6.4 0.25 6.4 0.25 | 6.4 0.25 | 2 660 7 140 | | EE776430 776520 | 170.5 6.71 | 1 135.0 44.69 1 130.0 44.49 | 1 260.0 49.61 1 280.5 50.41 | 0.57 1.05 0.58 | 761 746 | 1.02 | | | | | | | | | | | | | | |

Note 1) SP indicates the specially chamfered from.

TSS type
d (44.450) ~ 68.262 mm
(1.7500) ~ 2.6875 inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

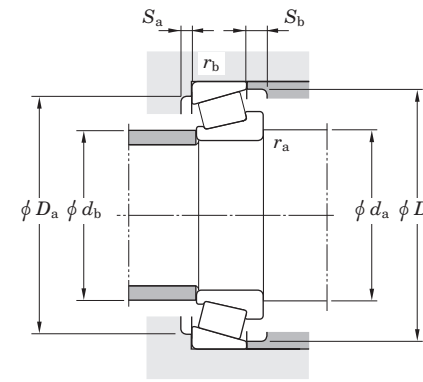
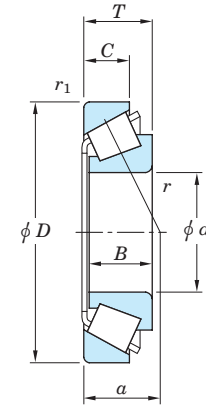
| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant | | Axial load factors | | Reference rating (kN) (500 rpm for 3 000 Hrs.) | | Factor | | | |
|---------------------|--------|---------|--------|--------|----------|-----------------------|----------------|-----------------|----------------------|---------------------|------|----------------------------|----------------|----------------|----------------|-------------|----------------|---------------------|--------|-------|------|------|------|----------|------|--------------------|------|--|------|--------|------|------|------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | d _b | D _a | D _b | e | Y ₁ | Y ₀ | Radial | Axial | K | | | | | | | | | | | | |
| mm | inch | mm | inch | mm | mm | mm | mm | mm | (Cone) | (Cup) | mm | inch | mm | inch | mm | inch | | | | | | | | | | | | | | | | | |
| 44.450 | 1.7500 | 112.712 | 4.4375 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 97.7 | 119 | 55175 | 55443 | 36.6 | 1.44 | 67.0 | 2.64 | 60.0 | 2.36 | 92.0 | 3.62 | 106.0 | 4.17 | 0.88 | 0.68 | 0.37 | 28.5 | 43.0 | 0.66 |
| 44.988 | 1.7712 | 95.250 | 3.7500 | 30.958 | 1.2188 | 28.575 | 1.1250 | 22.225 | 0.8750 | 3.6 | 0.14 | 0.8 | 0.03 | 99.7 | 120 | HM903248 | HM903210 | 30.8 | 1.21 | 65.0 | 2.56 | 54.0 | 2.13 | 81.0 | 3.19 | 91.0 | 3.58 | 0.74 | 0.81 | 0.45 | 29.0 | 36.6 | 0.79 |
| 47.625 | 1.8750 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 97.7 | 119 | 55187 | 55437 | 36.6 | 1.44 | 69.0 | 2.72 | 62.0 | 2.44 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 28.5 | 43.0 | 0.66 |
| | 1.8750 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 111 | 150 | 55187CR | 55437 | 36.6 | 1.44 | 69.0 | 2.72 | 62.0 | 2.44 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 32.3 | 48.8 | 0.66 |
| | 1.8750 | 111.125 | 4.3750 | 30.162 | 1.1875 | 28.575 | 1.1250 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 107 | 142 | HM907639 | HM907614 | 37.2 | 1.46 | 72.0 | 2.83 | 65.0 | 2.56 | 91.0 | 3.58 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 31.2 | 47.1 | 0.66 |
| | 1.8750 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 166 | 72187 | 72487 | 38.0 | 1.50 | 72.0 | 2.83 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 41.2 | 51.9 | 0.79 |
| 49.974 | 1.9675 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 97.7 | 119 | 55196 | 55437 | 36.6 | 1.44 | 71.0 | 2.80 | 64.0 | 2.52 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 28.5 | 43.0 | 0.66 |
| | 1.9675 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 2.0 | 0.08 | 3.2 | 0.13 | 97.7 | 119 | 55197 | 55437 | 36.6 | 1.44 | 68.0 | 2.68 | 64.0 | 2.52 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 28.5 | 43.0 | 0.66 |
| 50.800 | 2.0000 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 97.7 | 119 | 55200 | 55437 | 36.6 | 1.44 | 71.0 | 2.80 | 64.0 | 2.52 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 28.5 | 43.0 | 0.66 |
| | 2.0000 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 111 | 150 | 55200CR | 55437 | 36.6 | 1.44 | 71.0 | 2.80 | 64.0 | 2.52 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 32.3 | 48.8 | 0.66 |
| | 2.0000 | 111.125 | 4.3750 | 30.162 | 1.1875 | 28.575 | 1.1250 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 107 | 142 | HM907643 | HM907614 | 37.2 | 1.46 | 74.0 | 2.91 | 65.5 | 2.58 | 91.0 | 3.58 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 31.2 | 47.1 | 0.66 |
| | 2.0000 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 166 | 72200 | 72487 | 38.0 | 1.50 | 74.0 | 2.91 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 41.2 | 51.9 | 0.79 |
| | 2.0000 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 190 | 72200C | 72487 | 38.0 | 1.50 | 74.0 | 2.91 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 45.2 | 57.0 | 0.79 |
| 52.388 | 2.0625 | 111.125 | 4.3750 | 30.162 | 1.1875 | 26.909 | 1.0594 | 20.638 | 0.8125 | 3.6 | 0.14 | 3.2 | 0.13 | 97.7 | 119 | 55206 | 55437 | 36.6 | 1.44 | 72.0 | 2.83 | 64.0 | 2.52 | 92.0 | 3.62 | 105.0 | 4.13 | 0.88 | 0.68 | 0.37 | 28.5 | 43.0 | 0.66 |
| 53.975 | 2.1250 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 166 | 72212 | 72487 | 38.0 | 1.50 | 77.0 | 3.03 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 41.2 | 51.9 | 0.79 |
