# Spherical roller bearings

**ECB 22240 CCK JA / C3 W33**

1 2 3 4 5 6

## 1. Prefix:

| | |
|---|---|
| **BS2** | Two row spherical roller bearing, special dimensions and/or features |
| **ECB** | Air melt carburized steel, inner ring only, replaced by HA3 |
| **ZE** | Bearings with SensorMount feature |

## 2. Internal design:

| | |
|---|---|
| **E** | Two pressed window-type hardened steel cages, an inner ring without flanges and a floating guide ring centered on the inner ring ($d \leq 65$ mm) or on the cages ($d > 65$ mm). Optimized internal design for increased load carrying capacity. Includes the W33 feature. |
| **CC** | Two pressed window-type steel cages, an inner ring without flanges and a floating guide ring centered on the inner ring |
| **CA, CAC** | Machined double prong-type brass cage, an inner ring with a retaining flange on both sides and a floating guide ring centered on the inner ring |
| **ECA, ECAC** | Large CA design bearings with the designation suffix ECA and ECAC have an optimized internal design for increased load carrying capacity |

## 3. Bore type:

| | |
|---|---|
| **–** | Cylindrical bore |
| **K** | Bearing with 1 to 12 tapered bore |
| **K30** | Bearing with 1 to 30 tapered bore |

## 4. Cage designs:

| | |
|---|---|
| **J** | Pressed steel cage, inner ring centered (usually omitted with E or CC suffixes) |
| **JA** | Hardened pressed steel cage, hardened outer ring centered guide ring (for vibratory applications) |
| **M** | Machined brass cage, rolling element centered (usually omitted with CA suffix) |
| **MA** | Machined brass cage, outer ring guided (usually omitted with CA suffix) |
| **M2** | Heavy duty machined brass cage for vibratory equipment |
| **F** | Machined steel cage, rolling element centered |
| **FA** | Machined steel cage, outer ring centered |

## 4. Seals:

| | |
|---|---|
| **-2CS** | Contact seal, NBR, on both sides |
| **-2CS2** | Contact seal, FKM, on both sides |
| **-2CS5** | Contact seal, HNBR, on both sides |
| **-2RS** | Improved design contact seal, NBR, on both sides |
| **-2RS2** | Improved design contact seal, FKM, on both sides |
| **-2RS5** | Improved design contact seal, HNBR, on both sides |

## 5. Clearance / tolerance:

| | |
|---|---|
| **C1** | Clearance < C2 |
| **C2** | Clearance < Normal |
| **(C0)*** | Normal clearance |
| **C3** | Clearance > Normal |
| **C4** | Clearance > C3 |
| **C08** | RBEC 5 running accuracy, inner & outer rings |
| **C083** | C08 + C3 |
| **C084** | C08 + C4 |

*Not marked on bearing or package

## 6. Features:

| | |
|---|---|
| **W4** | High point of eccentricity marked on inner ring or sleeve |
| **W22** | Special reduced outside diameter tolerance for outer ring |
| **W26** | Six lubrication holes in inner ring |
| **W31** | Bearing inspected to special quality requirement |
| **W33** | Three oil holes and circumferential groove in outside diameter |
| **W33X** | Lubrication groove and six holes in outer ring |
| **W502** | Combination of W22 & W33 |
| **W507** | Combination of W4, W31 & W33 |
| **W509** | Combination of W26, W31 & W33 |
| **HA1** | Case hardened outer and inner rings |
| **HA3** | Case hardened inner rings (equal to ECB) |
| **VA405** | Specification for vibrating applications |
| **VA406** | PTFE-lined bore |
| **VA751-VA759** | Specification for high precision applications (printing, embossing, coating) |
| **VT143** | SKF grease LGEP2 supplied in sealed spherical roller bearings |
| **VE552(E)** | Outer ring with three equally-spaced threaded holes in one side face to accommodate lifting tackle. The E indicates that three appropriate hoist rings are supplied with the bearing. |
| **VT143** | SKF grease LGEP 2 filled to 25 – 45% in sealed spherical roller bearing |
| **GEM9** | SKF grease LGHB 2 filled to 70 – 100% in sealed spherical roller bearing |
| **W64** | Solid Oil lubricants |

## Technical features

**Boundary dimensions**
In accordance with ISO 15

**Tolerances**
SKF spherical roller bearings are manufactured as standard to ISO Normal (RBEC 1) tolerances. SKF Explorer bearings up to and including 300 mm bore diameter are produced with a higher precision: the width tolerance is at least 50% tighter than ISO standard and the geometrical tolerance is ISO P5 (RBEC 5) as standard. For larger bearings, ISO P5 geometrical tolerance is available on request with suffix C08 or closer tolerances are available with suffix VQ424. Bearing for vibratory applications have the same features as SKF Explorer bearings with additional specifications suited to increase performance in vibratory applications.

**Heat stabilization**
392° F (200° C)

**Misalignment**

Series 21300 – 2.0°
Series 22300 – 3.0°
Series 23100 – <60: 2° ; ≥60: 3°
Series 23800 – 1.5°
Series 24000 – 2.0°
Series 24000 – 1.5°
Sealed sphericals – 0.5°

Series 22200 – <52: 2.0° ; ≥52: 1.5°
Series 23000 – <56: 2.0° ; ≥56: 2.5°
Series 23200 – <52: 2.5° ; ≥52: 3.5°
Series 23900 – 1.5°
Series 24100 – <64: 2.5° ; ≥64: 3.5°
Series 24900 – 2.5°

**Cage material**

**Standard**
Steel

**Optional**
Machined brass (CA) and machined steel (F) for larger bearings only

**Axial load – max**
For adapter and withdrawal sleeve installations: $F_{ap}$ = 3 x B x d
where B = bearing width (mm)

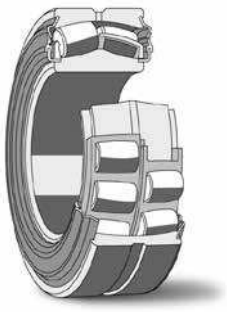
$F_{ap}$ = axial load in Newtons

For cylindrical mounts contact SKF

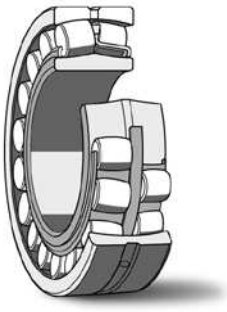
**Seals**
-2CS – Contact seal, NBR, on both sides
-2CS2 – Contact seal, FKM, on both sides
-2CS5 – Contact seal, HNBR, on both sides
-2RS – Improved design contact seal, NBR, on both sides
-2RS2 – Contact seal, FKM, on both sides
-2RS5 – Improved design contact seal, HNBR, on both sides

* See width tolerances in SKF Rolling Bearings catalog.

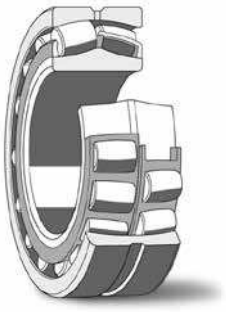
*Standard spherical roller bearing (data tables on page 162)*



*Sealed spherical roller bearing (data tables on page 173)*



*Shaker screen spherical roller bearing (data tables on page 178)*



*Printing press spherical roller bearing (data tables on page 180)*

# Introduction

Spherical roller bearings have two rows of rollers with a common sphered raceway in the outer ring. The two inner ring raceways are inclined at an angle to the bearing axis. The bearings are self – aligning and consequently insensitive to minor errors of alignment of the shaft relative to the housing, and to shaft bending. In addition to radial loads, the bearings can also accommodate axial loads acting in both directions.

SKF spherical roller bearings have a large number of long, symmetrical rollers of large diameter and consequently have very high load carrying capacity. Their internal design differs slightly depending on series and size, but has been continually improved over the years.

Bearing performance is not only determined by load or speed ratings. There are a number of other factors that contribute to bearing performance. To a large extent, performance is influenced by the geometry of the rollers, raceways and cages, the heat treatment, as well as the surface finish of all contact surfaces. Main factors which influence SKF spherical roller bearing performance include, but are not limited to:

### Symmetrical rollers

Symmetrical rollers self-adjust **(Fig. 1a)**, providing optimal load distribution along the roller length. This keeps stresses low under all load conditions and extends bearing service life.

### Roller tolerances

The rollers in an SKF spherical roller bearing are manufactured to extremely tight tolerances for dimension and form. Each roller is virtually identical in size and shape to the other rollers in the set. This optimizes load distribution over the rollers to maximize bearing service life.

### Special roller profile

The roller profile determines the stress distribution in the roller/raceway contact area. The special profile distributes loads more evenly along the rollers and prevents stress peaks at the roller ends to extend bearing service life **(Fig. 1b)**.

### Self-guiding rollers and a floating guide ring between the two rows of rollers

The special roller and raceway surface finishes provide self-guiding rollers that reduce friction and frictional heat **(Fig. 1c)**. A floating guide ring guides unloaded rollers so that they enter the load zone in the optimal position.

### Metal cages

All SKF spherical roller bearings contain strong metal cages. This enables them to tolerate high temperatures and all lubricants.

In response to the ever-demanding performance requirements of modern machinery, SKF developed the SKF Explorer performance class of rolling bearings.

SKF Explorer spherical roller bearings realized this substantial improvement in performance by optimizing the internal geometry and surface finish of all contact surfaces, combining the extremely clean and homogenous steel with a unique heat treatment, improving the cage, roller profile and the geometry of the raceways.

These improvements provide the following benefits:
- higher dynamic load carrying capacity compared to conventional design bearings
- improved wear-resistance
- reduced noise and vibration levels
- less frictional heat
- significantly extended bearing service life

SKF Explorer bearings reduce environmental impact by enabling downsizing and reducing both lubricant and energy consumption. Just as importantly, SKF Explorer bearings can reduce the need for maintenance and contribute to increased productivity.

All standard SKF spherical roller bearings, CARB toroidal bearings and all spherical roller thrust bearings are now manufactured to SKF Explorer performance class specifications. All have been upgraded to a new level of performance. Combining the clean and homogenous high-quality steel used in the original SKF Explorer bearings with an improved heat treatment process, upgraded SKF Explorer bearings provide longer service life, particularly under difficult operating conditions.

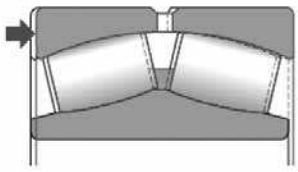
SKF upgraded bearing steel can extend the service life of SKF Explorer self-aligning roller bearings regardless of the application. However, the benefits are most noticeable in applications where bearings are subjected to contaminated or poor lubrication conditions.

Upgraded SKF Explorer bearings can provide the following benefits:

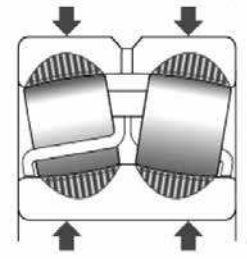
- Significantly improved wear resistance
- SKF compared the wear resistance of upgraded SKF Explorer bearings to original SKF Explorer bearings. The test results showed that upgraded bearings were significantly more wear resistant than the original SKF Explorer bearings.
- Extended service life under poor lubrication conditions
- Tests have been conducted at the SKF Engineering & Research Centre to verify the service life of upgraded SKF Explorer bearings. The results show conclusively that upgraded SKF Explorer bearings last twice as long as the original, when used under poor lubrication conditions.
- Extended service life under contaminated conditions
- The SKF Engineering & Research Centre also performed endurance tests under contaminated conditions that verified performance improvements of the upgraded SKF Explorer bearings. These test results showed that the upgraded SKF Explorer bearings provide almost twice the service life under contaminated operating conditions.

For additional information visit us online at:
**www.skf.com/upgrade**

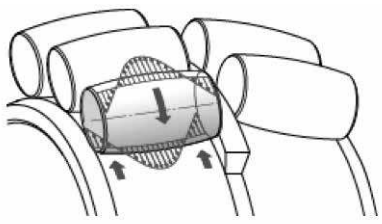
**Figure 1**



*a*



*b*



*c*

# Introduction

## Basic design

All SKF spherical roller bearings are produced with the SKF Explorer upgraded steel. As such, all SKF Explorer spherical roller bearings have an optimized surface finish on the rollers and raceways to promote roller guidance and reduce friction.

### E design (Figure 2a)

These bearings have symmetrical rollers, a flangeless inner ring and a floating guide ring between the two rows of rollers, which is centered on the inner ring (d ≤ 65 mm) or on the cages (d > 65 mm). The hardened pressed steel cages have been newly developed and permit the inclusion of a greater number and/or larger diameter rollers of increased length, imparting even higher load carrying capacity to the bearings. The hardened steel cages also provide increased robustness even in challenging applications. The positioning of the guide ring towards the outer ring (d > 65 mm) enables lubrication at the roller end guide ring contact to be improved. The guide ring contributes to the reduced friction in the bearing as it helps to guide the rollers in the unloaded zone and assists their entry into the loaded zone.

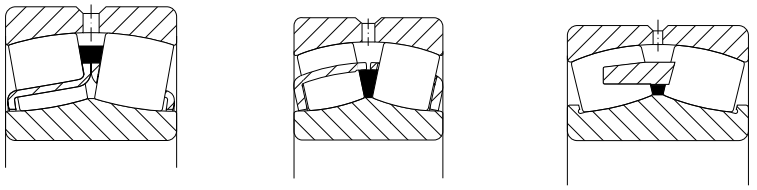
### CC, E (d ≤ 65) designs (Figure 2b)

These bearings have symmetrical rollers, a flangeless inner ring and a pressed steel cage for each roller row. The guide ring is centered on the inner ring between the two rows of rollers. E (d ≤ 65) design bearings incorporate reinforced roller sets for increased load carrying capacity.

### CAC, ECAC, CA and ECA designs (Figure 2c)

These designs are used for the larger sizes of SKF spherical roller bearings. The rollers are symmetrical and the inner ring has retaining flanges. The guide ring is centered on the inner ring between the two rows of rollers and the cage is a one–piece, double pronged machined brass cage. The ECAC and ECA designs have reinforced roller complements for increased load carrying capacity.

**Figure 2**



*a*
*E design*

*b*
*CC and E (d ≤ 65) designs*

*c*
*CAC, ECAC, CA and ECA designs*

## Variations

SKF offers an unmatched range of sealed spherical roller bearings with market-leading performance, all according to SKF Explorer performance class. Sealed SRB can significantly increase bearing service life in contaminated environments. These bearings are pre-lubricated and sealed with highly effective contact seals. The seals protect the bearing and lubricant from contaminants that might otherwise cause premature bearing failure. By eliminating or extending relubrication intervals, these bearings can significantly reduce the cost to purchase, apply and dispose the grease. Reduced maintenance costs and increased uptime will substantially reduce the total cost of ownership in an application.

Sealed E-design bearings are wider than ISO standards (BS2 prefix) to have the same internal geometry as corresponding open bearings, and accordingly have the same basic load ratings. Sealed CC design bearings are kept within ISO standards, but the basic load ratings differ slightly from the corresponding open bearings due to the adjusted contact angle. The effect on calculated life can be considered negligible for moderate axial loads.

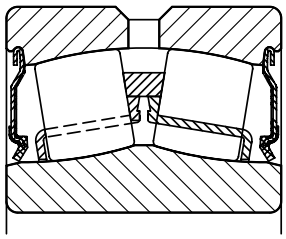
The three current designs of seals will be replaced by one design, with an improved seal recess to facilitate efficient mounting, a seal lip with an optimized contact pressure and a rubberized side face. The new seal design (suffix RS) replaces the current design (suffix CS) for the small sealed SRB (D to around 180 mm).

Two different seal materials are standard. NBR is standard for the small assortment (D to around 180 mm) and HNBR is standard for the rest of the sealed assortment. Please note that for the improved small assortment, i.e. RS-design, HNBR is colored brown. FKM is available for certain sizes.

NBR is intended for normal operating temperatures, up to 90 °C, identified by the suffix 2CS or 2RS HNBR is intended for both normal and high operating temperatures, up to 150 °C, identified by suffix 2CS5 or 2RS5. FKM is intended for both normal and high operating temperatures, up to 200 °C, identified by suffix 2CS2 or 2RS2.

The new design of small sealed SRB, maintain the sealing capabilities while reducing the friction, enabling up to twice the limiting speed or further reducing the need for maintenance. The sealed SKF Explorer SRB standard assortment is available on stock. The new seal design suffix RS is valid for the small assortment (O.D. to around180 mm), while the remaining assortment keeps the suffix CS.

Figure 3



*Sealed bearing*

Warning:

SKF sealed roller bearings that are fitted with fluoro rubber (elastomer) seals (2CS2 and 2RS2) can cause serious bodily injury if used improperly. The seals are suitable for operation up to 392° F (200° C). A fluoroelastomer base will resist ignition under any conditions outside special furnace condition, but if exposure to heat (due to fire or any other conditions) is extreme, e.g. over 572° F (300° C) for more than a brief time, degradation will occur. Fluoro rubber emits dangerous fumes at temperatures of 572° F (300° C) and above. This may occur if the seals are subjected to extreme heat during dismounting, for example. Once it has been overheated, fluoro rubber will remain dangerous to handle, even when it has cooled down. This degraded product is a major health and safety danger due to the evolution of hydrofluoric acid (HF). It is necessary to handle overheated fluoro rubber seals carefully: always observe safety instructions and wear goggles and protective gloves. Under no circumstances should material (hot or cold) be allowed to contact skin. If hands or eyes have come into contact with the material or fumes, they should be washed or rinsed in plenty of water. A doctor should always be consulted, especially if the fumes have been inhaled.

Decontamination can be carried out using limewater (calcium hydroxide solution); use of PVC gloves is essential. After neutralization, the degraded seal can be disposed of in a similar manner to an un-degraded one.

The user is responsible for the correct handling of the seals during bearing life and for the proper disposal of used seals. Seals of fluoro rubber and bearings incorporating them are not dangerous to handle provided they have never been overheated.

### Annular groove and lubrication holes (W33)

To facilitate efficient bearing lubrication, all SKF spherical roller bearings are provided with an annular groove and three lubrication holes in the outer ring as standard except those of series 213 CC, and CC design bearings having an outside diameter smaller than 150 or 180 mm (depending on series).

Designation suffix W33 is used to identify this feature on bearings of the CC, C, CAC, ECAC, CA and ECA designs. The suffix is not used with the E design bearings as the lubrication groove and three holes feature is an integral part of the new standard E design. If E design bearings are required without this feature, then suffix W must be added to the bearing designation; for example, 22312 EW or 22312 EKW.

### Bearings for vibrating applications

Continuing research into the operating characteristics of roller bearings in extreme environments, such as those encountered in vibrating applications, has been an ongoing and integral part of the SKF search to optimize the value received by our customers.

Laboratory and field testing over prolonged periods have proven the durability we have sought to engineer into these bearings. SKF Vibrating screen bearings of series 4523 / 4533 (CAC)M2/W502 as well as series 223 VA405 bearings and 4533 VA405 kits are the proven result of years of intensive and innovative applications research.

Upgraded Explorer series 223 VA405 bearings and 4533 VA405 kits special clearance are modified to cope with shaft deflection encountered in vibrating applications. They are characterized by a hardened floating guide ring centered in the outer ring which guides the highly wear resistant, surface hardened window-type steel cages. To prevent fretting corrosion at the non-locating bearing position, a special version with PTFE-coated cylindrical bore is available (VA406). Contact SKF Applications Engineering for further details.

