

**C&H**

# **Transmission Bearing**



# Transmission Bearing

Size Range: Nine types of gearbox bearing with OD 30- 2500mm.

Applications: Industrial Gearbox, Wind Turbine Gearbox and Vehicle Gearbox, etc.

Manufacturing Capability: C&H can provide no less than 2000 specifications, 1 million gearbox bearings every month. Manufacturing cycle: 35 days by through hardened steel, and 50 days by case hardened steel.

## 1 Selection of Bearing

The variety in kinds and types and dimensions of power train bearings makes the selection of the most appropriate bearings very important in order to achieve the expected functions of the mechanical devices. Analyses and evaluations from different viewpoints on the factors to be considered must be made in order to choose the bearings. There are no special regulations on such selection procedures, but the steps below are followed:

Understand the work conditions of the mechanical device and the bearings.

Define the requirements on the bearing to be chosen.

Choose the type of the bearing.

Choose the configuration way of the bearing

Choose the dimensions of the bearing.

Choose the specifications of the bearing

Choose the mounting method for the bearing

### 1.1 The use conditions and the surrounding conditions of the bearings

Correct definitions on the application position in the mechanical device and the use conditions and surrounding conditions are the pre-conditions of choosing the proper bearing. For this purpose, the following figures and data are required:

The functions and structure of the mechanical device.

The application position

Loads (how big and in which directions);

Rotate speed.

Vibration and shock.

Temperature of the bearing (surrounding temperature and rises).

Surrounding ambience (corrosion, cleanliness, lubrication).

### 1.2 The Selection of Bearing Type

| Items of Analyses |  | Methods for Choose  |
|-------------------|--|---|
| Mounting space    | Those can be put in the mounting space | Since the rigidity and strength of the shaft have been considered in the designing, first of all the inner diameter of the bearing must be determined. But there are too many dimensional series and types, the most appropriate type must be chosen. |

|   |   |   |
|---|---|---|
| Load  | Strength, direction and nature of the load<br>[the load carrying capacity is indicated by basic load rating whose value is provided in the bearing dimension tables]  | The load is subject to changes, such as the amount of the load, whether there is only radial load or not, whether the axial load is in single-direction or double-direction, the amount of vibration or shock and others. These factors must be considered before choosing the most appropriate bearing type. Normally, the radial load carrying capacity of the bearings with the same ID are listed in the following order:<br>[deep groove ball bearing < angular contact ball bearings < cylindrical roller bearings < tapered roller bearings < spherical roller bearings] |
| Rotating speed  | Those are suitable for the mechanical rotations.<br>[the limit value of rotating speed is indicated by limiting speed (rpm) whose figures are provided in the bearing dimension tables.]  | The limit speed of the bearing rests with not only the bearing type but also bearing dimensions, cage type, precision, load carrying conditions, and lubrication methods. These factors must be considered for the choice.<br>The following bearings are applied for high speed rotation:<br>[deep groove bearings, angular contact ball bearings, cylindrical roller bearings]   |
| Rotating precision                                    | Those can satisfy the rotation precision requirements.<br>[The dimensional precision and rotation precision have been standardized according to national standards and bearing types.]  | Machine tool spindles, gas turbines and control machines entail high rotation precision, high speed and low friction. Bearings with precision degree 5 or over should be applied in the cases.<br>Normally the following bearings are applied:<br>[deep groove ball bearings, angular contact ball bearings, cylindrical roller bearings]   |
| The relative leaning of the inner ring and outer ring | Reason of leading to the relative leaning of the inner ring and outer ring must be analyzed (such as the load-induced bending of the shaft, poor precision of the shaft and housing or mounting error), and the bearings that fit these conditions should be chosen.<br>[The permissible sloping angle is indicated in the notes to the tables of bearing dimensions] | If the relative leaning between the inner ring and outer ring is too big, the inside load thereof shall do harm to the bearings. So bearing types that can carry this leaning should be chosen. Normally, the allowable sloping angle increased with the following order:<br>[cylindrical roller bearings, tapered roller bearing, deep groove ball bearings (angular contact ball bearings), thrust ball (spherical roller) bearings]  |
| Mounting and dismounting                              | Check the frequency and methods of mounting and dismounting of the bearings regularly.  | If too much mounting and dismounting, choosing cylindrical roller bearings with separable inner ring and outer ring, needle roller bearings and tapered roller bearings is comparatively convenient.<br>With adapter or withdrawal sleeve, self-aligning ball bearing with tapered bore and spherical roller bearings with tapered bore are convenient for mounting and dismounting.  |

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## 1.2 The selection of bearing Collocation

Normally, the shaft is supported by two bearings in radial and axial directions. Then, one of the bearings is called the fixing-end bearing which carries the load in radial and axial directions. It controls the comparative axial movement between the shaft and the bearings. The other one is called the free-end bearing that only carries the radial load and the bearing can comparatively move in the axial direction in order to solve the problems of expansion of the shaft caused by changed in the temperature and the clearance error in mounting.

For the fixing-end bearing it must be chosen from which the axial movement can be prevented. For the free-end bearing, it must be chosen to use its sliding surface to make axial movement (such as cylindrical roller bearings) or use its mounting surface to move (such as radial ball bearings). On the comparatively short shaft, if there are no differences between the two bearings, the bearings that only move in the fixed single axial direction (such as radial thrust ball bearings) are preferable.

### Bearings on the fixing end and the free end

|                                      | Content  | Applicable bearing types  |
|--------------------------------------|--|---|
| Bearings on the fixing end           | Fix the bearing in the axial direction<br>Choose bearings that can carry both the radial load and the axial load<br>In order to carry double-direction axial load, strength must be considered according to the amount of the axial load while mounting  | Deep groove ball bearings<br>Combined angular contact ball bearings<br>Self-aligning ball bearings<br>Cylindrical roller bearings with flanges (NUP and NH types.)<br>Double-row tapered roller bearings<br>Spherical roller bearings |
| Bearings on the free end             | The bearing must adapt to the shaft expansion caused by the changes in temperature while working and adjust the bearing position in the axial direction.<br>Only the bearing with separable inner ring and outer ring that can carry radial load should be chosen.   | Separable type:<br>Cylindrical roller bearings (NU or N type)<br>Non-separable types<br>Deep groove ball bearings<br>Combined angular contact ball bearings (back-to-back arrangement)<br>Double-row angular contact ball bearings    |
|                                      | With non-separable bearings, there should be a clearance between the outer ring and housing in order to adapt the bearing to the shaft expansion in the axial direction. Sometimes, the adaptation is achieved with the contact surface between the shaft and the inner ring.  | Self-aligning ball bearings<br>Double-row tapered roller bearings (3700 type)<br>Spherical roller bearings  |
| Regardless of fixing end or free end | When the distance between the two bearings is small, and the effects of shaft expansion are not important, two angular contact ball bearings or tapered roller bearings that can carry axial load can be used together in face-to-face or back-to-back arrangement. Use screw nut or filling piece to adjust the axial clearance after mounting. | Deep groove ball bearings<br>Angular contact ball bearings<br>Self-aligning ball bearings<br>Cylindrical roller bearings (NJ and NF types)<br>Tapered roller bearings<br>Spherical roller bearings                                    |

|                |   |   |
|----------------|---|---|
| Vertical shaft | Bearings that can carry both radial load and axial load should be chosen for the fixing end. If the axial load is too big, use the combination of thrust bearings and radial bearing. Similarly, only bearings that can carry radial load should be used to adapt to the shaft expansion. | For fixing end<br>Combined angular contact ball bearing (back-to-back arrangement)<br>Double-row tapered roller bearings (3700 type)<br>Combined thrust bearing and radial bearing arrangements |
|----------------|---|---|

## 1.4 The selection of bearing dimensions

### 1.4.1 Life of bearing

When the bearing is carrying load, material fatigue shall happen even under normal operating conditions due to the effects of changing load on the raceways of rings and the sliding surface of the rolling elements, and it will cause scaling damage to the raceways and the sliding surface (called flaking or spalling).

The total number of revolutions before such scaling happens is called the (Fatigue) life of the bearing.

The bearing (fatigue) life varies greatly even for those with the same structure, dimensions, materials and manufacturing processes under the same rotation conditions.

Because the material fatigue is of diversity, it must be considered statistically. Suppose a number of bearings of the same specification are operated individually under the same working conditions. After a certain period of time, 10% of the fail as a result of flaking caused by rolling fatigue. In this case, the total number of revolutions is defined as the fatigue life rating. (i.e. bearing life reliability 90%)

When the bearings rotate at constant speed, its life can also be expressed with total rotation time.

In fact, however, other damage or impair may happen besides fatigue scaling.

The damage of impair may be avoided by choosing the correct bearing, mounting method and lubrication.

### 1.4.2 Basic dynamic load rating

Basic dynamic load rating indicates the fatigue resistant capacity (i.e. load carrying capacity). It shows that with pure radial load (for radial bearings), and with the presumption of running inner ring and motionless outer ring (or vice versa), the basic rating life can exceed 1 million rotations. The basic load rating for radial bearings and thrust bearing is called radial basic load rating respectively, indicated by  $C_r$  and  $C_a$ , whose values are provided in the bearing dimension tables.

### 1.4.3 Basic life rating

Formula (1) shows the relations among basic dynamic load rating, equivalent dynamic load rating and basic life rating.

When the rotation speed is constant, it is more convenient to express the life rating in time, as shown in formula (2).

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(Total rotation number)  $L_{10} = \left(\frac{C}{P}\right)^p \cdot n \cdot h$

Time  $L_{10h} = \frac{10^6}{60n} \left(\frac{C}{P}\right)^p$

$L_{10}$  & basic life rating revolutions

$L_{10h}$  & basic life rating h

P & equivalent dynamic load rating N{kgf}

C & basic dynamic load rating N{kgf}

n & rotational speed rpm

p & life index

ball bearing # # # # # P=3

roller bearing # # # # # P=  $\frac{10}{3}$

Therefore, we assume the working conditions of the bearing are: equivalent dynamic load is P, rotation speed is n, then the basic dynamic load rating that satisfies the design requirement of the bearing can be calculated with formula (4). From the dimension tables, we can select the bearing that can meet the requirement of value C, then we can define the dimension of the bearing.

We use life factor \$fh\$ and speed factor \$fn\$ and get the following formula

$$C = P \left( L_{10h} \times \frac{60n}{10^6} \right)^{\frac{1}{p}}$$

Life factor

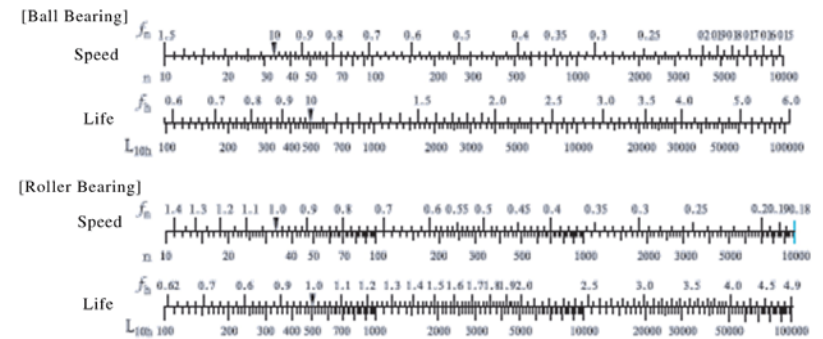
$$L_{10h} = 500 fh^p$$

$$fh = fh \frac{C}{P}$$

Speed factor:

$$fn = \left( \frac{10^6}{500 \times 60n} \right)^{\frac{1}{p}} = (0.03n)^{\frac{1}{p}}$$

We can easily get fh, fn and L10h with the calculated figure [Reference figure].



## 1.4.4 Correction of basic dynamic load rating based on temperature and treatment on stability of bearing dimensions

When applied in high temperature, the internal microstructure in the material shall change and the hardness shall be decreased, while the basic dynamic load rating shall be smaller than in normal temperature. And the changed microstructure in the material shall not recover even when the bearing is put back in the normal temperature again. Therefore, under high temperature conditions, the basic dynamic load ratings must be multiplied by the temperature factors listed in table 1 for correction on purpose.

Table 1 Temperature factors:

| Working temperature (°C) | 125 | 150 | 175  | 200  | 250  |
|--------------------------|-----|-----|------|------|------|
| Temperature factor (ft)  | 1   | 1   | 0.95 | 0.90 | 0.75 |

If working in the temperature of over 120°C for a very long time, the dimensions for bearings with only normal heat treatment shall change greatly, measures must be taken to stabilize the dimensions.

The code names for these stabilization measures and the applicable temperature ranges are provided in Table 2. The hardness of the bearing, however, shall be reduced with the above treatment. Sometimes, the basic dynamic load rating will also decrease.

Measures for dimensional stabilization

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| Code name | Relative temperature range |
|-----------|----------------------------|
| $S_0$     | Over 100( to 150           |
| $S_1$     | Over 150( to 200           |
| $S_2$     | Over 200( to 250           |

## 1.4.5 Correction of life rating

Formula (1) shows the basic life rating ( $L_{10}$ ) of 90% reliability. Based on different applications, high-reliability life with reliability being over 90% will be required under some conditions.

In addition, special materials sometimes shall elongate the bearing life, even lubrication or differences in working conditions can have effects on bearing life. The bearing life after taking these factors into consideration is called the corrected life rating, which is calculated with formula (7).

$$L_{na} = a_1 a_2 a_3 L_{10} \quad (7)$$

Here is:

$L_{na}$  & corrected life rating  $10^6$  revolution

the life with 100- n% reliability (n% loss rate) after taking the bearing features and operating conditions into consideration.

$L_{10}$  & basic life rating  $10^6$  revolution\$ reliability 90%

$a_1$  & reliability factor # # # # .. referring to (1)

$a_2$  & Material factor # # # # .referring to (2)

$a_3$  & Application condition factor # # # # .referring to (3)

[Note] When select bearing dimension according to  $L_{na}$  higher than 90%, the shaft and shell rigidity shall be specially concerned.

(1) Reliability factor  $a_1$

When calculating the corrected life rating for those with reliability of greater than 90% (i.e.the loss if not greater than 10%),factor  $a_1$  in Table 3 should be employed.

Table 3 Reliability factor  $a_1$ :

| Reliability % | $L_{na}$  | $a_1$ |
|---------------|-----------|-------|
| 90            | $L_{10a}$ | 1     |
| 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) Material factor  $a_2$

The bearing characteristics relate to service life may vary with the bearing materials (steel type, quality), manufacture processes and design. In these cases, the factor  $a_2$  should be used for correction purpose.

If the material is quality vacuum degassed bearing steel or with quite minimum amount of inclusion,  $a_2 > 1$   
For normal bearing material steel,  $a_2 = 1$ .

(3) Application condition factor  $a_3$

This factor  $a_3$  is used for correction purpose when the bearings are applied in conditions (especially lubrication) that shall affect the service life of the bearings.

We can let  $a_3 = 1$  under normal lubricating conditions and let  $a_3 > 1$  if the conditions are excellent.

Under the following circumstances, let  $a_3 < 1$ :

) If the kinematic viscosity of the lubricant decreases during the working time of the bearing:

Ball bearings # # # # # # # # less than  $13 \text{mm}^2/\text{s}$  {13ces}

Roller bearings # # # # # # # # less than  $20 \text{mm}^2/\text{s}$  {20ces}

) When the rotational speed is extremely low the product of the pitch diameter of the rolling elements and the rotational speed is less than 10000.

) When the lubricant has inner ring and outer ring is very big.

[Note] When the hardness decreases under high temperature circumstance circumstances, the basic dynamic load rating must be corrected (see Table 1)

## 1.4.6 Equivalent dynamic load

Bearings usually carry the combination of radial load and axial load, and the load conditions are varied, such as the changes in the amount and so on.

Therefore, the actual load can not be directly compared with its dynamic load rating.

In this case, it is necessary to convert the actual load into a perceived load with definite amount and direction that passes the bearing center. The bearing with this perceived load shall have the same life as with actual load and the same rotational speed.

This perceived load after conversion is called the equivalent dynamic load, indicated by  $P$ .

the equivalent dynamic load of the radial bearings and thrust bearings ( $a=90^\circ$ ) can be calculated with formula below:



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## 2. The limit speed of bearing

The rotational speed of the bearing is mainly restricted by the increase in temperature due to the frictional heat generated inside the bearing. When the rotational speed exceeds certain limit, the bearing shall fail to continue to rotate due to the burns.

Limit rotational speed of the bearing indicates the limit value of the rotational speed when there is no frictional heat that leads to the burns and the bearing can continuously rotate.

Therefore, the limit rotational speed of the bearing is subject to the bearing type, dimensions, precision, lubrication method, quality and amount of lubricant, material and design of retaining cage, loading conditions and other factors.

The limit rotational speed for different types of bearings using grease lubrication and oil lubrication are respectively given in the dimension tables of these bearings. These values indicate the limit values of rotation speed the bearings of normal design under normal loading conditions ( $C/P \geq 13$ ,  $F_a/F_r \leq 0.25$  or so).

In addition, the lubricant may be better than others in property, according to types and brand, but it may not be suitable for high speed rotation.

### Correction of limit rotate speed

Correction must be with formula (1) on limit rotational speed, when the loading condition  $C/P < 13$  (ie. the equivalent dynamic load  $P$  exceeds basic dynamic load rating  $C$  by 8% or so), or the axial load exceeds the radial load by over 25% in the combined load.

$$n_a = f_1 f_2 n \quad (12)$$

$n_a$ : the corrected limit rotational speed / rpm

$f_1$ : the correction factor related to the loading condition (Figure 1)

$f_2$ : the correction factor related to the combined load (Figure 2)

$n$ : the limit rotational speed under normal load conditions, rpm (see bearing dimension tables)

$C$ : the basic dynamic load rating / N / kgf

$P$ : the equivalent dynamic load / N / kgf

$F_r$ : radial load / N / kgf

$F_a$ : axial load / N / kgf

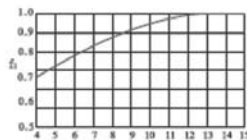


Figure 1: The correction factor  $f_1$  relative to load condition

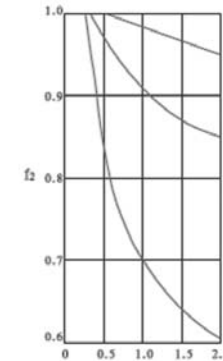


Figure 2: The correction factory  $f_2$  relative to the combined load

### Precautions for high- speed rotation

When the bearing rotates at high speed, especially at rotational speed approaching or exceeding the limit rotational speed given in the dimension tables, attention must be paid to the following issues:

\$ % Apply precision bearings

\$ % Analyze the internal clearance of the bearing (taking the reduction in internal clearance caused by the temperature increase into consideration)

\$ % Analyze the type of material of the cage (For high speed rotation, cages of copper alloy or PF resins are preferred. Cages of synthetic resins are also workable.).

\$ % Analyze the lubricating method (Circular lubrication, spurt lubrication, oil spray or gas lubrications are suitable for high- speed rotations.)

### 3! Fits of bearings

#### 3.1 Purpose of fit

The purpose of fit is to make the inner ring or the outer ring fixed to the shaft or housing so that no bad circular slide shall happen on the fit surface.

The bad circular slide (called creep deformation) will bring about abnormal heat, scratches on the fit surface (hence making the ground iron power enter into the bearing), vibration and other problems, which cause the insufficient functioning of the bearing.

Therefore, since the bearing rotates with load, normally the rings must have interference fit so that they are fixed to the shaft or the house.

#### 3.1.1 Dimensional tolerances and fits of shaft and housing

The dimensional tolerance of the metric shaft and housing bore have been standardized in the GB/T275- 93 3 The fits of Rolling Bearings with Shaft and Housing4 . If the dimensional tolerances are available, we can define the fit of the bearing with the shaft or the housing.

The fit relations between the dimensional tolerances of the shaft and housing bore and the bearings with PO class

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precision degree are given in Figure 1.

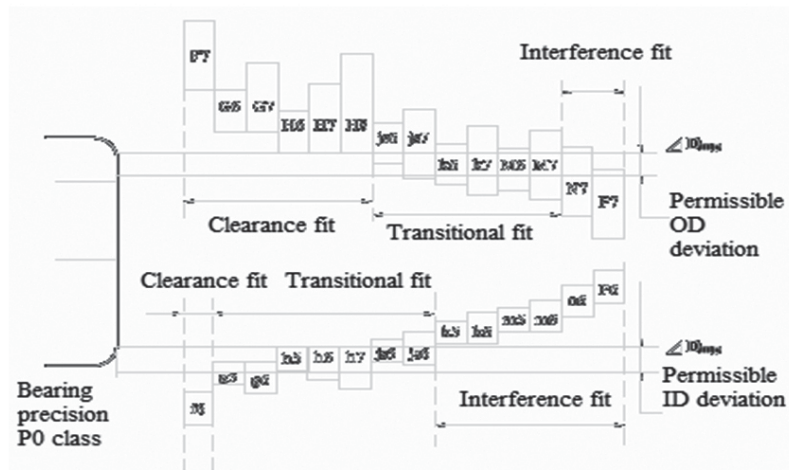


Figure 1 Relations between dimension tolerances of shaft and housing bore and fit (bearings of PO class precision).

## 3.1.2 The selection of fit

The selection of fit is made according to the following principles.

According to the direction and nature of applied load and which of the two rings rotates, the load carried by each of the rings can be divided into rotational load, static load or indeterminate direction load. The ring and carries rotation load or indeterminate direction load should use static fit (interference fit), and the ring carrying static load should use transitional fit or dynamic fit (clearance fit).

If the bearing load is big or there is vibrating or shock load, the interference fit should be increased. When using hollow

shaft, bearing box with thin wall or light alloy or plastic bearing box, the interference should also be increased.

If high rotation precision is required, the high precision bearing should be used, and the dimension precision of the shaft or bearing box should be increased to avoid too much interference fit. If the interference is too big, the geometric precision of the shaft or bearing box shall affect the geometric shape of the bearing rings, and accordingly damage the bearing rotation precision.

If both inner ring and outer ring of non-separable bearing (such as deep groove ball bearing) adopt static fits, the mounting and dismounting of bearing is very inconvenient. It's better to adopt dynamic fit for inner ring or outer ring.

(1) Effects of the load nature

According to its nature, bearing load can be divided into inner ring rotation load, outer ring rotation load and indeterminate direction load. The relations between them and the fit are shown as below.

| Bearing rotational conditions  | Figure example      | Nature of load     | Fit choice                              |
|--|---------------------|--------------------|---|
| Inner ring: rotating<br>Outer ring: static<br>Direction of load: fixed   | <br>Static load     | I.R. rotating load | I.R.: use static fit (interference fit) |
| Inner ring: static<br>Outer ring: rotating<br>Direction of load: Rotating simultaneously with outer ring   | <br>Unbalanced load | O.R. static load   | O.R.: use dynamic (clearance fit)       |
| Inner ring: static<br>Outer ring: rotating<br>Direction of load: fixed<br>Static load<br>I.R. static load  | <br>Static load     | I.R. static load   | I.R. use dynamic fit (clearance fit)    |
| O.R. rotating load<br>I.R. use dynamic fit (clearance fit)<br>Inner ring: rotating<br>Outer ring: static<br>Direction of load: Rotating simultaneously with inner ring<br>Unbalance load<br>O.R. use static fit (interference fit) | <br>Unbalance load  | O.R. rotating load | O.R. use static fit (interference fit)  |

Relations between load nature and fits





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When a much higher accuracy is required, the precision level of the shaft and housing should be increased. Compared with shaft, it is more difficult to process the housing and the precision level is low. Therefore, the loosened fit between the shaft and the housing is recommended.

When using hollow shaft or thin wall - thickness, the fit must be higher than normal.

When using two half housings, the fit with the outer ring must be loosened. For housing of cast aluminum or light alloy, the fit must be tighter than normal.

## 4. Lubrication

Lubrication has important effects on the functions of the bearing. Whether the lubricant and the method are suitable or not shall influence the bearing life. That is to say, the lubrication is a necessary condition to assure the normal operation of bearing and the lubrication plays an important role in improving load-carry capability and service life of bearing.

### 4.1 Purpose of lubrication

The purpose of bearing lubrication is to form a thin grease film on rolling or sliding surfaces in order to prevent the direct contact of the metals.

### 4.2 The function of lubrication

Reducing the friction of metals and slow the wear.

The grease film formed expands the touching area and reduces the contacting stress.

Assure the rolling bearing can work normally under a high-frequency contact stress for a long time and elongates the bearing fatigue life.

Take away the heat generated by friction and reduce the temperature of bearing working surface in order to prevent burns.

Prevent the bearing from rust, dust and corrosion.

### 4.3 Oil lubrication

Oil lubrication is applied to high-speed and heat-resistant bearings and is effective for reducing vibration and lowering noise.

Oil lubrication has the following methods:

#### (1) Oil drip lubrication

Oil drip lubrication can lubricate the bearing by dripping oil through the orifice of oil cup. The orifice of oil cup can be adjusted according to the magnitude of oil.

The advantage of lubrication method is the simple configuration and convenient use. But the viscosity degree of oil can not be too high. Or it can not go through smoothly and influence the lubrication effect.

#### (2) Oil bath lubrication

Oil bath lubrication also can be called soak oil lubrication. A part of bearing is dipped into the lubricant and make sure that every rollers can be dipped into the lubricant when rolling the bearing. Then the lubricant with rollers can go around other working parts of bearing. Considering the churning waste and increase of temperature, in order to slow down the aging speed of lubrication, oil bath lubrication should not be adopted when lubricating bearings with high rotate speed.

#### (3) Splash lubrication

Splash lubrication is often adopted when lubricating rolling bearing works in closed gearing. It splashes the lubricant

using rotating parts, such as gear, swing oil plate and so on. The lubricant scatters on the bearing or flow into inside of rolling bearing through a designed oil trough along the box wall to lubricate rolling bearing. The used lubricant can mass again in the box for recycling. Since splash lubrication doesn't need any other accessory equipment, it is normally adopted by the gearing with simple and compact configuration. But the following three points should be paid more attention when using splash lubrication:

1% The upside surface of the lubricant should not be too high, or the wastage caused by churning oil will be overmuch. And it can also cause granule abrasion because of the sediment such as grinding scraps taken from oil pool to bearing part when churning oil. 2% The lubricant in the box should be often kept clean. Magnetism adsorber should be used in the oil pool to clear away grinding scraps and eyewinker for reducing granule abrasion.

3% When designing the configuration, a oil trough for storing and a throttle orifice towards bearing could be set up against box wall to make bearing in the similar situation where they are oil bath lubricated and dripping oil lubricated for supplying lubricant and preventing from the lack of oil.

#### (4) Oil cycling lubrication

Oil cycling lubrication is a way of actively lubricating for the part of rolling bearing. It pumps the lubricant from oil box using a lift pump and transmits the lubricant into the rolling bearing supporting through an oil pipe and oil bore. Then the lubricant returns to the oil box through the orifice of bearing housing for reusing after cooled and filtrated. Therefore, this method of lubrication can eliminate much more heat and simultaneously expel friction heat effectively. So it is applied to the bearing supporting with overload and high-speed rotation.

#### (5) Oil jet lubrication

Oil jet lubrication is a kind of oil circulating lubrication. But in order to make the lubricant adequately enter into the inside relative motion surface of high-speed bearing and synchronously avoid overheating and overmuch friction due to the circulatory superfluous oil under the condition of high-speed rotation, a nozzle is mounted against the oil orifice of bearing support and augment the stress of oil supply to spurt oil onto the bearing by dint of the nozzle for bearing lubrication and cooling. Thus, oil jet lubrication is a favorable lubrication method mainly adopted in rolling bearing with high-speed rotation. It is also the same with the situation where the dmn of rolling bearing exceeds 2000000mm<sup>2</sup>/r/min. The oil pump stress of oil jet lubrication is about 3~5 bar. For overcoming and avoiding clinging effect under the condition of high speed, what have to be done is to make sure that the speed of oil spurting from oil orifice is 20% larger than that of linear velocity of rolling bearing.

#### (6) Oil mist lubrication

Oil mist lubrication is a kind of micro-lubricating. It meets the lubricating demand of rolling bearing with a spot of lubricant. Oil mist lubrication is to lubricate bearing with the oil mist that converted from lubricating oil in the oil mist generator. Actually, rolling bearing still keep the status of sparse lubricating since oil mist coagulate into oil drippings on the working surface of rolling bearing. To avoid the overmuch of oil supplying and increase of rolling bearing's working temperature caused by the augment of friction inside the oil, oil mist lubrication is normally adopted when the linear velocity of roller is quite high. Generally, the stress of oil mist is around 0.05~0.1 bar. But the following two points should be paid much attention when adopt this lubrication method:

1% The viscosity degree of lubricant should not exceed 340mm<sup>2</sup>/s (40cSt) because exorbitant viscosity degree can not bring the effect of atomization.

2% The oil mist after lubricating may spread with air partially and result in environment pollution. The oil mist should be collected using oil-gas separator if necessary or eliminated by aerator.

#### (7) Oil air lubrication

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Transmit little oil to the constricting airflow inside the pipe every third moment or so using stopcock ration distributor to form a continuous flowing of oil against the wall of the pipe for supplying to bearing. The oil won't aging because of the new lubricant coming continuously. Compressing the air can make the impurity outside not to break into the inside of bearing easily. The little oil supplying can reduce the pollution to surrounding environment. Oil air lubrication use less oil than oil mist lubrication and has well stability, small friction moment, slowly temperature increasing. It is especially applied to high speed bearing.

## 4.4 The selection principle of lubricant oil

From the invalidation instance of oil lubricated rolling bearing, we can see most of invalidations are caused by the low viscosity degree of lubricant. The lower viscosity degree of lubricant is, the smaller carrying capacity of oil film owns and the easier oil film break bringing that the metal material connect each other directly when doing relative motions inside the rolling bearing and leading the bearing life is shorted for the increase of friction and abrasion or the burn and rupture accident occurs. But if the viscosity degree is overmuch, it can cause the increase of friction. So the quantity of heat increases when churning the lubricant, that is to say, the consumed energy of the system will increase. On the other hand, for working under the condition of high-speed, high load and high temperature, the rolling bearing may have special demand of antirust, antioxidant, wearability and the increase of lubricant adsorbability. Therefore, for selecting lubricant, it is mainly to ensure the viscosity degree and additive kind or different lubricant with some additive.

The following is a general principle for selecting lubricant:

### (1) Operating temperature

Operating temperature influences the viscosity degree of lubricant and the lubricating effect. So, when the operating temperature is lower, the low viscosity degree of lubricant should be selected; when the operating temperature is higher, the high viscosity degree of lubricant or the lubricant with proper additive should be selected. For the different temperature of surrounding, the viscosity degree of selected lubricant should varies synchronously. For example, much lower viscosity of degree lubricant should be selected when lubricating bearings in north area or winter than in south area or summer. When the operating temperature varies frequently, the lubricant with excellent viscosity temperature quality should be selected. Namely, the viscosity degree of lubricant doesn't change a lot when the operating temperature ascending or descending to ensure that the thickness of oil film is controlled in a certain range steadily.

### (2) Motion Velocity

The higher rotation speed, the lower viscosity of lubricating oil should be selected, to avoid moving resistance and producing more heat. On the contrary, under the situation of the lower rotation speed, using the higher viscosity will be beneficial to improve the ability of load for bearings.

### (3) Velocity Characteristic

In motion, there are pounding, vibration, frequent changes of load and speed, and starting. Stop motion, rolling back frequent and intercourse or intermittence moving, they are not beneficial to form the oil film. Sometimes, would rather adopt lubricating grease, even the solid lubricating, to make sure the reliable lubrication.

### (4) Loading

The bigger load of rolling bearings, the higher viscosity, the better oiliness and extreme-pressure of lubricating oil should be selected, to avoid squeezing the lubricating oil from the friction pair, or producing the direct contact of metal

### Structure feature

The smaller roller bearing's radial clearance is, the higher friction surface's process precision, the lower the viscosity of oil lubrication.

### Circumstance condition

When the bearing works under the condition of moisture corrosive gas, lower temperature, dust, radiation, the oil lubrication is easy to be polluted. Choosing the oil lubrication has feature of wearability, anti-corrosion, cold-resistant, anti-radiate. When the circumstance is water pollution, latex ejection, moisture or heavy dust, don't choose the oil lubrication but the grease lubrication.

### The precision of the bearing

When the friction surface is crudity, generally, the high viscosity of oil lubrication should be selected so that it can carry part pressure owing to the mal of contacting, but when the precision of motion friction is high, the low viscosity of lubricant should be chosen to reduce the unnecessary waste of energy and increase of temperature.

### Bearing hardness

When the hardness of bearing motion friction surface is low, the high viscosity degree of lubricant should be selected and the amount of oil should be rich. Contrarily, the viscosity degree of lubricant could be reduced.

## 5! Data of bearings

### 5.1 Main dimensions

The main dimensions of bearings indicate the boundary dimensions of inner ring, outer ring, width or height and chamfer and others that are used to describe the outline of the bearing. They are the necessary dimensions required for the mounting on the shaft or in the housing.

These main dimensions have been standardized by international standard (ISO 15). GB307 (main dimensions for rolling bearings) are also based on ISO standards.

The national standards have defined the main dimensions. The details are provided in the bearing catalogue.



Radial bearing (Excluding tapered roller bearing)

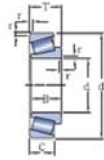
d & bearing nominal bore diameter

D & bearing nominal outer diameter

B & bearing nominal width

r & inner and outer rings chamfer dimension

# Transmission Bearing



Tapered roller bearing  
 $d$  & bearing nominal bore diameter  
 $D$  & bearing nominal outer diameter  
 $T$  & bearing nominal width (assembly width)  
 $B$  & inner ring nominal width  
 $C$  & outer ring nominal width  
 $r$  & inner and outer rings chamfer dimension

## 5.2 Bearing Precision

Rolling bearing precision class has been standardized and has been classified into 6 levels of P0, P6X, P6, P5, P4 and P2.

The precision level increases beginning from P0. P0 class is applicable for normal purpose. When bearings are working in special conditions or circumstances, P5 or even higher precision is needed. Although the above mentioned precision class is made on the ISO basis, it is named differently in some countries. Applicable precision classes to all kinds of bearing types and comparisons among different countries' standards are listed in below table.

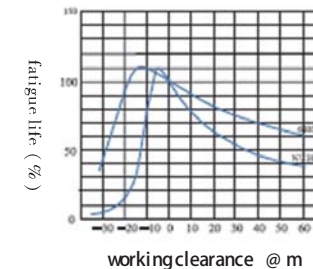
| Bearing type                  |                                      | Applicable standard                   | Applicable precision class |          |         |         |         |          |
|-------------------------------|--------------------------------------|---------------------------------------|----------------------------|----------|---------|---------|---------|----------|
| Deep groove ball bearings     |                                      | GB307                                 | Class 0                    | =        | Class 6 | Class 5 | Class 4 | Class 2  |
| Angular contact ball bearings |                                      |                                       | Class 0                    | =        | Class 6 | Class 5 | Class 4 | Class 2  |
| Tapered roller bearings       | Metric series (single row)           | GB307<br>SB/T53419-94<br>SB/CO/T10-89 | Class 0                    | Class 6X | Class 6 | Class 5 | Class 4 | =        |
|                               | Metric series (double-row, four-row) |                                       | Class 0                    | =        | =       | =       | =       | =        |
|                               | Inch series                          |                                       | Class 4                    | =        | Class 2 | Class 3 | Class 0 | Class 00 |
| Spherical Roller bearings     |                                      | GB307                                 | Class 0                    | =        | =       | =       | =       | =        |

- > Dimension precision (relative to axle and housing mounting)
  - ? Bore diameter, outer diameter, width and permissible deviation of assembly width
  - ? Permissible deviation of roller group inner and outer inscribed circle diameters
  - ? Permissible limit value of chamfer dimension
  - ? Permissible variation of width
  - ? Permissible deviation and variation of tapered bore
- > Rotation precision (relative to rotation object's runout)
  - ? Permissible radial and axial runout of inner and ring and outer ring
  - ? Permissible horizontal runout of inner ring
  - ? Permissible variation of outer diameter surface leaning slope

## 5.3 clearance

If the amount of expansion or contraction of the rings caused by the interference fit when mounting the bearing on the shaft or in the housing is deducted from the theoretical clearance, then we have the ! Mounting Clearance. Furthermore, if the dimensional change caused by the temperature difference inside the bearing is added to or reduced from the mounting clearance, we have the so-called ! Effective Clearance. When the bearing rotates while carrying a certain magnitude of load in the machine, if the elastic deformation caused by the load is added to the effective clearance, we then have the ! Working Clearance.

As shown in Figure 2, when the working clearance is a slightly negative, the bearing has the longest service life. But with the negative clearance changing to be positive, the fatigue life shall decrease. Therefore, when choosing the clearance, it is preferred to choose the 0 or slightly positive working clearance. As to table 2: The relations between the working clearance and the fatigue life.



In addition, when a higher rigidity or a lower noise is required, a further negative working clearance is preferred, and when the temperature increases inside the bearing, a bigger positive value of the working clearance will be better. In these or many other cases, specific analyses should be made according to the application conditions.

The values of clearance of the bearings are shown in Table 1 A Table 4

Table 1 Radial clearance of deep groove ball bearings (Cylindrical bore) " m

# Transmission Bearing

| Nominal inner ring d mm |      | clearance |     |        |     |        |     |        |     |        |      |
|-------------------------|------|-----------|-----|--------|-----|--------|-----|--------|-----|--------|------|
|                         |      | Group2    |     | Group0 |     | Group3 |     | Group4 |     | Group5 |      |
| over                    | to   | min       | max | min    | max | min    | max | min    | max | min    | max  |
| 2.5                     | 6    | 0         | 7   | 2      | 13  | 8      | 23  | =      | =   | =      | =    |
| 6                       | 10   | 0         | 7   | 2      | 13  | 8      | 23  | 14     | 29  | 20     | 37   |
| 10                      | 18   | 0         | 9   | 3      | 18  | 11     | 25  | 18     | 33  | 25     | 45   |
| 18                      | 24   | 0         | 10  | 5      | 20  | 13     | 28  | 20     | 36  | 28     | 48   |
| 24                      | 30   | 1         | 11  | 5      | 20  | 13     | 28  | 23     | 41  | 30     | 53   |
| 30                      | 40   | 1         | 11  | 6      | 20  | 15     | 33  | 28     | 46  | 40     | 64   |
| 40                      | 50   | 1         | 11  | 6      | 23  | 18     | 36  | 30     | 51  | 45     | 73   |
| 50                      | 65   | 1         | 15  | 8      | 28  | 23     | 43  | 38     | 61  | 55     | 90   |
| 65                      | 80   | 1         | 15  | 10     | 30  | 25     | 51  | 46     | 71  | 65     | 105  |
| 80                      | 100  | 1         | 18  | 12     | 36  | 30     | 58  | 53     | 84  | 75     | 120  |
| 100                     | 120  | 2         | 20  | 15     | 41  | 36     | 66  | 61     | 97  | 90     | 140  |
| 120                     | 140  | 2         | 23  | 18     | 48  | 41     | 81  | 71     | 114 | 105    | 160  |
| 140                     | 160  | 2         | 23  | 18     | 53  | 46     | 91  | 81     | 130 | 120    | 180  |
| 160                     | 180  | 2         | 25  | 20     | 61  | 53     | 102 | 91     | 147 | 135    | 200  |
| 180                     | 200  | 2         | 30  | 25     | 71  | 63     | 117 | 107    | 163 | 150    | 230  |
| 200                     | 225  | 2         | 35  | 25     | 85  | 75     | 140 | 125    | 195 | 175    | 265  |
| 225                     | 250  | 2         | 40  | 30     | 95  | 85     | 160 | 145    | 225 | 205    | 300  |
| 250                     | 280  | 2         | 45  | 35     | 105 | 90     | 170 | 155    | 245 | 225    | 340  |
| 280                     | 315  | 2         | 55  | 40     | 115 | 100    | 190 | 175    | 270 | 245    | 370  |
| 315                     | 355  | 3         | 60  | 45     | 125 | 110    | 210 | 195    | 300 | 275    | 410  |
| 355                     | 400  | 3         | 70  | 55     | 145 | 130    | 240 | 225    | 340 | 315    | 460  |
| 400                     | 450  | 3         | 80  | 60     | 170 | 150    | 270 | 250    | 380 | 350    | 510  |
| 450                     | 500  | 3         | 90  | 70     | 190 | 170    | 300 | 280    | 420 | 390    | 570  |
| 500                     | 560  | 10        | 100 | 80     | 210 | 190    | 330 | 310    | 470 | 440    | 630  |
| 560                     | 630  | 10        | 110 | 90     | 230 | 210    | 360 | 340    | 520 | 490    | 690  |
| 630                     | 710  | 20        | 130 | 110    | 260 | 240    | 400 | 380    | 570 | 540    | 760  |
| 710                     | 800  | 20        | 140 | 120    | 290 | 270    | 450 | 430    | 630 | 600    | 840  |
| 800                     | 900  | 20        | 160 | 140    | 320 | 300    | 500 | 480    | 700 | 670    | 940  |
| 900                     | 1000 | 20        | 170 | 150    | 350 | 330    | 550 | 530    | 770 | 740    | 1040 |
| 1000                    | 1120 | 20        | 180 | 160    | 380 | 360    | 600 | 580    | 850 | 820    | 1150 |
| 1120                    | 1250 | 20        | 190 | 170    | 410 | 390    | 650 | 630    | 920 | 890    | 1260 |

Table 2 Radial clearance of cylindrical roller bearing with cylindrical bore " m

| Nominal inner ring d mm |     | clearance |     |          |     |     |     |     |     |     |     |
|-------------------------|-----|-----------|-----|----------|-----|-----|-----|-----|-----|-----|-----|
|                         |     | C2        |     | standard |     | C3  |     | C4  |     | C5  |     |
| over                    | to  | min       | max | min      | max | min | max | min | max | min | max |
| -                       | 10  | 0         | 25  | 20       | 45  | 35  | 60  | 50  | 75  | =   | =   |
| 10                      | 24  | 0         | 25  | 20       | 45  | 35  | 60  | 50  | 75  | 65  | 90  |
| 24                      | 30  | 0         | 25  | 20       | 45  | 35  | 60  | 50  | 75  | 70  | 95  |
| 30                      | 40  | 5         | 30  | 25       | 50  | 45  | 70  | 60  | 85  | 80  | 105 |
| 40                      | 50  | 5         | 35  | 30       | 60  | 50  | 80  | 70  | 100 | 95  | 125 |
| 50                      | 65  | 10        | 40  | 40       | 70  | 60  | 90  | 80  | 110 | 110 | 140 |
| 65                      | 80  | 10        | 45  | 40       | 75  | 65  | 100 | 90  | 125 | 130 | 165 |
| 80                      | 100 | 15        | 50  | 50       | 85  | 75  | 110 | 105 | 140 | 155 | 190 |
| 100                     | 120 | 15        | 55  | 50       | 90  | 85  | 125 | 125 | 165 | 180 | 220 |
| 120                     | 140 | 15        | 60  | 60       | 105 | 100 | 145 | 145 | 190 | 200 | 245 |
| 140                     | 160 | 20        | 70  | 70       | 120 | 115 | 165 | 165 | 215 | 225 | 275 |
| 160                     | 180 | 25        | 75  | 75       | 125 | 120 | 170 | 170 | 220 | 250 | 300 |
| 180                     | 200 | 35        | 90  | 90       | 145 | 140 | 195 | 195 | 250 | 275 | 330 |
| 200                     | 225 | 45        | 105 | 105      | 165 | 160 | 220 | 220 | 280 | 305 | 365 |
| 225                     | 250 | 45        | 110 | 110      | 175 | 170 | 235 | 235 | 300 | 330 | 395 |
| 250                     | 280 | 55        | 125 | 125      | 195 | 190 | 260 | 260 | 330 | 370 | 440 |
| 280                     | 315 | 55        | 130 | 130      | 205 | 200 | 275 | 275 | 350 | 410 | 485 |
| 315                     | 355 | 65        | 145 | 145      | 225 | 225 | 305 | 305 | 385 | 455 | 535 |
| 355                     | 400 | 100       | 190 | 190      | 280 | 280 | 370 | 370 | 460 | 510 | 600 |
| 400                     | 450 | 110       | 210 | 210      | 310 | 310 | 410 | 410 | 510 | 565 | 665 |
| 450                     | 500 | 110       | 220 | 220      | 330 | 330 | 440 | 440 | 550 | 625 | 735 |

# Transmission Bearing

Table 3 Radial clearance of Self-aligning roller bearing with cylindrical bores " m

| Nominal inner ring d mm |      | clearance |     |        |     |        |     |        |      |        |      |
|-------------------------|------|-----------|-----|--------|-----|--------|-----|--------|------|--------|------|
|                         |      | Group2    |     | Group0 |     | Group3 |     | Group4 |      | Group5 |      |
| over                    | to   | min       | max | min    | max | min    | max | min    | max  | min    | max  |
| 14                      | 18   | 10        | 20  | 20     | 35  | 35     | 45  | 45     | 60   | 60     | 75   |
| 18                      | 24   | 10        | 20  | 20     | 35  | 35     | 45  | 45     | 60   | 60     | 75   |
| 24                      | 30   | 15        | 25  | 25     | 40  | 40     | 55  | 55     | 75   | 75     | 95   |
| 30                      | 40   | 15        | 30  | 30     | 45  | 45     | 60  | 60     | 80   | 80     | 100  |
| 40                      | 50   | 20        | 35  | 35     | 55  | 55     | 75  | 75     | 100  | 100    | 125  |
| 50                      | 65   | 20        | 40  | 40     | 65  | 65     | 90  | 90     | 120  | 120    | 150  |
| 65                      | 80   | 30        | 50  | 50     | 80  | 80     | 110 | 110    | 145  | 145    | 180  |
| 80                      | 100  | 35        | 60  | 60     | 100 | 100    | 135 | 135    | 180  | 180    | 225  |
| 100                     | 120  | 40        | 75  | 75     | 120 | 120    | 160 | 160    | 210  | 210    | 260  |
| 120                     | 140  | 50        | 95  | 95     | 145 | 145    | 190 | 190    | 240  | 240    | 300  |
| 140                     | 160  | 60        | 110 | 110    | 170 | 170    | 220 | 220    | 280  | 280    | 350  |
| 160                     | 180  | 65        | 120 | 120    | 180 | 180    | 240 | 240    | 310  | 310    | 390  |
| 180                     | 200  | 70        | 130 | 130    | 200 | 200    | 260 | 260    | 340  | 340    | 430  |
| 200                     | 225  | 80        | 140 | 140    | 220 | 220    | 290 | 290    | 380  | 380    | 470  |
| 225                     | 250  | 90        | 150 | 150    | 240 | 240    | 320 | 320    | 420  | 420    | 520  |
| 250                     | 280  | 100       | 170 | 170    | 260 | 260    | 350 | 350    | 460  | 460    | 570  |
| 280                     | 315  | 110       | 190 | 190    | 280 | 280    | 370 | 370    | 500  | 500    | 630  |
| 315                     | 355  | 120       | 200 | 200    | 310 | 310    | 410 | 410    | 550  | 550    | 690  |
| 355                     | 400  | 130       | 220 | 220    | 340 | 340    | 450 | 450    | 600  | 600    | 750  |
| 400                     | 450  | 140       | 240 | 240    | 370 | 370    | 500 | 500    | 660  | 660    | 820  |
| 450                     | 500  | 140       | 260 | 260    | 410 | 410    | 550 | 550    | 720  | 720    | 900  |
| 500                     | 560  | 150       | 280 | 280    | 440 | 440    | 600 | 600    | 780  | 780    | 1000 |
| 560                     | 630  | 170       | 310 | 310    | 480 | 480    | 650 | 650    | 850  | 850    | 1100 |
| 630                     | 710  | 190       | 350 | 350    | 530 | 530    | 700 | 700    | 920  | 920    | 1190 |
| 710                     | 800  | 210       | 390 | 390    | 580 | 580    | 770 | 770    | 1010 | 1010   | 1300 |
| 800                     | 900  | 230       | 430 | 430    | 650 | 650    | 860 | 860    | 1120 | 1120   | 1440 |
| 900                     | 1000 | 260       | 480 | 480    | 710 | 710    | 930 | 930    | 1220 | 1220   | 1570 |

Table 4 Radial clearance of double row and four row tapered roller bearings " m

| Nominal inner ring d mm |      | clearance |     |        |     |        |     |        |     |        |      |        |      |
|-------------------------|------|-----------|-----|--------|-----|--------|-----|--------|-----|--------|------|--------|------|
|                         |      | Group1    |     | Group2 |     | Group0 |     | Group3 |     | Group4 |      | Group5 |      |
| over                    | to   | min       | max | min    | max | min    | max | min    | max | min    | max  | min    | max  |
| _                       | 30   | 0         | 10  | 10     | 20  | 20     | 30  | 40     | 50  | 50     | 60   | 70     | 80   |
| 30                      | 40   | 0         | 12  | 12     | 25  | 25     | 40  | 45     | 60  | 60     | 75   | 80     | 95   |
| 40                      | 50   | 0         | 15  | 15     | 30  | 30     | 45  | 50     | 65  | 65     | 80   | 90     | 110  |
| 50                      | 65   | 0         | 15  | 15     | 30  | 30     | 50  | 50     | 70  | 70     | 90   | 90     | 120  |
| 65                      | 80   | 0         | 20  | 20     | 40  | 40     | 60  | 60     | 80  | 80     | 110  | 110    | 150  |
| 80                      | 100  | 0         | 20  | 20     | 45  | 45     | 70  | 70     | 100 | 100    | 130  | 130    | 170  |
| 100                     | 120  | 0         | 25  | 25     | 50  | 50     | 80  | 80     | 110 | 110    | 150  | 150    | 200  |
| 120                     | 140  | 0         | 30  | 30     | 60  | 60     | 90  | 90     | 120 | 120    | 170  | 170    | 230  |
| 140                     | 160  | 0         | 30  | 30     | 6   | 65     | 100 | 100    | 140 | 140    | 190  | 190    | 260  |
| 160                     | 180  | 0         | 35  | 35     | 70  | 70     | 110 | 110    | 150 | 150    | 210  | 210    | 280  |
| 180                     | 200  | 0         | 40  | 40     | 80  | 80     | 120 | 120    | 170 | 170    | 230  | 230    | 310  |
| 200                     | 225  | 0         | 40  | 40     | 90  | 90     | 140 | 140    | 190 | 190    | 260  | 260    | 340  |
| 225                     | 250  | 0         | 50  | 50     | 100 | 100    | 150 | 150    | 210 | 210    | 290  | 290    | 380  |
| 250                     | 280  | 0         | 50  | 50     | 110 | 110    | 170 | 170    | 230 | 230    | 320  | 320    | 420  |
| 280                     | 315  | 0         | 60  | 60     | 120 | 120    | 180 | 180    | 250 | 250    | 350  | 350    | 460  |
| 315                     | 355  | 0         | 70  | 70     | 140 | 140    | 210 | 210    | 280 | 280    | 390  | 390    | 510  |
| 355                     | 400  | 0         | 70  | 70     | 150 | 150    | 230 | 230    | 310 | 310    | 440  | 440    | 580  |
| 400                     | 450  | 0         | 80  | 80     | 170 | 170    | 260 | 260    | 350 | 350    | 490  | 490    | 650  |
| 450                     | 500  | 0         | 90  | 90     | 190 | 190    | 290 | 290    | 390 | 390    | 540  | 540    | 720  |
| 500                     | 560  | 0         | 100 | 100    | 210 | 210    | 320 | 320    | 430 | 430    | 590  | 590    | 790  |
| 560                     | 630  | 0         | 110 | 110    | 230 | 230    | 350 | 350    | 480 | 480    | 660  | 660    | 880  |
| 630                     | 710  | 0         | 130 | 130    | 260 | 260    | 400 | 400    | 540 | 540    | 740  | 740    | 910  |
| 710                     | 800  | 0         | 140 | 140    | 290 | 290    | 450 | 450    | 610 | 610    | 830  | 830    | 1100 |
| 800                     | 900  | 0         | 160 | 160    | 330 | 330    | 500 | 500    | 670 | 670    | 920  | 920    | 1240 |
| 900                     | 1000 | 0         | 180 | 180    | 360 | 360    | 540 | 540    | 720 | 720    | 980  | 980    | 1300 |
| 1000                    | 1120 | 0         | 200 | 200    | 400 | 400    | 600 | 600    | 820 | 820    | 1100 | 1100   | 1440 |
| 1120                    | 1250 | 0         | 220 | 220    | 450 | 450    | 670 | 670    | 900 | 900    | 1240 | 1240   | 1640 |
| 1250                    | 1400 | 0         | 250 | 250    | 500 | 500    | 750 | 750    | 980 | 980    | 1300 | 1300   | 1740 |

# Transmission Bearing

## 6! The system of bearing code

### 6.1 The basic bearing code

#### 6.1.1 The standard bearings

Each standard bearing, designed by C&H, has a basic code, which usually consists of three, four or five digitals, or combined with letters and digitals.

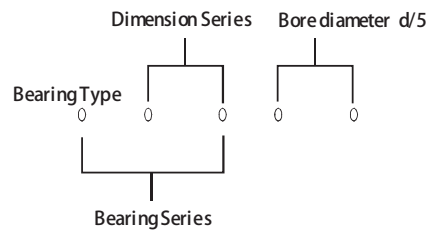
The meaning of digitals (or letters and digitals) is as below:

B The initial digital, letter or letter group indicates bearing type.

B The second and the third digital indicates the dimensional

series. The second digital stands for the width (height) series, the third digital stands for the diameter series.

B The last two digitals of the basic bearing code multiplied by 5 will be the bore diameter in millimeter.



#### The code of bearing types

- 0- Double-row angular contact ball bearing
- 1- Self-aligning ball bearing
- 2- Self-aligning roller bearing and aligning roller thrust bearing
- 3- Tapered roller bearing
- 4- Double-row deep groove ball bearing
- 5- Thrust ball bearing
- 6- Deep groove ball bearing
- 7- Angular contact ball bearing
- 8- Cylindrical roller thrust bearing
- 9- Tapered roller thrust bearing
- N- Cylindrical roller bearing

If there are one or more letters followed! 'N', such as NJ, NU, NUP, the code will stand for rib types of the bearings.

NN stands for double-row or multi-row cylindrical roller bearing.

NA or NK is usually used to stand for Needle roller bearings.

U- Spherical outside surface ball bearing

QJ- Four-point contact ball bearing

Table 1 The series code of bearings in basic codes

Table 1 Bearing series code

| Bearing type  | Bearing series code | Type code | Dimensional series code |
|---|---------------------|-----------|-------------------------|
| Single-row deep groove ball bearing                         | 618                 | 6         | 18                      |
|   | 619                 | 6         | 19                      |
|   | 160                 | 6         | \$ 0 0                  |
|   | 60                  | 6         | \$ 1 0                  |
|   | 62                  | 6         | \$ 0 2                  |
|   | 63                  | 6         | \$ 0 3                  |
| Double-row deep groove ball bearing (with filling slot)     | 64                  | 6         | \$ 0 4                  |
|   | 42                  | 4         | \$ 2 2                  |
| Single-row angular contact ball bearing                     | 43                  | 4         | \$ 2 3                  |
|   | 719                 | 7         | 19                      |
|   | 70                  | 7         | (1)0                    |
|   | 72                  | 7         | (0)2                    |
|   | 73                  | 7         | (0)3                    |
| Double-row angular contact ball bearing (with filling slot) | 74                  | 7         | (0)4                    |
|   | 32                  | (0)       | 32                      |
| Four-point contact ball bearing                             | 33                  | \$ 0 0    | 33                      |
|   | QJ2                 | QJ1       | (0)2                    |
| Self-aligning ball bearing                                  | QJ3                 |           | (0)3                    |
|   | 12                  | 1         | (0)2                    |
|   | 22                  | \$ 1 0    | 22                      |
|   | 13                  | 1         | (0)                     |
| Single-row cylindrical roller bearing                       | 23                  | \$ 1 0    | 23                      |
|   | NU10                | NU        | 10                      |
|   | NU2                 | NU        | (0)2                    |
|   | NU22                | NU        | 22                      |
|   | NU32                | NU        | 32                      |
|   | NU3                 | NU        | (0)3                    |
| Tapered roller bearing                                      | NU23                | NU        | 23                      |
|   | NU4                 | NU        | (0)4                    |
|   | 329                 | 3         | 29                      |
|   | 320                 | 3         | 20                      |
| Tapered roller bearing                                      | 330                 | 3         | 30                      |
|   | 331                 | 3         | 31                      |
|   | 302                 | 3         | 02                      |

# Transmission Bearing

Table 2 Continued

| Bearing type  | Bearing series code | Type code | Dimensional series code |
|---|---------------------|-----------|-------------------------|
| Tapered roller bearing  | 322                 | 3         | 22                      |
|   | 332                 | 3         | 32                      |
|   | 303                 | 3         | 03                      |
|   | 313                 | 3         | 13                      |
|   | 323                 | 3         | 23                      |
| Spherical roller bearing  | 239                 | 2         | 39                      |
|   | 230                 | 2         | 30                      |
|   | 240                 | 2         | 40                      |
|   | 231                 | 2         | 31                      |
|   | 241                 | 2         | 41                      |
|   | 222                 | 2         | 22                      |
|   | 232                 | 2         | 32                      |
|   | 213                 | 2         | 03                      |
| 223   | 2                   | 23        |                         |
| Thrust ball bearing<br>(single direction plane<br>housing washer type)    | 511                 | 5         | 11                      |
|   | 512                 | 5         | 12                      |
|   | 513                 | 5         | 13                      |
|   | 514                 | 5         | 14                      |
| Thrust ball bearing<br>(single direction aligning<br>housing washer type) | 532                 | 5         | 32                      |
|   | 533                 | 5         | 33                      |
|   | 534                 | 5         | 34                      |
| Thrust ball bearing<br>(double direction plane<br>housing washer type)    | 522                 | 5         | 22                      |
|   | 523                 | 5         | 23                      |
|   | 524                 | 5         | 24                      |
| Thrust ball bearing<br>(double direction aligning<br>housing washer type) | 542                 | 5         | 42                      |
|   | 543                 | 5         | 43                      |
|   | 544                 | 5         | 44                      |
| Thrust spherical<br>roller bearing  | 292                 | 2         | 92                      |
|   | 293                 | 2         | 93                      |
|   | 294                 | 2         | 94                      |

[Note: ]

1% ( ) Width series code showed in bracket will be default in bearing series code

2% Cylindrical roller bearing includes NJ, NUP, N, NF and NH type besides NU type.

## 6.1.2 The non- standard bearings

The basic code of the non- standard bearing consists of two parts, one is the bearing type code and the other is bearing dimension code.

Type code Reference to the present C&H standard

Dimensional code Defined as following two methods

1. Non- standard bearing showed as dimensional series code

a) Standard bore diameter and non- standard outside diameter or width\$ height%

The non- standard outside diameter or width (height) should be indicated by a letter following basic bearing code of a bearing, which has a most similar diameter series or width (height series) with this non- standard bearing. This bearing can be determined through comparing the standard OD dimension or width (height) dimension, or following the extensive rule of the standard boundary dimension. Please refer to Table 3.

| Bearing type   | Bearing basic code | Bearing basic code |
|--|--------------------|--------------------|
| Double row angular contact ball bearing                    |                    | 4600               |
| Self-aligning ball bearing                                 |                    | 1600               |
| Spherical roller bearing                                   |                    | 20600              |
| Tapered roller bearing                                     |                    | 30600              |
| Double raceway outer ring- double row taper roller bearing |                    | 350600             |
| Double raceway inner ring- double row taper roller bearing |                    | 370600             |
| Four rows taper roller bearing                             |                    | 380600             |
| Double- row deep groove ball bearing                       |                    | 40600              |
| Thrust ball bearing  |                    | 51700              |
| Double direction thrust ball bearing                       |                    | 52700              |
| Deep groove ball bearing                                   |                    | 6600               |
| Angular contact ball bearing                               |                    | 7600               |
| Four point contact ball bearing\$ double half inner ring   |                    | QJ600              |
| Four point contact ball bearing\$ double half outer ring   |                    | QJF600             |
| Thrust angular contact ball bearing                        |                    | 561700             |
| Double direction thrust angular contact ball bearing       |                    | 232700             |
| Thrust cylindrical roller bearing                          |                    | 81700              |
| Double direction thrust cylindrical roller bearing         |                    | 82700              |



# Transmission Bearing

|  |  |
|--|--|
| Thrust tapered roller bearing                  | 91700  |
| Double direction thrust tapered roller bearing | 92700  |
| Cylindrical roller bearing                     | N600, NU600, NJ600 NF600<br>NUP600, NN600 NNU600 |
| Thrust spherical roller bearing                | 21700  |

[Note]  
The 00 in above tables refers to any suitable inner diameter code.

b) Non- standard bore diameter, outside diameter and width  
The non- standard bore diameter, outside diameter and width (height) should be indicated by indefinite series code because the comparison with standard dimension or, extensive rule of the standard boundary dimension is not available.  
Please refer to Table 4 for the indefinite series code of C&H bearings.

Table 4

| Letter | Meaning  |
|--------|--|
| X1     | Non- standard outside diameter   |
| X2     | Non- standard width (height)   |
| X3     | Non- standard outside diameter and width (height) (Standard bore diameter) |

## 2. Non- standard bearing indicated by bore diameter code

Table 5

| Bore diameter           | Indication method   |
|-------------------------|---|
| Standard dimension      | Reference to the present standard   |
| Non- standard dimension | <p>Bore diameter is indicated by the quotient divided by 5 if this bore diameter is smaller than 500mm and can be divided by 5.</p> <p>Other bore diameter are indicated with the actual bore diameter value (mm) or additive letter. When the bore diameter value (mm) is integer or with one place decimal, it can be indicated with this dimension directly, but be separated from the dimension series code with "/";<br/>When the actual bore diameter value (mm) is with two or more places decimals, the dimension is indicated with the integral part and expressed with X4. For example, NCF6/27X4V, it indicates the cylindrical roller bearing, indefinite series, with the bore diameter of 27.762 and full filling with rollers.</p> |

Example 1: 66/6.4 deep groove ball bearing, indefinite series, bore diameter is 6.4mm.

Example 2: 61936X1M deep groove ball bearing, non- standard outside diameter, close to diameter series 9.

Example 3: 62/14.5 deep groove ball bearing, dimension series 02, bore diameter is 14.5mm.

Example 4: 52706 double- direction ball thrust bearing, indefinite series, bore diameter is 30mm.

When the code names of several non- standard bearings, which belong to the same type but with the slightly different dimensions, are same with each other, they are distinguished by adding "1" and follow the sequence number 1, 2, 3# # after each code name.

For example, 61956X1M  
61956X1M-1

## 6.2 The illustration to the change of dimensions and structures

The suffix YA plus number indicates all technical changes. Please refer to the suffix illustration for details.

If one type of bearing has two changes on its structure, the bearing is indicated with YA plus two digitals. For example, /YA12, it indicates the surface of outer ring and inner bore of inner ring vary from the standard design. The specific change can be referenced to the product catalogue or the supplemented technical requirements.

If one type of bearing has two or more changes on its structure at the same time, the bearing is indicated with YAD.

## The specification to the change of the technical requirements

The suffix YB appended with digitals indicates all variations of the technical requirements. See more details to the specification of bearing suffix.

If one type of bearing has two changes on the technical requirements at the same time, the bearing is indicated with YB appended with two digitals. For example, /YB12, see the specific change to the product catalogue or supplemented technical requirements. If one type of bearing has two or more changes on its technical requirements, the bearing is indicated with /YBD.

If one type of bearing has changes both on the structure and the technical requirements at the same time, the bearing is indicated with /YAB.

Note: If the bearing suffix has Y and another letter or the appended number, it is suggested to reference the product catalogue or the supplemented technical requirements, in order to know the specific change.

### 6.2.1 Prefix code

| Code | Meaning   |
|------|---|
| N    | Cylindrical roller bearing, inner ring with double ribs, outer ring without rib.                            |
| NCF  | NF + snap ring  |
| NCL  | Cylindrical roller bearing, outer ring without rib but with double snap rings, inner ring with double ribs. |
| NF   | Cylindrical roller bearing, inner ring with double ribs, outer ring with single rib.                        |
| NFP  | Cylindrical roller bearing, inner ring with double ribs, outer ring with single rib and loose rib.          |

# Transmission Bearing

|      |  |
|------|--|
| NJ   | Cylindrical roller bearing, outer ring with double ribs, inner ring with single rib.   |
| NJP  | Cylindrical roller bearing, outer ring with double ribs, inner ring without rib but with loose rib.  |
| NN   | Double-row cylindrical roller bearing, inner ring with three ribs, outer ring without rib.   |
| NNB  | Double-row cylindrical roller bearing, both inner ring and outer ring without no rib.  |
| NNCL | Double-row cylindrical roller bearing, inner ring with three ribs, outer ring without rib but with central spacer.   |
| NNCF | Double-row cylindrical roller bearing, inner ring with three ribs, outer ring with single rib and with snap ring on the other side.  |
| NND  | Double-row cylindrical roller bearing, single inner ring, double outer rings with double ribs.   |
| NNF  | Double-row cylindrical roller bearing, double inner rings, single outer ring with central rib and no rib on both sides.  |
| NNFP | Double-row cylindrical roller bearing, single inner ring, with loose ring on two sides, single outer ring with central rib and no rib on both sides.   |
| NNJ  | Double-row cylindrical roller bearing, outer ring with three ribs, inner ring with single rib.   |
| NNP  | Double-row cylindrical roller bearing, inner ring with no rib, outer ring with central rib and with loose rib on both faces.   |
| NNU  | Double-row cylindrical roller bearing, outer ring with three ribs, inner ring with no rib.   |
| NU   | Cylindrical roller bearing, outer ring with double ribs, inner ring without rib.   |
| NUCL | Cylindrical roller bearing, inner ring with no rib but double snap rings   |
| NUP  | Cylindrical roller bearing, outer ring with double ribs, inner ring with single rib and loose rib.   |
| T    | complying with GB273.1 appendix A.<br>For example, T 2ED 020<br>T- tapered roller bearing<br>2- angle series code (reference to GB273.1 appendix B)<br>ED- series code (reference to GB273.1 appendix B)<br>020- inner ring 20mm |

## 6.2.2 Suffix Code

| code     | meaning  |
|----------|--|
| - 1 -2 # | It indicates the non-standard series X1,X2,YA2,# #   |
| A        | 1. Angular contact ball bearing, nominal contact angle $C = 30^\circ$<br>2. Tapered roller bearing, contact angle $C$ and the outside diameter $D1$ not conform to the national standard, same as there are two or more $C, D1$ which is different from the national standard in one |

|     |  |
|-----|--|
| A   | code, it will be indicated with A1, A2# by sequence.<br>3. Outer ring guided   |
| AC  | Angular contact ball bearing, nominal contact angle $C = 25^\circ$   |
| ACA | Aligning roller bearing with movable central rib and asymmetrical rollers.   |
| A6  | Inch tapered roller bearing assembly of chamfer differed from TIMKEN, if the assembly of chamfer in one code have two or more bearings different from TIMKEN, it will be indicated with A61, A62#  |
| B   | 1. Angular contact ball bearing, nominal contact angle $C = 40^\circ$<br>2. Tapered roller bearing, contact angle enlarged (enlarge with one more angle series)<br>3. Inner ring guided.   |
| C   | 1. Angular contact ball bearing, nominal contact angle $C = 15^\circ$<br>2. Aligning roller bearing, inner ring with no rib but movable central rib, with symmetrical rollers, pressed steel cage.<br>3. Matched pair tapered roller bearing, when the axial clearance not complying with C&H standard, the mean value of the axial clearance should be directly added after C.  |
| CA  | Aligning roller bearing, inner ring with no rib but smaller ribs on both sides, filling with symmetrical rollers, solid brass cage.  |
| /CM | Clearance of the electrical machine deep groove ball bearing.  |
| /CN | 0 group Clearances. /CN combined with the letter H, M or L, it indicates the clearance scope decreased in half; or combined with P, it indicates the clearance scope deviated. For example,<br>/CNH 0 group clearance decreased in half, belonging to the upper part.<br>/CNM 0 group clearance decreased in half, belonging to the middle part.<br>/CNL 0 group clearance decreased in half, belonging to the low part.<br>/CNP clearance scope lies in the upper part of 0 group clearance and the low part of C3 grade.             |
| /C1 | Clearance conforms to the standard group 1.  |
| /C2 | Clearance conforms to the standard group 2.  |
| /C3 | Clearance conforms to the standard group 3.  |
| /C4 | Clearance conforms to the standard group 4   |
| /C5 | Clearance conforms to the standard group 5.  |
| /C9 | Letter H, M, L or P can follow directly after the clearance code, it indicates the clearance scope decreased in half or deviated, see explanation of /CN, but P must be added after the lower clearance grade. For example, /C3P clearance scope lies in the upper part of group C3 and the low part of grade C4.<br><br>Bearing clearance not conforms to the present standard.<br>When two or more clearances in one code are different from the present standard, it will be indicated with the added digitals, such as C91, C92# # |

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|     |   |
|-----|---|
| /CR | When the matched pair tapered roller bearings have the radial clearance, the mean value of clearance will be added after CR.  |
| D   | 1. Double row angular contact ball bearing, double inner ring, contact angle $C = 45^\circ$<br>2. Double row tapered roller bearing, no inner spacer or outer spacer, un-grinded end face.<br>3. Inch tapered roller bearing, inner ring with double raceway or outer ring with double raceway.<br>4. Split bearing.  |
| /DB | Two single deep groove ball bearings or angular contact ball bearings or tapered roller bearings used for the back to back paired mounting.   |
| /DC | Double row angular contact ball bearing with double outer ring.   |
| /DF | Two single deep groove ball bearings or angular contact ball bearings or tapered roller bearings used for the face to face paired mounting.   |
| /DT | Two single deep groove ball bearings or angular contact ball bearings or tapered roller bearings used for the same direction tandem paired mounting.  |
| D1  | Double row tapered roller bearing, with no inner spacer, grinded end face.  |
| E   | Inside design is changed, belonging to the reinforced type.   |
| F   | The materials of steel, nodular cast iron or power metallurgical solid cage are indicated with the added digitals.<br>F1- carbon steel<br>F2- graphite steel<br>F3- nodular cast iron<br>F4- powder metallurgy<br>FA- steel, nodular cast iron or power metallurgical solid cage, outer ring guided.<br>FAB- steel, nodular cast iron or power metallurgical solid cage, inner ring guided.<br>FE- phosphated steel solid cage. |
| /HC | Ring and rolling elements or only ring or rolling elements are made from case hardened steel (/HC- 20Cr2Ni4A; /HC1- 20Cr2Mn2MoA; /HC2- 15Mn).   |
| /HE | Ring, rolling elements and cage or only the ring and rolling elements are made from electroslag remelting bearing steel (military first grade steel) ZGCr15.  |
| /HG | Ring and rolling elements or only ring are made from other bearing steel (/HG- 5GrMnMo; /HG1- 55SiMoVA; /HG2- GCr18Mo; /HG3- 42CrMo).   |
| /HN | Ring and rolling elements are made from the heat resisting steel.   |
| /HP | Ring and rolling elements are made from beryllium bronze or other anti-magnetic materials. When material is changed, it is indicated with the added digitals.   |
| /HQ | Ring and rolling elements are made from the unusual materials (/HQ- plastic; /HQ1- ceramic alloy)   |
| /HU | Ring, rolling elements and cage or only the ring and rolling elements are made from the unhardened stainless steel 1Cr18Ni9Ti.  |

|       |   |
|-------|---|
| /HV   | Ring, rolling elements and cage or only the ring and rolling elements are made from the unhardened stainless steel  |
| K     | Tapered bore bearing. Conicity is 1: 12   |
| K30   | Tapered bore bearing. Conicity is 1: 30   |
| L     | Light alloy solid cage. When the material of cage is changed, it is indicated with the appended digitals.   |
| L3    | Zinc aluminum alloy ZnAl127Cu2  |
| LA    | Light alloy solid cage, outer ring guided.  |
| LB    | Light alloy solid cage, inner ring guided.  |
| M     | Brass solid cage  |
| MA    | Brass solid cage, outer ring guided.  |
| MB    | Brass solid cage, inner ring guided.  |
| N     | Bearing with snap groove on outer ring.   |
| /P0   | Tolerance grade conforms to the standard P0, code is omitted.   |
| /P6   | Tolerance grade conforms to the standard P6   |
| /P6X  | Tolerance grade conforms to the standard P6X  |
| /P5   | Tolerance grade conforms to the standard P5   |
| /P4   | Tolerance grade conforms to the standard P4   |
| /P2   | Tolerance grade conforms to the standard P2   |
| Q     | Bronze solid cage, indicated with the appended digitals, which means different materials.<br>Q1- aluminum iron manganese bronze.<br>Q2- silicon iron zinc bronze.<br>Q3- silicon nickel bronze.<br>Q4- aluminum bronze.<br>Q5- stannum bronze (ZQSn10- 1) |
| /W20  | Bearing with three lubricating oil holes on outer ring (no oil slot)  |
| /W20A | Bearing with four lubricating oil holes on outer ring (no oil slot)   |
| /W20C | Bearing with six lubricating oil holes on outer ring (no oil slot)  |
| /W20T | Bearing with eight lubricating oil holes on outer ring (no oil slot)  |
| /W23  | Bearing with three lubricating oil holes on inner ring (no oil slot)  |

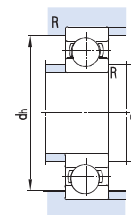
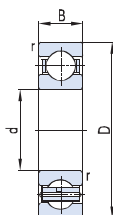
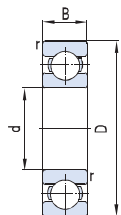
# Transmission Bearing

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|       |  |
|-------|--|
| /W26  | Bearing with six lubricating oil holes on inner ring.  |
| /W33  | Bearing with oil slot and three lubricating oil holes on outer ring.   |
| /W33A | Bearing with oil slot and four lubricating oil holes on outer ring.  |
| /W33X | Bearing with oil slot and six lubricating oil holes on outer ring.   |
| /W513 | W26+W33  |
| /W518 | W20+W26  |
| /W512 | W23+W33  |
| /WN33 | Bearing with oil groove and three lubricating oil holes on inner ring.   |
| X1    | Non- standard outside diameter.  |
| X2    | Non- standard width (height).  |
| X3    | Non standard outside diameter, width (height) (standard bore diameter)   |
| /Y    | Y combines with another letter (such as YA, YB) or more digitals to identify the change of the non- series which can not be indicated with the present suffix code.<br>YA- structure change<br>YA1- outside surface of outer ring has change comparing to standard design.<br>YA2- bore of inner ring has change comparing to the standard design.<br>YA3- end face of bearing ring has change comparing to the standard design.<br>YA4- raceway of bearing ring has change comparing to the standard design.<br>YA5- bearing rolling elements have change comparing to the standard design.<br>YAB- structure and technical specification have changes at the same time.<br>YAD- one type of bearing has two or more changes on structure.<br>YB- technical specification has change.<br>YB1- surface of bearing ring has plated coating.<br>YB2- bearing dimension and tolerance change.<br>YB3- surface roughness of bearing ring change.<br>YB4- heat treating specification (e.g. hardness) change.<br>YB5- structure and position tolerance have special requirements.<br>YBD- one type of bearing has two or more changes on technical specification. |

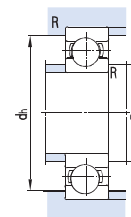
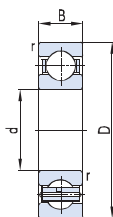
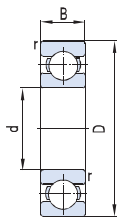
## Transmission Bearing Type Catalogue

# Deep Groove Ball Bearings



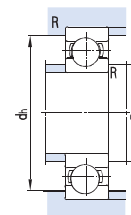
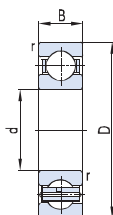
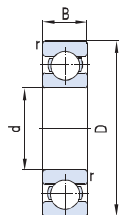
| Basic dimensions |     |    |       | Basic load ratings |      | Limit speed |       | Designations                                   | Abutment and fillet dimensions |       |       | Weight |
|------------------|-----|----|-------|--------------------|------|-------------|-------|--|--------------------------------|-------|-------|--------|
| d                | D   | B  | rsmin | Cr                 | Cor  | Grease      | Oil   |  | Dsmin                          | dhmax | R max | Kg     |
| mm               |     |    |       | KN                 |      | r/min       |       |  | mm                             |       |       |        |
| 20               | 47  | 14 | 1     | 13.0               | 6.70 | 15000       | 18000 | 6204<br>6304X3                                 | 25                             | 42    | 1     | 0.110  |
|                  | 62  | 16 | 1     | 18.2               | 10.0 | 13000       | 16000 |  | 28                             | 54    | 1     | 0.252  |
| 22               | 56  | 16 | 1.1   | 17.7               | 9.25 | 12000       | 15000 | 63/22  | 29                             | 47    | 1     | 0.183  |
| 23               | 56  | 15 | 1     | 18.5               | 9.30 | 12000       | 15000 | 66/23  | 29                             | 47    | 1     | 0.125  |
| 25               | 42  | 9  | 0.3   | 9.50               | 4.55 | 15000       | 18000 | 61905<br>6005<br>6205<br>6305<br>6405          | 27                             | 40    | 0.3   | 0.0415 |
|                  | 47  | 12 | 0.6   | 11.3               | 5.90 | 14000       | 17000 |  | 29                             | 43    | 0.6   | 0.078  |
|                  | 52  | 15 | 1     | 14.3               | 8.00 | 12000       | 15000 |  | 30                             | 47    | 1     | 0.134  |
|                  | 62  | 17 | 1.1   | 22.4               | 11.5 | 11000       | 14000 |  | 31.5                           | 55.5  | 1     | 0.214  |
|                  | 80  | 21 | 1.5   | 37.5               | 19.0 | 9000        | 11000 |  | 33                             | 72    | 1.5   | 0.530  |
| 28               | 68  | 18 | 1.1   | 23.5               | 13.0 | 9000        | 11000 | 63/28  | 34.5                           | 61.5  | 1     | 0.299  |
| 30               | 47  | 9  | 0.3   | 9.75               | 4.95 | 14000       | 17000 | 61906<br>6006<br>6206<br>6306<br>6406          | 32                             | 45    | 0.3   | 0.0433 |
|                  | 55  | 13 | 1     | 13.1               | 7.88 | 12000       | 15000 |  | 34.6                           | 50.4  | 1     | 0.121  |
|                  | 62  | 16 | 1     | 19.3               | 11.4 | 10000       | 13000 |  | 35                             | 57    | 1     | 0.218  |
|                  | 72  | 19 | 1.1   | 28.2               | 15.2 | 9000        | 11000 |  | 36.5                           | 65.5  | 1     | 0.354  |
|                  | 90  | 23 | 1.5   | 44.5               | 22.8 | 8500        | 10000 |  | 38                             | 82    | 1.5   | 0.805  |
| 33               | 72  | 17 | 1.1   | 22.5               | 13.6 | 9000        | 11000 | 62/33  | 38                             | 66.5  | 1     | 0.308  |
| 35               | 47  | 7  | 0.3   | 4.92               | 3.00 | 13000       | 16000 | 61807<br>61907<br>6007<br>6207<br>6307<br>6407 | 37                             | 45    | 0.3   | 0.0292 |
|                  | 55  | 10 | 0.6   | 9.35               | 6.70 | 11000       | 14000 |  | 38.2                           | 51.8  | 0.6   | 0.0779 |
|                  | 62  | 14 | 1     | 16.3               | 10.5 | 10000       | 13000 |  | 40                             | 57    | 1     | 0.148  |
|                  | 72  | 17 | 1.1   | 25.7               | 15.3 | 9000        | 11000 |  | 41.5                           | 65.5  | 1     | 0.284  |
|                  | 80  | 21 | 1.5   | 35.5               | 19.2 | 8500        | 10000 |  | 43                             | 72    | 1.5   | 0.456  |
|                  | 100 | 25 | 1.5   | 55.5               | 29.5 | 7000        | 8500  |  | 43                             | 92    | 1.5   | 0.919  |
| 40               | 62  | 12 | 0.6   | 13.1               | 9.20 | 10000       | 13000 | 61908<br>6008<br>6208<br>6308<br>6408          | 43.2                           | 58.8  | 0.6   | 0.108  |
|                  | 68  | 15 | 1     | 16.8               | 11.6 | 9500        | 12000 |  | 44.6                           | 63.4  | 1     | 0.191  |
|                  | 80  | 18 | 1.1   | 31.0               | 17.9 | 8500        | 10000 |  | 46.5                           | 73.5  | 1     | 0.361  |
|                  | 90  | 23 | 1.5   | 41.0               | 24.0 | 7500        | 9000  |  | 48                             | 82    | 1.5   | 0.642  |
|                  | 110 | 27 | 2     | 67.5               | 36.0 | 6700        | 8000  |  | 49                             | 101   | 2     | 1.20   |
| 41               | 80  | 17 | 1.1   | 31.0               | 19.0 | 8500        | 10000 | 62/41/HA                                       | 46.5                           | 73.5  | 1     | 0.342  |