| | 2.1250 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 190 | 72212C | 72487 | 38.0 | 1.50 | 77.0 | 3.03 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 45.2 | 57.0 | 0.79 |
| | 2.1250 | 127.000 | 5.0000 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 166 | 72212 | 72500 | 38.0 | 1.50 | 77.0 | 3.03 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 41.2 | 51.9 | 0.79 |
| | 2.1250 | 130.175 | 5.1250 | 36.512 | 1.4375 | 33.338 | 1.3125 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 153 | 181 | HM911242R | HM911210 | 41.8 | 1.65 | 79.0 | 3.11 | 74.0 | 2.91 | 109.0 | 4.29 | 124.0 | 4.88 | 0.82 | 0.73 | 0.40 | 44.3 | 62.1 | 0.71 |
| | 2.1250 | 136.525 | 5.3750 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 0.8 | 0.03 | 3.2 | 0.13 | 150 | 177 | 78214 | 78537 | 46.2 | 1.82 | 75.0 | 2.95 | 77.0 | 3.03 | 115.0 | 4.53 | 130.0 | 5.12 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| | 2.1250 | 140.030 | 5.5130 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 3.6 | 0.14 | 2.4 | 0.09 | 150 | 177 | 78215 | 78551 | 46.2 | 1.82 | 81.0 | 3.19 | 75.0 | 2.95 | 117.0 | 4.61 | 132.0 | 5.20 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| 55.562 | 2.1875 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 166 | 72218 | 72487 | 38.0 | 1.50 | 78.0 | 3.07 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 41.2 | 51.9 | 0.79 |
| 57.150 | 2.2500 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 141 | 166 | 72225 | 72487 | 38.0 | 1.50 | 80.0 | 3.15 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 41.2 | 51.9 | 0.79 |
| | 2.2500 | 123.825 | 4.8750 | 36.512 | 1.4375 | 32.791 | 1.2910 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 156 | 190 | 72225C | 72487 | 38.0 | 1.50 | 80.0 | 3.15 | 66.0 | 2.60 | 102.0 | 4.02 | 116.0 | 4.57 | 0.74 | 0.81 | 0.45 | 45.2 | 57.0 | 0.79 |
| | 2.2500 | 136.525 | 5.3750 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 3.6 | 0.14 | 3.2 | 0.13 | 150 | 177 | 78225 | 78537 | 46.2 | 1.82 | 83.0 | 3.27 | 77.0 | 3.03 | 115.0 | 4.53 | 130.0 | 5.12 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| | 2.2500 | 140.030 | 5.5130 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 3.6 | 0.14 | 2.4 | 0.09 | 150 | 177 | 78225 | 78551 | 46.2 | 1.82 | 83.0 | 3.27 | 77.0 | 3.03 | 117.0 | 4.61 | 132.0 | 5.20 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| 60.325 | 2.3750 | 130.175 | 5.1250 | 36.512 | 1.4375 | 33.338 | 1.3125 | 23.812 | 0.9375 | 5.2 | 0.20 | 3.2 | 0.13 | 153 | 181 | HM911245R | HM911210 | 41.8 | 1.65 | 87.0 | 3.43 | 74.5 | 2.93 | 109.0 | 4.29 | 124.0 | 4.88 | 0.82 | 0.73 | 0.40 | 44.3 | 62.1 | 0.71 |
| | 2.3750 | 136.525 | 5.3750 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 5.2 | 0.20 | 3.2 | 0.13 | 150 | 177 | 78238 | 78537 | 46.2 | 1.82 | 83.0 | 3.27 | 75.0 | 2.95 | 115.0 | 4.53 | 130.0 | 5.12 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| | 2.3750 | 140.030 | 5.5130 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 5.2 | 0.20 | 2.4 | 0.09 | 150 | 177 | 78238 | 78551 | 46.2 | 1.82 | 83.0 | 3.27 | 75.0 | 2.95 | 117.0 | 4.61 | 132.0 | 5.20 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| 61.912 | 2.4375 | 130.175 | 5.1250 | 36.512 | 1.4375 | 33.338 | 1.3125 | 23.812 | 0.9375 | 3.6 | 0.14 | 3.2 | 0.13 | 153 | 181 | HM911249R | HM911210 | 41.8 | 1.65 | 88.0 | 3.46 | 75.0 | 2.95 | 109.0 | 4.29 | 123.5 | 4.86 | 0.82 | 0.73 | 0.40 | 44.3 | 62.1 | 0.71 |
| | 2.4375 | 146.050 | 5.7500 | 41.275 | 1.6250 | 39.688 | 1.5625 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 199 | 232 | H913842R | H913810 | 45.6 | 1.80 | 90.0 | 3.54 | 82.5 | 3.25 | 124.0 | 4.88 | 138.0 | 5.43 | 0.78 | 0.77 | 0.42 | 57.7 | 77.2 | 0.75 |
| 63.500 | 2.5000 | 136.525 | 5.3750 | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.520 | 0.9260 | 2.4 | 0.09 | 3.2 | 0.13 | 150 | 177 | 78250 | 78537 | 46.2 | 1.82 | 85.0 | 3.35 | 79.0 | 3.11 | 115.0 | 4.53 | 130.0 | 5.12 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| 64.988 | 2.5586 | 136.525 | 5.3750 | 36.512 | 1.4375 | 32.923 | 1.2962 | 23.520 | 0.9260 | 3.6 | 0.14 | 3.2 | 0.13 | 150 | 177 | 78255X | 78537 | 46.2 | 1.82 | 89.0 | 3.50 | 79.0 | 3.11 | 115.0 | 4.53 | 130.0 | 5.12 | 0.87 | 0.69 | 0.38 | 43.6 | 64.6 | 0.68 |
| 66.675 | 2.6250 | 177.800 | 7.0000 | 57.150 | 2.2500 | 53.975 | 2.1250 | 37.308 | 1.4688 | 3.6 | 0.14 | 3.2 | 0.13 | 334 | 372 | HH914449 | HH914412 | 57.9 | 2.28 | 106.0 | 4.17 | 85.5 | 3.37 | 146.0 | 5.75 | 165.0 | 6.50 | 0.80 | 0.75 | 0.41 | 97.3 | 133 | 0.73 |
| 68.262 | 2.6875 | 161.925 | 6.3750 | 49.212 | 1.9375 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 246 | 286 | 9278R | 9220 | 50.2 | 1.98 | 95.0 | 3.74 | 85.0 | 3.35 | 138.0 | 5.43 | 153.0 | 6 | | | | | | |