### Bearings for high precision applications

Preloaded spherical roller bearings have been made in many sizes for use on various cylinders in printing presses. These bearings, in addition to being extensively used by the printing industry, are also used on embossing, coating and slitting machines.

Special design features, which have contributed to their outstanding performance, are as follows:

- High precision O.D. tolerance maintains a controlled housing fit
- Torque tested bearings are “run in” at the factory
- Interchangeability within one size against a properly made spacer resulting in the desired preload
- Special precision roller diameter variation.
- Special inner ring runout closer than normal
- High point of eccentricity (both magnitude and location) marked on inner ring
- All bearings are marked with a serial number and the individual bearing drive up required to achieve a specific internal preload
- Special unmounted radial internal clearance

## Accessories for optimum performance

Any system is only as strong as its weakest member. Therefore, SKF offers not only a wide range of spherical roller bearings, but also a full line of quality bearing accessories to go with them.

### Adapter and withdrawal sleeves

Adapter and withdrawal sleeves are used to locate bearings with a tapered bore on cylindrical or shouldered shafts. They facilitate bearing mounting and dismounting and in many cases simplify bearing arrangement design. Consequently, several series of quality sleeves are included in the SKF product range. More detailed information on the sleeves can be found in the Accessories Section of the “Split Pillow Block – Inch” and “Split Pillow Block – Metric” chapters in this catalog.

### Lock nuts

To lock bearings in position on a shaft, SKF supplies a variety of lock or shaft nuts. Lock nuts N, KM(L) and HM use a locking washer or a locking clip to engage a groove on the shaft. KMF, KMK, KMT and KMTA locknuts are locked on the shaft with either grub screws or locking pins.

### Bearing housings

Bearing housings must be suited to the demands placed on the bearings that they house, e.g. load, accuracy, type of lubrication and lubricant, sealing, etc. Therefore, SKF offers a comprehensive range of high-quality standard and special housings. These, together with the appropriate SKF Explorer spherical roller bearings, form economic and interchangeable bearing units, which meet all the performance demands of a bearing application.

# Introduction

## Availability

All SKF spherical roller bearings are produced to a high performance with the SKF Explorer upgraded steel. The designations of SKF Explorer bearings are shown colored blue in the product tables. The bearings retain the designation of earlier standard bearings. However, each bearing and its box are marked with the name “SKF Explorer” or “SKF Explorer UPGRADE” and “WR”. The bearing outer ring will also be marked with the letters WR, positioned immediately after the year letter.

### Product designations

The SKF Explorer bearings retain the designations of the earlier standard bearings, e.g. 22218 E or 23032 CC/W33. However, each bearing and its box is marked with the name SKF Explorer so that there can be no confusion.

Additional details on Explorer performance class bearings can be found on page 25.

## Product highlights

**Self-aligning, robust design**
Allows misalignment between shaft and housing without increasing friction or reducing bearing life. Also insensitive to misalignment caused by shaft or housing deflection due to heavy load.

**Very high load carrying capacity**
Optimum internal design provides maximum radial and axial load carrying capacity.

**Reduced friction and minimum heat generation**
Self-guiding roller – an SKF patent – means reduced friction and minimum heat generation.

**Excellent performance at high temperatures**
High-strength, dimensionally stable bearing rings minimize the risk of ring breakage allowing for good performance at high temperatures.

**Seals integration**
Under normal operating conditions, sealed SKF Explorer spherical roller bearings are greased for life and may make external seals unnecessary–simplifying bearing arrangements and requiring minimum maintenance.

**Special bearing series available for demanding applications**
High precision printing press bearings and bearings for vibrating screen applications.

## Minimum load

In order to provide satisfactory operation of all ball and roller bearings, they must always be subjected to a given minimum load. This is also true of spherical roller bearings, particularly if they run at high speeds where the inertia forces of the rollers and cage, and the friction in the lubricant can have a detrimental influence on the rolling conditions in the bearing and may cause damaging sliding movements to occur between the rollers and the raceways.

The requisite minimum radial load to be applied in such cases can be determined by using the SKF Interactive Engineering Catalog on the SKF website www.skf.com or by contacting SKF Applications Engineering. However, the weight of the components supported by the bearing, together with the external forces, often exceeds the requisite minimum load. If this is not the case, an additional radial load must be applied to the bearing, for example, by increasing belt tension or similar means.

### Frequency vibration data

Frequency vibration data is available on the SKF website www.skf.com under Knowledge Centre/ Engineering tools and CAD, or by contacting SKF Applications Engineering.

## Misalignment

The design of spherical roller bearings is such that they are inherently self-aligning, i.e. angular misalignment between the outer and inner rings can be accommodated without any effect on bearing performance. Under Normal loads and operating conditions (C / P>10), and when misalignment is constant in position with respect to the outer ring, the guideline values for permissible misalignment given in Table 3 apply. Whether these values can be fully exploited or not depends on the design of the bearing arrangement, the type of seals used, etc.

Additional sliding is caused in the bearing under certain operating conditions when the position of the misalignment is not constant with respect to the bearing outer ring, for example:

Vibrating screens with rotating imbalance and therefore rotating deflection of the shaft **(Figure 4)**, or Deflection-compensating rolls of papermachines where the stationary shaft is bent.

Therefore, with reference to bearing friction and associated heat generation, it is recommended that misalignment of the inner ring with respect to the outer ring should not exceed a few tenths of a degree.

Sealed bearings can accommodate angular misalignments of the shaft with respect to the housing of up to approximately 0.5°. Provided the guideline value is not exceeded, there will be no detrimental effect on the efficiency of the seals.

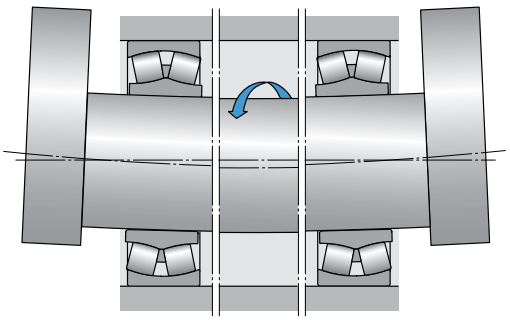
**Table 3**

**Permissible angular misalignment**

| Bearing series sizes[1)] | Permissible angular misalignment |
|---|---|
| – | degrees |
| **Series 213** | 2.0 |
| **Series 222** | |
| sizes < 52 | 2.0 |
| sizes ≥ 52 | 1.5 |
| **Series 223** | 3.0 |
| **Series 230** | |
| sizes < 56 | 2.0 |
| sizes ≥ 56 | 2.5 |
| **Series 231** | |
| sizes < 60 | 2.0 |
| sizes ≥ 60 | 3.0 |
| **Series 232** | |
| sizes < 52 | 2.5 |
| sizes ≥ 52 | 3.5 |
| **Series 238** | 1.5 |
| **Series 239** | 1.5 |
| **Series 240** | 2.0 |
| **Series 241** | |
| sizes < 64 | 2.5 |
| sizes ≥ 64 | 3.5 |
| **Series 248** | 1.5 |
| **Series 249** | 2.5 |

[1)] Last two figures of bearing designation

**Figure 4**



# Introduction

## Special solutions

SKF supplies different types of spherical roller bearings in addition to those shown in this catalog, including:

- Spherical roller bearings for heavy engineering applications
- Split spherical roller bearings
- Rolling mill bearings

Details on these special solution products are available in other SKF publications, which can be supplied upon request.

## Internal clearance

### Internal radial clearance

SKF spherical roller bearings are manufactured as standard with Normal radial internal clearance. Nearly all the bearings are also available with the larger C3 clearance and some can be supplied with the even larger C4 clearance. Some sizes can be delivered with C2 clearance which is smaller than Normal. The availability of bearings with radial internal clearances other than Normal (including C5) should be checked before design change or order placement.

The limits for the various clearances can be found in Table 1, for cylindrical bores and Table 2, for tapered (K) bores and are in accordance with ISO 5753-1991 (ABMA standard 20), where d ≤ 1,000 mm (39.3701"). They are valid for zero measuring load and before mounting.

## Masses

The masses given in the bearing tables are for bearings with cylindrical bore; the masses of bearings with tapered bore are somewhat less. For a specific value, contact SKF Applications Engineering.

**Table 1**

**Radial internal clearance of spherical roller bearings with cylindrical bore**

| Bore diameter d | | | | Radial internal clearance | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | C2 | | | | Normal | | | | C3 | | | | C4 | | | | C5 | | | |
| over | incl. | over | incl. | min | max | min | max | min | max | min | max | min | max | min | max | min | max | min | max | min | max | min | max |
| mm | | in | | µm | | in | | µm | | in | | µm | | in | | µm | | in | | µm | | in | |
| 18 | 24 | 0.7087 | 0.9449 | 10 | 20 | 0.0004 | 0.0008 | 20 | 35 | 0.0008 | 0.0014 | 35 | 45 | 0.0014 | 0.0018 | 45 | 60 | 0.0018 | 0.0024 | 60 | 75 | 0.0024 | 0.0030 |
| 24 | 30 | 0.9449 | 1.1811 | 15 | 25 | 0.0006 | 0.0010 | 25 | 40 | 0.0010 | 0.0016 | 40 | 55 | 0.0016 | 0.0022 | 55 | 75 | 0.0022 | 0.0030 | 75 | 95 | 0.0030 | 0.0037 |
| 30 | 40 | 1.1811 | 1.5748 | 15 | 30 | 0.0006 | 0.0012 | 30 | 45 | 0.0012 | 0.0018 | 45 | 60 | 0.0018 | 0.0024 | 60 | 80 | 0.0024 | 0.0031 | 80 | 100 | 0.0031 | 0.0039 |
| 40 | 50 | 1.5748 | 1.9685 | 20 | 35 | 0.0008 | 0.0014 | 35 | 55 | 0.0014 | 0.0022 | 55 | 75 | 0.0022 | 0.0030 | 75 | 100 | 0.0030 | 0.0039 | 100 | 125 | 0.0039 | 0.0049 |
| 50 | 65 | 1.9685 | 2.5591 | 20 | 40 | 0.0008 | 0.0016 | 40 | 65 | 0.0016 | 0.0026 | 65 | 90 | 0.0026 | 0.0035 | 90 | 120 | 0.0035 | 0.0047 | 120 | 150 | 0.0047 | 0.0059 |
| 65 | 80 | 2.5591 | 3.1496 | 30 | 50 | 0.0012 | 0.0020 | 50 | 80 | 0.0020 | 0.0031 | 80 | 110 | 0.0031 | 0.0043 | 110 | 145 | 0.0043 | 0.0057 | 145 | 180 | 0.0057 | 0.0071 |
| 80 | 100 | 3.1496 | 3.9370 | 35 | 60 | 0.0014 | 0.0024 | 60 | 100 | 0.0024 | 0.0039 | 100 | 135 | 0.0039 | 0.0053 | 135 | 180 | 0.0053 | 0.0071 | 180 | 225 | 0.0071 | 0.0089 |
| 100 | 120 | 3.9370 | 4.7244 | 40 | 75 | 0.0016 | 0.0030 | 75 | 120 | 0.0030 | 0.0047 | 120 | 160 | 0.0047 | 0.0063 | 160 | 210 | 0.0063 | 0.0083 | 210 | 260 | 0.0083 | 0.0102 |
| 120 | 140 | 4.7244 | 5.5118 | 50 | 95 | 0.0020 | 0.0037 | 95 | 145 | 0.0037 | 0.0057 | 145 | 190 | 0.0057 | 0.0075 | 190 | 240 | 0.0075 | 0.0094 | 240 | 300 | 0.0094 | 0.0118 |
| 140 | 160 | 5.5118 | 6.2992 | 60 | 110 | 0.0024 | 0.0043 | 110 | 170 | 0.0043 | 0.0067 | 170 | 220 | 0.0067 | 0.0087 | 220 | 280 | 0.0087 | 0.0110 | 280 | 350 | 0.0110 | 0.0138 |
| 160 | 180 | 6.2992 | 7.0866 | 65 | 120 | 0.0026 | 0.0047 | 120 | 180 | 0.0047 | 0.0071 | 180 | 240 | 0.0071 | 0.0094 | 240 | 310 | 0.0094 | 0.0122 | 310 | 390 | 0.0122 | 0.0154 |
| 180 | 200 | 7.0866 | 7.8740 | 70 | 130 | 0.0028 | 0.0051 | 130 | 200 | 0.0051 | 0.0079 | 200 | 260 | 0.0079 | 0.0102 | 260 | 340 | 0.0102 | 0.0134 | 340 | 430 | 0.0134 | 0.0169 |
| 200 | 225 | 7.8740 | 8.8583 | 80 | 140 | 0.0031 | 0.0055 | 140 | 220 | 0.0055 | 0.0087 | 220 | 290 | 0.0087 | 0.0114 | 290 | 380 | 0.0114 | 0.0150 | 380 | 470 | 0.0150 | 0.0185 |
| 225 | 250 | 8.8583 | 9.8425 | 90 | 150 | 0.0035 | 0.0059 | 150 | 240 | 0.0059 | 0.0094 | 240 | 320 | 0.0094 | 0.0126 | 320 | 420 | 0.0126 | 0.0165 | 420 | 520 | 0.0165 | 0.0205 |
| 250 | 280 | 9.8425 | 11.0236 | 100 | 170 | 0.0039 | 0.0067 | 170 | 260 | 0.0067 | 0.0102 | 260 | 350 | 0.0102 | 0.0138 | 350 | 460 | 0.0138 | 0.0181 | 460 | 570 | 0.0181 | 0.0224 |
| 280 | 315 | 11.0236 | 12.4016 | 110 | 190 | 0.0043 | 0.0075 | 190 | 280 | 0.0075 | 0.0110 | 280 | 370 | 0.0110 | 0.0146 | 370 | 500 | 0.0146 | 0.0197 | 500 | 630 | 0.0197 | 0.0248 |
| 315 | 355 | 12.4016 | 13.9764 | 120 | 200 | 0.0047 | 0.0079 | 200 | 310 | 0.0079 | 0.0122 | 310 | 410 | 0.0122 | 0.0161 | 410 | 550 | 0.0161 | 0.0217 | 550 | 690 | 0.0217 | 0.0272 |
| 355 | 400 | 13.9764 | 15.7480 | 130 | 220 | 0.0051 | 0.0087 | 220 | 340 | 0.0087 | 0.0134 | 340 | 450 | 0.0134 | 0.0177 | 450 | 600 | 0.0177 | 0.0236 | 600 | 750 | 0.0236 | 0.0295 |
| 400 | 450 | 15.7480 | 17.7165 | 140 | 240 | 0.0055 | 0.0094 | 240 | 370 | 0.0094 | 0.0146 | 370 | 500 | 0.0146 | 0.0197 | 500 | 660 | 0.0197 | 0.0260 | 660 | 820 | 0.0260 | 0.0323 |
| 450 | 500 | 17.7165 | 19.6850 | 140 | 260 | 0.0055 | 0.0102 | 260 | 410 | 0.0102 | 0.0161 | 410 | 550 | 0.0161 | 0.0217 | 550 | 720 | 0.0217 | 0.0283 | 720 | 900 | 0.0283 | 0.0354 |
| 500 | 560 | 19.6850 | 22.0472 | 150 | 280 | 0.0059 | 0.0110 | 280 | 440 | 0.0110 | 0.0173 | 440 | 600 | 0.0173 | 0.0236 | 600 | 780 | 0.0236 | 0.0307 | 780 | 1000 | 0.0307 | 0.0394 |
| 560 | 630 | 22.0472 | 24.8031 | 170 | 310 | 0.0067 | 0.0122 | 310 | 480 | 0.0122 | 0.0189 | 480 | 650 | 0.0189 | 0.0256 | 650 | 850 | 0.0256 | 0.0335 | 850 | 1100 | 0.0335 | 0.0433 |
| 630 | 710 | 24.8031 | 27.9528 | 190 | 350 | 0.0075 | 0.0138 | 350 | 530 | 0.0138 | 0.0209 | 530 | 700 | 0.0209 | 0.0276 | 700 | 920 | 0.0276 | 0.0362 | 920 | 1190 | 0.0362 | 0.0469 |
| 710 | 800 | 27.9528 | 31.4961 | 210 | 390 | 0.0083 | 0.0154 | 390 | 580 | 0.0154 | 0.0228 | 580 | 770 | 0.0228 | 0.0303 | 770 | 1010 | 0.0303 | 0.0398 | 1010 | 1300 | 0.0398 | 0.0512 |
| 800 | 900 | 31.4961 | 35.4331 | 230 | 430 | 0.0091 | 0.0169 | 430 | 650 | 0.0169 | 0.0256 | 650 | 860 | 0.0256 | 0.0339 | 860 | 1120 | 0.0339 | 0.0441 | 1120 | 1440 | 0.0441 | 0.0567 |
| 900 | 1000 | 35.4331 | 39.3701 | 260 | 480 | 0.0102 | 0.0189 | 480 | 710 | 0.0189 | 0.0280 | 710 | 930 | 0.0280 | 0.0366 | 930 | 1220 | 0.0366 | 0.0480 | 1220 | 1570 | 0.0480 | 0.0618 |
| 1000 | 1120 | 39.3701 | 44.0945 | 290 | 530 | 0.0114 | 0.0209 | 530 | 780 | 0.0209 | 0.0307 | 780 | 1020 | 0.0307 | 0.0402 | 1020 | 1330 | 0.0402 | 0.0524 | 1330 | 1720 | 0.0524 | 0.0677 |
| 1120 | 1250 | 44.0945 | 49.2126 | 320 | 580 | 0.0126 | 0.0228 | 580 | 860 | 0.0228 | 0.0339 | 860 | 1120 | 0.0339 | 0.0441 | 1120 | 1460 | 0.0441 | 0.0575 | 1460 | 1870 | 0.0575 | 0.0736 |

# Loads

### Axial load carrying capacity of bearings mounted on adapter or withdrawal sleeves

If spherical roller bearings with adapter or withdrawal sleeves are mounted on smooth shafts with no fixed abutment, the magnitude of the axial load that can be supported is determined by the friction between the shaft and sleeve. Provided the bearings are mounted correctly, the permissible axial load can be calculated from:

$F_{ap} = 3\ B\ d$

where
$F_{ap}$ = maximum permissible axial load, N
B = bearing width, mm
d = bearing bore diameter, mm

### Equivalent dynamic bearing load – standard spherical roller bearings

The equivalent dynamic bearing load for spherical roller bearings can be obtained from:

$P = F_r + Y_1 F_a$ when $F_a / F_r \leq e$
$P = 0.67\ F_r + Y_2 F_a$ when $F_a / F_r > e$

where
P = equivalent dynamic bearing load, N
$F_r$ = actual radial bearing load, N
$F_a$ = actual axial bearing load, N
$Y_1$, $Y_2$ = axial load factors for the bearings
e = calculation factor

Appropriate values of the factors e, Y1 and Y2 will be found in the bearing tables for each individual bearing.