# Deep Groove Ball Bearings



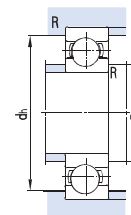
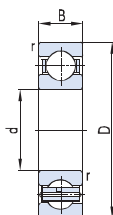
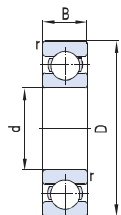
| Basic dimensions |     |     |       | Basic load ratings |      | Limit speed |       | Designations | Abutment and fillet dimensions |       |       | Weight |
|------------------|-----|-----|-------|--------------------|------|-------------|-------|--------------|--------------------------------|-------|-------|--------|
| d                | D   | B   | rsmin | Cr                 | Cor  | Grease      | Oil   |              | Dsmin                          | dhmax | R max | Kg     |
| mm               |     |     |       | KN                 |      | r/min       |       |              | mm                             |       |       |        |
| 45               | 58  | 7   | 0.3   | 6.50               | 5.00 | 9500        | 12000 | 61809        | 47                             | 56    | 0.3   | 0.0391 |
|                  | 75  | 16  | 1     | 21.0               | 14.0 | 9000        | 11000 | 6009         | 50                             | 70    | 1     | 0.246  |
|                  | 85  | 19  | 1.1   | 33.3               | 20.4 | 7500        | 9000  | 6209         | 51.5                           | 78.5  | 1     | 0.428  |
|                  | 100 | 25  | 1.5   | 52.7               | 30.0 | 6700        | 8000  | 6309         | 53                             | 92    | 1.5   | 0.850  |
|                  | 120 | 29  | 2     | 78.0               | 46.0 | 6000        | 7000  | 6409         | 54                             | 111   | 2     | 1.69   |
| 50               | 72  | 12  | 0.6   | 13.5               | 11.0 | 8500        | 10000 | 61910        | 53.2                           | 68.8  | 0.6   | 0.134  |
|                  | 80  | 16  | 1     | 22.0               | 16.3 | 6500        | 10000 | 6010         | 55                             | 75    | 1     | 0.248  |
|                  | 90  | 20  | 1.1   | 35.2               | 23.2 | 7100        | 8500  | 6210         | 56.5                           | 83.5  | 1     | 0.504  |
|                  | 110 | 27  | 2     | 62.0               | 38.0 | 6300        | 7500  | 6310         | 59                             | 101   | 2     | 1.07   |
|                  | 130 | 31  | 2.1   | 88.0               | 55.0 | 5300        | 6300  | 6410         | 61                             | 119   | 2     | 1.85   |
| 55               | 72  | 9   | 0.3   | 8.80               | 8.10 | 8500        | 10000 | 61811        | 57                             | 70    | 0.3   | 0.0845 |
|                  | 80  | 13  | 1     | 15.9               | 13.2 | 8000        | 9500  | 61911        | 59.6                           | 75.4  | 1     | 0.177  |
|                  | 90  | 18  | 1.1   | 24.2               | 18.4 | 7500        | 9000  | 6011         | 61                             | 84    | 1     | 0.384  |
|                  | 100 | 21  | 1.5   | 43.9               | 28.8 | 6300        | 7500  | 6211         | 63                             | 92    | 1.5   | 0.605  |
|                  | 120 | 29  | 2     | 71.5               | 45.0 | 5600        | 6700  | 6311         | 64                             | 111   | 2     | 1.39   |
|                  | 140 | 33  | 2.1   | 100                | 62.0 | 5000        | 6000  | 6411         | 66                             | 129   | 2     | 2.31   |
| 60               | 85  | 13  | 1     | 17.0               | 15.1 | 7500        | 9000  | 61912        | 64.5                           | 80.5  | 1     | 0.201  |
|                  | 95  | 18  | 1.1   | 30.0               | 23.0 | 6700        | 8000  | 6012         | 66.5                           | 88.5  | 1     | 0.426  |
|                  | 110 | 22  | 1.5   | 53.0               | 33.0 | 5600        | 7100  | 6212         | 68                             | 102   | 1.5   | 0.793  |
|                  | 130 | 31  | 2.1   | 82.0               | 48.5 | 5300        | 6300  | 6312         | 71                             | 119   | 2     | 1.71   |
|                  | 150 | 35  | 2.1   | 109                | 70.0 | 4800        | 5600  | 6412         | 71                             | 139   | 2     | 2.78   |
| 65               | 90  | 13  | 1     | 19.5               | 17.0 | 6700        | 8000  | 61913        | 70                             | 85    | 1     | 0.203  |
|                  | 100 | 18  | 1.1   | 32.0               | 25.0 | 6300        | 7500  | 6013         | 71.5                           | 93.5  | 1     | 0.428  |
|                  | 120 | 23  | 1.5   | 56.0               | 41.0 | 5300        | 6300  | 6213         | 73                             | 112   | 1.5   | 0.973  |
|                  | 140 | 33  | 2.1   | 92.6               | 59.5 | 4800        | 5600  | 6313         | 76                             | 129   | 2     | 2.10   |
|                  | 160 | 37  | 2.1   | 118                | 78.5 | 4500        | 6300  | 6413         | 76                             | 149   | 2     | 3.25   |
|                  | 70  | 110 | 20    | 1.1                | 38.0 | 31.0        | 6000  | 7000         | 6014                           | 76.5  | 103.5 | 1      |
| 125              |     | 24  | 1.5   | 60.5               | 46.0 | 5000        | 6000  | 6214         | 78                             | 117   | 1.5   | 1.34   |
| 150              |     | 35  | 2.1   | 105                | 68.0 | 4500        | 5300  | 6314         | 81                             | 139   | 2     | 2.55   |
| 180              |     | 42  | 3     | 143                | 103  | 3800        | 4500  | 6414         | 83                             | 167   | 2.5   | 4.73   |
| 75               | 115 | 20  | 1.1   | 39.5               | 31.8 | 5600        | 6700  | 6015         | 81.5                           | 108.5 | 1     | 0.630  |

# Deep Groove Ball Bearings



| Basic dimensions |     |    |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       | Weight |
|------------------|-----|----|-------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|--------|
| d                | D   | B  | rsmin | Cr                 | Cor  | Grease      | Oil  |              | Dsmin                          | dhmax | R max |        |
| mm               |     |    |       | KN                 |      | r/min       |      |              | mm                             |       |       | Kg     |
|                  | 130 | 25 | 1.5   | 66.0               | 50.0 | 4800        | 5600 | 6215         | 83                             | 122   | 1.5   | 1.16   |
|                  | 160 | 37 | 2.1   | 113                | 77   | 4300        | 5000 | 6315         | 86                             | 149   | 2     | 3.10   |
|                  | 190 | 45 | 3     | 153                | 114  | 3600        | 4300 | 6415         | 88                             | 177   | 2.5   | 5.57   |
| 80               | 100 | 10 | 0.6   | 12.7               | 13.3 | 6000        | 7000 | 61816        | 83.2                           | 96.8  | 0.6   | 0.153  |
|                  | 110 | 16 | 1     | 27.5               | 25.0 | 5600        | 6700 | 61916        | 85                             | 105   | 1     | 0.350  |
|                  | 125 | 22 | 1.1   | 47.5               | 40.0 | 5300        | 6300 | 6016         | 86.5                           | 118.5 | 1     | 0.860  |
|                  | 140 | 26 | 2     | 71.5               | 54.5 | 4500        | 5300 | 6216         | 89                             | 131   | 2     | 1.43   |
|                  | 170 | 39 | 2.1   | 123                | 86.5 | 3800        | 4500 | 6316         | 91                             | 159   | 2     | 3.64   |
|                  | 200 | 48 | 3     | 164                | 125  | 3400        | 4000 | 6416         | 93                             | 187   | 2.5   | 6.63   |
| 85               | 120 | 18 | 1.1   | 30.3               | 27.0 | 5300        | 6300 | 61917        | 91                             | 114   | 1     | 0.557  |
|                  | 130 | 22 | 1.1   | 49.4               | 40.0 | 5000        | 6000 | 6017         | 91.5                           | 123.5 | 1     | 0.935  |
|                  | 150 | 28 | 2     | 83.0               | 64.0 | 4300        | 5000 | 6217         | 94                             | 141   | 2     | 1.80   |
|                  | 180 | 41 | 3     | 133                | 96.5 | 3800        | 4500 | 6317         | 98                             | 167   | 2.5   | 4.33   |
|                  | 210 | 52 | 4     | 165                | 136  | 3200        | 3800 | 6417         | 101                            | 194   | 3     | 8.12   |
| 90               | 125 | 18 | 1.1   | 33.0               | 31.5 | 5000        | 6000 | 61918        | 96.5                           | 118.5 | 1     | 0.572  |
|                  | 140 | 24 | 1.5   | 58.5               | 50.0 | 4800        | 5600 | 6018         | 98                             | 132   | 1.5   | 1.16   |
|                  | 160 | 30 | 2     | 96.0               | 72.0 | 3800        | 4500 | 6218         | 99                             | 151   | 2     | 2.19   |
|                  | 190 | 43 | 3     | 144                | 108  | 3400        | 4000 | 6318         | 103                            | 177   | 2.5   | 4.97   |
|                  | 225 | 54 | 4     | 193                | 158  | 3000        | 3600 | 6418         | 106                            | 209   | 3     | 9.47   |
| 95               | 120 | 13 | 1     | 19.3               | 20.4 | 5000        | 6000 | 61819        | 99.6                           | 115   | 1     | 0.288  |
|                  | 130 | 18 | 1.1   | 33.8               | 33.0 | 4800        | 5600 | 61919        | 101                            | 124   | 1     | 0.610  |
|                  | 145 | 24 | 1.5   | 60.5               | 54.0 | 4500        | 5300 | 6019         | 103                            | 137   | 1.5   | 1.14   |
|                  | 170 | 32 | 2.1   | 108                | 81.5 | 3600        | 4300 | 6219         | 106                            | 159   | 2     | 2.61   |
|                  | 200 | 45 | 3     | 152                | 122  | 3200        | 3800 | 6319         | 108                            | 187   | 2.5   | 5.65   |
|                  | 240 | 55 | 4     | 204                | 171  | 3400        | 3600 | 6419M        | 108                            | 215   | 2.5   | 13.4   |
| 100              | 125 | 13 | 1     | 19.6               | 21.2 | 4800        | 5600 | 61820        | 105                            | 120   | 1     | 0.326  |
|                  | 140 | 20 | 1.1   | 40.2               | 39.0 | 4500        | 5300 | 61920        | 106.5                          | 133.5 | 1     | 0.850  |
|                  | 150 | 24 | 1.5   | 60.5               | 56.5 | 4300        | 5000 | 6020         | 108                            | 142   | 1.5   | 1.17   |
|                  | 180 | 28 | 1.8   | 116                | 92.0 | 3400        | 4000 | 720          | 111.5                          | 171.5 | 1.8   | 2.70   |
|                  | 180 | 34 | 2.1   | 122                | 93.0 | 3400        | 4000 | 6220         | 111                            | 169   | 2     | 3.20   |
|                  | 215 | 47 | 3     | 173                | 141  | 2800        | 3600 | 6320         | 113                            | 202   | 2.5   | 7.01   |
|                  | 250 | 58 | 4     | 224                | 195  | 2600        | 3400 | 6420         | 116                            | 234   | 3     | 12.8   |

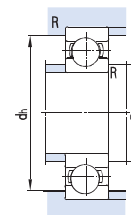
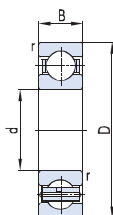
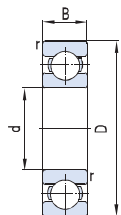
# Deep Groove Ball Bearings



| Basic dimensions |     |    |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       | Weight |
|------------------|-----|----|-------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|--------|
| d                | D   | B  | rsmin | Cr                 | Cor  | Grease      | Oil  |              | Dsmin                          | dhmax | R max | Kg     |
| mm               |     |    |       | KN                 |      | r/min       |      |              | mm                             |       |       |        |
| 105              | 130 | 13 | 1     | 19.5               | 21.0 | 4500        | 5300 | 61821M       | 110                            | 125   | 1     | 0.362  |
|                  | 160 | 26 | 2     | 73.0               | 65.5 | 4000        | 4800 | 6021         | 114                            | 151   | 2     | 1.62   |
|                  | 180 | 22 | 1.1   | 68.0               | 65.0 | 4200        | 5000 | 721          | 113.5                          | 173.5 | 1     | 2.61   |
|                  | 190 | 36 | 2.1   | 133                | 105  | 3200        | 3800 | 6221         | 116                            | 179   | 2     | 3.66   |
|                  | 225 | 49 | 3     | 240                | 154  | 2800        | 3400 | 6321         | 118                            | 212   | 2.5   | 7.84   |
| 110              | 140 | 16 | 1     | 26.7               | 28.0 | 4300        | 5000 | 61822        | 115                            | 135   | 1     | 0.505  |
|                  | 150 | 20 | 1.1   | 43.5               | 44.5 | 4000        | 4800 | 61922        | 116.5                          | 143.5 | 1     | 0.888  |
|                  | 170 | 28 | 2     | 82.0               | 73.5 | 3800        | 4500 | 6022         | 119                            | 161   | 2     | 2.09   |
|                  | 200 | 38 | 2.1   | 144                | 112  | 2800        | 3400 | 6222         | 121                            | 189   | 2     | 4.29   |
|                  | 240 | 50 | 3     | 205                | 176  | 2400        | 3000 | 6322         | 123                            | 227   | 2.5   | 9.49   |
| 280              | 65  | 4  | 265   | 226                | 2200 | 3000        | 6422 | 126          | 264                            | 3     | 18.3  |        |
| 120              | 150 | 16 | 1     | 27.9               | 28.0 | 3800        | 4500 | 61824        | 125                            | 145   | 1     | 0.568  |
|                  | 165 | 22 | 1.1   | 53.0               | 54.0 | 3600        | 4300 | 61924        | 126.5                          | 158.5 | 1     | 1.21   |
|                  | 180 | 28 | 2     | 85.5               | 80.0 | 3400        | 4000 | 6024         | 129                            | 171   | 2     | 2.21   |
|                  | 215 | 40 | 2.1   | 156                | 131  | 2800        | 3400 | 6224         | 131                            | 204   | 2     | 5.26   |
|                  | 260 | 55 | 3     | 217                | 196  | 2200        | 2800 | 6324         | 133                            | 247   | 2.5   | 12.2   |
| 130              | 165 | 18 | 1.1   | 35.8               | 38.0 | 3600        | 4300 | 61826MA      | 136                            | 159   | 1     | 0.898  |
|                  | 180 | 24 | 1.5   | 65.0               | 67.0 | 3400        | 4000 | 61926        | 138                            | 172   | 1.5   | 1.56   |
|                  | 200 | 33 | 2     | 106                | 95.0 | 3200        | 3800 | 6026         | 139                            | 191   | 2     | 3.29   |
|                  | 230 | 40 | 3     | 165                | 148  | 2600        | 3200 | 6226         | 143                            | 217   | 2.5   | 6.04   |
|                  | 280 | 58 | 4     | 250                | 239  | 2200        | 2600 | 6326         | 146                            | 264   | 3     | 14.7   |
| 140              | 175 | 18 | 1.1   | 37.0               | 40.0 | 3400        | 4000 | 61828M       | 146.5                          | 168.5 | 1     | 0.930  |
|                  | 190 | 24 | 1.5   | 64.0               | 67.5 | 3200        | 3800 | 61928M       | 148                            | 182   | 1.5   | 2.11   |
|                  | 210 | 33 | 2     | 106                | 102  | 3000        | 3600 | 6028         | 146.5                          | 201   | 2     | 3.25   |
|                  | 250 | 42 | 3     | 166                | 150  | 2400        | 3000 | 6228         | 153                            | 237   | 2.5   | 7.41   |
|                  | 300 | 62 | 4     | 253                | 246  | 2000        | 2600 | 6328         | 156                            | 284   | 3     | 18.5   |
| 150              | 190 | 20 | 1.1   | 46.4               | 53.0 | 3000        | 3600 | 61830M       | 156                            | 184   | 1     | 1.36   |
|                  | 210 | 28 | 2     | 84.5               | 90   | 2800        | 3400 | 61930M       | 159                            | 201   | 2     | 3.04   |
|                  | 225 | 35 | 2.1   | 123                | 117  | 2600        | 3200 | 6030         | 161                            | 214   | 2     | 4.14   |
|                  | 270 | 45 | 3     | 175                | 169  | 2000        | 2600 | 6230         | 163                            | 257   | 2.5   | 9.76   |
|                  | 320 | 65 | 4     | 277                | 280  | 1800        | 2200 | 6330         | 166                            | 304   | 3     | 21.4   |

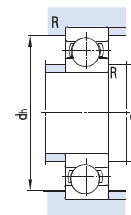
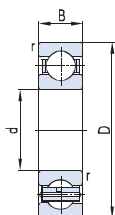
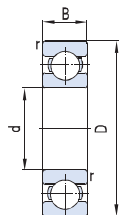


# Deep Groove Ball Bearings



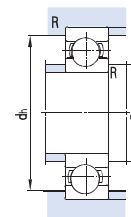
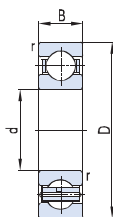
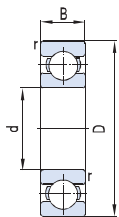
| Basic dimensions |       |    |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       | Weight |
|------------------|-------|----|-------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|--------|
| d                | D     | B  | rsmin | Cr                 | Cor  | Grease      | Oil  |              | Dsmin                          | dhmax | R max |        |
| mm               |       |    |       | KN                 |      | r/min       |      |              | mm                             |       |       | Kg     |
| 160              | 200   | 20 | 1.1   | 49.5               | 59   | 2600        | 3200 | 61832M       | 168                            | 192   | 1.1   | 1.32   |
|                  | 220   | 28 | 2     | 87.5               | 90.0 | 2600        | 3200 | 61932M       | 169                            | 211   | 2     | 3.28   |
|                  | 240   | 38 | 2.1   | 143                | 138  | 2400        | 3000 | 6032         | 171                            | 229   | 2     | 5.63   |
|                  | 290   | 48 | 3     | 210                | 210  | 1900        | 2400 | 6232         | 173                            | 277   | 2.5   | 12.3   |
|                  | 340   | 68 | 4     | 310                | 325  | 1800        | 2200 | 6332         | 177                            | 323   | 3     | 25.7   |
| 170              | 215   | 22 | 1.1   | 65.0               | 61.0 | 2600        | 3200 | 61834M       | 176.5                          | 208.5 | 1     | 1.87   |
|                  | 230   | 28 | 2     | 115                | 100  | 2400        | 3000 | 61934M       | 179                            | 221   | 2     | 3.42   |
|                  | 260   | 42 | 2.1   | 170                | 171  | 2200        | 2800 | 6034         | 181                            | 249   | 2     | 6.78   |
|                  | 310   | 52 | 4     | 227                | 240  | 1900        | 2400 | 6234         | 186                            | 294   | 3     | 15.2   |
|                  | 360   | 72 | 4     | 330                | 368  | 1700        | 2000 | 6334         | 186                            | 344   | 3     | 30.9   |
| 180              | 225   | 22 | 1.1   | 61.8               | 65.0 | 2400        | 3000 | 61836M       | 186                            | 219   | 1     | 1.97   |
|                  | 250   | 33 | 2     | 127                | 137  | 2200        | 2800 | 61936M       | 189                            | 241   | 2     | 5.27   |
|                  | 280   | 46 | 2.1   | 195                | 202  | 2200        | 2600 | 6036         | 191                            | 269   | 2     | 8.83   |
|                  | 320   | 52 | 4     | 256                | 279  | 1800        | 2200 | 6236         | 196                            | 304   | 3     | 15.4   |
|                  | 380   | 75 | 4     | 340                | 400  | 1700        | 1900 | 6336M        | 198                            | 363   | 3     | 49.5   |
| 190              | 240   | 24 | 1.5   | 72.5               | 83.5 | 2200        | 2800 | 61838M       | 198                            | 232   | 1.5   | 2.38   |
|                  | 260   | 33 | 2     | 127                | 138  | 2200        | 2800 | 61938M       | 199                            | 251   | 2     | 5.85   |
|                  | 290   | 46 | 2.1   | 193                | 204  | 2000        | 2600 | 6038         | 201                            | 279   | 2     | 9.58   |
|                  | 340   | 55 | 4     | 265                | 320  | 1700        | 2000 | 6238         | 206                            | 324   | 3     | 18.9   |
|                  | 400   | 78 | 5     | 360                | 425  | 1600        | 1900 | 6338M        | 210                            | 382   | 4     | 50     |
| 200              | 250   | 24 | 1.5   | 72.3               | 84.0 | 2200        | 2800 | 61840MA      | 207                            | 243   | 1.5   | 2.68   |
|                  | 280   | 38 | 2.1   | 141                | 158  | 2000        | 2600 | 61940MA      | 210                            | 270   | 2     | 7.63   |
|                  | 310   | 51 | 2.1   | 222                | 245  | 1900        | 2400 | 6040         | 211                            | 299   | 2     | 11.7   |
|                  | 360   | 58 | 4     | 288                | 335  | 1700        | 2000 | 6240         | 216                            | 344   | 3     | 22.6   |
| 220              | 270   | 24 | 1.5   | 74.0               | 105  | 1900        | 2400 | 61844M       | 227                            | 263   | 1.5   | 3.21   |
|                  | 300   | 38 | 2.1   | 175                | 162  | 1900        | 2400 | 61944M       | 231                            | 289   | 2     | 7.96   |
|                  | 340   | 56 | 3     | 245                | 293  | 1800        | 2200 | 6044         | 233                            | 327   | 2.5   | 15.6   |
|                  | 400   | 65 | 4     | 297                | 365  | 1500        | 1800 | 6244         | 236                            | 384   | 3     | 31.2   |
|                  | 460   | 88 | 5     | 403                | 520  | 1300        | 1600 | 6344         | 240                            | 440   | 4     | 71.4   |
| 230              | 329.5 | 40 | 2.1   | 190                | 227  | 1600        | 2000 | 6646M        | 241                            | 319   | 2.1   | 10.4   |

# Deep Groove Ball Bearings



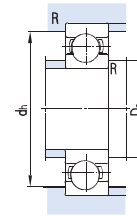
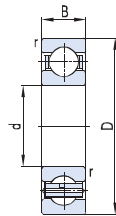
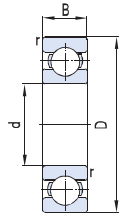
| Basic dimensions |     |     |       | Basic load ratings |     | Limit speed |      | Designations | Abutment and fillet dimensions |       |      | Weight |
|------------------|-----|-----|-------|--------------------|-----|-------------|------|--------------|--------------------------------|-------|------|--------|
| d                | D   | B   | rsmin | Cr                 | Cor | Grease      | Oil  |              | Dsmin                          | dhmax | Rmax | Kg     |
| mm               |     |     |       | KN                 |     | r/min       |      |              | mm                             |       |      |        |
| 240              | 300 | 28  | 2     | 103                | 116 | 1800        | 2200 | 61848M       | 249                            | 291   | 2    | 4.78   |
|                  | 320 | 38  | 2.1   | 155                | 186 | 1800        | 2200 | 61948M       | 251                            | 309   | 2    | 8.10   |
|                  | 360 | 56  | 3     | 255                | 315 | 1700        | 2000 | 6048M        | 253                            | 347   | 2.5  | 20.7   |
|                  | 440 | 72  | 4     | 360                | 470 | 1300        | 1600 | 6248         | 256                            | 424   | 3    | 51.8   |
|                  | 500 | 95  | 5     | 440                | 595 | 1100        | 1400 | 6348M        | 260                            | 480   | 4    | 96.2   |
| 260              | 320 | 28  | 2     | 122                | 128 | 1700        | 2000 | 61852M       | 269                            | 311   | 2    | 4.85   |
|                  | 360 | 46  | 2.1   | 212                | 269 | 1600        | 1900 | 61952M       | 276                            | 349   | 2    | 14.4   |
|                  | 400 | 65  | 4     | 294                | 375 | 1500        | 1800 | 6052M        | 276                            | 384   | 3    | 28.8   |
|                  | 480 | 80  | 5     | 430                | 592 | 1100        | 1400 | 6252         | 280                            | 460   | 4    | 68.8   |
|                  | 540 | 102 | 6     | 501                | 710 | 1000        | 1300 | 6352F1       | 286                            | 514   | 5    | 120    |
| 280              | 350 | 33  | 2     | 131                | 188 | 1600        | 1900 | 61856M       | 289                            | 341   | 2    | 7.17   |
|                  | 380 | 46  | 2.1   | 215                | 282 | 1500        | 1800 | 61956M       | 291                            | 369   | 2    | 15.6   |
|                  | 420 | 65  | 4     | 305                | 405 | 1400        | 1700 | 6056         | 296                            | 404   | 3    | 32.2   |
|                  | 500 | 80  | 5     | 410                | 600 | 1000        | 1300 | 6256         | 300                            | 480   | 4    | 72     |
|                  | 580 | 108 | 6     | 560                | 840 | 1000        | 1200 | 6356         | 305                            | 553   | 5    | 141    |
| 300              | 380 | 38  | 2.1   | 163                | 206 | 1400        | 1700 | 61860M       | 309                            | 371   | 2    | 10.4   |
|                  | 420 | 56  | 3     | 267                | 370 | 1300        | 1600 | 61960        | 313                            | 407   | 2.5  | 20.7   |
|                  | 460 | 74  | 4     | 340                | 480 | 1200        | 1500 | 6060         | 316                            | 444   | 3    | 48.4   |
|                  | 540 | 85  | 5     | 450                | 665 | 950         | 1200 | 6260         | 320                            | 520   | 4    | 88     |
| 320              | 400 | 38  | 2.1   | 164                | 220 | 1300        | 1600 | 61864M       | 331                            | 389   | 2    | 11.4   |
|                  | 440 | 37  | 2.1   | 210                | 305 | 1200        | 1400 | 60964        | 331                            | 428   | 2    | 15.5   |
|                  | 440 | 56  | 3     | 278                | 395 | 1300        | 1600 | 61964        | 333                            | 427   | 2.5  | 24.9   |
|                  | 480 | 74  | 4     | 355                | 510 | 1100        | 1400 | 6064         | 336                            | 464   | 3    | 50.3   |
|                  | 560 | 82  | 5     | 435                | 665 | 950         | 1200 | 6076F3       | 336                            | 540   | 4    | 65.6   |
|                  | 580 | 92  | 5     | 515                | 780 | 900         | 1100 | 6264         | 340                            | 560   | 4    | 111    |
| 340              | 420 | 38  | 2.1   | 169                | 227 | 1200        | 1500 | 61868        | 352                            | 408   | 2    | 11.6   |
|                  | 460 | 56  | 3     | 282                | 420 | 1100        | 1400 | 61968        | 353                            | 447   | 2.5  | 27.0   |
|                  | 520 | 82  | 5     | 403                | 620 | 950         | 1200 | 6068         | 360                            | 500   | 4    | 63.4   |
|                  | 620 | 92  | 6     | 545                | 890 | 900         | 1000 | 6268         | 366                            | 599   | 4    | 112    |
| 360              | 440 | 25  | 1.5   | 118                | 210 | 1130        | 1450 | 60872        | 367                            | 432   | 1.5  | 6.5    |
|                  | 440 | 38  | 2.1   | 173                | 242 | 1100        | 1400 | 61872        | 351                            | 429   | 2    | 12.2   |

# Deep Groove Ball Bearings



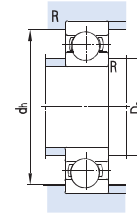
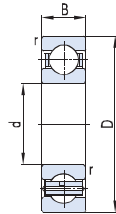
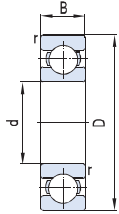
| Basic dimensions |     |     |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       | Weight |
|------------------|-----|-----|-------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|--------|
| d                | D   | B   | rsmin | Cr                 | Cor  | Grease      | Oil  |              | Dsmin                          | dhmax | R max | Kg     |
| mm               |     |     |       | KN                 |      | r/min       |      |              | mm                             |       |       |        |
|                  | 480 | 56  | 3     | 282                | 425  | 1100        | 1400 | 61972        | 373                            | 467   | 2.5   | 30.9   |
|                  | 540 | 82  | 5     | 439                | 698  | 1000        | 1200 | 6072M        | 380                            | 520   | 4     | 65.7   |
| 380              | 480 | 46  | 2.1   | 278                | 345  | 1000        | 1300 | 61876F1      | 391                            | 469   | 2     | 19.0   |
|                  | 520 | 65  | 4     | 345                | 550  | 1000        | 1300 | 61976        | 396                            | 504   | 3     | 39.8   |
|                  | 560 | 82  | 5     | 439                | 665  | 950         | 1200 | 6076         | 398                            | 542   | 4     | 69.3   |
| 400              | 500 | 31  | 2     | 159                | 277  | 1000        | 1200 | 60880        | 410                            | 490   | 2     | 15     |
|                  | 500 | 46  | 2.1   | 242                | 403  | 1000        | 1200 | 61880        | 413                            | 488   | 2     | 21     |
|                  | 540 | 44  | 3     | 258                | 435  | 980         | 1250 | 60980        | 411                            | 525   | 2.5   | 27.5   |
|                  | 540 | 65  | 4     | 355                | 585  | 950         | 1200 | 61980        | 416                            | 524   | 3     | 43.6   |
|                  | 600 | 90  | 5     | 495                | 780  | 900         | 1100 | 6080M        | 420                            | 580   | 4     | 87.9   |
| 420              | 520 | 46  | 2.1   | 245                | 420  | 980         | 1250 | 61884        | 431                            | 508   | 2     | 21.5   |
|                  | 620 | 90  | 5     | 495                | 875  | 900         | 1100 | 6084         | 437                            | 603   | 4     | 90.5   |
| 440              | 540 | 31  | 2     | 155                | 285  | 900         | 1100 | 60888        | 450                            | 531   | 2     | 16.5   |
|                  | 540 | 46  | 2.1   | 245                | 445  | 900         | 1100 | 61888        | 453                            | 528   | 2     | 22     |
|                  | 600 | 50  | 4     | 305                | 550  | 900         | 1100 | 60988        | 456                            | 585   | 3     | 41     |
|                  | 600 | 74  | 4     | 390                | 680  | 870         | 1000 | 61988        | 455                            | 585   | 3     | 61.6   |
|                  | 650 | 94  | 6     | 525                | 880  | 850         | 1000 | 6088         | 466                            | 624   | 5     | 108    |
| 460              | 580 | 56  | 3     | 303                | 435  | 900         | 1100 | 61892        | 473                            | 567   | 2.5   | 34.3   |
|                  | 620 | 74  | 4     | 410                | 765  | 870         | 1100 | 61992        | 475                            | 604   | 3     | 63     |
|                  | 680 | 100 | 6     | 553                | 945  | 800         | 950  | 6092F1       | 483                            | 657   | 5     | 121    |
| 480              | 600 | 56  | 3     | 315                | 610  | 870         | 1100 | 61896        | 492                            | 587   | 2.5   | 36     |
|                  | 650 | 78  | 5     | 417                | 743  | 800         | 950  | 61996F3      | 498                            | 632   | 4     | 74.1   |
|                  | 700 | 100 | 6     | 605                | 1130 | 740         | 900  | 6096         | 504                            | 676   | 5     | 126    |
| 500              | 620 | 37  | 2.1   | 220                | 445  | 800         | 950  | 608/500      | 510                            | 609   | 2     | 20     |
|                  | 620 | 56  | 3     | 315                | 480  | 800         | 950  | 618/500M     | 513                            | 607   | 2.5   | 37.3   |
|                  | 670 | 78  | 5     | 450                | 860  | 760         | 900  | 619/500      | 519                            | 651   | 4     | 79     |
|                  | 720 | 100 | 6     | 575                | 1020 | 750         | 900  | 60/500       | 526                            | 694   | 5     | 135    |
| 530              | 650 | 56  | 3     | 315                | 620  | 750         | 900  | 618/530F1    | 543                            | 637   | 2.5   | 41.1   |
|                  | 650 | 56  | 3     | 315                | 620  | 750         | 900  | 618/530MA    | 543                            | 637   | 2.5   | 42.1   |

# Deep Groove Ball Bearings



| Basic dimensions |      |     |                  | Basic load ratings |                 | Limit speed |     | Designations | Abutment and fillet dimensions |                   |                  | Weight |
|------------------|------|-----|------------------|--------------------|-----------------|-------------|-----|--------------|--------------------------------|-------------------|------------------|--------|
| d                | D    | B   | r <sub>min</sub> | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil |              | D <sub>smin</sub>              | dh <sub>max</sub> | R <sub>max</sub> |        |
| mm               |      |     |                  | KN                 |                 | r/min       |     |              | mm                             |                   |                  | Kg     |
|                  | 710  | 57  | 4                | 410                | 810             | 690         | 840 | 609/530      | 545                            | 696               | 3                | 60     |
|                  | 710  | 82  | 5                | 468                | 885             | 700         | 850 | 619/530F1    | 548                            | 692               | 4                | 91.6   |
|                  | 780  | 112 | 6                | 635                | 1260            | 670         | 810 | 60/530       | 552                            | 757               | 5                | 188    |
| 560              | 680  | 37  | 2.1              | 220                | 460             | 710         | 860 | 608/560      | 572                            | 670               | 2                | 30     |
|                  | 680  | 56  | 3                | 328                | 525             | 700         | 850 | 618/560      | 573                            | 667               | 2.5              | 42.8   |
|                  | 750  | 85  | 5                | 475                | 925             | 670         | 800 | 619/560F1    | 578                            | 732               | 4                | 110    |
|                  | 820  | 115 | 6                | 670                | 1370            | 630         | 750 | 60/560F3     | 586                            | 794               | 5                | 75.7   |
| 600              | 700  | 100 | 3                | 345                | 710             | 670         | 800 | D66/600      | 610                            | 690               | 2.5              | 60.6   |
|                  | 730  | 42  | 3                | 260                | 550             | 670         | 800 | 608/600      | 614                            | 718               | 2.5              | 41     |
|                  | 730  | 60  | 3                | 345                | 710             | 670         | 800 | 618/600      | 614                            | 717               | 2.5              | 52.7   |
|                  | 870  | 118 | 6                | 680                | 1450            | 600         | 700 | 60/600       | 623                            | 847               | 5                | 233    |
| 630              | 780  | 48  | 3                | 355                | 730             | 640         | 760 | 608/630      | 643                            | 767               | 2.5              | 41     |
|                  | 780  | 69  | 4                | 420                | 760             | 630         | 750 | 618/630      | 645                            | 765               | 3                | 76.5   |
|                  | 850  | 71  | 5                | 475                | 1050            | 600         | 710 | 609/630      | 649                            | 832               | 4                | 112    |
|                  | 850  | 100 | 6                | 610                | 1330            | 600         | 710 | 619/630      | 654                            | 829               | 5                | 163    |
|                  | 920  | 128 | 7.5              | 800                | 1750            | 550         | 660 | 60/630       | 657                            | 891               | 6                | 280    |
| 670              | 820  | 69  | 4                | 420                | 780             | 560         | 670 | 618/670      | 685                            | 805               | 3                | 82.2   |
|                  | 900  | 73  | 5                | 540                | 1210            | 580         | 700 | 609/670      | 689                            | 882               | 4                | 143    |
|                  | 900  | 103 | 6                | 670                | 1450            | 530         | 630 | 619/670MA    | 693                            | 877               | 5                | 194    |
|                  | 920  | 118 | 6                | 750                | 1600            | 530         | 630 | 66/650N1     | 673                            | 897               | 5                | 254    |
|                  | 980  | 136 | 7.5              | 904                | 1900            | 500         | 600 | 60/670F3     | 698                            | 952               | 6                | 361    |
| 710              | 870  | 74  | 4                | 451                | 905             | 530         | 630 | 618/710      | 725                            | 855               | 3                | 98.1   |
|                  | 950  | 78  | 5                | 545                | 1280            | 500         | 610 | 609/710      | 729                            | 932               | 4                | 148    |
|                  | 950  | 106 | 6                | 645                | 1510            | 500         | 610 | 619/710      | 732                            | 928               | 5                | 218    |
|                  | 1030 | 140 | 7.5              | 935                | 2180            | 490         | 560 | 60/710       | 738                            | 1002              | 6                | 375    |
| 750              | 920  | 78  | 5                | 515                | 1240            | 480         | 610 | 618/750      | 766                            | 901               | 4                | 110    |
|                  | 1000 | 112 | 6                | 745                | 1790            | 490         | 570 | 619/750      | 774                            | 977               | 5                | 260    |
|                  | 1090 | 150 | 7.5              | 975                | 2370            | 450         | 530 | 60/750       | 778                            | 1061              | 6                | 490    |
| 800              | 980  | 57  | 4                | 390                | 990             | 430         | 510 | 608/800      | 815                            | 966               | 3                | 100    |
|                  | 980  | 82  | 5                | 545                | 1360            | 430         | 510 | 618/800      | 820                            | 960               | 4                | 132    |

# Deep Groove Ball Bearings



| Basic dimensions |      |     |                  | Basic load ratings |                 | Limit speed |     | Designations | Abutment and fillet dimensions |                   |                  | Weight |
|------------------|------|-----|------------------|--------------------|-----------------|-------------|-----|--------------|--------------------------------|-------------------|------------------|--------|
| d                | D    | B   | r <sub>min</sub> | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil |              | D <sub>smin</sub>              | dh <sub>max</sub> | R <sub>max</sub> |        |
| mm               |      |     |                  | KN                 |                 | r/min       |     |              | mm                             |                   |                  | Kg     |
|                  | 1060 | 115 | 6                | 815                | 2100            | 430         | 500 | 619/800      | 823                            | 1037              | 5                | 280    |
|                  | 1150 | 155 | 7.5              | 985                | 2530            | 400         | 480 | 60/800       | 828                            | 1120              | 6                | 540    |
| 850              | 1030 | 57  | 4                | 385                | 1000            | 450         | 500 | 608/850      | 865                            | 1015              | 3                | 75     |
|                  | 1030 | 82  | 5                | 555                | 1310            | 450         | 530 | 618/850      | 870                            | 1010              | 4                | 144    |
|                  | 1120 | 118 | 6                | 815                | 2150            | 400         | 480 | 619/850      | 873                            | 1098              | 5                | 315    |
|                  | 1220 | 165 | 7.5              | 1090               | 2980            | 370         | 430 | 60/850       | 879                            | 1190              | 6                | 640    |
| 900              | 1090 | 85  | 5                | 600                | 1430            | 380         | 450 | 618/900F3    | 918                            | 1072              | 4                | 155    |
|                  | 1180 | 122 | 6                | 830                | 2270            | 360         | 440 | 619/900      | 923                            | 1156              | 5                | 355    |
|                  | 1280 | 170 | 7.5              | 1080               | 3120            | 330         | 410 | 60/900       | 928                            | 1252              | 6                | 725    |
| 950              | 1150 | 90  | 5                | 660                | 1620            | 360         | 430 | 618/950F1    | 968                            | 1132              | 4                | 188    |
|                  | 1250 | 132 | 7.5              | 985                | 2850            | 330         | 410 | 619/950      | 979                            | 1222              | 6                | 395    |
|                  | 1360 | 180 | 7.5              | 1145               | 3315            | 310         | 380 | 60/950       | 979                            | 1330              | 6                | 850    |
| 960              | 1160 | 90  | 5                | 630                | 1550            | 360         | 430 | 66/960MA     | 978                            | 1142              | 4                | 199    |
| 1000             | 1220 | 71  | 5                | 540                | 1550            | 350         | 400 | 608/1000     | 1018                           | 1201              | 4                | 175    |
|                  | 1220 | 100 | 6                | 680                | 1720            | 340         | 400 | 618/1000MA   | 1023                           | 1197              | 5                | 234    |
|                  | 1320 | 103 | 6                | 800                | 2340            | 330         | 380 | 609/1000     | 1023                           | 1297              | 5                | 405    |
|                  | 1320 | 140 | 7.5              | 985                | 2880            | 330         | 380 | 619/1000     | 1028                           | 1292              | 6                | 525    |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |    |       |        |      |       | Basic load ratings |      | Limit speed |       | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|-----|----|-------|--------|------|-------|--------------------|------|-------------|-------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D   | B  | rsmin | r1smin | F    | E     | Cr                 | Cor  | Grease      | Oil   |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |     |    |       |        |      |       | KN                 |      | r/min       |       |              | mm                             |        |        |        |        |        | Kg     |        |
| 25               | 52  | 15 | 1     | 0.6    | 31.5 |       | 28.6               | 24.0 | 11000       | 14000 | NU205EM      | 29                             | 30     | 36     | 47     |        | 1      | 0.7    | 0.159  |
|                  | 62  | 17 | 1.1   | 1.1    | 34   |       | 44.2               | 37.0 | 9500        | 12000 | NJ305M       | 31.5                           | 32     | 40     | 55.5   |        | 1      | 1      | 0.267  |
|                  | 62  | 24 | 1.1   | 1.1    | 35   |       | 53.4               | 52   | 9500        | 12000 | NJ2305M/HA   | 31.5                           | 32     | 40     | 55.5   |        | 1      | 1      | 0.453  |
| 30               | 55  | 13 | 1     | 0.6    | 36.5 |       | 18.2               | 18   | 12000       | 15000 | NU1006M      | 34                             | 35     | 38     | 50     |        | 1      | 0.6    | 0.138  |
|                  | 62  | 16 | 1     | 0.6    | 37.5 |       | 37.4               | 35.0 | 9500        | 12000 | NJ206EM      | 34                             | 36     | 43     | 57     |        | 1      | 0.6    | 0.264  |
|                  | 62  | 20 | 1     | 0.6    | 37.5 |       | 46.2               | 70.5 | 9500        | 12000 | NJ2206EM     | 34                             | 36     | 43     | 57     |        | 1      | 0.6    | 0.297  |
|                  | 72  | 19 | 1.1   | 1.1    | 40.5 |       | 53.3               | 51.0 | 9000        | 11000 | N306M        | 36.5                           | 39     | 47     | 65.5   |        | 1      | 1      | 0.403  |
|                  | 72  | 27 | 1.1   | 1.1    | 42   |       | 72.6               | 74   | 9000        | 11000 | NUP2306M     | 36.5                           |        | 47     | 65.5   |        | 1      | 1      | 0.585  |
|                  | 72  | 27 | 1.1   | 1.1    | 40.5 |       | 72.6               | 75.0 | 8000        | 9500  | NU2306EM     | 36.5                           |        | 47     | 65.5   |        | 1      | 1      | 0.593  |
|                  | 90  | 23 | 1.5   | 1.5    | 45   |       | 77.6               | 65.5 | 7500        | 9000  | NJ406M       | 38                             | 43     | 52     | 82     |        | 1.5    | 1.5    | 0.882  |
| 35               | 62  | 14 | 1     | 0.6    | 42   |       | 39.9               | 36.5 | 9000        | 11000 | NU1007M      | 38.2                           | 41     | 44     | 56     |        | 1      | 0.6    | 0.173  |
|                  | 72  | 17 | 0.6   | 1.1    |      | 64    | 53.2               | 46.5 | 8500        | 10000 | N207EM       | 41.5                           | 62     |        | 68     | 66     | 1      | 0.6    | 0.331  |
|                  | 72  | 23 | 1.1   | 1.1    | 44   |       | 66.1               | 59   | 8500        | 10000 | NJ2207EM     | 39                             | 42     | 50     | 65.5   |        | 1      | 0.6    | 0.363  |
|                  | 80  | 21 | 1.5   | 1.5    |      | 70.2  | 57.0               | 60.0 | 8000        | 9500  | N307M        | 41.5                           | 44     |        | 73.5   | 72     | 1.5    | 1      | 0.595  |
|                  | 80  | 21 | 1.5   | 1.1    | 46.2 |       | 71.3               | 70.0 | 8000        | 9500  | NJ307EM      | 41.5                           | 44     | 48     | 72     |        | 1.5    | 1      | 0.604  |
|                  | 80  | 31 | 1.5   | 1.5    | 46.2 |       | 77.0               | 80.0 | 7000        | 8500  | NJ2307M      | 41.5                           | 44     | 53     | 72     |        | 1.5    | 1      | 0.833  |
|                  | 80  | 31 | 1.1   | 1.1    | 46.2 |       | 101                | 100  | 7000        | 8500  | NU2307EM     | 41.5                           | 44     | 48     | 72     |        | 1.5    | 1      | 0.81   |
|                  | 100 | 25 | 1.5   | 1.5    | 53   |       | 89                 | 85   | 6700        | 8000  | NJ407M       | 44                             | 49     | 59     | 85     |        | 1.5    | 1.5    | 1.10   |
| 40               | 68  | 15 | 1     | 0.6    | 47   |       | 26.4               | 28.0 | 9500        | 12000 | NU1008M      | 42                             | 45     | 50     | 65     |        | 1      | 0.6    | 0.231  |
|                  | 80  | 18 | 1.1   | 1.1    |      | 71.5  | 55.6               | 55.5 | 7500        | 9000  | N208EM       | 46.5                           | 69     |        | 73.5   | 73     | 1      | 1      | 0.425  |
|                  | 80  | 23 | 1.1   | 1.1    | 49.5 |       | 77.5               | 77.0 | 7500        | 9000  | NJ2208EM     | 46.5                           | 48     | 56     | 73.5   |        | 1      | 1      | 0.539  |
|                  | 90  | 23 | 1.5   | 1.5    |      | 80    | 88.0               | 87.0 | 6700        | 8000  | N308EM       | 48                             | 78     |        | 82     | 82     | 1.5    | 1.5    | 0.794  |
|                  | 90  | 33 | 1.5   | 1.5    | 52   |       | 122                | 116  | 6300        | 7500  | NU2308EM     | 48                             | 49     | 55     | 82     |        | 1.5    | 1.5    | 1.01   |
| 45               | 85  | 19 | 1.1   | 1.1    | 55   |       | 67.5               | 72.5 | 6700        | 8000  | NJ209M       | 51.5                           | 53     | 61     | 78.5   |        | 1      | 1      | 0.487  |
|                  | 85  | 19 | 1.1   | 1.1    | 54.5 |       | 67.5               | 72.5 | 6700        | 8000  | NJ209EM      | 51.5                           | 53     | 61     | 78.5   |        | 1      | 1      | 0.51   |
|                  | 85  | 23 | 1.1   | 1.1    | 54.5 |       | 80.8               | 84.5 | 5600        | 6700  | NU2209EM     | 51                             | 53     | 58     | 79     |        | 1      | 1      | 0.635  |
|                  | 100 | 25 | 1.5   | 1.5    |      | 86.5  | 106                | 109  | 6300        | 7500  | N309M        | 53                             | 58     |        | 92     | 90.5   | 1.5    | 1.5    | 0.920  |
|                  | 100 | 25 | 1.5   | 1.5    |      | 88.5  | 106                | 109  | 6300        | 7500  | N309EM       | 53                             | 86     |        | 92     | 91     | 1.5    | 1.5    | 0.959  |
|                  | 100 | 36 | 1.5   | 1.5    | 58.5 |       | 152                | 164  | 5600        | 6700  | NJ2309EM     | 53                             | 56     | 67     | 92     |        | 1.5    | 1.5    | 1.52   |
|                  | 120 | 29 | 2     | 2      |      | 100.5 | 124                | 123  | 5600        | 6700  | N409M        | 54                             | 97     |        | 111    | 103    | 2      | 2      | 1.67   |
| 50               | 80  | 16 | 1     | 0.6    | 57.5 |       | 44.5               | 53.2 | 8500        | 10000 | NJ1010M      | 54                             | 56     | 60     | 75     |        | 1      | 0.6    | 0.316  |
|                  | 90  | 20 | 1.1   | 1.1    |      | 80.4  | 57.0               | 64.0 | 6300        | 7500  | N210M        | 56.5                           | 79     |        | 83.5   | 82     | 1      | 1      | 0.559  |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |      |                   |                    |      |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|-----|------|-------------------|--------------------|------|-------|--------------------|------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D   | B    | r <sub>smin</sub> | r <sub>1smin</sub> | F    | E     | Cr                 | Cor  | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |     |      |                   |                    |      |       | KN                 |      | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |
|                  | 90  | 20   | 1.1               | 1.1                |      | 81.5  | 62.5               | 67.5 | 6300        | 7500 | N210EM       | 56.5                           | 79     |        | 83.5   | 82     | 1      | 1      | 0.566  |
|                  | 90  | 23   | 1.1               | 1.1                | 59.5 |       | 86.1               | 90   | 6300        | 7500 | NU2210EM     | 56.5                           | 57     | 62     | 83.5   |        | 1      | 1      | 0.65   |
|                  | 110 | 27   | 2                 | 2                  |      | 95    | 94.0               | 97.0 | 5000        | 6000 | N310M        | 59                             | 93     |        | 101    | 97     | 2      | 2      | 1.17   |
|                  | 110 | 27   | 2                 | 2                  |      | 97    | 121                | 125  | 5000        | 6000 | N310EM       | 59                             | 95     |        | 101    | 99     | 2      | 2      | 1.30   |
|                  | 110 | 40   | 2                 | 2                  | 65   |       | 150                | 170  | 5000        | 6000 | NU2310M      | 59                             | 61     | 67     | 101    |        | 2      | 2      | 1.91   |
|                  | 110 | 40   | 2                 | 2                  | 65   |       | 177                | 198  | 5000        | 6000 | NJ2310EM     | 59                             | 62     | 73     | 101    |        | 2      | 2      | 1.92   |
|                  | 130 | 31   | 2.1               | 2.1                |      | 110   | 151                | 151  | 5000        | 6000 | N410M        | 61                             | 107    |        | 119    | 113    | 2      | 2      | 2.18   |
| 55               | 90  | 18   | 1.1               | 1                  | 64.5 |       | 54.4               | 66   | 7000        | 8500 | NU1011M      | 59.6                           | 63     | 67     | 84     |        | 1      | 1      | 0.479  |
|                  | 100 | 21   | 1.5               | 1.5                |      | 88.5  | 73.2               | 84.5 | 6000        | 7000 | NF211M       | 63                             |        |        | 93.5   | 92     | 1.5    | 1.5    | 0.806  |
|                  | 100 | 21   | 1.5               | 1.5                |      | 90    | 91.7               | 106  | 6000        | 7000 | NF211E       | 63                             |        |        | 93.5   | 92     | 1.5    | 1.5    | 0.757  |
|                  | 100 | 25   | 1.5               | 1.1                | 66   |       | 108                | 122  | 6000        | 7000 | NJ2211EM     | 61.5                           | 64     | 73     | 92     |        | 1.5    | 1      | 0.783  |
|                  | 120 | 29   | 2                 | 2                  |      | 104.5 | 148                | 136  | 4800        | 5600 | N311M        | 64                             | 102    |        | 111    | 107    | 2      | 2      | 1.65   |
|                  | 120 | 29   | 2                 | 2                  |      | 106.5 | 148                | 144  | 4800        | 5600 | N311EM       | 64                             | 104    |        | 111    | 109    | 2      | 2      | 1.60   |
|                  | 100 | 33.3 | 1.5               | 1.1                | 70.5 |       | 88.9               | 85.0 | 6000        | 7000 | N3211M       | 63                             | 87     |        | 93.5   | 92     | 1.5    | 1      | 1.20   |
|                  | 120 | 43   | 2                 | 2                  |      |       | 156                | 174  | 4800        | 5600 | NU2311M      | 64                             | 68     | 73     | 111    |        | 2      | 2      | 2.43   |
|                  | 120 | 43   | 2                 | 2                  |      | 106.5 | 220                | 246  | 4800        | 5600 | N2311E       | 64                             | 104    |        | 111    | 110    | 2      | 2      | 2.56   |
|                  | 140 | 33   | 2.1               | 2.1                |      | 117.2 | 162                | 168  | 4800        | 5600 | N411M        | 66                             | 114    |        | 129    | 119    | 2      | 2      | 2.86   |
| 60               | 95  | 18   | 1.1               | 1                  |      | 85.5  | 50.6               | 66.0 | 6700        | 8000 | N1012M       | 65                             | 83     |        | 88.5   | 87     | 1      | 1      | 0.432  |
|                  | 110 | 22   | 1.5               | 1.5                |      | 100   | 103                | 102  | 5300        | 6300 | N212EM       | 65                             | 70     |        | 102    |        | 1.5    | 1.5    | 0.910  |
|                  | 110 | 22   | 1.5               | 1.5                |      | 97.5  | 80.5               | 92.5 | 5300        | 6300 | N212M        | 68                             |        |        | 102    |        | 1.5    | 1.5    | 0.937  |
|                  | 110 | 28   | 1.5               | 1.5                | 73.5 |       | 91.3               | 131  | 5300        | 6300 | NUP2212M     | 68                             |        | 80     | 102    |        | 1.5    | 1.5    | 1.27   |
|                  | 110 | 28   | 1.5               | 1.5                | 72   |       | 139                | 145  | 5300        | 6300 | NJ2212EM     | 68                             | 70     | 80     | 102    |        | 1.5    | 1.5    | 1.23   |
|                  | 130 | 31   | 2.1               | 2.1                |      | 113   | 163                | 152  | 4300        | 5000 | N312M        | 71                             | 110    |        | 119    | 116    | 2      | 2      | 2.04   |
|                  | 130 | 31   | 2.1               | 2.1                |      | 115   | 163                | 166  | 4300        | 5000 | N312EM       | 71                             | 112    |        | 119    | 118    | 2      | 2      | 2.06   |
|                  | 130 | 46   | 2.1               | 2.1                |      | 113   | 190                | 217  | 4300        | 5000 | N2312M       | 71                             | 110    |        | 119    | 117    | 2      | 2      | 2.95   |
|                  | 130 | 46   | 2.1               | 2.1                |      | 115   | 247                | 279  | 4300        | 5000 | N2312E       | 71                             | 112    |        | 119    | 118    | 2      | 2      | 2.93   |
|                  | 140 | 51   | 2.5               | 2.5                |      | 122   | 268                | 310  | 4300        | 5000 | N612M        | 72                             | 119    |        | 128    | 125    | 2      | 2      | 3.96   |
|                  | 150 | 35   | 2.1               | 2.1                |      | 127   | 193                | 202  | 4300        | 5000 | N412M        | 71                             | 124    |        | 139    | 130    | 2      | 2      | 3.29   |
| 65               | 120 | 23   | 1.5               | 1.5                |      | 105.6 | 109                | 125  | 4800        | 5600 | N213M        | 73                             | 103    |        | 112    | 111    | 1.5    | 1.5    | 1.11   |
|                  | 120 | 23   | 1.5               | 1.5                |      | 108.5 | 118                | 133  | 4800        | 5600 | NF213EM      | 73                             | 80     |        | 112    | 111    | 1.5    | 1.5    | 1.19   |
|                  | 120 | 31   | 1.5               | 1.5                | 79.6 |       | 122                | 154  | 4800        | 5600 | NU2213M      | 73                             | 76     | 81     | 112    |        | 1.5    | 1.5    | 1.65   |
|                  | 120 | 31   | 1.5               | 1.5                | 78.5 |       | 150                | 182  | 4800        | 5600 | NU2213EM     | 73                             | 76     | 81     | 112    |        | 1.5    | 1.5    | 1.61   |
|                  | 140 | 33   | 2.1               | 2.1                |      | 121.5 | 151                | 168  | 4000        | 4800 | N313M        | 76                             | 119    |        | 129    | 124    | 2      | 2      | 2.45   |
|                  | 140 | 33   | 2.1               | 2.1                |      | 124.5 | 201                | 185  | 4000        | 4800 | N313EM       | 76                             | 122    |        | 129    | 127    | 2      | 2      | 2.42   |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |      |       |        |       |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|-----|------|-------|--------|-------|-------|--------------------|------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D   | B    | rsmin | r1smin | F     | E     | Cr                 | Cor  | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |     |      |       |        |       |       | KN                 |      | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |
|                  | 140 | 48   | 2.1   | 2.1    | 83.5  |       | 271                | 276  | 4000        | 4800 | NU2313M      | 76                             | 79     | 85     | 129    |        | 2      | 2      | 3.60   |
|                  | 140 | 48   | 2.1   | 2.1    |       | 124.5 | 271                | 305  | 4000        | 4800 | NF2313E      | 76                             |        |        | 129    | 127    | 2      | 2      | 3.60   |
|                  | 160 | 37   | 2.1   | 2.1    |       | 135.5 | 209                | 222  | 4000        | 4800 | N413M        | 76                             | 132    |        | 149    | 139    | 2      | 2      | 4.01   |
| 70               | 125 | 24   | 1.5   | 1.5    |       | 110.5 | 110                | 130  | 4500        | 5300 | N214M        | 78                             | 108    |        | 117    | 116    | 1.5    | 1.5    | 1.27   |
|                  | 125 | 24   | 1.5   | 1.5    |       | 113.5 | 130                | 152  | 4500        | 5300 | N214E        | 78                             | 111    |        | 117    | 116    | 1.5    | 1.5    | 1.29   |
|                  | 125 | 31   | 1.5   | 1.5    |       | 110.5 | 171                | 183  | 4500        | 5300 | N2214M       | 78                             | 81     |        | 117    | 100    | 1.5    | 1.5    | 1.68   |
|                  | 150 | 35   | 2.1   | 2.1    |       | 130   | 210                | 216  | 3600        | 4300 | N314M        | 81                             | 127    |        | 139    | 133    | 2      | 2      | 3.00   |
|                  | 150 | 35   | 2.1   | 2.1    |       | 133   | 224                | 242  | 3600        | 4300 | N314EM       | 81                             | 130    |        | 139    | 136    | 2      | 2      | 3.08   |
|                  | 150 | 35   | 2.1   | 2.1    | 89    |       | 224                | 226  | 3600        | 4300 | NU314EM      | 82                             | 86     | 91     | 138    |        | 2      | 2      | 3.45   |
|                  | 150 | 51   | 2.1   | 2.1    | 90    |       | 299                | 345  | 3600        | 4300 | NU2314M      | 81                             | 86     | 93     | 139    |        | 2      | 2      | 4.52   |
|                  | 150 | 51   | 2.1   | 2.1    |       | 133   | 299                | 345  | 3600        | 4300 | N2314E       | 81                             | 130    |        | 139    | 136    | 2      | 2      | 4.27   |
|                  | 180 | 42   | 3     | 3      |       | 151   | 262                | 283  | 3600        | 4300 | N414M        | 83                             | 148    |        | 167    | 155    | 2.5    | 2.5    | 5.66   |
|                  | 180 | 42   | 3     | 3      |       | 152   | 262                | 283  | 3600        | 4300 | N414         | 83                             | 148    |        | 167    | 155    | 2.5    | 2.5    | 6.40   |
|                  | 180 | 42   | 3     | 3      | 99    |       | 262                | 283  | 3600        | 4300 | NU414M       | 83                             | 97     | 102    | 167    |        | 2.5    | 2.5    | 5.79   |
|                  | 180 | 42   | 3     | 3      | 100   |       | 262                | 283  | 3600        | 4300 | NJ414M       | 83                             | 97     | 113    | 167    |        | 2.5    | 2.5    | 5.94   |
| 75               | 115 | 20   | 1.1   | 1      | 85    |       | 64.9               | 83.0 | 5600        | 6700 | NU1015M      | 80                             | 83     | 87     | 108.5  |        | 1      | 1      | 0.739  |
|                  | 130 | 25   | 1.5   | 1.5    |       | 116.5 | 130                | 148  | 4500        | 5300 | N215M        | 83                             | 114    |        | 122    | 121    | 1.5    | 1.5    | 1.40   |
|                  | 130 | 25   | 1.5   | 1.5    |       | 118.5 | 142                | 173  | 4500        | 5300 | N215E        | 83                             | 116    |        | 122    | 121    | 1.5    | 1.5    | 1.38   |
|                  | 130 | 31   | 1.5   | 1.5    | 88.5  |       | 177                | 197  | 4500        | 5300 | NU2215M      | 83                             | 86     | 91     | 122    |        | 1.5    | 1.5    | 1.75   |
|                  | 130 | 31   | 1.5   | 1.5    |       | 116.5 | 177                | 197  | 4500        | 5300 | N2215M       | 83                             | 86     |        | 122    | 121    | 1.5    | 1.5    | 1.77   |
|                  | 160 | 37   | 2.1   | 2.1    | 95    |       | 266                | 285  | 3400        | 4000 | NU315EM      | 86                             | 92     | 97     | 149    |        | 2      | 2      | 3.62   |
|                  | 160 | 37   | 2.1   | 2.1    |       | 143   | 266                | 285  | 3400        | 4000 | N315E        | 86                             | 140    |        | 149    | 146    | 2      | 2      | 3.59   |
|                  | 160 | 37   | 2.1   | 2.1    |       | 139.5 | 240                | 252  | 3400        | 4000 | N315M        | 86                             | 140    |        | 149    | 146    | 2      | 2      | 3.59   |
|                  | 160 | 37   | 2.1   | 2.1    | 95.5  |       | 240                | 252  | 3400        | 4000 | NU315M       | 86                             | 92     | 97     | 149    |        | 2      | 2      | 3.56   |
|                  | 160 | 55   | 2.1   | 2.1    | 95.5  |       | 361                | 345  | 3400        | 4000 | NJ2315M      | 86                             | 91     | 107    | 149    |        | 2      | 2      | 5.86   |
|                  | 190 | 45   | 3     | 3      |       | 160.5 | 300                | 325  | 3400        | 4000 | N415M        | 88                             | 101    |        | 177    |        | 2.5    | 2.5    | 6.86   |
|                  | 80  | 125  | 22    | 1.1    | 1     |       | 113.5              | 78.1 | 100         | 5300 | 6300         | N1016M                         | 85     | 110    |        | 118.5  | 116.5  | 1      | 1      |
| 140              |     | 26   | 2     | 2      |       | 125   | 140                | 158  | 4000        | 4800 | N216M        | 89                             | 123    |        | 131    | 128    | 2      | 2      | 1.66   |
| 140              |     | 26   | 2     | 2      |       | 127.3 | 152                | 184  | 4000        | 4800 | N216E        | 89                             | 125    |        | 131    | 130    | 2      | 2      | 1.67   |
| 140              |     | 33   | 2     | 2      | 95.3  |       | 190                | 233  | 4000        | 4800 | NU2216M      | 89                             | 93     | 98     | 131    |        | 2      | 2      | 2.32   |
| 140              |     | 33   | 2     | 2      |       | 127.3 | 201                | 260  | 4000        | 4800 | N2216E       | 89                             | 124    |        | 131    | 130    | 2      | 2      | 2.16   |
| 170              |     | 39   | 2.1   | 2.1    |       | 151   | 260                | 275  | 3200        | 3800 | N316M        | 91                             | 144    |        | 159    |        | 2      | 2      | 4.30   |
| 140              |     | 44.5 | 2     | 2      | 95.28 |       | 217                | 305  | 4000        | 4800 | NU5216       | 88                             | 93     | 97     | 132    |        | 1.5    | 1.5    | 3.03   |
| 170              |     | 58   | 2.1   | 2.1    |       | 147   | 394                | 420  | 3200        | 3800 | N2316M       | 91                             | 144    |        | 159    |        | 2      | 2      | 6.15   |



# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |      |       |        |       |       | Basic load ratings |      | Limit speed |      | Designations  | Abutment and fillet dimensions  |   |        |        |        |        | Weight |        |      |
|------------------|-----|------|-------|--------|-------|-------|--------------------|------|-------------|------|---|---|---|--------|--------|--------|--------|--------|--------|------|
| d                | D   | B    | rsmin | r1smin | F     | E     | Cr                 | Cor  | Grease      | Oil  |   | da min  | da max  | db min | Da max | Da max | ra max |        | rb max |      |
| mm               |     |      |       |        |       |       | KN                 |      | r/min       |      |   | mm  |   |        |        |        |        | Kg     |        |      |
|                  | 170 | 58   | 2.1   | 2.1    | 101   |       | 394                | 435  | 3200        | 3800 | NJ2316EM<br>N416M   | 91  | 98  | 113    | 159    |        | 2      | 2      | 6.62   |      |
|                  | 200 | 48   | 3     | 3      |       | 170   | 341                | 375  | 3200        | 3800 |   | 93  | 167   |        | 187    |        | 2.5    | 2.5    |        | 8.02 |
| 85               | 150 | 28   | 2     | 2      |       | 133.8 | 165                | 191  | 3800        | 4500 | N217M<br>N217E<br>NU2217M<br>NU2217EM<br>NJ317EM<br>NU3217M<br>NJ2317M<br>N417M | 94  | 132   |        | 141    | 139    | 2      | 2      | 2.08   |      |
|                  | 150 | 28   | 2     | 2      |       | 136.5 | 181                | 217  | 3800        | 4500 |   | 94  | 134   |        | 141    | 139    | 2      | 2      |        | 2.08 |
|                  | 150 | 36   | 2     | 2      | 101.8 |       | 238                | 266  | 3800        | 4500 |   | 94  | 98  | 103    | 141    |        | 2      | 2      |        | 2.8  |
|                  | 150 | 36   | 2     | 2      | 100.5 |       | 238                | 279  | 3800        | 4500 |   | 94  | 98  | 103    | 141    |        | 2      | 2      |        | 2.82 |
|                  | 180 | 41   | 1.1   | 1.1    | 108   |       | 323                | 360  | 3000        | 3600 |   | 98  | 105   | 111    | 167    |        | 2.5    | 2.5    |        | 5.27 |
|                  | 150 | 49.2 | 2     | 2      | 102   |       | 223                | 310  | 3800        | 4500 |   | 94  | 98  | 103    | 141    |        | 2      | 2      |        | 3.88 |
|                  | 180 | 60   | 3     | 3      | 108   |       | 415                | 467  | 3000        | 3600 |   | 96  | 103   | 120    | 169    |        | 2.5    | 2.5    |        | 7.81 |
|                  | 210 | 52   | 4     | 4      |       | 179.5 | 385                | 425  | 3000        | 3600 |   | 101   | 176   |        | 194    | 183    | 3      | 3      |        | 9.48 |
|                  | 90  | 140  | 24    | 1.5    | 1.1   | 103   |                    | 90   | 114         | 3600 |   | 4300  | NJ1018M<br>N218M<br>N218E<br>N2218M<br>NUP2218EM<br>NU3218A<br>N318M<br>N318EM<br>NJ2318M<br>NJ2318E<br>N418M | 96.5   | 101    | 106    | 132    |        |        | 1.5  |
| 160              |     | 30   | 2     | 2      |       | 143   | 162                | 209  | 3600        | 4300 | 99  | 140   |   |        | 151    | 148    | 2      | 2      | 2.64   |      |
| 160              |     | 30   | 2     | 2      |       | 145   | 198                | 241  | 3600        | 4300 | 99  | 142   |   |        | 151    | 148    | 2      | 2      | 2.49   |      |
| 160              |     | 40   | 2     | 2      |       | 143   | 235                | 299  | 3600        | 4300 | 99  | 105   |   |        | 158    | 151    | 2      | 2      | 3.62   |      |
| 160              |     | 40   | 2     | 2      | 107   |       | 266                | 335  | 3600        | 4300 | 104   |   |   | 117    | 149    |        | 2      |        | 3.59   |      |
| 160              |     | 52.4 | 2     | 2      | 107.2 |       | 281                | 390  | 3600        | 4300 | 99  | 104   |   | 110    | 151    |        | 2      | 2      | 4.50   |      |
| 190              |     | 43   | 3     | 3      |       | 165   | 319                | 342  | 2800        | 3400 | 103   | 162   |   |        | 177    | 168    | 2.5    | 2.5    | 6.05   |      |
| 190              |     | 43   | 3     | 3      |       | 169.5 | 347                | 385  | 2800        | 3400 | 103   | 166   |   |        | 177    | 173    | 2.5    | 2.5    | 5.99   |      |
| 190              |     | 43   | 3     | 3      | 115   |       | 396                | 505  | 2800        | 3400 | 103   | 110   |   | 127    | 177    |        | 2.5    | 2.5    | 9.29   |      |
| 190              |     | 64   | 3     | 3      | 113.5 |       | 475                | 565  | 2800        | 3400 | 103   | 110   |   | 127    | 177    |        | 2.5    | 2.5    | 8.84   |      |
| 225              |     | 54   | 4     | 4      |       | 191.5 | 429                | 480  | 2800        | 3400 | 106   | 188   |   |        | 209    | 195    | 3      | 3      | 11.3   |      |
| 95               |     | 145  | 24    | 1.5    | 1.1   | 108   |                    | 117  | 166         | 4500 | 5300  | NJ1019M<br>N219M<br>N219EM<br>N2219M<br>N319M<br>N319EM<br>NJ2319M<br>N419M |   | 101.5  | 104    | 116    | 137    |        | 1.5    | 1    |
|                  | 170 | 32   | 2.1   | 2.1    |       | 151.5 | 189                | 231  | 3400        | 4000 | 106   |   | 149   |        | 159    | 157    | 2      | 2      | 3.07   |      |
|                  | 170 | 32   | 2.1   | 2.1    |       | 154.5 | 242                | 291  | 3400        | 4000 | 106   |   | 152   |        | 159    | 157    | 2      | 2      | 3.19   |      |
|                  | 170 | 43   | 2.1   | 2.1    |       | 151.5 | 309                | 315  | 3400        | 4000 | 106   |   | 152   |        | 159    | 157    | 2      | 2      | 4.27   |      |
|                  | 200 | 45   | 3     | 3      |       | 173.5 | 330                | 370  | 2600        | 3200 | 108   |   | 170   |        | 187    | 178    | 2.5    | 2.5    | 6.67   |      |
|                  | 200 | 45   | 3     | 3      |       | 177.5 | 371                | 420  | 2600        | 3200 | 108   |   | 174   |        | 187    | 181    | 2.5    | 2.5    | 7.00   |      |
|                  | 200 | 67   | 3     | 3      | 121.5 |       | 485                | 565  | 2600        | 3200 | 108   |   | 116   | 135    | 187    |        | 2.5    | 2.5    | 10.2   |      |
|                  | 240 | 55   | 4     | 4      |       | 201.5 | 455                | 525  | 2600        | 3200 | 111   |   | 198   |        | 224    | 205    | 3      | 3      | 13.3   |      |
|                  | 100 | 140  | 20    | 1.1    | 1.1   | 110   |                    | 75.5 | 108         | 3600 | 4300  |   | NU1920M<br>NJ1020M<br>N220M<br>N220E  | 102    | 107    | 118    | 133    |        | 1      | 1    |
| 150              |     | 24   | 1.5   | 1.1    | 113   |       | 94.5               | 129  | 3600        | 4300 | 105   | 110   |   | 123    | 132    |        | 1      | 1      | 1.51   |      |
| 180              |     | 34   | 2.1   | 2.1    |       | 160   | 250                | 290  | 3200        | 3800 | 111   | 157   |   |        | 169    | 163    | 2      | 2      | 3.45   |      |
| 180              |     | 34   | 2.1   | 2.1    |       | 163   | 271                | 330  | 3200        | 3800 | 111   | 160   |   |        | 169    | 166    | 2      | 2      | 3.77   |      |

# Single Row Cylindrical Roller Bearings



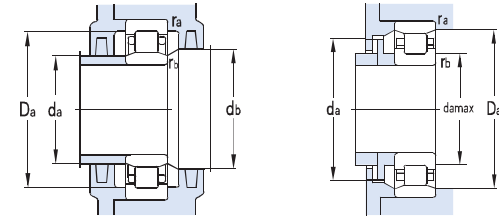
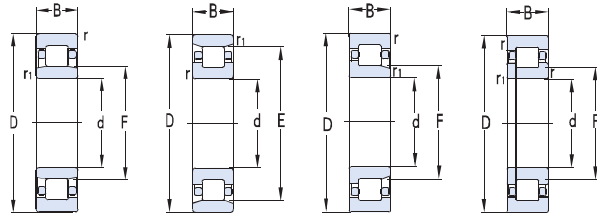
| Basic dimensions |     |      |                 |                  |        |       | Basic load ratings |                 | Limit speed |      | Designations | Abutment and fillet dimensions |                    |                    |                    |                    |                    | Weight |                    |
|------------------|-----|------|-----------------|------------------|--------|-------|--------------------|-----------------|-------------|------|--------------|--------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|
| d                | D   | B    | r <sub>sm</sub> | r <sub>1sm</sub> | F      | E     | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil  |              | d <sub>a min</sub>             | d <sub>a max</sub> | d <sub>b min</sub> | D <sub>a max</sub> | D <sub>a max</sub> | r <sub>a max</sub> |        | r <sub>b max</sub> |
| mm               |     |      |                 |                  |        |       | KN                 |                 | r/min       |      |              | mm                             |                    |                    |                    |                    |                    | Kg     |                    |
|                  | 180 | 46   | 2.1             | 2.1              |        | 160   | 349                | 385             | 3200        | 3800 | N2220M       | 111                            | 116                |                    | 169                | 166                | 2                  | 2      | 5.25               |
|                  | 180 | 46   | 2.1             | 2.1              | 119    | 160   | 361                | 470             | 3200        | 3800 | NU2220E      | 111                            | 116                | 122                | 169                | 166                | 2                  | 2      | 5.08               |
|                  | 180 | 60.3 | 2.1             | 2.1              | 120    | 160   | 208                | 256             | 3200        | 3800 | NU3220M      | 121                            | 140                | 147                | 244                | 244                | 3                  | 3      | 6.81               |
|                  | 215 | 41   | 3               | 3                | 125.1  | 160   | 391                | 440             | 2400        | 3000 | NJ320EM      | 113                            | 124                | 142                | 202                | 202                | 2.5                | 2.5    | 9.82               |
|                  | 215 | 47   | 3               | 3                | 129.5  | 160   | 428                | 418             | 2400        | 3000 | NUP320M      | 113                            |                    | 142                | 202                | 202                | 2.5                | 2.5    | 9.05               |
|                  | 215 | 47   | 3               | 3                |        | 191.5 | 428                | 465             | 2400        | 3000 | N320EM       | 113                            | 188                |                    | 202                | 195                | 2.5                | 2.5    | 9.67               |
|                  | 215 | 73   | 3               | 3                |        | 185.5 | 637                | 700             | 2400        | 3000 | N2320M       | 113                            | 182                |                    | 202                | 190                | 2.5                | 2.5    | 13.1               |
|                  | 215 | 73   | 3               | 3                |        | 191.5 | 637                | 760             | 2400        | 3000 | N2320E       | 113                            | 188                |                    | 202                | 195                | 2.5                | 2.5    | 12.9               |
|                  | 250 | 58   | 4               | 4                |        | 211   | 505                | 590             | 2400        | 3000 | N420M        | 116                            | 208                |                    | 234                | 215                | 3                  | 3      | 15.4               |
| 105              | 160 | 26   | 2               | 1.1              |        | 145.5 | 119                | 168             | 4000        | 4800 | N1021M       | 111.5                          | 166                |                    | 151                | 149                | 2                  | 1      | 1.85               |
|                  | 190 | 36   | 2.1             | 2.1              |        | 168.8 | 285                | 299             | 3000        | 3600 | N221M        | 116                            | 121                |                    | 179                | 172                | 2                  | 2      | 4.33               |
|                  | 190 | 36   | 2.1             | 2.1              | 125    | 168.8 | 285                | 315             | 3000        | 3600 | NJ221EM      | 116                            | 198                | 137                | 179                | 179                | 2                  | 2      | 4.52               |
|                  | 190 | 65.1 | 2.1             | 2.1              | 126.8  | 168.8 | 352                | 500             | 3000        | 3600 | NU3221M      | 116                            | 122                | 128                | 179                | 179                | 2                  | 2      | 8.22               |
|                  | 225 | 87.3 | 3               | 3                |        | 196   | 660                | 910             | 2200        | 2800 | N3321M       | 116                            | 139                |                    | 208                | 204                | 2.5                | 2.5    | 18.3               |
|                  | 225 | 49   | 3               | 3                |        | 201   | 475                | 525             | 2200        | 2800 | N321EM       | 118                            | 130                |                    | 212                | 203                | 2.5                | 2.5    | 10.5               |
|                  | 260 | 60   | 4               | 4                |        | 220.5 | 576                | 655             | 2200        | 2800 | N421M        | 121                            | 151                |                    | 244                | 224                | 3                  | 3      | 17.2               |
| 110              | 170 | 28   | 2               | 1.1              |        | 155   | 143                | 194             | 3800        | 4500 | N1022M       | 116.5                          | 123                |                    | 161                | 157                | 2                  | 1      | 2.31               |
|                  | 170 | 28   | 2               | 1.1              | 125    | 155   | 143                | 194             | 3800        | 4500 | NU1022M      | 116.5                          | 175                | 128                | 161                | 161                | 2                  | 1      | 2.32               |
|                  | 200 | 38   | 2.1             | 2.1              |        | 178.5 | 270                | 347             | 2800        | 3400 | N222M        | 121                            | 129                |                    | 189                | 181                | 2                  | 2      | 5.02               |
|                  | 200 | 38   | 2.1             | 2.1              |        | 180.5 | 318                | 370             | 2800        | 3400 | N222EM       | 121                            | 129                |                    | 189                | 183                | 2                  | 2      | 5.27               |
|                  | 200 | 53   | 2.1             | 2.1              | 132    | 180.5 | 418                | 490             | 2800        | 3400 | NJ2222M      | 121                            | 138                | 145                | 189                | 189                | 2                  | 2      | 7.83               |
|                  | 200 | 69.8 | 2.1             | 2.1              | 132.5  | 180.5 | 451                | 655             | 2800        | 3400 | NU3222M      | 121                            | 129                | 135                | 189                | 189                | 2                  | 2      | 9.92               |
|                  | 240 | 50   | 3               | 3                |        | 207   | 462                | 515             | 2000        | 2600 | N322M        | 123                            | 139                |                    | 227                | 210                | 2.5                | 2.5    | 11.4               |
|                  | 240 | 50   | 3               | 3                |        | 211   | 503                | 575             | 2000        | 2600 | N322E        | 123                            | 204                |                    | 227                | 215                | 2.5                | 2.5    | 11.2               |
|                  | 240 | 80   | 3               | 3                |        | 211   | 741                | 930             | 2000        | 2600 | N2322E       | 123                            | 138                |                    | 227                | 215                | 2.5                | 2.5    | 17.5               |
|                  | 280 | 65   | 4               | 4                |        | 235   | 615                | 725             | 2000        | 2600 | N422M        | 126                            | 150                |                    | 264                | 240                | 3                  | 3      | 21.8               |
| 120              | 180 | 28   | 2               | 1.1              | 135    | 191.5 | 146                | 205             | 3400        | 4000 | NU1024M      | 126.5                          | 133                | 138                | 171                | 171                | 2                  | 1      | 2.96               |
|                  | 215 | 40   | 2.1             | 2.1              |        | 191.5 | 350                | 390             | 2400        | 3000 | N224M        | 131                            | 140                |                    | 204                | 195                | 2                  | 2      | 6.11               |
|                  | 215 | 40   | 2.1             | 2.1              | 143.5  | 191.5 | 374                | 460             | 2400        | 3000 | NJ224EM      | 131                            |                    | 156                | 204                | 204                | 2                  | 2      | 6.68               |
|                  | 215 | 58   | 2.1             | 2.1              |        | 191.5 | 480                | 550             | 2400        | 3000 | N2224M       | 131                            | 188                |                    | 204                | 195                | 2                  | 2      | 8.92               |
|                  | 215 | 58   | 2.1             | 2.1              | 143.5  | 191.5 | 494                | 620             | 2400        | 3000 | NJ2224EM     | 131                            | 140                | 156                | 204                | 204                | 2                  | 2      | 9.80               |
|                  | 215 | 76   | 2.1             | 2.1              | 145.14 | 191.5 | 517                | 780             | 2400        | 3000 | NU3224M      | 131                            | 140                | 146                | 204                | 204                | 2                  | 2      | 12.4               |
|                  | 240 | 80   | 3.7             | 3.7              | 150    | 226   | 583                | 790             | 2400        | 3200 | NJ624M       | 140                            | 147                | 165                | 222                | 222                | 2.5                | 2.5    | 17.7               |
|                  | 260 | 55   | 3               | 3                |        | 226   | 580                | 645             | 1900        | 2400 | N324M        | 133                            |                    |                    | 247                | 230                | 2.5                | 2.5    | 15.1               |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |     |       |        |       |       | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|-----|-----|-------|--------|-------|-------|--------------------|------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D   | B   | rsmin | r1smin | F     | E     | Cr                 | Cor  | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |     |     |       |        |       |       | KN                 |      | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |
|                  | 260 | 55  | 3     | 3      | 154   |       | 594                | 710  | 1900        | 2400 | NU324EM      | 133                            | 150    | 157    | 247    |        | 2.5    | 2.5    | 16.3   |
|                  | 260 | 86  | 3     | 3      |       | 226   | 869                | 970  | 1900        | 2400 | N2324M       | 133                            | 223    |        | 247    | 229    | 2.5    | 2.5    | 22.9   |
|                  | 260 | 106 | 3     | 3      |       | 230   | 990                | 1380 | 1900        | 2400 | NF3324Q1     | 133                            | 149    | 170    | 247    |        | 2.5    | 2.5    | 29.9   |
|                  | 310 | 72  | 5     | 5      |       | 260   | 770                | 915  | 1900        | 2400 | N424M        | 140                            | 254    |        | 290    | 266    | 4      | 4      | 29.0   |
| 130              | 180 | 50  | 1.5   | 1.5    | 150   |       | 220                | 555  | 1900        | 2400 | NA4926       | 150                            | 170    | 145    | 160    |        | 1.5    | 1.5    | 4.36   |
|                  | 200 | 33  | 2     | 1.1    |       | 182   | 192                | 274  | 3200        | 3800 | N1026M       | 136.5                          | 178    |        | 191    | 184    | 2      | 1      | 4.57   |
|                  | 200 | 42  | 2     | 1.1    | 147   |       | 280                | 415  | 3000        | 3700 | NU2026EMA    | 143                            | 149    | 167    | 217    |        | 1      | 1      | 4.95   |
|                  | 230 | 40  | 3     | 3      |       | 204   | 376                | 465  | 2200        | 2800 | N226M        | 143                            | 200    |        | 217    | 207    | 2.5    | 2.5    | 7.08   |
|                  | 230 | 40  | 3     | 3      |       | 209.5 | 394                | 495  | 2200        | 2800 | N226E        | 143                            | 206    |        | 217    | 213    | 2.5    | 2.5    | 7.09   |
|                  | 230 | 64  | 3     | 3      |       | 204   | 580                | 690  | 2200        | 2800 | N2226M       | 143                            | 200    |        | 217    | 209    | 2.5    | 2.5    | 11.6   |
|                  | 230 | 64  | 3     | 3      | 153.5 |       | 580                | 735  | 2200        | 2800 | NU2226EM     | 143                            | 150    | 159    | 217    |        | 2.5    | 2.5    | 11.5   |
|                  | 280 | 58  | 4     | 4      |       | 243   | 600                | 690  | 1800        | 2200 | N326M        | 146                            | 239    |        | 264    | 247    | 3      | 3      | 17.8   |
|                  | 280 | 58  | 4     | 4      | 167   |       | 690                | 795  | 1800        | 2200 | NU326EM      | 146                            | 163    | 170    | 264    |        | 3      | 3      | 15.8   |
|                  | 280 | 93  | 4     | 4      |       | 243   | 870                | 1180 | 1800        | 2200 | N2326M       | 146                            | 240    |        | 264    | 246    | 3      | 3      | 29.0   |
|                  | 280 | 93  | 4     | 4      | 167   |       | 900                | 1200 | 1800        | 2200 | NU2326EM     | 146                            | 161    | 185    | 264    |        | 3      | 3      | 29.3   |
|                  | 340 | 78  | 5     | 5      | 185   |       | 941                | 1110 | 1800        | 2200 | NU426M       | 150                            | 180    | 190    | 320    |        | 4      | 4      | 39.5   |
| 140              | 190 | 30  | 1.5   | 1.1    | 158   |       | 184                | 315  | 3000        | 3600 | NF2928M      | 146.5                          | 155    | 161    | 181    |        | 2      | 1      | 2.59   |
|                  | 210 | 33  | 2     | 2      | 158   |       | 195                | 290  | 3000        | 3600 | NJ1028M      | 146.5                          | 155    | 161    | 200    |        | 2      | 2      | 4.01   |
|                  | 210 | 53  | 2     | 1.1    | 158   |       | 358                | 630  | 2600        | 3400 | NU3028M      | 147                            | 154    | 162    | 200    |        | 2      | 1      | 7.64   |
|                  | 250 | 42  | 3     | 3      |       | 221   | 390                | 490  | 2400        | 3000 | N228M        | 153                            | 218    |        | 237    | 225    | 2.5    | 2.5    | 9.14   |
|                  | 250 | 42  | 3     | 3      |       | 225   | 428                | 530  | 2400        | 3000 | N228E        | 153                            | 221    |        | 237    | 232    | 2.5    | 2.5    | 9.01   |
|                  | 250 | 68  | 3     | 3      | 169   |       | 603                | 755  | 2000        | 2600 | NU2228M      | 153                            | 164    | 172    | 237    |        | 2.5    | 2.5    | 14.4   |
|                  | 250 | 68  | 3     | 3      |       | 225   | 622                | 840  | 2000        | 2600 | N2228E       | 154                            | 218    | 224    | 236    |        | 2.5    | 2.5    | 14.2   |
|                  | 300 | 62  | 4     | 4      |       | 260   | 710                | 810  | 1900        | 2400 | N328M        | 156                            | 256    |        | 284    | 264    | 3      | 3      | 21.9   |
|                  | 300 | 62  | 4     | 4      | 180   |       | 740                | 880  | 1800        | 2200 | NU328EM      | 156                            | 176    | 183    | 284    |        | 3      | 3      | 21.8   |
|                  | 360 | 82  | 5     | 5      | 196   |       | 1010               | 1200 | 1800        | 2200 | NJ428M       | 160                            | 192    | 219    | 340    |        | 4      | 4      | 46.3   |
|                  | 300 | 102 | 4     | 4      |       | 260   | 1140               | 1310 | 1800        | 2200 | N2328M       | 156                            | 256    |        | 284    | 264    | 3      | 3      | 34.6   |
| 150              | 225 | 35  | 2.1   | 1.5    | 169.5 |       | 212                | 310  | 2600        | 3200 | NJ1030M      | 159                            | 166    | 178    | 214    |        | 2      | 2      | 5.05   |
|                  | 270 | 45  | 3     | 3      |       | 238   | 430                | 570  | 2000        | 2600 | N230M        | 163                            | 234    |        | 257    | 242    | 2.5    | 2.5    | 11.6   |
|                  | 270 | 45  | 3     | 3      |       | 242   | 484                | 610  | 1900        | 2400 | N230E        | 163                            | 238    |        | 257    | 246    | 2.5    | 2.5    | 11.5   |
|                  | 225 | 56  | 2.1   | 2.1    | 169.5 |       | 363                | 620  | 2400        | 3000 | NU3030M      | 159                            | 166    | 172    | 214    |        | 2      | 2      | 7.99   |
|                  | 270 | 73  | 3     | 3      | 182   |       | 698                | 980  | 1900        | 2400 | NJ2230E      | 163                            | 177    | 197    | 257    |        | 2.5    | 2.5    | 18.1   |
|                  | 320 | 65  | 4     | 4      |       | 277   | 826                | 890  | 1700        | 2000 | N330M        | 166                            | 272    |        | 304    | 282    | 3      | 3      | 26.5   |
|                  | 320 | 65  | 4     | 4      | 193   |       | 855                | 1010 | 1700        | 2000 | NJ330EM      | 166                            | 189    | 213    | 304    |        | 3      | 3      | 26.2   |