TSS type

d 69.850 ~ 342.900 mm
2.7500 ~ 13.5000 inch



$$P = XF_r + YF_a$$

$$P_0 = 0.5 F_r + Y_0 F_a \text{ or } P_0 = F_r$$

| $F_a / F_r \leq e$ | | $F_a / F_r > e$ | |
|--------------------|---|-----------------|-------|
| X | Y | X | Y |
| 1 | 0 | 0.4 | Y_1 |

Note) The Values of "e", "Y₁" and "Y₀" are given in the table below.

| Boundary dimensions | | | | | | | | | | | | Basic load ratings (kN) | | Bearing No. | | Load center | | Mounting dimensions | | | | | | Constant e | Axial load factors | | Reference rating (kN) | | Factor K | | | | |
|---------------------|---------|---------|---------|---------|----------|-----------------------|----------------|-----------------|-------------------|------------------|------|-------------------------|----------------|----------------|----------------|----------------|----------------|---------------------|-------|-------|-------|-------|-------|------------|--------------------|-------|-----------------------|------|----------|------|------|------|------|
| d | D | T | B | C | r (min.) | r ₁ (min.) | C _r | C _{0r} | Inner ring (Cone) | Outer ring (Cup) | a | d _a | d _b | D _a | D _b | Y ₁ | Y ₀ | Radial | Axial | | | | | | | | | | | | | | |
| mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | | | | | | | | |
| 69.850 | 2.7500 | 146.050 | 5.7500 | 41.275 | 1.6250 | 39.688 | 1.5625 | 25.400 | 1.0000 | 3.6 | 0.14 | 3.2 | 0.13 | 202 | 237 | H913849R | H913810 | 45.6 | 1.80 | 95.0 | 3.74 | 82.5 | 3.25 | 124.0 | 4.88 | 138.0 | 5.43 | 0.78 | 0.77 | 0.42 | 58.7 | 78.5 | 0.75 |
| 69.914 | 2.7525 | 171.450 | 6.7500 | 49.212 | 1.9375 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 320 | 9382R | 9321 | 55.1 | 2.17 | 105.0 | 4.13 | 98.0 | 3.86 | 147.0 | 5.79 | 164.0 | 6.46 | 0.76 | 0.79 | 0.43 | 76.9 | 100 | 0.77 |
| 76.200 | 3.0000 | 161.925 | 6.3750 | 49.212 | 1.9375 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 246 | 286 | 9285R | 9220 | 50.2 | 1.98 | 103.0 | 4.06 | 90.5 | 3.56 | 138.0 | 5.43 | 153.0 | 6.02 | 0.71 | 0.85 | 0.47 | 71.6 | 86.8 | 0.83 |
| | 3.0000 | 177.800 | 7.0000 | 52.388 | 2.0625 | 46.038 | 1.8125 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 320 | 9380R | 9320 | 55.1 | 2.17 | 117.0 | 4.61 | 98.2 | 3.87 | 148.0 | 5.83 | 164.0 | 6.46 | 0.76 | 0.79 | 0.43 | 76.9 | 100 | 0.77 |
| | 3.0000 | 177.800 | 7.0000 | 52.388 | 2.0625 | 50.800 | 2.0000 | 34.925 | 1.3750 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 320 | 9378R | 9320 | 55.1 | 2.17 | 117.0 | 4.61 | 98.2 | 3.87 | 148.0 | 5.83 | 164.0 | 6.46 | 0.76 | 0.79 | 0.43 | 76.9 | 100 | 0.77 |
| 84.138 | 3.3125 | 171.450 | 6.7500 | 49.212 | 1.9375 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 264 | 320 | 9385R | 9321 | 55.1 | 2.17 | 111.0 | 4.37 | 98.0 | 3.86 | 147.0 | 5.79 | 164.0 | 6.46 | 0.76 | 0.79 | 0.43 | 76.9 | 100 | 0.77 |
| 96.838 | 3.8125 | 188.913 | 7.4375 | 50.800 | 2.0000 | 46.038 | 1.8125 | 31.750 | 1.2500 | 3.6 | 0.14 | 3.2 | 0.13 | 276 | 357 | 90381 | 90744 | 63.0 | 2.48 | 125.0 | 4.92 | 113.0 | 4.44 | 161.0 | 6.34 | 179.5 | 7.06 | 0.87 | 0.69 | 0.38 | 77 | 115 | 0.67 |
| 101.600 | 4.0000 | 250.825 | 9.8750 | 76.200 | 3.0000 | 73.025 | 2.8750 | 50.800 | 2.0000 | 6.4 | 0.25 | 6.4 | 0.25 | 548 | 691 | HH923649 | HH923610 | 74.0 | 2.91 | 149.0 | 5.87 | 131.0 | 5.16 | 207.0 | 8.15 | 229.0 | 9.02 | 0.71 | 0.85 | 0.47 | 162 | 196 | 0.83 |
| | 4.0000 | 250.825 | 9.8750 | 76.200 | 3.0000 | 73.025 | 2.8750 | 50.800 | 2.0000 | 6.4 | 0.25 | 3.2 | 0.13 | 548 | 691 | HH923649 | HH923611 | 74.0 | 2.91 | 149.0 | 5.87 | 131.0 | 5.16 | 210.0 | 8.27 | 229.0 | 9.02 | 0.71 | 0.85 | 0.47 | 162 | 196 | 0.83 |
| 111.125 | 4.3750 | 214.313 | 8.4375 | 55.563 | 2.1875 | 52.388 | 2.0625 | 39.688 | 1.5625 | 3.6 | 0.14 | 3.2 | 0.13 | 404 | 578 | H924045 | H924010 | 62.3 | 2.45 | 139.0 | 5.47 | 131.0 | 5.16 | 186.0 | 7.32 | 205.0 | 8.07 | 0.67 | 0.89 | 0.49 | 118 | 137 | 0.87 |