### Equivalent dynamic bearing load – vibrating screen bearings

For the normal configuration of a shaft supported by a bearing at each end, the equivalent dynamic bearing load is mostly a function of the centrifugal force and is calculated from:

$$P = \frac{.5 f_d\ WRn^2}{91{,}100} \text{ for N \& mm}$$

$$P = \frac{.5 f_d\ WRn^2}{35{,}200} \text{ for lb \& in}$$

where
W = mass of eccentric part of shaft kg (lb mass)
R = eccentric radius, mm (in)
n = rev / m
$f_d$ = vibrating application factor = 1.2
P = equivalent Load, N (lb force)

**Table 2**

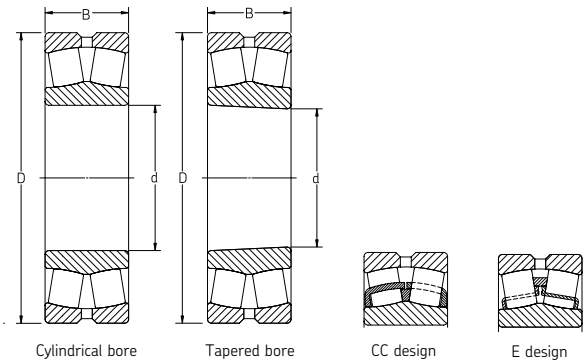
**Radial internal clearance of spherical roller bearings with tapered bore**

| Bore diameter d | | | | Radial internal clearance | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | C2 | | | | Normal | | | | C3 | | | | C4 | | | | C5 | | | |
| over | incl. | over | incl. | min | max | min | max | min | max | min | max | min | max | min | max | min | max | min | max | min | max | min | max |
| mm | | in | | µm | | in | | µm | | in | | µm | | in | | µm | | in | | µm | | in | |
| 24 | 30 | 0.9449 | 1.1811 | 20 | 30 | 0.0008 | 0.0012 | 30 | 40 | 0.0012 | 0.0016 | 40 | 55 | 0.0016 | 0.0022 | 55 | 75 | 0.0022 | 0.0030 | - | - | - | - |
| 30 | 40 | 1.1811 | 1.5748 | 25 | 35 | 0.0010 | 0.0014 | 35 | 50 | 0.0014 | 0.0020 | 50 | 65 | 0.0020 | 0.0026 | 65 | 85 | 0.0026 | 0.0033 | 85 | 105 | 0.0033 | 0.0041 |
| 40 | 50 | 1.5748 | 1.9685 | 30 | 45 | 0.0012 | 0.0018 | 45 | 60 | 0.0018 | 0.0024 | 60 | 80 | 0.0024 | 0.0031 | 80 | 100 | 0.0031 | 0.0039 | 100 | 130 | 0.0039 | 0.0051 |
| 50 | 65 | 1.9685 | 2.5591 | 40 | 55 | 0.0016 | 0.0022 | 55 | 75 | 0.0022 | 0.0030 | 75 | 95 | 0.0030 | 0.0037 | 95 | 120 | 0.0037 | 0.0047 | 120 | 160 | 0.0047 | 0.0063 |
| 65 | 80 | 2.5591 | 3.1496 | 50 | 70 | 0.0020 | 0.0028 | 70 | 95 | 0.0028 | 0.0037 | 95 | 120 | 0.0037 | 0.0047 | 120 | 150 | 0.0047 | 0.0059 | 150 | 200 | 0.0059 | 0.0079 |
| 80 | 100 | 3.1496 | 3.9370 | 55 | 80 | 0.0022 | 0.0031 | 80 | 110 | 0.0031 | 0.0043 | 110 | 140 | 0.0043 | 0.0055 | 140 | 180 | 0.0055 | 0.0071 | 180 | 230 | 0.0071 | 0.0091 |
| 100 | 120 | 3.9370 | 4.7244 | 65 | 100 | 0.0026 | 0.0039 | 100 | 135 | 0.0039 | 0.0053 | 135 | 170 | 0.0053 | 0.0067 | 170 | 220 | 0.0067 | 0.0087 | 220 | 280 | 0.0087 | 0.0110 |
| 120 | 140 | 4.7244 | 5.5118 | 80 | 120 | 0.0031 | 0.0047 | 120 | 160 | 0.0047 | 0.0063 | 160 | 200 | 0.0063 | 0.0079 | 200 | 260 | 0.0079 | 0.0102 | 260 | 330 | 0.0102 | 0.0130 |
| 140 | 160 | 5.5118 | 6.2992 | 90 | 130 | 0.0035 | 0.0051 | 130 | 180 | 0.0051 | 0.0071 | 180 | 230 | 0.0071 | 0.0091 | 230 | 300 | 0.0091 | 0.0118 | 300 | 380 | 0.0118 | 0.0150 |
| 160 | 180 | 6.2992 | 7.0866 | 100 | 140 | 0.0039 | 0.0055 | 140 | 200 | 0.0055 | 0.0079 | 200 | 260 | 0.0079 | 0.0102 | 260 | 340 | 0.0102 | 0.0134 | 340 | 430 | 0.0134 | 0.0169 |
| 180 | 200 | 7.0866 | 7.8740 | 110 | 160 | 0.0043 | 0.0063 | 160 | 220 | 0.0063 | 0.0087 | 220 | 290 | 0.0087 | 0.0114 | 290 | 370 | 0.0114 | 0.0146 | 370 | 470 | 0.0146 | 0.0185 |
| 200 | 225 | 7.8740 | 8.8583 | 120 | 180 | 0.0047 | 0.0071 | 180 | 250 | 0.0071 | 0.0098 | 250 | 320 | 0.0098 | 0.0126 | 320 | 410 | 0.0126 | 0.0161 | 410 | 520 | 0.0161 | 0.0205 |
| 225 | 250 | 8.8583 | 9.8425 | 140 | 200 | 0.0055 | 0.0079 | 200 | 270 | 0.0079 | 0.0106 | 270 | 350 | 0.0106 | 0.0138 | 350 | 450 | 0.0138 | 0.0177 | 450 | 570 | 0.0177 | 0.0224 |
| 250 | 280 | 9.8425 | 11.0236 | 150 | 220 | 0.0059 | 0.0087 | 220 | 300 | 0.0087 | 0.0118 | 300 | 390 | 0.0118 | 0.0154 | 390 | 490 | 0.0154 | 0.0193 | 490 | 620 | 0.0193 | 0.0244 |
| 280 | 315 | 11.0236 | 12.4016 | 170 | 240 | 0.0067 | 0.0094 | 240 | 330 | 0.0094 | 0.0130 | 330 | 430 | 0.0130 | 0.0169 | 430 | 540 | 0.0169 | 0.0213 | 540 | 680 | 0.0213 | 0.0268 |
| 315 | 355 | 12.4016 | 13.9764 | 190 | 270 | 0.0075 | 0.0106 | 270 | 360 | 0.0106 | 0.0142 | 360 | 470 | 0.0142 | 0.0185 | 470 | 590 | 0.0185 | 0.0232 | 590 | 740 | 0.0232 | 0.0291 |
| 355 | 400 | 13.9764 | 15.7480 | 210 | 300 | 0.0083 | 0.0118 | 300 | 400 | 0.0118 | 0.0157 | 400 | 520 | 0.0157 | 0.0205 | 520 | 650 | 0.0205 | 0.0256 | 650 | 820 | 0.0256 | 0.0323 |
| 400 | 450 | 15.7480 | 17.7165 | 230 | 330 | 0.0091 | 0.0130 | 330 | 440 | 0.0130 | 0.0173 | 440 | 570 | 0.0173 | 0.0224 | 570 | 720 | 0.0224 | 0.0283 | 720 | 910 | 0.0283 | 0.0358 |
| 450 | 500 | 17.7165 | 19.6850 | 260 | 370 | 0.0102 | 0.0146 | 370 | 490 | 0.0146 | 0.0193 | 490 | 630 | 0.0193 | 0.0248 | 630 | 790 | 0.0248 | 0.0311 | 790 | 1000 | 0.0311 | 0.0394 |
| 500 | 560 | 19.6850 | 22.0472 | 290 | 410 | 0.0114 | 0.0161 | 410 | 540 | 0.0161 | 0.0213 | 540 | 680 | 0.0213 | 0.0268 | 680 | 870 | 0.0268 | 0.0343 | 870 | 1100 | 0.0343 | 0.0433 |
| 560 | 630 | 22.0472 | 24.8031 | 320 | 460 | 0.0126 | 0.0181 | 460 | 600 | 0.0181 | 0.0236 | 600 | 760 | 0.0236 | 0.0299 | 760 | 980 | 0.0299 | 0.0386 | 980 | 1230 | 0.0386 | 0.0484 |
| 630 | 710 | 24.8031 | 27.9528 | 350 | 510 | 0.0138 | 0.0201 | 510 | 670 | 0.0201 | 0.0264 | 670 | 850 | 0.0264 | 0.0335 | 850 | 1090 | 0.0335 | 0.0429 | 1090 | 1360 | 0.0429 | 0.0535 |
| 710 | 800 | 27.9528 | 31.4961 | 390 | 570 | 0.0154 | 0.0224 | 570 | 750 | 0.0224 | 0.0295 | 750 | 960 | 0.0295 | 0.0378 | 960 | 1220 | 0.0378 | 0.0480 | 1220 | 1500 | 0.0480 | 0.0591 |
| 800 | 900 | 31.4961 | 35.4331 | 440 | 640 | 0.0173 | 0.0252 | 640 | 840 | 0.0252 | 0.0331 | 840 | 1070 | 0.0331 | 0.0421 | 1070 | 1370 | 0.0421 | 0.0539 | 1370 | 1690 | 0.0539 | 0.0665 |
| 900 | 1000 | 35.4331 | 39.3701 | 490 | 710 | 0.0193 | 0.0280 | 710 | 930 | 0.0280 | 0.0366 | 930 | 1190 | 0.0366 | 0.0469 | 1190 | 1520 | 0.0469 | 0.0598 | 1520 | 1860 | 0.0598 | 0.0732 |
| 1000 | 1120 | 39.3701 | 44.0945 | 530 | 770 | 0.0209 | 0.0303 | 770 | 1030 | 0.0303 | 0.0406 | 1030 | 1300 | 0.0406 | 0.0512 | 1300 | 1670 | 0.0512 | 0.0657 | 1670 | 2050 | 0.0657 | 0.0807 |
| 1120 | 1250 | 44.0945 | 49.2126 | 570 | 830 | 0.0224 | 0.0327 | 830 | 1120 | 0.0327 | 0.0441 | 1120 | 1420 | 0.0441 | 0.0559 | 1420 | 1830 | 0.0559 | 0.0720 | 1830 | 2250 | 0.0720 | 0.0886 |

**SKF Explorer**

**Series: 21305 CC – 21320 E**
**Size: 25 mm – 100 mm**
**0.9843 in – 3.9370 in**

**Series: 22205 E – 22224 E**
**Size: 25 mm – 120 mm**
**0.9843 in – 4.7244 in**




Cylindrical bore | Tapered bore | CC design | E design

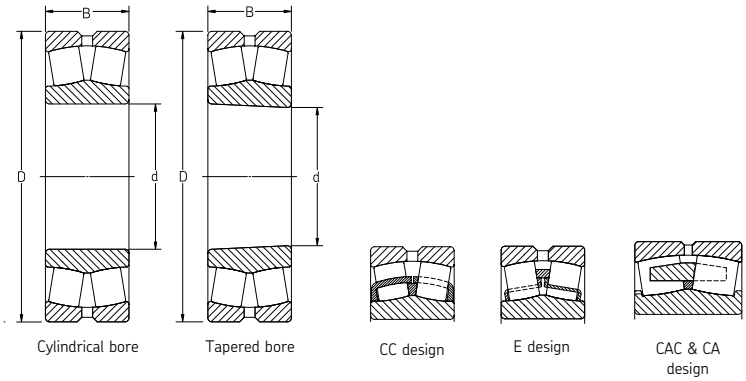
| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 21305 CC | 25 | 0.9843 | 62 | 2.4409 | 17 | 0.6693 | 49 100 | 11 030 | 41 500 | 9 330 | 9 300 | 12 000 | 0.28 | 0.62 | 0.30 | 2.3 | 3.4 |
| 21306 CC | 30 | 1.1811 | 72 | 2.8346 | 19 | 0.7480 | 65 700 | 14 760 | 61 000 | 13 710 | 8 200 | 10 000 | 0.41 | 0.90 | 0.27 | 2.5 | 3.7 |
| 21307 CC | 35 | 1.3780 | 80 | 3.1496 | 21 | 0.8268 | 79 200 | 17 800 | 72 000 | 16 180 | 7 300 | 9 500 | 0.55 | 1.21 | 0.28 | 2.4 | 3.6 |
| 21308 E | 40 | 1.5748 | 90 | 3.5433 | 23 | 0.9055 | 107 000 | 24 040 | 108 000 | 24 270 | 7 000 | 9 500 | 0.75 | 1.65 | 0.24 | 2.8 | 4.2 |
| 21309 E | 45 | 1.7717 | 100 | 3.9370 | 25 | 0.9843 | 129 000 | 28 990 | 127 000 | 28 540 | 6 300 | 8 500 | 0.99 | 2.18 | 0.24 | 2.8 | 4.2 |
| 21310 E | 50 | 1.9685 | 110 | 4.3307 | 27 | 1.0630 | 159 000 | 35 730 | 163 000 | 36 630 | 5 600 | 7 500 | 1.35 | 2.98 | 0.24 | 2.8 | 4.2 |
| 21311 E | 55 | 2.1654 | 120 | 4.7244 | 29 | 1.1417 | 159 000 | 35 730 | 163 000 | 36 630 | 5 600 | 7 500 | 1.70 | 3.75 | 0.24 | 2.8 | 4.2 |
| 21312 E | 60 | 2.3622 | 130 | 5.1181 | 31 | 1.2205 | 217 000 | 48 760 | 240 000 | 53 900 | 4 800 | 6 300 | 2.10 | 4.63 | 0.22 | 3.0 | 4.6 |
| 21313 E | 65 | 2.5591 | 140 | 5.5118 | 33 | 1.2992 | 243 000 | 54 600 | 270 000 | 60 700 | 4 300 | 6 000 | 2.55 | 5.62 | 0.22 | 3.0 | 4.6 |
| 21314 E | 70 | 2.7559 | 150 | 5.9055 | 35 | 1.3780 | 291 000 | 65 400 | 325 000 | 73 000 | 4 000 | 5 600 | 3.10 | 6.84 | 0.22 | 3.0 | 4.6 |
| 21315 E | 75 | 2.9528 | 160 | 6.2992 | 37 | 1.4567 | 291 000 | 65 400 | 325 000 | 73 000 | 4 000 | 5 600 | 3.75 | 8.27 | 0.22 | 3.0 | 4.6 |
| 21316 E | 80 | 3.1496 | 170 | 6.6929 | 39 | 1.5354 | 331 000 | 74 400 | 375 000 | 84 300 | 3 800 | 5 300 | 4.45 | 9.81 | 0.24 | 2.8 | 4.2 |
| 21317 E | 85 | 3.3465 | 180 | 7.0866 | 41 | 1.6142 | 331 000 | 74 400 | 375 000 | 84 300 | 3 800 | 5 300 | 5.20 | 11.47 | 0.24 | 2.8 | 4.2 |
| 21318 E | 90 | 3.5433 | 190 | 7.4803 | 43 | 1.6929 | 393 000 | 88 300 | 450 000 | 101 100 | 3 600 | 4 800 | 6.10 | 13.45 | 0.24 | 2.8 | 4.2 |
| 21319 E | 95 | 3.7402 | 200 | 7.8740 | 45 | 1.7717 | 433 000 | 97 300 | 490 000 | 110 100 | 3 400 | 4 500 | 7.05 | 15.55 | 0.24 | 2.8 | 4.2 |
| 21320 E | 100 | 3.9370 | 215 | 8.4646 | 47 | 1.8504 | 433 000 | 97 300 | 490 000 | 110 100 | 3 400 | 4 500 | 8.60 | 18.96 | 0.24 | 2.8 | 4.2 |
| 22205 E | 25 | 0.9843 | 52 | 2.0472 | 18 | 0.7087 | 49 900 | 11 210 | 44 000 | 9 890 | 13 000 | 17 000 | 0.26 | 0.57 | 0.35 | 1.9 | 2.9 |
| 22206 E | 30 | 1.1811 | 62 | 2.4409 | 20 | 0.7874 | 66 100 | 14 850 | 58 500 | 13 150 | 10 000 | 14 000 | 0.29 | 0.64 | 0.31 | 2.2 | 3.3 |
| 22207 E | 35 | 1.3780 | 72 | 2.8346 | 23 | 0.9055 | 88 800 | 19 960 | 83 000 | 18 650 | 9 000 | 12 000 | 0.45 | 0.99 | 0.31 | 2.2 | 3.3 |
| 22208 E | 40 | 1.5748 | 80 | 3.1496 | 23 | 0.9055 | 98 500 | 22 130 | 91 500 | 20 560 | 8 000 | 11 000 | 0.53 | 1.17 | 0.28 | 2.4 | 3.6 |
| 22209 E | 45 | 1.7717 | 85 | 3.3465 | 23 | 0.9055 | 104 000 | 23 370 | 100 000 | 22 470 | 7 500 | 10 000 | 0.58 | 1.28 | 0.26 | 2.6 | 3.9 |
| 22210 E | 50 | 1.9685 | 90 | 3.5433 | 23 | 0.9055 | 107 000 | 24 040 | 108 000 | 24 270 | 7 000 | 9 500 | 0.63 | 1.39 | 0.24 | 2.8 | 4.2 |
| 22211 E | 55 | 2.1654 | 100 | 3.9370 | 25 | 0.9843 | 129 000 | 28 990 | 127 000 | 28 540 | 6 300 | 8 500 | 0.84 | 1.85 | 0.24 | 2.8 | 4.2 |
| 22212 E | 60 | 2.3622 | 110 | 4.3307 | 28 | 1.1024 | 159 000 | 35 730 | 163 000 | 36 630 | 5 600 | 7 500 | 1.15 | 2.54 | 0.24 | 2.8 | 4.2 |
| 22213 E | 65 | 2.5591 | 120 | 4.7244 | 31 | 1.2205 | 198 000 | 44 490 | 208 000 | 46 740 | 5 000 | 7 000 | 1.55 | 3.42 | 0.24 | 2.8 | 4.2 |
| 22214 E | 70 | 2.7559 | 125 | 4.9213 | 31 | 1.2205 | 213 000 | 47 870 | 228 000 | 51 200 | 5 000 | 6 700 | 1.55 | 3.42 | 0.23 | 2.9 | 4.4 |
| 22215 E | 75 | 2.9528 | 130 | 5.1181 | 31 | 1.2205 | 217 000 | 48 760 | 240 000 | 53 900 | 4 800 | 6 300 | 1.70 | 3.75 | 0.22 | 3.0 | 4.6 |
| 22216 E | 80 | 3.1496 | 140 | 5.5118 | 33 | 1.2992 | 243 000 | 54 600 | 270 000 | 60 700 | 4 300 | 6 000 | 2.10 | 4.63 | 0.22 | 3.0 | 4.6 |
| 22217 E | 85 | 3.3465 | 150 | 5.9055 | 36 | 1.4173 | 291 000 | 65 400 | 325 000 | 73 000 | 4 000 | 5 600 | 2.69 | 5.93 | 0.22 | 3.0 | 4.6 |
| 22218 E | 90 | 3.5433 | 160 | 6.2992 | 40 | 1.5748 | 331 000 | 74 400 | 375 000 | 84 300 | 3 800 | 5 300 | 3.40 | 7.50 | 0.24 | 2.8 | 4.2 |
| 22219 E | 95 | 3.7402 | 170 | 6.6929 | 43 | 1.6929 | 393 000 | 88 300 | 450 000 | 101 100 | 3 600 | 4 800 | 4.15 | 9.15 | 0.24 | 2.8 | 4.2 |
| 22220 E | 100 | 3.9370 | 180 | 7.0866 | 46 | 1.8110 | 433 000 | 97 300 | 490 000 | 110 100 | 3 400 | 4 500 | 4.90 | 10.80 | 0.24 | 2.8 | 4.2 |
| 22222 E | 110 | 4.3307 | 200 | 7.8740 | 53 | 2.0866 | 572 000 | 128 500 | 640 000 | 143 800 | 3 000 | 4 000 | 7.00 | 15.44 | 0.25 | 2.7 | 4.0 |
| 22224 E | 120 | 4.7244 | 215 | 8.4646 | 58 | 2.2835 | 652 000 | 146 500 | 765 000 | 171 900 | 2 800 | 3 800 | 8.70 | 19.18 | 0.26 | 2.6 | 3.9 |