# Single Row Cylindrical Roller Bearings



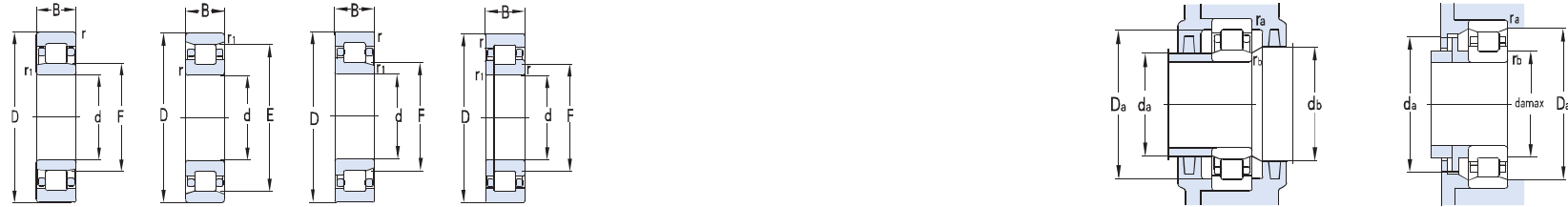
| Basic dimensions |     |     |       |        |     |     | Basic load ratings |      | Limit speed |      | Designations  | Abutment and fillet dimensions |   |        |        |        |        | Weight |        |
|------------------|-----|-----|-------|--------|-----|-----|--------------------|------|-------------|------|---|--------------------------------|---|--------|--------|--------|--------|--------|--------|
| d                | D   | B   | rsmin | r1smin | F   | E   | Cr                 | Cor  | Grease      | Oil  |   | da min                         | da max  | db min | Da max | Da max | ra max |        | rb max |
| mm               |     |     |       |        |     |     | KN                 |      | r/min       |      |   | mm                             |   |        |        |        |        | Kg     |        |
|                  | 320 | 108 | 4     | 4      | 193 |     | 1300               | 1480 | 1700        | 2000 | NU2330M<br>N2330M<br>NJ3330M  | 166                            | 186   | 196    | 304    |        | 3      | 3      | 41.5   |
|                  | 320 | 108 | 4     | 4      | 193 | 277 | 1300               | 1420 | 1700        | 2000 |   | 166                            |   |        | 304    | 284    | 3      | 3      | 42.8   |
|                  | 320 | 128 | 4     | 4      | 193 |     | 1320               | 1880 | 1400        | 1800 |   | 166                            | 189   | 213    | 304    |        | 3      | 3      | 49.9   |
| 160              | 220 | 36  | 2     | 2      | 173 |     | 255                | 435  | 2500        | 3200 | NJ2932M<br>N1032M<br>N232M<br>NU232EM<br>NU2232EM<br>NJ2232M<br>N332M<br>NU332EQ1<br>N2332M<br>NU2332EM | 169                            | 171   | 181    | 211    |        | 1.5    | 1.5    | 4.17   |
|                  | 240 | 38  | 2.1   | 2.1    | 173 | 220 | 260                | 365  | 2400        | 3000 |   | 168                            | 217   |        | 232    | 223    | 2      | 2      | 5.96   |
|                  | 290 | 48  | 3     | 3      | 173 | 257 | 556                | 655  | 1800        | 2200 |   | 173                            | 255   |        | 277    | 263    | 2.5    | 2.5    | 14.3   |
|                  | 290 | 48  | 3     | 3      | 195 |     | 556                | 695  | 1800        | 2200 |   | 173                            | 191   | 198    | 277    |        | 2.5    | 2.5    | 14.3   |
|                  | 290 | 80  | 3     | 3      | 193 |     | 883                | 1190 | 1800        | 2200 |   | 173                            | 189   | 196    | 277    |        | 2.5    | 2.5    | 24.2   |
|                  | 290 | 80  | 3     | 3      | 195 |     | 810                | 1000 | 1800        | 2200 |   | 173                            | 189   | 196    | 277    |        | 2.5    | 2.5    | 23.9   |
|                  | 340 | 68  | 4     | 4      | 204 | 292 | 950                | 1026 | 1500        | 1800 |   | 176                            | 288   |        | 324    | 296    | 3      | 3      | 30.8   |
|                  | 340 | 68  | 4     | 4      | 204 |     | 950                | 1150 | 1500        | 1800 |   | 176                            | 200   | 207    | 324    |        | 3      | 3      | 27.8   |
|                  | 340 | 114 | 4     | 4      | 204 | 292 | 1187               | 1610 | 1350        | 1700 |   | 176                            | 200   | 209    | 324    |        | 3      | 3      | 51.6   |
|                  | 340 | 114 | 4     | 4      | 204 |     | 1260               | 1730 | 1350        | 1700 |   | 176                            | 200   | 209    | 324    |        | 3      | 3      | 52.4   |
| 170              | 230 | 28  | 2     | 1.1    |     | 216 | 193                | 310  | 2400        | 2900 | N1934M<br>N1034M<br>N234M<br>NU234EM<br>NU2234EM<br>NU2234M<br>N2332M<br>N334M<br>NJ2334M               | 180                            |   | 213    | 222    | 219    | 1.5    | 1      | 3.64   |
|                  | 260 | 42  | 2.1   | 2.1    |     | 237 | 299                | 400  | 2200        | 2800 |   | 181                            | 233   |        | 249    | 241    | 2      | 2      | 8.02   |
|                  | 310 | 52  | 4     | 4      |     | 272 | 660                | 780  | 1800        | 2200 |   | 186                            | 266   |        | 294    | 278    | 3      | 3      | 18.2   |
|                  | 310 | 52  | 4     | 4      | 207 |     | 660                | 870  | 1800        | 2200 |   | 186                            | 203   | 210    | 294    |        | 3      | 3      | 18.4   |
|                  | 310 | 86  | 4     | 4      | 205 |     | 1000               | 1480 | 1800        | 2200 |   | 186                            | 201   | 208    | 294    |        | 3      | 3      | 29.0   |
|                  | 310 | 86  | 4     | 4      | 208 |     | 1000               | 1480 | 1800        | 2200 |   | 187                            | 203   | 211    | 293    |        | 3      | 3      | 30.5   |
|                  | 340 | 114 | 4     | 4      | 208 | 292 | 1120               | 1610 | 1500        | 1800 |   | 176                            | 288   |        | 324    | 295    | 3      | 3      | 51.6   |
|                  | 360 | 72  | 4     | 4      |     | 310 | 904                | 1040 | 1400        | 1700 |   | 186                            | 307   |        | 344    | 315    | 3      | 3      | 37.3   |
|                  | 360 | 120 | 4     | 4      | 220 |     | 1380               | 1850 | 1400        | 1700 |   | 186                            | 212   | 240    | 344    |        | 3      | 3      | 62.5   |
|                  | 180 | 250 | 33    | 2      | 1.1 |     | 233                | 237  | 380         | 2200 |   | 2800                           | NF1936M<br>N036M<br>N036L<br>N036EM<br>N1036M<br>N236M<br>NU2236M<br>NU3236M<br>N336M<br>NU336EM<br>NJ2336M | 190    |        |        | 240    | 236    | 1.5    |
| 280              |     | 31  | 2     | 2      |     | 250 | 270                | 420  | 2000        | 2400 | 191   | 246                            |   |        | 269    | 254    | 2      | 2      | 8.59   |
| 280              |     | 31  | 2     | 2      |     | 250 | 270                | 420  | 2000        | 2400 | 191   | 246                            |   |        | 269    | 254    | 2      | 2      | 7.08   |
| 280              |     | 31  | 2     | 2      |     | 260 | 330                | 472  | 2000        | 2400 | 191   | 246                            |   |        | 269    | 254    | 2      | 2      | 7.15   |
| 280              |     | 46  | 2.1   | 2.1    |     | 255 | 380                | 565  | 2000        | 2600 | 191   | 221                            |   |        | 265    | 260    | 2      | 2      | 10.3   |
| 320              |     | 52  | 4     | 4      |     | 282 | 685                | 785  | 1700        | 2000 | 196   | 278                            |   |        | 304    | 286    | 3      | 3      | 19.7   |
| 320              |     | 86  | 4     | 4      | 215 |     | 1100               | 1580 | 1700        | 2000 | 196   | 211                            |   | 218    | 304    |        | 3      | 3      | 31.4   |
| 320              |     | 112 | 4     | 4      | 218 |     | 1120               | 1950 | 1700        | 2000 | 196   | 211                            |   | 218    | 304    |        | 3      | 3      | 41.6   |
| 380              |     | 75  | 4     | 4      |     | 330 | 990                | 1260 | 1500        | 1800 | 196   | 325                            |   |        | 364    | 335    | 3      | 3      | 39.6   |
| 380              |     | 75  | 4     | 4      | 231 |     | 1170               | 1360 | 1500        | 1800 | 196   | 226                            |   | 236    | 364    |        | 3      | 3      | 42.1   |
| 380              |     | 126 | 4     | 4      | 232 |     | 1530               | 1850 | 1300        | 1600 | 196   | 227                            |   | 255    | 364    |        | 3      | 3      | 72.0   |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |     |       |        |         |      | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |         |        |        |        |        | Weight |        |      |
|------------------|-----|-----|-------|--------|---------|------|--------------------|------|-------------|------|--------------|--------------------------------|---------|--------|--------|--------|--------|--------|--------|------|
| d                | D   | B   | rsmin | r1smin | F       | E    | Cr                 | Cor  | Grease      | Oil  |              | da min                         | da max  | db min | Da max | Da max | ra max |        | rb max |      |
| mm               |     |     |       |        |         |      | KN                 |      | r/min       |      |              | mm                             |         |        |        |        |        | Kg     |        |      |
| 190              | 260 | 42  | 2     | 2      | 208     | 345  | 315                | 610  | 2200        | 2800 | NJ2938       | 196                            | 206     | 210    | 252    |        | 1.5    | 1      | 7.24   |      |
|                  | 290 | 46  | 2.1   | 2.1    | 215     |      | 413                | 640  | 2000        | 2600 | NU1038M      | 201                            | 212     | 218    | 279    |        | 2      | 2      | 10.9   |      |
|                  | 340 | 55  | 4     | 4      | 231     |      | 730                | 916  | 1600        | 1900 | NU238M       | 206                            | 226     | 234    | 324    |        | 3      | 3      | 21.6   |      |
|                  | 400 | 78  | 5     | 5      |         |      | 1080               | 1730 | 1200        | 1500 | N338M        | 210                            | 340     | 380    | 350    |        | 4      | 4      | 50.2   |      |
|                  | 400 | 132 | 5     | 5      | 240     |      | 1870               | 2450 | 1200        | 1500 | NU2338EMA    | 210                            | 235     | 249    | 380    |        | 4      | 4      | 82.8   |      |
| 200              | 310 | 34  | 2     | 2      |         | 277  | 336                | 545  | 2200        | 2800 | N040M        | 211                            | 274     |        | 299    | 280    | 2      | 2      | 10.1   |      |
|                  | 310 | 51  | 2.1   | 2.1    | 227     |      | 468                | 705  | 1900        | 2400 | NU1040M      | 211                            | 225     | 233    | 299    |        | 2      | 2      | 14.3   |      |
|                  | 320 | 48  | 2.1   | 2.1    |         | 283  | 473                | 705  | 1900        | 2400 | N640M        | 211                            | 280     |        | 299    | 286    | 2      | 2      | 14.7   |      |
|                  | 360 | 58  | 4     | 4      |         | 316  | 808                | 995  | 1500        | 1800 | N240M        | 216                            | 310     |        | 344    | 322    | 3      | 3      | 26.8   |      |
|                  | 360 | 98  | 4     | 4      | 244     |      | 1200               | 1710 | 1500        | 1800 | NJ2240M      | 216                            | 236     | 260    | 344    |        | 3      | 3      | 45.5   |      |
|                  | 360 | 98  | 4     | 4      |         | 325  | 1300               | 1900 | 1500        | 1800 | N2240EM      | 216                            | 320     |        | 344    | 330    | 3      | 3      | 44.9   |      |
|                  | 420 | 80  | 5     | 5      | 260     |      | 1090               | 1400 | 1300        | 1600 | NU340M       | 220                            | 253     | 264    | 400    |        | 4      | 4      | 56.7   |      |
|                  | 420 | 138 | 5     | 5      |         | 364  | 1880               | 2510 | 1200        | 1500 | N2340M       | 220                            | 360     |        | 400    | 368    | 4      | 4      | 94.5   |      |
|                  | 420 | 165 | 5     | 5      | 260     |      | 2150               | 3540 | 1200        | 1500 | NU3340M      | 220                            | 253     | 264    | 400    |        | 4      | 4      | 118    |      |
|                  | 220 | 300 | 48    | 2.1    | 2.1     | 240  | 350                | 407  | 755         | 1900 | 2400         | NJ2944M                        | 229     | 237    | 243    | 289    |        | 2      | 1      | 10.8 |
| 340              |     | 56  | 3     | 3      | 250     | 534  |                    | 810  | 1800        | 2200 | NJ1044M      | 233                            | 246     | 265    | 327    |        | 2.5    | 2.5    | 19.6   |      |
| 340              |     | 90  | 3     | 3      | 251.409 | 1060 |                    | 1820 | 1800        | 2200 | NU3044Q1/HA  | 233                            | 246     | 254    | 327    |        | 2.5    | 2.5    | 32     |      |
| 400              |     | 65  | 4     | 4      |         | 1000 |                    | 1220 | 1500        | 1800 | N244M        | 236                            | 342     |        | 384    | 358    | 3      | 3      | 36.7   |      |
| 400              |     | 108 | 4     | 4      | 270     | 1500 |                    | 1990 | 1300        | 1600 | NU2244M      | 236                            | 262     | 274    | 384    |        | 3      | 3      | 62.2   |      |
| 400              |     | 144 | 4     | 4      | 270     | 1950 |                    | 3350 | 1500        | 1800 | NB3244F1     | 236                            | 263     | 276    | 384    |        | 3      | 3      | 77.3   |      |
| 400              |     | 108 | 4     | 4      | 265     | 1490 |                    | 2280 | 1300        | 1600 | NU2244EM/HC  | 237                            | 255     | 264    | 383    |        | 3      | 3      | 62.8   |      |
| 400              |     | 108 | 4     | 4      |         | 350  |                    | 1440 | 1990        | 1300 | 1600         | N2244M                         | 237     | 255    | 264    | 383    |        | 3      | 3      | 61.8 |
| 460              |     | 88  | 5     | 5      | 284     |      |                    | 1280 | 1730        | 1000 | 1300         | NU344M                         | 240     | 277    | 288    | 440    |        | 4      | 4      | 73.4 |
| 460              |     | 145 | 5     | 5      | 284     |      |                    | 2260 | 3270        | 1000 | 1300         | NU2344M                        | 240     | 276    | 288    | 440    |        | 4      | 4      | 125  |
| 460              |     | 145 | 5     | 5      |         | 407  |                    | 2300 | 3360        | 1000 | 1300         | N2344EM                        | 240     | 403    |        | 440    | 411    | 4      | 4      | 114  |
| 240              |     | 320 | 38    | 2.5    | 1.8     | 260  |                    | 385  | 308         | 540  | 1900         | 2400                           | NU1948M | 249    | 257    | 263    | 308    |        | 2      | 1.5  |
|                  | 360 | 56  | 3     | 3      | 270     | 512  | 775                |      | 1700        | 2000 | NU1048M      | 253                            | 266     | 274    | 347    |        | 2.5    | 2.5    | 20.5   |      |
|                  | 440 | 72  | 4     | 4      | 295     | 1050 | 1540               |      | 1300        | 1600 | NU248M       | 256                            | 288     | 299    | 424    |        | 3      | 3      | 46.9   |      |
|                  | 440 | 72  | 4     | 4      |         | 1050 | 1540               |      | 1300        | 1600 | N248M        | 256                            | 288     | 317    | 424    |        | 3      | 3      | 49.1   |      |
|                  | 440 | 120 | 4     | 4      | 295     | 1490 | 2450               |      | 1200        | 1500 | NU2248MA     | 256                            | 284     | 299    | 423    |        | 3      | 3      | 84.8   |      |
|                  | 440 | 146 | 4     | 4      | 290     | 2240 | 3820               |      | 1100        | 1400 | NU5248       | 256                            | 287     | 293    | 424    |        | 3      | 3      | 104    |      |
|                  | 500 | 95  | 5     | 5      |         | 430  | 1530               |      | 2120        | 1000 | 1300         | N348M                          | 260     | 426    |        | 480    | 434    | 4      | 4      | 96.3 |
|                  | 500 | 95  | 5     | 5      | 306     |      | 1670               |      | 2190        | 1000 | 1300         | NU348EM                        | 260     | 296    | 313    | 480    |        | 4      | 4      | 94.9 |
|                  | 500 | 155 | 5     | 5      | 310     |      | 2470               |      | 3460        | 950  | 1200         | NU2348M                        | 260     | 296    | 314    | 480    |        | 4      | 4      | 154  |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |     |       |        |       |     | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |      |
|------------------|-----|-----|-------|--------|-------|-----|--------------------|------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| d                | D   | B   | rsmin | r1smin | F     | E   | Cr                 | Cor  | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |      |
| mm               |     |     |       |        |       |     | KN                 |      | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |      |
| 250              | 308 | 50  | 6     | 2.3    |       |     | 655                | 1050 | 1800        | 2300 | N650EM/HA    | 268                            | 343    |        | 368    | 351    | 5      | 2      | 21.4   |      |
| 260              | 360 | 46  | 2.1   | 2.1    |       |     | 337                | 445  | 785         | 1600 | 1850         | NF1952M                        | 276    | 280    | 295    | 384    |        | 3      | 3      | 14.9 |
|                  | 400 | 65  | 4     | 4      |       |     | 347                | 690  | 1090        | 1500 | 1800         | NU1052M                        | 276    | 291    | 300    | 384    |        | 3      | 3      | 30.2 |
|                  | 400 | 82  | 4     | 4      | 294   |     |                    | 1080 | 1880        | 1300 | 1700         | NU2052EM                       | 276    | 291    | 300    | 384    |        | 3      | 3      | 40.1 |
|                  | 400 | 104 | 4     | 4      | 290.5 |     |                    | 1350 | 2340        | 1150 | 1450         | NU3052M                        | 275    | 286    | 295    | 385    |        | 3      | 3      | 49.5 |
|                  | 440 | 144 | 4     | 4      | 298.5 |     |                    | 2050 | 3450        | 950  | 1250         | NU3152M                        | 277    | 295    | 302    | 423    |        | 3      | 3      | 98   |
|                  | 480 | 80  | 5     | 5      | 320   |     |                    | 1220 | 1800        | 1100 | 1400         | NU252M                         | 280    | 313    | 324    | 460    |        | 4      | 4      | 67.1 |
|                  | 480 | 130 | 5     | 5      |       |     | 420                | 1780 | 2910        | 950  | 1250         | N2252M                         | 280    | 416    | 427    | 460    |        | 4      | 4      | 105  |
|                  | 540 | 102 | 6     | 6      | 336   |     |                    | 1843 | 2560        | 850  | 1050         | NU352M                         | 286    | 330    | 341    | 514    |        | 5      | 5      | 120  |
|                  | 540 | 165 | 6     | 6      | 319   |     |                    | 3150 | 4500        | 850  | 1050         | NU2352M                        | 286    | 310    | 323    | 514    |        | 5      | 5      | 188  |
| 280              | 340 | 30  | 2     | 2      |       |     | 327                | 308  | 690         | 1800 | 2200         | N1856X3M/HG2                   | 289    |        | 324    | 330    | 330    | 2      | 2      | 5.76 |
|                  | 350 | 42  | 2     | 2      | 299   |     |                    | 363  | 790         | 1800 | 2200         | NJ2856M                        | 289    | 309    | 324    | 330    |        | 2      | 2      | 9.15 |
|                  | 360 | 30  | 2     | 2      | 301   |     |                    | 385  | 625         | 1700 | 1900         | NJ1856X3M/HG2                  | 289    | 309    | 334    | 340    |        | 2      | 2      | 8.11 |
|                  | 380 | 46  | 2.1   | 2.1    | 306   |     |                    | 473  | 865         | 1700 | 1900         | NU1956M                        | 291    | 303    | 309    | 369    |        | 2      | 2      | 15.5 |
|                  | 420 | 65  | 4     | 4      |       |     | 384                | 700  | 1150        | 1400 | 1700         | N1056M                         | 296    | 380    |        | 411    | 388    | 3      | 3      | 31.5 |
|                  | 420 | 82  | 4     | 4      | 314   |     |                    | 1190 | 2170        | 1050 | 1300         | NU2056M                        | 295    | 310    | 318    | 405    |        | 3      | 3      | 39.5 |
|                  | 460 | 146 | 5     | 5      | 321   |     |                    | 2250 | 3900        | 900  | 1150         | NU3156M                        | 300    | 316    | 325    | 440    |        | 4      | 4      | 106  |
|                  | 500 | 80  | 5     | 5      | 340   |     |                    | 1100 | 1750        | 1150 | 1450         | NJ256M                         | 300    | 333    | 364    | 480    |        | 4      | 4      | 71.5 |
|                  | 500 | 130 | 5     | 5      | 333   |     |                    | 2080 | 3270        | 1100 | 1400         | NU2256EM                       | 300    | 333    | 344    | 480    |        | 4      | 4      | 118  |
|                  | 580 | 108 | 6     | 6      | 362   |     |                    | 1880 | 2660        | 850  | 1000         | NU356M                         | 306    | 347    | 366    | 554    |        | 5      | 5      | 147  |
|                  | 580 | 175 | 6     | 6      | 362   |     |                    | 2560 | 4250        | 900  | 1100         | NU2356M                        | 306    | 347    | 366    | 554    |        | 5      | 5      | 232  |
| 300              | 380 | 48  | 2.1   | 2.1    | 321   |     |                    | 450  | 1000        | 1370 | 1650         | NJ2860M                        | 310    | 318    | 332    | 370    |        | 1.5    | 1.5    | 15.5 |
|                  | 380 | 60  | 2.1   | 2.1    |       | 360 | 468                | 990  | 1200        | 1500 | 1500         | N3860M/HG2                     | 316    | 335    |        | 444    | 440    | 4      | 4      | 16.6 |
|                  | 460 | 74  | 4     | 4      | 340   |     |                    | 935  | 1510        | 1200 | 1500         | NJ1060M                        | 316    | 335    | 358    | 444    |        | 3      | 3      | 45.1 |
|                  | 460 | 95  | 4     | 4      | 341   |     |                    | 1400 | 2510        | 980  | 1250         | NU2060M                        | 317    | 336    | 345    | 443    |        | 3      | 3      | 60   |
|                  | 460 | 118 | 4     | 4      | 340   |     |                    | 1470 | 2700        | 1200 | 1500         | NU3060M                        | 316    | 335    | 344    | 444    |        | 3      | 3      | 72.5 |
|                  | 540 | 85  | 5     | 5      | 364   |     |                    | 1510 | 2270        | 1000 | 1300         | NU260M                         | 320    | 358    | 368    | 520    |        | 4      | 4      | 86.9 |
|                  | 540 | 140 | 5     | 5      | 364   |     |                    | 2080 | 3450        | 1000 | 1200         | NU2260M                        | 320    | 352    | 368    | 520    |        | 4      | 4      | 146  |
|                  | 620 | 109 | 7.5   | 7.5    | 385   |     |                    | 2310 | 3300        | 900  | 1100         | NU360M                         | 330    | 379    | 390    | 590    |        | 7      | 7      | 166  |
|                  | 620 | 185 | 7.5   | 7.5    | 371   |     |                    | 3860 | 5850        | 830  | 1000         | NU2360M                        | 332    | 365    | 375    | 588    |        | 6      | 6      | 271  |
| 320              | 400 | 38  | 2.1   | 1.5    | 341   |     |                    | 365  | 715         | 1270 | 1550         | NU1864M                        | 327    | 337    | 345    | 389    |        | 2      | 1.5    | 11.3 |
|                  | 400 | 48  | 2.1   | 1.5    | 341   |     |                    | 490  | 1050        | 1250 | 1550         | NU2864M                        | 327    | 337    | 345    | 389    |        | 2      | 1.5    | 15   |
|                  | 440 | 56  | 3     | 3      | 350   |     |                    | 638  | 1130        | 1100 | 1400         | NU1964M                        | 335    | 346    | 354    | 425    |        | 2.5    | 2.5    | 24.7 |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |     |                   |                    |     |   | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|-----|-----|-------------------|--------------------|-----|---|--------------------|------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D   | B   | r <sub>smin</sub> | r <sub>1smin</sub> | F   | E | Cr                 | Cor  | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |     |     |                   |                    |     |   | KN                 |      | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |
|                  | 480 | 74  | 4                 | 4                  | 360 |   | 960                | 1580 | 1100        | 1400 | NJ1064M      | 336                            | 355    | 380    | 464    |        | 3      | 3      | 47.8   |
|                  | 480 | 95  | 4                 | 4                  | 360 |   | 1380               | 2650 | 970         | 1250 | NU2064M      | 335                            | 357    | 364    | 465    |        | 3      | 3      | 63     |
|                  | 480 | 121 | 4                 | 4                  | 360 |   | 1540               | 2910 | 1100        | 1400 | NU3064M      | 336                            | 335    | 380    | 464    |        | 3      | 3      | 78.1   |
|                  | 540 | 176 | 5                 | 5                  | 374 |   | 2780               | 5000 | 870         | 1050 | NU3164M      | 367                            | 369    | 387    | 490    |        | 4      | 4      | 172    |
|                  | 580 | 92  | 5                 | 5                  | 390 |   | 1620               | 2450 | 960         | 1200 | NU264M       | 340                            | 383    | 394    | 560    |        | 4      | 4      | 112    |
|                  | 580 | 150 | 5                 | 5                  | 380 |   | 3030               | 4750 | 900         | 1100 | NU2264EM     | 340                            | 377    | 394    | 560    |        | 4      | 4      | 181    |
| 340              | 420 | 48  | 2.1               | 2.1                | 361 |   | 490                | 1150 | 1150        | 1450 | NJ2868M      | 350                            | 357    | 372    | 410    |        | 2      |        | 15.5   |
|                  | 460 | 56  | 3                 | 3                  | 370 |   | 700                | 1400 | 1050        | 1350 | NU1968M      | 353                            | 365    | 374    | 447    |        | 2.5    | 2.5    | 28.3   |
|                  | 460 | 72  | 3                 | 3                  | 373 |   | 785                | 1650 | 1050        | 1350 | NU2968M      | 353                            | 369    | 377    | 447    |        | 2.5    | 2.5    | 36.2   |
|                  | 520 | 82  | 5                 | 5                  | 385 |   | 1130               | 1910 | 1000        | 1300 | NU1068M      | 360                            | 380    | 389    | 500    |        | 4      | 4      | 65.0   |
|                  | 580 | 190 | 5                 | 5                  | 399 |   | 3300               | 5900 | 760         | 910  | NU3168E      | 360                            | 388    | 403    | 560    |        | 4      | 4      | 211    |
|                  | 580 | 190 | 5                 | 5                  | 400 |   | 3550               | 6650 | 760         | 910  | NU3168       | 360                            | 388    | 403    | 560    |        | 4      | 4      | 211    |
|                  | 620 | 165 | 6                 | 6                  | 416 |   | 2950               | 4900 | 810         | 950  | NU2268M      | 366                            | 401    | 421    | 594    |        | 5      | 5      | 225    |
|                  | 620 | 224 | 6                 | 6                  | 410 |   | 4600               | 8600 | 810         | 950  | NU3268       | 366                            | 401    | 421    | 594    |        | 5      | 5      | 307    |
| 360              | 480 | 72  | 3                 | 3                  | 388 |   | 1220               | 2300 | 1100        | 1300 | NJ2972E      | 380                            | 400    | 380    | 464    |        | 4      | 4      | 38.1   |
|                  | 540 | 82  | 5                 | 5                  | 405 |   | 1190               | 2000 | 980         | 1280 | NU1072M      | 378                            | 400    | 410    | 522    |        | 4      | 4      | 65.9   |
|                  | 540 | 106 | 5                 | 5                  | 405 |   | 1890               | 3560 | 870         | 1050 | NU2072M      | 380                            | 399    | 410    | 520    |        | 4      | 4      | 89.5   |
|                  | 540 | 134 | 5                 | 5                  | 405 |   | 2060               | 4050 | 800         | 1000 | NU3072M      | 381                            | 400    | 410    | 520    |        | 4      | 4      | 112    |
|                  | 600 | 192 | 5                 | 5                  | 420 |   | 3520               | 6500 | 900         | 1000 | NU3172       | 373                            | 417    | 400    | 587    | 423    | 4      | 4      | 219    |
|                  | 650 | 170 | 6                 | 6                  | 437 |   | 3150               | 5400 | 800         | 950  | NU2272M      | 386                            | 428    | 442    | 624    |        | 5      | 5      | 262    |
|                  | 750 | 224 | 7.5               | 7.5                | 455 |   | 4900               | 7600 | 700         | 850  | NUP2372M     | 390                            | 445    | 460    | 720    |        | 7      | 7      | 513    |
| 380              | 480 | 60  | 2.1               | 2.1                | 406 |   | 550                | 680  | 900         | 1180 | N2876        | 390                            | 401    | 410    | 470    |        | 2      | 2      | 25.9   |
|                  | 480 | 46  | 2.1               | 2.1                | 406 |   | 525                | 1050 | 950         | 1250 | NU1876M      | 390                            | 401    | 410    | 470    |        | 2      | 2      | 23.5   |
|                  | 520 | 82  | 4                 | 4                  |     |   | 1180               | 2540 | 920         | 1200 | N2976M       | 400                            | 419    | 428    | 490    |        | 3      | 3      | 82.8   |
|                  | 560 | 82  | 5                 | 5                  | 425 |   | 1220               | 2090 | 950         | 1200 | NU1076M      | 400                            | 420    | 430    | 540    |        | 4      | 4      | 71.0   |
|                  | 560 | 106 | 5                 | 5                  | 425 |   | 1930               | 3750 | 800         | 950  | NU2076EM     | 398                            | 422    | 430    | 542    |        | 4      | 4      | 93     |
|                  | 560 | 135 | 5                 | 5                  | 425 |   | 2250               | 4700 | 800         | 950  | NU3076EM     | 398                            | 417    | 430    | 542    |        | 4      | 4      | 116    |
|                  | 680 | 175 | 6                 | 6                  | 462 |   | 3760               | 6080 | 730         | 860  | NU2276EM     | 406                            | 445    | 457    | 654    |        | 5      | 5      | 276    |
| 400              | 500 | 46  | 2.1               | 2.1                | 423 |   | 565                | 1150 | 980         | 1250 | NU1880M      | 410                            | 419    | 428    | 490    |        | 2      | 2      | 21.2   |
|                  | 500 | 75  | 2.1               | 2.1                | 425 |   | 855                | 2010 | 980         | 1250 | NU3880Q1     | 410                            | 419    | 428    | 490    |        | 2      | 2      | 33.4   |
|                  | 540 | 65  | 4                 | 4                  | 435 |   | 900                | 1750 | 900         | 1150 | NU1980M      | 415                            | 429    | 439    | 525    |        | 3      | 3      | 42     |
|                  | 540 | 82  | 4                 | 4                  | 435 |   | 1350               | 2850 | 900         | 1150 | NU2980EM     | 415                            | 429    | 439    | 525    |        | 3      | 3      | 57.8   |
|                  | 540 | 82  | 4                 | 4                  | 438 |   | 1250               | 2510 | 900         | 1150 | NU2980M      | 415                            | 434    | 442    | 525    |        | 3      | 3      | 55.2   |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |     |       |        |       |     | Basic load ratings |       | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |     |
|------------------|-----|-----|-------|--------|-------|-----|--------------------|-------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|-----|
| d                | D   | B   | rsmin | r1smin | F     | E   | Cr                 | Cor   | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |     |
| mm               |     |     |       |        |       |     | KN                 |       | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |     |
|                  | 600 | 90  | 5     | 5      | 450   |     | 1450               | 2470  | 900         | 1100 | NU1080M      | 420                            | 446    | 455    | 580    |        | 4      | 4      | 92.5   |     |
|                  | 600 | 118 | 5     | 5      | 449   |     | 2150               | 4800  | 750         | 900  | NU2080EM     | 418                            | 446    | 454    | 582    |        | 4      | 4      | 122    |     |
|                  | 600 | 148 | 5     | 5      | 450   |     | 2330               | 4550  | 900         | 1100 | NU3080M      | 420                            | 446    | 455    | 580    |        | 4      | 4      | 153    |     |
|                  | 650 | 145 | 6     | 6      | 460   |     | 2920               | 5190  | 700         | 850  | NU2180M      | 420                            | 450    | 460    | 590    |        | 4      | 4      | 197    |     |
|                  | 650 | 200 | 6     | 6      | 460   |     | 3760               | 7170  | 700         | 850  | NU3180M      | 420                            | 450    | 460    | 590    |        | 4      | 4      | 274    |     |
| 420              | 520 | 46  | 2.1   | 2.1    | 447   |     | 605                | 1270  | 900         | 1100 | NU1884       | 440                            | 466    | 380    | 500    |        | 2      | 2      | 20.7   |     |
|                  | 520 | 75  | 2.1   | 2.1    | 447   |     | 900                | 2250  | 930         | 1150 | NJ3884M      | 427                            | 441    | 462    | 510    |        | 2      | 2      | 33.3   |     |
|                  | 560 | 65  | 4     | 4      |       | 528 | 1080               | 2010  | 930         | 1150 | NF1984F3     | 435                            | 523    |        | 530    | 533    |        |        | 45.2   |     |
|                  | 560 | 65  | 4     | 4      | 449   |     | 1080               | 1950  | 930         | 1150 | NJ1984MA     | 435                            | 442    | 466    | 545    |        | 3      |        | 46     |     |
|                  | 560 | 82  | 4     | 4      | 458   |     | 1290               | 2800  | 930         | 1150 | NU2984M      | 435                            | 452    | 463    | 545    |        | 3      | 3      | 58.1   |     |
|                  | 620 | 90  | 5     | 5      | 470   |     | 1440               | 2490  | 900         | 1100 | NU1084M      | 440                            | 466    | 475    | 600    |        | 4      | 4      | 98.0   |     |
|                  | 620 | 118 | 5     | 5      | 469   |     | 2400               | 4750  | 770         | 950  | NU2084EM     | 438                            | 466    | 474    | 602    |        | 4      | 4      | 127    |     |
|                  | 620 | 150 | 3     | 5      |       | 574 | 2850               | 5450  | 770         | 950  | NF3084EM     | 438                            | 466    |        | 602    | 586    |        | 4      | 4      | 162 |
|                  | 700 | 224 | 6     | 6      | 485   |     | 4950               | 8950  | 650         | 780  | NU3184EM     | 446                            | 478    | 490    | 694    |        | 5      | 5      | 368    |     |
| 440              | 540 | 60  | 2.1   | 2.1    | 464   |     | 790                | 1900  | 870         | 1050 | NU2888EM     | 450                            | 459    | 469    | 530    |        | 2      | 2      | 34.5   |     |
|                  | 600 | 74  | 4     | 4      | 482   |     | 1010               | 1980  | 870         | 1050 | NU1988M      | 455                            | 477    | 487    | 585    |        | 3      | 3      | 65     |     |
|                  | 600 | 95  | 4     | 4      | 481.5 |     | 1670               | 3550  | 870         | 1050 | NJ2988EM     | 455                            | 477    | 500    | 585    |        | 3      |        | 83.5   |     |
|                  | 600 | 118 | 4     | 4      | 481.5 |     | 1940               | 4250  | 850         | 1000 | NUP3988EM    | 455                            |        | 483    | 585    |        | 3      |        | 106    |     |
|                  | 650 | 94  | 6     | 6      | 493   |     | 1570               | 2430  | 850         | 1000 | NU1088M      | 466                            | 488    | 498    | 624    |        | 5      | 5      | 102    |     |
|                  | 650 | 122 | 6     | 6      | 487   |     | 2450               | 5000  | 670         | 820  | NU2088EM     | 463                            | 483    | 492    | 627    |        | 5      | 5      | 146    |     |
|                  | 720 | 122 | 6     | 6      |       | 648 | 2850               | 4300  | 800         | 950  | N1188        | 466                            | 488    |        | 690    | 670    |        | 5      | 5      | 207 |
|                  | 720 | 226 | 6     | 6      | 508   |     | 5230               | 9800  | 600         | 750  | NU3188       | 460                            | 498    | 518    | 700    |        | 5      | 5      | 374    |     |
| 445              | 815 | 210 | 7.5   | 7.5    | 539   |     | 4800               | 7950  | 750         | 1100 | NU689M       | 478                            | 535    | 560    | 770    |        | 6      | 6      | 501    |     |
| 460              | 580 | 56  | 3     | 3      |       | 553 | 795                | 1720  | 800         | 950  | N1892M       | 473                            | 548    |        | 567    | 558    | 2.5    | 2.5    | 37.2   |     |
|                  | 580 | 72  | 3     | 3      | 489   |     | 1030               | 2350  | 800         | 950  | NJ2892EM     | 473                            | 485    | 505    | 567    |        | 2.5    |        | 48.7   |     |
|                  | 620 | 95  | 4     | 4      | 502   |     | 1640               | 3500  | 800         | 950  | NJ2992       | 486                            | 511    | 550    | 610    |        | 3      | 3      | 83.4   |     |
|                  | 680 | 100 | 6     | 6      | 516   |     | 1690               | 2630  | 800         | 950  | NU1092M      | 486                            | 511    | 521    | 654    |        | 5      | 5      | 111    |     |
|                  | 680 | 128 | 6     | 6      | 513   |     | 2700               | 5450  | 650         | 800  | NU2092EM     | 483                            | 509    | 518    | 657    |        | 5      | 5      | 166    |     |
|                  | 680 | 163 | 6     | 6      | 516   |     | 2970               | 6150  | 650         | 790  | NU3092M      | 483                            | 496    | 508    | 657    |        | 5      | 5      | 211    |     |
|                  | 680 | 163 | 6     | 6      | 499   |     | 3300               | 6340  | 650         | 790  | NU3092EM     | 483                            | 491    | 504    | 657    |        | 5      | 5      | 211    |     |
|                  | 760 | 240 | 7.5   | 7.5    | 531   |     | 5450               | 10400 | 400         | 480  | NU3192       | 490                            | 526    | 536    | 730    |        | 6      | 6      | 467    |     |
|                  | 830 | 165 | 7.5   | 7.5    | 554   |     | 4200               | 6800  | 600         | 720  | NU1292       | 492                            | 542    | 559    | 798    |        | 6      | 6      | 405    |     |
|                  | 830 | 212 | 7.5   | 7.5    | 554   |     | 4860               | 8200  | 580         | 670  | NU2292M      | 492                            | 542    | 559    | 798    |        | 6      | 6      | 515    |     |



# Single Row Cylindrical Roller Bearings



| Basic dimensions |      |     |       |        |       |     | Basic load ratings |       | Limit speed |      | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |      |
|------------------|------|-----|-------|--------|-------|-----|--------------------|-------|-------------|------|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| d                | D    | B   | rsmin | r1smin | F     | E   | Cr                 | Cor   | Grease      | Oil  |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |      |
| mm               |      |     |       |        |       |     | KN                 |       | r/min       |      |              | mm                             |        |        |        |        |        | Kg     |        |      |
| 480              | 600  | 56  | 3     | 3      | 511   |     | 750                | 1620  | 840         | 950  | NU1896M      | 439                            | 507    | 516    | 587    |        | 2.5    | 2.5    | 37.5   |      |
|                  | 600  | 72  | 3     | 3      | 509.5 |     | 1050               | 2400  | 840         | 950  | NJ2896EM     | 493                            | 504    | 524    | 587    | 2.5    |        |        | 46.5   |      |
|                  | 700  | 100 | 6     | 6      | 536   |     | 1600               | 2970  | 720         | 860  | NU1096M      | 503                            | 531    | 538    | 677    |        | 5      | 5      | 128    |      |
|                  | 700  | 128 | 6     | 6      | 536   |     | 2600               | 5250  | 600         | 720  | NU2096MA     | 503                            | 529    | 538    | 677    |        | 5      | 5      | 176    |      |
|                  | 790  | 248 | 7.5   | 7.5    | 547   |     | 5650               | 10700 | 500         | 600  | NU3196EM     | 512                            | 536    | 552    | 758    |        | 6      | 6      | 495    |      |
|                  | 790  | 248 | 7.5   | 7.5    | 556   |     | 5700               | 11000 | 500         | 600  | NU3196M      | 512                            | 545    | 561    | 767    |        | 6      | 6      | 508    |      |
| 500              | 620  | 56  | 3     | 3      |       | 592 | 795                | 1700  | 780         | 940  | NF18/500EM   | 513                            |        |        | 607    | 598    |        | 2.5    | 2.5    | 38.5 |
|                  | 620  | 72  | 3     | 3      | 530   |     | 1130               | 2670  | 780         | 940  | NU28/500EM   | 513                            | 526    | 534    | 607    |        | 2.5    | 2.5    | 48.5   |      |
|                  | 670  | 78  | 5     | 5      | 544   |     | 1160               | 2350  | 720         | 880  | NU19/500EM   | 518                            | 537    | 549    | 652    |        | 4      | 4      | 80     |      |
|                  | 670  | 100 | 5     | 5      | 543   |     | 1930               | 4300  | 750         | 900  | NU29/500     | 522                            | 537    | 549    | 648    |        | 3      | 3      | 101    |      |
|                  | 670  | 128 | 5     | 5      |       | 633 | 2250               | 5150  | 670         | 840  | N39/500EM    | 518                            | 627    | 638    | 652    |        | 4      |        | 128    |      |
|                  | 720  | 100 | 6     | 6      | 556   |     | 1680               | 3050  | 720         | 880  | NJ10/500     | 523                            | 550    |        | 697    |        | 5      | 5      | 136    |      |
|                  | 720  | 128 | 6     | 6      | 553   |     | 2850               | 5900  | 620         | 720  | NU20/500EM   | 523                            | 549    | 558    | 697    |        | 5      | 5      | 175    |      |
|                  | 720  | 167 | 6     | 6      | 556   |     | 3210               | 6970  | 620         | 720  | NU30/500     | 523                            | 530    | 545    | 697    |        | 5      | 5      | 232    |      |
|                  | 830  | 264 | 7.5   | 7.5    | 581   |     | 6250               | 12200 | 480         | 580  | NU31/500     | 532                            | 550    | 580    | 798    |        | 6      | 6      | 602    |      |
|                  | 920  | 185 | 7.5   | 7.5    | 603.1 |     | 5050               | 8450  | 540         | 650  | NU12/500M    | 532                            | 593    | 610    | 888    |        | 6      | 6      | 585    |      |
| 530              | 650  | 72  | 3     | 3      |       | 622 | 1170               | 2890  | 900         | 1100 | NF28/530     | 544                            |        |        | 645    | 625    |        | 2.5    | 2.5    | 52.2 |
|                  | 710  | 82  | 5     | 5      | 573   |     | 1500               | 2980  | 680         | 830  | NJ19/530EM   | 548                            | 568    | 598    | 692    |        | 4      |        | 94.5   |      |
|                  | 710  | 106 | 5     | 5      | 580   |     | 2000               | 4800  | 400         | 500  | NU29/530F3   | 555                            | 585    | 605    | 585    |        | 4      | 4      | 125    |      |
|                  | 780  | 112 | 6     | 6      | 593   |     | 2200               | 4050  | 650         | 780  | NU10/530M    | 553                            | 585    | 598    | 757    |        | 5      | 5      | 187    |      |
|                  | 780  | 145 | 6     | 6      | 591   |     | 3650               | 7360  | 550         | 650  | NU20/530EM   | 553                            | 587    | 596    | 757    |        | 5      | 5      | 252    |      |
|                  | 870  | 272 | 7.5   | 7.5    | 612   |     | 7500               | 13500 | 460         | 550  | NU31/530EM   | 562                            | 605    | 617    | 838    |        | 6      | 6      | 663    |      |
| 560              | 680  | 56  | 3     | 3      | 591   |     | 810                | 1830  | 670         | 820  | NJ18/560M    | 573                            | 584    | 606    | 667    |        | 2.5    | 2.5    | 42.5   |      |
|                  | 680  | 72  | 3     | 3      |       | 651 | 1170               | 2950  | 670         | 820  | NF28/560     | 573                            | 645    |        | 665    | 657    |        | 2.5    | 2.5    | 53   |
|                  | 750  | 85  | 5     | 5      | 608   |     | 1660               | 3250  | 650         | 780  | NJ19/560     | 578                            | 600    | 613    | 732    |        | 4      | 4      | 111    |      |
|                  | 750  | 112 | 5     | 5      | 607   |     | 2400               | 5450  | 650         | 780  | NJ29/560     | 586                            | 620    | 693    | 724    |        | 4      | 4      | 148    |      |
|                  | 750  | 112 | 5     | 5      |       | 703 | 2420               | 5600  | 650         | 780  | N29/560      | 586                            |        |        | 724    | 713    |        | 4      | 4      | 138  |
|                  | 820  | 115 | 6     | 6      | 625   |     | 2250               | 4200  | 620         | 720  | NU10/560M    | 583                            | 617    | 630    | 797    |        | 5      | 5      | 215    |      |
|                  | 820  | 150 | 6     | 6      | 626   |     | 3650               | 7600  | 500         | 600  | NU20/560EM   | 583                            | 616    | 631    | 797    |        | 5      | 5      | 289    |      |
|                  | 1030 | 206 | 9.5   | 9.5    | 668   |     | 6850               | 11000 | 460         | 550  | NU12/560MA   | 600                            | 657    | 674    | 990    |        | 8      | 8      | 809    |      |
| 600              | 730  | 60  | 3     | 3      | 632   |     | 860                | 2000  | 650         | 780  | NU18/600EM   | 613                            | 625    | 637    | 717    |        | 2.5    | 2.5    | 49.3   |      |
|                  | 730  | 78  | 3     | 3      | 632   |     | 1250               | 3350  | 620         | 730  | NU28/600EM   | 613                            | 625    | 637    | 717    |        | 2.5    | 2.5    | 68.5   |      |
|                  | 800  | 90  | 5     | 5      | 649   |     | 1860               | 3600  | 620         | 750  | NU19/600     | 618                            | 642    | 645    | 782    |        | 4      | 4      | 128    |      |

# Single Row Cylindrical Roller Bearings



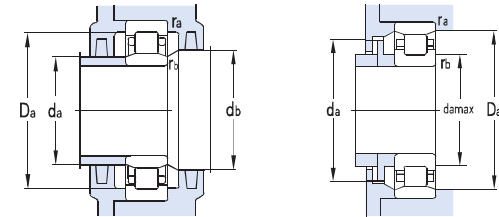
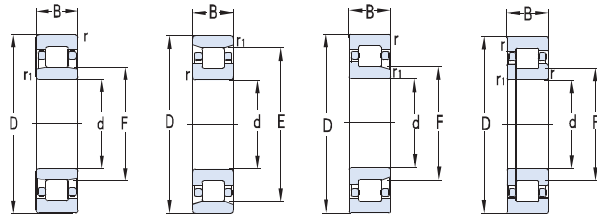
| Basic dimensions |      |     |                   |                    |     |     | Basic load ratings |       | Limit speed |     | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|------|-----|-------------------|--------------------|-----|-----|--------------------|-------|-------------|-----|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D    | B   | r <sub>smin</sub> | r <sub>1smin</sub> | F   | E   | Cr                 | Cor   | Grease      | Oil |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |      |     |                   |                    |     |     | KN                 |       | r/min       |     |              | mm                             |        |        |        |        |        | Kg     |        |
|                  | 800  | 118 | 5                 | 5                  | 649 |     | 2900               | 6550  | 620         | 750 | NU29/600E    | 618                            |        | 675    | 782    |        | 4      | 4      | 163    |
|                  | 830  | 150 | 5                 | 5                  | 655 |     | 3410               | 7450  | 600         | 700 | NU6/600      | 619                            | 647    | 703    | 806    |        | 4      | 4      | 237    |
|                  | 870  | 118 | 6                 | 6                  | 667 |     | 2840               | 5250  | 590         | 680 | NU10/600     | 623                            | 658    | 672    | 847    |        | 5      | 5      | 234    |
|                  | 870  | 155 | 6                 | 6                  | 661 |     | 4180               | 8000  | 500         | 600 | NU20/600EM   | 623                            | 652    | 667    | 847    |        | 5      | 5      | 320    |
|                  | 870  | 200 | 6                 | 6                  | 661 |     | 5390               | 11000 | 500         | 600 | NU30/600E    | 623                            | 655    | 666    | 847    |        | 5      | 5      | 412    |
|                  | 1090 | 155 | 9.5               | 9.5                | 740 |     | 5330               | 9200  | 500         | 600 | NU2/600MA/HC | 623                            | 655    | 666    | 1062   |        | 8      | 8      | 686    |
| 620              | 780  | 102 | 4                 | 4                  | 740 |     | 1950               | 4800  | 600         | 750 | NFP6/620Q1   | 654                            | 680    | 695    | 765    |        | 3      | 3      | 124    |
|                  | 780  | 102 | 4                 | 4                  | 740 |     | 1950               | 4800  | 600         | 750 | N620/780     | 654                            | 680    | 695    | 765    |        | 3      | 3      | 124    |
| 630              | 780  | 69  | 4                 | 4                  | 667 | 744 | 1050               | 2500  | 630         | 750 | NJ18/630EM   |                                | 662    | 685    | 765    | 744    | 3      | 3      | 74.2   |
|                  | 780  | 88  | 4                 | 4                  |     | 745 | 1800               | 4500  | 630         | 750 | N28/630M     | 645                            | 737    |        | 765    |        | 3      | 3      | 95.6   |
|                  | 780  | 112 | 4                 | 4                  |     |     | 2150               | 5750  | 550         | 650 | N38/630M     | 645                            | 739    | 750    | 765    |        | 3      | 3      | 118    |
|                  | 850  | 100 | 6                 | 6                  | 688 |     | 1980               | 4000  | 600         | 700 | NU19/630M    | 653                            | 681    | 694    | 827    |        | 5      | 5      | 158    |
|                  | 850  | 100 | 6                 | 6                  | 683 |     | 2150               | 4250  | 600         | 700 | NU19/630EM   | 653                            | 676    | 688    | 827    |        | 5      | 5      | 160    |
|                  | 850  | 128 | 6                 | 6                  | 688 |     | 3050               | 6950  | 580         | 680 | NU29/630     | 653                            | 678    | 689    | 827    |        | 5      | 5      | 210    |
|                  | 850  | 128 | 6                 | 6                  | 683 |     | 3250               | 7250  | 580         | 680 | NU29/630EM   | 653                            | 678    | 689    | 827    |        | 5      | 5      | 214    |
|                  | 920  | 128 | 7.5               | 7.5                | 702 |     | 3400               | 6250  | 450         | 530 | NU10/630EM   | 658                            | 691    | 706    | 892    |        | 6      | 6      | 284    |
|                  | 920  | 170 | 7.5               | 7.5                | 699 |     | 4700               | 9500  | 480         | 560 | NU20/630EM   | 658                            | 690    | 705    | 892    |        | 6      | 6      | 395    |
|                  | 920  | 212 | 7.5               | 7.5                | 699 |     | 6450               | 14500 | 450         | 530 | NU30/630     | 658                            | 690    | 705    | 892    |        | 6      | 6      | 485    |
| 670              | 820  | 69  | 4                 | 4                  | 708 |     | 1230               | 2800  | 550         | 650 | NJ18/670     |                                | 700    | 727    | 805    |        | 3      |        | 83.8   |
|                  | 820  | 112 | 4                 | 4                  | 706 |     | 2570               | 7000  | 560         | 670 | NJ38/670Q1   | 640                            | 700    | 727    | 805    |        | 3      | 3      | 133    |
|                  | 900  | 103 | 6                 | 6                  | 731 |     | 2420               | 4900  | 530         | 630 | NU19/670     | 693                            | 730    | 755    | 877    |        | 5      | 5      | 193    |
|                  | 980  | 136 | 7.5               | 7.5                | 747 |     | 3700               | 6800  | 430         | 500 | NU10/670     | 698                            | 736    | 753    | 952    |        | 6      | 6      | 344    |
|                  | 980  | 180 | 7.5               | 7.5                | 746 |     | 5400               | 11500 | 430         | 500 | NU20/670E    | 698                            | 736    | 752    | 952    |        | 6      | 6      | 477    |
|                  | 980  | 230 | 7.5               | 7.5                |     | 914 | 6930               | 15000 | 430         | 500 | N30/670      |                                | 908    |        | 952    | 919    | 3      |        | 594    |
|                  | 980  | 230 | 7.5               | 7.5                | 744 |     | 6500               | 14500 | 430         | 500 | NU30/670M    | 698                            | 736    | 750    | 952    |        | 6      | 6      | 596    |
| 700              | 930  | 160 | 6                 | 6                  | 760 |     | 3520               | 8500  | 500         | 600 | NUP6/700     | 733                            |        | 772    | 900    |        | 5      | 5      | 316    |
| 710              | 870  | 74  | 4                 | 4                  |     | 830 | 1450               | 3370  | 500         | 600 | N8/710       | 725                            |        |        | 855    | 835    | 3      | 3      | 102    |
|                  | 870  | 95  | 4                 | 4                  |     | 831 | 1880               | 4950  | 480         | 560 | N28/710EM    | 725                            | 825    |        | 855    | 835    | 3      | 3      | 128    |
|                  | 950  | 106 | 6                 | 6                  | 770 |     | 2590               | 5500  | 480         | 560 | NU19/710     | 740                            | 755    |        | 900    |        | 5      | 5      | 210    |
|                  | 950  | 140 | 6                 | 6                  | 766 |     | 3650               | 8250  | 480         | 560 | NU29/710EM   | 733                            | 760    | 772    | 927    |        | 5      | 5      | 294    |
|                  | 950  | 140 | 6                 | 6                  | 776 |     | 3000               | 7000  | 480         | 560 | NU29/710M    | 733                            | 760    | 772    | 927    |        | 5      | 5      | 291    |
|                  | 1030 | 140 | 7.5               | 7.5                | 778 |     | 4550               | 8400  | 420         | 490 | NU10/710EM   | 738                            | 769    | 783    | 1002   |        | 6      | 6      | 420    |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |      |     |       |        |       |      | Basic load ratings |       | Limit speed |     | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|------|-----|-------|--------|-------|------|--------------------|-------|-------------|-----|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D    | B   | rsmin | r1smin | F     | E    | Cr                 | Cor   | Grease      | Oil |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |      |     |       |        |       |      | KN                 |       | r/min       |     |              | mm                             |        |        |        |        |        | Kg     |        |
|                  | 1030 | 185 | 7.5   | 7.5    | 787   |      | 5800               | 12000 | 420         | 490 | NU20/710EM   | 738                            | 780    | 793    | 1002   |        | 6      | 6      | 535    |
| 751              | 920  | 78  | 5     | 5      | 794   |      | 1510               | 3480  | 480         | 590 | N18/750M     | 770                            | 784    | 800    | 900    |        | 4      | 4      | 102    |
|                  | 920  | 100 | 5     | 5      |       | 880  | 2160               | 5500  | 480         | 590 | N28/750      | 773                            | 875    |        | 900    | 885    | 5      | 5      | 145    |
|                  | 1000 | 112 | 6     | 6      |       | 943  | 2750               | 5750  | 470         | 550 | NF19/750EM   | 773                            | 938    |        | 977    | 953    | 5      | 5      | 264    |
|                  | 1090 | 150 | 7.5   | 7.5    | 830   |      | 4500               | 8500  | 350         | 415 | NU10/750EM   | 778                            | 823    | 838    | 1062   |        | 6      | 6      | 492    |
|                  | 1090 | 195 | 7.5   | 7.5    | 832   |      | 6700               | 14500 | 350         | 415 | NU20/750EM   | 778                            | 823    | 838    | 1062   |        | 6      | 6      | 634    |
| 800              | 980  | 82  | 5     | 5      |       | 936  | 1690               | 4000  | 430         | 510 | NF18/800     | 818                            | 930    |        | 950    | 942    | 5      | 5      | 133    |
|                  | 980  | 82  | 5     | 5      | 846   |      | 1700               | 4200  | 430         | 510 | NJ18/800EM   | 818                            | 838    | 866    | 962    |        | 4      |        | 144    |
|                  | 1150 | 155 | 7.5   | 7.5    | 883   |      | 5400               | 10500 | 320         | 380 | NU10/800EM   | 828                            | 869    | 889    | 1122   |        | 6      | 6      | 565    |
|                  | 1150 | 200 | 7.5   | 7.5    | 882   |      | 6900               | 14500 | 320         | 380 | NU20/800EM   | 828                            | 868    | 888    | 1122   |        | 6      | 6      | 710    |
| 820              | 990  | 72  | 5     | 5      |       | 943  | 1180               | 2960  | 450         | 530 | N6/820       | 840                            | 937    |        | 970    | 944    | 4      | 4      | 128    |
| 850              | 1030 | 106 | 5     | 5      | 902   |      | 2050               | 5900  | 410         | 480 | NU28/850M    | 868                            | 891    | 908    | 1012   |        | 4      | 4      | 192    |
|                  | 1120 | 118 | 6     | 6      | 919   |      | 2930               | 7000  | 390         | 460 | NJ19/850     | 873                            | 909    | 926    | 1097   |        | 5      | 5      | 326    |
|                  | 1120 | 155 | 6     | 6      |       | 1059 | 4500               | 11300 | 390         | 460 | N29/850EM    | 873                            | 1052   |        | 1097   | 1070   | 5      | 5      | 428    |
| 900              | 1090 | 85  | 5     | 5      | 949   |      | 1900               | 4850  | 370         | 440 | NU18/900M    | 918                            | 942    | 956    | 1072   |        | 4      | 4      | 172    |
|                  | 1090 | 112 | 5     | 5      | 949   |      | 2650               | 7150  | 370         | 440 | NU28/900M    | 918                            | 944    | 956    | 1072   |        | 4      | 4      | 234    |
|                  | 1090 | 140 | 5     | 5      | 945   |      | 3300               | 9100  | 350         | 420 | NU38/900     |                                |        |        |        |        |        |        | 268    |
|                  | 1180 | 122 | 6     | 6      | 966.5 |      | 4050               | 8700  | 350         | 420 | NU19/900EM   | 923                            | 957    | 973    | 1157   |        | 5      | 5      | 378    |
|                  | 1180 | 165 | 6     | 6      | 969   |      | 5750               | 13500 | 350         | 420 | NU29/900EM   | 923                            | 958    | 975    | 1157   |        | 5      | 5      | 565    |
|                  | 1200 | 150 | 6     | 6      |       | 1124 | 4450               | 10200 | 350         | 420 | N6/900       | 923                            | 985    |        | 1165   |        | 5      | 5      | 485    |
| 950              | 1250 | 175 | 7.5   | 7.5    | 1024  |      | 5560               | 13000 | 340         | 400 | NU29/950     | 978                            | 1013   | 1013   | 1222   |        | 6      | 6      | 596    |
| 1000             | 1220 | 100 | 6     | 6      | 1053  |      | 2650               | 6550  | 350         | 420 | NU18/1000M   | 1023                           | 1040   | 1060   | 1197   |        | 5      | 5      | 264    |
|                  | 1220 | 128 | 6     | 6      | 1053  |      | 3600               | 9500  | 350         | 420 | NJ28/1000EM  | 1023                           | 1040   | 1082   | 1197   |        | 5      |        | 345    |
|                  | 1320 | 185 | 7.5   | 7.5    | 1082  |      | 6700               | 17000 | 290         | 350 | NU29/1000E   | 1028                           | 1072   | 1089   | 1292   |        | 6      | 6      | 705    |
| 1060             | 1280 | 128 | 6     | 6      |       | 1225 | 3550               | 10500 | 310         | 370 | N28/1060M    | 1083                           | 1218   |        | 1257   | 1230   | 5      | 5      | 355    |
|                  | 1400 | 195 | 7.5   | 7.5    | 1146  |      | 7200               | 17000 | 290         | 350 | NU29/1060EM  | 1028                           | 1133   | 1152   | 1372   |        | 6      | 6      | 875    |
|                  | 1400 | 250 | 7.5   | 7.5    | 1146  |      | 9000               | 23500 | 250         | 310 | NU39/1060EM  | 1028                           | 1140   | 1153   | 1372   |        | 6      | 6      | 1060   |
|                  | 1500 | 325 | 9.5   | 9.5    |       | 1390 | 12500              | 32500 | 230         | 290 | N30/1060     | 1094                           | 1382   |        | 1466   | 1402   | 8      | 8      | 1880   |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |      |     |       |        |      |      | Basic load ratings |       | Limit speed |     | Designations | Abutment and fillet dimensions |        |        |        |        |        | Weight |        |
|------------------|------|-----|-------|--------|------|------|--------------------|-------|-------------|-----|--------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| d                | D    | B   | rsmin | r1smin | F    | E    | Cr                 | Cor   | Grease      | Oil |              | da min                         | da max | db min | Da max | Da max | ra max |        | rb max |
| mm               |      |     |       |        |      |      | KN                 |       | r/min       |     |              | mm                             |        |        |        |        |        | Kg     |        |
| 1120             | 1360 | 106 | 6     | 6      | 1182 |      | 3350               | 8600  | 270         | 330 | NJ18/1120EM  | 1143                           | 1175   | 1210   | 1337   |        | 5      | 5      | 330    |
| 1180             | 1420 | 106 | 6     | 6      | 1242 |      | 2950               | 7750  | 250         | 320 | NJ18/1180EM  | 1203                           | 1228   | 1270   | 1397   |        | 5      |        | 354    |
|                  | 1540 | 206 | 7.5   | 7.5    | 1258 |      | 8950               | 21500 | 180         | 220 | NU29/1180EM  | 1208                           | 1250   | 1266   | 1512   |        | 6      | 6      | 1046   |
|                  | 1540 | 272 | 7.5   | 7.5    |      | 1466 | 11000              | 28500 | 190         | 250 | N39/1180M    | 1208                           | 1458   |        | 1512   | 1474   | 6      | 6      | 1350   |
| 1200             | 1520 | 185 | 7.5   | 7.5    | 1289 |      | 6220               | 17000 | 110         | 140 | NU6/1200     | 1240                           | 1274   | 1304   | 1480   |        | 6      | 6      | 825    |
| 1250             | 1500 | 112 | 6     | 6      | 1316 |      | 3630               | 9550  | 300         | 380 | NU18/1250    | 1280                           | 1306   | 1326   | 1470   |        | 5      | 5      | 386    |
|                  | 1750 | 290 | 9.5   | 9.5    |      | 1635 | 12500              | 29500 | 165         | 190 | N20/1250M    | 1284                           | 1625   |        | 1716   | 1650   | 8      | 8      | 2310   |
| 1320             | 1600 | 122 | 6     | 6      | 1395 |      | 3650               | 9500  | 190         | 250 | NU18/1320M   | 1343                           | 1382   | 1403   | 1577   |        | 5      | 5      | 525    |
|                  | 1720 | 175 | 7.5   | 7.5    | 1425 |      | 7920               | 19500 | 190         | 240 | NU19/1320    | 1348                           | 1406   | 1428   | 1692   |        | 6      | 6      | 1110   |
|                  | 1720 | 230 | 7.5   | 7.5    | 1420 |      | 10900              | 29000 | 180         | 230 | NU29/1320E   | 1348                           | 1405   | 1430   | 1692   |        | 6      | 6      | 1510   |
|                  | 1720 | 300 | 7.5   | 7.5    |      | 1640 | 12600              | 32500 | 175         | 210 | N39/1320M    | 1348                           | 1630   |        | 1692   | 1655   | 6      | 6      | 1890   |
| 1400             | 1700 | 175 | 7.5   | 7.5    |      | 1637 | 6300               | 18400 | 175         | 210 | N28/1400EM   | 1428                           | 1627   |        | 1672   | 1647   | 6      | 6      | 858    |
| 1500             | 1820 | 140 | 7.5   | 7.5    | 1585 |      | 6220               | 17300 | 195         | 250 | NU18/1500/HC | 1528                           | 1570   | 1748   | 1792   |        | 6      | 6      | 773    |

# Spherical Roller Bearings



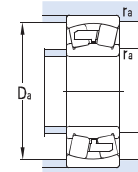
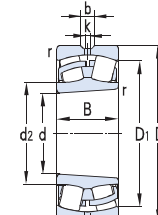
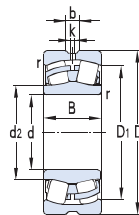
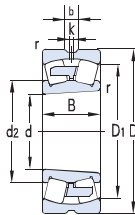
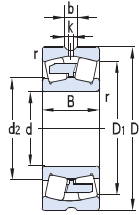
| Basic dimensions |     |    |                 | Basic load ratings |                 | Limit speed |      | Designations | Other dimensions |                |     |     | Contact surface and chamfer dimensions |                |                | Calculation factor |                |                |                | Weight |
|------------------|-----|----|-----------------|--------------------|-----------------|-------------|------|--------------|------------------|----------------|-----|-----|--|----------------|----------------|--------------------|----------------|----------------|----------------|--------|
| d                | D   | B  | r <sub>sm</sub> | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil  |              | d <sub>2</sub>   | D <sub>1</sub> | b   | k   | d <sub>a</sub>                         | D <sub>a</sub> | r <sub>a</sub> | e                  | y <sub>1</sub> | y <sub>2</sub> | y <sub>0</sub> |        |
| mm               |     |    |                 | KN                 |                 | r/min       |      |              | mm               |                |     |     | mm                                     |                |                |                    |                |                |                | Kg     |
| 40               | 80  | 23 | 1.1             | 91.7               | 85.5            | 6000        | 7500 | 22208C/W33   | 50.4             | 68.9           | 5.5 | 2   | 47                                     | 73             | 1              | 0.28               | 2.40           | 3.50           | 2.50           | 0.523  |
|                  | 90  | 33 | 1.5             | 143                | 133             | 4500        | 5600 | 22308CA/W33  | 56               | 74             | 5.5 | 2.5 | 49                                     | 81             | 1.5            | 0.39               | 1.73           | 2.58           | 1.69           | 1.01   |
|                  | 90  | 33 | 1.5             | 143                | 133             | 4500        | 5600 | 22308C/W33   | 56               | 74             | 5.5 | 2.5 | 49                                     | 81             | 1.5            | 0.38               | 1.80           | 2.70           | 1.80           | 1.01   |
| 45               | 85  | 23 | 1.1             | 97                 | 93.5            | 5300        | 6700 | 22209CA/W33  | 57.6             | 73             | 5.5 | 2   | 52                                     | 78             | 1              | 0.28               | 2.40           | 3.50           | 2.50           | 0.629  |
|                  | 100 | 36 | 1.5             | 174                | 174             | 3800        | 4800 | 22309C/W33   | 57.4             | 81.4           | 5.5 | 2.5 | 54                                     | 91             | 1.5            | 0.26               | 2.60           | 3.90           | 2.50           | 1.51   |
|                  | 100 | 36 | 1.5             | 174                | 174             | 3800        | 4800 | 22309CA/W33  | 63               | 81.4           | 5.5 | 2.5 | 54                                     | 91             | 1.5            | 0.38               | 1.80           | 2.60           | 1.70           | 1.52   |
| 50               | 90  | 23 | 1.1             | 98.8               | 103             | 5000        | 6300 | 22210CA/W33  | 62.2             | 81.6           | 5.5 | 2   | 57                                     | 83             | 1              | 0.26               | 2.60           | 3.90           | 2.50           | 0.630  |
|                  | 110 | 40 | 2               | 209                | 213             | 3400        | 4300 | 22310C/W33   | 62.9             | 90.6           | 5.5 | 2.5 | 61                                     | 100            | 2              | 0.38               | 1.80           | 2.70           | 1.80           | 1.96   |
|                  | 110 | 40 | 2               | 209                | 213             | 3400        | 4300 | 22310CA/W33  | 69               | 90.6           | 5.5 | 2.5 | 60                                     | 100            | 2              | 0.38               | 1.80           | 2.60           | 1.70           | 2.17   |
| 55               | 100 | 25 | 1.5             | 119                | 120             | 4500        | 5600 | 22211CA/W33  | 68.8             | 87.3           | 5.5 | 2   | 64                                     | 91             | 1.5            | 0.25               | 2.70           | 4.00           | 2.60           | 0.887  |
|                  | 100 | 25 | 1.5             | 119                | 121             | 4500        | 5600 | 22211C/W33   | 65.7             | 87.3           | 5.5 | 2   | 62                                     | 91             | 1.5            | 0.24               | 2.80           | 4.20           | 2.80           | 0.856  |
|                  | 120 | 43 | 2               | 257                | 266             | 3200        | 4000 | 22311C/W33   | 69               | 99.5           | 5.5 | 2.5 | 65                                     | 110            | 2              | 0.37               | 1.90           | 2.90           | 1.80           | 2.37   |
|                  | 120 | 43 | 2               | 257                | 266             | 3200        | 4000 | 22311CA/W33  | 75               | 99.5           | 5.5 | 2.5 | 65                                     | 110            | 2              | 0.37               | 1.80           | 2.70           | 1.80           | 2.60   |
| 60               | 110 | 28 | 1.5             | 148                | 158             | 4000        | 5000 | 22212CA/W33  | 75.2             | 95             | 5.5 | 2   | 69                                     | 101            | 1.5            | 0.24               | 2.80           | 4.20           | 2.80           | 1.01   |
|                  | 110 | 28 | 1.5             | 148                | 158             | 4300        | 5300 | 22212C/W33   | 75.5             | 95             | 5.5 | 2   | 69                                     | 101            | 1.5            | 0.24               | 2.80           | 4.20           | 2.80           | 1.11   |
|                  | 130 | 31 | 2.1             | 201                | 228             | 3400        | 4300 | 21312C/W33   | 87.8             | 115            | 5.5 | 3   | 72                                     | 118            | 2              | 0.22               | 3.00           | 4.60           | 2.80           | 2.08   |
|                  | 130 | 46 | 2.1             | 295                | 318             | 2800        | 3600 | 22312C/W33   | 81.4             | 108            | 5.5 | 3   | 72                                     | 118            | 2              | 0.37               | 1.90           | 2.90           | 1.80           | 3.25   |
|                  | 130 | 46 | 2.1             | 295                | 318             | 3000        | 3800 | 22312CA/W33  | 81.4             | 108            | 5.5 | 3   | 72                                     | 118            | 2              | 0.37               | 1.80           | 2.70           | 1.80           | 3.33   |
| 65               | 120 | 31 | 1.5             | 183                | 205             | 3800        | 4800 | 22213CA/W33  | 81.5             | 103            | 5.5 | 2.5 | 74                                     | 111            | 1.5            | 0.25               | 2.70           | 4.00           | 2.50           | 1.56   |
|                  | 120 | 31 | 1.5             | 183                | 205             | 3800        | 4800 | 22213C/W33   | 81.5             | 103            | 5.5 | 2.5 | 74                                     | 111            | 1.5            | 0.25               | 2.70           | 4.00           | 2.50           | 1.55   |
|                  | 140 | 48 | 2.1             | 323                | 342             | 2600        | 3400 | 22313C/W33   | 88.6             | 116            | 5.5 | 3   | 77                                     | 128            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 4.92   |
|                  | 140 | 48 | 2.1             | 323                | 342             | 2600        | 3400 | 22313CA/W33  | 88.6             | 116            | 5.5 | 3   | 77                                     | 128            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 4.92   |
| 70               | 125 | 31 | 1.5             | 198                | 217             | 3600        | 4500 | 22214CA/W33  | 86.8             | 109            | 6   | 2.5 | 79                                     | 116            | 1.5            | 0.24               | 3.00           | 4.60           | 2.80           | 1.83   |
|                  | 125 | 31 | 1.5             | 198                | 217             | 3600        | 4500 | 22214C/W33   | 86.8             | 109            | 6   | 2.5 | 79                                     | 116            | 1.5            | 0.24               | 3.00           | 4.60           | 2.80           | 1.63   |
|                  | 150 | 51 | 2.1             | 380                | 408             | 2200        | 3000 | 22314C/W33   | 95.8             | 125            | 8.3 | 4   | 82                                     | 138            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 4.48   |
|                  | 150 | 51 | 2.1             | 380                | 408             | 2200        | 3000 | 22314CA/W33  | 95.8             | 125            | 8.3 | 4   | 82                                     | 138            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 5.23   |
| 75               | 115 | 40 | 1.1             | 164                | 220             | 2900        | 3500 | 24015CA/W33  | 87.5             | 100            | 5.5 | 3   | 82                                     | 106            | 1              | 0.32               | 2.09           | 3.11           | 2.04           | 1.48   |
|                  | 130 | 31 | 1.5             | 201                | 228             | 3400        | 4300 | 22215CA/W33  | 92               | 114            | 5.5 | 2.5 | 84                                     | 121            | 1.5            | 0.24               | 3.00           | 4.60           | 2.80           | 1.71   |
|                  | 130 | 31 | 1.5             | 201                | 228             | 3400        | 4300 | 22215C/W33   | 92               | 114            | 5.5 | 2.5 | 84                                     | 121            | 1.5            | 0.24               | 3.00           | 4.60           | 2.80           | 1.71   |
|                  | 160 | 55 | 2.1             | 418                | 451             | 2200        | 3000 | 22315C/W33   | 101              | 133            | 8.3 | 4   | 87                                     | 148            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 5.39   |

# Spherical Roller Bearings



| Basic dimensions |     |      |                  | Basic load ratings |     | Limit speed |      | Designations | Other dimensions |     |      |     | Contact surface and chamfer dimensions |     |     | Calculation factor |      |      |      | Weight |
|------------------|-----|------|------------------|--------------------|-----|-------------|------|--------------|------------------|-----|------|-----|--|-----|-----|--------------------|------|------|------|--------|
| d                | D   | B    | r <sub>min</sub> | Cr                 | Cor | Grease      | Oil  |              | d2               | D1  | b    | k   | da                                     | Da  | ra  | e                  | y1   | y2   | y0   |        |
| mm               |     |      |                  | KN                 |     | r/min       |      |              | mm               |     |      |     | mm                                     |     |     |                    |      |      |      | Kg     |
|                  | 160 | 55   | 2.1              | 418                | 451 | 2200        | 3000 | 22315CA/W33  | 101              | 133 | 8.3  | 4   | 87                                     | 148 | 2   | 0.35               | 1.90 | 2.90 | 1.80 | 5.44   |
| 80               | 140 | 33   | 2                | 224                | 257 | 3200        | 4000 | 22216C/W33   | 95.1             | 122 | 5.5  | 2.5 | 91                                     | 129 | 2   | 0.22               | 3.00 | 4.60 | 2.80 | 2.10   |
|                  | 140 | 33   | 2                | 224                | 257 | 3200        | 4000 | 22216CA/W33  | 98.9             | 122 | 5.5  | 2.5 | 91                                     | 129 | 2   | 0.24               | 2.80 | 4.20 | 2.80 | 2.08   |
|                  | 170 | 58   | 2.1              | 466                | 513 | 2000        | 2800 | 22316C/W33   | 109              | 142 | 8.3  | 4   | 92                                     | 158 | 2   | 0.34               | 1.90 | 2.90 | 1.80 | 6.60   |
|                  | 170 | 58   | 2.1              | 466                | 513 | 2000        | 2800 | 22316CA/W33  | 109              | 142 | 8.3  | 4   | 92                                     | 158 | 2   | 0.34               | 1.99 | 2.96 | 1.94 | 7.47   |
| 85               | 150 | 36   | 2                | 271                | 309 | 2800        | 3600 | 22217C/W33   | 105              | 132 | 6.5  | 3   | 96                                     | 139 | 2   | 0.23               | 3.00 | 4.60 | 2.80 | 2.73   |
|                  | 150 | 36   | 2                | 271                | 309 | 3000        | 3800 | 22217CA/W33  | 105              | 132 | 6.5  | 3   | 96                                     | 139 | 2   | 0.24               | 2.80 | 4.20 | 2.80 | 2.69   |
|                  | 180 | 41   | 3                | 309                | 356 | 2000        | 2800 | 21317CA/W33  | 118              | 152 |      |     | 99                                     | 166 | 2.5 | 0.24               | 2.80 | 4.20 | 2.80 | 5.42   |
|                  | 180 | 60   | 3                | 523                | 589 | 1900        | 2600 | 22317C/W33   | 107              | 150 | 8.3  | 4   | 99                                     | 166 | 2.5 | 0.33               | 2.00 | 3.00 | 2.00 | 7.38   |
|                  | 180 | 60   | 3                | 523                | 589 | 1900        | 2600 | 22317CA/W33  | 115              | 150 | 8.3  | 4   | 99                                     | 166 | 2.5 | 0.34               | 1.99 | 2.96 | 1.94 | 8.19   |
| 90               | 140 | 50   | 1.5              | 233                | 390 | 2600        | 3400 | 24018CA/W33  | 106              | 121 | 5.5  | 3   | 100                                    | 125 | 1.5 | 0.33               | 2.00 | 3.00 | 2.00 | 3.25   |
|                  | 160 | 40   | 2                | 309                | 356 | 2600        | 3400 | 22218C/W33   | 106              | 139 | 8.3  | 2.5 | 101                                    | 149 | 2   | 0.23               | 2.80 | 4.20 | 2.80 | 4.50   |
|                  | 160 | 40   | 2                | 309                | 356 | 2600        | 3400 | 22218CA/W33  | 111              | 139 | 8.3  | 2.5 | 101                                    | 149 | 2   | 0.25               | 2.70 | 4.00 | 2.60 | 3.40   |
|                  | 160 | 52.4 | 2                | 337                | 418 | 1900        | 2600 | 23218CA/W33  | 112              | 136 | 5.5  | 2.5 | 101                                    | 149 | 2   | 0.25               | 2.70 | 4.00 | 2.60 | 4.82   |
|                  | 190 | 64   | 3                | 580                | 660 | 1800        | 2400 | 22318C/W33   | 113              | 159 | 8.3  | 5   | 104                                    | 176 | 2.5 | 0.35               | 2.00 | 3.00 | 2.00 | 10.1   |
|                  | 190 | 64   | 3                | 580                | 660 | 1800        | 2400 | 22318CA/W33  | 123              | 159 | 8.3  | 5   | 104                                    | 176 | 2.5 | 0.34               | 1.99 | 2.96 | 1.94 | 11.5   |
|                  | 190 | 43   | 3                | 580                | 660 | 2400        | 3200 | 21318CA/W33  | 112              | 150 | 8.3  | 4.5 | 104                                    | 176 | 2.5 | 0.24               | 2.80 | 4.20 | 2.80 | 5.82   |
|                  | 95  | 170  | 43               | 2.1                | 361 | 428         | 2400 | 3200         | 22219C/W33       | 114 | 148  | 8.3 | 3                                      | 107 | 158 | 2                  | 0.24 | 2.80 | 4.20 | 2.80   |
| 170              |     | 43   | 2.1              | 361                | 428 | 2400        | 3200 | 22219CA/W33  | 119              | 148 | 8.3  | 3   | 107                                    | 158 | 2   | 0.24               | 2.80 | 4.20 | 2.80 | 4.68   |
| 200              |     | 45   | 3                | 404                | 466 | 2400        | 3200 | 21319CA/W33  | 112              | 150 | 8.3  | 4.5 | 107                                    | 158 | 2   | 0.24               | 2.80 | 4.20 | 2.80 | 7.48   |
| 200              |     | 67   | 3                | 637                | 727 | 1800        | 2400 | 22319C/W33   | 128              | 167 | 8.3  | 5   | 109                                    | 186 | 2.5 | 0.34               | 2.00 | 3.00 | 2.00 | 10.2   |
| 200              |     | 67   | 3                | 637                | 727 | 1800        | 2400 | 22319CA/W33  | 128              | 167 | 8.3  | 5   | 109                                    | 186 | 2.5 | 0.34               | 1.99 | 2.96 | 1.94 | 10.5   |
| 100              | 150 | 37   | 1.5              | 206                | 325 | 2400        | 3200 | 23020C/W33   | 116              | 135 | 5.5  | 3   | 110                                    | 140 | 2   | 0.22               | 2.90 | 4.40 | 2.80 | 2.21   |
|                  | 150 | 50   | 1.5              | 271                | 394 | 2400        | 3200 | 24020CA/W33  | 115              | 133 | 5.5  | 3   | 110                                    | 140 | 2   | 0.30               | 2.25 | 3.35 | 2.20 | 3.18   |
|                  | 165 | 52   | 2                | 347                | 466 | 2000        | 2800 | 23120CA/W33  | 121              | 143 | 5.5  | 3   | 110                                    | 155 | 2   | 0.30               | 2.90 | 4.40 | 2.80 | 4.42   |
|                  | 165 | 52   | 2                | 347                | 466 | 2000        | 2800 | 23120C/W33   | 121              | 143 | 5.5  | 3   | 110                                    | 155 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 4.43   |
|                  | 180 | 46   | 2.1              | 404                | 466 | 2200        | 3000 | 22220C/W33   | 124              | 156 | 8.3  | 3   | 112                                    | 168 | 2   | 0.24               | 2.80 | 4.20 | 2.80 | 5.30   |
|                  | 180 | 46   | 2.1              | 404                | 466 | 2200        | 3000 | 22220CA/W33  | 124              | 156 | 8.3  | 3   | 112                                    | 168 | 2   | 0.24               | 2.80 | 4.20 | 2.80 | 5.18   |
|                  | 180 | 60.3 | 2.1              | 451                | 570 | 1700        | 2200 | 23220CA/W33  | 125              | 153 | 9.5  | 4   | 112                                    | 168 | 2   | 0.33               | 2.00 | 3.00 | 2.00 | 6.58   |
|                  | 215 | 73   | 3                | 774                | 903 | 1700        | 2200 | 22320C/W33   | 138              | 179 | 11.1 | 5   | 114                                    | 201 | 2.5 | 0.35               | 2.00 | 3.00 | 2.00 | 13.1   |
|                  | 215 | 73   | 3                | 774                | 903 | 1700        | 2200 | 22320CA/W33  | 138              | 179 | 11.1 | 5   | 114                                    | 201 | 2.5 | 0.35               | 1.90 | 2.90 | 1.80 | 13.8   |