| 114.300 | 4.5000 | 228.600 | 9.0000 | 53.975 | 2.1250 | 49.428 | 1.9460 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 430 | 651 | HM926740 | HM926710 | 67.9 | 2.67 | 146.0 | 5.75 | 142.0 | 5.59 | 200.0 | 7.87 | 219.0 | 8.62 | 0.74 | 0.81 | 0.45 | 126 | 159 | 0.79 |
| 127.000 | 5.0000 | 228.600 | 9.0000 | 53.975 | 2.1250 | 49.428 | 1.9460 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 430 | 651 | HM926747 | HM926710 | 68.1 | 2.68 | 156.0 | 6.14 | 143.0 | 5.63 | 200.0 | 7.87 | 219.0 | 8.63 | 0.74 | 0.81 | 0.45 | 126 | 159 | 0.79 |
| | 5.0000 | 304.800 | 12.0000 | 88.900 | 3.5000 | 82.550 | 3.2500 | 57.150 | 2.2500 | 6.4 | 0.25 | 6.4 | 0.25 | 791 | 1060 | HH932132 | HH932110 | 92.1 | 3.63 | 182.0 | 7.17 | 172.0 | 6.77 | 260.0 | 10.24 | 288.0 | 11.34 | 0.73 | 0.82 | 0.45 | 233 | 290 | 0.80 |
| 127.792 | 5.0312 | 228.600 | 9.0000 | 53.975 | 2.1250 | 49.428 | 1.9460 | 38.100 | 1.5000 | 3.6 | 0.14 | 3.2 | 0.13 | 430 | 651 | HM926749 | HM926710 | 68.1 | 2.68 | 156.0 | 6.14 | 143.0 | 5.63 | 200.0 | 7.87 | 219.0 | 8.63 | 0.74 | 0.81 | 0.45 | 126 | 159 | 0.79 |
| 146.050 | 5.7500 | 304.800 | 12.0000 | 88.900 | 3.5000 | 82.550 | 3.2500 | 57.150 | 2.2500 | 6.4 | 0.25 | 6.4 | 0.25 | 791 | 1060 | HH932145 | HH932110 | 92.1 | 3.63 | 195.0 | 7.68 | 174.5 | 6.87 | 260.0 | 10.24 | 288.0 | 11.34 | 0.73 | 0.82 | 0.45 | 233 | 290 | 0.80 |
| 155.575 | 6.1250 | 330.200 | 13.0000 | 85.725 | 3.3750 | 79.375 | 3.1250 | 53.975 | 2.1250 | 6.4 | 0.25 | 6.4 | 0.25 | 868 | 1210 | H936340 | H936310 | 103.8 | 4.09 | 209.0 | 8.23 | 192.5 | 7.58 | 282.0 | 11.10 | 311.5 | 12.26 | 0.81 | 0.74 | 0.41 | 255 | 352 | 0.72 |
| 168.275 | 6.6250 | 330.200 | 13.0000 | 85.725 | 3.3750 | 79.375 | 3.1250 | 53.975 | 2.1250 | 6.4 | 0.25 | 6.4 | 0.25 | 868 | 1210 | H936349 | H936310 | 103.8 | 4.09 | 218.0 | 8.58 | 192.5 | 7.58 | 282.0 | 11.10 | 311.5 | 12.26 | 0.81 | 0.74 | 0.41 | 255 | 352 | 0.72 |
| | 6.6250 | 342.900 | 13.5000 | 85.725 | 3.3750 | 79.375 | 3.1250 | 53.975 | 2.1250 | 6.4 | 0.25 | 6.4 | 0.25 | 868 | 1210 | H936349 | H936316 | 103.8 | 4.09 | 218.0 | 8.58 | 192.5 | 7.58 | 287.0 | 11.30 | 311.5 | 12.26 | 0.81 | 0.74 | 0.41 | 255 | 352 | 0.72 |
| 177.800 | 7.0000 | 428.625 | 16.8750 | 106.362 | 4.1875 | 95.250 | 3.7500 | 61.912 | 2.4375 | 6.4 | 0.25 | 6.4 | 0.25 | 1070 | 1390 | EE350701 | 351687 | 118.7 | 4.67 | 230.0 | 9.06 | 221.0 | 8.70 | 365.0 | 14.37 | 383.0 | 15.08 | 0.76 | 0.79 | 0.44 | 318 | 411 | 0.77 |
| 190.500 | 7.5000 | 428.625 | 16.8750 | 106.363 | 4.1875 | 95.250 | 3.7500 | 61.913 | 2.4375 | 6.4 | 0.25 | 6.4 | 0.25 | 1070 | 1390 | EE350750 | 351687 | 118.7 | 4.67 | 240.0 | 9.45 | 237.0 | 9.33 | 365.0 | 14.37 | 383.0 | 15.08 | 0.76 | 0.79 | 0.44 | 318 | 411 | 0.77 |
| 203.200 | 8.0000 | 482.600 | 19.0000 | 117.475 | 4.6250 | 95.250 | 3.7500 | 73.025 | 2.8750 | 6.4 | 0.25 | 6.4 | 0.25 | 1450 | 2060 | EE380080 | 380190 | 152.8 | 6.02 | 280.0 | 11.02 | 260.0 | 10.24 | 402.0 | 15.83 | 428.5 | 16.87 | 0.87 | 0.69 | 0.38 | 426 | 631 | 0.67 |
| 241.300 | 9.5000 | 508.000 | 20.0000 | 117.475 | 4.6250 | 95.250 | 3.7500 | 73.025 | 2.8750 | 6.4 | 0.25 | 6.4 | 0.25 | 1230 | 1800 | EE390095 | 390200 | 168.1 | 6.62 | 297.0 | 11.69 | 288.0 | 11.34 | 423.0 | 16.65 | 456.0 | 17.96 | 0.94 | 0.64 | 0.35 | 366 | 587 | 0.62 |
| 254.000 | 10.0000 | 533.400 | 21.0000 | 133.350 | 5.2500 | 120.650 | 4.7500 | 77.788 | 3.0625 | 6.4 | 0.25 | 6.4 | 0.25 | 1780 | 2800 | HH953749 | HH953710 | 180.8 | 7.12 | 328.0 | 12.91 | 306.5 | 12.06 | 455.0 | 17.91 | 495.5 | 19.51 | 0.94 | 0.64 | 0.35 | 528 | 846 | 0.62 |
| 317.500 | 12.5000 | 622.300 | 24.5000 | 147.638 | 5.8125 | 131.763 | 5.1875 | 82.550 | 3.2500 | 14.3 | 0.56 | 12.7 | 0.50 | 2220 | 3490 | H961649 | H961610 | 210.5 | 8.29 | 410.0 | 16.14 | 373.0 | 14.69 | 531.0 | 20.91 | 581.5 | 22.90 | 0.94 | 0.64 | 0.35 | 659 | 1060 | 0.62 |
| 342.900 | 13.5000 | 457.098 | 17.9960 | 66.675 | 2.6250 | 63.500 | 2.5000 | 46.038 | 1.8125 | 3.2 | 0.13 | 3.2 | 0.13 | 729 | 1670 | LM961548 | LM961510 | 122.3 | 4.81 | 367.0 | 14.45 | 363.0 | 14.29 | 423.0 | 16.65 | 443.0 | 17.44 | 0.71 | 0.84 | 0.46 | 212 | 258 | 0.82 |