***Consult SKF USA Inc. prior to design change or order placement.***

SKF Explorer

**Series: 22226 E – 22272 CA/W33**
**Size: 130 mm – 360 mm**
**5.1181 in – 14.1732 in**

**Series: 22308 E – 22330 CC/W33**
**Size: 40 mm – 150 mm**
**1.5748 in – 5.9055 in**




Cylindrical bore | Tapered bore | CC design | E design | CAC & CA design

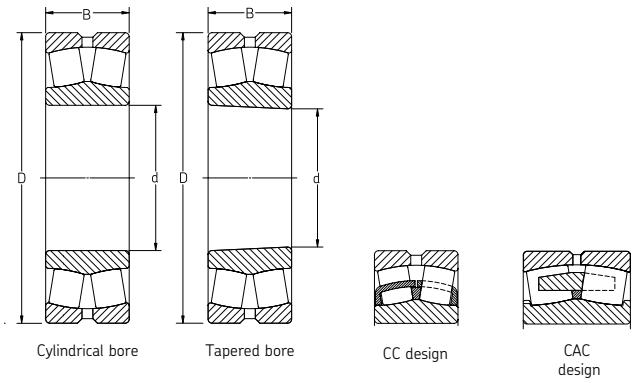
| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 22226 E | 130 | 5.1181 | 230 | 9.0551 | 64 | 2.5197 | 758 000 | 170 300 | 930 000 | 209 000 | 2 600 | 3 600 | 11.00 | 24.26 | 0.27 | 2.5 | 3.7 |
| 22228 CC/W33 | 140 | 5.5118 | 250 | 9.8425 | 68 | 2.6772 | 743 000 | 167 000 | 900 000 | 202 200 | 2 400 | 3 200 | 14.00 | 30.87 | 0.26 | 2.6 | 3.9 |
| 22230 CC/W33 | 150 | 5.9055 | 270 | 10.6299 | 73 | 2.8740 | 898 000 | 201 800 | 1 080 000 | 242 700 | 2 200 | 3 000 | 18.00 | 39.69 | 0.26 | 2.6 | 3.9 |
| 22232 CC/W33 | 160 | 6.2992 | 290 | 11.4173 | 80 | 3.1496 | 1 043 000 | 234 400 | 1 290 000 | 289 900 | 2 000 | 2 800 | 22.50 | 49.61 | 0.26 | 2.6 | 3.9 |
| 22234 CC/W33 | 170 | 6.6929 | 310 | 12.2047 | 86 | 3.3858 | 1 183 000 | 265 800 | 1 460 000 | 328 100 | 1 900 | 2 600 | 28.50 | 62.84 | 0.27 | 2.5 | 3.7 |
| 22236 CC/W33 | 180 | 7.0866 | 320 | 12.5984 | 86 | 3.3858 | 1 237 000 | 278 000 | 1 560 000 | 350 600 | 1 800 | 2 600 | 29.50 | 65.05 | 0.26 | 2.6 | 3.9 |
| 22238 CC/W33 | 190 | 7.4803 | 340 | 13.3858 | 92 | 3.6220 | 1 342 000 | 301 600 | 1 700 000 | 382 000 | 1 700 | 2 400 | 36.50 | 80.48 | 0.26 | 2.6 | 3.9 |
| 22240 CC/W33 | 200 | 7.8740 | 360 | 14.1732 | 98 | 3.8583 | 1 526 000 | 342 900 | 1 930 000 | 433 700 | 1 600 | 2 200 | 43.50 | 95.92 | 0.26 | 2.6 | 3.9 |
| 22244 CC/W33 | 220 | 8.6614 | 400 | 15.7480 | 108 | 4.2520 | 1 835 000 | 412 400 | 2 360 000 | 530 300 | 1 500 | 2 000 | 60.50 | 133.40 | 0.27 | 2.5 | 3.7 |
| 22248 CC/W33 | 240 | 9.4488 | 440 | 17.3228 | 120 | 4.7244 | 2 258 000 | 507 400 | 3 000 000 | 674 200 | 1 300 | 1 800 | 83.00 | 183.02 | 0.27 | 2.5 | 3.7 |
| 22252 CC/W33 | 260 | 10.2362 | 480 | 18.8976 | 130 | 5.1181 | 2 722 000 | 611 700 | 3 550 000 | 797 800 | 1 200 | 1 600 | 110.00 | 242.55 | 0.27 | 2.5 | 3.7 |
| 22252 CAC/W33 | | | | | | | | | | | | | 110.00 | 242.55 | 0.27 | 2.5 | 3.7 |
| 22256 CC/W33 | 280 | 11.0236 | 500 | 19.6850 | 130 | 5.1181 | 2 795 000 | 628 100 | 3 750 000 | 842 700 | 1 100 | 1 500 | 115.00 | 253.58 | 0.26 | 2.6 | 3.9 |
| 22260 CC/W33 | 300 | 11.8110 | 540 | 21.2598 | 140 | 5.5118 | 3 239 000 | 727 900 | 4 250 000 | 955 100 | 1 000 | 1 400 | 135.00 | 297.68 | 0.26 | 2.6 | 3.9 |
| 22264 CC/W33 | 320 | 12.5984 | 580 | 22.8346 | 150 | 5.9055 | 3 708 000 | 833 300 | 4 900 000 | 1 101 100 | 950 | 1 300 | 175.00 | 385.88 | 0.26 | 2.6 | 3.9 |
| 22272 CA/W33 | 360 | 14.1732 | 650 | 25.5906 | 170 | 6.6929 | 4 430 000 | 995 500 | 6 200 000 | 1 393 300 | 630 | 850 | 255.00 | 562.28 | 0.26 | 2.6 | 3.9 |
| 22308 E | 40 | 1.5748 | 90 | 3.5433 | 33 | 1.2992 | 155 000 | 34 830 | 137 000 | 30 790 | 6 000 | 8 000 | 1.05 | 2.32 | 0.37 | 1.8 | 2.7 |
| 22309 E | 45 | 1.7717 | 100 | 3.9370 | 36 | 1.4173 | 190 000 | 42 700 | 176 000 | 39 550 | 5 300 | 7 000 | 1.40 | 3.09 | 0.37 | 1.8 | 2.7 |
| 22310 E | 50 | 1.9685 | 110 | 4.3307 | 40 | 1.5748 | 228 000 | 51 200 | 216 000 | 48 540 | 4 800 | 6 300 | 1.90 | 4.19 | 0.37 | 1.8 | 2.7 |
| 22311 E | 55 | 2.1654 | 120 | 4.7244 | 43 | 1.6929 | 280 000 | 62 900 | 280 000 | 62 900 | 4 300 | 5 600 | 2.45 | 5.40 | 0.35 | 1.9 | 2.9 |
| 22312 E | 60 | 2.3622 | 130 | 5.1181 | 46 | 1.8110 | 325 000 | 73 000 | 335 000 | 75 300 | 4 000 | 5 300 | 3.10 | 6.84 | 0.35 | 1.9 | 2.9 |
| 22313 E | 65 | 2.5591 | 140 | 5.5118 | 48 | 1.8898 | 357 000 | 80 200 | 360 000 | 80 900 | 3 800 | 5 000 | 3.75 | 8.27 | 0.35 | 1.9 | 2.9 |
| 22314 E | 70 | 2.7559 | 150 | 5.9055 | 51 | 2.0079 | 413 000 | 92 800 | 430 000 | 96 600 | 3 400 | 4 500 | 4.55 | 10.03 | 0.33 | 2.0 | 3.0 |
| 22315 E | 75 | 2.9528 | 160 | 6.2992 | 55 | 2.1654 | 462 000 | 103 800 | 475 000 | 106 700 | 3 200 | 4 300 | 5.55 | 12.24 | 0.35 | 1.9 | 2.9 |
| 22316 E | 80 | 3.1496 | 170 | 6.6929 | 58 | 2.2835 | 516 000 | 116 000 | 530 000 | 119 100 | 3 000 | 4 000 | 6.60 | 14.55 | 0.35 | 1.9 | 2.9 |
| 22317 E | 85 | 3.3465 | 180 | 7.0866 | 60 | 2.3622 | 577 000 | 129 700 | 620 000 | 139 300 | 2 800 | 3 800 | 7.65 | 16.87 | 0.33 | 2.0 | 3.0 |
| 22318 E | 90 | 3.5433 | 190 | 7.4803 | 64 | 2.5197 | 637 000 | 143 100 | 695 000 | 156 200 | 2 600 | 3 600 | 9.05 | 19.96 | 0.33 | 2.0 | 3.0 |
| 22319 E | 95 | 3.7402 | 200 | 7.8740 | 67 | 2.6378 | 699 000 | 157 100 | 765 000 | 171 900 | 2 600 | 3 400 | 10.50 | 23.15 | 0.33 | 2.0 | 3.0 |
| 22320 E | 100 | 3.9370 | 215 | 8.4646 | 73 | 2.8740 | 847 000 | 190 300 | 950 000 | 213 500 | 2 400 | 3 000 | 13.50 | 29.77 | 0.33 | 2.0 | 3.0 |
| 22322 E | 110 | 4.3307 | 240 | 9.4488 | 80 | 3.1496 | 989 000 | 222 200 | 1 120 000 | 251 700 | 2 000 | 2 800 | 18.40 | 40.57 | 0.33 | 2.0 | 3.0 |
| 22324 CC/W33 | 120 | 4.7244 | 260 | 10.2362 | 86 | 3.3858 | 1 019 000 | 229 000 | 1 120 000 | 251 700 | 2 000 | 2 600 | 23.00 | 50.72 | 0.35 | 1.9 | 2.9 |
| 22326 CC/W33 | 130 | 5.1181 | 280 | 11.0236 | 93 | 3.6614 | 1 176 000 | 264 300 | 1 320 000 | 296 600 | 1 800 | 2 400 | 29.00 | 63.95 | 0.35 | 1.9 | 2.9 |
| 22328 CC/W33 | 140 | 5.5118 | 300 | 11.8110 | 102 | 4.0157 | 1 357 000 | 304 900 | 1 560 000 | 350 600 | 1 700 | 2 200 | 36.50 | 80.48 | 0.35 | 1.9 | 2.9 |
| 22330 CC/W33 | 150 | 5.9055 | 320 | 12.5984 | 108 | 4.2520 | 1 539 000 | 345 800 | 1 760 000 | 395 500 | 1 600 | 2 000 | 43.50 | 95.92 | 0.35 | 1.9 | 2.9 |

*Consult SKF USA Inc. prior to design change or order placement.*

**SKF Explorer**

**Series: 22332 CC/W33 – 22380 CA/W33**
**Size: 160 mm – 400 mm**
**6.2992 in – 15.7480 in**

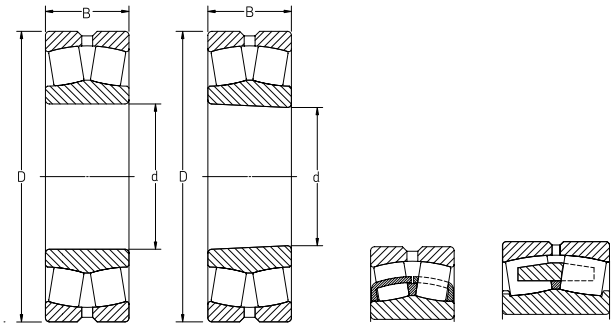
**Series: 23022 CC/W33 – 23072 CC/W33**
**Size: 110 mm – 360 mm**
**4.3307 in – 14.1732 in**




Cylindrical bore | Tapered bore | CC design | CAC design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 22332 CC/W33 | 160 | 6.2992 | 340 | 13.3858 | 114 | 4.4882 | 1 680 000 | 377 500 | 1 960 000 | 440 400 | 1 500 | 1 900 | 52.00 | 114.66 | 0.35 | 1.9 | 2.9 |
| 22334 CC/W33 | 170 | 6.6929 | 360 | 14.1732 | 120 | 4.7244 | 1 863 000 | 418 700 | 2 160 000 | 485 400 | 1 400 | 1 800 | 61.00 | 134.51 | 0.33 | 2.0 | 3.0 |
| 22336 CC/W33 | 180 | 7.0866 | 380 | 14.9606 | 126 | 4.9606 | 2 077 000 | 466 700 | 2 450 000 | 550 600 | 1 300 | 1 700 | 71.50 | 157.66 | 0.35 | 1.9 | 2.9 |
| 22338 CC/W33 | 190 | 7.4803 | 400 | 15.7480 | 132 | 5.1969 | 2 232 000 | 501 600 | 2 650 000 | 595 500 | 1 200 | 1 600 | 82.50 | 181.91 | 0.35 | 1.9 | 2.9 |
| 22340 CC/W33 | 200 | 7.8740 | 420 | 16.5354 | 138 | 5.4331 | 2 439 000 | 548 100 | 2 900 000 | 651 700 | 1 200 | 1 500 | 95.00 | 209.48 | 0.33 | 2.0 | 3.0 |
| 22344 CC/W33 | 220 | 8.6614 | 460 | 18.1102 | 145 | 5.7087 | 2 839 000 | 638 000 | 3 450 000 | 775 300 | 1 000 | 1 400 | 120.00 | 264.60 | 0.31 | 2.2 | 3.3 |
| 22348 CC/W33 | 240 | 9.4488 | 500 | 19.6850 | 155 | 6.1024 | 3 229 000 | 725 600 | 4 000 000 | 898 900 | 950 | 1 300 | 155.00 | 341.78 | 0.31 | 2.2 | 3.3 |
| 22352 CC/W33 | 260 | 10.2362 | 540 | 21.2598 | 165 | 6.4961 | 3 680 000 | 827 000 | 4 550 000 | 1 022 500 | 850 | 1 100 | 190.00 | 418.95 | 0.31 | 2.2 | 3.3 |
| 22356 CC/W33 | 280 | 11.0236 | 580 | 22.8346 | 175 | 6.8898 | 4 158 000 | 934 400 | 5 200 000 | 1 168 500 | 800 | 1 100 | 235.00 | 518.18 | 0.30 | 2.3 | 3.4 |
| 22380 CA/W33 | 400 | 15.7480 | 820 | 32.2835 | 243 | 9.5669 | 7 832 000 | 1 760 000 | 10 400 000 | 2 337 100 | 430 | 750 | 650.00 | 1433.25 | 0.30 | 2.3 | 3.4 |
| 229750 J/C3R505 | 130 | 5.1181 | 220 | 8.6614 | 73 | 2.8740 | 564 000 | 126 700 | 930 000 | 209 000 | 1 600 | 2 400 | 11.50 | 25.36 | 0.31 | 2.2 | 3.3 |
| 23022 CC/W33 | 110 | 4.3307 | 170 | 6.6929 | 45 | 1.7717 | 326 000 | 73 300 | 440 000 | 98 900 | 3 400 | 4 300 | 3.80 | 8.38 | 0.23 | 2.9 | 4.4 |
| 23024 CC/W33 | 120 | 4.7244 | 180 | 7.0866 | 46 | 1.8110 | 366 000 | 82 200 | 500 000 | 112 400 | 3 200 | 4 000 | 4.20 | 9.26 | 0.22 | 3.0 | 4.6 |
| 23026 CC/W33 | 130 | 5.1181 | 200 | 7.8740 | 52 | 2.0472 | 452 000 | 101 600 | 610 000 | 137 100 | 2 800 | 3 600 | 6.00 | 13.23 | 0.23 | 2.9 | 4.4 |
| 23028 CC/W33 | 140 | 5.5118 | 210 | 8.2677 | 53 | 2.0866 | 485 000 | 109 000 | 680 000 | 152 800 | 2 600 | 3 400 | 6.55 | 14.44 | 0.22 | 3.0 | 4.6 |
| 23030 CC/W33 | 150 | 5.9055 | 225 | 8.8583 | 56 | 2.2047 | 531 000 | 119 300 | 750 000 | 168 500 | 2 400 | 3 200 | 7.95 | 17.53 | 0.22 | 3.0 | 4.6 |
| 23032 CC/W33 | 160 | 6.2992 | 240 | 9.4488 | 60 | 2.3622 | 614 000 | 138 000 | 880 000 | 197 800 | 2 400 | 3 000 | 9.70 | 21.39 | 0.22 | 3.0 | 4.6 |
| 23034 CC/W33 | 170 | 6.6929 | 260 | 10.2362 | 67 | 2.6378 | 745 000 | 167 400 | 1 060 000 | 238 200 | 2 200 | 2 800 | 13.00 | 28.67 | 0.23 | 2.9 | 4.4 |
| 23036 CC/W33 | 180 | 7.0866 | 280 | 11.0236 | 74 | 2.9134 | 883 000 | 198 400 | 1 250 000 | 280 900 | 2 000 | 2 600 | 17.00 | 37.49 | 0.24 | 2.8 | 4.2 |
| 23038 CC/W33 | 190 | 7.4803 | 290 | 11.4173 | 75 | 2.9528 | 916 000 | 205 800 | 1 340 000 | 301 100 | 1 900 | 2 400 | 18.00 | 39.69 | 0.23 | 2.9 | 4.4 |
| 23040 CC/W33 | 200 | 7.8740 | 310 | 12.2047 | 82 | 3.2283 | 1 058 000 | 237 800 | 1 530 000 | 343 800 | 1 800 | 2 200 | 23.30 | 51.38 | 0.24 | 2.8 | 4.2 |
| 23044 CC/W33 | 220 | 8.6614 | 340 | 13.3858 | 90 | 3.5433 | 1 261 000 | 283 400 | 1 860 000 | 418 000 | 1 600 | 2 000 | 30.50 | 67.25 | 0.24 | 2.8 | 4.2 |
| 23048 CC/W33 | 240 | 9.4488 | 360 | 14.1732 | 92 | 3.6220 | 1 340 000 | 301 100 | 2 080 000 | 467 400 | 1 500 | 1 900 | 33.50 | 73.87 | 0.23 | 2.9 | 4.4 |
| 23052 CC/W33 | 260 | 10.2362 | 400 | 15.7480 | 104 | 4.0945 | 1 675 000 | 376 400 | 2 550 000 | 573 000 | 1 300 | 1 700 | 48.50 | 106.94 | 0.23 | 2.9 | 4.4 |
| 23056 CC/W33 | 280 | 11.0236 | 420 | 16.5354 | 106 | 4.1732 | 1 797 000 | 403 800 | 2 850 000 | 640 400 | 1 300 | 1 600 | 52.50 | 115.76 | 0.23 | 2.9 | 4.4 |
| 23056 CAC/W33 | | | | | | | 1 747 000 | 392 600 | 2 750 000 | 618 000 | 1 300 | 1 600 | 52.50 | 115.76 | 0.23 | 2.9 | 4.4 |
| 23060 CC/W33 | 300 | 11.8110 | 460 | 18.1102 | 118 | 4.6457 | 2 219 000 | 498 700 | 3 450 000 | 775 300 | 1 200 | 1 500 | 71.50 | 157.66 | 0.23 | 2.9 | 4.4 |
| 23060 CAC/W33 | | | | | | | 2 154 000 | 484 000 | 3 350 000 | 752 800 | 1 200 | 1 500 | 71.50 | 157.66 | 0.23 | 2.9 | 4.4 |
| 23064 CC/W33 | 320 | 12.5984 | 480 | 18.8976 | 121 | 4.7638 | 2 348 000 | 527 600 | 3 800 000 | 853 900 | 1 100 | 1 400 | 78.00 | 171.99 | 0.23 | 2.9 | 4.4 |
| 23068 CC/W33 | 340 | 13.3858 | 520 | 20.4724 | 133 | 5.2362 | 2 812 000 | 631 900 | 4 550 000 | 1 022 500 | 1 000 | 1 300 | 105.00 | 231.53 | 0.24 | 2.8 | 4.2 |
| 23068 CAC/W33 | | | | | | | | | | | 1 000 | 1 300 | 105.00 | 231.53 | 0.24 | 2.8 | 4.2 |
| 23072 CC/W33 | 360 | 14.1732 | 540 | 21.2598 | 134 | 5.2756 | 2 850 000 | 640 400 | 4 800 000 | 1 078 700 | 950 | 1 200 | 110.00 | 242.55 | 0.23 | 2.9 | 4.4 |