# Spherical Roller Bearings



| Basic dimensions |     |      |                 | Basic load ratings |                 | Limit speed |      | Designations | Other dimensions |     |      |     | Contact surface and chamfer dimensions |                |                | Calculation factor |                |                |                | Weight |
|------------------|-----|------|-----------------|--------------------|-----------------|-------------|------|--------------|------------------|-----|------|-----|--|----------------|----------------|--------------------|----------------|----------------|----------------|--------|
| d                | D   | B    | r <sub>sm</sub> | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil  |              | d2               | D1  | b    | k   | d <sub>a</sub>                         | D <sub>a</sub> | r <sub>a</sub> | e                  | y <sub>1</sub> | y <sub>2</sub> | y <sub>0</sub> |        |
| mm               |     |      |                 | KN                 |                 | r/min       |      |              | mm               |     |      |     | mm                                     |                |                |                    |                |                |                |        |
| 105              | 175 | 56   | 2               | 402                | 550             | 1900        | 2700 | 23121CA/W33  | 127              | 151 | 5.5  | 3   | 115                                    | 165            | 2              | 0.31               | 2.20           | 3.30           | 2.20           | 5.35   |
|                  | 175 | 56   | 2               | 365                | 560             | 1900        | 2700 | 23121C/W33   | 127              | 151 | 5.5  | 3   | 115                                    | 165            | 2              | 0.30               | 2.20           | 3.30           | 2.20           | 5.36   |
| 110              | 170 | 45   | 2               | 295                | 418             | 2200        | 3000 | 23022CA/W33  | 128              | 150 | 7.5  | 3   | 120                                    | 160            | 2              | 0.25               | 2.70           | 4.00           | 2.60           | 3.54   |
|                  | 170 | 45   | 2               | 295                | 418             | 2200        | 3000 | 23022C/W33   | 128              | 150 | 7.5  | 3   | 120                                    | 160            | 2              | 0.24               | 2.90           | 4.40           | 2.80           | 3.68   |
|                  | 170 | 60   | 2               | 394                | 589             | 2100        | 2800 | 24022CA/W33  | 128              | 150 | 5.5  | 3   | 120                                    | 160            | 2              | 0.32               | 2.09           | 3.11           | 2.04           | 4.98   |
|                  | 180 | 56   | 2               | 409                | 556             | 1900        | 2600 | 23122C/W33   | 132              | 156 | 5.5  | 3   | 120                                    | 170            | 2              | 0.30               | 2.30           | 3.40           | 2.20           | 5.69   |
|                  | 180 | 56   | 2               | 409                | 580             | 1900        | 2600 | 23122CA/W33  | 132              | 156 | 5.5  | 3   | 120                                    | 170            | 2              |                    |                |                |                | 573    |
|                  | 180 | 69   | 2               | 494                | 713             | 1000        | 1400 | 24122CA/W33  | 131              | 153 | 5.5  | 2.5 | 120                                    | 170            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 6.92   |
|                  | 200 | 53   | 2.1             | 530                | 610             | 2000        | 2800 | 22222C/W33   | 133              | 173 | 8.3  | 4   | 122                                    | 188            | 2              | 0.26               | 2.70           | 4.00           | 2.50           | 7.32   |
|                  | 200 | 53   | 2.1             | 530                | 610             | 2000        | 2800 | 22222CA/W33  | 139              | 173 | 8.3  | 4   | 122                                    | 188            | 2              | 0.26               | 2.60           | 3.90           | 2.50           | 7.43   |
|                  | 200 | 69.8 | 2.1             | 570                | 727             | 1600        | 2000 | 23222CA/W33  | 138              | 168 | 12   | 5   | 122                                    | 188            | 2              | 0.34               | 1.99           | 2.96           | 1.94           | 10.1   |
|                  | 200 | 69.8 | 2.1             | 570                | 720             | 1700        | 2200 | 23222/W33    | 139              | 168 | 12   | 5   | 122                                    | 188            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 9.54   |
|                  | 240 | 50   | 3               | 420                | 490             | 1600        | 2000 | 21322CA/W33  | 150              | 202 | 7.5  | 3   |  |                |                |                    |                |                |                | 11.7   |
|                  | 240 | 80   | 3               | 900                | 727             | 1600        | 2000 | 22322C/W33   | 151              | 197 | 13.9 | 6   | 122                                    | 188            | 2.5            | 0.34               | 2.20           | 3.30           | 2.20           | 17.9   |
|                  | 240 | 80   | 3               | 900                | 1060            | 1600        | 2000 | 22322CA/W33  | 151              | 197 | 13.9 | 6   | 122                                    | 188            | 2.5            | 0.31               | 2.20           | 3.30           | 2.20           | 18.9   |
|                  | 120 | 180  | 46              | 2                  | 340             | 495         | 2000 | 2800         | 23024CA/W33      | 139 | 162  | 5.5 | 3                                      | 130            | 170            | 2                  | 0.23           | 2.90           | 4.40           | 2.80   |
| 180              |     | 60   | 2               | 410                | 640             | 1600        | 2000 | 24024CA/W33  | 139              | 158 | 5.5  | 4   | 130                                    | 170            | 2              | 0.31               | 2.20           | 3.30           | 2.20           | 5.83   |
| 200              |     | 62   | 2               | 490                | 660             | 1800        | 2400 | 23124CA/W33  | 146              | 174 | 5.5  | 3   | 130                                    | 190            | 2              | 0.30               | 2.30           | 3.40           | 2.20           | 12.4   |
| 200              |     | 62   | 2               | 490                | 660             | 1800        | 2400 | 23124C/W33   | 146              | 174 | 5.5  | 3   | 130                                    | 190            | 2              | 0.29               | 2.40           | 3.60           | 2.50           | 7.97   |
| 200              |     | 80   | 2               | 623                | 900             | 1400        | 1800 | 24124CA/W33  | 146              | 167 | 5.5  | 3   | 130                                    | 190            | 2              | 0.30               | 2.30           | 3.40           | 2.20           | 10.6   |
| 215              |     | 58   | 2.1             | 600                | 730             | 1900        | 2600 | 22224C/W33   | 149              | 187 | 11.1 | 4   | 132                                    | 203            | 2              | 0.25               | 2.60           | 3.90           | 2.50           | 9.78   |
| 215              |     | 58   | 2.1             | 600                | 730             | 1900        | 2600 | 22224CA/W33  | 149              | 187 | 11.1 | 4   | 132                                    | 203            | 2              | 0.26               | 2.60           | 3.90           | 2.50           | 9.53   |
| 215              |     | 76   | 2.1             | 660                | 880             | 1500        | 1900 | 23224CA/W33  | 150              | 182 | 8.3  | 5   | 132                                    | 203            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 12.1   |
| 260              |     | 86   | 3               | 920                | 1060            | 1400        | 1800 | 22324C/W33   | 165              | 218 | 13.9 | 6   | 134                                    | 246            | 2.5            | 0.35               | 1.90           | 2.90           | 1.80           | 23.8   |
| 260              |     | 86   | 3               | 920                | 1060            | 1400        | 1800 | 22324CA/W33  | 165              | 215 | 13.9 | 6   | 134                                    | 246            | 2.5            | 0.34               | 1.99           | 2.96           | 1.94           | 23.3   |
| 130              |     | 200  | 52              | 2                  | 410             | 580         | 1900 | 2600         | 23026CA/W33      | 153 | 179  | 9.5 | 4                                      | 140            | 190            | 2                  | 0.24           | 2.80           | 4.20           | 2.80   |
|                  | 200 | 52   | 2               | 410                | 580             | 1900        | 2600 | 23026C/W33   | 153              | 179 | 9.5  | 4   | 140                                    | 190            | 2              | 0.24               | 2.90           | 4.40           | 2.80           | 5.72   |
|                  | 200 | 69   | 2               | 510                | 770             | 1800        | 2400 | 24026CA/W33  | 151              | 175 | 5.5  | 3   | 140                                    | 190            | 2              | 0.32               | 2.09           | 3.11           | 2.04           | 7.76   |
|                  | 210 | 64   | 2               | 530                | 740             | 1700        | 2200 | 23126C/W33   | 156              | 183 | 8.3  | 4   | 140                                    | 200            | 2              | 0.28               | 2.40           | 3.50           | 2.50           | 9.56   |
|                  | 210 | 64   | 2               | 530                | 740             | 1700        | 2200 | 23126CA/W33  | 156              | 183 | 8.3  | 4   | 140                                    | 200            | 2              | 0.28               | 2.40           | 3.50           | 2.50           | 10.7   |
|                  | 210 | 80   | 2               | 650                | 950             | 1700        | 2200 | 24126CA/W33  | 153              | 180 | 8.3  | 4   | 140                                    | 200            | 2              | 0.35               | 1.90           | 2.90           | 1.80           | 10.6   |
|                  | 230 | 64   | 3               | 700                | 880             | 1800        | 2400 | 22226C/W33   | 162              | 200 | 10   | 5   | 144                                    | 216            | 2.5            | 0.26               | 2.50           | 3.70           | 2.50           | 11.5   |
|                  | 230 | 64   | 3               | 700                | 880             | 1800        | 2400 | 22226CA/W33  | 162              | 200 | 10   | 5   | 144                                    | 216            | 2.5            | 0.27               | 2.50           | 3.70           | 2.50           | 12.4   |
|                  | 230 | 80   | 3               | 740                | 1010            | 1300        | 1700 | 23226CA/W33  | 161              | 194 | 12   | 5   | 144                                    | 216            | 2.5            | 0.33               | 2.00           | 3.00           | 2.00           | 15.9   |

# Spherical Roller Bearings



| Basic dimensions |     |     |                  | Basic load ratings |      | Limit speed |      | Designations | Other dimensions |     |      |      | Contact surface and chamfer dimensions |     |     | Calculation factor |      |      |      | Weight |
|------------------|-----|-----|------------------|--------------------|------|-------------|------|--------------|------------------|-----|------|------|--|-----|-----|--------------------|------|------|------|--------|
| d                | D   | B   | r <sub>min</sub> | Cr                 | Cor  | Grease      | Oil  |              | d2               | D1  | b    | k    | da                                     | Da  | ra  | e                  | y1   | y2   | y0   |        |
| mm               |     |     |                  | KN                 |      | r/min       |      |              | mm               |     |      |      | mm                                     |     |     |                    |      |      |      |        |
|                  | 280 | 93  | 4                | 1060               | 1250 | 1300        | 1700 | 22326C/W33   | 178              | 232 | 16.7 | 6    | 148                                    | 262 | 3   | 0.34               | 1.90 | 2.90 | 1.80 | 24.8   |
|                  | 280 | 93  | 4                | 1060               | 1250 | 1300        | 1700 | 22326CA/W33  | 178              | 232 | 16.7 | 6    | 148                                    | 262 | 3   | 0.34               | 1.99 | 2.96 | 1.94 | 18.3   |
| 140              | 210 | 53  | 2                | 440                | 650  | 1800        | 2400 | 23028CA/W33  | 162              | 188 | 8.3  | 4.5  | 150                                    | 200 | 2   | 0.23               | 2.90 | 4.40 | 2.80 | 6.70   |
|                  | 210 | 53  | 2                | 440                | 650  | 1800        | 2400 | 23028C/W33   | 162              | 188 | 8.3  | 4.5  | 150                                    | 200 | 2   | 0.22               | 3.00 | 4.60 | 2.80 | 6.31   |
|                  | 210 | 69  | 2                | 540                | 860  | 1800        | 2400 | 24028CA/W33  | 162              | 188 | 5.5  | 3    | 150                                    | 200 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 8.31   |
|                  | 225 | 68  | 2.1              | 600                | 860  | 1600        | 2000 | 23128CA/W33  | 166              | 196 | 8.3  | 5    | 152                                    | 213 | 2   | 0.29               | 2.30 | 3.50 | 2.40 | 10.9   |
|                  | 225 | 68  | 2.1              | 600                | 860  | 1600        | 2000 | 23128C/W33   | 166              | 196 | 8.3  | 5    | 152                                    | 213 | 2   | 0.28               | 2.40 | 3.60 | 2.50 | 10.7   |
|                  | 225 | 85  | 2.1              | 730                | 1100 | 850         | 1100 | 24128CA/W33  | 165              | 192 | 8.3  | 4.5  | 152                                    | 213 | 2   | 0.37               | 1.80 | 2.70 | 1.80 | 13.4   |
|                  | 250 | 68  | 3                | 670                | 860  | 1700        | 2200 | 22228CA/W33  | 176              | 218 | 11.1 | 5    | 154                                    | 236 | 2.5 | 0.26               | 2.60 | 3.90 | 2.50 | 16.2   |
|                  | 250 | 68  | 3                | 670                | 860  | 1700        | 2200 | 22228C/W33   | 176              | 218 | 11.1 | 5    | 154                                    | 236 | 2.5 | 0.26               | 2.60 | 3.90 | 2.50 | 14.5   |
|                  | 250 | 88  | 3                | 870                | 1190 | 1200        | 1600 | 23228CA/W33  | 173              | 215 | 15   | 6    | 154                                    | 236 | 2.5 | 0.33               | 2.00 | 3.00 | 2.00 | 19.7   |
|                  | 300 | 102 | 3.7              | 1230               | 1480 | 1100        | 1500 | 22328C/W33   | 191              | 249 | 16.7 | 7    | 158                                    | 282 | 3   | 0.34               | 1.90 | 2.90 | 1.80 | 35.2   |
|                  | 300 | 102 | 4                | 1230               | 1480 | 1100        | 1500 | 22328CA/W33  | 191              | 249 | 16.7 | 7    | 158                                    | 282 | 3   | 0.35               | 1.90 | 2.90 | 1.80 | 36.2   |
| 150              | 225 | 56  | 2.1              | 485                | 710  | 1700        | 2200 | 23030C/W33   | 174              | 201 | 8.3  | 4.5  | 162                                    | 213 | 2   | 0.22               | 3.00 | 4.60 | 2.80 | 7.82   |
|                  | 225 | 56  | 2.1              | 485                | 710  | 1700        | 2200 | 23030CA/W33  | 174              | 201 | 8.3  | 4.5  | 162                                    | 213 | 2   | 0.22               | 3.00 | 4.60 | 2.80 | 8.01   |
|                  | 225 | 75  | 2.1              | 620                | 990  | 1300        | 1700 | 24030CA/W33  | 175              | 196 | 5.5  | 3    | 162                                    | 213 | 2   | 0.31               | 2.20 | 3.30 | 2.20 | 9.39   |
|                  | 250 | 80  | 2.1              | 790                | 1140 | 1400        | 1800 | 23130C/W33   | 173              | 216 | 11.1 | 5    | 162                                    | 238 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 16.2   |
|                  | 250 | 80  | 2.1              | 790                | 1140 | 1400        | 1800 | 23130CA/W33  | 182              | 216 | 11.1 | 5    | 162                                    | 238 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 16.5   |
|                  | 250 | 100 | 2.1              | 970                | 1450 | 800         | 1000 | 24130CA/W33  | 180              | 208 | 8.3  | 4.5  | 162                                    | 238 | 2   | 0.37               | 1.80 | 2.70 | 1.80 | 19.2   |
|                  | 270 | 73  | 3                | 810                | 1030 | 1600        | 2000 | 22230C/W33   | 179              | 234 | 12   | 6    | 164                                    | 256 | 2.5 | 0.26               | 2.60 | 3.90 | 2.50 | 18.6   |
|                  | 270 | 73  | 3                | 810                | 1030 | 1600        | 2000 | 22230CA/W33  | 189              | 234 | 12   | 6    | 164                                    | 256 | 2.5 | 0.26               | 2.60 | 3.90 | 2.50 | 18.7   |
|                  | 270 | 96  | 3                | 1030               | 1390 | 1100        | 1500 | 23230CA/W33  | 188              | 228 | 11.1 | 6    | 164                                    | 256 | 2.5 | 0.35               | 1.90 | 2.90 | 1.80 | 26.6   |
|                  | 320 | 108 | 4                | 1390               | 1670 | 1000        | 1400 | 22330CA/W33  | 203              | 265 | 16.7 | 9    | 168                                    | 302 | 3   | 0.36               | 1.87 | 2.79 | 1.83 | 41.5   |
|                  | 160 | 240 | 60               | 2.1                | 555  | 840         | 1700 | 2200         | 23032C/W33       | 180 | 216  | 11.1 | 4                                      | 172 | 228 | 2                  | 0.22 | 3.00 | 4.60 | 2.80   |
| 240              |     | 60  | 2.1              | 555                | 840  | 1700        | 2200 | 23032CA/W33  | 186              | 216 | 8.3  | 5    | 172                                    | 228 | 2   | 0.22               | 3.00 | 4.60 | 2.80 | 10.0   |
| 240              |     | 80  | 2.1              | 710                | 1140 | 1100        | 1500 | 24032CA/W33  | 183              | 209 | 8.3  | 5    | 172                                    | 228 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 13.2   |
| 270              |     | 86  | 2.1              | 930                | 1300 | 1300        | 1700 | 23132CA/W33  | 188              | 234 | 13.9 | 6    | 172                                    | 258 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 21.9   |
| 270              |     | 86  | 2.1              | 930                | 1300 | 1300        | 1700 | 23132C/W33   | 188              | 234 | 13.9 | 6    | 172                                    | 258 | 2   | 0.30               | 2.30 | 3.40 | 2.20 | 21.9   |
| 270              |     | 86  | 2.1              | 930                | 1300 | 1300        | 1700 | 23132/W33    | 193              | 231 | 13.9 | 6    | 172                                    | 258 | 2   |                    |      |      |      | 21     |
| 270              |     | 86  | 2.1              | 930                | 1300 | 1300        | 1700 | 23132CA/W33  | 193              | 231 | 13.9 | 6    | 172                                    | 258 | 2   | 0.34               | 1.99 | 2.96 | 1.94 | 22.2   |
| 270              |     | 109 | 2.1              | 1120               | 1670 | 1200        | 1600 | 24132CA/W33  | 193              | 225 | 8.3  | 4    | 172                                    | 258 | 2   | 0.40               | 1.69 | 2.51 | 1.65 | 24.6   |
| 270              |     | 109 | 2.1              | 1120               | 1670 | 1200        | 1600 | 24132C/W33   | 193              | 225 | 8.3  | 4    | 172                                    | 258 | 2   | 0.40               | 1.69 | 2.51 | 1.65 | 24.8   |
| 290              |     | 80  | 3                | 960                | 1230 | 1200        | 1500 | 22232C/W33   | 201              | 249 | 13.9 | 5    | 174                                    | 276 | 2.5 | 0.27               | 2.50 | 3.70 | 2.50 | 22.8   |
| 290              |     | 104 | 3                | 1160               | 1580 | 1000        | 1400 | 23232C/W33   | 201              | 244 | 13.9 | 7    | 174                                    | 276 | 2.5 | 0.35               | 1.90 | 2.90 | 1.80 | 30.0   |



# Spherical Roller Bearings



| Basic dimensions |     |     |                  | Basic load ratings |                 | Limit speed |      | Designations | Other dimensions |                |      |      | Contact surface and chamfer dimensions |                |                | Calculation factor |                |                |                | Weight |      |
|------------------|-----|-----|------------------|--------------------|-----------------|-------------|------|--------------|------------------|----------------|------|------|--|----------------|----------------|--------------------|----------------|----------------|----------------|--------|------|
| d                | D   | B   | r <sub>min</sub> | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil  |              | d <sub>2</sub>   | D <sub>1</sub> | b    | k    | d <sub>a</sub>                         | D <sub>a</sub> | r <sub>a</sub> | e                  | y <sub>1</sub> | y <sub>2</sub> | y <sub>0</sub> |        |      |
| mm               |     |     |                  | KN                 |                 | r/min       |      |              | mm               |                |      |      | mm                                     |                |                |                    |                |                |                |        |      |
|                  | 290 | 104 | 3                | 1160               | 1580            | 1000        | 1400 | 23232CA/W33  | 189              | 244            | 13.9 | 7    | 174                                    | 276            | 2.5            | 0.35               | 1.90           | 2.90           | 1.80           | 30.2   |      |
|                  | 340 | 114 | 4                | 1520               | 1860            | 950         | 1300 | 22332C/W33   | 189              | 284            | 16.7 | 7    | 178                                    | 322            | 3              | 0.35               | 1.90           | 2.90           | 1.80           | 51.6   |      |
|                  | 340 | 114 | 4                | 1520               | 1860            | 950         | 1300 | 22332CA/W33  | 201              | 284            | 16.7 | 7    | 178                                    | 322            | 3              | 0.35               | 1.90           | 2.90           | 1.80           | 51.6   |      |
| 170              | 260 | 67  | 2.1              | 670                | 1000            | 1600        | 2000 | 23034CA/W33  | 198              | 231            | 11.1 | 5    | 182                                    | 248            | 2              | 0.23               | 2.90           | 4.40           | 2.80           | 14.1   |      |
|                  | 260 | 67  | 2.1              | 670                | 1000            | 1600        | 2000 | 23034C/W33   | 192              | 231            | 11.1 | 5    | 182                                    | 248            | 2              | 0.23               | 2.90           | 4.40           | 2.80           | 13.6   |      |
|                  | 260 | 90  | 2.1              | 885                | 1390            | 1000        | 1400 | 24034CA/W33  | 198              | 227            | 8.3  | 4    | 182                                    | 248            | 2              | 0.33               | 2.00           | 3.00           | 2.00           | 17.8   |      |
|                  | 280 | 88  | 2.1              | 990                | 1450            | 1200        | 1600 | 23134C/W33   | 190              | 243            | 13.9 | 6    | 182                                    | 268            | 2              | 0.30               | 2.30           | 3.40           | 2.20           | 21.4   |      |
|                  | 280 | 109 | 2.1              | 1160               | 1770            | 1200        | 1600 | 24134CA/W33  | 203              | 237            | 8.3  | 5    | 182                                    | 268            | 2              | 0.37               | 1.80           | 2.70           | 1.80           | 24.8   |      |
|                  | 310 | 86  | 4                | 1060               | 1390            | 1300        | 1700 | 22234CA/W33  | 215              | 268            | 16.7 | 6    | 188                                    | 292            | 3              | 0.27               | 2.50           | 3.70           | 2.50           | 26.8   |      |
|                  | 310 | 86  | 4                | 1060               | 1390            | 1300        | 1700 | 22234C/W33   | 215              | 268            | 16.7 | 6    | 188                                    | 292            | 3              | 0.27               | 2.50           | 3.70           | 2.50           | 29.2   |      |
|                  | 310 | 110 | 4                | 1330               | 1830            | 1000        | 1300 | 23234CA/W33  | 214              | 261            | 13.9 | 7    | 188                                    | 292            | 3              | 0.34               | 1.99           | 2.96           | 1.94           | 37.7   |      |
|                  | 360 | 120 | 4                | 1670               | 2050            | 950         | 1200 | 22334CA/W33  | 231              | 299            | 16.7 | 7    | 188                                    | 342            | 3              | 0.34               | 1.99           | 2.96           | 1.94           | 62.6   |      |
|                  | 180 | 250 | 52               | 2                  | 410             | 790         | 1700 | 2200         | 23936CA/W33      | 204            | 230  | 9.5  | 4                                      | 190            | 240            | 2                  | 0.18           | 3.80           | 5.60           | 3.60   | 7.34 |
| 280              |     | 74  | 2.1              | 790                | 1190            | 1400        | 1800 | 23036CA/W33  | 214              | 247            | 13.9 | 7.5  | 192                                    | 268            | 2              | 0.25               | 2.70           | 4.00           | 2.60           | 17.7   |      |
| 280              |     | 74  | 2.1              | 790                | 1190            | 1400        | 1800 | 23036C/W33   | 214              | 247            | 13.9 | 7.5  | 192                                    | 268            | 2              | 0.25               | 2.70           | 4.00           | 2.60           | 17.1   |      |
| 280              |     | 100 | 2.1              | 1030               | 1640            | 1200        | 1300 | 24036CA/W33  | 210              | 242            | 8.3  | 4    | 192                                    | 268            | 2              | 0.33               | 2.00           | 3.00           | 2.00           | 26.6   |      |
| 300              |     | 96  | 3                | 1140               | 1670            | 1100        | 1500 | 23136CA/W33  | 216              | 259            | 13.9 | 6    | 194                                    | 286            | 2.5            | 0.30               | 2.30           | 3.40           | 2.20           | 27.1   |      |
| 300              |     | 96  | 3                | 1140               | 1670            | 1100        | 1500 | 23136C/W33   | 216              | 259            | 13.9 | 6    | 194                                    | 286            | 2.5            | 0.30               | 2.30           | 3.40           | 2.20           | 26.3   |      |
| 300              |     | 118 | 3                | 1330               | 2050            | 950         | 1300 | 24136CA/W33  | 212              | 252            | 11.1 | 6    | 194                                    | 286            | 2.5            | 0.37               | 1.80           | 2.70           | 1.80           | 33.0   |      |
| 320              |     | 86  | 4                | 1120               | 1480            | 1300        | 1700 | 22236CA/W33  | 224              | 278            | 16.7 | 6    | 198                                    | 302            | 3              | 0.26               | 2.60           | 3.90           | 2.50           | 29.4   |      |
| 320              |     | 86  | 4                | 1120               | 1480            | 1300        | 1700 | 22236C/W33   | 224              | 278            | 16.7 | 6    | 198                                    | 302            | 3              | 0.26               | 2.60           | 3.90           | 2.50           | 29.9   |      |
| 320              |     | 112 | 4                | 1430               | 2010            | 900         | 1200 | 23236CA/W33  | 222              | 271            |      |      | 198                                    | 302            | 3              | 0.35               | 1.90           | 2.90           | 1.80           | 38.7   |      |
| 380              |     | 126 | 4                | 1900               | 2330            | 900         | 1200 | 22336CA/W33  | 242              | 316            | 22.3 | 8    | 198                                    | 362            | 3              | 0.34               | 1.99           | 2.96           | 1.94           | 72.2   |      |
| 380              |     | 126 | 4                | 1900               | 2330            | 900         | 1200 | 22336C/W33   | 242              | 316            | 22.3 | 8    | 198                                    | 362            | 3              | 0.34               | 1.99           | 2.96           | 1.94           | 69.6   |      |
| 190              |     | 260 | 52               | 2                  | 390             | 760         | 1600 | 2000         | 23938CA/W33      | 213            | 238  | 5.5  | 3                                      | 202            | 248            | 2                  | 0.18           | 3.80           | 5.60           | 3.60   | 8.29 |
|                  |     | 290 | 75               | 2.1                | 820             | 1270        | 1300 | 1700         | 23038CA/W33      | 224            | 259  | 13.9 | 5                                      | 202            | 278            | 2                  | 0.23           | 2.90           | 4.40           | 2.80   | 17.3 |
|                  | 290 | 100 | 2.1              | 1060               | 1710            | 950         | 1300 | 24038CA/W33  | 219              | 252            |      |      | 202                                    | 278            | 2              | 0.31               | 2.20           | 3.30           | 2.20           | 22.9   |      |
|                  | 320 | 104 | 3                | 1300               | 1980            | 1000        | 1400 | 23138CA/W33  | 232              | 276            | 13.9 | 7    | 204                                    | 306            | 2.5            | 0.31               | 2.20           | 3.30           | 2.20           | 34.3   |      |
|                  | 320 | 128 | 3                | 1520               | 2380            | 800         | 1200 | 24138CA/W33  | 226              | 267            | 11.1 | 6    | 204                                    | 306            | 2.5            | 0.40               | 1.69           | 2.51           | 1.65           | 41.9   |      |
|                  | 340 | 92  | 4                | 1210               | 1620            | 1200        | 1600 | 22238CA/W33  | 235              | 293            |      |      | 208                                    | 322            | 3              | 0.26               | 2.60           | 3.90           | 2.50           | 37.4   |      |
|                  | 340 | 92  | 4                | 1210               | 1620            | 1200        | 1600 | 22238C/W33   | 235              | 293            | 16.7 | 6    | 208                                    | 322            | 3              | 0.26               | 2.60           | 3.90           | 2.50           | 37.9   |      |
|                  | 340 | 120 | 4                | 1580               | 2280            | 850         | 1100 | 23238CA/W33  | 237              | 288            | 16.7 | 7    | 208                                    | 322            | 3              | 0.35               | 1.90           | 2.90           | 1.80           | 44.8   |      |
|                  | 400 | 132 | 5                | 2010               | 2520            | 850         | 1100 | 22338CA/W33  | 257              | 334            | 22.3 | 8    | 212                                    | 378            | 4              | 0.34               | 1.99           | 2.96           | 1.94           | 82.2   |      |
|                  | 400 | 132 | 5                | 2010               | 2520            | 850         | 1100 | 22338C/W33   | 257              | 334            | 22.3 | 8    | 212                                    | 378            | 4              | 0.34               | 1.99           | 2.96           | 1.94           | 81.9   |      |

# Spherical Roller Bearings



| Basic dimensions |     |     |                  | Basic load ratings |      | Limit speed |      | Designations | Other dimensions |       |      |     | Contact surface and chamfer dimensions |     |     | Calculation factor |      |      |      | Weight |
|------------------|-----|-----|------------------|--------------------|------|-------------|------|--------------|------------------|-------|------|-----|--|-----|-----|--------------------|------|------|------|--------|
| d                | D   | B   | r <sub>min</sub> | Cr                 | Cor  | Grease      | Oil  |              | d2               | D1    | b    | k   | da                                     | Da  | ra  | e                  | y1   | y2   | y0   |        |
| mm               |     |     |                  | KN                 |      | r/min       |      |              | mm               |       |      |     | mm                                     |     |     |                    |      |      |      | Kg     |
| 200              | 280 | 60  | 2.1              | 520                | 990  | 1600        | 2000 | 23940CA/W33  | 226              | 254   | 9.5  | 4   | 212                                    | 268 | 2   | 0.19               | 3.61 | 5.38 | 3.53 | 12.1   |
|                  | 310 | 82  | 2.1              | 950                | 1450 | 1200        | 1600 | 23040CA/W33  | 237              | 276   | 13.9 | 7.5 | 212                                    | 298 | 2   | 0.25               | 2.70 | 4.00 | 2.60 | 22.6   |
|                  | 310 | 82  | 2.1              | 950                | 1450 | 1200        | 1600 | 23040C/W33   | 237              | 276   | 13.9 | 7.5 | 212                                    | 298 | 2   | 0.25               | 2.70 | 4.00 | 2.60 | 23.3   |
|                  | 310 | 109 | 2.1              | 1230               | 2010 | 1000        | 1200 | 24040CA/W33  | 233              | 268   | 11.1 | 5   | 212                                    | 298 | 2   | 0.33               | 2.00 | 3.00 | 2.00 | 31.3   |
|                  | 340 | 112 | 3                | 1520               | 2240 | 950         | 1300 | 23140CA/W33  | 243              | 292   | 16.7 | 7   | 214                                    | 326 | 2.5 | 0.31               | 2.20 | 3.30 | 2.20 | 43.8   |
|                  | 340 | 140 | 3                | 1710               | 2660 | 900         | 1000 | 24140CA/W33  | 242              | 283   | 11.1 | 6   | 214                                    | 326 | 2.5 | 0.40               | 1.70 | 2.50 | 1.60 | 52.1   |
|                  | 360 | 98  | 4                | 1390               | 1830 | 1100        | 1500 | 22240CA/W33  | 250              | 309   | 16.7 | 6   | 218                                    | 342 | 3   | 0.26               | 2.60 | 3.90 | 2.50 | 44.7   |
|                  | 360 | 128 | 4                | 1770               | 2570 | 850         | 1100 | 23240CA/W33  | 249              | 304   | 16.7 | 8   | 218                                    | 342 | 3   | 0.35               | 1.90 | 2.90 | 1.80 | 53.4   |
|                  | 420 | 138 | 5                | 2200               | 2760 | 850         | 1100 | 22340CA/W33  | 269              | 350   |      |     | 222                                    | 398 | 4   | 0.34               | 1.99 | 2.96 | 1.94 | 96.7   |
|                  | 420 | 138 | 5                | 2200               | 2760 | 850         | 1100 | 22340C/W33   | 269              | 350   | 22.3 | 8   | 222                                    | 398 | 4   | 0.34               | 1.99 | 2.96 | 1.94 | 92     |
| 220              | 300 | 60  | 2.1              | 520                | 1030 | 1500        | 1900 | 23944CA/W33  | 242              | 278   | 8.3  | 4   | 232                                    | 288 | 2   | 0.18               | 3.80 | 5.60 | 3.60 | 12.9   |
|                  | 340 | 90  | 3                | 1160               | 1770 | 1100        | 1500 | 23044CA/W33  | 260              | 303   | 13.9 | 6   | 234                                    | 326 | 2.5 | 0.24               | 2.80 | 4.20 | 2.80 | 32     |
|                  | 340 | 118 | 3                | 1480               | 2470 | 850         | 1100 | 24044CA/W33  | 257              | 295   | 11.1 | 5   | 234                                    | 326 | 2.5 | 0.33               | 2.00 | 3.00 | 2.00 | 39.1   |
|                  | 370 | 120 | 4                | 1710               | 2610 | 900         | 1200 | 23144CA/W33  | 268              | 320   | 16.7 | 7   | 238                                    | 352 | 3   | 0.30               | 2.30 | 3.40 | 2.20 | 54.7   |
|                  | 370 | 120 | 4                | 1730               | 2610 | 900         | 1200 | 22244CA/W33  | 268              | 320   | 16.7 | 7   | 238                                    | 352 | 3   | 0.30               | 2.30 | 3.40 | 2.20 | 54.7   |
|                  | 370 | 150 | 4                | 2010               | 3180 | 800         | 1000 | 24144CA/W33  | 262              | 308   | 11.1 | 6   | 238                                    | 352 | 3   | 0.40               | 1.70 | 2.50 | 1.60 | 66.4   |
|                  | 400 | 108 | 4                | 1670               | 2240 | 950         | 1300 | 22244CA/W33  | 275              | 344   | 16.7 | 8   | 238                                    | 382 | 3   | 0.27               | 2.50 | 3.70 | 2.50 | 63.5   |
|                  | 400 | 144 | 4                | 2240               | 3280 | 900         | 1100 | 23244CA/W33  | 272.5            | 334   | 16.7 | 8   | 238                                    | 382 | 3   | 0.36               | 1.89 | 2.81 | 1.85 | 77.3   |
|                  | 460 | 145 | 5                | 2570               | 3280 | 850         | 1000 | 22344CA/W33  | 293.5            | 384.5 | 22.3 | 12  | 246                                    | 422 | 4   | 0.32               | 2.09 | 3.11 | 2.04 | 119    |
|                  | 240 | 320 | 60               | 2.1                | 535  | 1100        | 1300 | 1700         | 23948CA/W33      | 266   | 295  | 9.5 | 4                                      | 252 | 308 | 2                  | 0.15 | 4.50 | 6.70 | 4.50   |
| 360              |     | 92  | 3                | 1230               | 1980 | 1000        | 1400 | 23048CA/W33  | 278              | 322   | 13.9 | 6   | 254                                    | 346 | 2.5 | 0.24               | 2.80 | 4.20 | 2.80 | 34     |
| 400              |     | 128 | 4                | 1980               | 3040 | 850         | 1100 | 23148CA/W33  | 289              | 345   | 16.7 | 8   | 258                                    | 382 | 3   | 0.31               | 2.21 | 3.29 | 2.16 | 68.2   |
| 400              |     | 128 | 4                | 1980               | 3040 | 850         | 1100 | 23148C/W33   | 289              | 345   | 16.7 | 8   | 258                                    | 382 | 3   | 0.31               | 2.21 | 3.29 | 2.16 | 64.8   |
| 400              |     | 160 | 4                | 2280               | 3705 | 480         | 600  | 24148CA/W33  | 285              | 336   | 11.1 | 6   | 258                                    | 382 | 3   | 0.40               | 1.70 | 2.50 | 1.60 | 79     |
| 440              |     | 120 | 4                | 2090               | 2850 | 900         | 1200 | 22248CA/W33  | 290              | 383   | 18   | 7   | 258                                    | 422 | 3   | 0.27               | 2.50 | 3.70 | 2.50 | 85.3   |
| 440              |     | 160 | 4                | 2950               | 3800 | 670         | 850  | 23248CA/W33  | 292              | 369   | 22.3 | 8   | 258                                    | 422 | 3   | 0.35               | 1.90 | 2.90 | 1.80 | 102    |
| 500              |     | 155 | 5                | 2950               | 3800 | 650         | 800  | 22348CA/W33  | 330              | 390   | 22.3 | 12  | 297                                    | 439 | 4   | 0.32               | 2.09 | 3.11 | 2.04 | 148    |
| 250              |     | 360 | 75               | 2.1                | 902  | 1750        | 1100 | 1500         | 23952CA/W33      | 294   | 328  | 12  | 6                                      | 272 | 348 | 2                  | 0.18 | 3.80 | 5.60 | 3.60   |
| 260              | 360 | 75  | 2.1              | 836                | 1710 | 1100        | 1500 | 23952CA/W33  | 287              | 331   | 8.3  | 4.5 | 271                                    | 348 | 2   | 0.18               | 3.80 | 5.60 | 3.60 | 24.3   |
|                  | 400 | 104 | 4                | 1520               | 2420 | 900         | 1200 | 23052CA/W33  | 306              | 357   | 16.7 | 7   | 278                                    | 382 | 3   | 0.23               | 2.90 | 4.40 | 2.80 | 49.8   |
|                  | 400 | 104 | 4                | 1520               | 2420 | 900         | 1200 | 23052C/W33   | 306              | 357   | 16.7 | 7   | 278                                    | 382 | 3   | 0.23               | 2.90 | 4.40 | 2.80 | 47.8   |
|                  | 400 | 140 | 4                | 1940               | 3280 | 700         | 900  | 24052CA/W33  | 300              | 347   | 11.1 | 6   | 278                                    | 382 | 3   | 0.33               | 2.00 | 3.00 | 2.00 | 66.7   |
|                  | 440 | 144 | 4                | 2420               | 3700 | 800         | 1000 | 23152CA/W33  | 310              | 379   | 16.7 | 9   | 278                                    | 422 | 3   | 0.31               | 2.20 | 3.30 | 2.20 | 88.9   |

# Spherical Roller Bearings



| Basic dimensions |     |     |                  | Basic load ratings |      | Limit speed |      | Designations | Other dimensions |     |      |     | Contact surface and chamfer dimensions |     |     | Calculation factor |      |      |      | Weight |
|------------------|-----|-----|------------------|--------------------|------|-------------|------|--------------|------------------|-----|------|-----|--|-----|-----|--------------------|------|------|------|--------|
| d                | D   | B   | r <sub>min</sub> | Cr                 | Cor  | Grease      | Oil  |              | d2               | D1  | b    | k   | da                                     | Da  | ra  | e                  | y1   | y2   | y0   |        |
| mm               |     |     |                  | KN                 |      | r/min       |      |              | mm               |     |      |     | mm                                     |     |     |                    |      |      |      | Kg     |
|                  | 440 | 180 | 4                | 2850               | 4560 | 430         | 530  | 24152CA/W33  | 312              | 366 | 13.9 | 8   | 278                                    | 422 | 3   | 0.39               | 1.73 | 2.58 | 1.69 | 115    |
|                  | 480 | 130 | 5                | 2520               | 3370 | 850         | 1100 | 22252CA/W33  | 330              | 414 | 22.3 | 12  | 282                                    | 458 | 4   | 0.27               | 2.51 | 3.74 | 2.45 | 106    |
|                  | 480 | 174 | 5                | 3090               | 4510 | 630         | 800  | 23252CA/W33  | 320              | 404 | 22.3 | 8   | 282                                    | 458 | 4   | 0.35               | 1.90 | 2.90 | 1.80 | 141    |
|                  | 540 | 165 | 6                | 3370               | 4320 | 630         | 800  | 22352CA/W33  | 349              | 455 | 22.3 | 8   | 288                                    | 512 | 5   | 0.31               | 2.20 | 3.30 | 2.20 | 186    |
|                  | 540 | 165 | 6                | 3370               | 4320 | 630         | 800  | 22352C/W33   | 349              | 455 | 22.3 | 8   | 288                                    | 512 | 5   | 0.31               | 2.20 | 3.30 | 2.20 | 185    |
| 280              | 350 | 52  | 2                | 435                | 1230 | 1200        | 1500 | 23856CA/W33  | 305              | 328 | 8.3  | 4.5 | 278                                    | 348 | 2   | 0.13               | 5.36 | 7.98 | 5.24 | 11.4   |
|                  | 380 | 75  | 2.1              | 800                | 1670 | 1000        | 1400 | 23956CA/W33  | 316              | 346 | 12   | 6   | 292                                    | 368 | 2   | 0.18               | 3.80 | 5.66 | 3.72 | 25.7   |
|                  | 420 | 106 | 4                | 1640               | 2700 | 850         | 1100 | 23056CA/W33  | 323              | 377 |      |     | 298                                    | 402 | 3   | 0.23               | 2.91 | 4.40 | 2.84 | 56.8   |
|                  | 420 | 106 | 4                | 1640               | 2700 | 850         | 1100 | 23056C/W33   | 323              | 377 | 16.7 | 7   | 298                                    | 402 | 3   | 0.23               | 2.91 | 4.40 | 2.84 | 53.9   |
|                  | 420 | 140 | 4                | 2050               | 3610 | 670         | 850  | 24056CA/W33  | 317              | 366 | 11.1 | 6   | 298                                    | 402 | 3   | 0.31               | 2.20 | 3.30 | 2.20 | 69.2   |
|                  | 460 | 146 | 5                | 2520               | 4040 | 800         | 950  | 23156CA/W33  | 333              | 400 | 16.7 | 8   | 302                                    | 438 | 4   | 0.30               | 2.30 | 3.40 | 2.20 | 104    |
|                  | 460 | 180 | 5                | 2950               | 4850 | 750         | 950  | 24156CA/W33  | 327              | 388 | 13.9 | 8   | 302                                    | 438 | 4   | 0.40               | 1.70 | 2.50 | 1.60 | 119    |
|                  | 500 | 130 | 5                | 2570               | 3560 | 800         | 1000 | 22256CA/W33  | 347              | 435 | 22.3 | 8   | 302                                    | 478 | 4   | 0.26               | 2.60 | 3.90 | 2.50 | 118    |
|                  | 500 | 176 | 5                | 3090               | 4660 | 630         | 750  | 23076CA/W33  | 340              | 424 |      |     | 302                                    | 478 | 4   | 0.35               | 1.90 | 2.90 | 1.80 | 147    |
|                  | 500 | 176 | 5                | 3090               | 4660 | 630         | 750  | 23256CA/W33  | 340              | 424 | 22.3 | 8   | 302                                    | 478 | 4   | 0.35               | 1.90 | 2.90 | 1.80 | 146    |
|                  | 580 | 175 | 6                | 3800               | 4940 | 600         | 750  | 22356CA/W33  | 364              | 485 | 22.3 | 8   | 308                                    | 552 | 5   | 0.30               | 2.30 | 3.40 | 2.20 | 221    |
| 300              | 380 | 60  | 3                | 625                | 1520 | 950         | 1400 | 23860CA/W33  | 328              | 357 | 12   | 6   | 310                                    | 368 | 2   | 0.13               | 5.20 | 7.70 | 5.00 | 18.2   |
|                  | 420 | 90  | 3                | 1140               | 2380 | 950         | 1300 | 23960CA/W33  | 339              | 382 | 15   | 6   | 314                                    | 406 | 2.5 | 0.19               | 3.60 | 5.30 | 3.60 | 40.1   |
|                  | 420 | 118 | 3                | 1140               | 2380 | 950         | 1200 | 24960CA/W33  | 339              | 376 | 18   | 7   | 314                                    | 406 | 2.5 | 0.19               | 3.60 | 5.30 | 3.60 | 36.5   |
|                  | 460 | 118 | 4                | 2010               | 3280 | 800         | 1000 | 23060CA/W33  | 351              | 409 | 16.7 | 9   | 318                                    | 442 | 3   | 0.23               | 2.90 | 4.40 | 2.80 | 75.8   |
|                  | 460 | 160 | 4                | 2570               | 4510 | 600         | 750  | 24060CA/W33  | 342              | 399 | 13.9 | 7   | 318                                    | 442 | 3   | 0.32               | 2.09 | 3.11 | 2.04 | 99     |
|                  | 460 | 160 | 4                | 2570               | 4510 | 600         | 750  | 24060C/W33   | 342              | 399 | 13.9 | 7   | 318                                    | 442 | 3   | 0.32               | 2.09 | 3.11 | 2.04 | 97.3   |
|                  | 500 | 160 | 5                | 3040               | 4850 | 670         | 850  | 23160CA/W33  | 356              | 433 | 16.7 | 9   | 322                                    | 478 | 4   | 0.30               | 2.30 | 3.40 | 2.20 | 126    |
|                  | 500 | 200 | 5                | 3560               | 5990 | 600         | 750  | 24160CA/W33  | 356              | 420 | 13.9 | 6   | 322                                    | 478 | 4   | 0.39               | 1.75 | 2.61 | 1.71 | 161    |
|                  | 540 | 140 | 5                | 3030               | 4040 | 750         | 950  | 22260CA/W33  | 374              | 467 |      |     | 322                                    | 518 | 4   | 0.26               | 2.60 | 3.90 | 2.50 | 138    |
|                  | 540 | 192 | 5                | 3700               | 5560 | 530         | 670  | 23260CA/W33  | 373              | 455 | 22   | 10  | 322                                    | 518 | 4   | 0.35               | 1.90 | 2.90 | 1.80 | 190    |
| 320              | 400 | 60  | 2.1              | 670                | 1620 | 920         | 1280 | 23864CA/W33  | 346              | 376 | 13.9 | 6   | 332                                    | 388 | 2   | 0.12               | 5.60 | 8.40 | 5.60 | 20.5   |
|                  | 440 | 90  | 3                | 1360               | 2570 | 900         | 1200 | 23964CA/W33  | 360              | 402 | 15   | 6   | 338                                    | 426 | 2.5 | 0.18               | 3.80 | 5.60 | 3.60 | 19.4   |
|                  | 480 | 121 | 4                | 2130               | 3610 | 800         | 1000 | 23064CA/W33  | 368              | 431 | 16.7 | 8   | 338                                    | 462 | 3   | 0.23               | 2.90 | 4.40 | 2.80 | 84.8   |
|                  | 480 | 160 | 4                | 2710               | 4850 | 560         | 700  | 24064CA/W33  | 368              | 421 | 22   | 8   | 338                                    | 462 | 3   | 0.32               | 2.09 | 3.11 | 2.04 | 105    |
|                  | 480 | 160 | 4                | 2710               | 4850 | 560         | 700  | 24064C/W33   | 354              | 423 | 22   | 8   | 335                                    | 465 | 3   | 0.32               | 2.09 | 3.11 | 2.04 | 97.9   |
|                  | 540 | 176 | 5                | 3560               | 5700 | 630         | 800  | 23164CA/W33  | 389              | 465 | 22.3 | 8   | 342                                    | 518 | 4   | 0.31               | 2.20 | 3.30 | 2.20 | 200    |
|                  | 540 | 210 | 5                | 4040               | 6750 | 340         | 430  | 24164CA/W33  | 364              | 455 | 16.7 | 9   | 342                                    | 518 | 4   | 0.40               | 1.70 | 2.50 | 1.60 | 206    |
|                  | 580 | 150 | 5                | 3420               | 4660 | 670         | 850  | 22264CA/W33  | 400              | 502 | 22.3 | 8   | 342                                    | 558 | 4   | 0.26               | 2.60 | 3.90 | 2.50 | 175    |

# Spherical Roller Bearings



| Basic dimensions |     |     |                 | Basic load ratings |       | Limit speed |      | Designations | Other dimensions |     |      |    | Contact surface and chamfer dimensions |     |     | Calculation factor |      |      |      | Weight |
|------------------|-----|-----|-----------------|--------------------|-------|-------------|------|--------------|------------------|-----|------|----|--|-----|-----|--------------------|------|------|------|--------|
| d                | D   | B   | r <sub>sm</sub> | Cr                 | Cor   | Grease      | Oil  |              | d2               | D1  | b    | k  | da                                     | Da  | ra  | e                  | y1   | y2   | y0   |        |
| mm               |     |     |                 | KN                 |       | r/min       |      |              | mm               |     |      |    | mm                                     |     |     |                    |      |      |      | Kg     |
|                  | 580 | 150 | 5               | 3420               | 4660  | 700         | 900  | 22264/W33    | 400              | 502 | 22.3 | 8  | 342                                    | 558 | 4   | 0.27               | 2.50 | 3.70 | 2.50 | 177    |
|                  | 580 | 208 | 5               | 4180               | 6370  | 500         | 630  | 23264CA/W33  | 400              | 490 | 24   | 10 | 342                                    | 558 | 4   | 0.35               | 1.90 | 2.90 | 1.80 | 253    |
|                  | 670 | 200 | 7.5             | 4530               | 6820  | 450         | 600  | 22364CA/W33  | 430              | 566 | 22.3 | 12 | 342                                    | 645 | 6   |                    |      |      |      | 344    |
| 340              | 460 | 90  | 3               | 1390               | 2660  | 900         | 1200 | 23968CA/W33  | 378              | 423 | 15   | 6  | 354                                    | 446 | 2.5 | 0.17               | 4.00 | 5.90 | 4.00 | 46     |
|                  | 520 | 133 | 5               | 2570               | 4320  | 700         | 900  | 23068CA/W33  | 400              | 464 | 22.3 | 8  | 362                                    | 498 | 4   | 0.24               | 2.80 | 4.20 | 2.80 | 115    |
|                  | 520 | 180 | 5               | 3280               | 5890  | 530         | 670  | 24068CA/W33  | 394              | 451 | 16.7 | 8  | 362                                    | 498 | 4   | 0.33               | 2.00 | 3.00 | 2.00 | 137    |
|                  | 520 | 180 | 5               | 3280               | 5890  | 530         | 670  | 24068C/W33   | 377              | 453 | 16.7 | 9  | 358                                    | 502 | 4   | 0.33               | 2.00 | 3.00 | 2.00 | 139    |
|                  | 580 | 190 | 5               | 4040               | 6460  | 600         | 750  | 23168CA/W33  | 412              | 497 | 22.3 | 8  | 362                                    | 558 | 4   | 0.31               | 2.20 | 3.30 | 2.20 | 211    |
|                  | 580 | 243 | 5               | 5040               | 8220  | 320         | 400  | 24168CA/W33  | 408              | 486 | 22.3 | 10 | 362                                    | 558 | 4   | 0.4                | 1.7  | 2.5  | 1.6  | 261    |
|                  | 620 | 224 | 6               | 4850               | 7410  | 430         | 530  | 23268CA/W33  | 426              | 528 |      |    | 368                                    | 592 | 5   | 0.35               | 1.90 | 2.90 | 1.80 | 297    |
| 360              | 480 | 90  | 3               | 1330               | 2610  | 850         | 1100 | 23972CA/W33  | 403              | 441 | 11.1 | 6  | 374                                    | 466 | 2.5 | 0.16               | 4.20 | 6.30 | 4.00 | 46.6   |
|                  | 540 | 134 | 5               | 2610               | 4560  | 670         | 850  | 23072CA/W33  | 419              | 486 | 22.3 | 8  | 382                                    | 518 | 4   | 0.23               | 2.90 | 4.40 | 2.80 | 126    |
|                  | 540 | 134 | 5               | 2610               | 4560  | 670         | 850  | 23072C/W33   | 419              | 486 | 22.3 | 8  | 382                                    | 518 | 4   | 0.23               | 2.90 | 4.40 | 2.80 | 108    |
|                  | 540 | 180 | 5               | 3370               | 6220  | 600         | 750  | 24072CA/W33  | 398              | 474 | 16.7 | 8  | 382                                    | 518 | 4   | 0.31               | 2.2  | 3.3  | 2.2  | 150    |
|                  | 600 | 192 | 5               | 4090               | 6600  | 560         | 700  | 23172CA/W33  | 434              | 518 | 22.3 | 12 | 382                                    | 578 | 4   | 0.30               | 2.30 | 3.40 | 2.20 | 255    |
|                  | 600 | 243 | 5               | 5320               | 8840  | 300         | 380  | 24172CA/W33  | 430              | 511 | 20   | 12 | 382                                    | 578 | 4   | 0.37               | 1.80 | 2.70 | 1.80 | 270    |
|                  | 650 | 170 | 6               | 4090               | 5890  | 380         | 480  | 22272CA/W33  | 449              | 563 | 22.3 | 8  | 388                                    | 622 | 5   | 0.26               | 2.60 | 3.87 | 2.54 | 253    |
|                  | 650 | 232 | 6               | 5130               | 7880  | 400         | 500  | 23272CA/W33  | 443              | 547 | 22.3 | 10 | 388                                    | 622 | 5   | 0.35               | 1.90 | 2.90 | 1.80 | 335    |
|                  | 750 | 224 | 7.5             | 4900               | 8600  | 400         | 500  | 22372CA/W33  | 471              | 631 | 22.3 | 12 | 392                                    | 720 | 6   | 0.31               | 2.21 | 3.29 | 2.16 | 468    |
| 380              | 520 | 106 | 4               | 1860               | 3610  | 800         | 1000 | 23976CA/W33  | 426              | 476 | 15   | 10 | 398                                    | 502 | 3   | 0.17               | 4.00 | 5.90 | 4.00 | 69.9   |
|                  | 560 | 135 | 5               | 2760               | 4750  | 630         | 800  | 23076CA/W33  | 441              | 505 | 22.3 | 8  | 402                                    | 538 | 4   | 0.22               | 3.00 | 4.60 | 2.80 | 130    |
|                  | 560 | 180 | 5               | 3420               | 6460  | 480         | 600  | 24076CA/W33  | 435              | 494 | 22   | 10 | 402                                    | 538 | 4   | 0.3                | 2.3  | 3.4  | 2.2  | 151    |
|                  | 560 | 180 | 5               | 3420               | 6460  | 480         | 600  | 24076C/W33   | 435              | 494 | 16.7 | 9  | 402                                    | 538 | 4   | 0.3                | 2.3  | 3.4  | 2.2  | 152    |
|                  | 620 | 194 | 5               | 4180               | 6750  | 400         | 500  | 23176CA/W33  | 457              | 540 | 22   | 8  | 402                                    | 598 | 4   | 0.30               | 2.30 | 3.40 | 2.20 | 250    |
|                  | 620 | 243 | 5               | 5420               | 9310  | 300         | 380  | 24176CA/W33  | 457              | 540 | 22   | 8  | 402                                    | 598 | 4   | 0.30               | 2.30 | 3.40 | 2.20 | 296    |
|                  | 680 | 240 | 6               | 5560               | 8690  | 380         | 480  | 23276CA/W33  | 468              | 574 | 22.3 | 10 | 408                                    | 652 | 5   | 0.35               | 1.90 | 2.90 | 1.80 | 389    |
| 400              | 540 | 106 | 4               | 1900               | 3700  | 750         | 950  | 23980CA/W33  | 445              | 497 | 15   | 10 | 418                                    | 522 | 3   | 0.17               | 4.00 | 5.90 | 4.00 | 72.9   |
|                  | 600 | 148 | 5               | 3090               | 5420  | 600         | 750  | 23080CA/W33  | 460              | 538 |      |    | 422                                    | 578 | 4   | 0.23               | 2.90 | 4.40 | 2.80 | 161    |
|                  | 600 | 200 | 5               | 4090               | 7600  | 450         | 560  | 24080CA/W33  | 458              | 524 | 22   | 12 | 422                                    | 578 | 4   | 0.30               | 2.30 | 3.40 | 2.20 | 203    |
|                  | 650 | 200 | 6               | 4420               | 7270  | 380         | 480  | 23180CA/W33  | 480              | 568 | 22.3 | 8  | 428                                    | 622 | 5   | 0.28               | 2.40 | 3.60 | 2.50 | 275    |
|                  | 650 | 250 | 6               | 5890               | 10070 | 320         | 400  | 24180CA/W33  | 476              | 563 | 22.3 | 8  | 428                                    | 622 | 5   | 0.36               | 1.87 | 2.79 | 1.83 | 325    |
|                  | 720 | 256 | 6               | 6220               | 9880  | 340         | 430  | 23280CA/W33  | 499              | 606 | 22   | 10 | 428                                    | 692 | 5   | 0.35               | 1.90 | 2.90 | 1.80 | 350    |
|                  | 820 | 243 | 7.5             | 7130               | 9880  | 340         | 430  | 22380CA/W33  | 520              | 694 | 22.3 | 12 | 442                                    | 790 | 6   | 0.31               | 2.21 | 3.29 | 2.16 | 623    |

# Spherical Roller Bearings



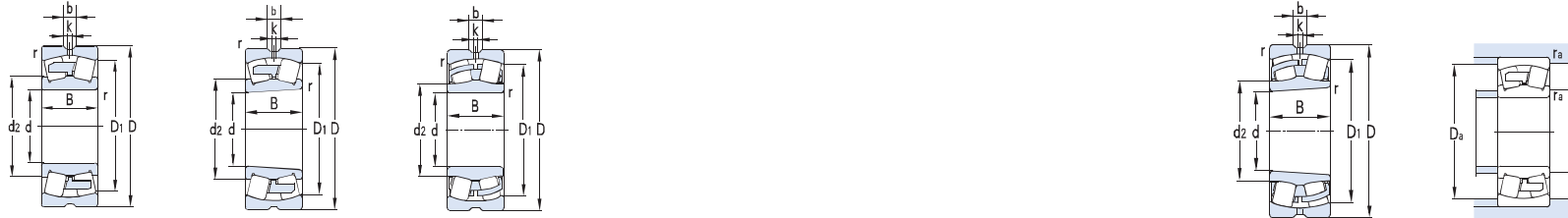
| Basic dimensions |     |     |                  | Basic load ratings |                 | Limit speed |     | Designations   | Other dimensions |     |      |      | Contact surface and chamfer dimensions |                |                | Calculation factor |                |                |                | Weight |
|------------------|-----|-----|------------------|--------------------|-----------------|-------------|-----|----------------|------------------|-----|------|------|--|----------------|----------------|--------------------|----------------|----------------|----------------|--------|
| d                | D   | B   | r <sub>min</sub> | C <sub>r</sub>     | C <sub>or</sub> | Grease      | Oil |                | d2               | D1  | b    | k    | d <sub>a</sub>                         | D <sub>a</sub> | r <sub>a</sub> | e                  | y <sub>1</sub> | y <sub>2</sub> | y <sub>0</sub> |        |
| mm               |     |     |                  | KN                 |                 | r/min       |     |                | mm               |     |      |      | mm                                     |                |                |                    |                |                |                |        |
| 420              | 520 | 75  | 2.1              | 950                | 2630            | 750         | 950 | 23884CA/W33    | 454              | 490 | 13.9 | 5    | 430                                    | 504            | 2              | 0.12               | 5.60           | 8.40           | 5.60           | 35.9   |
|                  | 560 | 106 | 4                | 1950               | 3950            | 700         | 900 | 23984CA/W33    | 464              | 517 | 16.7 | 9    | 435                                    | 545            | 3              | 0.16               | 4.20           | 6.30           | 4.00           | 73.6   |
|                  | 620 | 150 | 5                | 3230               | 5700            | 450         | 560 | 23084CA/W33    | 484              | 558 |      | 4    | 442                                    | 598            | 4              | 0.22               | 3.00           | 4.60           | 2.80           | 150    |
|                  | 620 | 200 | 5                | 4180               | 7880            | 380         | 480 | 24084CA/W33    | 479              | 548 | 22.3 | 12   | 442                                    | 598            | 4              | 0.30               | 2.30           | 3.40           | 2.20           | 202    |
|                  | 700 | 224 | 6                | 5320               | 8800            | 360         | 450 | 23184CA/W33    | 505              | 605 | 22.3 | 12   | 448                                    | 672            | 5              | 0.30               | 2.30           | 3.40           | 2.20           | 353    |
|                  | 700 | 280 | 6                | 7000               | 11950           | 300         | 380 | 24184CA/W33    | 497              | 599 | 22.3 | 12   | 448                                    | 674            | 5              | 0.38               | 1.80           | 2.60           | 1.70           | 436    |
|                  | 760 | 272 | 7.5              | 7000               | 11000           | 320         | 400 | 23284CA/W33    | 525              | 643 | 22   | 12   | 456                                    | 724            | 6              | 0.35               | 1.90           | 2.90           | 1.80           | 550    |
|                  | 440 | 600 | 118              | 4                  | 2400            | 4850        | 450 | 560            | 23988CA/W33      | 492 | 553  | 16.7 | 8                                      | 462            | 578            | 3                  | 0.17           | 4.00           | 5.90           | 4.00   |
| 650              |     | 157 | 6                | 3470               | 6220            | 430         | 530 | 23088CA/W33    | 507              | 585 | 22.3 | 8    | 468                                    | 622            | 5              | 0.22               | 3.00           | 4.60           | 2.80           | 185    |
| 650              |     | 212 | 6                | 4560               | 8700            | 360         | 450 | 24088CA/W33    | 502              | 569 | 22.3 | 12   | 468                                    | 626            | 5              | 0.30               | 2.30           | 3.40           | 2.20           | 251    |
| 720              |     | 226 | 6                | 5700               | 9500            | 340         | 430 | 23188CA/W33    | 522              | 626 | 22.3 | 12   | 468                                    | 692            | 5              | 0.30               | 2.30           | 3.40           | 2.20           | 377    |
| 720              |     | 280 | 6                | 7130               | 12500           | 300         | 380 | 24188CA/W33    | 517              | 618 | 22.3 | 12   | 468                                    | 692            | 5              | 0.37               | 1.80           | 2.70           | 1.80           | 436    |
| 790              |     | 280 | 7.5              | 7410               | 11880           | 320         | 400 | 23288CA/W33    | 548              | 675 | 22.3 | 12   | 472                                    | 578            | 6              | 0.35               | 1.90           | 2.90           | 1.80           | 611    |
| 460              | 580 | 118 | 3                | 1700               | 4655            | 450         | 560 | 24892CA/W33    | 504              | 540 | 15   | 6    | 472                                    | 566            | 2.5            | 0.17               | 4.00           | 5.90           | 4.00           | 82     |
|                  | 620 | 118 | 4                | 2370               | 4750            | 430         | 530 | 23992CA/W33    | 511              | 572 | 16.7 | 9    | 475                                    | 605            | 3              | 0.16               | 4.20           | 6.30           | 4.00           | 105    |
|                  | 680 | 163 | 6                | 3710               | 6600            | 400         | 500 | 23092CA/W33    | 531              | 613 | 23.5 | 12   | 488                                    | 652            | 5              | 0.22               | 3.00           | 4.60           | 2.80           | 229    |
|                  | 680 | 218 | 6                | 4940               | 9500            | 340         | 430 | 24092CA/W33    | 528              | 600 | 24   | 12   | 488                                    | 652            | 5              | 0.29               | 2.35           | 3.50           | 2.30           | 304    |
|                  | 760 | 240 | 7.5              | 6080               | 10260           | 320         | 400 | 23192CA/W33    | 557              | 660 | 22   | 8    | 496                                    | 724            | 6              | 0.30               | 2.30           | 3.40           | 2.20           | 443    |
|                  | 760 | 300 | 7.5              | 7900               | 13870           | 160         | 200 | 24192CA/W33    | 540              | 639 | 22.3 | 8    | 496                                    | 724            | 6              | 0.37               | 1.80           | 2.70           | 1.80           | 461    |
|                  | 830 | 296 | 7.5              | 8100               | 13000           | 300         | 380 | 23292CAKF3/W33 | 566              | 698 | 22.3 | 10   | 496                                    | 794            | 6              | 0.35               | 1.90           | 2.90           | 1.80           | 698    |
|                  | 480 | 600 | 90               | 3                  | 1350            | 3560        | 450 | 600            | 23896CA/W33      | 523 | 563  |      |  | 500            | 580            | 2.5                | 0.13           | 5.36           | 7.98           | 5.24   |
| 650              |     | 128 | 5                | 2760               | 5400            | 400         | 500 | 23996CA/W33    | 532              | 596 | 16.7 | 10   | 502                                    | 628            | 4              | 0.18               | 3.80           | 5.60           | 3.60           | 126    |
| 700              |     | 165 | 6                | 3700               | 6450            | 380         | 480 | 23096CA/W33    | 552              | 634 | 22.3 | 12   | 504                                    | 678            | 5              | 0.21               | 3.20           | 4.80           | 3.20           | 217    |
| 700              |     | 165 | 6                | 3700               | 6450            | 400         | 500 | 23096F3/W33    | 553              | 625 | 22.3 | 12   | 504                                    | 678            | 5              | 0.23               | 2.90           | 4.40           | 2.80           | 247    |
| 700              |     | 218 | 6                | 5050               | 9900            | 340         | 430 | 24096CA/W33    | 542              | 618 | 22.3 | 12   | 504                                    | 678            | 5              | 0.28               | 2.40           | 3.60           | 2.50           | 296    |
| 870              |     | 310 | 7.5              | 8850               | 14250           | 260         | 340 | 23296CA/W33    | 581              | 732 | 22.3 | 12   | 516                                    | 834            | 6              | 0.35               | 1.90           | 2.90           | 1.80           | 853    |
| 500              |     | 620 | 90               | 3                  | 1400            | 3800        | 420 | 520            | 238/500CA/W33    | 542 | 586  | 16.7 | 8                                      | 512            | 606            | 2.5                | 0.12           | 5.60           | 8.40           | 5.60   |
|                  | 670 | 128 | 5                | 2750               | 5700            | 400         | 500 | 239/500CA/W33  | 555              | 619 | 22.3 | 12   | 522                                    | 648            | 4              | 0.17               | 4.00           | 5.90           | 4.00           | 120    |
|                  | 720 | 167 | 6                | 3950               | 7400            | 380         | 480 | 230/500CA/W33  | 568              | 653 | 22.3 | 12   | 528                                    | 692            | 5              | 0.21               | 3.20           | 4.80           | 3.20           | 228    |
|                  | 720 | 218 | 6                | 5230               | 10450           | 420         | 520 | 240/500CA/W33  | 565              | 645 | 22.3 | 12   | 523                                    | 698            | 5              | 0.26               | 2.60           | 3.90           | 2.50           | 297    |
|                  | 830 | 264 | 7.5              | 7270               | 12260           | 320         | 400 | 231/500CA/W33  | 603              | 726 | 22.3 | 12   | 536                                    | 794            | 6              | 0.30               | 2.30           | 3.40           | 2.20           | 588    |
|                  | 830 | 325 | 7.5              | 9310               | 16150           | 300         | 380 | 241/500CA/W33  | 588              | 712 | 22.3 | 12   | 531                                    | 798            | 6              | 0.37               | 1.80           | 2.70           | 1.80           | 719    |

# Spherical Roller Bearings



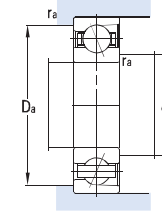
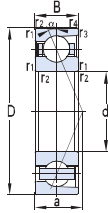
| Basic dimensions |      |     |                  | Basic load ratings |       | Limit speed |     | Designations    | Other dimensions |     |      |      | Contact surface and chamfer dimensions |      |     | Calculation factor |      |      |      | Weight |
|------------------|------|-----|------------------|--------------------|-------|-------------|-----|-----------------|------------------|-----|------|------|--|------|-----|--------------------|------|------|------|--------|
| d                | D    | B   | r <sub>min</sub> | Cr                 | Cor   | Grease      | Oil |                 | d2               | D1  | b    | k    | da                                     | Da   | ra  | e                  | y1   | y2   | y0   |        |
| mm               |      |     |                  | KN                 |       | r/min       |     |                 | mm               |     |      |      | mm                                     |      |     |                    |      |      |      |        |
| 530              | 650  | 118 | 3                | 1750               | 5000  | 380         | 480 | 248/530CA/W33   | 573              | 612 | 22   | 8    | 543                                    | 636  | 2.5 | 0.15               | 4.50 | 6.70 | 4.50 | 91     |
|                  | 710  | 136 | 5                | 3050               | 6350  | 360         | 450 | 239/530CA/W33   | 586              | 658 | 22.3 | 12   | 548                                    | 690  | 4   | 0.17               | 4.00 | 5.90 | 4.00 | 150    |
|                  | 780  | 185 | 6                | 4850               | 8850  | 340         | 430 | 230/530CA/W33   | 614              | 703 | 24   | 12   | 558                                    | 752  | 5   | 0.22               | 3.00 | 4.60 | 2.80 | 328    |
|                  | 780  | 250 | 6                | 6370               | 12550 | 280         | 360 | 240/530CA/W33   | 605              | 691 | 22.3 | 12   | 553                                    | 758  | 5   | 0.29               | 2.30 | 3.50 | 2.40 | 416    |
|                  | 870  | 272 | 7.5              | 7750               | 13300 | 260         | 340 | 231/530CA/W33   | 635              | 762 | 22.3 | 12   | 560                                    | 837  | 6   | 0.30               | 2.30 | 3.40 | 2.20 | 665    |
|                  | 870  | 335 | 7.5              | 10100              | 18050 | 190         | 280 | 241/530CA/W33   | 622              | 748 | 22.3 | 12   | 560                                    | 837  | 6   | 0.37               | 1.80 | 2.80 | 1.80 | 846    |
|                  | 980  | 355 | 9.5              | 10500              | 19300 | 210         | 290 | 232/530CA/W33   | 656              | 818 | 22.3 | 12   | 565                                    | 932  | 8   | 0.36               | 1.87 | 2.79 | 1.83 | 1220   |
|                  | 560  | 750 | 140              | 5                  | 3280  | 6850        | 340 | 430             | 239/560CA/W33    | 621 | 693  | 22.3 | 12                                     | 582  | 728 | 4                  | 0.16 | 4.20 | 6.30 | 4.00   |
| 820              |      | 195 | 6                | 5300               | 9700  | 320         | 410 | 230/560CA/W33   | 644              | 741 | 22.3 | 9    | 588                                    | 792  | 5   | 0.22               | 3.14 | 4.67 | 3.07 | 360    |
| 820              |      | 258 | 6                | 7000               | 13900 | 220         | 300 | 240/560CA/W33   | 640              | 721 | 22.3 | 12   | 585                                    | 798  | 5   | 0.28               | 2.40 | 3.60 | 2.50 | 471    |
| 920              |      | 280 | 7.5              | 8700               | 15200 | 240         | 320 | 231/560CA/W33   | 677              | 803 | 22.3 | 12   | 596                                    | 884  | 6   | 0.30               | 2.30 | 3.40 | 2.20 | 756    |
| 920              |      | 355 | 7.5              | 11400              | 20500 | 120         | 160 | 241/560CA/W33   | 634              | 796 | 22.3 | 12   | 596                                    | 884  | 6   | 0.37               | 1.80 | 2.80 | 1.80 | 973    |
| 1030             |      | 365 | 9.5              | 10900              | 21000 | 190         | 260 | 232/560CA/W33   | 705              | 877 | 22.3 | 12   | 600                                    | 990  | 8   | 0.35               | 1.90 | 2.90 | 1.80 | 1380   |
| 600              | 800  | 150 | 5                | 3700               | 7850  | 320         | 400 | 239/600CA/W33   | 668              | 742 | 22.3 | 12   | 622                                    | 778  | 4   | 0.17               | 4.00 | 5.90 | 4.00 | 220    |
|                  | 800  | 200 | 5                | 5700               | 10800 | 320         | 400 | 249/600CAF1/W33 | 666              | 728 | 22.3 | 12   | 622                                    | 760  | 4   | 0.22               | 3.00 | 4.60 | 2.80 | 287    |
|                  | 870  | 200 | 6                | 5700               | 10800 | 300         | 380 | 230/600CA/W33   | 685              | 787 | 22.3 | 9    | 628                                    | 842  | 5   | 0.22               | 3.00 | 4.60 | 2.80 | 431    |
|                  | 870  | 272 | 6                | 7750               | 16150 | 220         | 300 | 240/600CA/W33   | 682              | 770 | 22.3 | 12   | 628                                    | 850  | 5   | 0.30               | 2.30 | 3.40 | 2.80 | 551    |
|                  | 870  | 272 | 6                | 7750               | 16150 | 240         | 320 | 240/600/W33     | 680              | 770 | 22.3 | 12   | 628                                    | 850  | 5   | 0.30               | 2.30 | 3.40 | 2.20 | 550    |
|                  | 980  | 300 | 7.5              | 9700               | 17100 | 180         | 250 | 231/600CAF3/W33 | 717              | 855 | 22.3 | 12   | 660                                    | 996  | 6   | 0.29               | 2.30 | 3.50 | 2.40 | 894    |
|                  | 980  | 375 | 7.5              | 10950              | 22450 | 110         | 150 | 241/600CA/W33   | 709              | 827 | 22   | 8    | 636                                    | 944  | 6   | 0.36               | 1.90 | 2.82 | 1.85 | 1151   |
|                  | 1090 | 388 | 9.5              | 12450              | 24250 | 190         | 260 | 232/600CA/W33   | 750              | 920 | 22.3 | 12   | 700                                    | 1000 | 8   | 0.35               | 1.93 | 2.88 | 1.80 | 1570   |
|                  | 628  | 920 | 212              | 7.5                | 5600  | 12800       | 260 | 340             | 230/628CAF3/W33  | 721 | 831  | 22.3 | 9                                      | 666  | 884 | 6                  | 0.21 | 3.20 | 4.80 | 3.20   |
| 630              | 780  | 112 | 4                | 2100               | 5800  | 300         | 380 | 238/630CAF3/W33 | 682              | 738 | 16.7 | 9    | 645                                    | 765  | 3   | 0.12               | 5.60 | 8.40 | 5.60 | 124    |
|                  | 820  | 112 | 4                | 2200               | 6300  | 270         | 350 | 238/670CA/W33   | 722              | 778 | 16.7 | 9    | 686                                    | 805  | 3   | 0.11               | 6.10 | 9.10 | 6.30 | 136    |
|                  | 820  | 150 | 4                | 3100               | 9600  | 270         | 350 | 248/670CA/W33   | 716              | 771 | 16.7 | 9    | 686                                    | 805  | 3   | 0.16               | 4.20 | 6.30 | 4.00 | 315    |
|                  | 850  | 165 | 6                | 4400               | 9300  | 280         | 360 | 239/630CA/W33   | 705              | 786 | 22.3 | 12   | 658                                    | 822  | 5   | 0.17               | 4.00 | 5.90 | 4.00 | 220    |
|                  | 920  | 212 | 7.5              | 6400               | 11900 | 260         | 340 | 230/630CAF3/W33 | 721              | 831 | 22.3 | 9    | 666                                    | 884  | 6   | 0.21               | 3.20 | 4.80 | 3.20 | 471    |
|                  | 920  | 290 | 7.5              | 7350               | 17100 | 220         | 300 | 240/630/W33     | 722              | 815 | 22.3 | 10   | 666                                    | 884  | 6   | 0.30               | 2.30 | 3.40 | 2.20 | 661    |
|                  | 1030 | 315 | 7.5              | 9950               | 19700 | 180         | 250 | 231/630CA/W33   | 756              | 918 | 22.3 | 12   | 668                                    | 996  | 6   | 0.30               | 2.30 | 3.40 | 2.20 | 1080   |
|                  | 1030 | 400 | 7.5              | 12100              | 25700 | 160         | 210 | 241/630CA/W33   | 736              | 885 | 22.3 | 12   | 662                                    | 996  | 6   | 0.37               | 1.80 | 2.70 | 1.80 | 1440   |
| 670              | 900  | 170 | 6                | 4750               | 10200 | 260         | 340 | 239/670CAF3/W33 | 743              | 831 | 22.3 | 12   | 692                                    | 876  | 5   | 0.17               | 4.00 | 5.90 | 4.00 | 313    |
|                  | 980  | 230 | 7.5              | 7300               | 13390 | 240         | 310 | 230/670CA/W33   | 760              | 885 | 22.3 | 12   | 706                                    | 944  | 6   | 0.22               | 3.00 | 4.60 | 3.20 | 604    |

# Spherical Roller Bearings



| Basic dimensions |      |     |                  | Basic load ratings |       | Limit speed |     | Designations     | Other dimensions |      |      |    | Contact surface and chamfer dimensions |      |    | Calculation factor |      |      |      | Weight |
|------------------|------|-----|------------------|--------------------|-------|-------------|-----|------------------|------------------|------|------|----|--|------|----|--------------------|------|------|------|--------|
| d                | D    | B   | r <sub>min</sub> | Cr                 | Cor   | Grease      | Oil |                  | d2               | D1   | b    | k  | da                                     | Da   | ra | e                  | y1   | y2   | y0   |        |
| mm               |      |     |                  | KN                 |       | r/min       |     |                  | mm               |      |      |    | mm                                     |      |    |                    |      |      |      | Kg     |
|                  | 980  | 308 | 7.5              | 9500               | 19300 | 190         | 270 | 240/670CA/W33    | 760              | 866  | 22.3 | 12 | 700                                    | 952  | 6  | 0.28               | 2.40 | 3.60 | 2.50 | 807    |
|                  | 1090 | 336 | 7.5              | 10350              | 21300 | 175         | 240 | 231/670CA/W33    | 801              | 958  | 22.3 | 12 | 700                                    | 1056 | 6  | 0.30               | 2.30 | 3.40 | 2.20 | 1280   |
|                  | 1090 | 412 | 7.5              | 13100              | 27500 | 150         | 190 | 241/670CA/W33    | 786              | 934  | 22.3 | 12 | 705                                    | 1056 | 6  | 0.36               | 1.87 | 2.79 | 1.83 | 1560   |
|                  | 1220 | 438 | 12               | 14650              | 29000 | 160         | 210 | 232/670CA/W33    | 832              | 1027 | 22.3 | 12 | 718                                    | 1170 | 10 | 0.35               | 1.90 | 2.90 | 1.80 | 2300   |
| 690              | 990  | 180 | 6                | 5500               | 11800 | 220         | 310 | 206/690CAF3/W33  | 780              | 907  | 22.3 | 12 | 705                                    | 975  | 5  | 0.16               |      |      |      | 461    |
| 700              | 950  | 180 | 6                | 5000               | 11900 | 220         | 300 | 206/700CAF3/W33  | 780              | 877  | 13.3 | 12 | 715                                    | 935  | 5  | 0.16               |      |      |      | 378    |
| 710              | 870  | 118 | 4                | 2450               | 7100  | 260         | 340 | 238/710CAF3/W33  | 761              | 824  | 22.3 | 12 | 725                                    | 855  | 3  | 0.11               | 6.10 | 9.10 | 6.30 | 156    |
|                  | 950  | 180 | 6                | 5300               | 11400 | 240         | 310 | 239/710CA/W33    | 787              | 882  | 22.3 | 12 | 733                                    | 927  | 5  | 0.17               | 4.00 | 5.90 | 4.00 | 364    |
|                  | 950  | 243 | 6                | 6450               | 14800 | 200         | 280 | 249/710CAF1/W33X | 791              | 864  | 22.3 | 12 | 733                                    | 927  | 5  | 0.22               | 3.00 | 4.60 | 2.80 | 500    |
|                  | 1030 | 236 | 7.5              | 7900               | 15500 | 220         | 300 | 230/710CAF3/W33  | 814              | 939  | 22.3 | 12 | 746                                    | 994  | 6  | 0.21               | 3.20 | 4.80 | 3.20 | 669    |
|                  | 1030 | 315 | 7.5              | 10010              | 21650 | 180         | 250 | 240/710CA/W33    | 806              | 918  | 22.3 | 12 | 738                                    | 1002 | 6  | 0.27               | 2.50 | 3.70 | 2.50 | 910    |
|                  | 1150 | 345 | 9.8              | 11600              | 24700 | 170         | 220 | 231/710CA/W33    | 851              | 1016 | 22.3 | 12 | 750                                    | 1110 | 8  | 0.28               | 2.40 | 3.60 | 2.50 | 1480   |
|                  | 1150 | 438 | 9.5              | 14450              | 30900 | 90          | 120 | 241/710CA/W33    | 838              | 982  | 22.3 | 12 | 754                                    | 1106 | 8  | 0.35               | 1.90 | 2.90 | 1.80 | 1801   |
|                  | 1280 | 450 | 12               | 16700              | 32700 | 160         | 210 | 232/710CA/W33    | 876              | 1096 | 22.3 | 12 | 758                                    | 1232 | 10 | 0.35               | 1.90 | 2.90 | 1.80 | 2640   |
| 750              | 920  | 128 | 5                | 2800               | 8100  | 240         | 310 | 238/750CA/W33    | 806              | 873  | 22.3 | 12 | 770                                    | 902  | 4  | 0.11               | 6.10 | 9.10 | 6.30 | 188    |
|                  | 920  | 170 | 5                | 3550               | 11000 | 220         | 300 | 248/750CA/W33    | 808              | 864  | 22.3 | 12 | 770                                    | 902  | 4  | 0.16               | 4.20 | 6.30 | 4.00 | 253    |
|                  | 1000 | 185 | 6                | 5700               | 12500 | 210         | 290 | 239/750CA/W33    | 831              | 930  | 22.3 | 12 | 772                                    | 976  | 5  | 0.16               | 4.20 | 6.30 | 4.00 | 414    |
|                  | 1000 | 250 | 6                | 7300               | 17100 | 180         | 250 | 249/750CA/W33    | 830              | 916  | 22.3 | 12 | 773                                    | 976  | 5  | 0.22               | 3.00 | 4.60 | 2.80 | 566    |
|                  | 1090 | 250 | 7.5              | 9200               | 17700 | 200         | 280 | 230/750CAF3/W33  | 847              | 987  | 22.3 | 12 | 786                                    | 1054 | 6  | 0.21               | 3.20 | 4.80 | 3.20 | 786    |
|                  | 1090 | 335 | 7.5              | 11200              | 23750 | 170         | 220 | 240/750CA/W33    | 852              | 970  | 22.3 | 12 | 779                                    | 1062 | 6  | 0.28               | 2.40 | 3.60 | 2.50 | 1100   |
|                  | 1220 | 365 | 9.5              | 13100              | 27500 | 160         | 210 | 231/750CA/W33    | 898              | 1080 | 22.3 | 12 | 798                                    | 1180 | 8  | 0.28               | 2.40 | 3.60 | 2.50 | 1760   |
|                  | 1220 | 475 | 9.5              | 16400              | 35600 | 130         | 170 | 241/750CA/W33    | 872              | 1039 | 22.3 | 12 | 792                                    | 1175 | 8  | 0.35               | 1.90 | 2.90 | 1.80 | 2195   |