Supplementary tables

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Supplementary table 2 Housing bore tolerances (deviation from nominal dimensions)

| Nominal bore dia. (mm) | | Deviation classes of housing bore | | | | | | | | | | | | | | | Nominal bore dia. (mm) | | | | | | | Unit : μm (Refer.) | | | | | | | |
|------------------------|-------|-----------------------------------|-------------|-------------|------------|-------------|----------|-----------|-----------|-----------|-----------|-------|-------|-------|-----------|------------|------------------------|-----------|------------|------------|-------------|-------------|------------|--------------------|-------------|--------------|--------------|---|-------|-------|--|
| over | up to | E 6 | F 6 | F 7 | G 6 | G 7 | H 6 | H 7 | H 8 | H 9 | H 10 | JS 5 | JS 6 | JS 7 | J 6 | J 7 | K 5 | K 6 | K 7 | M 5 | M 6 | M 7 | N 5 | N 6 | N 7 | P 6 | P 7 | R 7 | over | up to | $\Delta_{Dmp}^{(1)}$ of bearing (class 0) |
| 10 | 18 | +43 +32 | +27 +16 | +34 +16 | +17 +6 | +24 +6 | +11 0 | +18 0 | +27 0 | +43 0 | +70 0 | ±4 | ±5.5 | ±9 | +6 -5 | +10 -8 | +2 -6 | +2 -9 | +6 -12 | -4 -12 | -4 -15 | 0 -18 | -9 -17 | -9 -20 | -5 -23 | -15 -26 | -11 -29 | -16 -34 | 10 | 18 | 0 -8 |
| 18 | 30 | +53 +40 | +33 +20 | +41 +20 | +20 +7 | +28 +7 | +13 0 | +21 0 | +33 0 | +52 0 | +84 0 | ±4.5 | ±6.5 | ±10.5 | +8 -5 | +12 -9 | +1 -8 | +2 -11 | +6 -15 | -5 -14 | -4 -17 | 0 -21 | -12 -21 | -11 -24 | -7 -28 | -18 -31 | -14 -35 | -20 -41 | 18 | 30 | 0 -9 |
| 30 | 50 | +66 +50 | +41 +25 | +50 +25 | +25 +9 | +34 +9 | +16 0 | +25 0 | +39 0 | +62 0 | +100 0 | ±5.5 | ±8 | ±12.5 | +10 -6 | +14 -11 | +2 -9 | +3 -13 | +7 -18 | -5 -16 | -4 -20 | 0 -25 | -13 -24 | -12 -28 | -8 -33 | -21 -37 | -17 -42 | -25 -50 | 30 | 50 | 0 -11 |
| 50 | 80 | +79 +60 | +49 +30 | +60 +30 | +29 +10 | +40 +10 | +19 0 | +30 0 | +46 0 | +74 0 | +120 0 | ±6.5 | ±9.5 | ±15 | +13 -6 | +18 -12 | +3 -10 | +4 -15 | +9 -21 | -6 -19 | -5 -24 | 0 -30 | -15 -28 | -14 -33 | -9 -39 | -26 -45 | -21 -51 | -30 -60 -32 -62 | 50 | 65 | 0 -13 |
| 80 | 120 | +94 +72 | +58 +36 | +71 +36 | +34 +12 | +47 +12 | +22 0 | +35 0 | +54 0 | +87 0 | +140 0 | ±7.5 | ±11 | ±17.5 | +16 -6 | +22 -13 | +2 -13 | +4 -18 | +10 -25 | -8 -23 | -6 -28 | 0 -35 | -18 -33 | -16 -38 | -10 -45 | -30 -52 | -24 -59 | -38 -73 -41 -76 | 80 | 100 | 0 -15 |
| 120 | 180 | +110 +85 | +68 +43 | +83 +43 | +39 +14 | +54 +14 | +25 0 | +40 0 | +63 0 | +100 0 | +160 0 | ±9 | ±12.5 | ±20 | +18 -7 | +26 -14 | +3 -15 | +4 -21 | +12 -28 | -9 -27 | -8 -33 | 0 -40 | -21 -39 | -20 -45 | -12 -52 | -36 -61 | -28 -68 | -48 -88 -50 -90 -53 -93 | 120 | 140 | (up to 150) 0 -18 (over to 150) 0 -25 |
| 180 | 250 | +129 +100 | +79 +50 | +96 +50 | +44 +15 | +61 +15 | +29 0 | +46 0 | +72 0 | +115 0 | +185 0 | ±10 | ±14.5 | ±23 | +22 -7 | +30 -16 | +2 -18 | +5 -24 | +13 -33 | -11 -31 | -8 -37 | 0 -46 | -25 -45 | -22 -51 | -14 -60 | -41 -70 | -33 -79 | -60 -106 -63 -109 -67 -113 | 180 | 200 | 0 -30 |
| 250 | 315 | +142 +110 | +88 +56 | +108 +56 | +49 +17 | +69 +17 | +32 0 | +52 0 | +81 0 | +130 0 | +210 0 | ±11.5 | ±16 | ±26 | +25 -7 | +36 -16 | +3 -20 | +5 -27 | +16 -36 | -13 -36 | -9 -41 | 0 -52 | -27 -50 | -25 -57 | -14 -66 | -47 -79 | -36 -88 | -74 -126 -78 -130 | 250 | 280 | 0 -35 |
| 315 | 400 | +161 +125 | +98 +62 | +119 +62 | +54 +18 | +75 +18 | +36 0 | +57 0 | +89 0 | +140 0 | +230 0 | ±12.5 | ±18 | ±28.5 | +29 -7 | +39 -18 | +3 -22 | +7 -29 | +17 -40 | -14 -39 | -10 -46 | 0 -57 | -30 -55 | -26 -62 | -16 -73 | -51 -87 | -41 -98 | -87 -144 -93 -150 | 315 | 355 | 0 -40 |
| 400 | 500 | +175 +135 | +108 +68 | +131 +68 | +60 +20 | +83 +20 | +40 0 | +63 0 | +97 0 | +155 0 | +250 0 | ±13.5 | ±20 | ±31.5 | +33 -7 | +43 -20 | +2 -25 | +8 -32 | +18 -45 | -16 -43 | -10 -50 | 0 -63 | -33 -60 | -27 -67 | -17 -80 | -55 -95 | -45 -108 | -103 -166 -109 -172 | 400 | 450 | 0 -45 |
| 500 | 630 | +189 +145 | +120 +76 | +146 +76 | +66 +22 | +92 +22 | +44 0 | +70 0 | +110 0 | +175 0 | +280 0 | - | ±22 | ±35 | - | - | - | 0 -44 | 0 -70 | - | -26 -70 | -26 -96 | - | -44 -88 | -44 -114 | -78 -122 | -78 -148 | -150 -220 -155 -225 | 500 | 560 | 0 -50 |
| 630 | 800 | +210 +160 | +130 +80 | +160 +80 | +74 +24 | +104 +24 | +50 0 | +80 0 | +125 0 | +200 0 | +320 0 | - | ±25 | ±40 | - | - | - | 0 -50 | 0 -80 | - | -30 -80 | -30 -110 | - | -50 -100 | -50 -130 | -88 -138 | -88 -168 | -175 -255 -185 -265 | 630 | 710 | 0 -75 |
| 800 | 1 000 | +226 +170 | +142 +86 | +176 +86 | +82 +26 | +116 +26 | +56 0 | +90 0 | +140 0 | +230 0 | +360 0 | - | ±28 | ±45 | - | - | - | 0 -56 | 0 -90 | - | -34 -90 | -34 -124 | - | -56 -112 | -56 -146 | -100 -156 | -100 -190 | -210 -300 -220 -310 | 800 | 900 | 0 -100 |
| 1 000 | 1 250 | +261 +195 | +164 +98 | +203 +98 | +94 +28 | +133 +28 | +66 0 | +105 0 | +165 0 | +260 0 | +420 0 | - | ±33 | ±52.5 | - | - | - | 0 -66 | 0 -105 | - | -40 -106 | -40 -145 | - | -66 -132 | -66 -171 | -120 -186 | -120 -225 | -250 -355 -260 -365 | 1 000 | 1 250 | 0 -125 |