***Consult SKF USA Inc. prior to design change or order placement.***



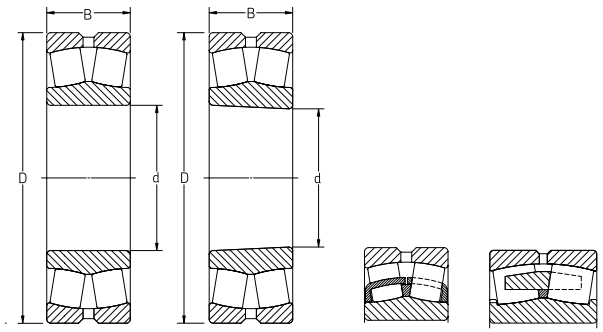

Cylindrical bore | Tapered bore | CC design | CAC & CA design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 23072 CAC/W33 | 360 | 14.1732 | 540 | 21.2598 | 134 | 5.2756 | 2773000 | 623100 | 4650000 | 1044900 | 950 | 1200 | 110.00 | 242.55 | 0.23 | 4.4 | 2.9 |
| 23076 CC/W33 | 380 | 14.9606 | 560 | 22.0472 | 135 | 5.3150 | 2984000 | 670600 | 5000000 | 1123600 | 900 | 1200 | 115.00 | 253.58 | 0.22 | 3.0 | 4.6 |
| 23076 CAC/W33 | | | | | | | 2903000 | 652400 | 4900000 | 1101100 | 900 | 1200 | 110.00 | 242.55 | 0.22 | 4.6 | 2.9 |
| 23080 CC/W33 | 400 | 15.7480 | 600 | 23.6220 | 148 | 5.8268 | 3511000 | 789000 | 5850000 | 1314600 | 850 | 1100 | 150.00 | 330.75 | 0.23 | 2.9 | 4.4 |
| 23080 CAC/W33 | | | | | | | 3413000 | 767000 | 5700000 | 1280900 | 850 | 1100 | 150.00 | 330.75 | 0.23 | 4.4 | 3.0 |
| 23084 CA/W33 | 420 | 16.5354 | 620 | 24.4094 | 150 | 5.9055 | 3541000 | 795700 | 6000000 | 1348300 | 600 | 1100 | 155.00 | 341.78 | 0.22 | 3.0 | 4.6 |
| 23088 CA/W33 | 440 | 17.3228 | 650 | 25.5906 | 157 | 6.1811 | 3831000 | 860900 | 6550000 | 1471900 | 560 | 1000 | 180.00 | 396.90 | 0.22 | 3.0 | 4.6 |
| 23092 CA/W33 | 460 | 18.1102 | 680 | 26.7717 | 163 | 6.4173 | 4065000 | 913500 | 6950000 | 1561800 | 560 | 950 | 205.00 | 452.03 | 0.22 | 3.0 | 4.6 |
| 23096 CA/W33 | 480 | 18.8976 | 700 | 27.5591 | 165 | 6.4961 | 3996000 | 898000 | 6800000 | 1528100 | 530 | 950 | 215.00 | 474.08 | 0.21 | 3.2 | 4.8 |
| 230/ 500 CA/W33 | 500 | 19.6850 | 720 | 28.3465 | 167 | 6.5748 | 4358000 | 979300 | 7800000 | 1752800 | 500 | 900 | 225.00 | 496.13 | 0.21 | 3.2 | 4.8 |
| 230/ 530 CA/W33 | 530 | 20.8661 | 780 | 30.7087 | 185 | 7.2835 | 5267000 | 1183600 | 9300000 | 2089900 | 450 | 800 | 310.00 | 683.55 | 0.22 | 3.0 | 4.6 |
| 230/ 560 CA/W33 | 560 | 22.0472 | 820 | 32.2835 | 195 | 7.6772 | 5779000 | 1298700 | 10200000 | 2292100 | 430 | 750 | 355.00 | 782.78 | 0.22 | 3.0 | 4.6 |
| 230/ 600 CA/W33 | 600 | 23.6220 | 870 | 34.2520 | 200 | 7.8740 | 6252000 | 1404900 | 11400000 | 2561800 | 400 | 700 | 405.00 | 893.03 | 0.22 | 3.0 | 4.6 |
| 230/ 630 CA/W33 | 630 | 24.8031 | 920 | 36.2205 | 212 | 8.3465 | 6898000 | 1550100 | 12500000 | 2809000 | 380 | 670 | 485.00 | 1069.43 | 0.21 | 3.2 | 4.8 |
| 230/ 670 CA/W33 | 670 | 26.3780 | 980 | 38.5827 | 230 | 9.0551 | 7919000 | 1779600 | 14600000 | 3280900 | 340 | 600 | 600.00 | 1323.00 | 0.21 | 3.2 | 4.8 |
| 230/ 710 CA/W33 | 710 | 27.9528 | 1030 | 40.5512 | 236 | 9.2913 | 8669000 | 1948100 | 16300000 | 3662900 | 300 | 560 | 670.00 | 1477.35 | 0.21 | 3.2 | 4.8 |
| 230/ 750 CA/W33 | 750 | 29.5276 | 1090 | 42.9134 | 250 | 9.8425 | 10061000 | 2260900 | 18600000 | 4179800 | 280 | 530 | 795.00 | 1752.98 | 0.21 | 3.2 | 4.8 |
| 230/ 800 CA/W33 | 800 | 31.4961 | 1150 | 45.2756 | 258 | 10.1575 | 10335000 | 2322500 | 20000000 | 4494400 | 260 | 480 | 895.00 | 1973.48 | 0.20 | 3.4 | 5.0 |
| 230/ 850 CA/W33 | 850 | 33.4646 | 1220 | 48.0315 | 272 | 10.7087 | 11291000 | 2537300 | 21600000 | 4853900 | 240 | 450 | 1050.00 | 2315.25 | 0.20 | 3.4 | 5.0 |
| 230/ 900 CA/W33 | 900 | 35.4331 | 1280 | 50.3937 | 280 | 11.0236 | 12002000 | 2697100 | 23200000 | 5213500 | 220 | 400 | 1200.00 | 2646.00 | 0.20 | 3.4 | 5.0 |
| 230/ 950 CA/W33 | 950 | 37.4016 | 1360 | 53.5433 | 300 | 11.8110 | 14363000 | 3227600 | 28500000 | 6404500 | 200 | 380 | 1450.00 | 3197.25 | 0.20 | 3.4 | 5.0 |
| 230/ 1250 CAF/W33 | 1250 | 49.2126 | 1750 | 68.8976 | 375 | 14.7638 | 21256000 | 4776600 | 45000000 | 10112400 | 130 | 240 | 2840.00 | 6262.20 | 0.19 | 3.6 | 5.3 |

*Consult SKF USA Inc. prior to design change or order placement.*

**SKF Explorer**

**Series: 23120 CC/W33 – 231/530 CA/W33**
**Size: 100 mm – 530 mm**
**3.9370 in – 20.8661 in**




Cylindrical bore | Tapered bore | CC design | CAC & CA design

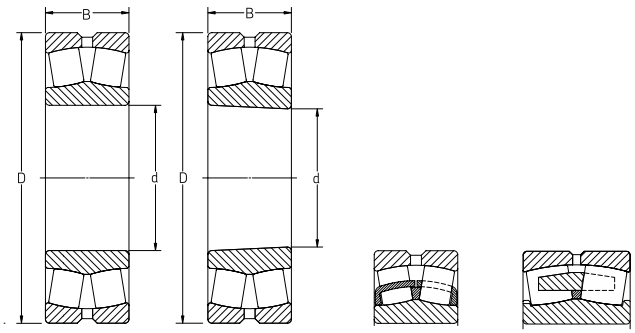
| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 23120 CC/W33 | 100 | 3.9370 | 165 | 6.4961 | 52 | 2.0472 | 385 000 | 86 500 | 490 000 | 110 100 | 3 000 | 4 000 | 4.55 | 10.03 | 0.30 | 2.3 | 3.4 |
| 23122 CC/W33 | 110 | 4.3307 | 180 | 7.0866 | 56 | 2.2047 | 450 000 | 101 100 | 585 000 | 131 500 | 2 800 | 3 600 | 5.75 | 12.68 | 0.30 | 2.3 | 3.4 |
| 23124 CC/W33 | 120 | 4.7244 | 200 | 7.8740 | 62 | 2.4409 | 534 000 | 120 000 | 695 000 | 156 200 | 2 600 | 3 400 | 8.00 | 17.64 | 0.28 | 2.4 | 3.6 |
| 23126 CC/W33 | 130 | 5.1181 | 210 | 8.2677 | 64 | 2.5197 | 586 000 | 131 700 | 780 000 | 175 300 | 2 400 | 3 200 | 8.80 | 19.40 | 0.28 | 2.4 | 3.6 |
| 23128 CC/W33 | 140 | 5.5118 | 225 | 8.8583 | 68 | 2.6772 | 659 000 | 148 100 | 900 000 | 202 200 | 2 200 | 2 800 | 10.50 | 23.15 | 0.28 | 2.4 | 3.6 |
| 23130 CC/W33 | 150 | 5.9055 | 250 | 9.8425 | 80 | 3.1496 | 883 000 | 198 400 | 1 200 000 | 269 700 | 2 000 | 2 600 | 16.00 | 35.28 | 0.30 | 2.3 | 3.4 |
| 23132 CC/W33 | 160 | 6.2992 | 270 | 10.6299 | 86 | 3.3858 | 1 029 000 | 231 200 | 1 370 000 | 307 900 | 1 900 | 2 400 | 20.50 | 45.20 | 0.30 | 2.3 | 3.4 |
| 23134 CC/W33 | 170 | 6.6929 | 280 | 11.0236 | 88 | 3.4646 | 1 086 000 | 244 000 | 1 500 000 | 337 100 | 1 800 | 2 400 | 22.00 | 48.51 | 0.30 | 2.3 | 3.4 |
| 23136 CC/W33 | 180 | 7.0866 | 300 | 11.8110 | 96 | 3.7795 | 1 263 000 | 283 800 | 1 760 000 | 395 500 | 1 700 | 2 200 | 28.00 | 61.74 | 0.30 | 2.3 | 3.4 |
| 23138 CC/W33 | 190 | 7.4803 | 320 | 12.5984 | 104 | 4.0945 | 1 456 000 | 327 200 | 2 080 000 | 467 400 | 1 500 | 2 000 | 35.00 | 77.18 | 0.31 | 2.2 | 3.3 |
| 23140 CC/W33 | 200 | 7.8740 | 340 | 13.3858 | 112 | 4.4094 | 1 665 000 | 374 200 | 2 360 000 | 530 300 | 1 500 | 1 900 | 43.00 | 94.82 | 0.31 | 2.2 | 3.3 |
| 23144 CC/W33 | 220 | 8.6614 | 370 | 14.5669 | 120 | 4.7244 | 1 888 000 | 424 300 | 2 750 000 | 618 000 | 1 300 | 1 700 | 53.50 | 117.97 | 0.30 | 2.3 | 3.4 |
| 23148 CC/W33 | 240 | 9.4488 | 400 | 15.7480 | 128 | 5.0394 | 2 187 000 | 491 500 | 3 200 000 | 719 100 | 1 200 | 1 600 | 66.50 | 146.63 | 0.30 | 2.3 | 3.4 |
| 23152 CC/W33 | 260 | 10.2362 | 440 | 17.3228 | 144 | 5.6693 | 2 664 000 | 598 700 | 3 900 000 | 876 400 | 1 100 | 1 400 | 90.50 | 199.55 | 0.31 | 2.2 | 3.3 |
| 23152 CAC/W33 | | | | | | | 2 568 000 | 577 100 | 3 750 000 | 842 700 | 1 100 | 1 400 | 91.00 | 200.66 | 0.31 | 3.3 | 4.4 |
| 23156 CC/W33 | 280 | 11.0236 | 460 | 18.1102 | 146 | 5.7480 | 2 784 000 | 625 600 | 4 250 000 | 955 100 | 1 000 | 1 300 | 97.00 | 213.89 | 0.30 | 2.3 | 3.4 |
| 23156 CAC/W33 | | | | | | | 2 688 000 | 604 000 | 4 000 000 | 898 900 | 1 000 | 1 300 | 97.00 | 213.89 | 0.30 | 3.4 | 4.6 |
| 23160 CC/W33 | 300 | 11.8110 | 500 | 19.6850 | 160 | 6.2992 | 3 368 000 | 756 900 | 5 100 000 | 1 146 100 | 950 | 1 200 | 125.00 | 275.63 | 0.30 | 2.3 | 3.4 |
| 23160 CAC/W33 | | | | | | | 3 135 000 | 704 500 | 4 650 000 | 1 044 900 | 950 | 1 200 | 125.00 | 275.63 | 2.3 | 3.4 | 4.4 |
| 23164 CC/W33 | 320 | 12.5984 | 540 | 21.2598 | 176 | 6.9291 | 3 923 000 | 881 600 | 6 000 000 | 1 348 300 | 850 | 1 100 | 165.00 | 363.83 | 0.31 | 2.2 | 3.3 |
| 23164 CAC/W33 | | | | | | | 3 653 000 | 820 900 | 5 500 000 | 1 236 000 | 850 | 1 100 | 165.00 | 363.83 | 2.2 | 3.3 | 4.4 |
| 23168 CC/W33 | 340 | 13.3858 | 580 | 22.8346 | 190 | 7.4803 | 4 445 000 | 998 900 | 6 800 000 | 1 528 100 | 800 | 1 000 | 210.00 | 463.05 | 0.31 | 2.2 | 3.3 |
| 23168 CAC/W33 | | | | | | | 4 285 000 | 962 900 | 6 550 000 | 1 471 900 | 800 | 1 000 | 210.00 | 463.05 | 2.2 | 3.3 | 4.2 |
| 23172 CC/W33 | 360 | 14.1732 | 600 | 23.6220 | 192 | 7.5591 | 4 515 000 | 1 014 600 | 6 950 000 | 1 561 800 | 750 | 1 000 | 220.00 | 485.10 | 0.30 | 2.3 | 3.4 |
| 23172 CAC/W33 | | | | | | | | | | | 750 | 1 000 | 220.00 | 485.10 | 2.3 | 3.4 | 4.4 |
| 23176 CA/W33 | 380 | 14.9606 | 620 | 24.4094 | 194 | 7.6378 | 4 561 000 | 1 024 900 | 7 100 000 | 1 595 500 | 560 | 1 000 | 230.00 | 507.15 | 0.30 | 2.3 | 3.4 |
| 23180 CA/W33 | 400 | 15.7480 | 650 | 25.5906 | 200 | 7.8740 | 4 864 000 | 1 093 000 | 7 650 000 | 1 719 100 | 530 | 950 | 265.00 | 584.33 | 0.28 | 2.4 | 3.6 |
| 23184 CJ/W33 | 420 | 16.5354 | 700 | 27.5591 | 224 | 8.8189 | 5 919 000 | 1 330 100 | 9 300 000 | 2 089 900 | 480 | 900 | 350.00 | 771.75 | 0.30 | 2.3 | 3.4 |
| 23188 CA/W33 | 440 | 17.3228 | 720 | 28.3465 | 226 | 8.8976 | 6 215 000 | 1 396 600 | 10 000 000 | 2 247 200 | 450 | 850 | 360.00 | 793.80 | 0.30 | 2.3 | 3.4 |
| 23192 CA/W33 | 460 | 18.1102 | 760 | 29.9213 | 240 | 9.4488 | 6 760 000 | 1 519 100 | 10 800 000 | 2 427 000 | 430 | 800 | 440.00 | 970.20 | 0.30 | 2.3 | 3.4 |
| 23196 CA/W33 | 480 | 18.8976 | 790 | 31.1024 | 248 | 9.7638 | 7 362 000 | 1 654 400 | 12 000 000 | 2 696 600 | 400 | 750 | 485.00 | 1069.43 | 0.30 | 2.3 | 3.4 |
| 231 / 500 CA/W33 | 500 | 19.6850 | 830 | 32.6772 | 264 | 10.3937 | 8 037 000 | 1 806 100 | 12 900 000 | 2 898 900 | 380 | 700 | 580.00 | 1278.90 | 0.30 | 2.3 | 3.4 |
| 231 / 530 CA/W33 | 530 | 20.8661 | 870 | 34.2520 | 272 | 10.7087 | 8 526 000 | 1 916 000 | 14 000 000 | 3 146 100 | 360 | 670 | 645.00 | 1422.23 | 0.30 | 2.3 | 3.4 |