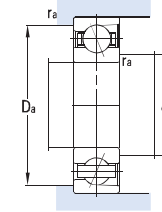
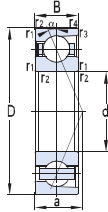
# Single Row Angular Contact Ball Bearings



| Basic dimensions |     |        |     |     | Basic load ratings |      | Limit speed |       | Designations | Funtion point | Abutment and fillet dimensions |         |         | Weight |
|------------------|-----|--------|-----|-----|--------------------|------|-------------|-------|--------------|---------------|--------------------------------|---------|---------|--------|
| d                | D   | B (2B) | r12 | r34 | Cr                 | Cor  | Grease      | Oil   |              | a             | da(max)                        | Da(max) | ra(max) |        |
| mm               |     |        |     |     | KN                 |      | r/min       |       |              |               | mm                             |         |         | Kg     |
| 35               | 72  | 17     | 1.1 | 1.1 | 30.5               | 20.7 | 8000        | 11000 | 7207AC       | 31            | 42                             | 65      | 1       | 0.304  |
| 45               | 100 | 25     | 1.5 | 0.6 | 65.0               | 45.0 | 6000        | 8000  | 7309ACM      | 29.4          | 64                             | 91      | 1.5     | 1.02   |
| 50               | 90  | 20     | 1.1 | 0.6 | 40.3               | 30.0 | 5800        | 7800  | 7210AC       | 26.3          | 57                             | 83      | 1       | 0.460  |
|                  | 110 | 27     | 2   | 1   | 71.5               | 49.0 | 5600        | 7500  | 7310ACM      | 32.2          | 60                             | 100     | 2       | 1.16   |
| 55               | 90  | 18     | 1.1 | 0.6 | 31.2               | 26.0 | 7500        | 10000 | 7011AC       | 25.9          | 62                             | 83      | 1       | 0.385  |
|                  | 100 | 21     | 1.5 | 0.6 | 50.7               | 38.0 | 7100        | 10000 | 7211AC       | 28.6          | 64                             | 91      | 1.5     | 0.599  |
|                  | 120 | 29     | 2   | 1   | 88.4               | 63.0 | 5000        | 6700  | 7311ACM      | 34.9          | 65                             | 110     | 2       | 1.65   |
| 60               | 130 | 31     | 2.1 | 1.1 | 94.9               | 67.0 | 4800        | 6300  | 7312AC       | 37.7          | 72                             | 118     | 2       | 1.80   |
| 65               | 100 | 18     | 1.1 | 0.6 | 33.8               | 31.0 | 6700        | 9500  | 7013AC       | 28.2          | 72                             | 93      | 1       | 0.414  |
|                  | 120 | 23     | 1.5 | 0.6 | 73                 | 59.0 | 5000        | 6700  | 7213ACM      | 50            | 74                             | 111     | 1.5     | 1.18   |
|                  | 130 | 31     | 2.1 | 1.1 | 105                | 67.0 | 4500        | 6000  | 7312ACM      | 55            | 72                             | 118     | 2       | 2.16   |
|                  | 140 | 33     | 2.1 | 1.1 | 114                | 84.0 | 4300        | 6000  | 7313ACM      | 40.4          | 77                             | 128     | 2       | 2.61   |
| 70               | 110 | 20     | 1.1 | 0.6 | 44.2               | 41.0 | 6300        | 8500  | 7014ACM      | 31            | 77                             | 103     | 1       | 0.725  |
|                  | 125 | 24     | 1.5 | 0.6 | 75.4               | 62.0 | 5600        | 8000  | 7214ACM      | 34.7          | 79                             | 116     | 1.5     | 1.26   |
|                  | 150 | 35     | 2.1 | 1.1 | 129                | 96.0 | 4000        | 5300  | 7314ACM      | 43.2          | 82                             | 138     | 2       | 3.01   |
| 75               | 130 | 25     | 1.5 | 0.6 | 79.3               | 67.0 | 5600        | 7500  | 7215ACM      | 36.4          | 84                             | 121     | 1.5     | 1.29   |
|                  | 160 | 37     | 2.1 | 1.1 | 140                | 109  | 3800        | 5000  | 7315ACM      | 45.9          | 87                             | 148     | 2       | 3.57   |
| 80               | 125 | 22     | 1.1 | 0.6 | 55.9               | 53.0 | 4500        | 6000  | 7016ACJ      | 34.9          | 87                             | 118     | 1       | 0.849  |
|                  | 125 | 22     | 1.1 | 0.6 | 56.5               | 52.5 | 5600        | 7500  | 7016ACM      | 40.6          | 87                             | 118     | 1       | 0.997  |
|                  | 140 | 26     | 2   | 1   | 92.3               | 79.0 | 5000        | 7100  | 7216ACM      | 38.7          | 90                             | 130     | 2       | 1.73   |
|                  | 170 | 39     | 2.1 | 1.1 | 152                | 122  | 3600        | 4800  | 7316ACM      | 48.7          | 92                             | 158     | 2       | 4.21   |
| 85               | 130 | 22     | 1.1 | 0.6 | 57.2               | 56.0 | 5300        | 7100  | 7017ACM      | 36.1          | 92                             | 123     | 1       | 1.12   |
|                  | 150 | 28     | 2   | 1   | 98.8               | 86.0 | 4800        | 6700  | 7217ACM      | 41.4          | 95                             | 140     | 2       | 1.72   |
|                  | 180 | 41     | 3   | 1.1 | 164                | 137  | 3400        | 4500  | 7317ACM      | 51.4          | 99                             | 166     | 2.5     | 4.99   |
| 90               | 140 | 24     | 1.5 | 0.6 | 67.6               | 66.0 | 4800        | 6700  | 7018ACM      | 38.8          | 99                             | 131     | 1.5     | 1.39   |
|                  | 160 | 30     | 2   | 1   | 117                | 100  | 4500        | 6000  | 7218ACM      | 44.1          | 100                            | 150     | 2       | 2.35   |
|                  | 190 | 43     | 3   | 1.1 | 176                | 152  | 3200        | 4300  | 7318ACM      | 54.1          | 104                            | 176     | 2.5     | 6.18   |

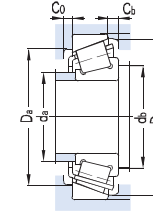
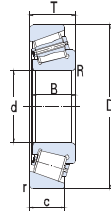
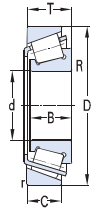


# Single Row Angular Contact Ball Bearings



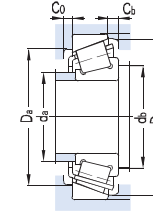
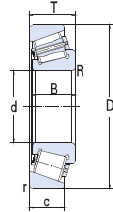
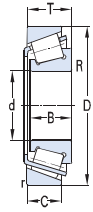
| Basic dimensions |      |        |     |     | Basic load ratings |      | Limit speed |      | Designations | Funtion point | Abutment and fillet dimensions |         |         | Weight |
|------------------|------|--------|-----|-----|--------------------|------|-------------|------|--------------|---------------|--------------------------------|---------|---------|--------|
| d                | D    | B (2B) | r12 | r34 | Cr                 | Cor  | Grease      | Oil  |              | a             | da(max)                        | Da(max) | ra(max) |        |
| mm               |      |        |     |     | KN                 |      | r/min       |      |              |               | mm                             |         |         | Kg     |
| 95               | 170  | 32     | 2.1 | 1.1 | 133                | 114  | 4300        | 5600 | 7219ACM      | 46.9          | 107                            | 158     | 2       | 2.97   |
| 100              | 150  | 24     | 1.5 | 0.6 | 76.7               | 77.0 | 4500        | 6000 | 7020AC       | 41.2          | 109                            | 141     | 1.5     | 1.25   |
|                  | 180  | 34     | 2.1 | 1.1 | 148                | 130  | 4000        | 5300 | 7220ACM      | 49.6          | 112                            | 168     | 2       | 3.74   |
|                  | 200  | 45     | 3   | 1.1 | 189                | 167  | 3000        | 4000 | 7319ACM      | 56.9          | 109                            | 186     | 2.5     | 6.67   |
|                  | 215  | 47     | 3   | 1.1 | 213                | 199  | 2800        | 3800 | 7320ACM      | 60.2          | 114                            | 201     | 2.5     | 9.61   |
| 110              | 170  | 28     | 2   | 1   | 98.8               | 101  | 4000        | 5300 | 7022ACM      | 46.7          | 120                            | 160     | 2       | 2.41   |
|                  | 200  | 38     | 2.1 | 1.1 | 176                | 164  | 3600        | 4800 | 7222ACM      | 55.1          | 122                            | 188     | 2       | 4.81   |
|                  | 240  | 50     | 3   | 1.1 | 239                | 231  | 2600        | 3400 | 7322ACM      | 65.8          | 124                            | 226     | 2.5     | 9.97   |
| 120              | 180  | 28     | 2   | 1   | 100                | 107  | 3600        | 5000 | 7024ACM      | 49            | 130                            | 170     | 2       | 2.62   |
|                  | 215  | 40     | 2.1 | 1.1 | 190                | 184  | 3200        | 4500 | 7224ACM      | 59.1          | 132                            | 203     | 2       | 6.04   |
|                  | 260  | 55     | 3   | 1.1 | 265                | 269  | 2200        | 3000 | 7324AC       | 71.8          | 134                            | 246     | 2.5     | 13.7   |
| 130              | 230  | 40     | 3   | 1.1 | 196                | 200  | 2400        | 3200 | 7226ACM      | 62            | 144                            | 216     | 2.5     | 7.26   |
| 140              | 210  | 33     | 2   | 1   | 125                | 137  | 3200        | 4300 | 7028ACM      | 57.3          | 150                            | 200     | 2       | 4.14   |
|                  | 250  | 42     | 3   | 1.1 | 220                | 237  | 2200        | 3000 | 7228ACM      | 66.5          | 154                            | 236     | 2.5     | 8.71   |
|                  | 300  | 62     | 4   | 1.5 | 275                | 300  | 1600        | 2200 | 7328B        | 123.3         | 158                            | 282     | 3       | 21.2   |
| 150              | 225  | 35     | 2.1 | 1.1 | 153                | 170  | 2400        | 3000 | 7030ACM      | 61.2          | 162                            | 213     | 2       | 4.80   |
|                  | 320  | 65     | 4   | 1.5 | 359                | 429  | 1800        | 2400 | 7330AC       | 87.6          | 168                            | 302     | 3       | 25.8   |
| 160              | 290  | 48     | 3   | 1.1 | 250                | 289  | 1900        | 2600 | 7232AC       | 76.5          | 174                            | 276     | 2.5     | 14.5   |
| 180              | 320  | 52     | 4   | 1.5 | 317                | 399  | 1700        | 2200 | 7236AC       | 84.3          | 198                            | 302     | 3       | 17.9   |
| 200              | 360  | 58     | 4   | 1.5 | 345                | 462  | 1500        | 2000 | 7240AC       | 94.3          | 218                            | 342     | 3       | 25.2   |
| 220              | 400  | 65     | 4   | 1.5 | 423                | 605  | 1100        | 1600 | 7244AC       | 104.7         | 238                            | 382     | 3       | 36.1   |
| 1000             | 1220 | 100    | 6   | 3   | 830                | 2460 | 260         | 360  | 718/1000A    | 370           | 1023                           | 1197    | 5       | 239    |

# Single Row Cylindrical Roller Bearings



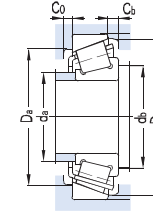
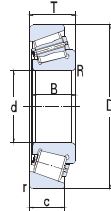
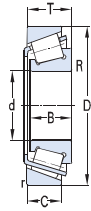
| Basic dimensions |       |       |    |      |          |         |          |         | Basic load ratings |      | Limit speed |       | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |      |      |      | Weight |       |
|------------------|-------|-------|----|------|----------|---------|----------|---------|--------------------|------|-------------|-------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|------|------|------|--------|-------|
| d                | D     | T     | B  | C    | R radial | R axial | r radial | r axial | Cr                 | Cor  | Grease      | Oil   |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e    | Y    | Yo   |        | a     |
| mm               |       |       |    |      |          |         |          |         | KN                 |      | r/min       |       |              | mm                             |       |       |       |       |       |                    |      |      |      | Kg     |       |
| 20               | 47    | 15.25 | 14 | 12   | 1        | 1       | 1        | 1       | 27.3               | 26.9 | 8000        | 11000 | 30204        | 27                             | 26    | 40    | 41    | 43    | 2.5   | 3.3                | 0.35 | 1.7  | 0.96 | 11     | 0.121 |
|                  | 47    | 19.25 | 18 | 15   | 1        | 1       | 1        | 1       | 27.5               | 31   | 7500        | 10000 | 32204        | 26                             | 24    | 38    | 43    | 44    | 2     | 4.3                | 0.33 | 1.8  | 1    | 12     | 0.158 |
|                  | 52    | 16.25 | 15 | 13   | 1.5      | 1.5     | 1.5      | 1.5     | 32.5               | 22   | 8000        | 11000 | 30304        | 28                             | 28    | 44    | 45    | 48    | 3     | 3.3                | 0.3  | 2    | 1.1  | 11     | 0.167 |
|                  | 52    | 22.25 | 21 | 18   | 1.5      | 1.5     | 1.5      | 1.5     | 42                 | 35   | 7500        | 10000 | 32304        | 26                             | 27    | 43    | 45    | 48    | 3     | 4.5                | 0.3  | 2    | 1.1  | 13     | 0.238 |
| 25               | 47    | 17    | 17 | 14   | 0.6      | 0.6     | 0.6      | 0.6     | 32.5               | 42.5 | 7500        | 9500  | 33005        | 31                             | 28    | 40    | 44    | 45    | 2     | 3                  | 0.29 | 2.1  | 1.14 | 11     | 0.129 |
|                  | 52    | 16.25 | 15 | 13   | 1        | 1       | 1        | 1       | 32                 | 34   | 7500        | 9500  | 30205        | 31                             | 31    | 44    | 46    | 49    | 2     | 3.3                | 0.37 | 1.6  | 0.88 | 12     | 0.160 |
|                  | 52    | 19.25 | 18 | 16   | 1        | 1       | 1        | 1       | 40.5               | 46   | 7000        | 9500  | 32205        | 31                             | 31    | 44    | 48    | 50    | 2     | 3.3                | 0.36 | 1.7  | 0.92 | 13     | 0.199 |
|                  | 52    | 22    | 22 | 18   | 1        | 1       | 1        | 1       | 51.5               | 56   | 7500        | 9500  | 33205        | 30                             | 29    | 42    | 48    | 50    | 2     | 4                  | 0.35 | 1.7  | 0.94 | 14     | 0.216 |
|                  | 62    | 18.25 | 17 | 13   | 1.5      | 1.5     | 1.5      | 1.5     | 42.5               | 46   | 5600        | 7500  | 31305        | 34                             | 32    | 47    | 55    | 59    | 3     | 5                  | 0.83 | 0.72 | 0.4  | 20     | 0.263 |
|                  | 62    | 18.25 | 17 | 13   | 1.5      | 1.5     | 1.5      | 1.5     | 48                 | 47   | 5600        | 7500  | 30305        | 35                             | 32    | 54    | 55    | 58    | 3     | 5.3                | 0.3  | 2    | 1.1  | 12     | 0.250 |
| 62               | 25.25 | 24    | 20 | 1.5  | 1.5      | 1.5     | 1.5      | 63      | 66                 | 6000 | 7100        | 32305 | 32           | 32                             | 52    | 55    | 58    | 2     | 5.3   | 0.3                | 2    | 1.1  | 15   | 0.422  |       |
| 28               | 52    | 16    | 16 | 12   | 1        | 1       | 1        | 1       | 35.5               | 39.2 | 7100        | 8900  | 320/28       | 33                             | 32    | 44    | 48    | 51    | 2     | 4                  | 0.43 | 1.4  | 0.77 | 13     | 0.145 |
| 30               | 62    | 17.25 | 16 | 14   | 1        | 1       | 1        | 1       | 41                 | 44   | 6300        | 8500  | 30206        | 37                             | 36    | 53    | 56    | 58    | 3     | 4.5                | 0.37 | 1.6  | 0.88 | 14     | 0.230 |
|                  | 62    | 21.25 | 20 | 17   | 1        | 1       | 1        | 1       | 55                 | 65   | 6300        | 8500  | 32206        | 36                             | 36    | 52    | 56    | 58    | 2     | 4.3                | 0.37 | 1.6  | 0.88 | 15     | 0.356 |
|                  | 62    | 25    | 25 | 19.5 | 1        | 1       | 1        | 1       | 70.5               | 75   | 5600        | 7500  | 33206        | 37                             | 34    | 51    | 58    | 60    | 2     | 5.5                | 0.34 | 1.8  | 0.97 | 16     | 0.343 |
|                  | 72    | 20.75 | 19 | 16   | 1.5      | 1.5     | 1.5      | 1.5     | 61.5               | 63   | 5600        | 7500  | 30306        | 40                             | 37    | 62    | 65    | 66    | 4     | 6                  | 0.31 | 1.9  | 1.05 | 15     | 0.390 |
| 72               | 28.75 | 27    | 23 | 1.5  | 1.5      | 1.5     | 1.5      | 77      | 84                 | 5300 | 7000        | 32306 | 38           | 37                             | 59    | 65    | 66    | 2     | 6     | 0.31               | 1.9  | 1.05 | 18   | 0.554  |       |
| 35               | 62    | 18    | 18 | 14   | 1        | 1       | 1        | 1       | 42                 | 52   | 6000        | 8000  | 32007        | 40                             |       | 54    | 56    | 59    | 4     | 4                  | 0.45 | 1.3  | 0.73 | 15     | 0.384 |
|                  | 65    | 18    | 18 | 14   | 3.5      | 3.5     | 1.2      | 1.2     | 40.8               | 41   | 5000        | 7000  | 30607        | 42                             | 47    | 55    | 65    | 62    | 2     | 4                  | 0.38 | 1.6  | 0.88 | 14     | 0.229 |
|                  | 72    | 18.25 | 17 | 15   | 1.5      | 1.5     | 1.5      | 1.5     | 50.5               | 55   | 5300        | 7000  | 30207        | 44                             | 42    | 62    | 65    | 67    | 3     | 3.3                | 0.37 | 1.6  | 0.88 | 15     | 0.318 |
|                  | 72    | 24.25 | 23 | 19   | 1.5      | 1.5     | 1.5      | 1.5     | 66                 | 80   | 5300        | 7000  | 32207        | 42                             | 42    | 61    | 65    | 68    | 2     | 5.3                | 0.37 | 1.6  | 0.88 | 17     | 0.452 |
|                  | 72    | 28    | 28 | 22   | 1.5      | 1.5     | 1.5      | 1.5     | 87.5               | 106  | 4800        | 6300  | 33207        | 42                             | 42    | 59    | 65    | 69    | 2     | 6                  | 0.35 | 1.7  | 0.93 | 18     | 0.519 |
|                  | 80    | 22.75 | 21 | 15   | 2        | 2       | 1.5      | 1.5     | 68                 | 76   | 4500        | 6000  | 31307        | 45                             | 44    | 62    | 71    | 76    | 3     | 7.5                | 0.83 | 0.7  | 0.4  | 25     | 0.515 |
|                  | 80    | 22.75 | 21 | 18   | 2        | 2       | 1.5      | 1.5     | 68.5               | 65   | 5000        | 6700  | 30307        | 47                             | 44    | 68    | 73    | 75    | 3     | 5.5                | 0.31 | 1.9  | 1.05 | 16     | 0.515 |
|                  | 80    | 32.75 | 31 | 25   | 2        | 2       | 1.5      | 1.5     | 90.5               | 94   | 4800        | 6300  | 32307        | 43                             | 44    | 66    | 71    | 74    | 4     | 8.5                | 0.31 | 1.9  | 1.05 | 20     | 0.755 |
| 40               | 68    | 19    | 19 | 14.5 | 1        | 1       | 1        | 1       | 58.5               | 79.5 | 5300        | 7000  | 32008        | 47                             | 44    | 59    | 64    | 66    | 3     | 4.5                | 0.38 | 1.6  | 0.87 | 15     | 0.297 |
|                  | 75    | 26    | 26 | 20.5 | 1.5      | 1.5     | 1.5      | 1.5     | 81                 | 104  | 5000        | 6700  | 33108        | 65                             | 47    | 65    | 68    | 71    | 4     | 5.5                | 0.35 | 1.7  | 0.9  | 18     | 0.499 |
|                  | 80    | 19.75 | 18 | 16   | 1.5      | 1.5     | 1.5      | 1.5     | 66                 | 73   | 4800        | 6300  | 30208        | 49                             | 47    | 69    | 73    | 75    | 3     | 3.8                | 0.37 | 1.6  | 0.88 | 17     | 0.430 |
|                  | 80    | 24.75 | 23 | 19   | 1.5      | 1.5     | 1.5      | 1.5     | 79                 | 93   | 4800        | 6300  | 32208        | 48                             | 47    | 68    | 73    | 76    | 3     | 5.8                | 0.37 | 1.6  | 0.88 | 18     | 0.561 |
|                  | 80    | 32    | 32 | 25   | 1.5      | 1.5     | 1.5      | 1.5     | 113                | 126  | 4300        | 5600  | 33208        | 47                             | 48    | 65    | 73    | 77    | 2     | 7                  | 0.36 | 1.7  | 0.92 | 21     | 0.701 |
|                  | 90    | 25.25 | 23 | 17   | 2        | 2       | 1.5      | 1.5     | 81                 | 77   | 4000        | 5300  | 31308        | 48                             | 49    | 71    | 81    | 87    | 4     | 9.5                | 0.83 | 0.7  | 0.4  | 29     | 0.731 |
|                  | 90    | 25.25 | 33 | 20   | 2        | 2       | 1.5      | 1.5     | 95.5               | 102  | 4500        | 6000  | 30308        | 52                             | 49    | 77    | 81    | 84    | 3     | 5.5                | 0.35 | 1.7  | 0.96 | 19     | 0.734 |

# Single Row Cylindrical Roller Bearings



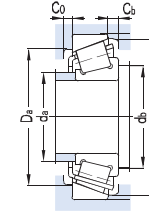
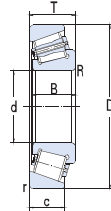
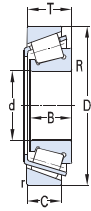
| Basic dimensions |     |       |      |      |          |         |          |         | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |       |      |      | Weight |       |
|------------------|-----|-------|------|------|----------|---------|----------|---------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|-------|------|------|--------|-------|
| d                | D   | T     | B    | C    | R radial | R axial | r radial | r axial | Cr                 | Cor  | Grease      | Oil  |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e     | Y    | Yo   |        | a     |
| mm               |     |       |      |      |          |         |          |         | KN                 |      | r/min       |      |              | mm                             |       |       |       |       |       |                    |       |      |      | Kg     |       |
|                  | 90  | 35.25 | 33   | 27   | 2        | 2       | 1.5      | 1.5     | 117                | 140  | 4000        | 5300 | 32308        | 49                             | 49    | 73    | 81    | 83    | 4     | 8.5                | 0.35  | 1.7  | 0.96 | 22     | 1.080 |
| 42               | 100 | 38.25 | 36   | 30   | 2        | 2       | 1.5      | 1.5     | 153                | 174  | 3600        | 4800 | 323/42R      | 58                             | 51    | 81    | 93    | 93    | 3     | 8.3                | 0.35  | 1.7  | 0.96 | 25     | 1.55  |
|                  | 76  | 24    | 27.5 | 19.8 | 2        | 2       | 2        | 2       | 76                 | 101  | 4700        | 6250 | 306/42       | 52                             | 49    | 65    | 71    | 73    | 3     | 6                  | 0.28  | 2.2  | 1.19 | 29     | 0.479 |
| 45               | 75  | 20    | 20   | 15.5 | 1        | 1       | 1        | 1       | 57.5               | 80   | 4800        | 6300 | 32009        | 52                             | 49    | 65    | 71    | 73    | 3     | 6                  | 0.39  | 1.5  | 0.84 | 17     | 0.343 |
|                  | 80  | 26    | 26   | 20.5 | 1.5      | 1.5     | 1.5      | 1.5     | 91.7               | 118  | 4500        | 6000 | 33109        | 52                             | 57    | 69    | 73    | 77    | 4.5   | 6.5                | 0.383 |      |      |        | 0.536 |
|                  | 85  | 20.75 | 19   | 16   | 1.5      | 1.5     | 1.5      | 1.5     | 70.5               | 83   | 4500        | 6000 | 30209        | 53                             | 52    | 74    | 78    | 80    | 3     | 5                  | 0.4   | 1.5  | 0.81 | 18     | 0.464 |
|                  | 85  | 24.75 | 23   | 19   | 1.5      | 1.5     | 1.5      | 1.5     | 86.9               | 105  | 4500        | 6000 | 32209        | 53                             | 52    | 73    | 78    | 81    | 3     | 5.8                | 0.4   | 1.5  | 0.81 | 20     | 0.576 |
|                  | 85  | 32    | 32   | 25   | 1.5      | 1.5     | 1.5      | 1.5     | 115                | 150  | 4000        | 5300 | 33209        | 52                             | 53    | 70    | 78    | 82    | 3     | 7                  | 0.39  | 1.6  | 0.86 | 22     | 0.789 |
|                  | 100 | 27.25 | 25   | 18   | 2        | 2       | 1.5      | 1.5     | 101                | 97   | 3600        | 4800 | 31309        | 54                             | 54    | 79    | 91    | 96    | 4     | 9.5                | 0.83  | 0.7  | 0.4  | 32     | 0.977 |
|                  | 100 | 27.25 | 25   | 22   | 2        | 2       | 1.5      | 1.5     | 103                | 107  | 4000        | 5300 | 30309        | 59                             | 54    | 86    | 91    | 94    | 4     | 8.5                | 0.35  | 1.7  | 0.96 | 21     | 0.987 |
|                  | 100 | 38.25 | 36   | 30   | 2        | 2       | 1.5      | 1.5     | 153                | 174  | 3600        | 4800 | 32309        | 56                             | 54    | 82    | 91    | 93    | 4     | 8.5                | 0.35  | 1.7  | 0.96 | 25     | 1.44  |
| 47               | 100 | 43    | 43   | 37   | 1.8      | 1.8     | 1.8      | 1.8     | 151                | 190  | 3400        | 4500 | 306/47       | 57                             | 55    | 79    | 100   | 93    | 4     | 6                  | 0.31  | 1.9  | 1.07 | 27     | 1.66  |
| 50               | 80  | 20    | 20   | 15.5 | 1        | 1       | 1        | 1       | 60                 | 86.5 | 4500        | 6000 | 32010        | 57                             | 54    | 70    | 76    | 78    | 4     | 4.5                | 0.42  | 1.4  | 0.78 | 18     | 0.381 |
|                  | 80  | 24    | 24   | 19   | 1        | 1       | 1        | 1       | 77                 | 111  | 4500        | 6000 | 33010        | 55                             | 58    | 70    | 77    | 76    | 4     | 4.5                | 0.32  | 1.9  | 1.04 | 17     | 0.442 |
|                  | 82  | 21.5  | 21.5 | 17   | 3        | 3       | 0.5      | 0.5     | 68.5               | 73   | 3200        | 4300 | 30610        | 57                             | 62    | 72    | 82    | 79    | 3     | 4.5                | 0.31  | 2    | 1.08 | 16     | 0.331 |
|                  | 90  | 21.75 | 20   | 17   | 1.5      | 1.5     | 1.5      | 1.5     | 72.5               | 74   | 4300        | 5600 | 30210        | 58                             | 57    | 79    | 83    | 86    | 3     | 5                  | 0.42  | 1.4  | 0.79 | 20     | 0.550 |
|                  | 90  | 24.75 | 23   | 19   | 1.5      | 1.5     | 1.5      | 1.5     | 170                | 110  | 4300        | 5600 | 32210        | 58                             | 57    | 78    | 83    | 85    | 3     | 5.5                | 0.43  | 1.4  | 0.8  | 21     | 0.640 |
|                  | 90  | 32    | 32   | 24.5 | 1.5      | 1.5     | 1.5      | 1.5     | 119                | 160  | 3800        | 5000 | 33210        | 57                             | 58    | 75    | 83    | 88    | 3     | 7.5                | 0.41  | 1.5  | 0.8  | 23     | 1.17  |
|                  | 110 | 29.25 | 27   | 23   | 2.5      | 2.5     | 2.5      | 2.5     | 136                | 150  | 3600        | 4800 | 30310        | 65                             | 60    | 95    | 100   | 103   | 4     | 6                  | 0.35  | 1.7  | 0.96 | 23     | 1.26  |
|                  | 110 | 29.25 | 27   | 19   | 2.5      | 2.5     | 2        | 2       | 116                | 124  | 3200        | 4300 | 31310        | 63                             | 10    | 86    | 102   | 104   | 3     | 10                 | 0.83  | 0.7  | 0.4  | 35     | 1.25  |
|                  | 110 | 42.25 | 40   | 33   | 2.5      | 2.5     | 2        | 2       | 173                | 214  | 3600        | 4800 | 32310        | 61                             | 60    | 90    | 100   | 102   | 5     | 9.5                | 0.35  | 1.7  | 0.96 | 27     | 1.26  |
| 50.8             | 100 | 35    | 35   | 27   | 1.5      | 1.5     | 1.5      | 1.5     | 141                | 193  | 3200        | 4300 | 339/50.8     | 64                             | 58    | 83    | 93    | 97    | 4.5   | 8                  | 0.4   | 1.5  | 0.83 | 25     | 1.267 |
|                  | 100 | 35    | 35   | 29   | 2        | 2       | 2        | 2       | 131                | 171  | 3200        | 4300 | 306/50.8     | 63                             | 59    | 83    | 92    | 94    | 3     | 6                  | 0.3   | 2    | 1.1  | 23     | 1.27  |
| 55               | 90  | 23    | 23   | 17.5 | 1.5      | 1.5     | 1.5      | 1.5     | 77                 | 111  | 4000        | 5300 | 32011        | 64                             | 63    | 79    | 83    | 88    | 4.5   | 5.5                | 0.41  | 1.5  | 0.81 | 20     | 0.564 |
|                  | 90  | 27    | 27   | 21   | 1.5      | 1.5     | 1.5      | 1.5     | 101                | 147  | 4000        | 5300 | 33011        | 62                             | 65    | 78    | 83    | 87    | 4.5   | 5.5                | 0.31  | 1.92 | 1.06 | 19     | 0.839 |
|                  | 95  | 30    | 30   | 23   | 1.5      | 1.5     | 1.5      | 1.5     | 105                | 163  | 3800        | 5000 | 33111/HA     | 64                             | 63    | 81    | 88    | 92    | 3     | 7                  | 0.37  | 1.6  | 0.88 | 22     | 0.881 |
|                  | 100 | 22.75 | 21   | 18   | 2        | 2       | 1.5      | 1.5     | 99                 | 110  | 3800        | 5000 | 30211        | 64                             | 64    | 88    | 91    | 95    | 4     | 5                  | 0.4   | 1.5  | 0.81 | 21     | 0.713 |
|                  | 100 | 26.75 | 25   | 21   | 2        | 2       | 1.5      | 1.5     | 108                | 133  | 3800        | 5000 | 32211        | 62                             | 64    | 87    | 91    | 95    | 4     | 5.7                | 0.4   | 1.5  | 0.81 | 22     | 0.878 |
|                  | 100 | 35    | 35   | 27   | 2        | 2       | 1.5      | 1.5     | 143                | 196  | 3400        | 4500 | 33211        | 63                             | 64    | 85    | 93    | 96    | 6     | 8                  | 0.4   | 1.5  | 0.8  | 25     | 1.17  |
|                  | 120 | 31.5  | 29   | 25   | 2.5      | 2.5     | 2        | 2       | 156                | 178  | 3200        | 4300 | 30311        | 70                             | 65    | 104   | 110   | 112   | 4     | 6.5                | 0.35  | 1.7  | 0.96 | 25     | 1.65  |
|                  | 120 | 31.5  | 29   | 21   | 2.5      | 2.5     | 2        | 2       | 155                | 166  | 2800        | 3800 | 31311        | 68                             | 65    | 92    | 112   | 112   | 3     | 11                 | 0.83  | 0.7  | 0.4  | 38     | 1.78  |

# Single Row Cylindrical Roller Bearings



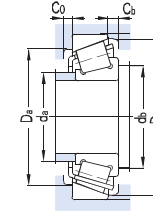
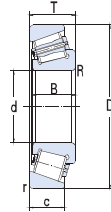
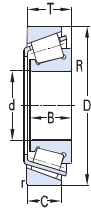
| Basic dimensions |     |       |    |      |          |         |          |         | Basic load ratings |     | Limit speed |      | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |     |      |     | Weight |    |       |
|------------------|-----|-------|----|------|----------|---------|----------|---------|--------------------|-----|-------------|------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|-----|------|-----|--------|----|-------|
| d                | D   | T     | B  | C    | R radial | R axial | r radial | r axial | Cr                 | Cor | Grease      | Oil  |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e   | Y    | Yo  |        | a  |       |
| mm               |     |       |    |      |          |         |          |         | KN                 |     | r/min       |      |              | mm                             |       |       |       |       |       |                    |     |      |     | Kg     |    |       |
|                  | 120 | 45.5  | 43 | 35   | 2.5      | 2.5     | 2        | 2       | 218                | 280 | 3000        | 4000 |              | 32311                          | 66    | 65    | 99    | 110   | 111   | 5                  | 11  | 0.35 | 1.7 | 0.96   | 29 | 2.43  |
|                  | 125 | 37    | 36 | 25   | 3        | 3       | 2        | 2       | 148                | 172 | 2800        | 3800 |              | 30611B                         | 69    | 67    | 95    | 117   | 117   | 3                  | 12  | 0.73 | 0.8 | 0.45   | 38 | 2.10  |
| 60               | 85  | 17    | 17 | 14   | 1        | 1       | 1        | 1       | 40                 | 65  | 3900        | 5100 |              | 32912                          | 65    | 68    | 76    | 81    | 79    | 4                  | 3   | 0.38 | 1.6 | 0.87   | 17 | 0.284 |
|                  | 95  | 23    | 23 | 17.5 | 1.5      | 1.5     | 1.5      | 1.5     | 90.3               | 112 | 3800        | 5000 |              | 32012                          | 68    | 68    | 83    | 88    | 92    | 5                  | 5.5 | 0.4  | 1.4 | 0.77   | 21 | 0.597 |
|                  | 95  | 27    | 27 | 21   | 1.5      | 1.5     | 1.5      | 1.5     | 101                | 158 | 2800        | 5000 |              | 33012                          | 67    | 67    | 85    | 88    | 90    | 5                  | 6   | 0.33 | 1.8 | 1      | 20 | 0.691 |
|                  | 100 | 30    | 30 | 23   | 1.5      | 1.5     | 1.5      | 1.5     | 116                | 171 | 3600        | 4800 |              | 33112                          | 68    | 68    | 85    | 93    | 97    | 3.5                | 7   | 0.4  | 1.5 | 0.83   | 23 | 0.895 |
|                  | 110 | 23.75 | 22 | 19   | 2        | 2       | 1.5      | 1.5     | 106                | 124 | 3400        | 4500 |              | 30212                          | 69    | 69    | 96    | 101   | 103   | 4                  | 5   | 0.4  | 1.5 | 0.81   | 23 | 0.923 |
|                  | 110 | 29.75 | 28 | 24   | 2        | 2       | 1.5      | 1.5     | 133                | 170 | 3400        | 4500 |              | 32212                          | 69    | 68    | 95    | 101   | 104   | 4                  | 5.8 | 0.4  | 1.5 | 0.81   | 25 | 1.26  |
|                  | 130 | 33.5  | 31 | 26   | 3        | 3       | 2.5      | 2.5     | 163                | 185 | 3000        | 4000 |              | 30312                          | 76    | 72    | 112   | 118   | 121   | 3.5                | 7.5 | 0.35 | 1.7 | 0.96   | 26 | 1.96  |
|                  | 130 | 33.5  | 31 | 22   | 3        | 3       | 2.5      | 2.5     | 138                | 155 | 2600        | 3600 |              | 31312                          | 69    | 72    | 103   | 118   | 124   | 5                  | 12  | 0.83 | 0.7 | 0.4    | 41 | 1.92  |
|                  | 130 | 48.5  | 46 | 37   | 3        | 3       | 2.5      | 2.5     | 229                | 289 | 2600        | 3600 |              | 32312                          | 72    | 72    | 107   | 118   | 122   | 6                  | 12  | 0.35 | 1.7 | 0.96   | 31 | 2.90  |
| 65               | 100 | 23    | 23 | 17.5 | 1.5      | 1.5     | 1.5      | 1.5     | 91.7               | 128 | 3400        | 4500 |              | 32013                          | 72    | 72    | 90    | 93    | 97    | 4                  | 5.5 | 0.46 | 1.3 | 0.7    | 22 | 0.612 |
|                  | 100 | 27    | 27 | 21   | 1.5      | 1.5     | 1.5      | 1.5     | 108                | 158 | 3400        | 4500 |              | 33013                          | 72    | 73    | 87    | 93    | 97    | 3.5                | 6   | 0.3  | 1.7 | 0.95   | 21 | 0.732 |
|                  | 110 | 30.35 | 30 | 24   | 3        | 4       | 1.8      | 1.8     | 109                | 155 | 3200        | 4300 |              | 7813                           | 76    | 79    | 94    | 105   | 106   | 3.5                | 6.4 | 0.4  | 1.5 | 0.82   | 25 | 1.10  |
|                  | 110 | 34    | 34 | 26.5 | 1.5      | 1.5     | 1.5      | 1.5     | 157                | 220 | 3200        | 4300 |              | 33113                          | 76    | 73    | 94    | 103   | 107   | 3.5                | 7.5 | 0.39 | 1.6 | 0.85   | 26 | 1.30  |
|                  | 120 | 24.75 | 23 | 20   | 2        | 2       | 1.5      | 1.5     | 125                | 147 | 3000        | 4000 |              | 30213                          | 77    | 74    | 106   | 111   | 114   | 4                  | 5   | 0.4  | 1.5 | 0.81   | 24 | 1.14  |
|                  | 120 | 32.75 | 31 | 27   | 2        | 2       | 1.5      | 1.5     | 151                | 192 | 3000        | 4000 |              | 32213                          | 75    | 74    | 104   | 111   | 115   | 4                  | 5.8 | 0.4  | 1.5 | 0.81   | 28 | 1.58  |
|                  | 120 | 41    | 41 | 32   | 2        | 2       | 1.5      | 1.5     | 222                | 282 | 2800        | 3800 |              | 33213                          | 75    | 74    | 102   | 113   | 115   | 6                  | 9   | 0.4  | 1.5 | 0.8    | 29 | 2.00  |
|                  | 130 | 45    | 43 | 35   | 7        | 7       | 2        | 2       | 223                | 298 | 2800        | 3800 |              | 30613                          | 80    | 66    | 108   | 122   | 122   | 3.5                | 10  | 0.33 | 1.8 | 0.99   | 30 | 2.64  |
|                  | 140 | 36    | 33 | 23   | 3        | 3       | 2.5      | 2.5     | 184                | 198 | 2800        | 3800 |              | 31313                          | 75    | 77    | 111   | 128   | 134   | 5                  | 13  | 0.83 | 0.7 | 0.4    | 44 | 2.46  |
|                  | 140 | 36    | 33 | 28   | 3        | 3       | 2.5      | 2.5     | 188                | 216 | 2600        | 3600 |              | 30313                          | 83    | 72    | 120   | 131   | 131   | 3.5                | 8   | 0.35 | 1.7 | 0.96   | 28 | 2.49  |
|                  | 140 | 51    | 48 | 39   | 3        | 3       | 2.5      | 2.5     | 264                | 335 | 2400        | 3400 |              | 32313                          | 79    | 77    | 117   | 128   | 131   | 6                  | 12  | 0.35 | 1.7 | 0.96   | 33 | 3.68  |
| 70               | 100 | 20    | 20 | 16   | 1        | 1       | 1        | 1       | 70.5               | 114 | 3000        | 4000 |              | 32914                          | 76    | 76    | 90    | 96    | 96    | 5                  | 4   | 0.32 | 1.9 | 1.05   | 18 | 0.475 |
|                  | 110 | 25    | 25 | 19   | 1.5      | 1.5     | 1.5      | 1.5     | 106                | 163 | 3000        | 4000 |              | 32014                          | 93    | 78    | 112   | 103   | 125   | 5                  | 6   | 0.43 | 1.4 | 0.76   | 26 | 0.972 |
|                  | 120 | 37    | 37 | 29   | 2        | 2       | 1.5      | 1.5     | 164                | 258 | 3000        | 4000 |              | 33114                          | 82    | 79    | 102   | 113   | 116   | 3.5                | 8   | 0.38 | 1.6 | 0.87   | 28 | 1.72  |
|                  | 120 | 45    | 42 | 37   | 2.5      | 2.5     | 2.5      | 2.5     | 138                | 198 | 3000        | 4000 |              | 30614                          | 79    | 80    | 99    | 111   | 115   | 3.5                | 8   | 0.39 | 1.5 | 0.84   | 32 | 1.89  |
|                  | 125 | 26.25 | 24 | 21   | 2        | 2       | 1.5      | 1.5     | 119                | 142 | 3000        | 4000 |              | 30214                          | 81    | 69    | 110   | 116   | 118   | 4                  | 5.3 | 0.42 | 1.4 | 0.79   | 26 | 1.29  |
|                  | 125 | 33.25 | 31 | 27   | 2        | 2       | 1.5      | 1.5     | 170                | 227 | 2800        | 3800 |              | 32214                          | 79    | 79    | 106   | 118   | 120   | 4                  | 6.3 | 0.42 | 1.4 | 0.79   | 29 | 1.66  |
|                  | 125 | 41    | 41 | 32   | 2        | 2       | 1.5      | 1.5     | 191                | 285 | 2800        | 3800 |              | 33214                          | 78    | 89    | 106   | 134   | 120   |                    |     | 0.41 |     |        |    |       |
|                  | 150 | 38    | 35 | 25   | 3        | 3       | 2.5      | 2.5     | 192                | 226 | 2400        | 3400 |              | 31314                          | 78    | 82    | 118   | 138   | 140   | 5                  | 13  | 0.83 | 0.7 | 0.4    | 47 | 2.87  |
|                  | 150 | 38    | 35 | 30   | 3        | 3       | 2.5      | 2.5     | 223                | 262 | 2400        | 3400 |              | 30314                          | 89    | 82    | 130   | 138   | 141   | 5                  | 8   | 0.35 | 1.7 | 0.96   | 30 | 3.08  |
|                  | 150 | 54    | 51 | 42   | 3        | 3       | 2.5      | 2.5     | 305                | 390 | 2200        | 3200 |              | 32314                          | 84    | 82    | 125   | 138   | 141   | 6                  | 12  | 0.35 | 1.7 | 0.96   | 36 | 4.38  |
| 75               | 115 | 25    | 25 | 19   | 1.5      | 1.5     | 1.5      | 1.5     | 104                | 160 | 3000        | 4000 |              | 32015                          | 84    | 83    | 100   | 108   | 112   | 6                  | 6   | 0.46 | 1.3 | 0.72   | 25 | 0.922 |

# Single Row Cylindrical Roller Bearings



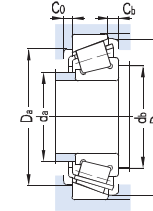
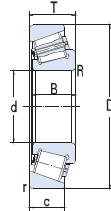
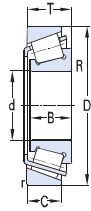
| Basic dimensions |     |       |    |      |          |         |          |         | Basic load ratings |     | Limit speed |      | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |      |     |      | Weight |       |
|------------------|-----|-------|----|------|----------|---------|----------|---------|--------------------|-----|-------------|------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|------|-----|------|--------|-------|
| d                | D   | T     | B  | C    | R radial | R axial | r radial | r axial | Cr                 | Cor | Grease      | Oil  |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e    | Y   | Yo   |        | a     |
| mm               |     |       |    |      |          |         |          |         | KN                 |     | r/min       |      |              | mm                             |       |       |       |       |       |                    |      |     |      | Kg     |       |
|                  | 115 | 31    | 31 | 25.5 | 1.5      | 1.5     | 1.5      | 1.5     | 130                | 213 | 3000        | 4000 | 33015        | 84                             | 82    | 104   | 108   | 110   | 6     | 5.5                | 0.3  | 2   | 1.1  | 23     | 1.10  |
|                  | 125 | 37    | 37 | 29   | 2        | 2       | 1.5      | 1.5     | 174                | 275 | 2800        | 3800 | 33115        | 87                             | 84    | 107   | 118   | 121   | 4.5   | 8                  | 0.4  | 1.5 | 0.83 | 29     | 1.80  |
|                  | 130 | 27.25 | 25 | 22   | 2        | 2       | 1.5      | 1.5     | 139                | 175 | 2800        | 3800 | 30215        | 85                             | 84    | 115   | 121   | 125   | 4.5   | 5.3                | 0.44 | 1.4 | 0.76 | 28     | 1.40  |
|                  | 130 | 33.25 | 31 | 27   | 2        | 2       | 1.5      | 1.5     | 173                | 231 | 2600        | 3600 | 32215        | 84                             | 84    | 115   | 126   | 126   | 4.5   | 6.3                | 0.44 | 1.4 | 0.76 | 30     | 1.76  |
|                  | 130 | 41    | 41 | 31   | 2        | 2       | 1.5      | 1.5     | 199                | 282 | 2600        | 3600 | 33215        | 87                             | 84    | 109   | 123   | 126   | 4.5   | 10                 | 0.43 | 1.4 | 0.77 | 32     | 2.27  |
|                  | 135 | 44.5  | 45 | 36.5 | 2.5      | 2.5     | 2.5      | 2.5     | 232                | 340 | 2600        | 3600 | 30615        | 90                             | 76    | 115   | 126   | 128   | 6     | 8                  | 0.28 | 2.2 | 1.19 | 29     | 2.79  |
|                  | 160 | 40    | 37 | 31   | 3        | 3       | 2.5      | 2.5     | 259                | 285 | 2200        | 3200 | 30315        | 95                             | 87    | 139   | 148   | 150   | 4.5   | 9                  | 0.35 | 1.7 | 0.96 | 32     | 3.71  |
|                  | 160 | 40    | 37 | 26   | 3        | 3       | 2.5      | 2.5     | 229                | 276 | 2200        | 3200 | 31315        | 86                             | 87    | 127   | 148   | 153   | 6     | 14                 | 0.83 | 0.7 | 0.4  | 50     | 3.40  |
|                  | 160 | 58    | 55 | 45   | 3        | 3       | 2.5      | 2.5     | 345                | 455 | 2000        | 3000 | 32315        | 94                             | 87    | 131   | 151   | 150   | 4.5   | 13                 | 0.35 | 1.7 | 0.96 | 38     | 5.35  |
| 76               | 141 | 28.25 | 26 | 22   | 0.5      | 0.5     | 2        | 2       | 165                | 209 | 2300        | 3400 | 306/76       | 91                             | 80    | 123   | 125   | 134   | 6.5   | 8                  | 0.42 |     |      |        | 1.83  |
| 80               | 110 | 20    | 20 | 16   | 1        | 1       | 1        | 1       | 71                 | 119 | 2700        | 3700 | 32916        | 86                             | 88    | 100   | 106   | 106   | 5     | 6                  | 0.35 | 1.7 | 0.96 | 38     | 0.548 |
|                  | 125 | 29    | 29 | 22   | 1.5      | 1.5     | 1.5      | 1.5     | 139                | 219 | 2600        | 3600 | 32016        | 90                             | 88    | 109   | 118   | 121   | 6     | 7                  | 0.42 | 1.4 | 0.78 | 27     | 1.26  |
|                  | 125 | 36    | 36 | 29.5 | 1.5      | 1.5     | 1.5      | 1.5     | 172                | 281 | 2600        | 3600 | 33016        | 90                             | 87    | 112   | 117   | 119   | 6     | 6.5                | 0.28 | 2.1 | 1.1  | 26     | 1.62  |
|                  | 130 | 37    | 37 | 29   | 2        | 2       | 1.5      | 1.5     | 179                | 280 | 2600        | 3600 | 33116        | 91                             | 81    | 111   | 123   | 127   | 4.5   | 8                  | 0.42 | 1.4 | 0.79 | 31     | 2.79  |
|                  | 140 | 28.25 | 26 | 22   | 2.5      | 2.5     | 2        | 2       | 146                | 178 | 2400        | 3400 | 30216        | 90                             | 90    | 124   | 130   | 133   | 4.5   | 6.3                | 0.42 | 1.4 | 0.79 | 29     | 1.56  |
|                  | 140 | 35.25 | 33 | 28   | 2.5      | 2.5     | 2        | 2       | 198                | 263 | 2400        | 3400 | 32216        | 89                             | 90    | 122   | 130   | 135   | 5     | 7.3                | 0.42 | 1.4 | 0.79 | 32     | 2.19  |
|                  | 140 | 46    | 46 | 35   | 2.5      | 2.5     | 2        | 2       | 264                | 390 | 2200        | 3200 | 33216        | 90                             | 90    | 117   | 132   | 136   | 4.5   | 11                 | 0.43 | 1.4 | 0.78 | 35     | 2.89  |
|                  | 170 | 42.5  | 39 | 27   | 3        | 3       | 2.5      | 2.5     | 223                | 260 | 2200        | 3200 | 31316        | 92                             | 91    | 128   | 156   | 156   | 6     | 16                 | 0.83 | 0.7 | 0.4  | 53     | 3.65  |
|                  | 170 | 42.5  | 39 | 33   | 3        | 3       | 2.5      | 2.5     | 273                | 320 | 2000        | 3000 | 30316        | 102                            | 92    | 146   | 158   | 160   | 5     | 9.5                | 0.35 | 1.7 | 0.96 | 34     | 4.32  |
|                  | 170 | 61.5  | 58 | 48   | 3        | 3       | 2.5      | 2.5     | 390                | 510 | 1900        | 2800 | 32316        | 97                             | 92    | 142   | 158   | 160   | 4.5   | 14                 | 0.35 | 1.7 | 0.96 | 41     | 6.43  |
| 85               | 130 | 29    | 29 | 22   | 1.5      | 1.5     | 1.5      | 1.5     | 138                | 220 | 2400        | 3400 | 32017        | 94                             | 93    | 114   | 123   | 126   | 7     | 7                  | 0.44 | 1.4 | 0.75 | 28     | 1.33  |
|                  | 130 | 36    | 36 | 29.5 | 1.5      | 1.5     | 1.5      | 1.5     | 195                | 330 | 2600        | 3600 | 33017        | 94                             | 92    | 118   | 122   | 125   | 6     | 6.5                | 0.3  | 2   | 1.1  | 26     | 1.70  |
|                  | 140 | 41    | 41 | 32   | 2.5      | 2.5     | 2        | 2       | 215                | 350 | 2400        | 3400 | 33117        | 98                             | 95    | 119   | 132   | 136   | 4.5   | 9                  | 0.41 | 1.5 | 0.81 | 33     | 2.43  |
|                  | 150 | 30.5  | 28 | 24   | 2.5      | 2.5     | 2        | 2       | 167                | 204 | 2400        | 3400 | 30217        | 96                             | 95    | 132   | 140   | 142   | 5     | 6.5                | 0.42 | 1.4 | 0.79 | 31     | 2.05  |
|                  | 150 | 38.5  | 36 | 30   | 2.5      | 2.5     | 2        | 2       | 230                | 315 | 2200        | 3200 | 32217        | 95                             | 95    | 130   | 140   | 143   | 5     | 8.5                | 0.42 | 1.4 | 0.79 | 34     | 2.70  |
|                  | 150 | 49    | 49 | 37   | 2.5      | 2.5     | 2        | 2       | 286                | 236 | 2000        | 3000 | 33217        | 96                             | 95    | 125   | 142   | 145   | 4.5   | 12                 | 0.42 | 1.4 | 0.79 | 37     | 3.64  |
|                  | 180 | 44.5  | 41 | 28   | 4        | 4       | 3        | 3       | 254                | 300 | 2000        | 3000 | 31317        | 96                             | 99    | 143   | 166   | 171   | 6     | 17                 | 0.83 | 0.7 | 0.4  | 56     | 4.92  |
|                  | 180 | 44.5  | 41 | 34   | 4        | 4       | 3        | 3       | 299                | 355 | 1900        | 2800 | 30317        | 107                            | 99    | 156   | 166   | 168   | 6     | 11                 | 0.35 | 1.7 | 0.96 | 35     | 5.39  |
|                  | 180 | 63.5  | 60 | 49   | 4        | 4       | 3        | 3       | 425                | 560 | 1800        | 2600 | 32317        | 102                            | 99    | 150   | 166   | 168   | 4.5   | 15                 | 0.35 | 1.7 | 0.96 | 42     | 7.37  |
| 90               | 140 | 32    | 32 | 24   | 2        | 2       | 1.5      | 1.5     | 165                | 255 | 2200        | 3200 | 32018        | 100                            | 99    | 122   | 133   | 135   | 7     | 8                  | 0.42 | 1.4 | 0.78 | 30     | 1.77  |
|                  | 140 | 39    | 39 | 32.5 | 2        | 2       | 1.5      | 1.5     | 226                | 370 | 2200        | 3200 | 33018        | 100                            | 99    | 127   | 132   | 135   | 7     | 6.5                | 0.27 | 2.2 | 1.3  | 27     | 2.24  |
|                  | 150 | 45    | 45 | 35   | 2.5      | 2.5     | 2        | 2       | 242                | 390 | 2000        | 3000 | 33118        | 101                            | 101   | 130   | 140   | 144   | 7     | 10                 | 0.4  | 1.5 | 0.8  | 35     | 3.15  |
|                  | 160 | 32.5  | 30 | 26   | 2.5      | 2.5     | 2        | 2       | 222                | 291 | 2000        | 3000 | 30218        | 102                            | 100   | 140   | 150   | 151   | 5     | 6.5                | 0.42 | 1.4 | 0.79 | 33     | 2.73  |

# Single Row Cylindrical Roller Bearings



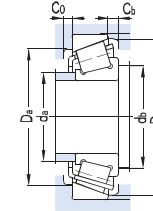
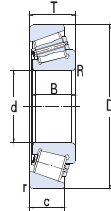
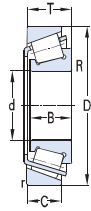
| Basic dimensions |     |      |      |      |          |         |          |         | Basic load ratings |     | Limit speed |      | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |      |      |      | Weight |      |
|------------------|-----|------|------|------|----------|---------|----------|---------|--------------------|-----|-------------|------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|------|------|------|--------|------|
| d                | D   | T    | B    | C    | R radial | R axial | r radial | r axial | Cr                 | Cor | Grease      | Oil  |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e    | Y    | Yo   |        | a    |
| mm               |     |      |      |      |          |         |          |         | KN                 |     | r/min       |      |              | mm                             |       |       |       |       |       |                    |      |      |      | Kg     |      |
|                  | 160 | 42.5 | 40   | 34   | 2.5      | 2.5     | 2        | 2       | 274                | 280 | 2000        | 3000 | 32218        | 101                            | 100   | 138   | 150   | 152   | 5     | 8.5                | 0.42 | 1.4  | 0.79 | 37     | 3.61 |
|                  | 160 | 55   | 55   | 42   | 2.5      | 2.5     | 2        | 2       | 330                | 495 | 2000        | 3000 | 33218        | 95                             | 99    | 115   | 160   | 126   | 7     | 13                 | 0.29 | 2.1  | 1.13 | 33     | 4.77 |
|                  | 170 | 62   | 59.5 | 49   | 2.5      | 2.5     | 2.5      | 2.5     | 360                | 520 | 2000        | 3000 | 30618        | 107                            | 100   | 139   | 161   | 161   | 4.5   | 13                 | 0.36 | 1.7  | 0.92 | 42     | 6.04 |
|                  | 190 | 46.5 | 43   | 30   | 4        | 4       | 3        | 3       | 283                | 340 | 2000        | 3000 | 31318        | 102                            | 104   | 151   | 176   | 181   | 6     | 17                 | 0.83 | 0.7  | 0.4  | 59     | 5.53 |
|                  | 190 | 46.5 | 43   | 36   | 4        | 4       | 3        | 3       | 335                | 410 | 1800        | 2600 | 30318        | 113                            | 104   | 165   | 176   | 178   | 6     | 11                 | 0.35 | 1.7  | 0.96 | 37     | 5.76 |
|                  | 190 | 67.5 | 64   | 53   | 4        | 4       | 3        | 3       | 485                | 650 | 1700        | 2400 | 32318        | 107                            | 104   | 157   | 176   | 178   | 8     | 15                 | 0.35 | 1.7  | 0.96 | 45     | 8.97 |
| 95               | 145 | 32   | 32   | 24   | 2        | 2       | 1.5      | 1.5     | 182                | 292 | 2200        | 3200 | 32019        | 105                            | 104   | 130   | 138   | 139   | 6     | 8                  | 0.44 | 1.35 | 0.8  | 31     | 1.87 |
|                  | 145 | 39   | 39   | 32.5 | 2        | 2       | 1.5      | 1.5     | 210                | 345 | 2200        | 3200 | 33019        | 105                            | 104   | 128   | 138   | 140   | 4.5   | 6.5                | 0.28 | 2.2  | 1.19 | 29     | 2.32 |
|                  | 160 | 47   | 47   | 38   | 3        | 3       | 3        | 3       | 286                | 460 | 2200        | 3200 | 30619        | 108                            | 107   | 137   | 149   | 153   | 4.5   | 9                  | 0.34 | 1.8  | 0.97 | 35     | 3.79 |
|                  | 160 | 47   | 47   | 38   | 3        | 3       | 2.5      | 2.5     | 325                | 435 | 2200        | 3200 | 7819E        | 67                             | 107   | 96    | 151   | 110   | 4.5   | 9                  | 0.28 | 2.2  | 1.19 | 28     | 3.73 |
|                  | 170 | 34.5 | 32   | 27   | 3        | 3       | 2.5      | 2.5     | 233                | 300 | 1900        | 2800 | 30219        | 108                            | 107   | 149   | 158   | 160   | 5     | 7.5                | 0.42 | 1.4  | 0.79 | 35     | 3.27 |
|                  | 170 | 45.5 | 43   | 37   | 3        | 3       | 2.5      | 2.5     | 298                | 415 | 1900        | 2800 | 32219        | 106                            | 107   | 145   | 158   | 163   | 5     | 8.5                | 0.42 | 1.4  | 0.79 | 40     | 4.34 |
|                  | 170 | 58   | 58   | 44   | 3        | 3       | 2.5      | 2.5     | 405                | 560 | 1900        | 2800 | 33219        | 109                            | 107   | 141   | 161   | 164   | 7     | 14                 | 0.41 | 1.5  | 0.81 | 43     | 5.54 |
|                  | 200 | 49.5 | 45   | 32   | 4        | 4       | 3        | 3       | 305                | 370 | 1900        | 2800 | 31319        | 107                            | 109   | 157   | 186   | 189   | 6     | 18                 | 0.83 | 0.7  | 0.4  | 62     | 6.84 |
|                  | 200 | 49.5 | 45   | 38   | 4        | 4       | 3        | 3       | 365                | 445 | 1800        | 2600 | 30319        | 118                            | 109   | 172   | 186   | 185   | 6     | 12                 | 0.35 | 1.7  | 0.96 | 39     | 6.91 |
|                  | 200 | 71.5 | 67   | 55   | 4        | 4       | 3        | 3       | 520                | 705 | 1700        | 2400 | 32319        | 114                            | 109   | 166   | 186   | 187   | 8     | 17                 | 0.35 | 1.7  | 0.96 | 47     | 10.0 |
| 100              | 150 | 32   | 32   | 24   | 2        | 2       | 1.5      | 1.5     | 190                | 281 | 1600        | 2200 | 32020        | 110                            | 109   | 131   | 143   | 145   | 4.5   | 8                  | 0.46 | 1.3  | 0.72 | 33     | 1.87 |
|                  | 150 | 39   | 39   | 32.5 | 2        | 2       | 1.5      | 1.5     | 253                | 390 | 2000        | 3000 | 33020        | 109                            | 109   | 132   | 143   | 144   | 4.5   | 6.5                | 0.29 | 2.1  | 1.15 | 29     | 2.36 |
|                  | 180 | 37   | 34   | 29   | 3        | 3       | 2.5      | 2.5     | 262                | 340 | 1900        | 2800 | 30220        | 114                            | 112   | 157   | 168   | 169   | 5     | 8                  | 0.42 | 1.4  | 0.79 | 37     | 3.56 |
|                  | 180 | 49   | 46   | 39   | 3        | 3       | 2.5      | 2.5     | 345                | 490 | 1800        | 2600 | 32220        | 113                            | 112   | 154   | 168   | 172   | 5     | 10                 | 0.42 | 1.4  | 0.79 | 42     | 5.31 |
|                  | 180 | 63   | 63   | 48   | 3        | 3       | 2.5      | 2.5     | 430                | 655 | 1700        | 2400 | 33220        | 112                            | 112   | 151   | 168   | 172   | 10    | 15                 | 0.4  | 1.5  | 0.8  | 43     | 6.58 |
|                  | 215 | 51.5 | 47   | 39   | 4        | 4       | 3        | 3       | 405                | 495 | 1700        | 2400 | 30320        | 127                            | 114   | 184   | 201   | 199   | 6     | 13                 | 0.35 | 1.7  | 0.96 | 41     | 8.09 |
|                  | 215 | 77.5 | 73   | 60   | 4        | 4       | 3        | 3       | 610                | 840 | 1600        | 2200 | 32320        | 122                            | 114   | 177   | 201   | 201   | 8     | 18                 | 0.35 | 1.7  | 0.96 | 51     | 13.2 |
|                  | 215 | 56.5 | 51   | 35   | 4        | 4       | 3        | 3       | 390                | 490 | 1600        | 2200 | 31320        | 121                            | 115   | 168   | 201   | 202   | 7     | 21.5               | 0.83 | 0.72 | 0.4  | 65     | 8.78 |
| 105              | 170 | 56   | 56   | 44   | 3        | 3       | 2.5      | 2.5     | 375                | 605 | 1700        | 2200 | 30621        | 125                            | 122   | 148   | 162   | 164   | 4.5   | 9                  | 0.43 | 1.4  | 0.77 | 35     | 4.71 |
|                  | 160 | 35   | 35   | 26   | 2.5      | 2.5     | 2        | 2       | 199                | 320 | 1900        | 2800 | 32021        | 116                            | 116   | 143   | 150   | 154   | 6     | 9                  | 0.44 | 1.35 | 0.8  | 34     | 2.38 |
|                  | 160 | 43   | 43   | 34   | 2.5      | 2.5     | 2        | 2       | 266                | 405 | 1900        | 2800 | 33021        | 117                            | 115   | 141   | 152   | 154   | 4.5   | 9                  | 0.28 | 2.1  | 1.17 | 31     | 2.98 |
|                  | 190 | 39   | 36   | 30   | 3        | 3       | 2.5      | 2.5     | 292                | 365 | 1800        | 2600 | 30221        | 125                            | 117   | 162   | 181   | 177   | 6     | 9                  | 0.42 | 1.4  | 0.79 | 39     | 4.47 |
|                  | 190 | 53   | 50   | 43   | 3        | 3       | 2.5      | 2.5     | 385                | 555 | 1800        | 2600 | 32221        | 118                            | 117   | 161   | 178   | 182   | 5     | 10                 | 0.42 | 1.4  | 0.79 | 45     | 6.34 |
|                  | 190 | 68   | 68   | 52   | 3        | 3       | 2.5      | 2.5     | 475                | 730 | 1800        | 2600 | 33221        | 129                            | 117   | 165   | 194   | 188   | 4.5   | 18                 | 0.35 | 1.9  | 1.05 | 49     | 8.02 |
|                  | 190 | 53   | 50   | 43   | 3        | 3       | 2.5      | 2.5     | 375                | 605 | 1800        | 2600 | 32221        | 120                            | 117   | 161   | 178   | 180   | 6     | 10                 | 0.43 | 1.4  | 0.8  | 44     | 6.26 |
|                  | 225 | 53.5 | 49   | 41   | 4        | 4       | 3        | 3       | 430                | 530 | 1600        | 2200 | 30321        | 133                            | 119   | 193   | 211   | 208   | 7     | 13                 | 0.35 | 1.7  | 0.96 | 43     | 9.38 |
|                  | 225 | 81.5 | 77   | 63   | 4        | 4       | 3        | 3       | 660                | 915 | 1500        | 2000 | 32321        | 128                            | 119   | 185   | 211   | 210   | 8     | 19                 | 0.35 | 1.7  | 0.96 | 54     | 15.0 |

# Single Row Cylindrical Roller Bearings



| Basic dimensions |      |        |     |    |          |         |          |         | Basic load ratings |      | Limit speed |       | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |      |      |      | Weight |      |      |
|------------------|------|--------|-----|----|----------|---------|----------|---------|--------------------|------|-------------|-------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|------|------|------|--------|------|------|
| d                | D    | T      | B   | C  | R radial | R axial | r radial | r axial | Cr                 | Cor  | Grease      | Oil   |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e    | Y    | Yo   |        | a    |      |
| mm               |      |        |     |    |          |         |          |         | KN                 |      | r/min       |       |              | mm                             |       |       |       |       |       |                    |      |      |      | Kg     |      |      |
| 110              | 170  | 38     | 38  | 29 | 2.5      | 2.5     | 2        | 2       | 231                | 365  | 1800        | 2600  | 32022        | 123                            | 120   | 148   | 162   | 164   | 4.5   | 9                  | 0.43 | 1.4  | 0.77 | 37     | 3.08 |      |
|                  | 170  | 47     | 47  | 37 | 2.5      | 2.5     | 2        | 2       | 300                | 465  | 1800        | 2600  |              | 33022                          | 123   | 120   | 148   | 162   | 162   | 4.5                | 10   | 0.29 | 2.1  | 1.15   | 33   | 3.75 |
|                  | 180  | 56     | 56  | 43 | 2.5      | 2.5     | 2        | 2       | 350                | 595  | 1800        | 2600  |              | 33122                          | 125   | 120   | 151   | 172   | 175   | 4.5                | 13   | 0.42 | 1.4  | 0.79   | 44   | 5.56 |
|                  | 200  | 41     | 38  | 32 | 3        | 3       | 2.5      | 2.5     | 320                | 430  | 1700        | 2400  |              | 30222                          | 132   | 122   | 171   | 191   | 187   | 6                  | 9    | 0.42 | 1.4  | 0.79   | 41   | 5.27 |
|                  | 200  | 56     | 53  | 46 | 3        | 3       | 2.5      | 2.5     | 465                | 695  | 1700        | 2400  |              | 32222                          | 124   | 122   | 170   | 188   | 192   | 6                  | 10   | 0.42 | 1.4  | 0.79   | 48   | 7.62 |
|                  | 240  | 54.5   | 50  | 42 | 4        | 4       | 3        | 3       | 470                | 580  | 1600        | 2200  |              | 30322                          | 142   | 124   | 206   | 226   | 222   | 8                  | 13   | 0.35 | 1.7  | 0.96   | 45   | 11.1 |
|                  | 240  | 63     | 57  | 38 | 4        | 4       | 3        | 3       | 470                | 595  | 1600        | 2200  |              | 31322                          | 129   | 124   | 188   | 226   | 226   | 7                  | 25   | 0.83 | 0.7  | 0.4    | 75   | 12.5 |
| 240              | 84.5 | 80     | 65  | 4  | 4        | 3       | 3        | 735     | 1030               | 1400 | 1900        | 32322 | 137          | 124                            | 198   | 226   | 224   | 9     | 20    | 0.35               | 1.7  | 0.96 | 56   | 18.0   |      |      |
| 115              | 190  | 49     | 49  | 35 | 2.5      | 2.5     | 2.5      | 2.5     | 282                | 440  | 1600        | 2200  | 30623        | 131                            | 120   | 160   | 181   | 180   | 4.5   | 14                 | 0.44 | 1.4  | 0.74 | 42     | 5.13 |      |
| 120              | 165  | 29     | 29  | 23 | 1.5      | 1.5     | 1.5      | 2.5     | 189                | 320  | 1600        | 2200  | 32924        | 131                            | 118   | 150   | 158   | 161   | 4.5   | 6                  | 0.35 | 1.7  | 0.95 | 29     | 1.79 |      |
|                  | 180  | 38     | 38  | 29 | 2.5      | 2.5     | 2        | 2       | 237                | 395  | 1700        | 2400  |              | 32024                          | 132   | 120   | 157   | 172   | 175   | 4.5                | 9    | 0.46 | 1.3  | 0.72   | 40   | 3.31 |
|                  | 180  | 48     | 48  | 38 | 2.5      | 2.5     | 2        | 2       | 295                | 530  | 1800        | 2600  |              | 33024                          | 132   | 131   | 160   | 170   | 171   | 6                  | 10   | 0.3  | 2    | 1.1    | 36   | 4.07 |
|                  | 200  | 62     | 62  | 48 | 2.5      | 2.5     | 2        | 2       | 440                | 770  | 1700        | 2400  |              | 33124                          | 135   | 132   | 177   | 190   | 190   | 6                  | 9.5  | 0.44 | 1.4  | 0.76   | 45   | 7.74 |
|                  | 215  | 43.5   | 40  | 34 | 3        | 3       | 2.5      | 2.5     | 330                | 445  | 1600        | 2200  |              | 30224                          | 139   | 132   | 187   | 203   | 203   | 6                  | 9.5  | 0.44 | 1.4  | 0.76   | 45   | 6.32 |
|                  | 215  | 61.5   | 58  | 50 | 3        | 3       | 2.5      | 2.5     | 480                | 720  | 1600        | 2200  |              | 32224                          | 134   | 132   | 181   | 203   | 206   | 7                  | 12   | 0.44 | 1.4  | 0.76   | 52   | 9.60 |
|                  | 260  | 59.5   | 55  | 46 | 4        | 4       | 3        | 3       | 565                | 710  | 1500        | 2000  |              | 30324                          | 153   | 134   | 221   | 246   | 238   | 8                  | 14   | 0.35 | 1.7  | 0.96   | 49   | 14.2 |
| 260              | 68   | 62     | 42  | 4  | 4        | 3       | 3        | 540     | 690                | 1500 | 2000        | 31324 | 140          | 134                            | 203   | 246   | 246   | 9     | 26    | 0.83               | 0.7  | 0.4  | 82   | 15.6   |      |      |
| 260              | 90.5 | 86     | 69  | 4  | 4        | 3       | 3        | 860     | 1330               | 1300 | 1800        | 32324 | 148          | 135                            | 213   | 245   | 239   | 9     | 21.5  | 0.35               | 1.7  | 0.9  | 60   | 22.4   |      |      |
| 130              | 200  | 45     | 45  | 34 | 2.5      | 2.5     | 2        | 2       | 340                | 580  | 1600        | 2200  | 32026        | 144                            | 142   | 178   | 190   | 192   | 7     | 11                 | 0.43 | 1.4  | 0.8  | 42     | 5.06 |      |
|                  | 230  | 43.75  | 40  | 34 | 4        | 4       | 3        | 3       | 360                | 480  | 1500        | 2000  |              | 30226                          | 150   | 144   | 203   | 216   | 219   | 7                  | 10   | 0.44 | 1.4  | 0.76   | 47   | 7.02 |
|                  | 230  | 67.75  | 64  | 54 | 4        | 4       | 3        | 4       | 555                | 845  | 1500        | 2000  |              | 32226                          | 143   | 144   | 193   | 216   | 221   | 7                  | 14   | 0.44 | 1.4  | 0.76   | 56   | 11.8 |
|                  | 280  | 63.75  | 58  | 49 | 5        | 5       | 4        | 5       | 645                | 815  | 1300        | 1800  |              | 30326                          | 165   | 145   | 239   | 262   | 258   | 8                  | 15   | 0.35 | 1.7  | 0.96   | 53   | 17.4 |
| 280              | 72   | 66     | 44  | 5  | 5        | 4       | 4        | 620     | 805                | 1300 | 1800        | 31326 | 150          | 147                            | 218   | 262   | 263   | 9     | 28    | 0.83               | 0.7  | 0.4  | 87   | 18.9   |      |      |
| 140              | 190  | 32     | 32  | 25 | 2        | 2       | 1.5      | 1.5     | 206                | 390  | 1600        | 2200  | 32928        | 150                            | 150   | 177   | 182   | 184   | 6     | 7                  | 0.35 | 1.7  | 0.9  | 33     | 2.55 |      |
|                  | 210  | 45     | 45  | 34 | 2.5      | 2.5     | 2        | 2       | 330                | 560  | 1600        | 2200  |              | 32028                          | 154   | 150   | 183   | 202   | 204   | 4.5                | 11   | 0.46 | 1.3  | 0.72   | 46   | 5.84 |
|                  | 230  | 58     | 57  | 45 | 3        | 3       | 3        | 3       | 400                | 660  | 1600        | 2200  |              | 30628                          | 182   | 152   | 217   | 219   | 242   | 4.5                | 13   | 0.44 | 1.4  | 0.74   | 56   | 8.97 |
|                  | 250  | 45.75  | 42  | 36 | 4        | 4       | 3        | 3       | 405                | 540  | 1400        | 1900  |              | 30228                          | 162   | 154   | 219   | 236   | 234   | 9                  | 11   | 0.44 | 1.4  | 0.76   | 50   | 8.80 |
|                  | 250  | 71.75  | 68  | 58 | 4        | 4       | 3        | 3       | 650                | 1000 | 1400        | 1900  |              | 32228                          | 156   | 154   | 210   | 236   | 240   | 8                  | 14   | 0.44 | 1.4  | 0.76   | 61   | 14.7 |
|                  | 300  | 67.75  | 62  | 53 | 5        | 5       | 4        | 4       | 740                | 945  | 1200        | 1700  |              | 30328                          | 176   | 155   | 255   | 282   | 275   | 9                  | 15   | 0.35 | 1.7  | 0.96   | 56   | 21.2 |
|                  | 300  | 107.75 | 102 | 85 | 5        | 5       | 4        | 4       | 1090               | 1630 | 1200        | 1700  |              | 32328                          | 177   | 156   | 239   | 287   | 276   | 9                  | 22.8 | 0.37 | 1.6  | 0.9    | 74   | 35.8 |
| 300              | 77   | 70     | 47  | 5  | 5        | 4       | 4        | 695     | 900                | 1200 | 1700        | 31328 | 162          | 157                            | 235   | 282   | 283   | 9     | 30    | 0.83               | 0.7  | 0.4  | 93   | 23.4   |      |      |
| 150              | 210  | 38     | 38  | 30 | 2.5      | 2.5     | 2        | 2       | 270                | 465  | 1500        | 2000  | 32930        | 161                            | 160   | 190   | 202   | 202   | 9     | 7.5                | 0.33 | 1.83 | 1    | 36     | 3.83 |      |

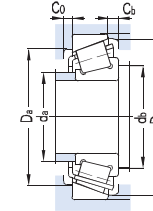
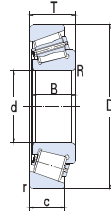
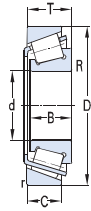
# Single Row Cylindrical Roller Bearings



| Basic dimensions |     |       |      |      |          |         |          |         | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |     |      |      | Weight |      |      |
|------------------|-----|-------|------|------|----------|---------|----------|---------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|-----|------|------|--------|------|------|
| d                | D   | T     | B    | C    | R radial | R axial | r radial | r axial | Cr                 | Cor  | Grease      | Oil  |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e   | Y    | Yo   |        | a    |      |
| mm               |     |       |      |      |          |         |          |         | KN                 |      | r/min       |      |              | mm                             |       |       |       |       |       |                    |     |      |      | Kg     |      |      |
|                  | 225 | 48    | 48   | 36   | 3        | 3       | 2.5      | 2.5     | 365                | 635  | 950         | 1400 |              | 32030                          | 161   | 160   | 197   | 216   | 217   | 9                  | 13  | 0.46 | 1.3  | 0.72   | 49   | 6.40 |
|                  | 270 | 49    | 45   | 38   | 4        | 4       | 3        | 3       | 450                | 605  | 1300        | 1800 |              | 30230                          | 174   | 164   | 234   | 256   | 252   | 9                  | 11  | 0.44 | 1.4  | 0.76   | 53   | 11.2 |
|                  | 270 | 77    | 73   | 60   | 4        | 4       | 3        | 3       | 735                | 1140 | 1200        | 1700 |              | 32230                          | 168   | 164   | 223   | 256   | 256   | 4.5                | 17  | 0.44 | 1.4  | 0.76   | 64   | 18.4 |
|                  | 320 | 72    | 65   | 55   | 5        | 5       | 4        | 4       | 815                | 1050 | 1100        | 1600 |              | 30330                          | 190   | 165   | 273   | 302   | 294   | 4.5                | 17  | 0.35 | 1.7  | 0.96   | 60   | 25.5 |
|                  | 320 | 82    | 75   | 50   | 5        | 5       | 4        | 4       | 810                | 1060 | 950         | 1400 |              | 31330                          | 181   | 170   | 251   | 303   | 300   | 9                  | 32  | 0.83 | 0.72 | 0.4    | 96   | 27.5 |
|                  | 320 | 114   | 108  | 90   | 5        | 5       | 4        | 4       | 1280               | 1880 | 950         | 1400 |              | 32330                          | 190   | 166   | 261   | 307   | 299   | 4.5                | 24  | 0.35 | 1.7  | 0.96   | 77   | 42.2 |
| 160              | 240 | 51    | 51   | 38   | 3        | 3       | 2.5      | 2.5     | 415                | 730  | 1100        | 1600 |              | 32032                          | 174   | 173   | 211   | 231   | 232   | 8                  | 13  | 0.46 | 1.3  | 0.72   | 53   | 7.69 |
|                  | 290 | 52    | 48   | 40   | 4        | 4       | 3        | 3       | 510                | 695  | 1100        | 1600 |              | 30232                          | 189   | 174   | 252   | 276   | 271   | 9                  | 12  | 0.44 | 1.4  | 0.76   | 57   | 13.4 |
|                  | 290 | 84    | 80   | 67   | 4        | 4       | 3        | 3       | 925                | 1490 | 1100        | 1600 |              | 32232                          | 180   | 174   | 242   | 276   | 276   | 10                 | 17  | 0.44 | 1.4  | 0.76   | 70   | 23.3 |
|                  | 340 | 75    | 68   | 58   | 5        | 5       | 4        | 4       | 915                | 1180 | 1000        | 1500 |              | 30332                          | 201   | 180   | 290   | 323   | 310   | 9                  | 17  | 0.35 | 1.7  | 0.9    | 61   | 29.5 |
|                  | 340 | 88    | 79   | 54   | 3.7      | 3.7     | 3.7      | 3.7     | 825                | 1080 | 1000        | 1500 |              | 31332                          | 199   | 161   | 265   | 340   | 315   | 4.5                | 34  | 0.76 | 0.8  | 0.43   | 100  | 29.9 |
|                  | 340 | 121   | 114  | 95   | 5        | 5       | 4        | 4       | 1540               | 2230 | 1000        | 1500 |              | 32332                          | 199   | 176   | 274   | 327   | 314   | 4.5                | 26  | 0.35 | 1.7  | 0.96   | 81   | 51.7 |
|                  | 375 | 86.55 | 79.4 | 50.3 | 5        | 5       | 5        | 5       | 870                | 1050 | 1000        | 1500 |              | 30632                          | 214   | 176   | 295   | 375   | 337   | 4.5                | 37  | 0.7  | 0.9  | 0.47   | 98   | 40.7 |
| 170              | 230 | 38    | 38   | 30   | 2.5      | 2.5     | 2        | 2       | 280                | 560  | 1400        | 1900 |              | 32934                          | 183   | 182   | 213   | 220   | 222   | 7                  | 8   | 0.37 | 1.6  | 0.9    | 42   | 4.51 |
|                  | 260 | 57    | 57   | 43   | 3        | 3       | 2.5      | 2.5     | 520                | 870  | 1200        | 1700 |              | 32034                          | 188   | 184   | 230   | 246   | 249   | 10                 | 14  | 0.44 | 1.35 | 0.8    | 56   | 10.6 |
|                  | 310 | 57    | 52   | 43   | 5        | 5       | 4        | 4       | 605                | 845  | 1000        | 1500 |              | 30234                          | 203   | 190   | 268   | 293   | 288   | 8                  | 14  | 0.43 | 1.4  | 0.8    | 58   | 17.0 |
|                  | 310 | 91    | 86   | 71   | 5        | 5       | 4        | 4       | 1010               | 1630 | 1000        | 1500 |              | 32234                          | 196   | 190   | 259   | 293   | 294   | 10                 | 20  | 0.43 | 1.4  | 0.8    | 75   | 30.0 |
|                  | 360 | 80    | 72   | 62   | 5        | 5       | 4        | 4       | 950                | 1360 | 980         | 1450 |              | 30334                          | 216   | 187   | 305   | 307   | 331   | 10                 | 20  | 0.34 |      |        |      | 35.8 |
| 180              | 250 | 45    | 45   | 34   | 2.5      | 2.5     | 2        | 2       | 345                | 725  | 1600        | 2500 |              | 32936                          | 194   | 192   | 225   | 240   | 241   | 8                  | 11  | 0.48 | 1.25 | 0.7    | 53   | 6.7  |
|                  | 280 | 64    | 64   | 48   | 3        | 3       | 2.5      | 2.5     | 611                | 1070 | 950         | 1400 |              | 32036                          | 199   | 192   | 247   | 268   | 267   | 9                  | 16  | 0.42 | 1.4  | 0.8    | 75   | 13.9 |
|                  | 320 | 57    | 52   | 43   | 5        | 5       | 4        | 4       | 590                | 820  | 1000        | 1500 |              | 30236                          | 209   | 198   | 278   | 302   | 300   | 4.5                | 14  | 0.45 | 1.3  | 0.73   | 64   | 17.8 |
|                  | 320 | 91    | 86   | 71   | 5        | 5       | 4        | 4       | 1020               | 1670 | 950         | 1400 |              | 32236                          | 208   | 196   | 264   | 307   | 304   | 10                 | 20  | 0.45 | 1.3  | 0.73   | 78   | 32.3 |
|                  | 380 | 98    | 88   | 60   | 5        | 5       | 4        | 4       | 1050               | 1500 | 900         | 1300 |              | 31336                          | 217   | 220   | 289   | 368   | 355   | 12                 | 21  | 0.55 | 0.73 | 0.8    | 120  | 46.4 |
|                  | 380 | 83    | 75   | 64   | 5        | 5       | 4        | 4       | 1180               | 1580 | 900         | 1300 |              | 30336                          | 207   | 233   | 362   | 324   | 345   | 10                 | 19  | 0.36 | 1.7  | 0.92   | 72.4 | 41.4 |
| 190              | 260 | 45    | 45   | 34   | 2.5      | 2.5     | 2        | 2       | 340                | 745  | 1100        | 1600 |              | 32938                          | 205   | 202   | 235   | 252   | 251   | 10                 | 9.5 | 0.48 | 1.25 | 0.7    | 55   | 6.94 |
|                  | 290 | 64    | 64   | 48   | 3        | 3       | 2.5      | 2.5     | 650                | 1180 | 1000        | 1500 |              | 32038                          | 210   | 204   | 257   | 276   | 279   | 10                 | 16  | 0.44 | 1.35 | 0.8    | 62   | 14.5 |
|                  | 340 | 60    | 55   | 46   | 5        | 5       | 4        | 4       | 740                | 1040 | 950         | 1400 |              | 30238                          | 229   | 206   | 294   | 327   | 317   | 4.5                | 14  | 0.44 | 1.4  | 0.76   | 67   | 20.6 |
|                  | 340 | 97    | 92   | 75   | 5        | 5       | 4        | 4       | 1100               | 1080 | 950         | 1300 |              | 32238                          | 214   | 208   | 286   | 322   | 326   | 10                 | 22  | 0.44 | 1.4  | 0.76   | 81   | 36.1 |
| 200              | 280 | 51    | 51   | 39   | 3        | 3       | 2.5      | 2.5     | 455                | 935  | 1000        | 1500 |              | 32940                          | 218   | 215   | 252   | 271   | 270   | 4.5                | 11  | 0.39 | 1.5  | 0.84   | 54   | 9.56 |
|                  | 310 | 70    | 70   | 53   | 3        | 3       | 2.5      | 2.5     | 760                | 1370 | 950         | 1400 |              | 32040                          | 222   | 214   | 273   | 296   | 297   | 11                 | 17  | 0.43 | 1.4  | 0.8    | 66   | 19.5 |
|                  | 360 | 64    | 58   | 48   | 5        | 5       | 4        | 4       | 780                | 1100 | 900         | 1300 |              | 30240                          | 236   | 218   | 315   | 342   | 338   | 9                  | 16  | 0.44 | 1.4  | 0.76   | 70   | 25.4 |
|                  | 360 | 104   | 98   | 82   | 5        | 5       | 4        | 4       | 1350               | 2144 | 900         | 1300 |              | 32240                          | 222   | 218   | 302   | 342   | 342   | 11                 | 22  | 0.41 | 1.5  | 0.81   | 84   | 42.6 |