[Note] 1) Δ_{Dmp} : single plane mean outside diameter deviation

Supplementary table 3 (1) SI units and conversion factors

| Mass | SI units | Other units ¹⁾ | Conversion into SI units | Conversion from SI units |
|-----------------------------|---------------------|---|---|---|
| Angle | rad [radian(s)] | ° [degree(s)] ' [minute(s)] " [second(s)] | * 1° = $\pi / 180$ rad * 1' = $\pi / 10\,800$ rad * 1" = $\pi / 648\,000$ rad | 1 rad = 57.295 78° |
| Length | m [meter(s)] | Å [Angstrom unit] μ [micron(s)] in [inch(es)] ft [foot (feet)] yd [yard(s)] mile [mile(s)] | 1 Å = 10^{-10} m = 0.1 nm = 100 pm 1 μ = 1 μm 1 in = 25.4 mm 1 ft = 12 in = 0.304 8 m 1 yd = 3 ft = 0.914 4 m 1 mile = 5 280 ft = 1 609.344 m | 1 m = 10^{10} Å 1 m = 39.37 in 1 m = 3.280 8 ft 1 m = 1.093 6 yd 1 km = 0.621 4 mile |
| Area | m ² | a [are(s)] ha [hectare(s)] acre [acre(s)] | 1 a = 100 m ² 1 ha = 10 ⁴ m ² 1 acre = 4 840 yd ² = 4 046.86 m ² | 1 km ² = 247.1 acre |
| Volume | m ³ | ℓ, L [liter(s)] * cc [cubic centimeters] gal (US) [gallon(s)] floz (US) [fluid ounce(s)] barrel (US) [barrels (US)] | 1 ℓ = 1 dm ³ = 10 ⁻³ m ³ 1 cc = 1 cm ³ = 10 ⁻⁶ m ³ 1 gal (US) = 231 in ³ = 3.785 41 dm ³ 1 floz (US) = 29.573 5 cm ³ 1 barrel (US) = 158.987 dm ³ | 1 m ³ = 10 ³ ℓ 1 m ³ = 10 ⁶ cc 1 m ³ = 264.17 gal 1 m ³ = 33 814 floz 1 m ³ = 6.289 8 barrel |
| Time | s [second(s)] | min [minute(s)] * h [hour(s)] * d [day(s)] * | | |
| Angular velocity | rad/s | | | |
| Velocity | m/s | kn [knot(s)] m/h * | 1 kn = 1 852 m/h | 1 km/h = 0.539 96 kn |
| Acceleration | m/s ² | G | 1 G = 9.806 65 m/s ² | 1 m/s ² = 0.101 97 G |
| Frequency | Hz [hertz] | c/s [cycle(s)/second] | 1 c/s = 1 s ⁻¹ = 1 Hz | |
| Rotational frequency | s ⁻¹ | rpm [revolutions per minute] min ⁻¹ * r/min | 1 rpm = 1/60 s ⁻¹ | 1 s ⁻¹ = 60 rpm |
| Mass | kg [kilogram(s)] | t [ton(s)] * lb [pound(s)] gr [grain(s)] oz [ounce(s)] ton (UK) [ton(s) (UK)] ton (US) [ton(s) (US)] car [carat(s)] | 1 t = 10 ³ kg 1 lb = 0.453 592 37 kg 1 gr = 64.798 91 mg 1 oz = 1/16 lb = 28.349 5 g 1 ton (UK) = 1 016.05 kg 1 ton (US) = 907.185 kg 1 car = 200 mg | 1 kg = 2.204 6 lb 1 g = 15.432 4 gr 1 kg = 35.274 0 oz 1 t = 0.984 2 ton (UK) 1 t = 1.102 3 ton (US) 1 g = 5 car |