***Consult SKF USA Inc. prior to design change or order placement.***

SKF Explorer

**Series: 231/560 CA/W33 – 231/1000 CAF/W33**
**Size: 560 mm – 1000 mm**
**22.0472 in – 39.3701 in**

**Series: 23218 CC/W33 – 23272 CA/W33**
**Size: 90 mm – 360 mm**
**3.5433 in – 14.1732 in**




Cylindrical bore | Tapered bore | CC design | CAC & CA design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 231/560 CA/W33 | 560 | 22.0472 | 920 | 36.2205 | 280 | 11.0236 | 9 596 000 | 2 156 400 | 16 000 000 | 3 595 500 | 340 | 630 | 740.00 | 1631.70 | 0.30 | 2.3 | 3.4 |
| 231/600 CA/W33 | 600 | 23.6220 | 980 | 38.5827 | 300 | 11.8110 | 10 738 000 | 2 413 000 | 18 000 000 | 4 044 900 | 320 | 560 | 895.00 | 1973.48 | 0.30 | 2.3 | 3.4 |
| 231/630 CA/W33 | 630 | 24.8031 | 1 030 | 40.5512 | 315 | 12.4016 | 12 600 000 | 2 831 500 | 20 800 000 | 4 674 200 | 260 | 530 | 1050.00 | 2315.25 | 0.30 | 2.3 | 3.4 |
| 231/670 CA/W33 | 670 | 26.3780 | 1 090 | 42.9134 | 336 | 13.2283 | 13 101 000 | 2 944 000 | 22 400 000 | 5 033 700 | 240 | 500 | 1250.00 | 2756.25 | 0.30 | 2.3 | 3.4 |
| 231/710 CA/W33 | 710 | 27.9528 | 1 150 | 45.2756 | 345 | 13.5827 | 14 732 000 | 3 310 600 | 26 000 000 | 5 842 700 | 240 | 450 | 1450.00 | 3197.25 | 0.28 | 2.4 | 3.6 |
| 231/750 CA/W33 | 750 | 29.5276 | 1 220 | 48.0315 | 365 | 14.3701 | 16 518 000 | 3 711 900 | 29 000 000 | 6 516 900 | 220 | 430 | 1700.00 | 3748.50 | 0.28 | 2.4 | 3.6 |
| 231/800 CA/W33 | 800 | 31.4961 | 1 280 | 50.3937 | 375 | 14.7638 | 18 033 000 | 4 052 400 | 31 500 000 | 7 078 700 | 200 | 400 | 1920.00 | 4233.60 | 0.28 | 2.4 | 3.6 |
| 231/1000 CAF/W33 | 1 000 | 39.3701 | 1 580 | 62.2047 | 462 | 18.1890 | 25 650 000 | 5 764 000 | 48 000 000 | 10 786 500 | 140 | 280 | 3500.00 | 7717.50 | 0.28 | 2.4 | 3.6 |
| 23218 CC/W33 | 90 | 3.5433 | 160 | 6.2992 | 52.4 | 2.0630 | 372 000 | 83 600 | 440 000 | 98 900 | 2 800 | 3 800 | 4.65 | 10.25 | 0.31 | 2.2 | 3.3 |
| 23220 CC/W33 | 100 | 3.9370 | 180 | 7.0866 | 60.3 | 2.3740 | 498 000 | 111 900 | 600 000 | 134 800 | 2 400 | 3 400 | 6.85 | 15.10 | 0.33 | 2.0 | 3.0 |
| 23222 CC/W33 | 110 | 4.3307 | 200 | 7.8740 | 69.8 | 2.7480 | 626 000 | 140 700 | 765 000 | 171 900 | 2 200 | 3 200 | 9.85 | 21.72 | 0.33 | 2.0 | 3.0 |
| 23224 CC/W33 | 120 | 4.7244 | 215 | 8.4646 | 76 | 2.9921 | 732 000 | 164 500 | 930 000 | 209 000 | 2 000 | 2 800 | 12.00 | 26.46 | 0.35 | 1.9 | 2.9 |
| 23226 CC/W33 | 130 | 5.1181 | 230 | 9.0551 | 80 | 3.1496 | 826 000 | 185 600 | 1 060 000 | 238 200 | 1 900 | 2 600 | 14.50 | 31.97 | 0.33 | 2.0 | 3.0 |
| 23228 CC/W33 | 140 | 5.5118 | 250 | 9.8425 | 88 | 3.4646 | 962 000 | 216 200 | 1 250 000 | 280 900 | 1 700 | 2 400 | 19.00 | 41.90 | 0.33 | 2.0 | 3.0 |
| 23230 CC/W33 | 150 | 5.9055 | 270 | 10.6299 | 96 | 3.7795 | 1 129 000 | 253 700 | 1 460 000 | 328 100 | 1 600 | 2 200 | 24.50 | 54.02 | 0.35 | 1.9 | 2.9 |
| 23232 CC/W33 | 160 | 6.2992 | 290 | 11.4173 | 104 | 4.0945 | 1 281 000 | 287 900 | 1 660 000 | 373 000 | 1 500 | 2 200 | 31.00 | 68.36 | 0.35 | 1.9 | 2.9 |
| 23234 CC/W33 | 170 | 6.6929 | 310 | 12.2047 | 110 | 4.3307 | 1 472 000 | 330 800 | 1 930 000 | 433 700 | 1 400 | 2 000 | 37.50 | 82.69 | 0.35 | 1.9 | 2.9 |
| 23236 CC/W33 | 180 | 7.0866 | 320 | 12.5984 | 112 | 4.4094 | 1 557 000 | 349 900 | 2 120 000 | 476 400 | 1 300 | 1 900 | 39.50 | 87.10 | 0.35 | 1.9 | 2.9 |
| 23238 CC/W33 | 190 | 7.4803 | 340 | 13.3858 | 120 | 4.7244 | 1 759 000 | 395 300 | 2 400 000 | 539 300 | 1 300 | 1 800 | 48.00 | 105.84 | 0.35 | 1.9 | 2.9 |
| 23240 CC/W33 | 200 | 7.8740 | 360 | 14.1732 | 128 | 5.0394 | 1 947 000 | 437 500 | 2 700 000 | 606 700 | 1 200 | 1 700 | 58.00 | 127.89 | 0.35 | 1.9 | 2.9 |
| 23244 CC/W33 | 220 | 8.6614 | 400 | 15.7480 | 144 | 5.6693 | 2 485 000 | 558 400 | 3 450 000 | 775 300 | 1 100 | 1 500 | 81.50 | 179.71 | 0.35 | 1.9 | 2.9 |
| 23248 CC/W33 | 240 | 9.4488 | 440 | 17.3228 | 160 | 6.2992 | 3 042 000 | 683 600 | 4 300 000 | 966 300 | 950 | 1 300 | 110.00 | 242.55 | 0.35 | 1.9 | 2.9 |
| 23252 CC/W33<br>23252 CAC/W33 | 260 | 10.2362 | 480 | 18.8976 | 174 | 6.8504 | 3 395 000 | 762 900 | 4 750 000 | 1 067 400 | 850 | 1 200 | 140.00 | 308.70 | 0.35 | 1.9 | 2.9 |
| 23256 CC/W33<br>23256 CAC/W33 | 280 | 11.0236 | 500 | 19.6850 | 176 | 6.9291 | 3 425 000 | 769 700 | 4 900 000 | 1 101 100 | 800 | 1 100 | 150.00 | 330.75 | 0.35 | 1.9 | 2.9 |
| 23260 CC/W33<br>23260 CAC/W33 | 300 | 11.8110 | 540 | 21.2598 | 192 | 7.5591 | 4 052 000 | 910 600 | 5 850 000 | 1 314 600 | 750 | 1 000 | 190.00 | 418.95 | 0.35 | 1.9 | 2.9 |
| 23264 CC/W33<br>23264 CAC/W33 | 320 | 12.5984 | 580 | 22.8346 | 208 | 8.1890 | 4 607 000 | 1 035 300 | 6 700 000 | 1 505 600 | 700 | 950 | 240.00 | 529.20 | 0.35 | 1.9 | 2.9 |
| 23268 CA/W33 | 340 | 13.3858 | 620 | 24.4094 | 224 | 8.8189 | 5 362 000 | 1 204 900 | 7 800 000 | 1 752 800 | 560 | 800 | 295.00 | 650.48 | 0.35 | 1.9 | 2.9 |
| 23272 CA/W33 | 360 | 14.1732 | 650 | 25.5906 | 232 | 9.1339 | 5 663 000 | 1 272 600 | 8 300 000 | 1 865 200 | 530 | 750 | 335.00 | 738.68 | 0.35 | 1.9 | 2.9 |

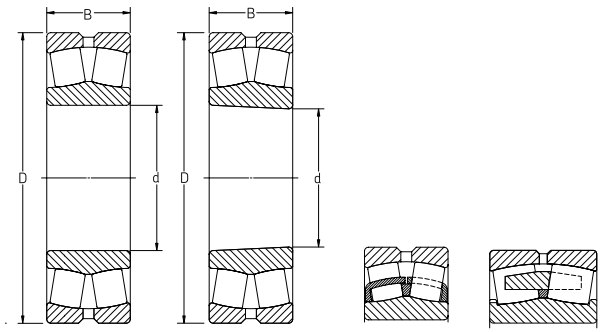
*Consult SKF USA Inc. prior to design change or order placement.*

**SKF Explorer**

**Series: 23276 CA/W33 – 232/850 CAF/W33**
**Size: 380 mm – 850 mm**
**14.9606 in – 33.4646 in**

**Series: 238/630 CAMA/W20 – 238/1180 CAFA/W20**
**Size: 630 mm – 1180 mm**
**24.8031 in – 46.4567 in**

**Series: 23936 CC/W33 – 23976 CC/W33**
**Size: 180 mm – 380 mm**
**7.0866 in – 14.9606 in**




Cylindrical bore | Tapered bore | CC design | CA design

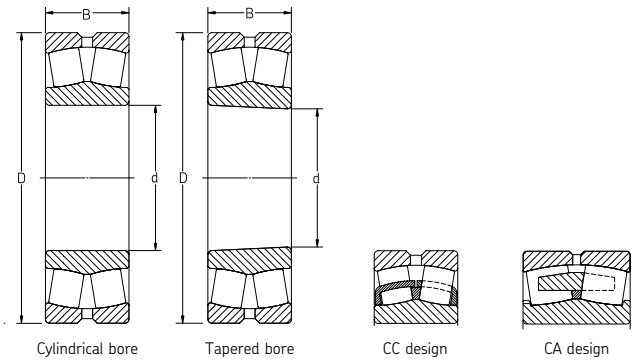
| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 23276 CA/W33 | 380 | 14.9606 | 680 | 26.7717 | 240 | 9.4488 | 6 126 000 | 1 376 600 | 9 150 000 | 2 056 200 | 500 | 750 | 375.00 | 826.88 | 0.35 | 1.9 | 2.9 |
| 23280 CA/W33 | 400 | 15.7480 | 720 | 28.3465 | 256 | 10.0787 | 6 881 000 | 1 546 300 | 10 400 000 | 2 337 100 | 480 | 670 | 450.00 | 992.25 | 0.35 | 1.9 | 2.9 |
| 23284 CA/W33 | 420 | 16.5354 | 760 | 29.9213 | 272 | 10.7087 | 7 677 000 | 1 725 200 | 11 600 000 | 2 606 700 | 450 | 630 | 535.00 | 1179.68 | 0.35 | 1.9 | 2.9 |
| 23288 CA/W33 | 440 | 17.3228 | 790 | 31.1024 | 280 | 11.0236 | 8 150 000 | 1 831 500 | 12 500 000 | 2 809 000 | 430 | 600 | 590.00 | 1300.95 | 0.35 | 1.9 | 2.9 |
| 23292 CA/W33 | 460 | 18.1102 | 830 | 32.6772 | 296 | 11.6535 | 8 958 000 | 2 013 000 | 13 700 000 | 3 078 700 | 400 | 560 | 695.00 | 1532.48 | 0.35 | 1.9 | 2.9 |
| 23296 CA/W33 | 480 | 18.8976 | 870 | 34.2520 | 310 | 12.2047 | 9 805 000 | 2 203 400 | 15 000 000 | 3 370 800 | 380 | 530 | 800.00 | 1764.00 | 0.35 | 1.9 | 2.9 |
| 232/500 CA/W33 | 500 | 19.6850 | 920 | 36.2205 | 336 | 13.2283 | 11 183 000 | 2 513 000 | 17 300 000 | 3 887 600 | 360 | 500 | 985.00 | 2171.93 | 0.35 | 1.9 | 2.9 |
| 232/530 CA/W33 | 530 | 20.8661 | 980 | 38.5827 | 355 | 13.9764 | 13 268 000 | 2 981 600 | 20 400 000 | 4 584 300 | 320 | 480 | 1200.00 | 2646.00 | 0.35 | 1.9 | 2.9 |
| 232/560 CA/W33 | 560 | 22.0472 | 1 030 | 40.5512 | 365 | 14.3701 | 13 940 000 | 3 132 600 | 22 000 000 | 4 943 800 | 280 | 430 | 1350.00 | 2976.75 | 0.35 | 1.9 | 2.9 |
| 232/600 CA/W33 | 600 | 23.6220 | 1 090 | 42.9134 | 388 | 15.2756 | 15 652 000 | 3 517 300 | 25 500 000 | 5 730 300 | 260 | 400 | 1600.00 | 3528.00 | 0.35 | 1.9 | 2.9 |
| 232/670 CA/W33 | 670 | 26.3780 | 1 220 | 48.0315 | 438 | 17.2441 | 18 650 000 | 4 191 000 | 30 500 000 | 6 853 900 | 220 | 360 | 2270.00 | 5005.35 | 0.35 | 1.9 | 2.9 |
| 232/710 CA/W33 | 710 | 27.9528 | 1 280 | 50.3937 | 450 | 17.7165 | 21 208 000 | 4 765 800 | 34 500 000 | 7 752 800 | 200 | 320 | 2610.00 | 5755.05 | 0.35 | 1.9 | 2.9 |
| 232/800 CAF/W33 | 800 | 31.4961 | 1 420 | 55.9055 | 488 | 19.2126 | 24 973 000 | 5 611 900 | 43 000 000 | 9 662 900 | 180 | 280 | 3280.00 | 7232.40 | 0.33 | 2.0 | 3.0 |
| 232/850 CAF/W33 | 850 | 33.4646 | 1 500 | 59.0551 | 515 | 20.2756 | 27 636 000 | 6 210 300 | 48 000 000 | 10 786 500 | 160 | 260 | 3940.00 | 8687.70 | 0.33 | 2.0 | 3.0 |
| 238/630 CAMA/W20 | 630 | 24.8031 | 780 | 30.7087 | 112 | 4.4094 | 2 545 000 | 571 900 | 6 100 000 | 1 370 800 | 430 | 750 | 120.00 | 264.60 | 0.12 | 5.6 | 8.4 |
| 238/670 CAMA/W20 | 670 | 26.3780 | 820 | 32.2835 | 112 | 4.4094 | 2 643 000 | 593 900 | 6 400 000 | 1 438 200 | 400 | 700 | 130.00 | 286.65 | 0.11 | 6.1 | 9.1 |
| 238/710 CAMA/W20 | 710 | 27.9528 | 870 | 34.2520 | 118 | 4.6457 | 3 013 000 | 677 100 | 7 500 000 | 1 685 400 | 360 | 670 | 153.00 | 337.37 | 0.11 | 6.1 | 9.1 |
| 238/750 CAMA/W20 | 750 | 29.5276 | 920 | 36.2205 | 128 | 5.0394 | 3 405 000 | 765 200 | 8 500 000 | 1 910 100 | 340 | 600 | 185.00 | 407.93 | 0.11 | 6.1 | 9.1 |
| 238/850 CAMA/W20 | 850 | 33.4646 | 1 030 | 40.5512 | 136 | 5.3543 | 3 882 000 | 872 400 | 10 000 000 | 2 247 200 | 260 | 530 | 240.00 | 529.20 | 0.11 | 6.1 | 9.1 |
| 238/1000 CAMA/W20 | 1 000 | 39.3701 | 1 220 | 48.0315 | 165 | 6.4961 | 5 405 000 | 1 214 600 | 14 300 000 | 3 213 500 | 220 | 400 | 410.00 | 904.05 | 0.12 | 5.6 | 8.4 |
| 238/1060 CAMA/W20 | 1 060 | 41.7323 | 1 280 | 50.3937 | 165 | 6.4961 | 5 555 000 | 1 248 300 | 15 000 000 | 3 370 800 | 200 | 380 | 435.00 | 959.18 | 0.11 | 6.1 | 9.1 |
| 238/1180 CAFA/W20 | 1 180 | 46.4567 | 1 420 | 55.9055 | 180 | 7.0866 | 6 778 000 | 1 523 100 | 18 600 000 | 4 179 800 | 170 | 320 | 575.00 | 1267.88 | 0.11 | 6.1 | 9.1 |
| 23936 CC/W33 | 180 | 7.0866 | 250 | 9.8425 | 52 | 2.0472 | 519 000 | 116 600 | 830 000 | 186 500 | 2 600 | 2 800 | 7.90 | 17.42 | 0.18 | 3.8 | 5.6 |
| 23938 CC/W33 | 190 | 7.4803 | 260 | 10.2362 | 52 | 2.0472 | 499 000 | 112 100 | 800 000 | 179 800 | 2 400 | 2 600 | 8.30 | 18.30 | 0.16 | 4.2 | 6.3 |
| 23940 CC/W33 | 200 | 7.8740 | 280 | 11.0236 | 60 | 2.3622 | 651 000 | 146 300 | 1 040 000 | 233 700 | 2 200 | 2 400 | 11.50 | 25.36 | 0.19 | 3.6 | 5.3 |
| 23944 CC/W33 | 220 | 8.6614 | 300 | 11.8110 | 60 | 2.3622 | 661 000 | 148 500 | 1 080 000 | 242 700 | 2 000 | 2 200 | 12.50 | 27.56 | 0.16 | 4.2 | 6.3 |
| 23948 CC/W33 | 240 | 9.4488 | 320 | 12.5984 | 60 | 2.3622 | 685 000 | 153 900 | 1 160 000 | 260 700 | 1 900 | 2 000 | 13.50 | 29.77 | 0.15 | 4.5 | 6.7 |
| 23952 CC/W33 | 260 | 10.2362 | 360 | 14.1732 | 75 | 2.9528 | 1 055 000 | 237 100 | 1 800 000 | 404 500 | 1 700 | 1 900 | 23.50 | 51.82 | 0.18 | 3.8 | 5.6 |
| 23956 CC/W33 | 280 | 11.0236 | 380 | 14.9606 | 75 | 2.9528 | 1 016 000 | 228 300 | 1 760 000 | 395 500 | 1 600 | 1 700 | 25.00 | 55.13 | 0.16 | 4.2 | 6.3 |
| 23960 CC/W33 | 300 | 11.8110 | 420 | 16.5354 | 90 | 3.5433 | 1 413 000 | 317 500 | 2 500 000 | 561 800 | 1 400 | 1 600 | 39.50 | 87.10 | 0.19 | 3.6 | 5.3 |
| 23964 CC/W33 | 320 | 12.5984 | 440 | 17.3228 | 90 | 3.5433 | 1 480 000 | 332 600 | 2 700 000 | 606 700 | 1 400 | 1 500 | 42.00 | 92.61 | 0.17 | 4.0 | 5.9 |
| 23968 CC/W33 | 340 | 13.3858 | 460 | 18.1102 | 90 | 3.5433 | 1 490 000 | 334 800 | 2 800 000 | 629 200 | 1 300 | 1 400 | 45.50 | 100.33 | 0.17 | 4.0 | 5.9 |
| 23972 CC/W33 | 360 | 14.1732 | 480 | 18.8976 | 90 | 3.5433 | 1 456 000 | 327 200 | 2 750 000 | 618 000 | 1 200 | 1 300 | 46.00 | 101.43 | 0.15 | 4.5 | 6.7 |
| 23976 CC/W33 | 380 | 14.9606 | 520 | 20.4724 | 106 | 4.1732 | 2 011 000 | 451 900 | 3 800 000 | 853 900 | 1 100 | 1 200 | 69.00 | 152.15 | 0.17 | 4.0 | 5.9 |