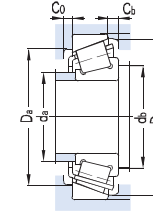
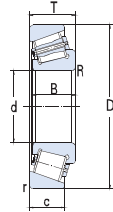
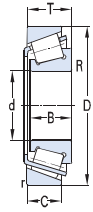


# Single Row Cylindrical Roller Bearings



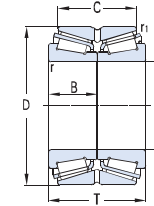
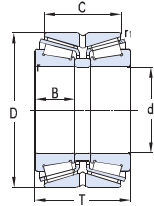
| Basic dimensions |        |        |       |      |          |         |          |         | Basic load ratings |      | Limit speed |      | Designations | Abutment and fillet dimensions |       |       |       |       |       | Calculation factor |      |      |      | Weight |      |
|------------------|--------|--------|-------|------|----------|---------|----------|---------|--------------------|------|-------------|------|--------------|--------------------------------|-------|-------|-------|-------|-------|--------------------|------|------|------|--------|------|
| d                | D      | T      | B     | C    | R radial | R axial | r radial | r axial | Cr                 | Cor  | Grease      | Oil  |              | damax                          | dbmin | Damin | Damax | Dbmin | Camin | Cbmin              | e    | Y    | Yo   |        | a    |
| mm               |        |        |       |      |          |         |          |         | KN                 |      | r/min       |      |              | mm                             |       |       |       |       |       |                    |      |      |      | Kg     |      |
|                  | 420    | 146    | 138   | 115  | 5        | 5       | 5        | 5       | 1820               | 2850 | 800         | 1100 | 32340        | 239                            | 253   | 398   | 346   | 346   | 11    | 31                 | 0.37 | 1.6  | 0.88 | 107    | 90.5 |
| 220              | 300    | 51     | 51    | 39   | 3        | 3       | 2.5      | 2.5     | 465                | 960  | 950         | 1400 | 32944        | 234                            | 234   | 275   | 286   | 290   | 9     | 12                 | 0.43 | 1.4  | 0.8  | 58     | 10.0 |
|                  | 340    | 76     | 76    | 57   | 4        | 4       | 3        | 3       | 850                | 1520 | 900         | 1300 | 32044        | 244                            | 234   | 300   | 325   | 326   | 12    | 19                 | 0.43 | 1.4  | 0.8  | 72     | 23.9 |
|                  | 400    | 72     | 65    | 54   | 5        | 5       | 4        | 4       | 975                | 1370 | 900         | 1300 | 30244        | 256                            | 220   | 334   | 382   | 382   | 10    | 18                 | 0.42 | 1.4  | 0.79 | 77     | 36.8 |
|                  | 400    | 114    | 108   | 90   | 5        | 5       | 4        | 4       | 1650               | 2770 | 900         | 1300 | 32244        | 256                            | 220   | 334   | 382   | 382   | 10    | 24                 | 0.44 | 1.4  | 0.76 | 96     | 62.7 |
| 240              | 320    | 51     | 51    | 39   | 3        | 3       | 2.5      | 2.5     | 500                | 1050 | 850         | 1200 | 32948        | 255                            | 254   | 294   | 308   | 311   | 9     | 12                 | 0.46 | 1.3  | 0.7  | 64     | 11.5 |
|                  | 360    | 76     | 76    | 57   | 4        | 4       | 3        | 3       | 1820               | 3300 | 850         | 1200 | 32048        | 262                            | 256   | 318   | 345   | 346   | 12    | 19                 | 0.46 | 1.3  | 0.7  | 78     | 26   |
|                  | 440    | 127    | 120   | 100  | 5        | 5       | 4        | 4       | 1900               | 3300 | 700         | 950  | 32248        | 276                            | 262   | 365   | 420   | 415   | 14    | 27                 | 0.43 | 1.4  | 0.8  | 105    | 82.5 |
|                  | 440    | 79     | 72    | 60   | 5        | 5       | 4        | 4       | 1070               | 1550 | 750         | 1000 | 30248        | 267                            | 288   | 422   | 384   | 408   | 11    | 19                 | 0.44 | 1.4  | 0.74 | 85     | 46.8 |
|                  | 500    | 165    | 155   | 132  | 6        | 6       | 5        | 5       | 2360               | 4100 | 670         | 900  | 32348        | 279                            | 301   | 478   | 410   | 464   | 12    | 33                 | 0.37 | 1.6  | 0.88 | 123    | 147  |
| 254              | 422.27 | 86.1   | 79.8  | 66.7 | 4.7      | 4.7     | 2.5      | 2.5     | 1110               | 1760 | 850         | 1200 | 306/254      | 297                            | 270   | 370   | 413   | 399   | 13    | 19                 | 0.36 | 1.7  | 0.9  | 80     | 45.4 |
| 255              | 560    | 123.05 | 104.8 | 70   | 6        | 6       | 6        | 6       | 1920               | 2690 | 560         | 750  | 30651        | 329                            | 274   | 435   | 542   | 510   | 13    | 53.1               | 0.87 | 0.7  | 0.38 | 171    | 127  |
| 260              | 360    | 63.5   | 63.5  | 48   | 3        | 3       | 2.5      | 2.5     | 650                | 1270 | 800         | 1100 | 32952        | 286                            | 272   | 325   | 351   | 344   | 13    | 13                 | 0.3  | 2    | 1.09 | 60     | 17.9 |
|                  | 400    | 87     | 87    | 65   | 5        | 5       | 4        | 4       | 1110               | 2030 | 800         | 1100 | 32052        | 287                            | 282   | 352   | 383   | 383   | 13    | 12                 | 0.43 | 1.4  | 0.8  | 84     | 39.8 |
|                  | 480    | 89     | 80    | 67   | 6        | 6       | 5        | 5       | 1430               | 2150 | 670         | 900  | 30252        | 293                            | 316   | 458   | 421   | 447   | 12    | 22                 | 0.44 | 1.4  | 0.74 | 94     | 63.9 |
|                  | 480    | 137    | 130   | 105  | 6        | 6       | 5        | 5       | 2160               | 3650 | 670         | 900  | 32252        | 305                            | 279   | 394   | 465   | 451   | 13    | 32                 | 0.43 | 1.4  | 0.77 | 113    | 105  |
|                  | 540    | 114    | 102   | 85   | 6        | 6       | 6        | 6       | 2015               | 2730 | 670         | 900  | 30352        | 332                            | 279   | 449   | 522   | 481   | 10    | 29                 | 0.32 | 1.9  | 1.04 | 92     | 113  |
| 280              | 380    | 63.5   | 63.5  | 48   | 3        | 3       | 2.5      | 2.5     | 727                | 1500 | 800         | 1100 | 32956        | 305                            | 292   | 344   | 371   | 364   | 13    | 13                 | 0.43 | 1.4  | 0.77 | 100    | 20   |
|                  | 420    | 87     | 87    | 65   | 5        | 5       | 4        | 4       | 1200               | 2300 | 750         | 1000 | 32056        | 305                            | 302   | 370   | 400   | 402   | 14    | 22                 | 0.46 | 1.3  | 0.7  | 89     | 40.4 |
| 300              | 420    | 74.5   | 72    | 62   | 4        | 4       | 3        | 3       | 710                | 1810 | 700         | 950  | 32960        | 330                            | 314   | 379   | 409   | 400   | 13    | 15                 | 0.28 | 2.1  | 1.17 | 67     | 30.2 |
|                  | 420    | 76     | 76    | 57   | 4        | 4       | 3        | 3       | 997                | 1870 | 700         | 950  | 32976        | 324                            | 317   | 383   | 404   | 405   | 12    | 19                 | 0.4  | 1.5  | 0.8  | 79     | 50.0 |
|                  | 460    | 100    | 100   | 74   | 5        | 5       | 4        | 4       | 1460               | 2740 | 670         | 900  | 32060        | 330                            | 322   | 404   | 440   | 439   | 15    | 26                 | 0.43 | 1.4  | 0.8  | 97     | 56.6 |
|                  | 540    | 149    | 140   | 115  | 6        | 6       | 5        | 5       | 2680               | 4700 | 600         | 800  | 30660        | 343                            | 326   | 453   | 518   | 511   | 17    | 34                 | 0.43 | 1.4  | 0.8  | 126    | 142  |
| 320              | 440    | 76     | 76    | 57   | 4        | 4       | 3        | 3       | 1030               | 2300 | 650         | 900  | 32964        | 343                            | 337   | 402   | 424   | 426   | 13    | 19                 | 0.43 | 1.4  | 0.8  | 84     | 34.5 |
|                  | 480    | 100    | 100   | 74   | 5        | 5       | 4        | 4       | 1540               | 2940 | 630         | 850  | 32064        | 354                            | 336   | 419   | 467   | 463   | 13    | 26                 | 0.46 | 1.3  | 0.72 | 104    | 62.7 |
|                  | 580    | 104    | 92    | 75   | 6        | 6       | 5        | 5       | 1700               | 2560 | 530         | 750  | 30264        | 353                            | 381   | 558   | 503   | 533   | 14    | 29                 | 0.44 | 1.4  | 0.74 | 114    | 103  |
|                  | 620    | 141    | 125   | 107  | 7.5      | 7.5     | 7.5      | 7.5     | 2780               | 4600 | 520         | 680  | 30664        | 380                            | 354   | 501   | 586   | 577   | 16    | 34                 | 0.6  | 1    | 0.6  | 154    | 183  |
| 340              | 460    | 76     | 76    | 57   | 4        | 4       | 3        | 3       | 1030               | 2350 | 500         | 830  | 32968        | 361                            | 357   | 421   | 444   | 446   | 14    | 19                 | 0.44 | 1.35 | 0.8  | 90     | 36.5 |

# Single Row Cylindrical Roller Bearings



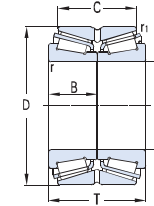
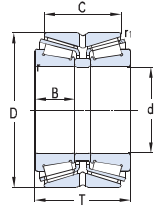
| Basic dimensions |      |     |     |     |          |         |          |         | Basic load ratings |       | Limit speed |     | Designations   | Abutment and fillet dimensions |                   |                   |                   |                   |                   | Calculation factor |       |      |                | Weight |      |
|------------------|------|-----|-----|-----|----------|---------|----------|---------|--------------------|-------|-------------|-----|----------------|--------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------|------|----------------|--------|------|
| d                | D    | T   | B   | C   | R radial | R axial | r radial | r axial | Cr                 | Cor   | Grease      | Oil |                | d <sub>amax</sub>              | d <sub>bmin</sub> | D <sub>amin</sub> | D <sub>amax</sub> | D <sub>bmin</sub> | C <sub>amin</sub> | C <sub>bmin</sub>  | e     | Y    | Y <sub>0</sub> |        | a    |
| mm               |      |     |     |     |          |         |          |         | KN                 |       | r/min       |     |                | mm                             |                   |                   |                   |                   |                   |                    |       |      |                |        | Kg   |
| 360              | 480  | 76  | 76  | 57  | 4        | 4       | 4        | 4       | 1060               | 2220  | 500         | 630 | 32972<br>30672 | 388                            | 374               | 433               | 467               | 468               | 13                | 19                 | 0.46  | 1.3  | 0.72           | 97     | 38.5 |
|                  | 530  | 80  | 66  | 59  | 5        | 5       | 5        | 5       | 1030               | 1900  | 500         | 630 |                | 410                            | 376               | 476               | 515               | 502               | 13                | 21                 | 0.4   | 1.5  | 0.82           | 95     | 53.2 |
| 380              | 520  | 87  | 82  | 71  | 5        | 5       | 4        | 4       | 1190               | 2670  | 560         | 750 | 32976          | 407                            | 406               | 502               | 478               | 501               | 16                | 16                 | 0.39  | 1.6  | 0.86           | 95     | 50.0 |
| 400              | 500  | 60  | 57  | 47  | 4        | 4       | 3        | 3       | 460                | 950   | 400         | 500 | 30680          | 368                            | 414               | 406               | 489               | 430               | 13                | 13                 | 0.38  | 1.6  | 0.86           | 77     | 25.1 |
|                  | 540  | 87  | 82  | 71  | 5        | 5       | 4        | 4       | 1280               | 2880  | 380         | 480 | 32980          | 450                            | 436               | 500               | 550               | 530               | 8                 | 8                  | 0.4   | 1.4  | 0.8            | 185    | 54.1 |
|                  | 540  | 70  | 65  | 48  | 4        | 4       | 4        | 4       | 965                | 1930  | 350         | 450 | 31980          | 450                            | 436               | 500               | 550               | 530               | 8                 | 8                  | 0.42  | 1.5  | 0.9            | 100    | 39.7 |
| 420              | 560  | 70  | 65  | 51  | 4        | 4       | 4        | 4       | 1020               | 2090  | 420         | 560 | 31984          | 458                            | 436               | 528               | 528               | 549               | 13                | 28                 | 0.41  | 1.5  | 0.81           | 106    | 41.7 |
|                  | 620  | 125 | 118 | 100 | 6        | 6       | 5        | 5       | 2300               | 5100  | 380         | 480 | 32084          | 473                            | 444               | 572               | 572               | 600               | 13                | 28                 | 0.37  | 1.6  | 0.88           | 120    | 125  |
| 460              | 860  | 210 | 190 | 160 | 7.5      | 7.5     | 7.5      | 7.5     | 5590               | 10100 | 350         | 470 | 30692          | 530                            | 494               | 690               | 826               | 804               | 10                | 50                 | 0.57  | 1.05 | 0.6            | 218    | 512  |
| 470              | 630  | 80  | 80  | 62  | 5        | 5       | 5        | 5       | 1410               | 3100  | 380         | 500 | 30694          | 498                            | 487               | 580               | 582               | 603               | 10                | 26                 | 0.319 |      |                |        | 66   |
| 480              | 950  | 240 | 225 | 174 | 9.5      | 9.5     | 9.5      | 9.5     | 6980               | 12500 | 310         | 420 | 30696          | 570                            | 524               | 761               | 906               | 877               | 32                | 66                 | 0.54  | 1.1  | 0.6            | 230    | 761  |
| 560              | 1080 | 265 | 235 | 208 | 9.5      | 9.5     | 9.5      | 9.5     | 8910               | 15700 | 180         | 270 | 306/560        | 660                            | 604               | 887               | 1036              | 995               | 27                | 50                 | 0.43  | 1.4  | 0.8            | 241    | 1063 |
| 600              | 720  | 73  | 69  | 56  | 3        | 3       | 3        | 3       | 1230               | 3320  | 380         | 480 | 306/600        | 680                            | 613               | 680               | 682               | 703               | 20                | 30                 | 0.365 |      |                |        | 53.0 |
| 610              | 820  | 105 | 95  | 80  | 6        | 6       | 6        | 6       | 1830               | 4200  | 360         | 450 | 306/610        | 661                            | 630               | 741               | 743               | 777               | 20                | 37                 | 0.374 |      |                |        | 139  |
| 630              | 850  | 132 | 132 | 95  | 6        | 6       | 6        | 6       | 3080               | 7150  | 360         | 450 | 329/630        | 675                            | 649               | 766               | 832               | 821               | 13                | 37                 | 0.46  | 1.3  | 0.72           | 168    | 200  |
| 710              | 950  | 114 | 106 | 80  | 6        | 6       | 6        | 6       | 2860               | 6900  | 260         | 360 | 319/710        | 774                            | 729               | 864               | 932               | 909               | 13                | 34                 | 0.46  | 1.3  | 0.72           | 175    | 210  |

# Metric Double Row Tapered Roller Bearings



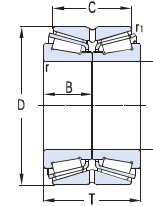
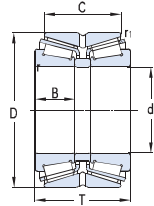
| Basic dimensions |     |     |      |       |      |       | Basic load ratings |      | Limit speed |      | Designations | Calculation factor |      |      |      | Weight |
|------------------|-----|-----|------|-------|------|-------|--------------------|------|-------------|------|--------------|--------------------|------|------|------|--------|
| d                | D   | T   | B    | C     | rmin | r1min | Cr                 | Cor  | Grease      | Oil  |              | e                  | Y1   | Y2   | Yo   |        |
| mm               |     |     |      |       |      |       | KN                 |      | r/min       |      |              | mm                 |      |      |      | Kg     |
| 50               | 90  | 55  | 23   | 43.5  | 1.5  | 0.6   | 320                | 220  | 3400        | 4500 | 352210       | 0.42               | 1.61 | 2.39 | 1.57 | 1.39   |
| 55               | 90  | 55  | 23   | 43.5  | 1.5  | 0.6   | 292                | 220  | 3300        | 4400 | 352210       | 0.42               | 1.61 | 2.39 | 1.57 | 1.37   |
| 70               | 125 | 74  | 31   | 61.5  | 2    | 0.6   | 310                | 495  | 2400        | 3200 | 352214       | 0.42               | 1.61 | 2.39 | 1.57 | 3.66   |
| 75               | 115 | 58  | 25   | 46    | 1.5  | 0.6   | 178                | 325  | 2400        | 3200 | 352015       | 0.46               | 1.47 | 2.19 | 1.44 | 2.04   |
| 80               | 125 | 66  | 29   | 52    | 1.5  | 0.6   | 238                | 430  | 2200        | 3000 | 352016       | 0.42               | 1.61 | 2.39 | 1.57 | 2.76   |
|                  | 170 | 94  | 39   | 63    | 3    | 1     | 405                | 560  | 2000        | 2600 | 351316       | 0.4                | 1.68 | 2.5  | 1.64 | 9.11   |
| 85               | 150 | 86  | 36   | 69    | 2.5  | 0.6   | 390                | 620  | 2000        | 2700 | 352217       | 0.42               | 1.61 | 2.39 | 1.57 | 5.94   |
|                  | 180 | 99  | 41   | 66    | 4    | 1     | 560                | 680  | 1900        | 2600 | 351317       | 0.83               | 0.82 | 1.22 | 0.8  | 11.1   |
| 90               | 190 | 103 | 43   | 70    | 4    | 1     | 530                | 760  | 1700        | 2200 | 351318       | 0.83               | 0.82 | 1.22 | 0.8  | 12.3   |
| 100              | 190 | 125 | 62.5 | 100   | 3    | 1.3   | 630                | 1050 | 1500        | 2000 | 350620D1     | 0.36               | 1.85 | 2.76 | 1.81 | 14.9   |
| 110              | 150 | 80  | 30   | 63    | 0.8  | 0.3   | 198                | 430  | 1300        | 1800 | 350622       | 0.37               | 1.82 | 2.72 | 1.78 | 3.61   |
|                  | 170 | 86  | 38   | 68    | 2.5  | 0.6   | 395                | 740  | 1300        | 1800 | 352022       | 0.43               | 1.57 | 2.34 | 1.53 | 6.65   |
|                  | 180 | 95  | 42   | 76    | 2    | 0.6   | 495                | 900  | 1200        | 1600 | 352122       | 0.32               | 2.09 | 3.11 | 2.04 | 9.10   |
| 115              | 230 | 116 | 49.5 | 84    | 3    | 2.5   | 685                | 1100 | 1300        | 1700 | 350623       | 0.72               | 0.94 | 1.4  | 0.9  | 20.2   |
| 120              | 180 | 88  | 38   | 70    | 2.5  | 0.6   | 405                | 785  | 1500        | 2000 | 352024       | 0.46               | 1.47 | 2.19 | 1.44 | 7.31   |
|                  | 200 | 110 | 48   | 90    | 2    | 0.6   | 605                | 1060 | 1500        | 2000 | 352124       | 0.3                | 2.25 | 3.43 | 2.2  | 12.6   |
|                  | 215 | 132 | 58   | 109   | 3    | 1     | 770                | 1390 | 1400        | 1900 | 352224       | 0.41               | 1.64 | 2.44 | 1.6  | 19.2   |
| 130              | 210 | 110 | 48   | 90    | 2    | 0.6   | 605                | 1070 | 1300        | 1700 | 352126       | 0.32               | 2.13 | 3.17 | 2.08 | 13.9   |
|                  | 230 | 145 | 64   | 117.5 | 4    | 1     | 890                | 1760 | 1300        | 1700 | 352226       |                    |      |      |      | 24.0   |
|                  | 235 | 145 | 72.5 | 115   | 2.3  | 1.3   | 885                | 1560 | 1300        | 1700 | 350626D1     | 0.39               | 1.74 | 2.59 | 1.7  | 24.7   |
| 140              | 210 | 104 | 45   | 82    | 2.5  | 0.6   | 580                | 1170 | 1200        | 1700 | 352028       | 0.35               | 1.94 | 2.88 | 1.89 | 11.9   |
|                  | 225 | 115 | 50   | 90    | 2.5  | 1     | 640                | 1180 | 1200        | 1700 | 352128       | 0.34               | 2    | 2.98 | 1.96 | 15.5   |
| 150              | 225 | 112 | 45   | 88    | 3    | 1     | 1100               | 1690 | 1200        | 1500 | 350630       | 0.39               | 1.73 | 2.58 | 1.69 | 14.1   |
|                  | 250 | 138 | 60   | 112   | 2.5  | 1     | 865                | 1560 | 1100        | 1500 | 352130       | 0.25               | 2.74 | 4.08 | 2.68 | 25.8   |

# Metric Double Row Tapered Roller Bearings



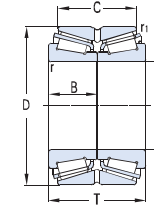
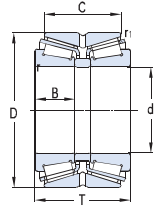
| Basic dimensions |     |       |       |      |      |       | Basic load ratings |      | Limit speed |      | Designations | Calculation factor |      |      |      | Weight |
|------------------|-----|-------|-------|------|------|-------|--------------------|------|-------------|------|--------------|--------------------|------|------|------|--------|
| d                | D   | T     | B     | C    | rmin | r1min | Cr                 | Cor  | Grease      | Oil  |              | e                  | Y1   | Y2   | Yo   |        |
| mm               |     |       |       |      |      |       | KN                 |      | r/min       |      |              | mm                 |      |      |      | Kg     |
|                  | 255 | 145   | 72.5  | 110  | 3    | 1.3   | 960                | 1840 | 1100        | 1500 | 350630D1     | 0.44               | 1.55 | 2.31 | 1.52 | 28.3   |
| 159.8            | 270 | 140   | 65    | 120  | 2.5  | 1     | 970                | 1930 | 1000        | 1400 | 3506/159.8   | 0.32               | 2.12 | 3.15 | 2.07 | 31.8   |
| 160              | 270 | 140   | 70    | 110  | 2.5  | 0.9   | 1720               | 2610 | 1000        | 1400 | 350632D1     | 0.36               | 1.86 | 2.76 | 1.81 | 26.7   |
| 165              | 290 | 150   | 70    | 125  | 3    | 1.3   | 1210               | 2300 | 920         | 1200 | 350633       | 0.31               | 2.2  | 3.27 | 2.15 | 41.1   |
| 170              | 280 | 150   | 66    | 120  | 2.5  | 1     | 1070               | 2000 | 950         | 1300 | 352134       | 0.38               | 1.78 | 2.65 | 1.74 | 35.6   |
| 180              | 280 | 142   | 64    | 110  | 3    | 1     | 1070               | 2220 | 940         | 1300 | 352036       | 0.42               | 1.61 | 2.39 | 1.57 | 29.8   |
|                  | 285 | 108   | 54    | 79.4 | 2.5  | 2.3   | 730                | 1190 | 940         | 1300 | 350636D1     | 0.35               | 1.95 | 2.9  | 1.91 | 23.2   |
|                  | 300 | 164   | 72    | 134  | 3    | 1     | 1200               | 2350 | 890         | 1200 | 352136       | 0.26               | 2.46 | 3.93 | 2.58 | 39.9   |
|                  | 340 | 180   | 83    | 140  | 5    | 1.1   | 1700               | 2860 | 840         | 1100 | 350636       | 0.35               | 1.96 | 2.91 | 1.91 | 71.9   |
| 200              | 280 | 116   | 51    | 92   | 3    | 1     | 750                | 1770 | 900         | 1200 | 352940       | 0.39               | 1.72 | 2.56 | 1.68 | 21.0   |
|                  | 310 | 154   | 70    | 120  | 3    | 1     | 1260               | 2620 | 840         | 1100 | 352040       | 0.43               | 1.57 | 2.34 | 1.53 | 41.9   |
|                  | 340 | 112   | 50.5  | 100  | 3    | 1.5   | 1070               | 1850 | 800         | 1100 | 350640       | 0.25               | 2.7  | 4.02 | 2.64 | 40.0   |
|                  | 340 | 184   | 82    | 150  | 3    | 1     | 1810               | 3400 | 800         | 1100 | 352140       | 0.25               | 2.74 | 4.08 | 2.68 | 63.8   |
| 220              | 370 | 195   | 88    | 150  | 4    | 1.3   | 1680               | 3200 | 760         | 1000 | 352144       | 0.37               | 1.83 | 2.72 | 1.79 | 76.3   |
|                  | 370 | 120   | 50    | 107  | 5    | 1.5   | 1130               | 1910 | 760         | 1000 | 350644       | 0.37               | 1.83 | 2.72 | 1.79 | 46.9   |
| 225              | 360 | 146.5 | 73.25 | 111  | 3    | 1.1   | 1280               | 2290 | 760         | 1000 | 350645D1     | 0.36               | 1.87 | 2.79 | 1.83 | 48.2   |
| 230              | 355 | 145   | 72.5  | 110  | 6    | 2.3   | 1180               | 2310 | 760         | 1000 | 350646D1     | 0.36               | 1.87 | 2.79 | 1.83 |        |
|                  |     |       |       |      |      |       |                    |      |             |      |              |                    |      |      |      |        |
| 240              | 400 | 210   | 95    | 163  | 3.7  | 1.3   | 2060               | 4050 | 630         | 840  | 352148       | 0.31               | 2.18 | 3.24 | 2.13 | 98.1   |
|                  | 400 | 128   | 59    | 114  | 5    | 1.5   | 1240               | 2270 | 720         | 1000 | 350648       | 0.43               | 1.55 | 2.31 | 1.52 | 60     |
| 260              | 360 | 141   | 63.5  | 110  | 3    | 1     | 1120               | 2550 | 670         | 900  | 352952       | 0.41               | 1.66 | 2.47 | 1.62 | 39.0   |
|                  | 430 | 180   | 90    | 130  | 7.5  | 2.3   | 1560               | 2990 | 630         | 840  | 350652D1     | 0.35               | 1.95 | 2.9  | 1.91 | 87.9   |
| 280              | 460 | 185   | 82    | 140  | 5    | 1.5   | 2130               | 4050 | 580         | 770  | 351156       | 0.33               | 2.05 | 3.05 | 2    | 114    |
|                  | 470 | 250   | 180   | 180  | 6.4  | 1.5   | 3430               | 6300 | 500         | 650  | 350656       | 0.46               | 1.5  | 2.2  | 1.4  | 156    |
| 300              | 400 | 140   | 62    | 100  | 5    | 1.5   | 1450               | 3000 | 560         | 740  | 350660       | 0.88               | 0.77 | 1.15 | 0.8  | 63.2   |

# Metric Double Row Tapered Roller Bearings



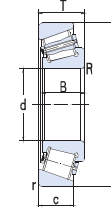
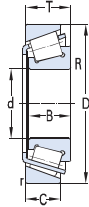
| Basic dimensions |     |     |      |     |      |       | Basic load ratings |       | Limit speed |     | Designations | Calculation factor |      |      |       | Weight |
|------------------|-----|-----|------|-----|------|-------|--------------------|-------|-------------|-----|--------------|--------------------|------|------|-------|--------|
| d                | D   | T   | B    | C   | rmin | r1min | Cr                 | Cor   | Grease      | Oil |              | e                  | Y1   | Y2   | Yo    |        |
| mm               |     |     |      |     |      |       | KN                 | r/min |             | mm  |              |                    |      | Kg   |       |        |
|                  | 500 | 205 | 90   | 152 | 5    | 1.5   | 2400               | 4450  | 530         | 710 | 351160       | 0.32               | 2.12 | 3.15 | 2.077 | 141    |
| 320              | 480 | 151 | 66.5 | 121 | 5    | 1.5   | 1870               | 3550  | 530         | 710 | 350664       | 0.32               | 2.08 | 3.1  | 2.04  | 88.9   |
|                  | 480 | 220 | 100  | 186 | 5    | 1.1   | 2540               | 5750  | 530         | 710 | 352064       | 0.46               | 1.47 | 2.19 | 1.44  | 134    |
|                  | 540 | 225 | 100  | 160 | 5    | 1.5   | 3100               | 5700  | 510         | 660 | 351164       | 0.4                | 1.68 | 2.5  | 1.64  | 181    |
| 340              | 460 | 166 | 75   | 128 | 4    | 1.1   | 1540               | 4050  | 500         | 660 | 352968       | 0.31               | 2.15 | 3.2  | 2.1   | 72.3   |
|                  | 520 | 180 | 82   | 135 | 5    | 1.5   | 2060               | 4100  | 480         | 640 | 351068       | 0.29               | 2.35 | 3.5  | 2.3   | 127    |
|                  | 580 | 242 | 106  | 170 | 5    | 1.5   | 3100               | 6000  | 460         | 620 | 351168       | 0.42               | 1.6  | 2.38 | 1.56  | 235    |
| 360              | 540 | 185 | 82   | 140 | 5    | 1.5   | 2880               | 6300  | 460         | 620 | 351072       | 0.37               | 1.82 | 2.7  | 1.78  | 120    |
|                  | 600 | 242 | 106  | 170 | 5    | 1.5   | 3410               | 6800  | 400         | 520 | 351172       | 0.44               | 0.54 | 2.3  | 1.51  | 221    |
| 380              | 520 | 145 | 65   | 105 | 4    | 1.1   | 1660               | 3800  | 530         | 710 | 351976       | 0.38               | 1.77 | 2.64 | 1.73  | 78.8   |
|                  | 560 | 190 | 82   | 140 | 5    | 1.5   | 2880               | 6300  | 410         | 540 | 351076       | 0.39               | 1.75 | 2.61 | 1.71  | 137    |
|                  | 620 | 242 | 106  | 170 | 5    | 1.5   | 3410               | 6850  | 410         | 540 | 351176       | 0.46               | 1.47 | 2.18 | 1.43  | 250    |
|                  | 660 | 380 |      | 310 | 14   | 3.5   | 7620               | 15900 | 300         | 400 | 350676       | 0.33               | 2    | 3    | 2     | 521    |
| 400              | 540 | 150 | 65   | 105 | 4    | 1.1   | 1650               | 3850  | 530         | 710 | 351980       | 0.45               | 1.5  | 2.23 | 1.47  | 84.6   |
|                  | 600 | 206 | 90   | 150 | 5    | 1.5   | 2890               | 6300  | 410         | 540 | 351080       | 0.38               | 1.78 | 2.65 | 1.74  | 179    |
|                  | 650 | 255 | 112  | 180 | 6    | 2.5   | 3630               | 7400  | 360         | 480 | 351180       | 0.41               | 1.66 | 2.47 | 1.63  | 279    |
| 420              | 560 | 145 | 65   | 105 | 4    | 1.1   | 1880               | 4450  | 360         | 480 | 351984       | 0.38               | 1.77 | 2.64 | 1.73  | 87.0   |
|                  | 620 | 206 | 90   | 150 | 5    | 1.5   | 2670               | 5880  | 360         | 480 | 351084       | 0.41               | 1.64 | 2.44 | 1.6   | 191    |
| 440              | 600 | 170 | 74   | 125 | 4    | 1.1   | 2300               | 5300  | 400         | 520 | 351988       | 0.39               | 1.73 | 2.58 | 1.69  | 123    |
|                  | 650 | 212 | 94   | 152 | 6    | 2.5   | 3150               | 6900  | 360         | 480 | 351088       | 0.44               | 1.52 | 2.26 | 1.49  | 212    |
|                  | 720 | 275 | 122  | 190 | 6    | 2.5   | 4950               | 10400 | 360         | 480 | 351188       | 0.46               | 1.48 | 2.2  | 1.44  | 404    |
| 460              | 620 | 174 | 74   | 130 | 4    | 1     | 1960               | 5150  | 400         | 520 | 351992       | 0.4                | 1.69 | 2.51 | 1.65  | 134    |
|                  | 680 | 230 | 100  | 175 | 6    | 2.5   | 3410               | 7450  | 360         | 480 | 351092       | 0.31               | 2.18 | 3.24 | 2.13  | 253    |
| 480              | 650 | 180 | 78   | 130 | 5    | 1.5   | 2150               | 5150  | 360         | 480 | 351996       | 0.42               | 1.61 | 2.4  | 1.58  | 159    |
|                  | 790 | 310 | 136  | 224 | 7.5  | 3     | 6200               | 13300 | 250         | 320 | 351196       | 0.39               | 1.73 | 2.58 | 1.69  | 540    |
| 500              | 670 | 180 | 78   | 130 | 5    | 1.5   | 1470               | 6200  | 350         | 460 | 3519/500     | 0.43               | 1.55 | 2.31 | 1.52  | 158    |
|                  | 720 | 236 | 100  | 180 | 6    | 2.5   | 3580               | 8150  | 410         | 540 | 3510/500     | 0.32               | 2.08 | 3.1  | 2.04  | 276    |

# Metric Double Row Tapered Roller Bearings



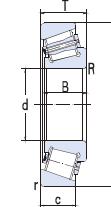
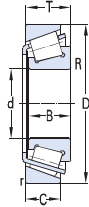
| Basic dimensions |      |     |     |     |      |       | Basic load ratings |       | Limit speed |     | Designations | Calculation factor |      |      |      | Weight |
|------------------|------|-----|-----|-----|------|-------|--------------------|-------|-------------|-----|--------------|--------------------|------|------|------|--------|
| d                | D    | T   | B   | C   | rmin | r1min | Cr                 | Cor   | Grease      | Oil |              | e                  | Y1   | Y2   | Yo   |        |
| mm               |      |     |     |     |      |       | KN                 |       | r/min       |     |              | mm                 |      |      |      | Kg     |
|                  | 720  | 236 | 118 | 180 | 6    | 2.5   | 3750               | 8500  | 410         | 540 | 3510/500D    | 0.32               | 2.08 | 3.1  | 2.04 | 276    |
| 530              | 710  | 190 | 82  | 136 | 5    | 1.5   | 2670               | 6300  | 320         | 420 | 3519/530     | 0.39               | 1.73 | 2.57 | 1.69 | 176    |
|                  | 780  | 255 | 112 | 180 | 6    | 2.5   | 4350               | 9850  | 320         | 420 | 3510/530     | 0.34               | 2    | 2.97 | 1.95 | 371    |
| 560              | 750  | 213 | 85  | 156 | 5    | 1.5   | 3410               | 8500  | 310         | 410 | 3519/560     | 0.43               | 1.57 | 2.34 | 1.53 | 232    |
|                  | 820  | 260 | 115 | 185 | 6    | 2.5   | 2920               | 5700  | 310         | 410 | 3510/560     | 0.4                | 1.7  | 2.54 | 1.67 | 434    |
| 600              | 800  | 205 | 90  | 156 | 5    | 1.5   | 3410               | 9050  | 290         | 390 | 3519/600     | 0.33               | 2.05 | 3.05 | 2    | 247    |
|                  | 870  | 270 | 118 | 198 | 6    | 2.5   | 5390               | 12700 | 280         | 380 | 3510/600     | 0.41               | 1.63 | 2.43 | 1.6  | 517    |
| 670              | 900  | 240 | 103 | 180 | 6    | 2.5   | 4200               | 11200 | 260         | 350 | 3519/670     | 0.44               | 1.53 | 2.28 | 1.5  | 378    |
| 710              | 950  | 240 | 106 | 175 | 6    | 2.5   | 4730               | 13200 | 250         | 320 | 3519/710     | 0.46               | 1.47 | 2.19 | 1.44 | 445    |
| 750              | 1000 | 264 | 112 | 194 | 6    | 2.5   | 5340               | 15600 | 230         | 310 | 3519/750     | 0.45               | 1.5  | 2.24 | 1.47 | 546    |
| 800              | 1060 | 270 | 115 | 204 | 6    | 2.5   | 6870               | 15200 | 220         | 300 | 3519/800     | 0.35               | 1.93 | 2.87 | 1.88 | 606    |
| 850              | 1120 | 268 | 118 | 188 | 6    | 2.5   | 6850               | 18700 | 210         | 270 | 3519/850     | 0.46               | 1.46 | 2.18 | 1.43 | 645    |
| 900              | 1180 | 275 | 122 | 205 | 6    | 2.5   | 7640               | 21300 | 200         | 260 | 3519/900     | 0.37               | 1.8  | 2.69 | 1.76 | 763    |
| 950              | 1250 | 300 | 132 | 220 | 7.5  | 3     | 7870               | 22500 | 180         | 240 | 3519/950     | 0.33               | 2.05 | 3.05 | 2    | 897    |
|                  | 1280 | 280 | 120 | 246 | 7.5  | 4     | 8300               | 22200 | 170         | 220 | 3506/950     | 0.4                | 1.68 | 2.5  | 1.64 | 974    |
| 1120             | 1460 | 335 | 158 | 250 | 7.5  | 3     | 9900               | 29500 | 160         | 210 | 3519/1120    | 0.35               | 1.93 | 2.87 | 1.88 | 1350   |
|                  | 1480 | 400 |     | 296 | 12   | 4     | 13200              | 37800 | 160         | 210 | 3506/1120    | 0.44               | 1.5  | 2.3  | 1.4  | 1763   |
| 1160             | 1540 | 400 |     | 290 | 12   | 4     | 14000              | 37900 | 140         | 190 | 3506/1160    | 0.44               | 1.5  | 2.3  | 1.4  | 1902   |
| 1250             | 1500 | 250 |     | 190 | 6    | 1.5   | 7350               | 22300 | 100         | 140 | 3506/1250    | 0.35               | 1.9  | 2.9  | 1.8  | 797    |
| 1370             | 1605 | 210 | 96  | 150 | 7.5  | 4     | 5150               | 20700 | 80          | 120 | 3506/1370    | 0.4                | 1.68 | 2.5  | 1.64 | 673    |

# Inch Single Row Tapered Roller Bearings



| Basic dimensions |        |        |        |        |        |        |        |        |        |      |      | Basic load ratings |      | Limit speed |       | Designations      | Calculation factor |   |    |        | Weight |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|------|--------------------|------|-------------|-------|-------------------|--------------------|---|----|--------|--------|
| d                |        | D      |        | T      |        | B      |        | C      |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil   |                   | e                  | Y | Yo | a      | Kg     |
| mm               | in     | mm     | in     | mm     | in     | mm     | in     | mm     | in     | mm   | mm   | KN                 |      | r/min       |       |                   |                    |   |    |        |        |
| 20.625           | 0.812  | 49.225 | 1.938  | 23.02  | 0.9063 | 21.539 | 0.848  | 17.462 | 0.6875 | 1.5  | 1.5  | 37.5               | 37   | 8000        | 11000 | K09081/K09196     |                    |   |    | 0.197  |        |
| 21.43            | 0.8437 | 50.005 | 1.9687 | 17.526 | 0.69   | 18.288 | 0.72   | 13.97  | 0.55   | 1.3  | 1.3  | 45                 | 43.5 | 8000        | 11000 | KM12649/KM12610   |                    |   |    | 0.169  |        |
|                  |        | 50.005 | 1.9687 | 17.526 | 0.69   | 18.288 | 0.72   | 13.97  | 0.55   | 1.3  | 1.3  | 45                 | 43.5 | 8000        | 11000 | K2M12649/K2M12610 |                    |   |    | 0.169  |        |
| 21.979           | 0.8653 | 45.237 | 1.781  | 15.494 | 0.61   | 16.637 | 0.655  | 12.065 | 0.475  | 1.3  | 1.3  | 35.5               | 40   | 8000        | 10000 | KLM12749/KLM12710 |                    |   |    | 0.116  |        |
|                  |        | 45.974 | 1.81   | 15.494 | 0.61   | 16.637 | 0.655  | 12.065 | 0.475  | 1.3  | 1.3  | 29.5               | 34   | 8000        | 10000 | KLM12749/KLM12711 |                    |   |    | 0.118  |        |
| 22.225           |        | 50.8   | 2      | 15.011 | 0.591  | 14.26  | 0.5614 | 12.7   | 0.5    | 1.5  | 1.5  | 30.5               | 33   | 8000        | 10000 | K07087X/K07210X   |                    |   |    | 0.104  |        |
| 25.4             | 1      | 50.292 | 1.98   | 14.224 | 0.56   | 14.732 | 0.58   | 10.668 | 0.42   | 1.3  | 1.3  | 29.5               | 34   | 7500        | 10000 | L44643/L44610     |                    |   |    | 0.128  |        |
|                  |        | 50.8   | 2      | 15.011 | 0.591  | 14.26  | 0.5614 | 12.7   | 0.5    | 1.5  | 1.5  | 30.5               | 33   | 7500        | 10000 | K07100S/K07210X   |                    |   |    | 0.0908 |        |
|                  |        | 57.15  | 2.25   | 19.431 | 0.765  | 19.431 | 0.765  | 14.732 | 0.58   | 1.5  | 1.5  | 42                 | 49   | 7500        | 10000 | KM84548/KM84510   |                    |   |    | 0.237  |        |
| 26*              |        | 57.15  | 2.25   | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 1.5  | 3.5  | 38                 | 43.5 | 7500        | 10000 | K15579X/K15520    |                    |   |    | 0.207  |        |
| 26.988           | 1.0625 | 50.292 | 1.98   | 14.224 | 0.56   | 14.732 | 0.58   | 10.668 | 0.42   | 1.3  | 3.6  | 29.5               | 34   | 7500        | 10000 | L44649/L44610     |                    |   |    | 0.126  |        |
|                  |        | 63.5   | 2.5    | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.625  | 1.5  | 0.8  | 46                 | 53   | 7500        | 9000  | K15106/K15250X    |                    |   |    | 0.316  |        |
| 28*              |        | 57.15  | 2.25   | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 1.5  | 3.5  | 38                 | 43.5 | 7000        | 9000  | KJ15585/K15520    |                    |   |    | 0.207  |        |
| 28.575           | 1.125  | 60.325 | 2.375  | 19.845 | 0.7813 | 19.355 | 0.762  | 15.875 | 0.625  | 1.3  | 3.5  | 39                 | 42.5 | 7000        | 9000  | K1988/K1931       |                    |   |    | 0.244  |        |
|                  |        | 64.292 | 2.5312 | 21.433 | 0.8438 | 21.433 | 0.8438 | 16.67  | 0.6563 | 1.5  | 1.5  | 48.5               | 67.5 | 7000        | 9000  | KM86647/KM86610   |                    |   |    | 0.351  |        |
|                  |        | 66.421 | 2.615  | 23.812 | 0.9375 | 25.433 | 1.0013 | 19.05  | 0.75   | 1.3  | 1.3  | 68.5               | 77   | 7000        | 9000  | K2689/K2631       |                    |   |    | 0.420  |        |
|                  |        | 68.262 | 2.6875 | 22.225 | 0.875  | 22.225 | 0.875  | 17.462 | 0.6875 | 1.5  | 0.8  | 53.5               | 65   | 7000        | 9000  | K02474/K02420     |                    |   |    | 0.410  |        |
|                  |        | 73.025 | 2.875  | 22.225 | 0.875  | 22.225 | 0.875  | 17.462 | 0.6875 | 3.3  | 0.8  | 94.1               | 133  | 7000        | 9000  | K02872/K02820     |                    |   |    | 0.825  |        |
| 29               | 1.1417 | 50.292 | 1.98   | 14.224 | 0.56   | 14.732 | 0.58   | 10.668 | 0.42   | 1.2  | 3.6  | 29.5               | 34   | 7000        | 9000  | L45449/L45410     |                    |   |    | 0.118  |        |
| 30               | 1.811  | 72.085 | 2.838  | 22.385 | 0.8813 | 19.202 | 0.756  | 18.415 | 0.725  | 2.3  | 0.8  | 46                 | 55.5 | 7000        | 8500  | K14118/K14283     |                    |   |    | 0.202  |        |
| 30.162           | 1.1875 | 62     | 2.4409 | 16.002 | 0.63   | 16.566 | 0.6522 | 14.288 | 0.5625 | 1.5  | 1.5  | 40                 | 43.5 | 7000        | 8500  | K17119/K17244B    |                    |   |    | 0.228  |        |
|                  |        | 68.262 | 2.6875 | 22.225 | 0.875  | 22.225 | 0.875  | 17.462 | 0.6875 | 2.3  | 0.8  | 58.5               | 75   | 5600        | 7500  | KM88043/KM88012   |                    |   |    | 0.412  |        |
| 31.75            | 1.25   | 59.131 | 2.328  | 15.875 | 0.625  | 16.764 | 0.66   | 11.811 | 0.465  | 1.3  | 3.6  | 44                 | 50   | 6300        | 8500  | KLM67048/KLM67010 |                    |   |    | 0.175  |        |
|                  |        | 62     | 2.4409 | 18.161 | 0.715  | 19.05  | 0.75   | 14.288 | 0.5625 | 1.3  | 4.8  | 56.5               | 62   | 6300        | 8500  | K15123/K15245     |                    |   |    | 0.242  |        |
|                  |        | 69.85  | 2.75   | 23.812 | 0.9375 | 25.357 | 0.9983 | 19.05  | 0.75   | 1.3  | 0.8  | 71.5               | 85.5 | 6300        | 8500  | K2580/K2523       |                    |   |    | 0.451  |        |

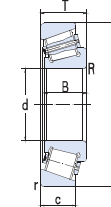
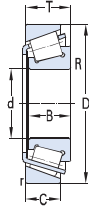
# Inch Single Row Tapered Roller Bearings



| Basic dimensions |        |        |        |        |        |        |        |        |        |        |       | Basic load ratings |      | Limit speed |      | Designations   | Calculation factor |      |  |      | Weight |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------------------|------|-------------|------|--|--------------------|------|--|------|--------|
| d                |        | D      |        | T      |        | B      |        | C      |        | rmin   | Rmin  | Cr                 | Cor  | Grease      | Oil  |  | e                  | Y    | Yo   | a    | Kg     |
| mm               | in     | mm     | in     | mm     | in     | mm     | in     | mm     | in     | mm     |       | KN                 |      | r/min       |      |  |                    |      |  |      |        |
| 33.338           | 1.3125 | 68.262 | 2.6875 | 22.225 | 0.875  | 22.225 | 0.875  | 17.462 | 0.6875 | 1.5    | 0.8   | 56                 | 70.4 | 6300        | 7500 | KM88048/KM88010<br>K2790/K2720<br>KHM89443/KHM89410  | 0.55               | 1.1  | 0.6  | 19   | 0.382  |
|                  |        | 76.2   | 3      | 23.812 | 0.9375 | 25.654 | 1.01   | 19.05  | 0.75   | 1.5    | 3.3   | 90                 | 110  | 5600        | 7500 |  | 0.3                | 1.98 | 1.09   | 16   | 0.559  |
|                  |        | 76.2   | 3      | 29.37  | 1.1563 | 28.575 | 1.125  | 23.02  | 0.9063 | 3.3    | 0.8   | 82                 | 110  | 5600        | 7500 |  | 0.55               | 1.1  | 0.6  | 24   | 0.774  |
| 34.925           | 1.375  | 65.088 | 2.5625 | 18.034 | 0.71   | 18.288 | 0.72   | 13.97  | 0.55   | 1.3    | 3.6   | 49                 | 60   | 5600        | 7500 | KLM48548/KLM48510<br>KLM48548A/KLM48511A<br>K14138A/K14276B<br>KHM88649/KHM88610<br>K25877/K25821<br>KHM89446/KHM89410<br>K31594SH/K31520SH<br>K3478/K3420<br>K449/K432B | 0.38               | 1.59 | 0.88   | 14   | 0.260  |
|                  |        | 65.088 | 2.5625 | 21.082 | 0.83   | 18.288 | 0.72   | 17.018 | 0.67   | 1.5    | 0.8   | 49                 | 60   | 5600        | 7500 |  | 0.38               | 1.59 | 0.88   | 14   | 0.291  |
|                  |        | 69.012 | 2.717  | 19.845 | 0.7813 | 19.583 | 0.771  | 15.875 | 0.625  | 3.5    | 0.8   | 51.2               | 55.5 | 5600        | 7500 |  | 0.38               | 1.57 | 0.86   | 15   | 0.333  |
|                  |        | 72.233 | 2.8438 | 25.4   | 1      | 25.4   | 1      | 19.842 | 0.7812 | 2.3    | 2.3   | 70.5               | 80.5 | 5000        | 7100 |  | 0.55               | 1.1  | 0.6  | 21   | 0.480  |
|                  |        | 73.025 | 2.875  | 23.812 | 0.9375 | 24.608 | 0.9688 | 19.05  | 0.75   | 0.8    | 1.5   | 71.5               | 85   | 5600        | 7500 |  | 0.29               | 2.07 | 1.14   | 14   | 0.475  |
|                  |        | 76.2   | 3      | 29.37  | 1.1563 | 28.575 | 1.125  | 23.02  | 0.9063 | 3.3    | 3.5   | 82                 | 110  | 5600        | 7500 |  | 0.55               | 1.1  | 0.6  | 24   | 0.670  |
|                  |        | 76.2   | 3      | 29.37  | 1.1563 | 28.575 | 1.125  | 23.812 | 0.9375 | 3.3    | 1.5   | 82                 | 98   | 5600        | 7500 |  | 0.4                | 1.49 | 0.82   | 21   | 2.13   |
|                  |        | 79.375 | 3.125  | 29.37  | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 3.3    | 3.5   | 87.5               | 106  | 5600        | 7500 |  | 0.37               | 1.64 | 0.9  | 20   | 0.695  |
|                  |        | 95.25  | 3.75   | 11.115 | 0.4376 | 29.9   | 1.1772 | 22.225 | 0.875  | 0.8    | 2.3   | 108                | 129  | 5600        | 7500 |  | 0.28               | 2.11 | 1.16   | 19   | 1.16   |
|                  |        | 35*    |        | 59.131 | 2.328  | 15.875 | 0.625  | 16.764 | 0.66   | 11.938 | 0.47  | 1.3                | 3.5  | 34          | 36   |  | 5600               | 7000 | KL68149/KL68110<br>KL68149/KL68111<br>KLM78349/KLM78310A | 0.42 | 1.44   |
| 59.974           | 2.3612 |        |        | 15.875 | 0.625  | 16.764 | 0.66   | 11.938 | 0.47   | 1.3    | 3.5   | 34.5               | 24.5 | 5600        | 7000 | 0.42   | 1.44               | 0.79 |  | 13   | 0.166  |
| 62*              |        |        |        | 16.7   |        | 17     |        | 13.6   |        | 1.5    | SP    | 41.5               | 53.5 | 5600        | 7500 | 0.44   | 1.4                | 0.74 |  | 14   | 0.206  |
| 36.487           | 1.4365 | 76.2   | 3      | 23.812 | 0.9375 | 25.645 | 1.0096 | 19.05  | 0.75   | 3.3    | 1.5   | 90                 | 110  | 5000        | 6700 | K2780/K2720  | 0.3                | 2    | 1.1  | 16   | 0.526  |
| 36.512           |        | 76.2   | 3      | 29.37  | 1.1563 | 28.575 | 1.125  | 23.02  | 0.9063 | 3.3    | 0.8   | 85                 | 116  | 4800        | 6300 | KHM89448/KHM89410<br>K16143/K16284   | 0.55               | 1.1  | 0.6  | 23   | 0.650  |
|                  |        | 72.238 | 2.844  | 20.638 | 0.8125 | 20.638 | 0.8125 | 18.575 | 0.7313 | 1.3    | 3.5   | 45                 | 61   | 4800        | 6300 |  | 0.4                | 1.49 | 0.82   | 17   | 0.362  |
| 38.1             | 1.5    | 65.088 | 2.5625 | 18.034 | 0.71   | 18.288 | 0.72   | 13.97  | 0.55   | 1.3    | 2.3   | 44                 | 57   | 5000        | 7000 | KLM29749/KLM29710<br>K13686/K13620<br>K16150/K16284<br>K2788/K2720<br>K3490/K3420<br>HM801346X/HM801310<br>K418/K414<br>K44150/K44348                                    | 0.33               | 1.8  | 0.99   | 12   | 0.237  |
|                  |        | 69.012 | 2.717  | 26.195 | 1.0313 | 26.195 | 1.0313 | 15.083 | 0.5938 | 0.8    | 1.5   | 49.5               | 62   | 5000        | 7000 |  | 0.4                | 1.49 | 0.82   | 16   | 0.362  |
|                  |        | 72.238 | 2.844  | 20.638 | 0.8125 | 20.638 | 0.8125 | 15.875 | 0.625  | 1.3    | 3.5   | 49.5               | 61   | 5000        | 7000 |  | 0.4                | 1.49 | 0.82   | 17   | 0.345  |
|                  |        | 76.2   | 3      | 23.812 | 0.9375 | 25.654 | 1.01   | 19.05  | 0.75   | 3.3    | 3.5   | 90                 | 110  | 5000        | 7000 |  | 0.3                | 1.98 | 1.09   | 17   | 0.507  |
|                  |        | 79.375 | 3.125  | 29.37  | 1.1563 | 29.771 | 1.1721 | 23.812 | 0.9375 | 3.3    | 3.5   | 87                 | 104  | 5000        | 7000 |  | 0.37               | 1.64 | 0.9  | 20   | 0.653  |
|                  |        | 82.55  | 3.25   | 29.37  | 1.1563 | 28.575 | 1.125  | 23.02  | 0.9063 | 3.3    | 2.3   | 98                 | 127  | 5000        | 7000 |  | 0.55               | 1.1  | 0.6  | 25   | 0.770  |
|                  |        | 88.5   | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.145  | 22.225 | 0.875  | 1.5    | 3.5   | 100                | 113  | 5000        | 6000 |  | 0.26               | 2.28 | 1.25   | 18   | 0.843  |
|                  |        | 88.5   | 3.4843 | 25.4   | 1      | 23.698 | 0.933  | 17.462 | 0.6875 | 1.5    | 2.3   | 76                 | 86   | 5000        | 6000 |  | 0.78               | 0.77 | 0.42   | 28   | 0.718  |
|                  |        | 39*    |        | 72.014 | 2.8352 | 21.4   | 0.8425 | 20.638 | 0.8125 | 16.637 | 0.655 | 0.4                | 3.5  | 49.5        | 61   |  | 4500               | 6000 | KJ16154/KJ16285  | 0.4  | 1.49   |
| 39.688           | 1.5625 | 73.025 | 2.875  | 23.812 | 0.9375 | 25.654 | 1.01   | 19.05  | 0.75   | 0.8    | 3.5   | 90                 | 110  | 4500        | 6000 | K2789/K2735X<br>KM201047/KM201011<br>K2789SH/K2729SH   | 0.3                | 1.98 | 1.09   | 17   | 0.413  |
|                  |        | 73.025 | 2.875  | 25.654 | 1.01   | 22.098 | 0.87   | 21.336 | 0.84   | 2.3    | 0.8   | 63.5               | 81.5 | 4500        | 6000 |  | 0.33               | 1.79 | 0.99   | 20   | 0.437  |
|                  |        | 76.2   | 3      | 23.812 | 0.9375 | 25.654 | 1.01   | 19.05  | 0.75   | 0.8    | 3.5   | 90                 | 110  | 4500        | 6000 |  | 0.3                | 1.98 | 1.09   | 16   | 0.507  |

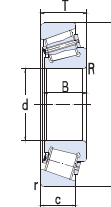
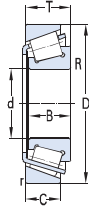


# Inch Single Row Tapered Roller Bearings



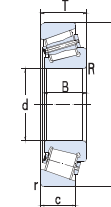
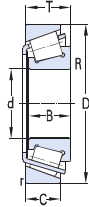
| Basic dimensions |        |         |        |        |        |        |        |        |        |      |      | Basic load ratings |      | Limit speed |      | Designations        | Calculation factor |      |      |    | Weight |
|------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|------|------|--------------------|------|-------------|------|---------------------|--------------------|------|------|----|--------|
| d                |        | D       |        | T      |        | B      |        | C      |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil  |                     | e                  | Y    | Yo   | a  | Kg     |
| mm               | in     | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm   | mm   | KN                 |      | r/min       |      |                     |                    |      |      |    |        |
|                  |        | 76.2    | 3      | 23.812 | 0.9375 | 25.645 | 1.0096 | 19.05  | 0.75   | 0.8  | 3.5  | 90                 | 110  | 4500        | 6000 | K2789/K2729         | 0.3                | 1.98 | 1.09 | 16 | 0.507  |
| 41*              |        | 68*     | 2.6772 | 17.5   | 0.689  | 18     | 7.087  | 13.5   | 0.5315 | 1.5  | 3.6  | 51                 | 60   | 4500        | 6000 | KLM300849/KLM300811 | 0.35               | 1.72 | 0.95 | 14 | 0.241  |
| 41.275           | 1.625  | 73.431  | 2.891  | 19.558 | 0.77   | 19.812 | 0.78   | 14.732 | 0.58   | 0.76 | 3.56 | 67                 | 73.5 | 4500        | 6000 | KLM501349/KLM501310 | 0.4                | 1.5  | 0.83 | 15 | 0.353  |
|                  |        | 73.431  | 2.891  | 21.43  | 0.8437 | 19.812 | 0.78   | 16.604 | 0.6537 | 0.8  | 3.5  | 67                 | 73.5 | 4500        | 6000 | KLM501349/KLM501314 | 0.4                | 1.5  | 0.83 | 17 | 0.360  |
|                  |        | 76.2    | 3      | 18.009 | 0.709  | 17.384 | 0.6844 | 14.288 | 0.5625 | 1.5  | 1.5  | 50.5               | 61.5 | 4500        | 6000 | K11162/K11300       | 0.49               | 1.2  | 0.68 | 17 | 0.343  |
|                  |        | 76.2    | 3      | 22.225 | 0.875  | 23.02  | 0.9063 | 17.462 | 0.6875 | 0.8  | 3.5  | 71                 | 83.5 | 4500        | 6000 | K24780/K24720       | 0.4                | 1.5  | 0.84 | 17 | 0.429  |
|                  |        | 80      | 3.1496 | 21     | 0.8268 | 22.403 | 0.882  | 17.826 | 0.7018 | 1.3  | 0.8  | 68.5               | 76   | 4500        | 6000 | K336/K332           | 0.27               | 2.2  | 1.21 | 15 | 0.453  |
|                  |        | 80.167  | 3.1562 | 29.37  | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.3  | 0.8  | 97                 | 114  | 4500        | 6000 | K3384/K3320         | 0.27               | 2.2  | 1.21 | 17 | 0.630  |
|                  |        | 80.167  | 3.1562 | 29.37  | 1.1563 | 30.391 | 1.1965 | 23.812 | 0.9375 | 3.3  | 0.8  | 97                 | 114  | 4500        | 6000 | K3379/K3320         | 0.27               | 2.2  | 1.21 | 17 | 0.630  |
|                  |        | 82.55   | 3.25   | 26.543 | 1.045  | 25.654 | 1.01   | 20.193 | 0.795  | 3.3  | 3.5  | 84                 | 105  | 4500        | 6000 | KM802048/KM802011   | 0.55               | 1.1  | 0.6  | 23 | 0.623  |
|                  |        | 84.138  | 3.3125 | 30.162 | 1.1875 | 30.886 | 1.216  | 23.812 | 0.9375 | 3.3  | 1.5  | 105                | 143  | 4500        | 6000 | K3585/K3520         | 0.53               | 1.14 | 0.62 | 25 | 0.792  |
|                  |        | 85.725  | 3.375  | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | SP   | 3.5  | 101                | 130  | 4500        | 6000 | K3877/K3826B        | 0.4                | 1.49 | 0.82 | 22 | 0.862  |
|                  |        | 87.312  | 3.4375 | 30.162 | 1.1875 | 30.866 | 0.9375 | 23.812 | 1.2452 | 1.5  | 3.3  | 129                | 175  | 4500        | 6000 | K3585/K3525         | 0.53               | 1.14 | 0.62 | 24 | 0.861  |
|                  |        | 88.5    | 3.4843 | 26.988 | 1.0625 | 29.083 | 1.145  | 22.225 | 0.875  | 1.5  | 3.5  | 100                | 113  | 5000        | 6000 | K419/K414           | 0.26               | 2.28 | 1.25 | 18 | 0.804  |
|                  |        | 88.9    | 3.5    | 30.162 | 1.1875 | 29.37  | 1.1563 | 23.02  | 0.9063 | 3.3  | 3.5  | 90.5               | 125  | 4300        | 5600 | KHM803146/KHM803110 | 0.54               | 1.1  | 0.6  | 26 | 0.915  |
|                  |        | 104.775 | 4.125  | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.125  | 3.3  | 1.5  | 146                | 194  | 4300        | 5600 | K59162/K59412       | 0.4                | 1.49 | 0.82 | 26 | 1.69   |
| 42.862           | 1.6875 | 82.55   | 3.25   | 26.195 | 1.0313 | 26.988 | 1.0625 | 20.638 | 0.8125 | 3.3  | 3.5  | 84.5               | 119  | 4500        | 6000 | K22780/K22720       | 0.4                | 1.49 | 0.82 | 20 | 0.687  |
| 42.875           | 1.688  | 80      | 3.1496 | 21     | 0.8268 | 22.403 | 0.882  | 17.826 | 0.7018 | 2    | 3.5  | 69                 | 76   | 4500        | 6000 | K342S/K332US        | 0.27               | 2.2  | 1.21 | 15 | 0.432  |
|                  |        | 82.931  | 3.265  | 26.988 | 1.0625 | 25.4   | 1      | 22.225 | 0.875  | 2.3  | 3.5  | 78                 | 101  | 4500        | 6000 | K25577/K25523       | 0.33               | 1.79 | 0.99 | 19 | 0.646  |
| 43*              |        | 80*     |        | 21.001 | 0.8268 | 22.403 | 0.882  | 17.826 | 0.7018 | 0.8  | 3.5  | 69                 | 76   | 4500        | 6000 | K342X/K332B         | 0.27               | 2.2  | 1.21 | 15 | 0.440  |
| 44.45            | 1.75   | 82.931  | 3.265  | 23.812 | 0.9375 | 25.4   | 1      | 19.05  | 0.75   | 0.8  | 3.5  | 77                 | 100  | 4500        | 6000 | K25580/K25520       | 0.33               | 1.79 | 0.99 | 18 | 0.573  |
|                  |        | 90.119  | 3.548  | 23     | 0.9055 | 21.692 | 0.854  | 21.808 | 0.8586 | 2.3  | 3.5  | 71.5               | 85   | 4500        | 6000 | K355X/K352          | 0.31               | 1.96 | 1.08 | 18 | 0.668  |
|                  |        | 93.264  | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.193  | 23.812 | 0.9375 | 3.3  | 3.5  | 103                | 140  | 4500        | 6000 | K3782/K3720         | 0.34               | 1.77 | 0.98 | 22 | 1.04   |
|                  |        | 95.25   | 3.75   | 30.958 | 1.2188 | 28.575 | 1.125  | 22.225 | 0.875  | 0.8  | 3.5  | 111                | 133  | 4500        | 6000 | KHM903249/KHM903210 | 0.74               | 0.81 | 0.45 | 32 | 1.00   |
|                  |        | 95.25   | 3.75   | 27.783 | 1.0938 | 28.575 | 1.125  | 22.225 | 0.875  | 0.8  | 0.8  | 110                | 140  | 3800        | 5300 | K33885/K33822       | 0.33               | 1.79 | 0.99 | 24 | 0.983  |
|                  |        | 101.6   | 4      | 34.925 | 1.375  | 36.068 | 1.42   | 26.988 | 1.0625 | 3.3  | 3.5  | 136                | 168  | 4500        | 6000 | K527/K522           | 0.29               | 2.1  | 1.16 | 22 | 1.36   |
|                  |        | 104.775 | 4.125  | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.125  | 3.3  | 3.5  | 146                | 194  | 4300        | 5600 | K59175/K59412       | 0.4                | 1.49 | 0.82 | 26 | 1.63   |
| 44.988           | 1.7712 | 104.986 | 4.1333 | 32.512 | 1.28   | 31.75  | 1.25   | 23.368 | 0.92   | 2.5  | 2.5  | 127                | 164  | 4500        | 6000 | KHM905843/KHM905810 | 0.78               | 0.77 | 0.42 | 34 | 1.41   |
| 45.23            | 1.7807 | 79.985  | 3.149  | 19.842 | 0.7812 | 20.638 | 0.8125 | 15.08  | 0.5937 | 2    | 1.3  | 58                 | 76   | 4500        | 6000 | K17887/K17831       | 0.37               | 1.64 | 0.9  | 16 | 0.406  |

# Inch Single Row Tapered Roller Bearings



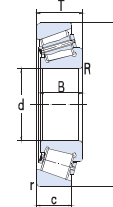
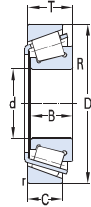
| Basic dimensions |        |         |        |        |        |        |        |        |        |      |      | Basic load ratings |      | Limit speed |      | Designations          | Calculation factor  |      |      |      | Weight |
|------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|------|------|--------------------|------|-------------|------|-----------------------|---------------------|------|------|------|--------|
| d                |        | D       |        | T      |        | B      |        | C      |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil  |                       | e                   | Y    | Yo   | a    |        |
| mm               | in     | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm   | mm   | KN                 |      | r/min       |      |                       |                     |      |      |      | Kg     |
| 45.242           | 1.7812 | 73.431  | 2.891  | 19.558 | 0.77   | 19.812 | 0.78   | 15.748 | 0.62   | 0.8  | 3.5  | 51.5               | 70   | 4500        | 6000 | KLM102949/KLM102910   | 0.31                | 1.97 | 1.08 | 14   | 0.318  |
|                  |        | 77.788  | 3.0625 | 21.43  | 0.8437 | 19.842 | 0.7812 | 16.667 | 0.6562 | 0.8  | 3.5  | 51                 | 71   | 4800        | 6300 |                       | KLM603049/KLM603012 | 0.43 | 1.4  | 0.77 | 19     |
| 45.618           | 1.796  | 82.931  | 3.265  | 23.812 | 0.7375 | 25.4   | 1      | 19.05  | 0.75   | 0.8  | 3.5  | 77                 | 100  | 4500        | 6000 | K25590/K25520         | 0.33                | 1.79 | 0.99 | 18   | 0.556  |
|                  |        | 82.931  | 3.265  | 26.988 | 1.0625 | 25.4   | 1      | 22.225 | 0.875  | 2.3  | 3.5  | 77                 | 100  | 4500        | 6000 | K25590/K25523         | 0.33                | 1.79 | 0.99 | 18   | 0.589  |
|                  |        | 83.058  | 3.27   | 23.876 | 0.94   | 25.4   | 1      | 19.114 | 0.7525 | 2    | 3.5  | 77                 | 100  | 4500        | 5000 | K25590/K25522         | 0.33                | 1.79 | 0.99 | 18   | 0.556  |
| 46.038           | 1.8125 | 79.375  | 3.125  | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 1.5  | 2.8  | 48                 | 60   | 4500        | 6000 | K18690/K18620         | 0.37                | 1.6  | 0.88 | 16   | 0.325  |
|                  |        | 85      | 3.3465 | 20.638 | 0.8125 | 21.692 | 0.854  | 17.462 | 0.6875 | 1.3  | 2.3  | 73                 | 83   | 4500        | 6000 | K359S/K354A           | 0.31                | 1.9  | 1.1  | 16   | 0.770  |
| 47.625           | 1.875  | 93.264  | 3.6718 | 30.162 | 1.1875 | 30.302 | 1.193  | 23.812 | 0.9375 | 3.3  | 3.5  | 103                | 140  | 3800        | 5300 | K3779/K3720           | 0.34                | 1.77 | 0.98 | 21   | 0.921  |
|                  |        | 95.25   | 3.75   | 30.162 | 1.1875 | 29.37  | 1.1563 | 23.02  | 0.9063 | 3.3  | 3.5  | 107                | 144  | 3800        | 5300 | KHM804846/KHM804810   | 0.55                | 1.1  | 0.6  | 26   | 0.987  |
|                  |        | 123.825 | 4.875  | 36.512 | 1.4375 | 32.791 | 1.291  | 25.4   | 1      | 3.3  | 3.5  | 142                | 189  | 3000        | 4000 | K72187C/K72487        | 0.74                | 0.81 | 0.45 | 37   | 2.25   |
| 50*              | 1.9685 | 82*     |        | 21.976 |        | 21.501 | 0.8465 | 17     |        | 0.5  | 3    | 61.5               | 84   | 4000        | 5000 | KJM104948/KJLM104910  | 0.31                | 1.97 | 1.08 | 16   | 0.425  |
|                  |        | 83*     | 3.3071 | 22     | 0.8661 | 22     | 0.8661 | 17.5   | 0.689  | 1.5  | 3.5  | 71                 | 96.5 | 4000        | 5000 | KJLM704649/KJLM704610 | 0.44                | 1.37 | 0.75 | 20   | 0.474  |
|                  |        | 90*     |        | 28     |        | 28     | 1.1024 | 23     |        | 2.5  | 3    | 121                | 140  | 4000        | 5000 | JM205149/JM205110     | 0.33                | 1.83 | 1.01 | 20   | 0.758  |
|                  |        | 93.264  | 3.6718 | 30.162 | 0.1875 | 30.302 | 1.193  | 23.812 | 0.9375 | 3.3  | 3.5  | 113                | 136  | 4000        | 5000 | K50KW01/K3720         | 0.34                | 1.77 | 0.98 | 23   | 0.928  |
|                  |        | 105*    |        | 37     |        | 36     |        | 29     |        | 3    | 2.5  | 140                | 192  | 4000        | 5000 | KJHM807045/KJHM807012 | 0.49                | 1.23 | 0.68 | 29   | 1.39   |
| 50.8             | 2      | 82      | 3.2283 | 21.967 | 0.8648 | 22.225 | 0.875  | 17     | 0.6693 | 0.5  | 3.5  | 68.5               | 84   | 4500        | 6000 | KLM104949/KLM104910   | 0.3                 | 2    | 1.1  | 16   | 0.422  |
|                  |        | 82.55   | 3.25   | 21.59  | 0.85   | 22.225 | 0.875  | 16.51  | 0.65   | 1.3  | 3.5  | 68.5               | 84   | 4500        | 6000 | KLM104949/KLM104911   | 0.31                | 1.97 | 1.08 | 16   | 0.417  |
|                  |        | 85      | 3.3465 | 17.462 | 0.6875 | 17.462 | 0.6875 | 13.495 | 0.5313 | 1.5  | 3.5  | 50.5               | 66.5 | 4000        | 5000 | K18790/K18720         | 0.41                | 1.48 | 0.81 | 63   | 0.378  |
|                  |        | 88.9    | 3.5    | 20.638 | 0.8125 | 22.225 | 0.875  | 16.513 | 0.6501 | 1.3  | 3.5  | 75.5               | 89   | 4000        | 5000 | K368A/K362A           | 0.32                | 1.88 | 1.03 | 17   | 0.520  |
|                  |        | 90      | 3.5433 | 25     | 0.9843 | 22.225 | 0.875  | 20     | 0.7874 | 2    | 3.5  | 75.5               | 89   | 4000        | 5000 | K368A/K362X           | 0.32                | 1.88 | 1.03 | 17   | 0.601  |
|                  |        | 92.075  | 3.625  | 24.608 | 0.9688 | 25.4   | 1      | 19.845 | 0.7813 | 0.8  | 3.5  | 86.5               | 119  | 4000        | 5000 | K28580/K28521         | 0.38                | 1.59 | 0.88 | 18   | 0.701  |
|                  |        | 93.264  | 3.6718 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 0.8  | 0.8  | 124                | 158  | 4000        | 5000 | K3775/K3730           | 0.34                | 1.77 | 0.98 | 22   | 0.870  |
|                  |        | 93.264  | 3.6718 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3  | 3.5  | 124                | 158  | 4000        | 4500 | K3780/K3720           | 0.34                | 1.77 | 0.98 | 22   | 0.870  |
|                  |        | 95.25   | 3.75   | 27.783 | 1.0938 | 28.575 | 1.125  | 22.225 | 0.875  | 0.8  | 3.5  | 110                | 140  | 4000        | 4500 | K33889/K33822         | 0.33                | 1.79 | 0.99 | 24   | 0.877  |
|                  |        | 101.6   | 4      | 31.75  | 1.25   | 31.75  | 1.25   | 25.4   | 1      | 0.8  | 3.5  | 120                | 151  | 4000        | 4500 | K49585/K49522         | 0.4                 | 1.5  | 0.82 | 23   |        |
|                  |        | 104.775 | 4.125  | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.125  | 3.3  | 3.5  | 140                | 192  | 3500        | 4500 | KHM807046/KHM807010   | 0.49                | 1.23 | 0.68 | 29   | 1.48   |
|                  |        | 104.775 | 4.125  | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.125  | 3.3  | 3.5  | 146                | 194  | 3500        | 4500 | K59200/K59412         | 0.4                 | 1.49 | 0.82 | 26   | 1.49   |
|                  |        | 104.775 | 4.125  | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 3.3  | 0.8  | 127                | 166  | 3500        | 4500 | K45285ASH/K45220SH    | 0.33                | 1.8  | 0.99 | 26   | 1.23   |
|                  |        | 104.775 | 4.125  | 30.162 | 1.1875 | 30.958 | 1.2188 | 23.812 | 0.9375 | 3.3  | 6.4  | 127                | 166  | 3500        | 4500 | K45284/K45220         | 0.33                | 1.8  | 0.99 | 26   | 1.23   |
|                  |        | 107.95  | 4.25   | 27.783 | 1.0938 | 29.317 | 1.1542 | 22.225 | 0.875  | 0.8  | 0.8  | 110                | 143  | 3500        | 4500 | K455/K453A            | 0.34                | 1.79 | 0.98 | 21   | 1.24   |
|                  |        | 107.95  | 4.25   | 27.795 | 1.0943 | 29.317 | 1.1542 | 27     | 1.063  | 0.8  | 0.8  | 110                | 143  | 3500        | 4500 | K455/K453             | 0.34                | 1.79 | 0.98 | 21   | 1.30   |
|                  |        | 123.825 | 4.875  | 36.512 | 1.4375 | 32.791 | 1.291  | 25.4   | 1      | 3.3  | 3.5  | 142                | 189  | 2800        | 4000 | K72200C/K72487        | 0.74                | 0.81 | 0.45 | 38   | 2.13   |

# Inch Single Row Tapered Roller Bearings



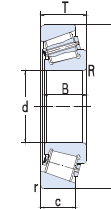
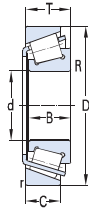
| Basic dimensions |        |         |        |        |        |        |        |        |        |                  |                  | Basic load ratings |      | Limit speed |      | Designations          | Calculation factor |      |                |    | Weight |
|------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|------------------|------------------|--------------------|------|-------------|------|-----------------------|--------------------|------|----------------|----|--------|
| d                |        | D       |        | T      |        | B      |        | C      |        | r <sub>min</sub> | R <sub>min</sub> | Cr                 | Cor  | Grease      | Oil  |                       | e                  | Y    | Y <sub>o</sub> | a  |        |
| mm               | in     | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm               |                  | KN                 |      | r/min       |      |                       |                    |      |                |    | Kg     |
| 51.75            | 2.0374 | 104.775 | 4.125  | 30.162 | 1.1875 | 29.317 | 1.1542 | 24.605 | 0.9687 | 3.3              | 2.3              | 100                | 145  | 3500        | 4500 | K462/K453X            | 0.34               | 1.79 | 0.98           | 25 | 1.05   |
| 52.388           | 2.0625 | 92.075  | 3.625  | 24.608 | 0.9688 | 25.4   | 1      | 19.845 | 0.7813 | 0.8              | 3.5              | 86.5               | 119  | 3500        | 4000 | K28584/K28521         | 0.38               | 1.59 | 0.88           | 18 | 0.678  |
|                  |        | 95.25   | 3.75   | 27.783 | 1.0938 | 28.575 | 1.125  | 22.225 | 0.875  | 2.3              | 3.5              | 109                | 140  | 3000        | 4000 | K33891/K33821         | 0.33               | 1.82 | 1              | 20 | 0.811  |
| 53.975           | 2.125  | 95.25   | 3.75   | 27.783 | 1.0938 | 28.575 | 1.125  | 22.225 | 0.875  | 0.8              | 1.5              | 109                | 140  | 3000        | 4000 | K33895/K33822         | 0.33               | 1.82 | 1              | 20 | 0.819  |
|                  |        | 100     | 3.937  | 21     | 0.8268 | 21.946 | 0.864  | 17.862 | 0.7032 | 2                | 0.8              | 82.5               | 103  | 3000        | 4000 | K389A/K383A           | 0.35               | 1.69 | 0.93           | 19 | 0.692  |
|                  |        | 107.95  | 4.25   | 36.512 | 1.4375 | 36.957 | 1.455  | 28.575 | 1.125  | 0.5              | 3.5              | 153                | 190  | 3000        | 4000 | K539/K532XA6          | 0.3                | 2.02 | 1.11           | 23 | 1.47   |
|                  |        | 123.825 | 4.875  | 36.512 | 1.4375 | 32.791 | 1.291  | 25.4   | 1      | 3.3              | 3.5              | 142                | 189  | 2800        | 4000 | K72212C/K72487        | 0.74               | 0.81 | 0.45           | 38 | 2.12   |
|                  |        | 130.175 | 5.125  | 36.512 | 1.4375 | 33.338 | 1.3425 | 23.812 | 0.9375 | 3.3              | 3.5              | 176                | 210  | 3000        | 4000 | KHM911242/KHM911210   | 0.81               | 0.74 | 0.41           | 41 | 2.24   |
| 54.488           | 2.1452 | 104.775 | 4.125  | 36.512 | 1.4375 | 36.512 | 1.4375 | 28.575 | 1.125  | 3.3              | 3.5              | 140                | 192  | 3000        | 4000 | KHM807048/KHM807010   | 0.49               | 1.23 | 0.68           | 29 | 1.39   |
| 55*              | 2.1654 | 90*     |        | 23     |        | 23     |        | 18.5   |        | 0.5              | 1.5              | 78                 | 113  | 3000        | 4000 | KJLM506849/KJLM506810 | 0.4                | 1.5  | 0.82           | 20 | 0.568  |
|                  |        | 95*     |        | 29     |        | 29     |        | 23.5   |        | 2.5              | 1.5              | 77                 | 152  | 3000        | 4000 | KJM207049/KJM207010   | 0.33               | 1.8  | 0.99           | 21 | 0.831  |
|                  |        | 110*    |        | 39     |        | 39     |        | 32     |        | 2.5              | 3                | 164                | 203  | 3000        | 4000 | KJH307749/KJH307710   | 0.35               | 1.69 | 0.93           | 26 | 1.69   |
| 55.562           | 2.1875 | 97.63   | 3.837  | 24.608 | 0.9688 | 24.608 | 0.9688 | 19.446 | 0.7656 | 0.8              | 3.5              | 89.5               | 129  | 3000        | 4000 | K28680/K28622         | 0.4                | 1.49 | 0.82           | 21 | 0.760  |
| 57.15            | 2.25   | 96.838  | 3.8125 | 21     | 0.8268 | 21.946 | 0.864  | 15.875 | 0.625  | 0.8              | 3.5              | 82.5               | 103  | 3000        | 4000 | K387A/K382A           | 0.35               | 1.7  | 0.9            | 21 | 0.581  |
|                  |        | 100     | 3.937  | 21     | 0.8268 | 21.946 | 0.864  | 17.826 | 0.7018 | 2                | 0.8              | 82.5               | 103  | 3000        | 4000 | K387S/K383A           | 0.35               | 1.69 | 0.93           | 19 | 0.653  |
|                  |        | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.183  | 23.812 | 0.9375 | 3.3              | 3.5              | 139                | 198  | 3000        | 4000 | K3979/K3920           | 0.35               | 1.7  | 0.93           | 24 | 1.46   |
|                  |        | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3              | 8                | 141                | 201  | 3000        | 4000 | K39581/K39520         | 0.35               | 1.7  | 0.93           | 24 | 1.42   |
|                  |        | 140.03  | 5.513  | 36.512 | 1.4375 | 33.236 | 1.3085 | 23.52  | 0.926  | 2.3              | 3.5              | 155                | 185  | 3000        | 4000 | K78225C/K78551        | 0.87               | 0.69 | 0.38           | 45 | 2.53   |
| 59.987           | 2.3617 | 146.05  | 5.75   | 41.275 | 1.625  | 39.688 | 1.5625 | 25.4   | 1      | 3.3              | 3.5              | 206                | 240  | 3000        | 4000 | KH913840/KH913810-3   | 0.78               | 0.77 | 0.42           | 45 | 3.28   |
| 60*              | 2.3346 | 112.712 | 4.4375 | 30.162 | 1.1875 | 30.048 | 1.183  | 23.812 | 0.9375 | 3.3              | 3.5              | 115                | 170  | 3000        | 4000 | K3977/K3920           | 0.4                | 1.49 | 0.82           | 25 | 1.30   |
|                  |        | 135     | 5.3147 | 33.45  | 1.3169 | 30.95  | 1.2185 | 22     | 0.8661 | 3.5              | 3.5              | 137                | 175  | 3000        | 4000 | KHM911244B/KHM911216B | 0.82               | 0.73 | 0.4            | 41 | 2.06   |
|                  |        | 146.05  | 5.75   | 41.275 | 1.625  | 39.688 | 1.5625 | 25.4   | 1      | 3.3              | 3.5              | 206                | 240  | 3000        | 4000 | KH913840/KH913810     | 0.78               | 0.77 | 0.42           | 45 | 3.28   |
| 60.325           | 2.375  | 100     | 3.937  | 25.4   | 1      | 25.4   | 1      | 19.845 | 0.7813 | 3.3              | 3.5              | 95                 | 75.5 | 3000        | 4000 | K28985/K28921         | 0.43               | 1.41 | 0.77           | 24 | 0.812  |
|                  |        | 101.6   | 4      | 25.4   | 1      | 25.4   | 1      | 19.845 | 0.7813 | 3.3              | 3.5              | 95                 | 75.7 | 3000        | 4000 | K28985/K28920         | 0.43               | 1.41 | 0.77           | 24 | 0.851  |
|                  |        | 122.238 | 4.8125 | 38.1   | 1.5    | 38.354 | 1.51   | 29.718 | 1.17   | 3.3              | 8                | 233                | 154  | 3000        | 4000 | KHM212044/KHM212011   | 0.34               | 1.78 | 0.98           | 31 | 2.08   |
|                  |        | 123.825 | 4.875  | 38.1   | 1.5    | 36.678 | 1.444  | 30.162 | 1.1875 | 3.3              | 2.3              | 162                | 223  | 3000        | 4000 | K558/K552A            | 0.35               | 1.73 | 0.95           | 31 | 2.09   |
|                  |        | 127     | 5      | 44.45  | 1.75   | 44.45  | 1.75   | 34.925 | 1.375  | 3.3              | 3.5              | 211                | 274  | 3000        | 4000 | K65237/K65500         | 0.49               | 1.2  | 0.68           | 35 | 2.65   |