[Note] 1) * : Unit can be used as an SI unit.
No asterisk : Unit cannot be used.

Supplementary table 3 (2) SI units and conversion factors

| Mass | SI units | Other units ¹⁾ | Conversion into SI units | Conversion from SI units |
|--------------------------------------|--|---|--|---|
| Density | kg/m ³ | | | |
| Linear density | kg/m | | | |
| Momentum | kg·m/s | | | |
| Moment of momentum, Angular momentum | } kg·m ² /s | | | |
| Moment of inertia | | kg·m ² | | |
| Force | N [newton(s)] | dyn [dyne(s)] kgf [kilogram-force] gf [gram-force] tf [ton-force] lbf [pound-force] | 1 dyn = 10 ⁻⁵ N 1 kgf = 9.806 65 N 1 gf = 9.806 65 × 10 ⁻³ N 1 tf = 9.806 65 × 10 ³ N 1 lbf = 4.448 22 N | 1 N = 10 ⁵ dyn 1 N = 0.101 97 kgf 1 N = 0.224 809 lbf |
| Moment of force | N·m [newton meter(s)] | gf·cm kgf·cm kgf·m tf·m lbf·ft | 1 gf·cm = 9.806 65 × 10 ⁻⁵ N·m 1 kgf·cm = 9.806 65 × 10 ⁻² N·m 1 kgf·m = 9.806 65 N·m 1 tf·m = 9.806 65 × 10 ³ N·m 1 lbf·ft = 1.355 82 N·m | 1 N·m = 0.101 97 kgf·m 1 N·m = 0.737 56 lbf·ft |
| Pressure, Normal stress | Pa [pascal(s)] or N/m ² {1 Pa = 1 N/m ² } | gf/cm ² kgf/mm ² kgf/m ² lbf/in ² bar [bar(s)] at [engineering air pressure] mH ₂ O, mAq [meter water column] atm [atmosphere] mHg [meter mercury column] Torr [torr] | 1 gf/cm ² = 9.806 65 × 10 Pa 1 kgf/mm ² = 9.806 65 × 10 ⁶ Pa 1 kgf/m ² = 9.806 65 Pa 1 lbf/in ² = 6 894.76 Pa 1 bar = 10 ⁵ Pa 1 at = 1 kgf/cm ² = 9.806 65 × 10 ⁴ Pa 1 mH ₂ O = 9.806 65 × 10 ³ Pa 1 atm = 101 325 Pa 1 mHg = $\frac{101\ 325}{0.76}$ Pa 1 Torr = 1 mmHg = 133.322 Pa | 1 MPa = 0.101 97 kgf/mm ² 1 Pa = 0.101 97 kgf/m ² 1 Pa = 0.145 × 10 ⁻³ lbf/in ² 1 Pa = 10 ⁻² mbar 1 Pa = 7.500 6 × 10 ⁻³ Torr |
| Viscosity | Pa·s [pascal second] | P [poise] kgf·s/m ² | 10 ⁻² P = 1 cP = 1 mPa·s 1 kgf·s/m ² = 9.806 65 Pa·s | 1 Pa·s = 0.101 97 kgf·s/m ² |
| Kinematic viscosity | m ² /s | St [stokes] | 10 ⁻² St = 1 cSt = 1 mm ² /s | |
| Surface tension | N/m | | | |