***Consult SKF USA Inc. prior to design change or order placement.***

SKF Explorer

**Series: 23980 CC/W33 – 239/1180 CAF/W33**
**Size: 400 mm – 1180 mm**
**15.7480 in – 46.4567 in**

**Series: 24013 CC/W33 – 24038 CC/W33**
**Size: 65 mm – 190 mm**
**2.5591 in – 7.4803 in**



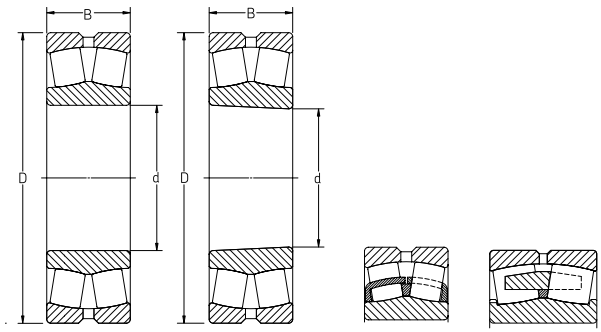

Cylindrical bore | Tapered bore | CC design | CA design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 23980 CC/W33 | 400 | 15.7480 | 540 | 21.2598 | 106 | 4.1732 | 2 038 000 | 458 000 | 3 900 000 | 876 400 | 1 100 | 1 200 | 71.00 | 156.56 | 0.16 | 4.2 | 6.3 |
| 23984 CC/W33 | 420 | 16.5354 | 560 | 22.0472 | 106 | 4.1732 | 2 083 000 | 468 100 | 4 150 000 | 932 600 | 1 000 | 1 100 | 74.50 | 164.27 | 0.16 | 4.2 | 6.3 |
| 23988 CC/W33 | 440 | 17.3228 | 600 | 23.6220 | 118 | 4.6457 | 2 506 000 | 563 100 | 4 900 000 | 1 101 100 | 950 | 1 000 | 99.50 | 219.40 | 0.16 | 4.2 | 6.3 |
| 23992 CA/W33 | 460 | 18.1102 | 620 | 24.4094 | 118 | 4.6457 | 2 558 000 | 574 800 | 5 000 000 | 1 123 600 | 600 | 1 000 | 105.00 | 231.53 | 0.16 | 4.2 | 6.3 |
| 23996 CA/W33 | 480 | 18.8976 | 650 | 25.5906 | 128 | 5.0394 | 2 990 000 | 671 900 | 5 700 000 | 1 280 900 | 560 | 1 000 | 125.00 | 275.63 | 0.18 | 3.8 | 5.6 |
| 239/500 CA/W33 | 500 | 19.6850 | 670 | 26.3780 | 128 | 5.0394 | 2 967 000 | 666 700 | 6 000 000 | 1 348 300 | 530 | 950 | 130.00 | 286.65 | 0.17 | 4.0 | 5.9 |
| 239/530 CA/W33 | 530 | 20.8661 | 710 | 27.9528 | 136 | 5.3543 | 3 308 000 | 743 400 | 6 700 000 | 1 505 600 | 500 | 900 | 155.00 | 341.78 | 0.17 | 4.0 | 5.9 |
| 239/560 CA/W33 | 560 | 22.0472 | 750 | 29.5276 | 140 | 5.5118 | 3 571 000 | 802 500 | 7 200 000 | 1 618 000 | 450 | 850 | 175.00 | 385.88 | 0.16 | 4.2 | 6.3 |
| 239/600 CA/W33 | 600 | 23.6220 | 800 | 31.4961 | 150 | 5.9055 | 4 022 000 | 903 800 | 8 300 000 | 1 865 200 | 430 | 750 | 220.00 | 485.10 | 0.17 | 4.0 | 5.9 |
| 239/630 CA/W33 | 630 | 24.8031 | 850 | 33.4646 | 165 | 6.4961 | 4 744 000 | 1 066 100 | 9 800 000 | 2 202 200 | 400 | 700 | 280.00 | 617.40 | 0.17 | 4.0 | 5.9 |
| 239/670 CA/W33 | 670 | 26.3780 | 900 | 35.4331 | 170 | 6.6929 | 5 146 000 | 1 156 400 | 10 800 000 | 2 427 000 | 360 | 670 | 315.00 | 694.58 | 0.17 | 4.0 | 5.9 |
| 239/710 CA/W33 | 710 | 27.9528 | 950 | 37.4016 | 180 | 7.0866 | 5 702 000 | 1 281 300 | 12 000 000 | 2 696 600 | 340 | 600 | 365.00 | 804.83 | 0.17 | 4.0 | 5.9 |
| 239/750 CA/W33 | 750 | 29.5276 | 1 000 | 39.3701 | 185 | 7.2835 | 6 138 000 | 1 379 300 | 13 200 000 | 2 966 300 | 320 | 560 | 420.00 | 926.10 | 0.16 | 4.2 | 6.3 |
| 239/800 CA/W33 | 800 | 31.4961 | 1 060 | 41.7323 | 195 | 7.6772 | 6 595 000 | 1 482 000 | 14 300 000 | 3 213 500 | 280 | 530 | 470.00 | 1036.35 | 0.16 | 4.2 | 6.3 |
| 239/850 CA/W33 | 850 | 33.4646 | 1 120 | 44.0945 | 200 | 7.8740 | 7 072 000 | 1 589 200 | 15 600 000 | 3 505 600 | 260 | 480 | 560.00 | 1234.80 | 0.16 | 4.2 | 6.3 |
| 239/900 CA/W33 | 900 | 35.4331 | 1 180 | 46.4567 | 206 | 8.1102 | 7 652 000 | 1 719 600 | 17 000 000 | 3 820 200 | 240 | 450 | 605.00 | 1334.03 | 0.15 | 4.5 | 6.7 |
| 239/950 CA/W33 | 950 | 37.4016 | 1 250 | 49.2126 | 224 | 8.8189 | 8 606 000 | 1 933 900 | 19 600 000 | 4 404 500 | 220 | 430 | 755.00 | 1664.78 | 0.15 | 4.5 | 6.7 |
| 239/1060 CAF/W33 | 1 060 | 41.7323 | 1 400 | 55.1181 | 250 | 9.8425 | 11 333 000 | 2 546 700 | 26 000 000 | 5 842 700 | 180 | 360 | 1100.00 | 2425.50 | 0.16 | 4.2 | 6.3 |
| 239/1180 CAF/W33 | 1 180 | 46.4567 | 1 540 | 60.6299 | 272 | 10.7087 | 13 076 000 | 2 938 400 | 31 000 000 | 6 966 300 | 150 | 300 | 1400.00 | 3087.00 | 0.16 | 4.2 | 6.3 |
| 24013 CC/W33 | 65 | 2.5591 | 100 | 3.9370 | 35 | 1.3780 | 137 000 | 30 790 | 173 000 | 38 880 | 4 300 | 6 300 | 0.95 | 2.09 | 0.27 | 2.5 | 3.7 |
| 24015 CC/W33 | 75 | 2.9528 | 115 | 4.5276 | 40 | 1.5748 | 181 000 | 40 670 | 232 000 | 52 100 | 3 800 | 5 300 | 1.55 | 3.42 | 0.28 | 2.4 | 3.6 |
| 24020 CC/W33 | 100 | 3.9370 | 150 | 5.9055 | 50 | 1.9685 | 296 000 | 66 500 | 415 000 | 93 300 | 2 800 | 4 000 | 3.15 | 6.95 | 0.28 | 2.4 | 3.6 |
| 24022 CC/W33 | 110 | 4.3307 | 170 | 6.6929 | 60 | 2.3622 | 437 000 | 98 200 | 620 000 | 139 300 | 2 400 | 3 600 | 5.00 | 11.03 | 0.33 | 2.0 | 3.0 |
| 24024 CC/W33 | 120 | 4.7244 | 180 | 7.0866 | 60 | 2.3622 | 456 000 | 102 500 | 670 000 | 150 600 | 2 400 | 3 400 | 5.45 | 12.02 | 0.30 | 2.3 | 3.4 |
| 24026 CC/W33 | 130 | 5.1181 | 200 | 7.8740 | 69 | 2.7165 | 569 000 | 127 900 | 815 000 | 183 100 | 2 000 | 3 000 | 8.05 | 17.75 | 0.31 | 2.2 | 3.3 |
| 24028 CC/W33 | 140 | 5.5118 | 210 | 8.2677 | 69 | 2.7165 | 600 000 | 134 800 | 900 000 | 202 200 | 2 000 | 2 800 | 8.55 | 18.85 | 0.30 | 2.3 | 3.4 |
| 24030 CC/W33 | 150 | 5.9055 | 225 | 8.8583 | 75 | 2.9528 | 680 000 | 152 800 | 1 040 000 | 233 700 | 1 800 | 2 600 | 10.50 | 23.15 | 0.30 | 2.3 | 3.4 |
| 24032 CC/W33 | 160 | 6.2992 | 240 | 9.4488 | 80 | 3.1496 | 783 000 | 176 000 | 1 200 000 | 269 700 | 1 700 | 2 400 | 13.00 | 28.67 | 0.30 | 2.3 | 3.4 |
| 24034 CC/W33 | 170 | 6.6929 | 260 | 10.2362 | 90 | 3.5433 | 963 000 | 216 400 | 1 460 000 | 328 100 | 1 600 | 2 400 | 17.50 | 38.59 | 0.33 | 2.0 | 3.0 |
| 24036 CC/W33 | 180 | 7.0866 | 280 | 11.0236 | 100 | 3.9370 | 1 134 000 | 254 800 | 1 730 000 | 388 800 | 1 500 | 2 200 | 23.00 | 50.72 | 0.33 | 2.0 | 3.0 |
| 24038 CC/W33 | 190 | 7.4803 | 290 | 11.4173 | 100 | 3.9370 | 1 164 000 | 261 600 | 1 800 000 | 404 500 | 1 400 | 2 000 | 24.50 | 54.02 | 0.31 | 2.2 | 3.3 |

*Consult SKF USA Inc. prior to design change or order placement.*

**SKF Explorer**

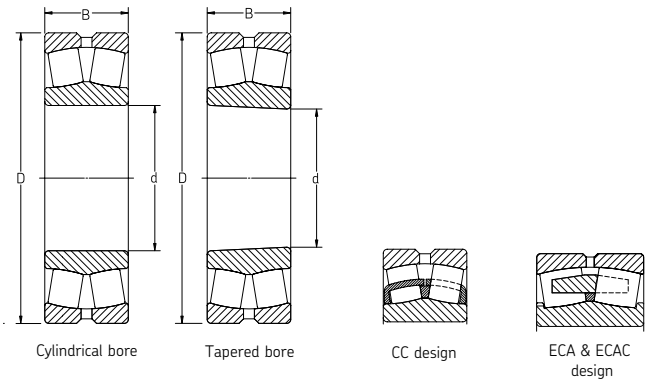
**Series: 24040 CC/W33 – 240/1180 CAF/W33**
**Size: 380 mm – 1180 mm**
**14.9606 in – 46.4567 in**




Cylindrical bore | Tapered bore | CC design | CAC & ECA design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Refer-ence speed | Limit-ing speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 24040 CC/W33 | 380 | 14.9606 | 680 | 26.7717 | 240 | 9.4488 | 6 126 000 | 1 376 600 | 9 150 000 | 2 056 200 | 500 | 750 | 375.00 | 826.88 | 0.35 | 1.9 | 2.9 |
| 24044 CC/W33 | 400 | 15.7480 | 720 | 28.3465 | 256 | 10.0787 | 6 881 000 | 1 546 300 | 10 400 000 | 2 337 100 | 480 | 670 | 450.00 | 992.25 | 0.35 | 1.9 | 2.9 |
| 24048 CC/W33 | 420 | 16.5354 | 760 | 29.9213 | 272 | 10.7087 | 7 677 000 | 1 725 200 | 11 600 000 | 2 606 700 | 450 | 630 | 535.00 | 1179.68 | 0.35 | 1.9 | 2.9 |
| 24052 CC/W33 | 440 | 17.3228 | 790 | 31.1024 | 280 | 11.0236 | 8 150 000 | 1 831 500 | 12 500 000 | 2 809 000 | 430 | 600 | 590.00 | 1300.95 | 0.35 | 1.9 | 2.9 |
| 24056 CC/W33 | 460 | 18.1102 | 830 | 32.6772 | 296 | 11.6535 | 8 958 000 | 2 013 000 | 13 700 000 | 3 078 700 | 400 | 560 | 695.00 | 1532.48 | 0.35 | 1.9 | 2.9 |
| 24060 CC/W33 | 480 | 18.8976 | 870 | 34.2520 | 310 | 12.2047 | 9 805 000 | 2 203 400 | 15 000 000 | 3 370 800 | 380 | 530 | 800.00 | 1764.00 | 0.35 | 1.9 | 2.9 |
| 24060 CAC/W33 | 500 | 19.6850 | 920 | 36.2205 | 336 | 13.2283 | 11 183 000 | 2 513 000 | 17 300 000 | 3 887 600 | 360 | 500 | 985.00 | 2171.93 | 0.35 | 1.9 | 2.9 |
| 24064 CC/W33 | 530 | 20.8661 | 980 | 38.5827 | 355 | 13.9764 | 13 268 000 | 2 981 600 | 20 400 000 | 4 584 300 | 320 | 480 | 1200.00 | 2646.00 | 0.35 | 1.9 | 2.9 |
| 24068 CC/W33 | 560 | 22.0472 | 1 030 | 40.5512 | 365 | 14.3701 | 13 940 000 | 3 132 600 | 22 000 000 | 4 943 800 | 280 | 430 | 1350.00 | 2976.75 | 0.35 | 1.9 | 2.9 |
| 24072 CC/W33 | 600 | 23.6220 | 1 090 | 42.9134 | 388 | 15.2756 | 15 652 000 | 3 517 300 | 25 500 000 | 5 730 300 | 260 | 400 | 1600.00 | 3528.00 | 0.35 | 1.9 | 2.9 |
| 24076 CC/W33 | 670 | 26.3780 | 1 220 | 48.0315 | 438 | 17.2441 | 18 650 000 | 4 191 000 | 30 500 000 | 6 853 900 | 220 | 360 | 2270.00 | 5005.35 | 0.35 | 1.9 | 2.9 |
| 24080 ECCJ/W33 | 710 | 27.9528 | 1 280 | 50.3937 | 450 | 17.7165 | 21 208 000 | 4 765 800 | 34 500 000 | 7 752 800 | 200 | 320 | 2610.00 | 5755.05 | 0.35 | 1.9 | 2.9 |
| 24084 ECA/W33 | 630 | 24.8031 | 780 | 30.7087 | 112 | 4.4094 | 2 545 000 | 571 900 | 6 100 000 | 1 370 800 | 430 | 750 | 120.00 | 264.60 | 0.12 | 5.6 | 8.4 |
| 24088 ECA/W33 | 670 | 26.3780 | 820 | 32.2835 | 112 | 4.4094 | 2 643 000 | 593 900 | 6 400 000 | 1 438 200 | 400 | 700 | 130.00 | 286.65 | 0.11 | 6.1 | 9.1 |
| 24092 ECA/W33 | 710 | 27.9528 | 870 | 34.2520 | 118 | 4.6457 | 3 013 000 | 677 100 | 7 500 000 | 1 685 400 | 360 | 670 | 153.00 | 337.37 | 0.11 | 6.1 | 9.1 |
| 24096 ECA/W33 | 750 | 29.5276 | 920 | 36.2205 | 128 | 5.0394 | 3 405 000 | 765 200 | 8 500 000 | 1 910 100 | 340 | 600 | 185.00 | 407.93 | 0.11 | 6.1 | 9.1 |
| 240/500 ECA/W33 | 850 | 33.4646 | 1 030 | 40.5512 | 136 | 5.3543 | 3 882 000 | 872 400 | 10 000 000 | 2 247 200 | 260 | 530 | 240.00 | 529.20 | 0.11 | 6.1 | 9.1 |
| 240/530 ECA/W33 | 1 000 | 39.3701 | 1 220 | 48.0315 | 165 | 6.4961 | 5 405 000 | 1 214 600 | 14 300 000 | 3 213 500 | 220 | 400 | 410.00 | 904.05 | 0.12 | 5.6 | 8.4 |
| 240/560 ECA/W33 | 180 | 7.0866 | 250 | 9.8425 | 52 | 2.0472 | 519 000 | 116 600 | 830 000 | 186 500 | 2 600 | 2 800 | 7.90 | 17.42 | 0.18 | 3.8 | 5.6 |
| 240/600 ECA/W33 | 190 | 7.4803 | 260 | 10.2362 | 52 | 2.0472 | 499 000 | 112 100 | 800 000 | 179 800 | 2 400 | 2 600 | 8.30 | 18.30 | 0.16 | 4.2 | 6.3 |
| 240/630 ECJ/W33 | 200 | 7.8740 | 280 | 11.0236 | 60 | 2.3622 | 651 000 | 146 300 | 1 040 000 | 233 700 | 2 200 | 2 400 | 11.50 | 25.36 | 0.19 | 3.6 | 5.3 |
| 240/670 ECA/W33 | 220 | 8.6614 | 300 | 11.8110 | 60 | 2.3622 | 661 000 | 148 500 | 1 080 000 | 242 700 | 2 000 | 2 200 | 12.50 | 27.56 | 0.16 | 4.2 | 6.3 |
| 240/710 ECA/W33 | 240 | 9.4488 | 320 | 12.5984 | 60 | 2.3622 | 685 000 | 153 900 | 1 160 000 | 260 700 | 1 900 | 2 000 | 13.50 | 29.77 | 0.15 | 4.5 | 6.7 |
| 240/750 ECA/W33 | 260 | 10.2362 | 360 | 14.1732 | 75 | 2.9528 | 1 055 000 | 237 100 | 1 800 000 | 404 500 | 1 700 | 1 900 | 23.50 | 51.82 | 0.18 | 3.8 | 5.6 |
| 240/800 ECA/W33 | 280 | 11.0236 | 380 | 14.9606 | 75 | 2.9528 | 1 016 000 | 228 300 | 1 760 000 | 395 500 | 1 600 | 1 700 | 25.00 | 55.13 | 0.16 | 4.2 | 6.3 |
| 240/850 ECA/W33 | 300 | 11.8110 | 420 | 16.5354 | 90 | 3.5433 | 1 413 000 | 317 500 | 2 500 000 | 561 800 | 1 400 | 1 600 | 39.50 | 87.10 | 0.19 | 3.6 | 5.3 |
| 240/900 ECA/W33 | 320 | 12.5984 | 440 | 17.3228 | 90 | 3.5433 | 1 480 000 | 332 600 | 2 700 000 | 606 700 | 1 400 | 1 500 | 42.00 | 92.61 | 0.17 | 4.0 | 5.9 |
| 240/950 CAF/W33 | 340 | 13.3858 | 460 | 18.1102 | 90 | 3.5433 | 1 490 000 | 334 800 | 2 800 000 | 629 200 | 1 300 | 1 400 | 45.50 | 100.33 | 0.17 | 4.0 | 5.9 |
| 240/1000 CAF/W33 | 360 | 14.1732 | 480 | 18.8976 | 90 | 3.5433 | 1 456 000 | 327 200 | 2 750 000 | 618 000 | 1 200 | 1 300 | 46.00 | 101.43 | 0.15 | 4.5 | 6.7 |
| 240/1060 CAF/W33 | 380 | 14.9606 | 520 | 20.4724 | 106 | 4.1732 | 2 011 000 | 451 900 | 3 800 000 | 853 900 | 1 100 | 1 200 | 69.00 | 152.15 | 0.17 | 4.0 | 5.9 |
| 240/1120 CAF/W33 | 1 120 | 44.0945 | 1 580 | 62.2047 | 462 | 18.1890 | 22 364 000 | 5 025 600 | 50 000 000 | 11 236 000 | 130 | 240 | 2925.00 | 6449.63 | 0.26 | 2.6 | 3.9 |
| 240/1180 CAF/W33 | 1 180 | 46.4567 | 1 660 | 65.3543 | 475 | 18.7008 | 25 471 000 | 5 723 800 | 58 500 000 | 13 146 100 | 130 | 220 | 3311.00 | 7300.76 | 0.26 | 2.6 | 3.9 |