# Inch Single Row Tapered Roller Bearings



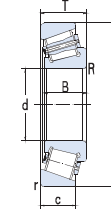
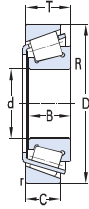
| Basic dimensions |        |         |        |         |        |        |        |        |        |        |        | Basic load ratings |     | Limit speed |      | Designations  | Calculation factor |      |   |      | Weight |      |    |      |
|------------------|--------|---------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------------------|-----|-------------|------|---|--------------------|------|---|------|--------|------|----|------|
| d                |        | D       |        | T       |        | B      |        | C      |        | rmin   | Rmin   | Cr                 | Cor | Grease      | Oil  |   | e                  | Y    | Yo  | a    | Kg     |      |    |      |
| mm               | in     | mm      | in     | mm      | in     | mm     | in     | mm     | in     | mm     |        | KN                 |     | r/min       |      |   |                    |      |   |      |        |      |    |      |
| 61.912           | 2.4375 | 112.712 | 4.4375 | 26.967  | 1.0617 | 21.996 | 0.866  | 23.812 | 0.9375 | 3.3    | 0.8    | 91                 | 105 | 3000        | 4000 | K392/K3920<br>KHM813843/KHM813810<br>KH715334/KH715311  | 0.4                | 1.49 | 0.82  | 27   | 1.06   |      |    |      |
|                  |        | 127     | 5      | 36.512  | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.3    | 3.5    | 166                | 234 | 2600        | 3400 |   | 0.5                | 1.2  | 0.66  | 37   | 2.16   |      |    |      |
|                  |        | 136.525 | 5.375  | 46.038  | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.3    | 3.5    | 249                | 405 | 2600        | 3400 |   | 0.47               | 1.3  | 0.7   | 37   | 3.41   |      |    |      |
| 63.5             | 2.5    | 94.458  | 3.7188 | 19.05   | 0.75   | 19.05  | 0.75   | 15.083 | 0.5938 | 1.5    | 1.5    | 62                 | 105 | 3000        | 4000 | KL610549/KL610510<br>K39250/K39412<br>K29586/K29520<br>K29586/K29522<br>K29585/K29522<br>K395/K394A<br>K29585/K29521<br>K3982/K3920<br>K39585/K39520<br>KHM212047/KHM212011<br>K559/K552A<br>KHM813842/KHM813810<br>KH414235/KH414210 | 0.42               | 1.4  | 0.78  | 20   | 0.453  |      |    |      |
|                  |        | 104.775 | 4.125  | 21.433  | 0.8438 | 22     | 0.8661 | 15.875 | 0.625  | 2.0    | 2.0    | 92.5               | 119 | 3000        | 4000 |   | 0.39               | 1.6  | 0.86  | 20   | 0.711  |      |    |      |
|                  |        | 107.95  | 4.25   | 25.4    | 1      | 25.4   | 1      | 19.05  | 0.75   | 3.3    | 1.5    | 92.5               | 141 | 3000        | 4000 |   | 0.46               | 1.31 | 0.72  | 18   | 0.914  |      |    |      |
|                  |        | 107.95  | 4.25   | 25.4    | 1      | 25.4   | 1      | 19.05  | 0.75   | 0.8    | 1.5    | 92.5               | 141 | 3000        | 4000 |   | 0.46               | 1.31 | 0.72  | 24   | 0.914  |      |    |      |
|                  |        | 107.95  | 4.25   | 25.4    | 1      | 25.4   | 1      | 19.05  | 0.75   | 0.8    | 3.5    | 92.5               | 141 | 3000        | 4000 |   | 0.46               | 1.31 | 0.72  | 24   | 0.914  |      |    |      |
|                  |        | 110     | 4.3307 | 22      | 0.8661 | 21.996 | 0.866  | 18.824 | 0.7411 | 1.3    | 3.5    | 90                 | 117 | 3000        | 4000 |   | 0.4                | 1.5  | 0.82  | 21   | 0.853  |      |    |      |
|                  |        | 110     | 4.3307 | 25.4    | 1      | 25.4   | 1      | 19.05  | 0.75   | 1.3    | 3.5    | 92.5               | 141 | 3000        | 4000 |   | 0.46               | 1.31 | 0.72  | 24   | 0.965  |      |    |      |
|                  |        | 112.712 | 4.4375 | 30.162  | 1.1875 | 30.048 | 1.183  | 23.812 | 0.9375 | 3.3    | 3.5    | 116                | 170 | 2900        | 3900 |   | 0.4                | 1.49 | 0.82  | 24   | 1.22   |      |    |      |
|                  |        | 112.712 | 4.4375 | 30.162  | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3    | 3.5    | 154                | 201 | 2900        | 3900 |   | 0.35               | 1.7  | 0.93  | 24   | 1.27   |      |    |      |
|                  |        | 122.238 | 4.8125 | 38.1    | 1.5    | 38.354 | 1.51   | 29.718 | 1.17   | 3.3    | 7      | 190                | 250 | 2900        | 3900 |   | 0.34               | 1.78 | 0.98  | 24   | 1.90   |      |    |      |
|                  |        | 123.825 | 4.875  | 38.1    | 1.5    | 36.678 | 1.444  | 30.162 | 1.1875 | 3.3    | 3.5    | 162                | 223 | 2900        | 3900 |   | 0.35               | 1.73 | 0.95  | 29   | 1.99   |      |    |      |
|                  |        | 127     | 5      | 36.512  | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.3    | 3.5    | 166                | 234 | 2900        | 3900 |   | 0.5                | 1.2  | 0.66  | 32   | 2.12   |      |    |      |
|                  |        | 136.525 | 5.375  | 41.275  | 1.625  | 41.275 | 1.625  | 31.75  | 1.25   | 3.3    | 3.5    | 264                | 340 | 2800        | 3800 |   | 0.36               | 1.66 | 0.91  | 30   | 3.03   |      |    |      |
|                  |        | 65*     |        | 110*    |        | 28     |        | 28     |        | 22.5   |        | 2.5                | 3   | 131         | 181  |   | 2800               | 3800 | KJM511946/KJM511910<br>KJM211749/KJM211710    | 0.4  | 1.49   | 0.82 | 24 | 1.06 |
| 120*             |        |         |        | 39      |        | 38.5   | 1.5157 | 32     |        | 2.5    | 3      | 187                | 250 | 2800        | 3800 | 0.34  | 1.78               | 0.98 |   | 27   | 0.86   |      |    |      |
| 65.088           | 2.5625 | 135.755 | 5.3447 | 53.975  | 2.125  | 56.007 | 2.205  | 44.45  | 1.75   | 3.3    | 3.5    | 272                | 355 | 2600        | 3400 | K6379/K6320   | 0.32               | 1.88 | 1.02  | 36   | 3.63   |      |    |      |
| 66.675           | 2.625  | 107.95  | 4.25   | 25.4    | 1      | 25.4   | 1      | 19.05  | 0.75   | 0.8    | 3.5    | 92.5               | 141 | 2800        | 3800 | K29590/K29522<br>K395A/K394A<br>K3984/K3920<br>K39590/K39520<br>K33262/K33462<br>KHM212049/KHM212011<br>KHM212049/KHM212010<br>K641/K632<br>KH715341/KH715311   | 0.46               | 1.31 | 0.72  | 18   | 0.853  |      |    |      |
|                  |        | 110     | 4.3307 | 22      | 0.8661 | 21.996 | 0.866  | 18.824 | 0.7411 | 1.3    | 0.8    | 90                 | 117 | 2800        | 3800 |   | 0.4                | 1.49 | 0.82  | 21   | 0.797  |      |    |      |
|                  |        | 112.712 | 4.4375 | 30.162  | 1.1875 | 30.048 | 1.183  | 23.812 | 0.9375 | 3.3    | 3.5    | 117                | 170 | 2800        | 3800 |   | 0.4                | 1.49 | 0.82  | 24   | 1.17   |      |    |      |
|                  |        | 112.712 | 4.4375 | 30.162  | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3    | 3.5    | 141                | 201 | 2800        | 3800 |   | 0.35               | 1.7  | 0.93  | 24   | 1.23   |      |    |      |
|                  |        | 117.475 | 4.625  | 30.162  | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3    | 3.5    | 123                | 180 | 2800        | 3800 |   | 0.44               | 1.38 | 0.76  | 28   | 1.37   |      |    |      |
|                  |        | 122.238 | 4.8125 | 38.1    | 1.5    | 38.354 | 1.51   | 29.718 | 1.17   | 3.3    | 3.6    | 233                | 154 | 2800        | 3800 |   | 0.34               | 1.78 | 0.98  | 24   | 1.90   |      |    |      |
|                  |        | 122.238 | 4.8125 | 38.1    | 1.5    | 38.354 | 1.51   | 29.718 | 1.17   | 1.5    | 3.5    | 233                | 154 | 2800        | 3800 |   | 0.34               | 1.78 | 0.98  | 27   | 1.90   |      |    |      |
|                  |        | 136.525 | 5.375  | 41.275  | 1.625  | 41.275 | 1.625  | 31.75  | 1.25   | 3.3    | 3.5    | 199                | 271 | 2600        | 3400 |   | 0.36               | 1.66 | 0.91  | 30   | 2.74   |      |    |      |
|                  |        | 136.525 | 5.375  | 46.038  | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.3    | 3.5    | 249                | 405 | 2600        | 3400 |   | 0.47               | 1.3  | 0.7   | 37   | 3.24   |      |    |      |
|                  |        | 68.262  | 2.6875 | 136.525 | 5.375  | 41.275 | 1.625  | 41.275 | 1.625  | 31.75  | 1.25   | 3.3                | 3.5 | 199         | 271  |   | 2600               | 3400 | K642/K632<br>KH715343/KH715311<br>K9278/K9220 | 0.36 | 1.66   | 0.91 | 30 | 2.69 |
|                  |        |         |        | 136.525 | 5.375  | 46.038 | 1.8125 | 46.038 | 1.8125 | 36.512 | 1.4375 | 3.3                | 3.5 | 238         | 380  |   | 2600               | 3400 |   | 0.47 | 1.3    | 0.7  | 37 | 3.18 |
| 161.925          | 6.375  |         |        | 49.212  | 1.9375 | 46.038 | 1.8125 | 31.75  | 1.25   | 3.3    | 3.5    | 248                | 490 | 2800        | 3800 | 0.71  | 0.85               | 0.47 |   | 56   | 4.58   |      |    |      |

# Inch Single Row Tapered Roller Bearings



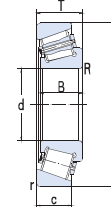
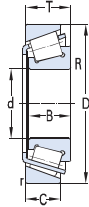
| Basic dimensions |        |         |        |        |        |        |        |        |        |       |      | Basic load ratings |     | Limit speed |      | Designations          | Calculation factor |      |      |    | Weight |
|------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|-------|------|--------------------|-----|-------------|------|-----------------------|--------------------|------|------|----|--------|
| d                |        | D       |        | T      |        | B      |        | C      |        | rmin  | Rmin | Cr                 | Cor | Grease      | Oil  |                       | e                  | Y    | Yo   | a  | Kg     |
| mm               | in     | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm    |      | KN                 |     | r/min       |      |                       |                    |      |      |    |        |
| 69.85            | 2.75   | 120     | 4.7244 | 29.795 | 1.173  | 29.007 | 1.142  | 24.237 | 0.9542 | 2     | 3.5  | 135                | 188 | 2800        | 3800 | K482/K472             | 0.38               | 1.56 | 0.86 | 26 | 1.32   |
|                  |        | 120     | 4.7244 | 32.545 | 1.2813 | 32.545 | 1.2813 | 26.195 | 1.0313 | 3.3   | 3.5  | 157                | 229 | 3000        | 4000 | K47487/K47420         | 0.35               | 1.7  | 0.9  | 25 | 1.50   |
|                  |        | 130.175 | 5.125  | 41.275 | 1.625  | 41.275 | 1.625  | 31.75  | 1.25   | 3.3   | 3.5  | 199                | 271 | 2600        | 3600 | K643/K633             | 0.36               | 1.66 | 0.91 | 29 | 2.30   |
|                  |        | 146.05  | 5.75   | 41.275 | 1.625  | 39.688 | 1.5625 | 25.4   | 1      | 3.3   | 3.5  | 206                | 240 | 2600        | 3600 | KH913849/KH913810     | 0.78               | 0.77 | 0.42 | 45 | 2.97   |
|                  |        | 112.712 | 4.4375 | 25.4   | 1      | 25.4   | 1      | 19.05  | 0.75   | 3.3   | 1.5  | 98                 | 156 | 2600        | 3600 | K29675/K29620         | 0.49               | 1.23 | 0.68 | 26 | 0.952  |
| 70*              | 2.7559 | 110*    |        | 26     |        | 25     |        | 20.5   |        | 2.5   | 1    | 102                | 156 | 3000        | 4000 | KJLM813049/KJLM813010 | 0.49               | 1.23 | 0.68 | 26 | 0.894  |
|                  |        | 120     | 4.7244 | 29.795 | 1.173  | 29.007 | 1.142  | 24.237 | 0.9542 | 2     | 2    | 135                | 188 | 3000        | 4000 | K484/K472             | 0.38               | 1.6  | 0.86 | 25 | 1.32   |
| 71.438           | 2.8125 | 117.475 | 4.625  | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3   | 3.5  | 118                | 180 | 2600        | 3600 | K33281/K33462         | 0.44               | 1.38 | 0.76 | 28 | 1.24   |
|                  |        | 120     | 4.7244 | 32.545 | 1.2813 | 32.545 | 1.2813 | 26.195 | 1.0313 | 3.3   | 3.5  | 157                | 229 | 2600        | 3600 | K47490/K47420         | 0.36               | 1.66 | 0.92 | 26 | 1.46   |
|                  |        | 136.525 | 5.375  | 41.275 | 1.625  | 41.275 | 1.625  | 31.75  | 1.25   | 3.3   | 3.5  | 242                | 300 | 2600        | 3600 | KH414249/KH414210     | 0.36               | 1.66 | 0.92 | 31 | 2.59   |
|                  |        | 136.525 | 5.375  | 41.275 | 1.625  | 41.275 | 1.625  | 31.75  | 1.25   | 3.3   | 6.4  | 199                | 271 | 2600        | 3600 | K645/K632             | 0.36               | 1.66 | 0.91 | 33 | 2.55   |
| 73.025           | 2.875  | 112.712 | 4.4375 | 25.4   | 1      | 25.4   | 1      | 19.05  | 0.75   | 3.3   | 3.5  | 98                 | 156 | 2600        | 3600 | K29685/K29620         | 0.49               | 1.23 | 0.68 | 25 | 0.878  |
|                  |        | 117.475 | 4.625  | 30.162 | 1.1875 | 30.162 | 1.1875 | 23.812 | 0.9375 | 3.3   | 3.5  | 118                | 180 | 2600        | 3600 | K33287/K33462         | 0.44               | 1.38 | 0.76 | 28 | 1.21   |
|                  |        | 150.089 | 5.909  | 44.45  | 1.75   | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.3   | 3.5  | 264                | 365 | 2400        | 3400 | K744/K742             | 0.33               | 1.84 | 1.01 | 31 | 3.74   |
| 75*              | 115*   |         |        | 25     |        | 25     |        | 19     |        | 2.5   | 3    | 105                | 152 | 2600        | 3600 | KJLM714149/KJLM714110 | 0.46               | 1.3  | 0.72 | 25 | 8.58   |
|                  |        |         |        | 31     |        | 29.5   |        | 25     |        | 2.5   | 3    | 128                | 204 | 2600        | 3600 | KJM714249/KJM714210   | 0.44               | 1.35 | 0.74 | 28 | 1.28   |
| 75.987           | 2.9916 | 131.976 | 5.1959 | 39     | 1.5354 | 39     | 1.5354 | 32     | 1.2598 | 3.5   | 7    | 203                | 305 | 2600        | 3600 | KHM215249/KHM215210   | 0.33               | 1.84 | 1.01 | 28 | 2.14   |
| 76.2             | 3      | 125.412 | 4.9375 | 25.4   | 1      | 25.4   | 1      | 19.845 | 0.7813 | 1.5   | 3.5  | 91                 | 160 | 2600        | 3600 | K27684/K27620         | 0.45               | 1.32 | 0.73 | 29 | 1.25   |
|                  |        | 127     | 5      | 30.162 | 1.1875 | 31     | 1.2205 | 22.225 | 0.875  | 3.3   | 3.5  | 184                | 220 | 2600        | 3600 | K42687/K42620         | 0.42               | 1.43 | 0.79 | 27 | 1.44   |
|                  |        | 127     | 5      | 30.162 | 1.1875 | 31     | 1.2205 | 22.225 | 0.875  | 3.3   | 6.4  | 184                | 220 | 2600        | 3600 | K42688/K42620         | 0.42               | 1.43 | 0.79 | 27 | 1.44   |
|                  |        | 135.733 | 5.3438 | 44.45  | 1.75   | 46.1   | 1.815  | 34.925 | 1.375  | 3.3   | 3.5  | 215                | 340 | 2600        | 3600 | K5760/K5735           | 0.41               | 1.5  | 0.81 | 33 | 2.73   |
|                  |        | 136.525 | 5.375  | 30.162 | 1.1875 | 29.769 | 1.1716 | 22.225 | 0.875  | 3.175 | 3.5  | 134                | 198 | 2400        | 3400 | K495A/K493            | 0.44               | 1.35 | 0.74 | 29 | 1.82   |
|                  |        | 139.992 | 5.5115 | 36.512 | 1.4375 | 36.098 | 1.4212 | 28.575 | 1.125  | 3.302 | 3.5  | 187                | 290 | 2400        | 3400 | K575/K572             | 0.4                | 1.49 | 0.82 | 32 | 2.44   |
|                  |        | 150.089 | 5.909  | 44.45  | 1.75   | 46.672 | 1.8375 | 36.512 | 1.4375 | 3.3   | 3.5  | 264                | 365 | 2400        | 3400 | K748S/K742            | 0.33               | 1.84 | 1.01 | 33 | 3.62   |
|                  |        | 161.925 | 6.375  | 47.625 | 1.875  | 48.26  | 1.9    | 38.1   | 1.5    | 3.3   | 3.5  | 273                | 390 | 2400        | 3400 | K755/K752             | 0.34               | 1.76 | 0.97 | 40 | 4.85   |
|                  |        | 161.925 | 6.375  | 53.975 | 2.125  | 55.1   | 2.1693 | 42.862 | 1.6875 | 3.3   | 3.5  | 315                | 475 | 2400        | 3400 | K6576/K6535           | 0.4                | 1.49 | 0.82 | 41 | 5.46   |
|                  |        | 171.45  | 6.75   | 49.212 | 1.9375 | 46.038 | 1.8125 | 31.75  | 1.25   | 3.3   | 3.5  | 267                | 325 | 2000        | 2800 | K9380/K9321           | 0.76               | 0.79 | 0.43 | 54 | 5.20   |
|                  |        | 180.975 | 7.125  | 53.975 | 2.125  | 53.183 | 2.0938 | 35.72  | 1.4063 | 3.3   | 3.5  | 207                | 210 | 2000        | 2800 | KH917840/KH917810     | 0.73               | 0.82 | 0.45 | 63 | 6.56   |
| 77.788           | 3.0625 | 135.733 | 5.3438 | 44.45  | 1.75   | 46.1   | 1.815  | 34.925 | 1.375  | 3.3   | 3.5  | 215                | 340 | 2600        | 3600 | K5795/K5735           | 0.41               | 1.5  | 0.81 | 33 | 2.73   |

# Inch Single Row Tapered Roller Bearings



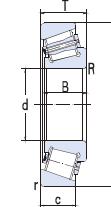
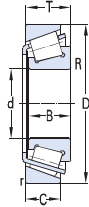
| Basic dimensions |        |         |        |        |             |        |             |        |        |       |       | Basic load ratings |      | Limit speed       |      | Designations        | Calculation factor |      |      |    | Weight |
|------------------|--------|---------|--------|--------|-------------|--------|-------------|--------|--------|-------|-------|--------------------|------|-------------------|------|---------------------|--------------------|------|------|----|--------|
| d                |        | D       |        | T      |             | B      |             | C      |        | rmin  | Rmin  | Cr                 | Cor  | Grease            | Oil  |                     | e                  | Y    | Yo   | a  | Kg     |
| mm               | in     | mm      | in     | mm     | in          | mm     | in          | mm     | in     | mm    |       | KN                 |      | r/min             |      |                     |                    |      |      |    |        |
| 80*              |        | 130*    |        | 35     |             | 34     |             | 28.5   |        | 2.5   | 3     | 175                | 280  | 2400              | 3400 | KJM515649/KJM515610 | 0.41               | 1.48 | 0.81 | 30 | 1.82   |
| 80.962           | 3.1875 | 136.525 | 5.375  | 30.162 | 1.1875      | 29.769 | 1.172       | 22.225 | 0.875  | 3.175 | 3.503 | 134                | 198  | 2400              | 3400 | K496/K493           | 0.44               | 1.35 | 0.74 | 29 | 1.75   |
| 82.55            | 3.25   | 125.412 | 4.9375 | 25.4   | 1           | 25.4   | 1           | 19.845 | 0.7813 | 1.5   | 3.5   | 140                | 151  | 2400              | 3400 | 27687/27620         | 0.45               | 1.32 | 0.73 | 27 | 1.10   |
|                  |        | 133.35  | 5.25   | 33.338 | 1.3125      | 33.338 | 1.3125      | 26.195 | 1.0313 | 3.3   | 6.8   | 142                | 218  | 2400              | 3400 | K47687/K47620       | 0.4                | 1.48 | 0.82 | 28 | 1.74   |
|                  |        | 133.35  | 5.25   | 33.338 | 1.3125      | 33.338 | 1.3125      | 26.195 | 1.0313 | 3.3   | 3.5   | 142                | 218  | 2400              | 3400 | K47686/K47620       | 0.4                | 1.48 | 0.82 | 28 | 1.80   |
|                  |        | 133.35  | 5.25   | 39.688 | 1.5625      | 39.688 | 1.5625      | 32.545 | 1.2813 | 3.3   | 3.5   | 186                | 310  | 2400              | 3400 | KHM516449/KHM516410 | 0.4                | 1.48 | 0.82 | 32 | 2.12   |
|                  |        | 139.7   | 5.5    | 36.512 | 1.4375      | 36.098 | 1.4212      | 28.575 | 1.125  | 3.3   | 3.556 | 187                | 290  | 2400              | 3400 | K580/K572X          | 0.4                | 1.48 | 0.82 | 31 | 2.21   |
|                  |        | 139.992 | 5.5115 | 36.512 | 1.4375      | 36.098 | 1.4212      | 28.575 | 1.125  | 3.302 | 3.556 | 217                | 275  | 2400              | 3400 | K580/K572           | 0.4                | 1.49 | 0.82 | 31 | 2.21   |
|                  |        | 146.05  | 5.75   | 41.275 | 1.625       | 41.275 | 1.625       | 31.75  | 1.25   | 3.505 | 0.254 | 265                | 360  | 2400              | 3400 | K663/K653           | 0.41               | 1.47 | 0.81 | 36 | 2.87   |
|                  |        | 150     | 5.9055 | 44.45  | 1.75        | 46.672 | 1.8375      | 36.512 | 1.4375 | 3.3   | 3.5   | 264                | 365  | 2400              | 3400 | K749A/K742A         | 0.33               | 1.84 | 1.01 | 38 | 3.33   |
| 180.975          | 7.125  | 53.975  | 2.125  | 53.183 | 2.093818898 | 35.72  | 1.406299213 | 3.3    | 3.3    | 207   | 210   | 2000               | 3000 | KH917849/KH917810 | 0.73 | 0.82                | 0.45               | 50   | 6.25 |    |        |
| 83.345           | 3.2813 | 125.412 | 4.9375 | 25.4   | 1           | 25.4   | 1           | 19.845 | 0.7813 | 1.5   | 3.5   | 100                | 160  | 2400              | 3400 | K27690/K27620       | 0.42               | 1.44 | 0.79 | 26 | 1.08   |
| 84.138           | 3.3125 | 133.35  | 5.25   | 30.162 | 1.1875      | 29.769 | 1.172       | 22.225 | 0.875  | 3.3   | 3.5   | 134                | 198  | 2400              | 3400 | K498/K492A          | 0.44               | 1.35 | 0.74 | 29 | 1.47   |
| 84.976           | 3.3455 | 125.412 | 4.9375 | 25.4   | 1           | 25.4   | 1           | 19.845 | 0.7813 | 1.5   | 5     | 100                | 160  | 2400              | 3400 | K27695/K27620       | 0.45               | 1.32 | 0.73 | 31 | 1.01   |
| 85*              |        | 130*    |        | 30     |             | 29     |             | 24     |        | 2.5   | 3     | 138                | 216  | 2400              | 3400 | KJM716649/KJM716610 | 0.44               | 1.35 | 0.74 | 30 | 1.39   |
| 85.026           | 3.3475 | 150.089 | 5.909  | 44.45  | 1.75        | 46.672 | 1.8375      | 36.512 | 1.4375 | 3.3   | 3.5   | 264                | 365  | 2400              | 3400 | K749/K742           | 0.33               | 1.84 | 1.01 | 31 | 3.22   |
| 85.725           | 3.375  | 136.525 | 5.375  | 30.163 | 1.1875      | 29.769 | 1.172       | 22.225 | 0.875  | 3.175 | 3.556 | 134                | 198  | 2400              | 3400 | K497/K493           | 0.44               | 1.35 | 0.74 | 29 | 1.60   |
|                  |        | 152.4   | 6      | 39.688 | 1.5625      | 36.322 | 1.43        | 30.162 | 1.1875 | 3.175 | 3.5   | 315                | 167  | 2000              | 3400 | K596/K592A          | 0.44               | 1.36 | 0.75 | 39 | 2.92   |
|                  |        | 133.35  | 5.25   | 30.162 | 1.1875      | 29.769 | 1.172       | 22.225 | 0.875  | 3.3   | 3.556 | 134                | 198  | 2200              | 3200 | K497/K492A          | 0.44               | 1.35 | 0.74 | 23 | 1.47   |
|                  |        | 142.138 | 5.596  | 42.862 | 1.6875      | 42.862 | 1.6875      | 34.133 | 1.3438 | 3     | 4.8   | 220                | 345  | 2200              | 3200 | KHM617049/KHM617010 | 0.43               | 1.4  | 0.76 | 35 | 2.63   |
|                  |        | 146.05  | 5.75   | 41.275 | 1.625       | 41.275 | 1.625       | 31.75  | 1.25   | 3.175 | 6.4   | 217                | 315  | 2200              | 3200 | K665A/K653          | 0.41               | 1.47 | 0.81 | 33 | 2.74   |
| 88.9             | 3.5    | 118.618 | 4.67   | 39.688 | 1.5625      | 39.688 | 1.5625      | 30.162 | 1.1875 | 3.556 | 6.35  | 286                | 350  | 2000              | 3000 | KHM518445/KHM518410 | 0.4                | 1.49 | 0.82 | 33 | 2.86   |
|                  |        | 152.4   | 6      | 39.688 | 1.5625      | 36.322 | 1.43        | 30.162 | 1.1875 | 3.175 | 6.4   | 184                | 286  | 1800              | 2700 | K593A/K592A         | 0.44               | 1.36 | 0.75 | 39 | 2.80   |
|                  |        | 152.4   | 6      | 39.688 | 1.5625      | 39.688 | 1.5625      | 30.162 | 1.1875 | 3.3   | 6.4   | 255                | 370  | 1800              | 2700 | KHM518445/KHM518410 | 0.4                | 1.49 | 0.82 | 34 | 2.70   |
|                  |        | 161.925 | 6.375  | 53.975 | 2.125       | 55.1   | 2.1693      | 42.862 | 1.6875 | 3.3   | 3.5   | 315                | 475  | 2400              | 3400 | K6580/K6535         | 0.4                | 1.49 | 0.82 | 41 | 4.73   |
|                  |        | 168.275 | 6.625  | 41.275 | 1.625       | 41.275 | 1.625       | 30.162 | 1.1875 | 3.3   | 3.5   | 205                | 350  | 1800              | 2700 | K679/K672           | 0.47               | 1.28 | 0.7  | 38 | 4.03   |
|                  |        | 190.5   | 7.5    | 57.15  | 2.25        | 57.531 | 2.265       | 44.45  | 1.75   | 3.3   | 8     | 380                | 555  | 1900              | 2600 | K855/K854           | 0.33               | 1.8  | 0.99 | 42 | 7.69   |
|                  |        | 190.5   | 7.5    | 57.15  | 2.25        | 57.531 | 2.265       | 46.038 | 1.8125 | 3.3   | 8     | 445                | 610  | 1700              | 2400 | KHH221434/KHH221410 | 0.33               | 1.79 | 0.99 | 24 | 7.87   |

# Inch Single Row Tapered Roller Bearings



| Basic dimensions |        |         |        |        |        |        |        |        |        |       |      | Basic load ratings |     | Limit speed |      | Designations            | Calculation factor |      |      |    | Weight |
|------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|-------|------|--------------------|-----|-------------|------|-------------------------|--------------------|------|------|----|--------|
| d                |        | D       |        | T      |        | B      |        | C      |        | rmin  | Rmin | Cr                 | Cor | Grease      | Oil  |                         | e                  | Y    | Yo   | a  | Kg     |
| mm               | in     | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm    | mm   | KN                 |     | r/min       |      |                         |                    |      |      |    |        |
| 90*              |        | 145*    |        | 35     |        | 34     |        | 27     |        | 2.5   | 6    | 189                | 315 | 2200        | 3200 | KJM718149A/KJM718110    | 0.44               | 1.36 | 0.75 | 33 | 2.17   |
|                  |        | 147*    |        | 40     |        | 40     |        | 32.5   |        | 3.5   | 7    | 216                | 345 | 2200        | 3200 | KHM218248/KHM218210     | 0.33               | 1.8  | 0.99 | 31 | 2.51   |
| 92.075           | 3.625  | 150     | 9.9055 | 35.992 | 1.417  | 36.322 | 1.43   | 27     | 1.063  | 3     | 6.35 | 184                | 286 | 1900        | 2800 | 598A/593X               | 0.44               | 1.36 | 0.75 | 34 | 2.37   |
|                  |        | 152.4   | 6      | 39.688 | 1.5625 | 36.322 | 1.43   | 30.162 | 1.1875 | 3.302 | 6.35 | 232                | 315 | 1900        | 2800 | 598A/592A               | 0.44               | 1.36 | 0.75 | 34 | 2.67   |
|                  |        | 180.975 | 7.125  | 47.625 | 1.875  | 48.006 | 1.89   | 38.1   | 1.5    | 3.3   | 3.5  | 288                | 435 | 1900        | 2800 | K778/K772               | 0.39               | 1.56 | 0.86 | 44 | 5.55   |
| 95*              |        | 150*    |        | 35     |        | 34     |        | 27     |        | 2.5   | 3    | 187                | 290 | 1900        | 2800 | KJM719149/KJM719113     | 0.44               | 1.4  | 0.75 | 33 | 2.23   |
| 95.25            | 3.75   | 147.638 | 5.8125 | 35.717 | 1.4062 | 36.322 | 1.43   | 26.192 | 1.0312 | 0.8   | 5    | 228                | 310 | 1900        | 2800 | 594A/592XE              | 0.44               | 1.39 | 0.75 | 34 | 2.13   |
|                  |        | 152.4   | 6      | 39.688 | 1.5625 | 36.322 | 1.43   | 30.162 | 1.1875 | 3.302 | 5.08 | 228                | 310 | 1900        | 2800 | 594A/592A               | 0.44               | 1.36 | 0.75 | 34 | 2.54   |
|                  |        | 168.275 | 6.625  | 41.275 | 1.625  | 41.275 | 1.625  | 30.162 | 1.1875 | 3.3   | 3.5  | 222                | 350 | 1900        | 2800 | K683/K672               | 0.48               | 1.25 | 0.7  | 38 | 3.75   |
| 96.838           | 3.8125 | 148.43  | 5.8437 | 28.575 | 1.125  | 28.971 | 1.1406 | 21.433 | 0.8438 | 3     | 3.5  | 146                | 230 | 1900        | 2800 | K42381/K42584           | 0.49               | 1.22 | 0.67 | 32 | 1.68   |
|                  |        | 188.912 | 7.4375 | 50.8   | 2      | 46.038 | 1.8125 | 31.75  | 1.25   | 3.3   | 3.5  | 270                | 345 | 1900        | 2800 | K90381/K90744           | 0.87               | 0.69 | 0.38 | 62 | 5.63   |
| 99.974           |        | 156.975 |        | 42     |        | 42     |        | 34     |        | 3.5   | 8    | 253                | 400 | 1900        | 2800 | KHM220149/KHM220110     | 0.33               | 1.84 | 1.01 | 42 | 2.89   |
| 99.975           | 3.936  | 212.725 | 8.375  | 66.675 | 2.625  | 66.675 | 2.625  | 53.975 | 2.125  | 3.3   | 3.5  | 600                | 830 | 1900        | 2800 | KHH224334/KHH224310     | 0.33               | 1.84 | 1.01 | 54 | 11.2   |
| 100*             |        | 145*    |        | 24     |        | 22.5   |        | 17.5   |        | 5     | 3    | 116                | 171 | 1900        | 2800 | KJP10049A/KJP10010      | 0.47               | 1.27 | 0.7  | 30 | 1.13   |
|                  |        | 155*    |        | 36     |        | 35     |        | 28     |        | 2.5   | 3    | 231                | 260 | 1900        | 2800 | KJM720249/KJM720210     | 0.47               | 1.27 | 0.7  | 36 | 2.34   |
|                  |        | 157*    |        | 42     |        | 42     |        | 34     |        | SP    | SP   | 253                | 400 | 1900        | 2800 | KHM220149A6/KHM220110A6 | 0.33               | 1.8  | 0.99 | 33 | 2.89   |
| 101.6            | 4      | 157.162 | 6.1875 | 36.512 | 1.4375 | 36.116 | 1.4219 | 26.195 | 1.0313 | 3.3   | 3.5  | 193                | 315 | 2000        | 2800 | K52400/K52618           | 0.47               | 1.3  | 0.69 | 36 | 2.48   |
|                  |        | 168.275 | 6.625  | 41.275 | 1.625  | 41.275 | 1.625  | 30.162 | 1.1875 | 3.3   | 3.5  | 221                | 350 | 2000        | 2800 | K687/K672               | 0.47               | 1.28 | 0.7  | 38 | 3.43   |
|                  |        | 180.975 | 7.125  | 47.625 | 1.875  | 48.006 | 1.89   | 38.1   | 1.5    | 3.3   | 3.5  | 290                | 435 | 2000        | 2600 | K780/K772               | 0.39               | 1.6  | 0.83 | 39 | 5.00   |
|                  |        | 190.5   | 7.5    | 57.15  | 2.25   | 57.531 | 2.265  | 44.45  | 1.75   | 3.3   | 8    | 380                | 555 | 1900        | 2600 | K861/K854               | 0.33               | 1.8  | 0.99 | 42 | 6.80   |
|                  |        | 190.5   | 7.5    | 57.15  | 2.25   | 57.531 | 2.265  | 46.038 | 1.8125 | 3.3   | 8    | 445                | 610 | 1800        | 2600 | KHH221449/KHH221410     | 0.33               | 1.79 | 0.99 | 24 | 7.87   |
|                  |        | 212.725 | 8.375  | 66.675 | 2.625  | 66.675 | 2.625  | 53.975 | 2.125  | 3.3   | 7    | 655                | 900 | 1800        | 2600 | KHH224335/KHH224310     | 0.33               | 1.84 | 1.01 | 48 | 11.1   |
|                  |        | 212.725 | 8.375  | 66.675 | 2.625  | 66.675 | 2.265  | 53.975 | 2.125  | 3.3   | 7    | 450                | 675 | 1800        | 2600 | K941/K932               | 0.33               | 1.84 | 1.01 | 48 | 11.0   |
|                  |        | 212.725 | 8.375  | 66.675 | 2.625  | 66.675 | 2.265  | 53.975 | 2.125  | 3.3   | 7    | 585                | 840 | 1700        | 2200 | KHH224335/KHH224310     | 0.33               | 1.84 | 1.01 | 47 | 11.1   |
|                  |        | 214.312 | 8.437  | 55.562 | 2.187  | 52.388 | 2.063  | 39.688 | 1.563  | 3.5   | 3.3  | 375                | 590 | 1550        | 2100 | KH924033/KH924010       | 0.674              | 0.89 | 0.49 |    | 9.15   |
|                  |        | 250.825 | 9.875  | 76.2   | 3      | 73.025 | 2.875  | 50.8   | 2      | 6.4   | 6.4  | 550                | 695 | 1400        | 1900 | KHH923649/KHH923610     | 0.71               | 0.85 | 0.47 | 85 | 17.6   |
| 104.775          | 4.125  | 180.975 | 7.125  | 47.625 | 1.875  | 48.006 | 1.89   | 38.1   | 1.5    | 3.3   | 7    | 288                | 435 | 2000        | 2600 | K787/K772               | 0.39               | 1.6  | 0.86 | 39 | 4.78   |
|                  |        | 180.975 | 7.125  | 47.625 | 1.875  | 48.006 | 1.89   | 38.1   | 1.5    | 3.3   | 3.5  | 288                | 435 | 2000        | 2600 | K782/K772               | 0.39               | 1.56 | 0.86 | 39 | 4.81   |

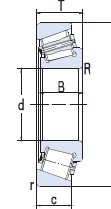
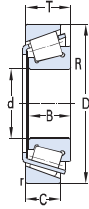
# Inch Single Row Tapered Roller Bearings



| Basic dimensions |        |         |        |        |        |        |        |        |        |      |      | Basic load ratings |      | Limit speed |      | Designations          | Calculation factor |      |      |    | Weight |
|------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|------|------|--------------------|------|-------------|------|-----------------------|--------------------|------|------|----|--------|
| d                |        | D       |        | T      |        | B      |        | C      |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil  |                       | e                  | Y    | Yo   | a  | Kg     |
| mm               | in     | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm   | mm   | KN                 |      | r/min       |      |                       |                    |      |      |    |        |
|                  |        | 180.975 | 7.125  | 47.625 | 1.875  | 48.006 | 1.89   | 38.1   | 1.5    | 3.3  | 6.4  | 288                | 435  | 2000        | 2600 | K786/K772             | 0.39               | 1.56 | 0.86 | 39 | 4.79   |
| 107.95           | 4.25   | 146.05  | 5.75   | 21.433 | 0.8438 | 21.433 | 0.8438 | 16.67  | 0.6563 | 1.5  | 1.5  | 106                | 180  | 1900        | 2800 | KL521949/KL521910     | 0.39               | 1.54 | 0.85 | 26 | 0.993  |
|                  |        | 158.75  | 6.25   | 23.02  | 0.9063 | 21.438 | 0.844  | 15.875 | 0.625  | 3.3  | 3.5  | 107                | 174  | 1900        | 2800 | K37425/K37625         | 0.61               | 0.99 | 0.54 | 39 | 1.36   |
|                  |        | 165.1   | 6.5    | 36.512 | 1.4375 | 36.512 | 1.4375 | 26.988 | 1.0625 | 3.3  | 3.5  | 198                | 330  | 1900        | 2800 | K56425/K56650         | 0.5                | 1.2  | 0.7  | 38 | 2.67   |
| 109.538          | 4.3125 | 158.75  | 6.25   | 23.02  | 0.9063 | 21.438 | 0.844  | 15.875 | 0.625  | 3.3  | 5    | 107                | 174  | 1900        | 2800 | K37431A/K37625        | 0.61               | 0.99 | 0.54 | 39 | 1.32   |
| 110*             |        | 165*    |        | 35     |        | 35     |        | 26.5   |        | 2.5  | 3    | 195                | 320  | 1900        | 2800 | KJM822049/KJM822010   | 0.5                | 1.21 | 0.66 | 39 | 2.63   |
|                  |        | 180*    |        | 47     |        | 46     |        | 38     |        | 2.5  | 3    | 320                | 510  | 1900        | 2800 | JHM522649/JHM522610   | 0.41               | 1.48 | 0.81 | 40 | 4.56   |
|                  |        | 165*    |        | 35     |        | 35     |        | 26.5   |        | 3    | 2.5  | 211                | 360  | 1900        | 2800 | KM822049/KM822010     | 0.5                | 1.2  | 0.66 | 38 | 2.63   |
|                  |        | 180*    |        | 47     |        | 46     |        | 38     |        | 2.5  | 3    | 320                | 510  | 1900        | 2800 | KJHM522649/KJHM522610 | 0.41               | 1.48 | 0.81 | 40 | 4.56   |
|                  | 4.3307 | 180     | 7.0866 | 47     | 1.8504 | 46     | 1.811  | 38     | 1.496  | 2.5  | 3    | 320                | 510  | 1900        | 2800 | KRJHM522649/JHM522610 | 0.41               | 1.48 | 0.81 | 40 | 4.56   |
| 114.3            | 4.5    | 177.8   | 7      | 41.275 | 1.625  | 41.275 | 1.625  | 30.162 | 1.1875 | 3.3  | 3.5  | 250                | 400  | 1900        | 2800 | K64450/K64700         | 0.52               | 1.23 | 0.64 | 43 | 3.50   |
|                  |        | 190.5   | 7.5    | 47.625 | 1.875  | 49.212 | 1.9375 | 34.925 | 1.375  | 3.3  | 3.5  | 305                | 480  | 1900        | 2800 | K71450/K71750         | 0.41               | 1.48 | 0.81 | 41 | 5.26   |
|                  |        | 212.725 | 8.375  | 66.675 | 2.625  | 66.675 | 2.625  | 53.957 | 2.1243 | 3.3  | 7    | 450                | 675  | 1700        | 2400 | K938/K932             | 0.33               | 1.8  | 1    | 47 | 9.95   |
|                  |        | 228.6   | 9      | 53.975 | 2.125  | 49.428 | 1.946  | 38.1   | 1.5    | 3.3  | 3.5  | 400                | 590  | 1700        | 2400 | KHM926740/KHM926710   | 0.74               | 0.81 | 0.45 | 69 | 9.78   |
| 114.976          | 4.5266 | 180.975 | 7.125  | 41.275 | 1.625  | 41.275 | 1.625  | 30.162 | 1.1875 | 3.3  | 9    | 250                | 400  | 1900        | 2800 | K64452A/K64713        | 0.52               | 1.15 | 0.63 | 43 | 3.72   |
| 117.8            | 4.6378 | 247.65  | 9.75   | 47.625 | 1.875  | 47.625 | 1.875  | 38.1   | 1.5    | 3.3  | 10.5 | 420                | 520  | 1600        | 2300 | K67791/K67720         | 0.44               | 1.36 | 0.75 | 52 | 6.82   |
| 120*             |        | 170*    |        | 27     |        | 25     |        | 19.5   |        | 3    | 3    | 155                | 243  | 1900        | 2800 | KJP12049/KJP12010     | 0.47               | 1.3  | 0.69 | 35 | 1.75   |
| 120.65           | 4.75   | 206.375 | 8.125  | 47.625 | 1.875  | 47.625 | 1.875  | 34.925 | 1.375  | 3.3  | 3.3  | 330                | 550  | 1600        | 2200 | K795/K792             | 0.46               | 1.3  | 0.72 | 46 | 6.28   |
|                  |        | 273.05  | 10.75  | 82.55  | 3.25   | 82.55  | 3.25   | 53.975 | 2.125  | 6.4  | 6.4  | 815                | 940  | 1700        | 2400 | HH926749/HH926710     | 0.63               | 0.95 | 0.52 | 76 | 22.1   |
|                  |        | 182.562 | 7.1875 | 39.688 | 1.5625 | 38.1   | 1.5    | 33.338 | 1.3125 | 3.3  | 3.5  | 228                | 430  | 1700        | 2400 | K48282/K48220         | 0.3                | 2    | 1.1  | 34 | 3.56   |
|                  |        | 254     | 10     | 77.78  | 3.0622 | 82.55  | 3.25   | 61.912 | 2.4375 | 6.4  | 9.7  | 730                | 1060 | 1500        | 2000 | KHH228340/KHH228310-3 | 0.32               | 1.9  | 1    | 31 | 18.2   |
| 127              | 5      | 182.562 | 7.1875 | 39.688 | 1.5625 | 38.1   | 1.5    | 33.338 | 1.3125 | 3.3  | 3.5  | 228                | 430  | 1700        | 2400 | K48290/K48220         | 0.3                | 2    | 1.1  | 34 | 3.20   |
|                  |        | 182.562 | 7.1875 | 39.688 | 1.5625 | 38.1   | 1.5    | 33.338 | 1.3125 | 3.3  | 3.5  | 240                | 430  | 1700        | 2400 | 48290/48220           | 0.3                | 2    | 1.1  | 34 | 3.20   |
|                  |        | 234.95  | 9.25   | 63.5   | 2.5    | 63.5   | 2.5    | 49.212 | 1.9375 | 3.3  | 6.4  | 515                | 810  | 1700        | 2400 | K95500/K95925         | 0.37               | 1.62 | 0.89 | 51 | 11.6   |
|                  |        | 228.6   | 9      | 53.975 | 2.125  | 49.428 | 1.946  | 38.1   | 1.5    | 3.3  | 3.5  | 400                | 590  | 1700        | 2400 | KHM926747/KHM926710   | 0.74               | 0.81 | 0.45 | 68 | 8.88   |
| 128.588          | 5.0625 | 206.375 | 8.125  | 47.625 | 1.875  | 47.625 | 1.875  | 34.925 | 1.375  | 3.3  | 3.3  | 330                | 550  | 1600        | 2200 | K799/K792             | 0.46               | 1.3  | 0.72 | 46 | 5.70   |

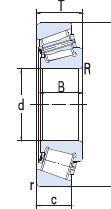
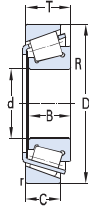


# Inch Single Row Tapered Roller Bearings



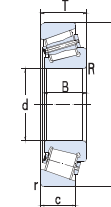
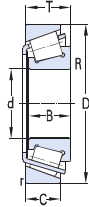
| Basic dimensions |       |         |        |        |        |        |        |        |        |      |      | Basic load ratings |      | Limit speed |      | Designations          | Calculation factor |      |      |     | Weight |
|------------------|-------|---------|--------|--------|--------|--------|--------|--------|--------|------|------|--------------------|------|-------------|------|-----------------------|--------------------|------|------|-----|--------|
| d                |       | D       |        | T      |        | B      |        | C      |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil  |                       | e                  | Y    | Yo   | a   | Kg     |
| mm               | in    | mm      | in     | mm     | in     | mm     | in     | mm     | in     | mm   | mm   | KN                 |      | r/min       |      |                       |                    |      |      |     |        |
| 130.175          | 5.125 | 196.85  | 7.75   | 46.038 | 1.8125 | 46.038 | 1.8125 | 38.1   | 1.5    | 3.3  | 3.5  | 330                | 590  | 1600        | 2200 | 67389/67322           | 0.34               | 1.74 | 0.96 | 40  | 4.96   |
| 133.35           | 5.25  | 196.85  | 7.75   | 46.038 | 1.8125 | 46.038 | 1.8125 | 38.1   | 1.5    | 3.3  | 3.5  | 380                | 420  | 1600        | 2200 | K67390/K67322         | 0.34               | 1.74 | 0.96 | 40  | 4.71   |
|                  |       | 234.95  | 9.25   | 63.5   | 2.5    | 63.5   | 2.5    | 49.212 | 1.9375 | 3.3  | 9.7  | 515                | 810  | 1500        | 2000 | 95525/95925           | 0.37               | 1.62 | 0.89 | 51  | 11.1   |
|                  |       | 234.95  | 9.25   | 63.5   | 2.5    | 63.5   | 2.5    | 49.212 | 1.9375 | 3.3  | 9.7  | 515                | 810  | 1500        | 2000 | K95525/K95925         | 0.37               | 1.62 | 0.89 | 51  | 11.1   |
| 139.7            | 5.5   | 228.6   | 9      | 57.15  | 2.25   | 57.15  | 2.25   | 44.45  | 1.75   | 3.3  | 3.5  | 370                | 680  | 1400        | 1900 | K898/K892             | 0.42               | 1.43 | 0.79 | 50  | 8.85   |
|                  |       | 236.538 | 9.3125 | 57.15  | 2.25   | 56.642 | 2.23   | 44.45  | 1.75   | 3.3  | 3.5  | 510                | 810  | 1400        | 1900 | KHM231132/KHM231110   | 0.31               | 1.9  | 1.1  | 45  | 10.1   |
|                  |       | 254     | 10     | 66.675 | 2.625  | 66.675 | 2.625  | 47.625 | 1.875  | 3.3  | 7    | 715                | 1100 | 1400        | 1900 | K99550/K99100         | 0.41               | 1.47 | 0.81 | 54  | 14.0   |
| 146.05           | 5.75  | 193.675 | 7.625  | 28.575 | 1.125  | 28.575 | 1.125  | 23.02  | 0.9063 | 1.5  | 1.5  | 186                | 370  | 1600        | 2200 | K36690/K36620B        | 0.37               | 1.6  | 0.9  | 34  | 2.22   |
|                  |       | 236.538 | 9.25   | 57.15  | 2.25   | 56.642 | 2.23   | 44.45  | 1.75   | 3.3  | 3.5  | 406                | 700  | 1300        | 1900 | K82576/K82931         | 0.44               | 1.36 | 0.75 | 52  | 9.56   |
|                  |       | 304.8   | 12     | 88.9   | 3.5    | 82.55  | 3.25   | 57.15  | 2.25   | 6.4  | 6.4  | 835                | 1140 | 1100        | 1600 | KHH932145/KHH932110   | 0.73               | 0.82 | 0.45 | 105 | 28.3   |
| 152.4            | 6     | 222.25  | 8.75   | 46.83  | 1.8437 | 46.83  | 1.8437 | 34.925 | 1.375  | 1.5  | 3.5  | 314                | 540  | 1100        | 1600 | KM231649/KM231610     | 0.33               | 1.8  | 0.99 | 28  | 5.76   |
|                  |       | 254     | 10     | 66.675 | 2.625  | 66.675 | 2.625  | 47.625 | 1.875  | 3.3  | 7    | 595                | 930  | 1100        | 1600 | K99600/K99100         | 0.41               | 1.5  | 0.81 | 55  | 12.5   |
|                  |       | 268.288 | 10.563 | 74.612 | 2.9375 | 74.612 | 2.9375 | 57.15  | 2.25   | 6.4  | 6.4  | 670                | 1070 | 1200        | 1700 | KEE107060/K107105     | 0.39               | 1.55 | 0.85 | 58  | 16.8   |
|                  |       | 307.975 | 12.125 | 88.9   | 3.5    | 93.662 | 3.6875 | 66.675 | 2.625  | 6.8  | 9.7  | 1190               | 1350 | 1100        | 1600 | KHH234048/KHH234010   | 0.33               | 1.84 | 1.01 | 63  | 30.9   |
| 158.75           | 6.25  | 225.425 | 8.875  | 41.275 | 1.625  | 39.688 | 1.5625 | 33.338 | 1.3125 | 3.3  | 3.5  | 261                | 440  | 1100        | 1600 | K46780/K46720         | 0.38               | 1.57 | 0.86 | 44  | 5.24   |
| 165.1            | 6.5   | 225.425 | 8.875  | 41.275 | 1.625  | 39.688 | 1.5625 | 33.338 | 1.3125 | 3.3  | 3.5  | 261                | 565  | 1100        | 1600 | K46790/K46720         | 0.38               | 1.57 | 0.86 | 44  | 4.64   |
|                  |       | 247.65  | 9.75   | 47.625 | 1.875  | 47.625 | 1.875  | 38.1   | 1.5    | 3.3  | 3.5  | 415                | 520  | 1000        | 1400 | K67780/K67720         | 0.44               | 1.36 | 0.75 | 52  | 8.16   |
|                  |       | 288.925 | 11.375 | 63.5   | 2.5    | 63.5   | 2.5    | 47.625 | 1.875  | 7    | 3.3  | 625                | 670  | 1100        | 1600 | KHM237535/KHM237510   | 0.32               | 1.88 | 1.04 | 52  | 16.8   |
|                  |       | 336.55  | 13.25  | 92.075 | 3.625  | 95.25  | 3.75   | 69.85  | 2.75   | 6.4  | 3.3  | 1320               | 1500 | 900         | 1300 | KHH437549/KHH437510   | 0.37               | 1.6  | 0.88 | 72  | 37.4   |
| 170*             |       | 230*    |        | 39     |        | 38     |        | 31     |        | 2.5  | 3    | 289                | 550  | 1100        | 1600 | KJHM534149/KJHM534110 | 0.38               | 1.57 | 0.86 | 44  | 4.45   |
|                  |       | 240*    |        | 46     |        | 44.5   |        | 37     |        | 2.5  | 3    | 355                | 675  | 1000        | 1400 | KJM734449/KJM734410   | 0.44               | 1.37 | 0.75 | 52  | 6.28   |
| 171.45           | 6.75  | 260.35  | 10.25  | 66.675 | 2.625  | 66.675 | 2.625  | 52.388 | 2.0625 | 3.3  | 3.5  | 550                | 1070 | 1000        | 1400 | KHM535349/KHM535310   | 0.4                | 1.6  | 0.83 | 64  | 12.3   |
| 174.625          | 6.875 | 288.925 | 11.375 | 63.5   | 2.5    | 63.5   | 2.5    | 47.625 | 1.875  | 3.3  | 7    | 815                | 850  | 1000        | 1400 | KHM237542/KHM237510   | 0.33               | 1.84 | 1.01 | 54  | 16.9   |
|                  |       | 288.925 | 11.375 | 63.5   | 2.5    | 63.5   | 2.5    | 47.625 | 1.875  | 3.3  | 7    | 815                | 850  | 1000        | 1400 | KHM237545/KHM237510   | 0.33               | 1.84 | 1.01 | 54  | 16.9   |
| 177.8            | 7     | 247.65  | 9.75   | 47.625 | 1.875  | 47.625 | 1.875  | 38.1   | 1.5    | 3.3  | 3.5  | 415                | 520  | 1000        | 1400 | K67790/K67720         | 0.44               | 1.36 | 0.75 | 52  | 7.12   |
|                  |       | 260.35  | 10.25  | 53.975 | 2.125  | 53.975 | 2.125  | 41.275 | 1.625  | 3.3  | 3.5  | 430                | 840  | 1000        | 1400 | KM236849/KM236810     | 0.33               | 1.8  | 0.99 | 47  | 9.08   |
|                  |       | 288.925 | 11.375 | 63.5   | 2.5    | 63.5   | 2.5    | 47.625 | 1.875  | 3.3  | 7    | 815                | 850  | 900         | 1300 | KHM237545/KHM237510   | 0.33               | 1.84 | 1.01 | 54  | 16.7   |

# Inch Single Row Tapered Roller Bearings



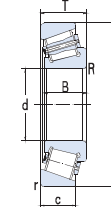
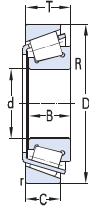
| Basic dimensions |        |                                    |                            |                                    |                         |                                    |                          |                                      |                            |                          |                          | Basic load ratings       |                           | Limit speed                 |                              | Designations   | Calculation factor           |                             |                           |                      | Weight                       |
|------------------|--------|------------------------------------|----------------------------|------------------------------------|-------------------------|------------------------------------|--------------------------|--------------------------------------|----------------------------|--------------------------|--------------------------|--------------------------|---------------------------|-----------------------------|------------------------------|--|------------------------------|-----------------------------|---------------------------|----------------------|------------------------------|
| d                |        | D                                  |                            | T                                  |                         | B                                  |                          | C                                    |                            | rmin                     | Rmin                     | Cr                       | Cor                       | Grease                      | Oil                          |  | e                            | Y                           | Yo                        | a                    | Kg                           |
| mm               | in     | mm                                 | in                         | mm                                 | in                      | mm                                 | in                       | mm                                   | in                         | mm                       | mm                       | KN                       |                           | r/min                       |                              |  |                              |                             |                           |                      |                              |
|                  |        | 319.964<br>428.628                 | 12.597<br>16.8751          | 88.9<br>106.362                    | 3.5<br>4.1875           | 85.725<br>95.25                    | 3.375<br>3.75            | 65.088<br>61.912                     | 2.5625<br>2.4375           | 4.8<br>6.4               | 3.5<br>6.4               | 930<br>1320              | 1420<br>1840              | 1000<br>900                 | 1400<br>1000                 | KH239640/KH239610<br>KEE350701/K351687   | 0.32<br>0.76                 | 1.88<br>0.82                | 1.04<br>0.43              | 65<br>121            | 28.2<br>68.1                 |
| 178.595          | 7.0313 | 265.112                            | 10.4375                    | 51.595                             | 2.0313                  | 57.15                              | 2.25                     | 38.895                               | 1.5313                     | 3.3                      | 3.3                      | 485                      | 870                       | 1000                        | 1400                         | M336948/M336912  | 0.33                         | 1.8                         | 1                         | 47                   | 9.75                         |
| 179.934          | 7.084  | 265.112                            | 10.4375                    | 51.595                             | 2.0313                  | 57.15                              | 2.25                     | 38.895                               | 1.5313                     | 3.3                      | 3.3                      | 485                      | 870                       | 1000                        | 1400                         | M336949/M336912  | 0.33                         | 1.8                         | 1                         | 47                   | 9.55                         |
| 180*             | 7.0866 | 250*                               |                            | 47                                 |                         | 45                                 |                          | 37                                   |                            | 3                        | 2.5                      | 400                      | 780                       | 900                         | 1000                         | JM736149/JM736110  | 0.48                         | 1.25                        | 0.69                      | 56                   | 6.80                         |
| 184.15           | 7.25   | 266.7<br>280                       | 10.5<br>11.0236            | 47.625<br>46.525                   | 1.875<br>1.8317         | 46.833<br>46.833                   | 1.8438<br>1.8438         | 38.1<br>36                           | 1.5<br>1.4173              | 3.3<br>3.3               | 3.5<br>3.5               | 485<br>360               | 520<br>760                | 900<br>900                  | 1000<br>1000                 | K67883CL4/K67820CL4<br>K67883/K67830   | 0.33<br>0.48                 | 1.81<br>1.26                | 1<br>0.69                 | 46<br>58             | 8.34<br>10.1                 |
| 187.325          | 7.375  | 269.875<br>282.575<br>320.675      | 10.625<br>11.125<br>12.625 | 55.562<br>50.8<br>88.9             | 2.1875<br>2<br>3.5      | 55.562<br>47.625<br>85.725         | 2.1875<br>1.875<br>3.375 | 42.862<br>36.512<br>65.088           | 1.6875<br>1.4375<br>2.5625 | 3.3<br>3.3<br>4.8        | 3.5<br>3.5<br>5.5        | 425<br>395<br>930        | 860<br>690<br>1420        | 900<br>900<br>800           | 1000<br>1000<br>900          | KM238849/KM238810<br>87737/87111<br>KH239649/KH239612                              | 0.33<br>0.43<br>0.32         | 1.81<br>1.4<br>2.11         | 1<br>0.8<br>2.06          | 49<br>55<br>56       | 9.63<br>9.95<br>26.7         |
| 190.475          | 7.499  | 279.4                              | 11                         | 52.388                             | 2.0625                  | 57.15                              | 2.25                     | 41.275                               | 1.625                      | 3.3                      | 3.3                      | 515                      | 985                       | 900                         | 1000                         | M239449/M239410  | 0.35                         | 1.7                         | 0.9                       | 49                   | 9.80                         |
| 190.5            | 7.5    | 266.7<br>365.049                   | 10.5<br>14.372             | 47.625<br>92.075                   | 1.875<br>3.625          | 46.833<br>88.897                   | 1.8438<br>3.4999         | 38.1<br>63.5                         | 1.5<br>2.5                 | 3.3<br>3.3               | 3.5<br>6.4               | 345<br>990               | 725<br>1460               | 1100<br>900                 | 1500<br>1000                 | K67885/K67820<br>KEE420751/K421437   | 0.48<br>0.4                  | 1.3<br>1.6                  | 0.69<br>0.83              | 58<br>79             | 8.04<br>39.3                 |
| 191.237          | 7.529  | 279.4                              | 11                         | 52.388                             | 2.0625                  | 58.738                             | 2.3125                   | 41.275                               | 1.625                      | 3.3                      | 3.3                      | 515                      | 985                       | 900                         | 1000                         | M239448A/M239410   | 0.35                         | 1.7                         | 0.9                       | 49                   | 9.55                         |
| 196.85           | 7.75   | 241.3<br>257.175<br>266.7<br>317.5 | 9.5<br>10.125<br>12.5      | 23.812<br>39.688<br>39.688<br>63.5 | 0.9375<br>1.5625<br>2.5 | 23.017<br>39.688<br>39.688<br>63.5 | 0.9062<br>1.5625<br>2.5  | 17.462<br>30.162<br>30.162<br>46.038 | 0.6875<br>1.1875<br>1.8125 | 1.5<br>3.3<br>3.3<br>3.3 | 1.5<br>3.5<br>3.5<br>4.3 | 160<br>275<br>275<br>605 | 330<br>635<br>635<br>1130 | 1200<br>1100<br>1100<br>850 | 1700<br>1600<br>1600<br>1200 | KLL639249/KLL639210<br>KLM739749/KLM739710<br>KLM739749/KLM739719<br>K93775/K93125 | 0.43<br>0.44<br>0.44<br>0.52 | 1.4<br>1.35<br>1.35<br>1.15 | 0.8<br>0.8<br>0.8<br>0.63 | 41<br>50<br>50<br>73 | 2.10<br>5.20<br>6.14<br>18.8 |
| 200*             |        | 300*                               |                            | 65                                 |                         | 62                                 |                          | 51                                   |                            | 2.5                      | 3.5                      | 615                      | 1240                      | 850                         | 1200                         | JHM840449/JHM840410  | 0.52                         | 1.15                        | 0.63                      | 72                   | 15.5                         |
| 200.025          | 7.875  | 276.225                            | 10.875                     | 42.862                             | 1.6875                  | 46.038                             | 1.8125                   | 34.133                               | 1.3438                     | 3.3                      | 3.5                      | 445                      | 780                       | 1000                        | 1500                         | LM241147/LM241100  | 0.31                         | 1.9                         | 1.1                       | 45                   | 7.75                         |
| 203.987          | 8.031  | 276.225                            | 10.875                     | 42.862                             | 1.6875                  | 46.038                             | 1.8125                   | 34.133                               | 1.3438                     | 3.3                      | 3.5                      | 445                      | 780                       | 1000                        | 1500                         | LM241148/LM241100  | 0.31                         | 1.9                         | 1.1                       | 45                   | 7.35                         |
| 206.375          | 8.125  | 282.575<br>336.55                  | 11.125<br>13.25            | 46.038<br>98.425                   | 1.8125<br>3.875         | 46.038<br>100.012                  | 1.8125<br>3.9375         | 36.512<br>77.788                     | 1.4375<br>3.0625           | 3.3<br>3.3               | 3.5<br>3.3               | 375<br>965               | 840<br>1400               | 1000<br>850                 | 1500<br>1200                 | 67985/67920<br>KH242649/KH242610   | 0.5<br>0.34                  | 1.2<br>1.78                 | 0.7<br>0.98               | 62<br>52             | 8.70<br>33.0                 |

# Inch Single Row Tapered Roller Bearings



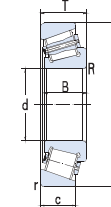
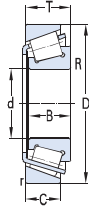
| Basic dimensions |        |          |         |         |        |         |        |        |             |                  |                  | Basic load ratings |      | Limit speed |      | Designations         | Calculation factor |      |                |     | Weight |
|------------------|--------|----------|---------|---------|--------|---------|--------|--------|-------------|------------------|------------------|--------------------|------|-------------|------|----------------------|--------------------|------|----------------|-----|--------|
| d                |        | D        |         | T       |        | B       |        | C      |             | r <sub>min</sub> | R <sub>min</sub> | Cr                 | Cor  | Grease      | Oil  |                      | e                  | Y    | Y <sub>0</sub> | a   | Kg     |
| mm               | in     | mm       | in      | mm      | in     | mm      | in     | mm     | in          | mm               |                  | KN                 |      | r/min       |      |                      |                    |      |                |     |        |
| 209.55           | 8.25   | 317.5    | 12.5    | 63.5    | 2.5    | 63.5    | 2.5    | 46.038 | 1.8125      | 3.3              | 4.3              | 605                | 1130 | 850         | 1200 | 93825/93125          | 0.52               | 1.15 | 0.63           | 73  | 16.6   |
| 215.9            | 8.5    | 285.75   | 11.25   | 46.038  | 1.8125 | 46.038  | 1.8125 | 34.924 | 1.375       | 3.3              | 3.5              | 375                | 840  | 1000        | 1500 | LM742749/LM742710    | 0.48               | 1.25 | 0.7            | 60  | 8.00   |
| 216.408          | 8.52   | 285.75   | 11.25   | 46.038  | 1.8125 | 46.038  | 1.8125 | 34.924 | 1.375       | 3.3              | 3.5              | 375                | 840  | 1000        | 1500 | LM742747/LM742710    | 0.48               | 1.25 | 0.7            | 60  | 7.95   |
| 216.713          | 8.532  | 285.75   | 11.25   | 46.038  | 1.8125 | 46.038  | 1.8125 | 34.924 | 1.375       | 3.3              | 3.5              | 375                | 840  | 1000        | 1500 | LM742747A/LM742710   | 0.48               | 1.25 | 0.7            | 60  | 7.95   |
| 220.662          | 8.6875 | 314.325  | 12.375  | 61.912  | 2.4375 | 61.912  | 2.4375 | 49.212 | 1.9375      | 3.3              | 6.4              | 620                | 1220 | 1000        | 1500 | KM244249/KM244210    | 0.33               | 1.88 | 0.99           | 58  | 14.9   |
| 228.397          |        | 431.8    |         | 92.075  |        | 85.725  |        | 49.212 |             | 6.4              | 6.4              | 1080               | 1600 | 850         | 1150 | KEE113089/K113170    | 0.88               | 0.77 | 0.75           | 116 | 51.9   |
| 228.6            | 9      | 358.775  | 14.125  | 71.438  | 2.8125 | 71.438  | 2.8125 | 53.975 | 2.125       | 3.3              | 3.5              | 750                | 1500 | 950         | 1300 | KM249732/KM249710-1  | 0.33               | 1.8  | 0.99           | 65  | 27.2   |
|                  |        | 488.95   | 19.25   | 123.825 | 4.875  | 111.125 | 4.375  | 73.025 | 2.875       | 6.4              | 6.4              | 1820               | 2490 | 750         | 1000 | HH949549/HH949510    | 0.94               | 0.64 | 0.35           | 174 | 101    |
| 230.188          | 9.0625 | 317.5    | 12.5    | 47.625  | 1.875  | 52.388  | 2.0625 | 36.512 | 1.4375      | 3.3              | 3.3              | 520                | 985  | 900         | 1200 | LM245846/LM245810    | 0.31               | 1.9  | 1.1            | 49  | 10.6   |
| 231.775          | 9.125  | 300.038  | 11.8125 | 33.338  | 1.3125 | 31.750  | 1.25   | 23.812 | 0.9375      | 3.3              | 3.3              | 212                | 420  | 950         | 1300 | 544091/544118A       | 0.4                | 1.5  | 0.8            | 49  | 5.40   |
|                  |        | 317.5    | 12.5    | 47.625  | 1.875  | 52.388  | 2.0625 | 36.512 | 1.4375      | 3.3              | 3.3              | 520                | 985  | 900         | 1200 | LM245848/LM245810    | 0.31               | 1.9  | 1.1            | 49  | 10.6   |
|                  |        | 336.55   | 13.25   | 65.088  | 2.5625 | 65.088  | 2.5625 | 50.8   | 2           | 3.3              | 6.4              | 640                | 1360 | 850         | 1200 | KM246942/KM246910    | 0.33               | 1.8  | 0.99           | 61  | 18.5   |
| 234.95           | 9.25   | 384.175  | 15.125  | 112.712 | 4.4375 | 112.712 | 4.4375 | 90.488 | 3.5625      | 6.4              | 6.4              | 1360               | 2540 | 750         | 1000 | KH247549/KH247510    | 0.33               | 1.88 | 0.99           | 84  | 50.0   |
| 237.33           | 9.3437 | 336.55   | 13.25   | 65.088  | 2.5625 | 65.088  | 2.5625 | 50.8   | 2           | 3.3              | 6.4              | 640                | 1360 | 850         | 1200 | KM246949/KM246910    | 0.33               | 1.8  | 0.99           | 61  | 17.5   |
| 241.3            | 9.5    | 444.5    | 17.5    | 101.6   | 4      | 100.012 | 3.9375 | 76.2   | 3           | 4.8              | 6.4              | 1340               | 2000 | 750         | 1000 | KEE923095/K923175    | 0.34               | 1.78 | 0.98           | 83  | 65.9   |
|                  |        | 327.025  | 12.875  | 52.388  | 2.063  | 52.388  | 2.063  | 36.512 | 1.437480315 | 3.3              | 6.4              | 470                | 950  | 900         | 1200 | K8578/K8520          | 0.41               | 1.5  | 0.81           | 60  | 11.3   |
|                  |        | 508      | 20      | 117.475 | 4.625  | 95.25   | 3.75   | 73.025 | 2.875       | 6.4              | 6.4              | 1340               | 2060 | 670         | 900  | KEE390095/K390200    | 0.94               | 0.64 | 0.35           | 132 | 96.4   |
| 247.65           | 9.75   | 346.075  | 13.625  | 63.5    | 2.5    | 63.5    | 2.5    | 50.8   | 2           | 6.4              | 6.4              | 670                | 1310 | 850         | 1200 | KM348449/KM348410    | 0.34               | 1.75 | 0.96           | 61  | 17.4   |
|                  |        | 406.4    | 16      | 115.888 | 4.5625 | 117.475 | 4.625  | 93.662 | 3.6875      | 6.4              | 6.4              | 1690               | 3200 | 750         | 1000 | HH249949/HH249910    | 0.33               | 1.8  | 0.99           | 87  | 58.0   |
|                  |        | 358.775  | 14.125  | 71.438  | 2.8125 | 76.2    | 3      | 53.975 | 2.125       | 3.3              | 1.5              | 740                | 1450 | 800         | 1100 | M249749/M249710B/YAB | 0.33               | 1.8  | 0.99           | 75  | 23.6   |
| 254*             | 10     | 324.975* | 12.7943 | 39      |        | 41.5    |        | 28     |             | 3.3              | 1.5              | 345                | 800  | 850         | 1200 | 1-7009               | 0.56               | 1.07 | 0.59           | 71  | 8.06   |
|                  |        | 324.975* | 12.7943 | 39      |        | 41.5    |        | 28     |             | 3.3              | 1.5              | 365                | 800  | 850         | 1200 | L848849SH/L848810SH  | 0.56               | 1.07 | 0.59           | 71  | 8.06   |
|                  |        | 533.4    | 21      | 133.35  | 5.25   | 120.65  | 4.75   | 77.788 | 3.0625      | 6.4              | 6.4              | 365                | 800  | 850         | 1200 | HH953749/HH953710    | 0.94               | 0.64 | 0.35           | 179 | 129    |

# Inch Single Row Tapered Roller Bearings



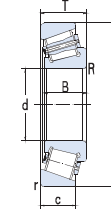
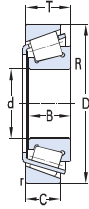
| Basic dimensions |        |         |         |         |        |         |        |        |        |      |      | Basic load ratings |      | Limit speed |      | Designations        | Calculation factor |      |      |     | Weight |
|------------------|--------|---------|---------|---------|--------|---------|--------|--------|--------|------|------|--------------------|------|-------------|------|---------------------|--------------------|------|------|-----|--------|
| d                |        | D       |         | T       |        | B       |        | C      |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil  |                     | e                  | Y    | Yo   | a   | Kg     |
| mm               | in     | mm      | in      | mm      | in     | mm      | in     | mm     | in     | mm   | mm   | KN                 |      | r/min       |      |                     |                    |      |      |     |        |
| 255.6            | 10.063 | 342.9   | 13.5    | 57.15   | 2.25   | 63.5    | 2.5    | 44.45  | 1.75   | 3.3  | 1.5  | 665                | 1330 | 850         | 1200 | M349547SH/M349510SH | 0.35               | 1.73 | 0.95 | 59  | 14.4   |
|                  |        | 342.9   | 13.5    | 57.15   | 2.25   | 63.5    | 2.5    | 44.45  | 1.75   | 3.3  | 1.5  | 564                | 1170 | 850         | 1200 | KM349547/KM349510   | 0.35               | 1.73 | 0.95 | 59  | 16.1   |
| 257.175          | 10.125 | 342.9   | 13.5    | 57.15   | 2.25   | 57.15   | 2.25   | 44.45  | 1.75   | 3.3  | 6.4  | 725                | 880  | 850         | 1200 | KM349549/KM349510   | 0.35               | 1.73 | 0.95 | 80  | 14.0   |
|                  |        | 358.775 | 14.125  | 71.438  | 2.8125 | 76.2    | 3      | 53.975 | 2.125  | 3.3  | 1.5  | 770                | 1570 | 850         | 1200 | KM249747/KM249710   | 0.33               | 1.8  | 0.99 | 64  | 21.7   |
| 260.35           | 10.25  | 422.275 | 16.625  | 86.121  | 3.3906 | 79.771  | 3.1406 | 66.675 | 2.625  | 3.3  | 6.8  | 1100               | 1800 | 900         | 1300 | HM252348/HM252310   | 0.33               | 1.8  | 0.99 | 78  | 42.8   |
| 263.525          | 10.375 | 325.438 | 12.8125 | 28.575  | 1.125  | 28.575  | 1.125  | 25.400 | 1      | 1.5  | 1.5  | 1280               | 1790 | 1000        | 1500 | 38880/38820         | 0.37               | 1.6  | 0.9  | 49  | 54.2   |
| 266.7            | 10.5   | 355.6   | 14      | 57.15   | 2.25   | 57.15   | 2.25   | 44.45  | 1.75   | 3.3  | 3.5  | 715                | 800  | 850         | 1200 | KLM451349/KLM451310 | 0.36               | 1.67 | 0.92 | 62  | 15.1   |
|                  |        | 393.7   | 15.5    | 73.817  | 5.125  | 69.85   | 2.75   | 50.005 | 1.9687 | 6.4  | 6.4  | 770                | 1460 | 750         | 1000 | KEE275105/K275155   | 0.4                | 1.49 | 0.82 | 75  | 27.8   |
|                  |        | 444.5   | 17.5    | 120.65  | 4.75   | 117.475 | 4.625  | 88.9   | 3.5    | 6.4  | 6.4  | 1610               | 3050 | 670         | 900  | KH852849/KH852810   | 0.58               | 1.04 | 0.57 | 121 | 73.1   |
| 273.05           | 10.75  | 393.7   | 15.5    | 73.817  | 5.125  | 69.85   | 2.75   | 50.005 | 1.9687 | 6.4  | 6.4  | 770                | 1460 | 750         | 1000 | KEE275108/K275155   | 0.4                | 1.49 | 0.82 | 75  | 26.3   |
| 288.925          | 11.375 | 406.4   | 16      | 77.788  | 3.0625 | 77.788  | 3.0625 | 60.325 | 2.375  | 3.3  | 6.4  | 1250               | 1900 | 670         | 900  | M255449/M255410     | 0.34               | 1.78 | 0.98 | 72  | 30.5   |
| 292.100          | 11.5   | 374.650 | 14.75   | 47.625  | 1.875  | 47.625  | 1.875  | 34.925 | 1.375  | 3.3  | 3.5  | 1080               | 1590 | 780         | 1050 | L555249/L555210     | 0.4                | 1.5  | 0.8  | 65  | 12.2   |
| 304.8            | 12     | 393.7   | 15.5    | 50.8    | 2      | 50.8    | 2      | 38.1   | 1.5    | 3.3  | 6.4  | 580                | 1210 | 670         | 900  | KL357049/KL357010   | 0.36               | 1.68 | 0.92 | 64  | 14.6   |
|                  |        | 406.4   | 16      | 63.5    | 2.5    | 63.5    | 2.5    | 47.625 | 1.875  | 3.3  | 6.4  | 2200               | 2800 | 670         | 900  | LM757049/LM757010   | 0.44               | 1.38 | 0.76 | 79  | 21.2   |
| 317.5            | 12.5   | 447.675 | 17.625  | 85.725  | 3.375  | 85.725  | 3.375  | 68.262 | 2.6875 | 3.3  | 3.5  | 960                | 2330 | 670         | 900  | HM259048/HM259010   | 0.33               | 1.8  | 0.99 | 80  | 41.3   |
| 330.2            | 13     | 415.925 | 16.375  | 47.625  | 1.875  | 47.625  | 1.875  | 34.925 | 1.375  | 3.3  | 3.5  | 475                | 1140 | 670         | 900  | KL860049/KL860010   | 0.5                | 1.2  | 0.7  | 83  | 14.3   |
|                  |        | 482.600 | 19      | 85.725  | 3.375  | 80.167  | 3.1562 | 60.325 | 2.375  | 3.5  | 6.4  | 1200               | 2480 | 600         | 830  | EE526130/526190     | 0.4                | 1.5  | 0.8  | 90  | 49.2   |
| 333.375          | 13.125 | 469.900 | 18.5    | 90.488  | 3.5625 | 90.488  | 3.5625 | 71.438 | 2.8125 | 3.3  | 6.4  | 1320               | 2820 | 600         | 830  | HM261049/HM261010   | 0.33               | 1.8  | 1    | 85  | 47.6   |
| 342.9            | 13.5   | 450.85  | 17.75   | 66.673  | 2.625  | 66.675  | 2.625  | 52.388 | 2.0625 | 3.5  | 8.5  | 770                | 1750 | 630         | 850  | KLM361649/KLM361610 | 0.33               | 1.8  | 1    | 78  | 26.5   |
| 343.154          | 13.51  | 450.850 | 17.75   | 66.675  | 2.625  | 66.675  | 2.625  | 52.388 | 2.0625 | 3.5  | 8.5  | 930                | 2180 | 650         | 850  | LM361649A/LM361610  | 0.35               | 1.7  | 0.9  | 75  | 28.3   |
| 346.075          | 13.625 | 488.950 | 19.25   | 95.250  | 3.75   | 95.250  | 3.75   | 74.612 | 2.9375 | 3.3  | 6.4  | 1350               | 2900 | 600         | 830  | HM262749/HM262710   | 0.33               | 1.8  | 1    | 88  | 55.8   |
| 371.5            | 14.626 | 622.3   | 24.5    | 147.638 | 5.8125 | 131.762 | 5.1875 | 82.55  | 3.25   | 12.7 | 14.3 | 2300               | 3600 | 420         | 580  | H961649/H961610     | 0.94               | 0.64 | 0.35 | 210 | 180    |

# Inch Single Row Tapered Roller Bearings



| Basic dimensions |         |         |         |         |        |         |        |         |        |      |      | Basic load ratings |      | Limit speed |     | Designations        | Calculation factor |      |      |     | Weight |
|------------------|---------|---------|---------|---------|--------|---------|--------|---------|--------|------|------|--------------------|------|-------------|-----|---------------------|--------------------|------|------|-----|--------|
| d                |         | D       |         | T       |        | B       |        | C       |        | rmin | Rmin | Cr                 | Cor  | Grease      | Oil |                     | e                  | Y    | Yo   | a   | Kg     |
| mm               | in      | mm      | in      | mm      | in     | mm      | in     | mm      | in     | mm   | mm   | KN                 |      | r/min       |     |                     |                    |      |      |     |        |
| 377.825          | 14.875  | 522.288 | 20.5625 | 85.725  | 3.375  | 84.138  | 3.3125 | 61.912  | 2.4375 | 3.3  | 6.4  | 1170               | 2580 | 670         | 900 | KLM565946/KLM565910 | 0.38               | 1.56 | 0.86 | 93  | 51.9   |
| 380.1            | 14.9646 | 480     | 18.8976 | 50      | 1.9685 | 48.08   | 1.8929 | 35.08   | 1.3811 | 4    | 6    | 590                | 1490 | 560         | 750 | 306/380.1           | 0.5                | 1.2  | 0.7  | 93  | 20.8   |
| 381              | 15      | 479.425 | 18.875  | 49.212  | 1.9375 | 47.625  | 1.875  | 34.925  | 1.375  | 3.3  | 6.4  | 590                | 1490 | 560         | 750 | L865547/L865512     | 0.5                | 1.2  | 0.7  | 92  | 20.4   |
|                  |         | 522.288 | 20.5625 | 85.725  | 3.375  | 84.138  | 3.3125 | 61.912  | 2.4375 | 3.3  | 6.4  | 1170               | 2580 | 650         | 870 | KLM565949/KLM565910 | 0.38               | 1.56 | 0.86 | 93  | 51.2   |
|                  |         | 546.1   | 21.5    | 104.775 | 5.5423 | 104.775 | 5.5423 | 82.55   | 3.25   | 6.4  | 6.4  | 1860               | 4100 | 560         | 750 | KHM266446/KHM266410 | 0.33               | 1.8  | 1    | 96  | 77.7   |
| 384.175          | 15.125  | 546.100 | 21.5    | 104.775 | 4.125  | 104.775 | 4.125  | 82.550  | 3.25   | 6.4  | 6.4  | 1850               | 4150 | 530         | 700 | HM266449/HM266410   | 0.33               | 1.8  | 1    | 96  | 77.6   |
| 403.225          | 15.875  | 460.375 | 18.125  | 28.575  | 1.125  | 28.575  | 1.125  | 20.638  | 0.8125 | 3.3  | 3.5  | 240                | 760  | 560         | 750 | LL566848/LL566810   | 0.4                | 1.5  | 0.8  | 70  | 6.73   |
| 406.4            | 16      | 546.1   | 21.5    | 76.2    | 3      | 61.12   | 2.4063 | 55.562  | 2.1875 | 6.4  | 6.4  | 840                | 1830 | 630         | 850 | KEE234160/K234215   | 0.48               | 1.26 | 0.69 | 107 | 41.8   |
|                  |         | 549.275 | 21.625  | 85.725  | 3.375  | 84.138  | 3.3125 | 61.962  | 2.4394 | 3.3  | 6.4  | 1350               | 3000 | 600         | 800 | LM567949/LM567910   | 0.4                | 1.5  | 0.8  | 100 | 54.0   |
|                  |         | 574.625 | 22.623  | 76.2    | 3      | 67.866  | 2.6719 | 50.8    | 2      | 3.3  | 6.8  | 920                | 2030 | 500         | 650 | EE285160/EE285226   | 0.5                | 1.2  | 0.7  | 114 | 54.2   |
|                  |         | 762     | 30      | 180.975 | 7.125  | 161.925 | 6.375  | 107.950 | 4.25   | 12.7 | 12.7 | 3650               | 6050 | 350         | 480 | H969249/H969210     | 0.94               | 0.64 | 0.35 | 250 | 322    |
| 415.925          | 16.375  | 590.55  | 23.25   | 114.3   | 4.5    | 114.3   | 4.5    | 88.9    | 3.5    | 6.4  | 6.4  | 1810               | 4030 | 480         | 650 | M268749/M268710     | 0.33               | 1.8  | 0.99 | 104 | 96.6   |
| 430.212          | 16.9375 | 603.250 | 23.75   | 76.2    | 3      | 73.025  | 2.875  | 50.8    | 2      | 6.4  | 6.4  | 1050               | 2300 | 480         | 650 | EE241693/242375     | 0.52               | 1.15 | 0.6  | 122 | 58.6   |
| 447.625          | 17.623  | 635     | 25      | 120.650 | 4.75   | 120.650 | 4.75   | 95.250  | 3.75   | 6.4  | 6.4  | 2300               | 5450 | 430         | 560 | M270749/M270710     | 0.33               | 1.8  | 1    | 111 | 121    |
| 457.2            | 18      | 573.088 | 22.5625 | 74.612  | 2.9375 | 74.612  | 2.9375 | 57.150  | 2.25   | 6.4  | 6.4  | 1100               | 2980 | 480         | 630 | L570649/L570610     | 0.4                | 1.5  | 0.8  | 101 | 43.8   |
|                  |         | 596.9   | 23.5    | 76.2    | 3      | 73.025  | 2.875  | 53.975  | 2.25   | 3.3  | 9.7  | 1200               | 2500 | 450         | 600 | KEE244180/K244235   | 0.4                | 1.5  | 0.8  | 102 | 50.8   |
|                  |         | 603.250 | 23.75   | 85.725  | 3.375  | 84.138  | 3.3125 | 60.325  | 2.375  | 3.3  | 6.4  | 1420               | 3390 | 450         | 600 | LM770949/LM770910   | 0.46               | 1.3  | 0.7  | 115 | 62.0   |
|                  |         | 615.950 | 24.25   | 85.725  | 3.375  | 85.725  | 3.375  | 66.675  | 2.625  | 6.4  | 6.4  | 1450               | 3750 | 420         | 580 | LM272235/LM272210   | 0.33               | 1.8  | 1    | 98  | 73.2   |
|                  |         | 660.400 | 26      | 91.280  | 3.5937 | 85.725  | 3.375  | 62.705  | 2.4687 | 6.4  | 10.5 | 1750               | 3600 | 420         | 580 | EE737181/737260     | 0.37               | 1.6  | 0.9  | 107 | 91.5   |
| 482.6            | 19      | 634.873 | 24.995  | 80.962  | 3.1875 | 80.962  | 3.1875 | 63.5    | 2.5    | 3.3  | 6.4  | 1430               | 3600 | 420         | 580 | EE243190/243250     | 0.35               | 1.7  | 0.9  | 98  | 60.8   |
| 488.95           | 19.25   | 634.873 | 24.995  | 84.138  | 3.3125 | 84.138  | 3.3125 | 61.912  | 2.4375 | 3.3  | 6.4  | 1420               | 3600 | 420         | 580 | LM772748/LM772710   | 0.48               | 1.25 | 0.7  | 124 | 64.5   |
| 498.475          | 19.625  | 634.873 | 24.995  | 80.962  | 3.1875 | 80.962  | 3.1875 | 63.5    | 2.5    | 3.3  | 6.4  | 1400               | 3500 | 420         | 580 | EE243196/243250/HE  | 0.35               | 1.7  | 0.9  | 98  | 58.3   |
| 501.65           |         | 711.2   |         | 136.525 |        | 136.525 |        | 106.363 |        | 6.4  | 6.4  | 2760               | 6110 | 400         | 530 | M274149/M274110     | 0.35               | 1.7  | 0.9  | 102 | 163    |

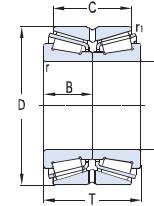
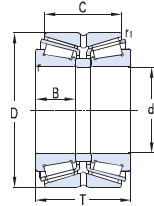
# Inch Single Row Tapered Roller Bearings



| Basic dimensions |        |         |         |         |        |         |        |         |        |                  |                  | Basic load ratings |       | Limit speed |     | Designations      | Calculation factor |      |                |     | Weight |
|------------------|--------|---------|---------|---------|--------|---------|--------|---------|--------|------------------|------------------|--------------------|-------|-------------|-----|-------------------|--------------------|------|----------------|-----|--------|
| d                |        | D       |         | T       |        | B       |        | C       |        | r <sub>min</sub> | R <sub>min</sub> | Cr                 | Cor   | Grease      | Oil |                   | e                  | Y    | Y <sub>0</sub> | a   | Kg     |
| mm               | in     | mm      | in      | mm      | in     | mm      | in     | mm      | in     | mm               |                  | KN                 |       | r/min       |     |                   |                    |      |                |     |        |
| 520.7            | 20.5   | 736.6   | 29      | 88.9    | 3.5    | 81.758  | 3.2188 | 53.975  | 2.125  | 3.3              | 6.4              | 1630               | 3350  | 380         | 500 | EE982051/982900   | 0.48               | 1.25 | 0.7            | 134 | 101    |
| 536.575          | 21.125 | 761.873 | 29.995  | 146.05  | 5.75   | 146.05  | 5.75   | 114.3   | 4.5    | 6.4              | 6.4              | 3300               | 7950  | 360         | 480 | M276449/M276410   | 0.33               | 1.8  | 1              | 134 | 202    |
|                  |        | 820     | 32.2835 | 152     | 5.9843 | 146     | 5.748  | 112     | 4.4094 | 5                | 6                | 3850               | 7750  | 340         | 450 | 306/536X4         | 0.43               | 1.4  | 0.8            | 161 | 273    |
| 549.275          | 21.625 | 692.15  | 27.25   | 80.962  | 3.1875 | 80.962  | 3.1875 | 61.912  | 2.437  | 6.4              | 6.4              | 1350               | 3470  | 560         | 750 | KL476549/KL476510 | 0.37               | 1.6  | 0.9            | 113 | 69.0   |
| 539.750          | 21.25  | 635     | 25      | 50.8    | 2      | 50.8    | 2      | 38.1    | 1.5    | 6.4              | 6.4              | 780                | 2150  | 400         | 530 | LL575349/LL575310 | 0.4                | 1.5  | 0.8            | 102 | 27.2   |
| 607.72           | 23.926 | 787.4   | 31      | 93.662  | 3.6875 | 93.662  | 3.6875 | 69.85   | 2.75   | 6.4              | 6.4              | 2200               | 2800  | 340         | 450 | EE649239/649310   | 0.38               | 1.58 | 0.87           | 124 | 108    |
| 609.6            | 24     | 787.4   | 31      | 93.662  | 3.6875 | 93.662  | 3.6875 | 69.85   | 2.75   | 6.4              | 6.4              | 2080               | 5250  | 340         | 450 | KEE649240/K649310 | 0.37               | 1.6  | 0.9            | 125 | 112    |
| 635              | 25     | 736.6   | 29      | 57.15   | 2.25   | 53.975  | 2.125  | 41.275  | 1.625  | 3.3              | 3.3              | 855                | 2640  | 350         | 470 | 80780/80720       | 0.44               | 1.35 | 0.8            | 124 | 37.3   |
| 660.4            | 26     | 812.8   | 32      | 95.25   | 3.75   | 95.25   | 3.75   | 73.025  | 2.875  | 6.4              | 6.4              | 1920               | 5550  | 310         | 420 | L281147/L281110   | 0.33               | 1.8  | 1              | 123 | 106    |
|                  |        | 939.8   | 37      | 136.525 | 5.375  | 127.08  | 5.0031 | 98.5    | 3.878  | 6.4              | 6.4              | 3700               | 8100  | 260         | 360 | 306/660.4         | 0.4                | 1.5  | 0.8            | 167 | 288    |
| 679.45           | 26.75  | 901.7   | 35.5    | 142.875 | 5.625  | 142.875 | 5.625  | 111.125 | 4.375  | 6.4              | 9.7              | 3550               | 8900  | 260         | 360 | LM281849/LM281810 | 0.33               | 1.8  | 1              | 149 | 243    |
| 682.625          | 26.875 | 965.2   | 38      | 185.738 | 7.3125 | 185.810 | 7.3154 | 142.950 | 5.628  | 6.4              | 6.4              | 5050               | 12480 | 240         | 340 | 306/682 X4-2      | 0.33               | 1.8  | 1              | 169 | 419    |
|                  |        | 1080    | 42.5197 | 200     | 7.874  | 195     | 7.6772 | 142     | 5.5906 | 12               | 12               | 6650               | 13100 | 200         | 300 | 306/682 X4-3      | 0.43               | 1.4  | 0.8            | 209 | 641    |
| 685.8            | 27     | 876.3   | 34.5    | 93.662  | 3.6875 | 92.075  | 3.625  | 69.85   | 2.75   | 6.4              | 6.4              | 2100               | 4950  | 280         | 380 | EE655270/655345   | 0.43               | 1.4  | 0.8            | 148 | 399    |

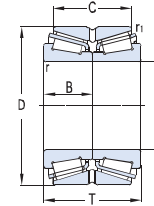
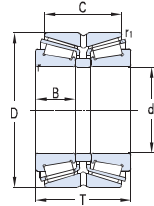
Note: \* stand for the maximum value of ID or OD; SP means the nonstandard assembly chamfer.