Supplementary table 3 (3) SI units and conversion factors

| Mass | SI units | Other units ¹⁾ | Conversion into SI units | Conversion from SI units |
|---|---|---|---|--|
| Work, energy | J [joule(s)] {1 J = 1 N·m} | eV [electron volt(s)] * erg [erg(s)] kgf·m lbf·ft | 1 eV = (1.602 189 2 ± 0.000 004 6) × 10 ⁻¹⁹ J 1 erg = 10 ⁻⁷ J 1 kgf·m = 9.806 65 J 1 lbf·ft = 1.355 82 J | 1 J = 10 ⁷ erg 1 J = 0.101 97 kgf·m 1 J = 0.737 56 lbf·ft |
| Power | W [watt(s)] | erg/s [ergs per second] kgf·m/s PS [French horse-power] HP [horse-power (British)] lbf·ft/s | 1 erg/s = 10 ⁻⁷ W 1 kgf·m/s = 9.806 65 W 1 PS = 75 kgf·m/s = 735.5 W 1 HP = 550 lbf·ft/s = 745.7 W 1 lbf·ft/s = 1.355 82 W | 1 W = 0.101 97 kgf·m/s 1 W = 0.001 36 PS 1 W = 0.001 34 HP |
| Thermo-dynamic temperature | K [kelvin(s)] | | | |
| Celsius temperature | °C [celsius(s)] {t °C = (t + 273.15) K} | °F [degree(s) Fahrenheit] | t °F = $\frac{5}{9} (t - 32) °C$ | t °C = $(\frac{9}{5} t + 32) °F$ |
| Linear expansion coefficient | K ⁻¹ | °C ⁻¹ [per degree] | | |
| Heat | J [joule(s)] {1 J = 1 N·m} | erg [erg(s)] kgf·m cal _{IT} [I. T. calories] | 1 erg = 10 ⁻⁷ J 1 cal _{IT} = 4.186 8 J 1 Mcal _{IT} = 1.163 kW·h | 1 J = 10 ⁷ erg 1 J = 0.238 85 cal _{IT} 1 kW·h = 0.86 × 10 ⁶ cal _{IT} |
| Thermal conductivity | W/(m·K) | W/(m·°C) cal/(s·m·°C) | 1 W/(m·°C) = 1 W/(m·K) 1 cal/(s·m·°C) = 4.186 05 W/(m·K) | |
| Coefficient of heat transfer | W/(m ² ·K) | W/(m ² ·°C) cal/(s·m ² ·°C) | 1 W/(m ² ·°C) = 1 W/(m ² ·K) 1 cal/(s·m ² ·°C) = 4.186 05 W/(m ² ·K) | |
| Heat capacity | J/K | J/°C | 1 J/°C = 1 J/K | |
| Massic heat capacity | J/(kg·K) | J/(kg·°C) | | |

[Note] 1) * : Unit can be used as an SI unit.
No asterisk : Unit cannot be used.

Supplementary table 3 (4) SI units and conversion factors

| Mass | SI units | Other units ¹⁾ | Conversion into SI units | Conversion from SI units |
|--|--|---------------------------------------|--|--|
| Electric current | A [ampere(s)] | | | |
| Electric charge, quantity of electricity | C [coulomb(s)] {1 C = 1 A·s} | A·h | * 1 A·h = 3.6 kC | |
| Tension, electric potential | V [volt(s)] {1 V = 1 W / A} | | | |
| Capacitance | F [farad(s)] {1 F = 1 C / V} | | | |
| Magnetic field strength | A / m | Oe [oersted(s)] | $1 \text{ Oe} = \frac{10^3}{4\pi} \text{ A/m}$ | $1 \text{ A/m} = 4\pi \times 10^{-3} \text{ Oe}$ |
| Magnetic flux density | T [tesla(s)] { $1 \text{ T} = 1 \text{ N}/(\text{A}\cdot\text{m})$ $= 1 \text{ Wb}/\text{m}^2$ $= 1 \text{ V}\cdot\text{s}/\text{m}^2$ } | Gs [gauss(es)] γ [gamma(s)] | $1 \text{ Gs} = 10^{-4} \text{ T}$ $1 \gamma = 10^{-9} \text{ T}$ | $1 \text{ T} = 10^4 \text{ Gs}$ $1 \text{ T} = 10^9 \gamma$ |
| Magnetic flux | Wb [weber(s)] {1 Wb = 1 V·s} | Mx [maxwell(s)] | $1 \text{ Mx} = 10^{-8} \text{ Wb}$ | $1 \text{ Wb} = 10^8 \text{ Mx}$ |
| Self inductance | H [henry (-ries)] {1 H = 1 Wb / A} | | | |
| Resistance (to direct current) | Ω [ohm(s)] {1 Ω = 1 V / A} | | | |
| Conductance (to direct current) | S [siemens] {1 S = 1 A / V} | | | |
| Active power | W { $1 \text{ W} = 1 \text{ J/s}$ $= 1 \text{ A}\cdot\text{V}$ } | | | |

Supplementary table 4 Greek alphabet list

| Name | Roman type | Italic type | | Name | Roman type | Italic type | |
|---------|------------|-----------------------------|------------|---------|------------|----------------------------|------------|
| | Capital | Capital | Lowercase | | Capital | Capital | Lowercase |
| alpha | A | <i>A</i> | α | nu | N | <i>N</i> | ν |
| beta | B | <i>B</i> | β | xi | Ξ | <i>Ξ</i> | ξ |
| gamma | Γ | <i>Γ</i> | γ | omicron | O | <i>O</i> | o |
| delta | Δ | <i>Δ</i> | δ | pi | Π | <i>Π</i> | π |
| epsilon | E | <i>E</i> | ϵ | rho | P | <i>P</i> | ρ |
| zeta | Z | <i>Z</i> | ζ | sigma | Σ | <i>Σ</i> | σ |
| eta | H | <i>H</i> | η | tau | T | <i>T</i> | τ |
| theta | Θ | <i>Θ</i> | θ | upsilon | Y | <i>Y</i> | υ |
| iota | I | <i>I</i> | ι | phi | Φ | <i>Φ</i> | ϕ |
| kappa | K | <i>K</i> | κ | chi | X | <i>X</i> | χ |
| lambda | Λ | <i>Λ</i> | λ | psi | Ψ | <i>Ψ</i> | ψ |
| mu | M | <i>M</i> | μ | omega | Ω | <i>Ω</i> | ω |

Supplementary table 5 Prefixes used with SI units

| Factor | Prefix | | Factor | Prefix | |
|-----------|--------|--------|------------|--------|--------|
| | Name | Symbol | | Name | Symbol |
| 10^{18} | exa | E | 10^{-1} | deci | d |
| 10^{15} | peta | P | 10^{-2} | centi | c |
| 10^{12} | tera | T | 10^{-3} | milli | m |
| 10^9 | giga | G | 10^{-6} | micro | μ |
| 10^6 | mega | M | 10^{-9} | nano | n |
| 10^3 | kilo | k | 10^{-12} | pico | p |
| 10^2 | hecto | h | 10^{-15} | femto | f |
| 10 | deka | da | 10^{-18} | atto | a |

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