# Inch Double Row Tapered Roller Bearings



| Basic dimensions |        |         |          |         |        |        |        |        |        |      |       | Basic load ratings |      | Limit speed |      | Designations                 | Calculation factor |      |      |      | Weight |
|------------------|--------|---------|----------|---------|--------|--------|--------|--------|--------|------|-------|--------------------|------|-------------|------|------------------------------|--------------------|------|------|------|--------|
| d                |        | D       |          | T       |        | B      |        | C      |        | rmin | r1min | Cr                 | Cor  | Grease      | Oil  |                              | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in     | mm      | in       | mm      | in     | mm     | in     | mm     | in     | mm   | mm    | KN                 |      | r/min       |      |                              |                    |      |      |      |        |
| 38.1             | 1.5    | 80.035  | 3.150984 | 57.15   | 2.25   | 23.698 | 0.933  | 44.958 | 1.77   | 0.8  | 0.8   | 131                | 194  | 4800        | 6400 | K27880/K27820D               | 0.56               | 1.2  | 1.79 | 1.18 | 1.33   |
| 47.625           | 1.875  | 96.838  | 3.813    | 50      | 1.969  | 21.946 | 0.864  | 39.75  | 1.565  | 0.8  | 0.3   | 147                | 216  | 3700        | 5000 | K386A/K382A/DB               | 0.35               | 2.07 | 3.08 | 2.02 | 1.58   |
| 52.388           | 2.0625 | 112.712 | 4.4375   | 65.088  | 2.5625 | 26.909 | 1.0594 | 46.038 | 1.8125 | 3.5  | 1.5   | 168                | 238  | 3600        | 4800 | K55206/K55444D               | 0.88               | 0.76 | 1.14 | 0.75 | 2.87   |
| 57.15            | 2.25   | 107.95  | 4.25     | 65.09   | 2.563  | 29.317 | 1.154  | 53.975 | 2.125  | 2.3  | 0.8   | 211                | 292  | 3500        | 4700 | K462/K452D                   | 0.32               | 2.09 | 3.11 | 2.04 | 2.3    |
| 63.5             | 2.5    | 110     | 4.3307   | 60.33   | 2.3752 | 21.996 | 0.866  | 18.824 | 0.7411 | 1.5  | 0.5   | 156                | 242  | 3200        | 4300 | K390A/K394A+K390A/K394AB/DB  | 0.4                | 1.68 | 2.5  | 1.64 | 2.22   |
| 65*              |        | 110*    |          | 62      |        | 28     |        | 51     |        | 3    | 0.6   | 224                | 362  | 3200        | 4300 | KJM511946/KJM511910/DB       | 0.4                | 1.68 | 2.5  | 1.64 | 2.25   |
|                  |        | 120*    |          | 86      |        | 38.5   |        | 72     |        | 3    | 0.6   | 320                | 500  | 3100        | 4100 | KJH211749/KJH211710/DB       | 0.34               | 2    | 2.98 | 1.96 | 3.89   |
| 69.85            | 2.75   | 146.05  | 5.75     | 91.516  | 3.603  | 39.688 | 1.5625 | 59.766 | 2.353  | 3.5  | 1     | 370                | 515  | 3000        | 3500 | KH913849/KH913810/DB         | 0.78               | 0.86 | 1.28 | 0.84 | 4.86   |
| 76.2             | 3      | 180.975 | 7.125    | 114.3   | 4.5    | 53.183 | 2.094  | 77.79  | 3.063  | 3.5  | 0.5   | 335                | 420  | 1900        | 2600 | H917840-90010                | 0.73               | 0.92 | 1.37 | 0.9  | 13.6   |
| 85.136           | 3.3518 | 139.992 | 5.5115   | 80.962  | 3.1875 | 80.134 | 3.1549 | 28.575 | 1.125  | 0.8  | 3.3   | 300                | 520  | 1900        | 2500 | K579TD/K572                  | 0.4                | 1.67 | 2.49 | 1.63 | 4.8    |
| 90*              |        | 147*    |          | 127     |        | 40     |        | 112    |        | 7    | 0.5   | 395                | 605  | 1800        | 2400 | KHM218248/KHM218210/DB       | 0.33               | 2.03 | 3.02 | 1.98 | 6.88   |
| 92.075           | 3.625  | 152.4   | 6        | 82.55   | 3.25   | 36.322 | 1.43   | 63.5   | 2.5    | 3.5  | 0.8   | 380                | 585  | 1900        | 2500 | 598/592D                     | 0.44               | 1.52 | 2.27 | 1.49 | 5.59   |
| 95.25            | 3.75   | 149.225 | 5.875    | 66.672  | 2.6249 | 28.971 | 1.1406 | 52.388 | 2.0625 | 3.5  | 0.8   | 260                | 490  | 1900        | 2500 | 42376/42587D                 | 0.49               | 1.37 | 2.04 | 1.34 | 4.05   |
| 96.838           | 3.8125 | 188.912 | 7.4375   | 107.95  | 4.25   | 46.038 | 1.8125 | 69.85  | 2.75   | 3.5  | 1     | 270                | 345  | 1600        | 2200 | K90381/K90744/DB             | 0.87               | 0.78 | 1.16 | 0.76 | 12.2   |
| 100.211          | 3.9453 | 168.275 | 6.625    | 95.25   | 3.75   | 95.25  | 3.75   | 30.162 | 1.1875 | 0.8  | 3.3   | 370                | 700  | 1800        | 2400 | K688TD/K672                  | 0.47               | 1.43 | 2.14 | 1.4  | 8.29   |
| 101.6            | 4      | 168.275 | 6.625    | 92.075  | 3.625  | 1.625  | 3.75   | 69.85  | 2.75   | 3.5  | 0.8   | 370                | 700  | 1800        | 2400 | K687/K672D                   | 0.47               | 1.43 | 2.14 | 1.4  | 7.43   |
|                  |        | 200.025 | 7.875    | 115.888 | 4.563  | 49.212 | 1.937  | 80.216 | 3.158  | 3.5  | 2.3   | 600                | 940  | 1600        | 2200 | K98400/K98789D               | 0.63               | 1.07 | 1.59 | 1.04 | 13     |
| 107.95           | 4.25   | 165.1   | 6.5      | 88.9    | 3.5    | 44.514 | 1.7525 | 63.5   | 2.5    | 3.5  | 0.8   | 330                | 640  | 1800        | 2400 | KNA56425SW/K56650D           | 0.5                | 1.36 | 2.02 | 1.33 | 6.37   |
| 110*             |        | 165*    |          | 80      |        | 35     |        | 62.413 | 2.457  | 3    | 0.8   | 335                | 640  | 1800        | 2400 | JM822049-90N01               | 0.5                | 1.36 | 2.02 | 1.33 | 5.74   |
| 110              | 4.3307 | 180     | 7.0866   | 103     | 4.0551 | 103    | 4.0551 | 85     |        | 3    | 0.6   | 545                | 1020 | 1600        | 2200 | KJHM522649/KJHM522610T103/DB | 0.4                | 1.69 | 2.51 | 1.65 | 9.81   |

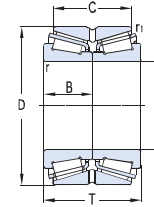
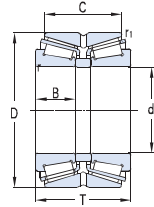
# Inch Double Row Tapered Roller Bearings



| Basic dimensions |        |         |         |         |        |         |        |         |        |      |       | Basic load ratings |      | Limit speed |      | Designations         | Calculation factor |      |      |      | Weight |
|------------------|--------|---------|---------|---------|--------|---------|--------|---------|--------|------|-------|--------------------|------|-------------|------|----------------------|--------------------|------|------|------|--------|
| d                |        | D       |         | T       |        | B       |        | C       |        | rmin | r1min | Cr                 | Cor  | Grease      | Oil  |                      | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in     | mm      | in      | mm      | in     | mm      | in     | mm      | in     | mm   | mm    | KN                 |      | r/min       |      |                      |                    |      |      |      |        |
| 111.125          | 4.375  | 214.312 | 8.4375  | 115.888 | 4.5625 | 52.388  | 2.0625 | 84.138  | 3.3125 | 3.5  | 1.5   | 670                | 1100 | 1500        | 2000 | KH924045/KH924010D   | 0.67               | 1    | 1.49 | 0.98 | 17.7   |
| 114.3            | 4.5    | 177.8   | 7       | 92.075  | 3.625  | 41.275  | 1.625  | 69.85   | 2.75   | 3.5  | 0.8   | 405                | 675  | 1600        | 2100 | K64450/K64700D       | 0.52               | 1.29 | 1.92 | 1.26 | 8.01   |
|                  |        | 190.5   | 7.5     | 106.365 | 4.1876 | 49.212  | 1.937  | 80.962  | 3.1875 | 3.5  | 1.5   | 525                | 965  | 1600        | 2100 | K71450/K71751D       | 0.42               | 1.62 | 2.42 | 1.59 | 11.3   |
|                  |        | 212.725 | 8.375   | 142.875 | 5.625  | 66.675  | 2.625  | 117.475 | 4.625  | 7    | 1.5   | 810                | 1390 | 1500        | 2000 | K938/K932CD          | 0.33               | 2    | 3    | 2    | 20.8   |
| 120.65           |        | 174.625 | 6.875   | 77.787  | 3.062  | 36.512  | 1.437  | 61.912  | 2.437  | 3.5  | 0.8   | 360                | 730  | 1500        | 1800 | KM224749/KM224710D   | 0.33               | 2    | 3    | 2    | 11.3   |
| 124.943          | 4.919  | 234.95  | 9.25    | 142.875 | 5.625  | 63.5    | 2.5    | 114.3   | 4.5    | 6.4  | 1.5   | 885                | 1620 | 1300        | 1600 | K95491/K95927D       | 0.37               | 1.83 | 2.72 | 1.79 | 26.9   |
| 127              | 5      | 182.562 | 7.1875  | 72.6    | 2.8583 | 72.6    | 2.8583 | 33.338  | 1.3125 | 1.5  | 3.3   | 375                | 815  | 1200        | 1500 | K48290DW/K48220      | 0.31               | 2.21 | 3.29 | 2.16 | 6.38   |
|                  |        | 228.6   | 9       | 115.888 | 4.5625 | 49.428  | 1.946  | 84.138  | 3.3125 | 3.5  | 2.3   | 790                | 1350 | 1200        | 1500 | KHM926747/KHM926710D | 0.74               | 0.92 | 1.36 | 0.9  | 19.1   |
|                  |        | 234.95  | 9.25    | 142.875 | 5.625  | 63.5    | 2.5    | 114.3   | 4.5    | 6.4  | 1.5   | 885                | 1620 | 1200        | 1500 | K95500/K95927D       | 0.37               | 1.83 | 2.72 | 1.79 | 26     |
| 127.792          | 5.0312 | 288.6   | 11.3622 | 115.888 | 4.5625 | 49.428  | 1.946  | 84.138  | 3.3125 | 3.5  | 2.3   | 790                | 1350 | 1200        | 1500 | KHM926749/KHM926710D | 0.74               | 0.92 | 1.36 | 0.9  | 18.8   |
| 133.35           | 5.25   | 196.85  | 7.75    | 92.075  | 3.625  | 92.075  | 3.625  | 38.1    | 1.5    | 1.5  | 3.3   | 590                | 1250 | 1200        | 1500 | K67390D/K67322       | 0.34               | 1.96 | 2.92 | 1.92 | 9.68   |
| 136.525          | 5.375  | 215.9   | 8.5     | 123.825 | 4.875  | 123.825 | 4.875  | 34.925  | 1.375  | 1.5  | 3.3   | 550                | 1020 | 1200        | 1500 | K74539TD/K74850      | 0.32               | 2.12 | 3.15 | 2.07 | 9.9    |
|                  |        | 228.6   | 9       | 123.825 | 4.875  | 57.15   | 2.25   | 98.425  | 3.875  | 3.5  | 1.5   | 705                | 1350 | 1200        | 1500 | K896/K892D           | 0.42               | 1.61 | 2.39 | 1.57 | 19.9   |
| 139.7            | 5.5    | 200.025 | 7.875   | 77.788  | 3.0625 | 75.408  | 2.9688 | 34.13   | 1.3437 | 0.8  | 3.3   | 475                | 955  | 1200        | 1500 | K48680D/K48620       | 0.34               | 2.01 | 2.99 | 1.96 | 8.18   |
|                  |        | 215.9   | 8.5     | 106.362 | 4.187  | 47.181  | 1.858  | 80.962  | 3.187  | 3.5  | 1.5   | 550                | 1020 | 1200        | 1600 | K74550/K74851CD      | 0.32               | 2.12 | 3.15 | 2.07 | 9.94   |
|                  |        | 236.538 | 9.3125  | 131.763 | 5.188  | 56.642  | 2.23   | 106.363 | 4.1875 | 3.6  | 1.6   | 700                | 1390 | 1200        | 1500 | 82550/82932D         | 0.44               | 1.52 | 2.27 | 1.49 | 23.4   |
|                  |        | 244.475 | 9.625   | 107.95  | 4.25   | 53.975  | 2.125  | 79.375  | 3.125  | 3.5  | 1.5   | 610                | 1100 | 1200        | 1500 | NA81550/81963D       | 0.35               | 2.07 | 3.08 | 2.02 | 19.3   |
| 142.875          | 5.625  | 200.025 | 7.875   | 87.315  | 3.438  | 39.688  | 1.5625 | 73.025  | 2.875  | 3.5  | 0.8   | 430                | 1030 | 1300        | 1700 | 48685/48620D         | 0.34               | 2.01 | 2.99 | 1.96 | 8.15   |
|                  |        | 200.025 | 7.875   | 93.665  | 3.688  | 46.832  | 1.8438 | 75.025  | 2.9537 | 3.5  | 0.8   | 430                | 1030 | 1300        | 1700 | NA48685SW/48620D     | 0.34               | 2.01 | 2.99 | 1.96 | 8.82   |
|                  |        | 236.538 | 9.3125  | 131.763 | 5.188  | 56.642  | 2.23   | 106.363 | 4.1875 | 3.6  | 1.6   | 715                | 1400 | 1200        | 1500 | 82562/82932D         | 0.36               | 1.88 | 2.8  | 1.84 | 23.3   |
| 147.638          | 5.8125 | 241.3   | 9.5     | 133.35  | 5.25   | 132.334 | 5.21   | 44.45   | 1.75   | 3.3  | 1.5   | 700                | 1400 | 1200        | 1500 | K82581TD/K82950      | 0.44               | 1.52 | 2.27 | 1.49 | 32.6   |
| 152.4            | 6      | 222.25  | 8.75    | 100.01  | 3.9374 | 46.83   | 1.8437 | 76.2    | 3      | 3.5  | 0.8   | 590                | 1200 | 1300        | 1700 | M231649/M231610CD    | 0.33               | 2    | 3    | 2    | 12.2   |
|                  |        | 254     | 10      | 142.875 | 5.625  | 66.675  | 2.625  | 111.125 | 4.375  | 7    | 1.5   | 1110               | 1850 | 940         | 1300 | K99600/K99102CD      | 0.41               | 1.66 | 2.47 | 1.62 | 26.9   |
|                  |        | 298.45  | 11.75   | 107.95  | 4.25   | 111.125 | 4.375  | 44.45   | 1.75   | 3.3  | 3.3   | 1090               | 1720 | 940         | 1300 | EE517060D/517117     | 0.33               | 2.05 | 3.05 | 2    | 35.7   |
| 160.325          | 6.312  | 288.925 | 11.375  | 142.875 | 5.625  | 63.5    | 2.5    | 111.125 | 4.375  | 7    | 1.5   | 1170               | 2170 | 940         | 1300 | KHM237532/KHM237510D | 0.33               | 2.07 | 3.09 | 2.03 | 37.2   |

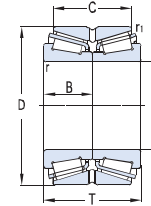
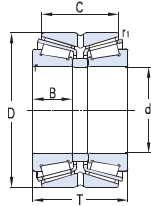


# Inch Double Row Tapered Roller Bearings



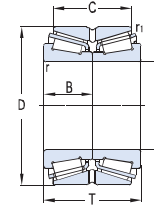
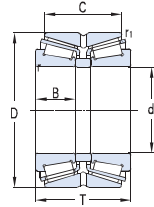
| Basic dimensions |        |         |        |         |        |         |        |         |        |      |       | Basic load ratings |      | Limit speed |      | Designations             | Calculation factor |                        |      |      | Weight |      |      |
|------------------|--------|---------|--------|---------|--------|---------|--------|---------|--------|------|-------|--------------------|------|-------------|------|--------------------------|--------------------|------------------------|------|------|--------|------|------|
| d                |        | D       |        | T       |        | B       |        | C       |        | rmin | r1min | Cr                 | Cor  | Grease      | Oil  |                          | e                  | Y1                     | Y2   | Yo   | Kg     |      |      |
| mm               | in     | mm      | in     | mm      | in     | mm      | in     | mm      | in     | mm   | mm    | KN                 |      | r/min       |      |                          |                    |                        |      |      |        |      |      |
| 161              | 6.3386 | 231.775 | 9.125  | 84.138  | 5.625  | 63.5    | 2.5    | 111.125 | 4.375  | 7    | 1.5   | 1170               | 2170 | 940         | 1300 | KHM237532/KHM237510D     | 0.33               | 2.07                   | 3.09 | 2.03 | 37.2   |      |      |
| 165.1            | 6.5    | 225.425 | 8.875  | 95.25   | 3.75   | 47.816  | 1.8825 | 69.85   | 2.75   | 3.5  | 0.8   | 445                | 1130 | 1150        | 1400 | KNA46790SW/K46720D       | 0.38               | 1.78                   | 2.65 | 1.74 | 10.4   |      |      |
|                  |        | 288.925 | 11.375 | 142.875 | 5.625  | 63.5    | 2.5    | 111.125 | 4.375  | 7    | 1.5   | 1080               | 1940 | 1000        | 1200 | KHM237535/KHM237510CD    | 0.32               | 2.11                   | 3.14 | 2.06 | 36.5   |      |      |
| 168.275          | 6.625  | 330.2   | 13     | 184.15  | 7.25   | 79.375  | 3.125  | 120.65  | 4.75   | 6.4  | 1.5   | 1500               | 2370 | 840         | 1100 | KH936349/KH936310D       | 0.81               | 0.8                    | 1.2  | 0.8  | 63.4   |      |      |
| 170*             | 230*   | 240     |        | 87      |        | 38      |        | 71      |        | 3    | 0.6   | 495                | 1100 | 1000        | 1300 | KJHM534149/KJHM534110/DB | 0.38               | 1.76                   | 2.62 | 1.72 | 9.4    |      |      |
|                  |        |         |        | 101     |        | 44.5    |        | 83      |        | 3    | 0.8   | 685                | 1350 |             |      |                          |                    | KJM734449/KJM734410/DB | 0.44 | 1.52 | 2.27   | 1.49 | 13.2 |
| 174.625          | 6.875  | 247.65  | 9.75   | 103.188 | 4.0625 | 47.625  | 1.875  | 84.138  | 3.3125 | 3.5  | 0.8   | 710                | 1500 | 940         | 1300 | K67787/K67720D           | 0.44               | 1.52                   | 2.27 | 1.49 | 15.5   |      |      |
| 177.8            | 7      | 269.875 | 10.625 | 119.062 | 4.687  | 55.562  | 2.1875 | 93.662  | 3.6875 | 3.5  | 1.5   | 795                | 1720 | 940         | 1300 | KM238840/KM238810D       | 0.33               | 2.03                   | 3.02 | 1.98 | 22     |      |      |
|                  |        | 282.575 | 11.125 | 107.95  | 4.25   | 54.166  | 2.1325 | 79.375  | 3.125  | 3.5  | 1.5   | 700                | 1450 | 940         | 1300 | KNA87700SW/K87112D       | 0.41               | 1.66                   | 2.47 | 1.62 | 24     |      |      |
|                  |        | 288.925 | 11.375 | 142.875 | 5.625  | 63.5    | 2.5    | 111.125 | 4.375  | 7    | 1.5   | 1170               | 2170 | 940         | 1300 | KHM237545/KHM237510D     | 0.33               | 2.07                   | 3.09 | 2.03 | 36.2   |      |      |
|                  |        | 288.925 | 11.375 | 142.875 | 5.625  | 63.5    | 2.5    | 111.125 | 4.375  | 7    | 1.5   | 1010               | 2020 | 940         | 1300 | K94700/K94114CD          | 0.47               | 1.44                   | 2.15 | 1.41 | 34     |      |      |
|                  |        | 320.675 | 12.625 | 185.738 | 7.3125 | 85.725  | 3.375  | 138.112 | 5.4375 | 3.5  | 1.5   | 1590               | 2830 | 840         | 1100 | KH239640/KH239612D       | 0.32               | 2.12                   | 3.15 | 2.07 | 58.9   |      |      |
|                  |        | 320.675 | 12.625 | 185.738 | 7.3125 | 85.725  | 3.375  | 138.112 | 5.4375 | 3.5  | 1.5   | 1400               | 2760 |             |      |                          |                    | KEE222070/K222127CD    | 0.4  | 1.68 | 2.50   | 1.64 | 61.5 |
|                  |        | 320.675 | 12.625 | 185.738 | 7.3125 | 85.725  | 3.375  | 138.112 | 5.4375 | 3.5  | 1.5   | 1590               | 2830 | 840         | 1100 | KH239640/KH239612D       | 0.32               | 2.12                   | 3.15 | 2.07 | 58.9   |      |      |
| 180.975          |        | 288.925 |        | 158.75  |        | 158.75  |        | 47.625  |        | 1.5  | 3.5   | 985                | 2020 | 940         | 1300 | K94713TD/K94113          | 0.47               | 1.44                   | 2.15 | 1.41 | 39.8   |      |      |
| 187.325          | 7.375  | 269.875 | 10.625 | 119.062 | 4.687  | 55.562  | 2.187  | 93.662  | 3.687  | 3.5  | 1.5   | 795                | 1720 | 940         | 1300 | KM238849/KM238810DC      | 0.33               | 2.04                   | 3.03 | 1.99 | 19.3   |      |      |
|                  |        | 320.675 | 12.625 | 185.738 | 7.3125 | 85.725  | 3.375  | 138.112 | 5.4375 | 5.5  | 1.5   | 1590               | 2830 | 850         | 1100 | KH239649/KH239612CD      | 0.32               | 2.12                   | 3.15 | 2.07 | 55.4   |      |      |
| 190              | 7.48   | 260     | 10.236 | 102     | 4.016  | 44      | 1.732  | 83      | 3.268  | 8    | 1     | 630                | 1460 | 940         | 1300 | KJM738249A/KJM738210/DB  | 0.477              | 1.41                   | 2.11 | 1.38 | 14.1   |      |      |
| 190.5            | 7.5    | 266.7   | 10.5   | 90.488  | 3.5625 | 89.695  | 3.5313 | 38.1    | 1.5    | 1.5  | 3.5   | 615                | 1520 | 940         | 1300 | K67885DW/K67820          | 0.48               | 1.41                   | 2.11 | 1.38 | 15.9   |      |      |
|                  |        | 266.7   | 10.5   | 109.538 | 4.313  | 54.961  | 2.1638 | 84.138  | 3.3125 | 3.5  | 0.8   | 615                | 1520 | 940         | 1300 | KNA67885SW/K67820D       | 0.48               | 1.41                   | 2.11 | 1.38 | 15.3   |      |      |
|                  |        | 368.3   |        | 193.675 |        | 88.897  |        | 136.525 |        | 6.4  | 1.5   | 1680               | 2900 | 700         | 950  | KEE420751/K421451CD      | 0.4                | 1.68                   | 2.50 | 1.64 | 84     |      |      |
| 200.025          | 7.875  | 317.5   | 12.5   | 146.05  | 5.75   | 63.5    | 2.5    | 111.125 | 4.375  | 4.3  | 1.5   | 1035               | 2270 | 840         | 1100 | K93787/K93127D           | 0.52               | 1.29                   | 1.92 | 1.26 | 40.8   |      |      |
|                  |        | 384.175 | 15.125 | 238.125 | 9.375  | 112.712 | 4.4375 | 193.675 | 7.625  | 6.4  | 1.5   | 2320               | 5080 | 690         | 920  | KH247535/KH247510CD      | 0.33               | 2.03                   | 3.02 | 1.98 | 112    |      |      |
| 203.2            | 8      | 276.225 | 10.875 | 95.25   | 3.75   | 47.816  | 1.8825 | 73.025  | 2.875  | 3.5  | 0.8   | 610                | 1440 | 940         | 1300 | KLM241149NW/KLM241110D   | 0.32               | 2.12                   | 3.15 | 2.07 | 15.3   |      |      |
|                  |        | 317.5   | 12.5   | 146.05  | 5.75   | 63.5    | 2.5    | 111.125 | 4.375  | 4.3  | 1.5   | 1035               | 2270 | 840         | 1100 | K93800/K93127D           | 0.52               | 1.29                   | 1.92 | 1.26 | 39.8   |      |      |
|                  |        | 368.3   | 14.5   | 158.75  | 6.25   | 152.4   | 6      | 152.4   | 6      | 3.3  | 3.3   | 1780               | 3300 | 840         | 1100 | EE420800D/421450         | 0.4                | 1.7                    | 2.5  | 1.6  | 75.2   |      |      |

# Inch Double Row Tapered Roller Bearings



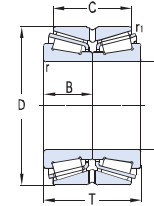
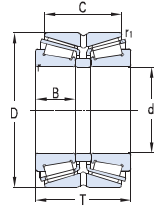
| Basic dimensions |        |         |         |         |        |         |        |         |        |      |       | Basic load ratings |      | Limit speed |      | Designations           | Calculation factor |      |      |      | Weight |
|------------------|--------|---------|---------|---------|--------|---------|--------|---------|--------|------|-------|--------------------|------|-------------|------|------------------------|--------------------|------|------|------|--------|
| d                |        | D       |         | T       |        | B       |        | C       |        | rmin | r1min | Cr                 | Cor  | Grease      | Oil  |                        | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in     | mm      | in      | mm      | in     | mm      | in     | mm      | in     | mm   | mm    | KN                 |      | r/min       |      |                        |                    |      |      |      |        |
|                  |        | 368.3   | 14.5    | 193.675 | 7.625  | 88.897  | 3.4999 | 136.525 | 5.375  | 3.3  | 1.5   | 1680               | 2900 | 840         | 1000 | EE420801/421451CD      | 0.4                | 1.69 | 2.52 | 1.65 | 78.8   |
| 212.725          |        | 285.75  | 11.25   | 98.425  | 3.875  | 46.038  | 1.8125 | 96.85   | 3      | 3.5  | 0.8   | 630                | 1630 | 670         | 900  | KLM742745/KLM742710CD  | 0.48               | 1.41 | 2.09 | 1.38 | 16.9   |
| 220.662          | 8.6875 | 314.325 | 12.375  | 131.762 | 5.1875 | 61.912  | 2.4375 | 106.362 | 4.1875 | 6.4  | 1.5   | 1050               | 2450 | 760         | 1000 | KM244249/KM244210D     | 0.33               | 2.03 | 3.02 | 1.98 | 30.5   |
|                  |        | 314.325 | 12.375  | 131.762 | 5.1875 | 61.912  | 2.4375 | 106.362 | 4.1875 | 6.4  | 1.5   | 1050               | 2300 | 760         | 1000 | M244249/M244210CD      | 0.33               | 2.03 | 3.02 | 1.98 | 30.5   |
| 234.95           | 9.25   | 327.025 | 12.875  | 93.662  | 3.688  | 93.662  | 3.6875 | 36.512  | 1.437  | 1.5  | 3.3   | 805                | 1860 | 760         | 1000 | 8576DW/8520            | 0.41               | 1.66 | 2.47 | 1.62 | 25     |
|                  |        | 327.025 | 12.875  | 114.3   | 4.5    | 52.388  | 2.0625 | 82.55   | 3.25   | 6.4  | 1.5   | 790                | 1830 | 760         | 1000 | K8575/K8520CD          | 0.41               | 1.66 | 2.47 | 1.62 | 26.9   |
|                  |        | 348.175 | 13.708  | 238.125 | 9.375  | 112.712 | 4.4375 | 193.675 | 7.625  | 6.4  | 1.5   | 2320               | 5080 | 750         | 950  | KH247549/KH247510D     | 0.33               | 2.03 | 3.02 | 1.98 | 111    |
| 237.33           |        | 358.775 | 14.125  | 152.4   | 6      | 71.438  | 2.8125 | 117.475 | 4.625  | 6.4  | 1.5   | 1530               | 3090 | 750         | 950  | KRM249736/M249710CD    | 0.33               | 2.03 | 3.02 | 1.98 | 53.2   |
| 228.6            | 9      | 327.025 | 12.875  | 114.3   | 4.5    | 52.388  | 2.0625 | 82.55   | 3.25   | 6.4  | 1.5   | 790                | 1830 | 760         | 1000 | K8573/K8520CD          | 0.41               | 1.66 | 2.47 | 1.62 | 28.9   |
|                  |        | 355.6   | 14      | 152.4   | 6      | 69.85   | 2.75   | 114.3   | 4.5    | 6.4  | 1.5   | 1300               | 2700 | 760         | 1000 | KHM746646/KHM746610CD  | 0.47               | 1.44 | 2.15 | 1.41 | 52.4   |
|                  |        | 355.6   | 14      | 152.4   | 6      | 69.85   | 2.75   | 111.125 | 4.375  | 6.8  | 1.5   | 1200               | 2500 | 760         | 1000 | KEE130902/K131401CD    | 0.33               | 2.03 | 3.02 | 1.98 | 50.2   |
|                  |        | 488.95  | 19.25   | 254     | 10     | 111.125 | 4.375  | 152.4   | 6      | 6.4  | 1.5   | 2800               | 4450 | 630         | 840  | HH949549/HH949510D     | 0.94               | 0.7  | 1.1  | 0.7  | 203    |
|                  |        | 488.95  | 19.25   | 254     | 10     | 120.65  | 4.75   | 196.85  | 7.75   | 6.4  | 1.5   | 2910               | 5650 | 630         | 840  | KEE295950/K295192D     | 0.31               | 2.18 | 3.24 | 2.13 | 217    |
| 241.3            | 9.5    | 327.025 | 12.875  | 114.3   | 4.5    | 52.388  | 2.0625 | 82.55   | 3.25   | 6.4  | 1.5   | 790                | 1830 | 760         | 1000 | K8578/K8520DC          | 0.41               | 1.66 | 2.47 | 1.62 | 25     |
|                  |        | 406.4   | 16      | 215.9   | 8.5    | 100.012 |        | 184.15  |        | 6.4  | 1.5   | 2390               | 4950 | 760         | 1000 | KH249148/KH249111CD    | 0.33               | 2.03 | 3.02 | 1.98 | 110    |
|                  |        | 444.5   | 17.5    | 209.55  | 8.25   | 100.012 | 3.9375 | 158.75  | 6.25   | 6.4  | 1.5   | 2480               | 4650 | 760         | 1000 | KEE923095/K923176D     | 0.34               | 2    | 2.98 | 1.96 | 135    |
| 247.65           | 9.75   | 406.4   | 16      | 215.9   | 8.5    | 219.075 | 8.625  | 93.662  | 3.6875 | 3.3  | 6.4   | 2900               | 6400 | 760         | 1000 | KHH249949D/KHH249910   | 0.33               | 2.03 | 3.15 | 1.98 | 114    |
| 249.25           | 9.813  | 381     | 15      | 171.45  | 6.75   | 76.2    | 3      | 127     | 5      | 6.4  | 1.5   | 1240               | 2960 | 690         | 920  | KEE126098/K126151CD    | 0.52               | 1.31 | 1.94 | 1.28 | 63.4   |
| 254              | 10     | 347.662 | 13.6875 | 101.6   | 4      | 50.99   | 2.0075 | 69.85   | 2.75   | 3.5  | 1.5   | 825                | 1740 | 690         | 920  | KLM249747NW/KLM249710D | 0.33               | 2.03 | 3.02 | 1.98 | 25.3   |
|                  |        | 358.775 | 14.125  | 152.4   | 6      | 71.438  | 2.8125 | 117.475 | 4.625  | 3.5  | 1.5   | 1530               | 3090 | 690         | 920  | KRM249749/M249710CD    | 0.33               | 2.03 | 3.02 | 1.98 | 46.9   |
|                  |        | 393.7   | 15.5    | 157.162 | 6.1875 | 69.85   | 2.75   | 109.538 | 4.3125 | 6.4  | 1.5   | 1290               | 2830 | 690         | 920  | KEE275100/K275156D     | 0.4                | 1.68 | 2.5  | 1.64 | 66.4   |
|                  |        | 422.275 | 16.625  | 178.592 | 7.0312 | 79.771  | 3.1406 | 139.7   | 5.5    | 6.8  | 1.5   | 2190               | 4000 | 580         | 770  | HM252343/HM252310D     | 0.33               | 2    | 3    | 2    | 98     |
|                  |        | 431.724 | 16.997  | 173.038 | 6.813  | 86.519  | 3.4063 | 128.588 | 5.0625 | 6.4  | 1.6   | 1130               | 1760 | 630         | 840  | NA551002/551701D       | 0.33               | 2.05 | 3.05 | 2    | 93.1   |
|                  |        | 438.15  | 17.25   | 165.1   | 6.5    | 165     | 6.4961 | 63.5    | 2.5    | 3.3  | 6.4   | 2200               | 3900 | 580         | 770  | EE738101DW/73817D      | 0.35               | 1.92 | 2.86 | 1.88 | 104    |
|                  |        | 444.5   | 17.5    | 133.35  | 5.25   | 133.35  | 5.25   | 50.8    | 2      | 3.3  | 6.4   | 2070               | 3600 | 580         | 770  | EE822101D/822175       | 0.33               | 2.06 | 3.06 | 2.01 | 88     |
|                  |        | 533.4   | 21      | 276.224 | 10.875 | 120.65  | 4.75   | 165.1   | 6.5    | 6.4  | 1.5   | 3350               | 5400 | 530         | 670  | HH953749/HH953710D     | 0.94               | 1.7  | 1.1  | 0.7  | 258    |
| 260.35           | 10.25  | 365.125 | 14.375  | 130.175 | 5.125  | 58.738  | 2.3125 | 98.425  | 3.875  | 6.4  | 1.5   | 975                | 2200 | 670         | 900  | EE134102/134144D       | 0.37               | 1.8  | 2.69 | 1.76 | 37.3   |

# Inch Double Row Tapered Roller Bearings



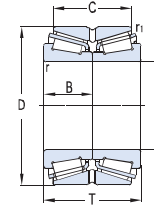
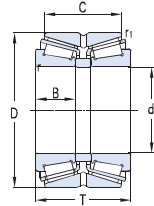
| Basic dimensions |         |         |        |         |        |         |        |         |        |      |       | Basic load ratings |      | Limit speed |     | Designations           | Calculation factor |      |      |      | Weight |
|------------------|---------|---------|--------|---------|--------|---------|--------|---------|--------|------|-------|--------------------|------|-------------|-----|------------------------|--------------------|------|------|------|--------|
| d                |         | D       |        | T       |        | B       |        | C       |        | rmin | r1min | Cr                 | Cor  | Grease      | Oil |                        | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in      | mm      | in     | mm      | in     | mm      | in     | mm      | in     | mm   | mm    | KN                 |      | r/min       |     |                        |                    |      |      |      |        |
|                  |         | 400.05  | 15.75  | 155.58  | 6.1252 | 67.47   | 2.6563 | 107.95  | 4.25   | 9.7  | 1.5   | 1260               | 2500 | 670         | 900 | KEE221026/K221576CD    | 0.39               | 1.71 | 2.54 | 1.67 | 61.7   |
|                  |         | 406.4   | 16     | 155.575 | 6.125  | 152.4   | 6      | 66.675  | 2.625  | 3.3  | 6.4   | 1620               | 3520 | 670         | 900 | EE324103D/324160       | 0.33               | 2.03 | 3.02 | 1.98 | 79.9   |
|                  |         | 422.275 | 16.625 | 178.592 | 7.0312 | 79.771  | 3.1406 | 139.7   | 5.5    | 6.8  | 1.5   | 1760               | 3750 | 670         | 900 | KHM252348/KHM252310CD  | 0.33               | 2.03 | 3.02 | 1.98 | 89.1   |
|                  |         | 444.5   | 17.5   | 196.85  | 7.75   | 196.85  | 7.75   | 73.025  | 2.875  | 6.4  | 5     | 2560               | 5050 | 670         | 900 | EE823103D/823175A6/YB2 | 0.55               | 1.23 | 1.83 | 1.2  | 126    |
| 266.7            | 10.5    | 352.425 | 13.875 | 107.95  | 4.25   | 54.166  | 2.1325 | 82.55   | 3.25   | 6.4  | 1.5   | 840                | 1780 | 670         | 900 | KLM251649NW/KLM251610D | 0.32               | 2.12 | 3.15 | 2.07 | 25.3   |
|                  |         | 355.6   | 14     | 127     | 5      | 57.15   | 2.25   | 101.6   | 4      | 3.5  | 1.5   | 1080               | 2700 | 670         | 900 | KLM451349/KLM451310CD  | 0.36               | 1.88 | 2.79 | 1.83 | 32.8   |
| 269.875          | 10.625  | 381     | 15     | 136.525 | 5.375  | 136.525 | 5.375  | 57.15   | 2.25   | 3.3  | 3.3   | 1760               | 3700 | 630         | 840 | M252349D/M252310       | 0.33               | 2.03 | 3.02 | 1.98 | 51.5   |
| 273.05           | 10.75   | 393.7   | 15.5   | 157.162 | 6.1875 | 69.85   | 2.75   | 109.538 | 4.3125 | 6.4  | 1.5   | 1290               | 2830 | 600         | 800 | KEE275108/K275156CD    | 0.4                | 1.68 | 2.5  | 1.64 | 56.3   |
| 279.4            | 11      | 457.2   | 18     | 244.475 | 9.625  | 244.475 | 9.625  | 106.362 | 4.1875 | 1.5  | 6.4   | 3850               | 7400 | 600         | 800 | HH255149D/HH255110     | 0.33               | 2.03 | 3.02 | 1.98 | 164    |
|                  |         | 469.9   | 18.5   | 200.025 | 7.875  | 93.662  | 3.6875 | 149.225 | 5.875  | 9.7  | 1.5   | 2740               | 5000 | 590         | 780 | EE722110/722186D       | 0.38               | 1.79 | 2.67 | 1.75 | 132    |
|                  |         | 488.95  | 19.25  | 254     | 10     | 120.65  | 4.75   | 196.85  | 7.75   | 1.5  | 1.3   | 2910               | 5650 | 580         | 770 | EE295110/295192D       | 0.31               | 2.18 | 3.45 | 2.13 | 188    |
| 279.578          | 11.007  | 380.898 |        | 117.475 |        | 117.475 |        | 49.212  |        | 1.5  | 3.3   | 1130               | 2830 | 650         | 900 | KLM654644D/KLM654610   | 0.43               | 1.57 | 2.34 | 1.53 | 39.2   |
| 279.982          | 11.023  | 380.898 | 14.996 | 139.7   | 5.5    | 65.088  | 2.563  | 107.95  | 4.25   | 3.5  | 1.5   | 1035               | 2830 | 620         | 850 | KLM654642/KLM654610CD  | 0.43               |      |      |      | 41.6   |
| 280.192          | 11.0312 | 406.4   | 16     | 149.226 | 5.875  | 67.673  | 2.6643 | 117.475 | 4.625  | 6.8  | 1.5   | 1320               | 2950 | 600         | 800 | KEE128111/K128160CD    | 0.39               | 1.71 | 2.54 | 1.67 | 56.7   |
| 285.75           |         | 380.898 |        | 139.7   |        | 65.088  |        | 107.95  |        | 3.5  | 1.5   | 1130               | 2830 | 600         | 800 | LM654649/LM654610CD    | 0.43               | 1.57 | 2.34 | 1.53 | 39.2   |
| 288.925          | 11.375  | 406.4   | 16     | 144.462 | 5.688  | 144.462 | 5.6875 | 60.325  | 2.375  | 3.3  | 1.5   | 1790               | 4200 | 580         | 770 | KM255449TD/KM255410    | 0.34               | 2    | 2.98 | 1.96 | 61.66  |
|                  |         | 406.4   | 16     | 144.462 | 5.688  | 144.462 | 5.6875 | 60.325  | 2.375  | 3.3  | 3.3   | 1720               | 4150 | 580         | 770 | M255449D/M255410       | 0.34               | 2    | 2.98 | 1.96 | 63.3   |
|                  |         | 406.4   | 16     | 165.1   | 6.5    | 77.788  | 3.0625 | 130.175 | 5.125  | 6.4  | 1     | 1720               | 4150 | 580         | 770 | KM255449/KM255410CD    | 0.34               | 2    | 2.98 | 1.96 | 64.1   |
|                  |         | 406.4   | 16     | 144.462 | 5.688  | 144.462 | 5.6875 | 60.325  | 2.375  | 3.3  | 3.3   | 1720               | 4150 | 580         | 770 | KM255449TD/KM255410    | 0.34               | 2    | 2.98 | 1.96 | 60.5   |
| 300.038          | 11.8125 | 422.275 | 16.625 | 150.812 | 5.9375 | 150.812 | 5.9375 | 63.5    | 2.5    | 3.3  | 3.3   | 1770               | 4050 | 580         | 770 | HM256849D/HM256810     | 0.34               | 2    | 2.98 | 1.96 | 56.4   |
|                  |         | 422.275 | 16.625 | 174.625 | 6.875  | 82.55   | 3.25   | 136.525 | 5.375  | 6.4  | 1.5   | 1720               | 4050 | 580         | 770 | HM256849/HM256810D     | 0.34               | 2    | 2.98 | 1.96 | 69.7   |
| 303.212          | 11.9375 | 495.3   | 19.5   | 263.525 | 10.375 | 263.525 | 10.375 | 114.3   | 4.5    | 3.3  | 6.4   | 3900               | 8850 | 460         | 600 | KHH258249TD/KHH258210  | 0.33               | 2    | 3    | 2    | 215    |
| 304.8            | 12      | 393.7   | 15.5   | 107.95  | 4.25   | 54.166  | 2.1325 | 82.55   | 3.25   | 6.4  | 1.5   | 1070               | 2330 | 580         | 770 | KL357049NW/KL3570101D  | 0.33               | 2.04 | 3.04 | 2    | 30.1   |
|                  |         | 393.7   | 15.5   | 107.95  | 4.25   | 50.8    | 2      | 82.55   | 3.25   | 6.4  | 1.5   | 1070               | 2330 | 580         | 770 | L357049/L357010D       | 0.33               | 2.04 | 3.04 | 2    | 30.5   |
|                  |         | 412.75  | 16.25  | 123.825 | 4.875  | 53.975  | 2.125  | 92.075  | 3.625  | 6.4  | 1.5   | 1060               | 2350 | 580         | 770 | EE109120/109163D       | 0.43               | 1.6  | 2.3  | 1.6  | 42.4   |

# Inch Double Row Tapered Roller Bearings



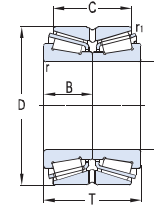
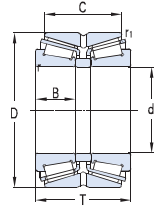
| Basic dimensions |         |         |         |         |        |         |        |         |        |      |       | Basic load ratings |      | Limit speed |     | Designations               | Calculation factor |      |      |      | Weight |
|------------------|---------|---------|---------|---------|--------|---------|--------|---------|--------|------|-------|--------------------|------|-------------|-----|----------------------------|--------------------|------|------|------|--------|
| d                |         | D       |         | T       |        | B       |        | C       |        | rmin | r1min | Cr                 | Cor  | Grease      | Oil |                            | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in      | mm      | in      | mm      | in     | mm      | in     | mm      | in     | mm   | mm    | KN                 |      | r/min       |     |                            |                    |      |      |      |        |
|                  |         | 444.5   | 17.5    | 146.05  | 5.75   | 61.912  | 2.4375 | 98.425  | 3.875  | 8    | 1.5   | 1240               | 2770 | 550         | 700 | EE291201/291751D           | 0.38               | 1.79 | 2.67 | 1.75 | 64.9   |
|                  |         | 495.3   | 19.5    | 168.595 | 6.638  | 74.612  | 2.9375 | 127     | 5      | 6.4  | 1.5   | 1850               | 3400 | 500         | 660 | EE941205/941953D           | 0.4                | 1.68 | 2.5  | 1.64 | 115    |
|                  |         | 495.3   | 19.5    | 196.85  | 7.75   | 92.075  | 3.5463 | 146.05  | 5.75   | 16   | 1.5   | 2300               | 5000 | 500         | 660 | EE724120/724196CD-3        | 0.4                | 1.68 | 2.5  | 1.64 | 139    |
|                  |         | 501.65  | 19.75   | 161.922 | 6.3749 | 161.925 | 6.375  | 61.117  | 2.4062 | 3.3  | 6.4   | 2800               | 4700 | 500         | 700 | HM258949D/HM258910         | 0.33               | 2    | 3    | 2    | 129    |
| 305.034          | 12.009  | 499.948 | 19.683  | 200.025 | 7.875  | 200.025 | 7.875  | 63.5    | 2.5    | 3.3  | 6.4   | 2430               | 5000 | 460         | 600 | KHM959741DW/KHM959710      | 0.88               | 0.77 | 1.15 | 0.75 | 149    |
| 305.054          | 12.01   | 499.949 | 19.683  | 200.025 | 7.875  | 200.025 | 7.875  |         |        | 6.4  | 6.4   | 1870               | 3650 | 460         | 600 | M959442D/M959410           | 1.17               | 0.58 | 0.86 | 0.56 | 145    |
| 305.07           | 12.0106 | 560     | 22.0472 | 200     | 7.874  | 200     | 7.874  |         |        | 3.3  | 6     | 2850               | 5250 | 440         | 540 | 3706/305X4-1               | 0.88               | 0.77 | 1.15 | 0.8  | 199    |
| 311.15           | 12.25   | 558.8   | 22      | 190.5   | 7.5    | 82.55   | 3.25   | 111.125 | 4.375  | 9.7  | 3.3   | 2130               | 4140 | 440         | 540 | EE148122/148220D           | 0.88               |      |      |      | 184    |
| 317.5            | 12.5    | 444.5   | 17.5    | 146.05  | 5.75   | 61.912  | 2.4375 | 98.425  | 3.875  | 8    | 1.5   | 1240               | 2770 | 490         | 650 | KEE291250/K291751CD        | 0.38               | 1.79 | 2.67 | 1.75 | 59.0   |
|                  |         | 447.675 | 17.625  | 158.75  | 6.25   | 158.75  | 6.25   | 158.75  | 6.25   | 3.3  | 3.3   | 1810               | 4150 | 490         | 650 | HM259049D/HM259010         | 0.33               | 2.03 | 3.02 | 1.98 | 80.7   |
|                  |         | 447.675 | 17.625  | 180.975 | 7.125  | 85.725  | 3.375  | 146.05  | 5.75   | 3.5  | 1.5   | 1800               | 4650 | 490         | 650 | KHM259049/KHM259010CD      | 0.33               | 2    | 3    | 2    | 85.4   |
| 330.2            | 13      | 482.6   | 19      | 177.8   | 7      | 80.167  | 3.1562 | 127     | 5      | 3.3  | 1.5   | 2180               | 4900 | 480         | 630 | EE526132/526191D           | 0.4                | 1.7  | 2.5  | 1.6  | 101    |
| 333.375          | 13.125  | 469.9   | 18.5    | 166.688 | 6.5625 | 166.688 | 6.5625 | 71.438  | 2.8125 | 3.3  | 3.3   | 2470               | 5900 | 480         | 630 | HM261049DW/HM261010        | 0.33               | 2    | 3    | 2    | 92.8   |
|                  |         | 469.9   | 18.5    | 190.5   | 7.5    | 90.488  | 3.5625 | 152.4   | 6      | 6.4  | 1.5   | 2470               | 5900 | 480         | 630 | HM261049/HM261010CD        | 0.33               | 2    | 3    | 2    | 98.2   |
| 342.9            | 13.5    | 457.098 | 17.996  | 142.875 | 5.625  | 63.5    | 2.5    | 101.6   | 4      | 3.3  | 1.5   | 1300               | 3550 | 480         | 630 | KLM961548/KLM961511D       | 0.7                | 0.97 | 1.44 | 0.94 | 44.8   |
|                  |         | 457.098 | 17.996  | 142.875 | 5.625  | 63.5    | 2.5    | 104.775 | 4.125  | 3.6  | 1.6   | 1300               | 3500 | 480         | 630 | KLM961548A6/KLM961511DX2A6 | 0.7                | 0.97 | 1.44 | 0.94 | 45     |
|                  |         | 533.4   | 21      | 139.7   | 5.5    | 146.05  | 5.75   | 50.8    | 2      | 3.3  | 3.3   | 2300               | 4350 | 420         | 560 | EE971355D/972100           | 0.33               | 2    | 3    | 2    | 116    |
|                  |         | 533.4   | 21      | 174.625 | 6.875  | 76.2    | 3      | 123.825 | 4.875  | 4.8  | 1.5   | 2300               | 4350 | 420         | 560 | EE971354/972103D           | 0.33               | 2    | 3    | 2    | 128    |
| 343.154          |         | 450.85  |         | 189.35  |        | 66.675  |        | 52.388  |        | 8.5  | 1     | 1320               | 3500 | 480         | 630 | KLM361649A/KLM361610/DB    | 0.35               | 1.93 | 2.87 | 1.89 | 59.2   |
| 343.052          | 13.506  | 457.098 | 17.996  | 122.238 | 4.8125 | 122.238 | 4.8125 | 49.212  | 1.9375 | 1.5  | 3.3   | 1480               | 3350 | 480         | 630 | LM761649DGW/LM761610       | 0.48               | 1.4  | 2.1  | 1.4  | 53.6   |
| 346.075          | 13.625  | 488.95  | 19.25   | 104.775 | 4.125  | 95.25   | 3.75   | 488.95  | 2.937  | 6.4  | 1.5   | 1090               | 2680 | 480         | 630 | 3706/346X4                 | 0.5                | 1.35 | 2    | 1.3  | 62.3   |
|                  |         | 488.95  | 19.25   | 174.625 | 6.875  | 174.625 | 6.875  | 74.612  | 2.937  | 3.3  | 3.3   | 2420               | 5800 | 480         | 630 | HM262749TD/HM262710D       | 0.34               | 1.99 | 2.96 | 1.95 | 102    |
|                  |         | 488.95  | 19.25   | 174.625 | 6.875  | 174.625 | 6.875  | 74.612  | 2.937  | 3.3  | 3.3   | 2400               | 5800 | 480         | 630 | KHM262749D/KHM262710       | 0.33               | 2    | 3    | 2    | 97.8   |
|                  |         | 488.95  | 19.25   | 200.025 | 7.875  | 95.25   | 3.75   | 158.75  | 6.25   | 6.4  | 1.5   | 2560               | 6450 | 480         | 630 | HM262749SH/HM262710CDSH    | 0.33               | 2    | 3    | 2    | 114    |
|                  |         | 488.95  | 19.25   | 200.025 | 7.875  | 95.25   | 3.75   | 158.75  | 6.25   | 6.4  | 1.5   | 2400               | 5800 | 480         | 630 | HM262749/HM262710D         | 0.33               | 2    | 3    | 2    | 108    |

# Inch Double Row Tapered Roller Bearings



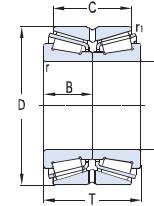
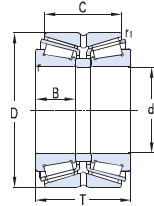
| Basic dimensions |         |         |        |         |        |         |        |         |        |      |       | Basic load ratings |       | Limit speed |     | Designations           | Calculation factor |      |      |      | Weight |
|------------------|---------|---------|--------|---------|--------|---------|--------|---------|--------|------|-------|--------------------|-------|-------------|-----|------------------------|--------------------|------|------|------|--------|
| d                |         | D       |        | T       |        | B       |        | C       |        | rmin | r1min | Cr                 | Cor   | Grease      | Oil |                        | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in      | mm      | in     | mm      | in     | mm      | in     | mm      | in     | mm   | mm    | KN                 |       | r/min       |     |                        |                    |      |      |      |        |
| 355.6            | 14      | 444.5   | 17.5   | 136.524 | 5.375  | 60.325  | 2.375  | 111.125 | 4.375  | 3.5  | 1.5   | 1110               | 3450  | 460         | 600 | L163149/L163110CD      | 0.31               | 2.2  | 3.27 | 2.15 | 46.1   |
|                  |         | 501.65  | 19.75  | 145.05  | 5.7106 | 61.413  | 2.4178 | 107.95  | 4.25   | 6.4  | 1.5   | 1410               | 3450  | 420         | 560 | KEE231400/K231976CDX2  | 0.44               | 1.53 | 2.28 | 1.5  | 83.4   |
|                  |         | 514.35  | 20.25  | 193.675 | 7.625  | 84.138  | 3.3125 | 152.4   | 6      | 6.4  | 1.5   | 2150               | 4950  | 410         | 540 | EE333140/333203CD      | 0.37               | 1.8  | 2.7  | 1.8  | 120    |
| 368.249          | 14.498  | 523.875 | 20.625 | 214.312 | 8.4375 | 101.6   | 4      | 169.862 | 6.6875 | 6.4  | 1.5   | 3000               | 7400  | 410         | 540 | HM265049/HM265010CD    | 0.33               | 2    | 3    | 2    | 141    |
| 368.3            | 14.5    | 523.875 | 20.625 | 185.738 | 7.3125 | 185.738 | 7.3125 | 79.375  | 3.125  | 3.3  | 6.4   | 3000               | 6200  | 410         | 540 | HM265049DW/HM265010    | 0.33               | 2    | 3    | 2    | 128    |
|                  |         | 596.9   | 23.5   | 165.1   | 6.5    | 158.75  | 6.25   | 60.325  | 2.375  | 6.4  | 6.4   | 3000               | 5800  | 400         | 520 | EE181454DW/182350      | 0.4                | 1.7  | 2.5  | 1.6  | 159    |
|                  |         | 596.9   | 23.5   | 203.2   | 8      | 92.075  | 3.625  | 133.35  | 5.25   | 9.7  | 2.3   | 2640               | 5200  | 400         | 520 | EE181453/182351D       | 0.42               | 1.62 | 2.42 | 1.59 | 191    |
| 374.65           | 14.75   | 501.65  | 19.75  | 130.175 | 5.125  | 120.65  | 4.75   | 50.8    | 2      | 1.5  | 3.3   | 1600               | 4000  | 460         | 600 | KLM765149DW/KLM765110  | 0.47               | 1.44 | 2.14 | 1.4  | 69.4   |
| 381              | 15      | 590.55  | 23.25  | 244.475 | 9.625  | 114.3   | 4.5    | 193.675 | 7.625  | 6.4  | 1.5   | 4500               | 6600  | 380         | 500 | M268730/M268710D       | 0.33               | 2.03 | 3.02 | 1.98 | 247    |
| 384.175          | 15.125  | 546.1   | 21.5   | 193.675 | 7.625  | 193.675 | 7.625  | 82.55   | 3.25   | 3.3  | 6.4   | 3200               | 8200  | 410         | 540 | HM266449TD/HM266410    | 0.33               | 2.04 | 3.02 | 1.98 | 151    |
|                  |         | 546.1   | 21.5   | 193.675 | 7.625  | 193.675 | 7.625  | 82.55   | 3.25   | 3.3  | 6.4   | 3200               | 8200  | 410         | 540 | HM266449DW/HM266410    | 0.33               | 2.04 | 3.02 | 1.98 | 151    |
|                  |         | 546.1   | 21.5   | 193.675 | 7.625  | 193.675 | 7.625  | 82.55   | 3.25   | 3.3  | 6.4   | 3200               | 8200  | 410         | 540 | HM266449D/HM266410     | 0.33               | 2.04 | 3.02 | 1.98 | 152    |
|                  |         | 546.1   | 21.5   | 222.25  | 8.75   | 104.775 | 4.125  | 177.8   | 7      | 6.4  | 1.5   | 3200               | 8200  | 410         | 540 | HM266448/HM266410CD    | 0.33               | 2.04 | 3.02 | 1.98 | 161    |
| 385.762          | 15.1875 | 514.35  | 20.25  | 177.8   | 4.6378 | 82.55   | 3.25   | 139.7   | 5.5    | 6.4  | 1.5   | 2050               | 5600  | 450         | 680 | LM665949/LM665910CD    | 0.42               | 1.62 | 2.42 | 1.59 | 100    |
| 390*             |         | 570*    |        | 180     |        | 180     |        | 63      |        | 1.5  | 4     | 2190               | 5230  | 400         | 520 | KJM966748DW/KJM966710  | 0.83               | 0.8  | 1.2  | 0.8  | 158    |
| 393.7            | 15.5    | 546.1   | 21.5   | 138.112 | 5.4375 | 138.112 | 5.4375 | 53.975  | 2.125  | 1.5  | 6.4   | 2150               | 4650  | 410         | 540 | LM767745D/LM767710/YB2 | 0.47               | 1.42 | 2.12 | 1.39 | 100    |
| 406.4            | 16      | 539.75  | 21.25  | 142.875 | 5.625  |         |        | 101.6   | 4      | 6.4  | 1.5   | 1620               | 4350  | 410         | 540 | 3506/406.4             | 0.48               | 1.4  | 2.1  | 1.4  | 82.6   |
|                  |         | 546.1   | 21.5   | 138.113 | 5.4375 | 138.113 | 5.4375 |         |        | 1.5  | 6.4   | 2080               | 5000  | 410         | 540 | 3706/406.4             | 0.48               | 1.4  | 2.1  | 1.4  | 88.6   |
|                  |         | 590.55  | 23.25  | 193.674 | 7.625  | 193.675 | 7.625  | 80.692  | 3.1769 | 3.3  | 6.4   | 3600               | 7100  | 410         | 540 | EE833161XD/833232/YB2  | 0.33               | 2.03 | 3.02 | 1.98 | 186    |
| 408.4            | 16.0787 | 546.1   | 21.5   | 120     | 4.7244 | 98      | 3.8583 | 98      | 3.8583 | 1    | 3     | 1480               | 3400  | 410         | 540 | 3706/408.4             | 0.88               | 0.77 | 1.15 | 0.8  | 76.3   |
| 409.575          | 16.125  | 546.1   | 21.5   | 161.925 | 6.375  | 161.925 | 6.375  | 66.675  | 2.625  | 1.5  | 6.4   | 2800               | 8500  | 410         | 540 | M667947D/M667910       | 0.43               | 1.6  | 2.3  | 1.6  | 104    |
|                  |         | 546.1   | 21.5   | 161.925 | 6.375  | 161.925 | 6.375  | 66.675  | 2.625  | 1.5  | 6.4   | 2800               | 6550  | 410         | 540 | KM667947D/KM667910     | 0.43               | 1.6  | 2.3  | 1.6  | 104    |
|                  |         | 635     | 25     | 257.175 | 10.125 | 120.65  | 4.75   | 206.375 | 8.125  | 6.4  | 1.5   | 4650               | 10300 | 380         | 500 | M270730/M270710CD      | 0.33               | 2    | 3    | 2    | 300    |
| 415.925          | 16.375  | 590.55  | 23.25  | 209.55  | 8.25   | 209.55  | 8.25   | 88.9    | 3.5    | 3.3  | 6.4   | 3960               | 8400  | 410         | 540 | M268749DW/M268710      | 0.33               | 2.03 | 3.02 | 1.98 | 179    |
|                  |         | 590.55  | 23.25  | 244.475 | 9.625  | 114.3   | 4.5    | 193.675 | 7.625  | 6.4  | 1.5   | 3250               | 8550  | 380         | 500 | M268749/M268710DC/HE   | 0.33               | 2.03 | 3.02 | 1.98 | 205    |

# Inch Double Row Tapered Roller Bearings



| Basic dimensions |         |         |        |         |         |         |         |         |        |      |       | Basic load ratings |       | Limit speed |     | Designations           | Calculation factor |      |      |      | Weight |
|------------------|---------|---------|--------|---------|---------|---------|---------|---------|--------|------|-------|--------------------|-------|-------------|-----|------------------------|--------------------|------|------|------|--------|
| d                |         | D       |        | T       |         | B       |         | C       |        | rmin | r1min | Cr                 | Cor   | Grease      | Oil |                        | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in      | mm      | in     | mm      | in      | mm      | in      | mm      | in     | mm   | mm    | KN                 |       | r/min       |     |                        |                    |      |      |      |        |
| 431.8            | 17      | 571.5   | 22.5   | 155.575 | 6.125   | 74.612  | 2.9375  | 111.125 | 4.375  | 3.3  | 1.5   | 1660               | 4200  | 410         | 540 | LM869448/LM869410CD    | 0.55               | 1.24 | 1.84 | 1.21 | 102    |
| 447.675          | 17.625  | 635     | 25     | 223.838 | 8.8125  | 223.838 | 8.8125  | 95.25   | 3.75   | 3.3  | 6.4   | 3900               | 10300 | 360         | 480 | KM270749D/KM270710     | 0.33               | 2    | 3    | 2    | 232    |
|                  |         | 635     | 25     | 257.175 | 10.125  | 120.65  | 4.75    | 206.375 | 8.125  | 6.4  | 1.5   | 4650               | 10300 | 360         | 480 | M270749/M270710CD      | 0.33               | 2    | 3    | 2    | 247    |
| 457.2            | 18      | 596.9   | 23.5   | 165.1   | 6.5     | 73.025  | 2.875   | 120.65  | 4.75   | 9.7  | 1.5   | 1860               | 5000  | 380         | 500 | EE244180/244236CD      | 0.4                | 1.67 | 2.48 | 1.63 | 109    |
| 479.425          | 18.875  | 679.45  | 26.75  | 276.225 | 10.875  | 128.588 | 5.0625  | 222.25  | 8.75   | 6.4  | 1.5   | 4180               | 10900 | 320         | 440 | KM272749/KM272710D     | 0.33               | 2.03 | 3.02 | 1.98 | 307    |
| 482.6            | 19      | 615.95  | 24.25  | 184.15  | 7.25    | 85.725  | 3.375   | 146.05  | 5.75   | 6.4  | 1.5   | 2540               | 7510  | 360         | 480 | LM272249/LM272210D     | 0.33               | 2.03 | 3.02 | 1.98 | 130    |
| 488.95           | 19.25   | 634.873 | 24.995 | 180.975 | 7.125   | 84.138  | 3.3125  | 136.525 | 5.375  | 6.4  | 1.5   | 2230               | 6250  | 360         | 480 | LM772748/LM772710CD    | 0.47               | 1.43 | 2.12 | 1.4  | 138    |
| 489.026          | 19.253  | 634.873 | 24.995 | 152.4   | 6       | 152.4   | 6       | 63.5    | 2.5    | 3.3  | 3.3   | 2700               | 7300  | 360         | 480 | EE243193D/243250       | 0.35               | 1.9  | 2.9  | 1.8  | 129    |
|                  |         | 634.873 | 24.995 | 177.8   | 7       | 80.962  | 3.1875  | 142.875 | 5.625  | 6.4  | 1.5   | 2700               | 7300  | 360         | 480 | EE243192/243251D       | 0.35               | 1.9  | 2.9  | 1.8  | 129    |
| 498.475          | 19.625  | 634.873 | 24.995 | 177.8   | 7       | 80.962  | 3.1875  | 142.875 | 5.625  | 6.4  | 1.5   | 2700               | 7300  | 360         | 480 | EE243196/243251D       | 0.35               | 1.9  | 2.9  | 1.8  | 124    |
| 501.65           | 19.75   | 673.1   | 26.5   | 184.15  | 7.25    | 184.15  | 7.25    |         |        | 3.3  | 6.4   | 3850               | 9600  | 340         | 450 | 3706/501X4             | 0.31               | 2.2  | 3.3  | 2.2  | 191    |
|                  |         | 711.2   | 28     | 250.825 | 9.875   | 250.825 | 9.875   | 103.363 | 4.0694 | 3.2  | 6.4   | 4500               | 13400 | 300         | 400 | 3706/500/HC            | 0.33               | 2    | 3    | 2    | 321    |
|                  |         | 711.2   | 28     | 292.1   | 11.5    | 136.525 | 5.375   | 231.775 | 9.125  | 6.4  | 1.5   | 4500               | 13400 | 300         | 400 | M274149/M274110DC      | 0.33               | 2    | 3    | 2    | 355    |
| 505.181          | 19.889  | 838.2   | 33     | 266.7   | 10.5    | 104.775 | 4.125   | 104.775 | 4.125  | 6.4  | 9.7   | 5800               | 12000 | 280         | 360 | EE426198D/426330       | 0.48               | 1.4  | 2.1  | 1.4  | 590    |
| 508              | 20      | 762     | 30     | 219.075 | 8.625   | 219.075 | 8.625   | 85.725  | 3.375  | 6.4  | 6.4   | 4650               | 10200 | 290         | 380 | KEE531201D/K531300     | 0.38               | 1.78 | 2.09 | 1.74 | 347    |
|                  |         | 838.2   | 33     | 304.8   | 12      | 139.7   | 5.5     | 222.25  | 8.75   | 9.7  | 3.3   | 6300               | 13500 | 280         | 360 | EE426200/426331CD      | 0.48               | 1.4  | 2.1  | 1.4  | 628    |
| 519.112          | 20.4375 | 736.6   | 29     | 258.672 | 10.1839 | 258.672 | 10.1839 |         |        | 3.3  | 6.4   | 5950               | 15300 | 300         | 400 | 3706/519X4             | 0.33               | 2    | 3    | 2    | 368    |
| 520.7            | 20.5    | 736.6   | 29     | 186.502 | 7.3426  | 81.758  | 3.2188  | 114.3   | 4.5    | 6.4  | 1.5   | 3000               | 6650  | 300         | 400 | EE982051/982901CD      | 0.48               | 1.4  | 2.1  | 1.4  | 208    |
| 536.575          | 21.125  | 761.873 | 29.995 | 269.875 | 10.625  | 269.875 | 10.625  | 114.3   | 4.5    | 3.3  | 6.4   | 6200               | 15500 | 280         | 350 | M276449DW/M276410      | 0.33               | 2    | 3    | 2    | 412    |
|                  |         | 761.873 | 29.995 | 311.15  | 12.25   | 146.05  | 5.75    | 247.65  | 9.75   | 6.4  | 1.5   | 5650               | 15000 | 280         | 350 | M276449/M276410CD      | 0.33               | 2    | 3    | 2    | 426    |
| 558.5            | 21.9882 | 736.6   | 29     | 225.425 | 8.875   | 104.775 | 4.125   | 177.8   | 7      | 1.5  | 6.4   | 4400               | 12800 | 280         | 350 | LM377449/LM377410CD/HE | 0.35               | 1.92 | 2.86 | 1.88 | 256    |
| 558.8            | 22      | 736.6   | 29     | 187.328 | 7.3751  |         |         | 138.112 | 5.4375 | 6.4  | 1.5   | 3350               | 8200  | 280         | 350 | 3506/558.8             | 0.35               | 1.9  | 2.9  | 1.8  | 191    |

# Inch Double Row Tapered Roller Bearings



| Basic dimensions |        |       |         |         |         |         |         |         |        |      |       | Basic load ratings |       | Limit speed |     | Designations        | Calculation factor |      |      |      | Weight |
|------------------|--------|-------|---------|---------|---------|---------|---------|---------|--------|------|-------|--------------------|-------|-------------|-----|---------------------|--------------------|------|------|------|--------|
| d                |        | D     |         | T       |         | B       |         | C       |        | rmin | r1min | Cr                 | Cor   | Grease      | Oil |                     | e                  | Y1   | Y2   | Yo   | Kg     |
| mm               | in     | mm    | in      | mm      | in      | mm      | in      | mm      | in     | mm   | mm    | KN                 |       | r/min       |     |                     |                    |      |      |      |        |
|                  | -      | 736.6 | 29      | 196.85  | 7.75    | 196.85  | 7.75    | 80.962  | 3.1875 | 3.3  | 6.4   | 14250              | 11500 | 280         | 350 | LM377448D/LM377410  | 0.35               | 1.9  | 2.9  | 1.8  | 233    |
|                  |        | 736.6 | 29      | 225.425 | 8.875   | 104.775 | 4.125   | 177.8   | 7      | 6.4  | 1.5   | 4250               | 11500 | 280         | 350 | LM377448/LM377410CD | 0.35               | 1.9  | 2.9  | 1.8  | 151    |
| 571.5            | 22.5   | 812.8 | 32      | 285.75  | 11.25   | 285.75  | 11.25   | 120.65  | 4.75   | 3.3  | 6.4   | 7700               | 18000 | 260         | 330 | M278749DW/M278710   | 0.33               | 2    | 3    | 2    | 524    |
|                  |        | 812.8 | 32      | 333.375 | 13.125  | 155.575 | 6.125   | 263.525 | 10.375 | 6.4  | 1.5   | 6400               | 15900 | 260         | 330 | M278749/M278710D    | 0.33               | 2    | 3    | 2    | 521    |
| 602.945          | 23.738 | 787.4 | 31      | 206.375 | 8.125   | 93.662  | 3.6875  | 158.75  | 6.25   | 6.4  | 1.5   | 4000               | 10500 | 260         | 330 | EE649237/649311CD   | 0.37               | 1.8  | 2.7  | 1.8  | 181    |
| 609.6            | 24     | 787.4 | 31      | 171.45  | 6.75    | 171.45  | 6.75    | 69.85   | 2.75   | 3.3  | 6.4   | 4000               | 10500 | 260         | 330 | EE649241D/649310    | 0.37               | 1.8  | 2.7  | 1.8  | 219    |
|                  |        | 787.4 | 31      | 206.375 | 8.125   | 93.662  | 3.6875  | 158.75  | 6.25   | 6.4  | 1.5   | 4000               | 10500 | 260         | 330 | EE649240/649311CD   | 0.37               | 1.8  | 2.7  | 1.8  | 233    |
|                  |        | 812.8 | 32      | 190.5   | 7.5     | 82.55   | 3.25    | 146.05  | 5.75   | 6.4  | 3.3   | 3500               | 8700  | 250         | 310 | EE743240/743321D    | 0.33               | 2    | 3    | 2    | 251    |
|                  |        | 820   | 32.2835 | 171.45  | 6.75    | 171.45  | 6.75    |         |        | 3.3  | 6.4   | 4000               | 10500 | 250         | 310 | 3706/609.6          | 0.37               | 1.8  | 2.7  | 1.8  | 266    |
|                  |        | 820   | 32.2835 | 206.375 | 8.125   |         |         | 158.75  | 6.25   | 6.4  | 1.5   | 4000               | 10500 | 250         | 310 | 3506/609.6          | 0.37               | 1.8  | 2.7  | 1.8  | 293    |
| 635              | 25     | 939.8 | 37      | 304.8   | 12      | 304.8   | 12      | 107.95  | 4.25   | 3.2  | 6.4   | 6270               | 17000 | 250         | 330 | 3706/635/HC-1       | 0.88               | 0.77 | 1.14 | 0.75 | 762    |
|                  |        | 990.6 | 39      | 339.725 | 13.375  |         |         | 212.725 | 8.375  | 6.4  | 6.4   | 8000               | 15800 | 250         | 320 | 3506/635            | 0.88               | 0.77 | 1.15 | 0.8  | 841    |
| 660.4            | 26     | 812.8 | 32      | 176.212 | 6.9375  | 176.212 | 6.9375  | 73.025  | 2.875  | 3.3  | 6.4   | 3500               | 11100 | 240         | 300 | L281149D/L281110    | 0.33               | 2    | 3    | 2    | 194    |
|                  |        | 812.8 | 32      | 203.2   | 8       | 95.25   | 3.75    | 158.75  | 6.25   | 6.4  | 1.5   | 3080               | 9900  | 240         | 300 | KL281148/KL281110CD | 0.33               | 2    | 3    | 2    | 212    |
| 682.625          | 26.875 | 965.2 | 38      | 338.138 | 13.3125 | 338.138 | 13.3125 | 142.875 | 5.625  | 6.4  | 3.3   | 9450               | 24800 | 220         | 290 | M282249D/M282210    | 0.33               | 2    | 3    | 2    | 812    |
| 685.8            | 27     | 876.3 | 34.5    | 200.024 | 7.875   | 92.075  | 3.625   | 152.4   | 6      | 6.4  | 1.5   | 3850               | 10500 | 220         | 290 | EE655270/655346D    | 0.43               | 1.6  | 2.3  | 1.6  | 271    |

Note: \* stand for the maximum value of ID or OD; SP means the nonstandard assembly chamfer.

## SHANGHAI CHENGHUI BEARING CO.,LTD.

Add:2-1709,No.289,Zheqiao Road,Pudong,Shanghai,201206,China

Tel:+86 21 58356710 58356720 58356398 Fax: +86 21 58356720

E-mail:[jason@chenghuibearing.com](mailto:jason@chenghuibearing.com)

Website: [www.chenghuibearing.com](http://www.chenghuibearing.com)

Whats app: +86 18616206301