***Consult SKF USA Inc. prior to design change or order placement.***




Cylindrical bore | Tapered bore | CC design | ECA & ECAC design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 24120 CC/W33 | 100 | 3.9370 | 165 | 6.4961 | 65 | 2.5591 | 468 000 | 105 200 | 640 000 | 143 800 | 2 400 | 3 200 | 5.65 | 12.46 | 0.37 | 1.8 | 2.7 |
| 24122 CC/W33 | 110 | 4.3307 | 180 | 7.0866 | 69 | 2.7165 | 539 000 | 121 100 | 750 000 | 168 500 | 2 000 | 3 000 | 7.10 | 15.66 | 0.37 | 1.8 | 2.7 |
| 24124 CC/W33 | 120 | 4.7244 | 200 | 7.8740 | 80 | 3.1496 | 679 000 | 152 600 | 950 000 | 213 500 | 1 900 | 2 600 | 10.30 | 22.71 | 0.37 | 1.8 | 2.7 |
| 24126 CC/W33 | 130 | 5.1181 | 210 | 8.2677 | 80 | 3.1496 | 699 000 | 157 100 | 1 000 000 | 224 700 | 1 700 | 2 400 | 11.00 | 24.26 | 0.35 | 1.9 | 2.9 |
| 24128 CC/W33 | 140 | 5.5118 | 225 | 8.8583 | 85 | 3.3465 | 796 000 | 178 900 | 1 160 000 | 260 700 | 1 600 | 2 200 | 13.50 | 29.77 | 0.35 | 1.9 | 2.9 |
| 24130 CC/W33 | 150 | 5.9055 | 250 | 9.8425 | 100 | 3.9370 | 1 054 000 | 236 900 | 1 530 000 | 343 800 | 1 400 | 2 000 | 20.00 | 44.10 | 0.37 | 1.8 | 2.7 |
| 24132 CC/W33 | 160 | 6.2992 | 270 | 10.6299 | 109 | 4.2913 | 1 227 000 | 275 700 | 1 760 000 | 395 500 | 1 300 | 1 900 | 25.00 | 55.13 | 0.40 | 1.7 | 2.5 |
| 24134 CC/W33 | 170 | 6.6929 | 280 | 11.0236 | 109 | 4.2913 | 1 270 000 | 285 400 | 1 860 000 | 418 000 | 1 200 | 1 800 | 27.50 | 60.64 | 0.37 | 1.8 | 2.7 |
| 24136 CC/W33 | 180 | 7.0866 | 300 | 11.8110 | 118 | 4.6457 | 1 449 000 | 325 600 | 2 160 000 | 485 400 | 1 100 | 1 600 | 34.50 | 76.07 | 0.37 | 1.8 | 2.7 |
| 24138 CC/W33 | 190 | 7.4803 | 320 | 12.5984 | 128 | 5.0394 | 1 652 000 | 371 200 | 2 500 000 | 561 800 | 1 100 | 1 500 | 43.00 | 94.82 | 0.40 | 1.7 | 2.5 |
| 24140 CC/W33 | 200 | 7.8740 | 340 | 13.3858 | 140 | 5.5118 | 1 865 000 | 419 100 | 2 800 000 | 629 200 | 1 000 | 1 400 | 53.50 | 117.97 | 0.40 | 1.7 | 2.5 |
| 24144 CC/W33 | 220 | 8.6614 | 370 | 14.5669 | 150 | 5.9055 | 2 197 000 | 493 700 | 3 350 000 | 752 800 | 850 | 1 200 | 67.00 | 147.74 | 0.40 | 1.7 | 2.5 |
| 24148 CC/W33 | 240 | 9.4488 | 400 | 15.7480 | 160 | 6.2992 | 2 489 000 | 559 300 | 3 900 000 | 876 400 | 750 | 1 100 | 83.00 | 183.02 | 0.40 | 1.7 | 2.5 |
| 24152 CC/W33 | 260 | 10.2362 | 440 | 17.3228 | 180 | 7.0866 | 3 086 000 | 693 500 | 4 800 000 | 1 078 700 | 670 | 950 | 110.00 | 242.55 | 0.40 | 1.7 | 2.5 |
| 24156 CC/W33 | 280 | 11.0236 | 460 | 18.1102 | 180 | 7.0866 | 3 183 000 | 715 300 | 5 100 000 | 1 146 100 | 630 | 900 | 120.00 | 264.60 | 0.40 | 1.7 | 2.5 |
| 24160 CC/W33 | 300 | 11.8110 | 500 | 19.6850 | 200 | 7.8740 | 3 876 000 | 871 000 | 6 300 000 | 1 415 700 | 560 | 800 | 160.00 | 352.80 | 0.40 | 1.7 | 2.5 |
| 24164 CC/W33 | 320 | 12.5984 | 540 | 21.2598 | 218 | 8.5827 | 4 395 000 | 987 600 | 7 100 000 | 1 595 500 | 500 | 700 | 210.00 | 463.05 | 0.40 | 1.7 | 2.5 |
| 24168 ECCJ/W33 | 340 | 13.3858 | 580 | 22.8346 | 243 | 9.5669 | 5 487 000 | 1 233 000 | 8 800 000 | 1 977 500 | 430 | 630 | 280.00 | 617.40 | 0.40 | 1.7 | 2.5 |
| 24168 ECAC/W33 | | | | | | | | | 8 650 000 | 1 943 800 | 430 | 630 | 270.00 | 595.35 | 0.40 | 1.7 | 2.5 |
| 24172 ECCJ/W33 | 360 | 14.1732 | 600 | 23.6220 | 243 | 9.5669 | 5 737 000 | 1 289 200 | 9 300 000 | 2 089 900 | 400 | 600 | 280.00 | 617.40 | 0.40 | 1.7 | 2.5 |
| 24176 ECA/W33 | 380 | 14.9606 | 620 | 24.4094 | 243 | 9.5669 | 5 936 000 | 1 333 900 | 10 000 000 | 2 247 200 | 360 | 530 | 300.00 | 661.50 | 0.37 | 1.8 | 2.7 |
| 24180 ECA/W33 | 400 | 15.7480 | 650 | 25.5906 | 250 | 9.8425 | 6 331 000 | 1 422 700 | 10 600 000 | 2 382 000 | 340 | 500 | 340.00 | 749.70 | 0.37 | 1.8 | 2.7 |
| 24184 ECA/W33 | 420 | 16.5354 | 700 | 27.5591 | 280 | 11.0236 | 7 577 000 | 1 702 700 | 12 500 000 | 2 809 000 | 320 | 480 | 445.00 | 981.23 | 0.40 | 1.7 | 2.5 |
| 24188 ECA/W33 | 440 | 17.3228 | 720 | 28.3465 | 280 | 11.0236 | 7 777 000 | 1 747 600 | 13 200 000 | 2 966 300 | 300 | 450 | 460.00 | 1014.30 | 0.37 | 1.8 | 2.7 |
| 24192 ECA/W33 | 460 | 18.1102 | 760 | 29.9213 | 300 | 11.8110 | 8 608 000 | 1 934 400 | 15 000 000 | 3 370 800 | 280 | 430 | 560.00 | 1234.80 | 0.37 | 1.8 | 2.7 |
| 24196 ECA/W33 | 480 | 18.8976 | 790 | 31.1024 | 308 | 12.1260 | 9 198 000 | 2 067 000 | 16 000 000 | 3 595 500 | 260 | 400 | 605.00 | 1334.03 | 0.37 | 1.8 | 2.7 |
| 241/500 ECA/W33 | 500 | 19.6850 | 830 | 32.6772 | 325 | 12.7953 | 10 123 000 | 2 274 800 | 17 300 000 | 3 887 600 | 260 | 380 | 700.00 | 1543.50 | 0.37 | 1.8 | 2.7 |
| 241/530 ECA/W33 | 530 | 20.8661 | 870 | 34.2520 | 335 | 13.1890 | 10 909 000 | 2 451 500 | 19 000 000 | 4 269 700 | 240 | 360 | 830.00 | 1830.15 | 0.37 | 1.8 | 2.7 |
| 241/560 ECJ/W33 | 560 | 22.0472 | 920 | 36.2205 | 355 | 13.9764 | 12 366 000 | 2 778 900 | 22 000 000 | 4 943 800 | 220 | 320 | 985.00 | 2171.93 | 0.35 | 1.9 | 2.9 |
| 241/600 ECA/W33 | 600 | 23.6220 | 980 | 38.5827 | 375 | 14.7638 | 13 522 000 | 3 038 700 | 24 000 000 | 5 393 300 | 200 | 300 | 1200.00 | 2646.00 | 0.37 | 1.8 | 2.7 |
| 241/630 ECA/W33 | 630 | 24.8031 | 1 030 | 40.5512 | 400 | 15.7480 | 15 001 000 | 3 371 000 | 27 000 000 | 6 067 400 | 190 | 280 | 1400.00 | 3087.00 | 0.37 | 1.8 | 2.7 |
| 241/670 ECA/W33 | 670 | 26.3780 | 1 090 | 42.9134 | 412 | 16.2205 | 16 381 000 | 3 681 100 | 29 000 000 | 6 516 900 | 180 | 260 | 1600.00 | 3528.00 | 0.37 | 1.8 | 2.7 |

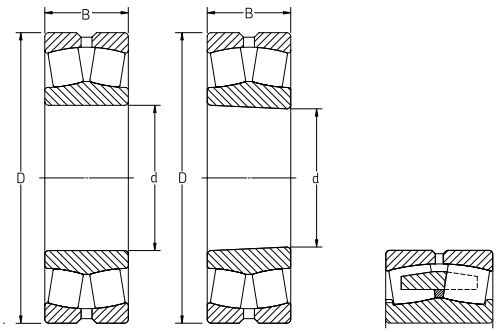
*Consult SKF USA Inc. prior to design change or order placement.*

## SKF Explorer

**Series: 241/710 ECA/W33 – 241/1000 ECAF/W33**
**Size: 710 mm – 1000 mm**
**27.9528 in – 39.3701 in**

**Series: 24892 CAMA/W20 – 248/1800 CAFA/W20**
**Size: 460 mm – 1800 mm**
**18.1102 in – 70.8661 in**

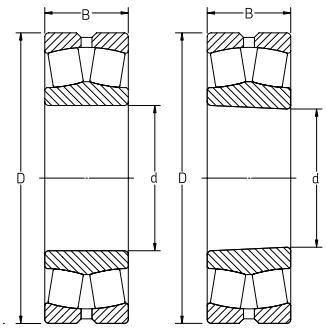
**Series: 249/710 CA/W33 – 249/1320 CAF/W33**
**Size: 710 mm – 1320 mm**
**27.9528 in – 51.9685 in**




Cylindrical bore | Tapered bore | CA, CAC & ECA design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 241/710 ECA/W33 | 710 | 27.9528 | 1 150 | 45.2756 | 438 | 17.2441 | 17 935 000 | 4 030 300 | 32 500 000 | 7 303 400 | 160 | 240 | 1900.00 | 4189.50 | 0.37 | 1.8 | 2.7 |
| 241/750 ECA/W33 | 750 | 29.5276 | 1 220 | 48.0315 | 475 | 18.7008 | 20 434 000 | 4 591 900 | 38 000 000 | 8 539 300 | 150 | 220 | 2100.00 | 4630.50 | 0.37 | 1.8 | 2.7 |
| 241/800 ECA/W33 | 800 | 31.4961 | 1 280 | 50.3937 | 475 | 18.7008 | 21 587 000 | 4 851 000 | 40 500 000 | 9 101 100 | 140 | 200 | 2300.00 | 5071.50 | 0.35 | 1.9 | 2.9 |
| 241/850 ECAF/W33 | 850 | 33.4646 | 1 360 | 53.5433 | 500 | 19.6850 | 23 827 000 | 5 354 400 | 45 000 000 | 10 112 400 | 130 | 190 | 2762.00 | 6090.21 | 0.35 | 1.9 | 2.9 |
| 241/900 ECAF/W33 | 900 | 35.4331 | 1 420 | 55.9055 | 515 | 20.2756 | 25 310 000 | 5 687 600 | 49 000 000 | 11 011 200 | 120 | 180 | 3350.00 | 7386.75 | 0.35 | 1.9 | 2.9 |
| 241/950 ECAF/W33 | 950 | 37.4016 | 1 500 | 59.0551 | 545 | 21.4567 | 27 892 000 | 6 267 900 | 55 000 000 | 12 359 600 | 110 | 160 | 3535.00 | 7794.68 | 0.35 | 1.9 | 2.9 |
| 241/1000 ECAF/W33 | 1 000 | 39.3701 | 1 580 | 62.2047 | 580 | 22.8346 | 31 174 000 | 7 005 400 | 62 000 000 | 13 932 600 | 100 | 150 | 4300.00 | 9481.50 | 0.35 | 1.9 | 2.9 |
| 24892 CAMA/W20 | 460 | 18.1102 | 580 | 22.8346 | 118 | 4.6457 | 2 082 000 | 467 900 | 4 900 000 | 1 101 100 | 630 | 1 100 | 75.50 | 166.48 | 0.17 | 4.0 | 5.9 |
| 248/530 CAMA/W20 | 530 | 20.8661 | 650 | 25.5906 | 118 | 4.6457 | 2 124 000 | 477 300 | 5 300 000 | 1 191 000 | 530 | 950 | 86.00 | 189.63 | 0.15 | 4.5 | 6.7 |
| 248/670 CAMA/W20 | 670 | 26.3780 | 820 | 32.2835 | 150 | 5.9055 | 3 598 000 | 808 500 | 9 500 000 | 2 134 800 | 400 | 700 | 172.00 | 379.26 | 0.16 | 4.2 | 6.3 |
| 248/800 CAMA/W20 | 800 | 31.4961 | 980 | 38.5827 | 180 | 7.0866 | 4 780 000 | 1 074 200 | 12 900 000 | 2 898 900 | 320 | 560 | 300.00 | 661.50 | 0.15 | 4.5 | 6.7 |
| 248/900 CAMA/W20 | 900 | 35.4331 | 1 090 | 42.9134 | 190 | 7.4803 | 5 428 000 | 1 219 800 | 15 300 000 | 3 438 200 | 240 | 480 | 370.00 | 815.85 | 0.14 | 4.8 | 7.2 |
| 248/1500 CAFA/W20 | 1 500 | 59.0551 | 1 820 | 71.6535 | 315 | 12.4016 | 14 684 000 | 3 299 800 | 45 000 000 | 10 112 400 | 110 | 220 | 1710.00 | 3770.55 | 0.15 | 4.5 | 6.7 |
| 248/1800 CAFA/W20 | 1 800 | 70.8661 | 2 180 | 85.8268 | 375 | 14.7638 | 20 274 000 | 4 556 000 | 63 000 000 | 14 157 300 | 75 | 140 | 2900.00 | 6394.50 | 0.15 | 4.5 | 6.7 |
| 249/710 CA/W33 | 710 | 27.9528 | 950 | 37.4016 | 243 | 9.5669 | 6 860 000 | 1 541 600 | 15 600 000 | 3 505 600 | 300 | 500 | 495.00 | 1091.48 | 0.22 | 3.0 | 4.6 |
| 249/750 CA/W33 | 750 | 29.5276 | 1 000 | 39.3701 | 250 | 9.8425 | 7 699 000 | 1 730 100 | 18 000 000 | 4 044 900 | 280 | 480 | 560.00 | 1234.80 | 0.22 | 3.0 | 4.6 |
| 249/800 CA/W33 | 800 | 31.4961 | 1 060 | 41.7323 | 258 | 10.1575 | 8 136 000 | 1 828 300 | 19 300 000 | 4 337 100 | 240 | 430 | 640.00 | 1411.20 | 0.21 | 3.2 | 4.8 |
| 249/850 CA/W33 | 850 | 33.4646 | 1 120 | 44.0945 | 272 | 10.7087 | 9 390 000 | 2 110 100 | 22 800 000 | 5 123 600 | 220 | 400 | 740.00 | 1631.70 | 0.22 | 3.0 | 4.6 |
| 249/950 CA/W33 | 950 | 37.4016 | 1 250 | 49.2126 | 300 | 11.8110 | 10 701 000 | 2 404 700 | 26 000 000 | 5 842 700 | 180 | 340 | 1015.00 | 2238.08 | 0.21 | 3.2 | 4.8 |
| 249/1000 CA/W33 | 1 000 | 39.3701 | 1 320 | 51.9685 | 315 | 12.4016 | 11 939 000 | 2 682 900 | 29 000 000 | 6 516 900 | 170 | 320 | 1200.00 | 2646.00 | 0.21 | 3.2 | 4.8 |
| 249/1060 CAF/W33 | 1 060 | 41.7323 | 1 400 | 55.1181 | 335 | 13.1890 | 13 354 000 | 3 000 900 | 32 500 000 | 7 303 400 | 160 | 280 | 1400.00 | 3087.00 | 0.21 | 3.2 | 4.8 |
| 249/1120 CAF/W33 | 1 120 | 44.0945 | 1 460 | 57.4803 | 335 | 13.1890 | 13 718 000 | 3 082 700 | 34 500 000 | 7 752 800 | 140 | 260 | 1500.00 | 3307.50 | 0.20 | 3.4 | 5.0 |
| 249/1180 CAF/W33 | 1 180 | 46.4567 | 1 540 | 60.6299 | 355 | 13.9764 | 15 751 000 | 3 539 600 | 40 500 000 | 9 101 100 | 130 | 240 | 1800.00 | 3969.00 | 0.20 | 3.4 | 5.0 |
| 249/1320 CAF/W33 | 1 320 | 51.9685 | 1 720 | 67.7165 | 400 | 15.7480 | 18 714 000 | 4 205 400 | 49 000 000 | 11 011 200 | 110 | 200 | 2500.00 | 5512.50 | 0.21 | 3.2 | 4.8 |

*Consult SKF USA Inc. prior to design change or order placement.*



Cylindrical bore Tapered bore

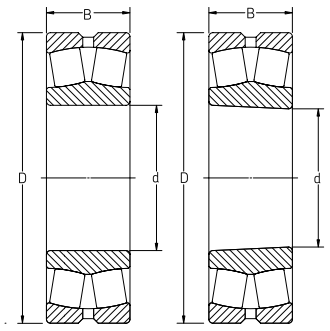
| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| BS2-2205-2RS | 25 | 0.9843 | 52 | 2.0472 | 23 | 0.9055 | 49 900 | 11 210 | 44 000 | 9 890 | 6 100 | 0.3 | 0.6 | 0.35 | 1.9 | 2.9 |
| BS2-2206-2RS | 30 | 1.1811 | 62 | 2.4409 | 25 | 0.9843 | 66 100 | 14 850 | 60 000 | 13 480 | 5 100 | 0.3 | 0.7 | 0.31 | 2.2 | 3.3 |
| BS2-2207-2RS | 35 | 1.3780 | 72 | 2.8346 | 28 | 1.1024 | 88 800 | 19 960 | 85 000 | 19 100 | 4 300 | 0.5 | 1.1 | 0.31 | 2.2 | 3.3 |
| BS2-2208-2RS | 40 | 1.5748 | 80 | 3.1496 | 28 | 1.1024 | 98 500 | 22 130 | 90 000 | 20 220 | 3 900 | 0.6 | 1.3 | 0.28 | 2.4 | 3.6 |
| BS2-2209-2RS | 45 | 1.7717 | 85 | 3.3465 | 28 | 1.1024 | 104 000 | 23 370 | 98 000 | 22 020 | 3 500 | 0.7 | 1.5 | 0.26 | 2.6 | 3.9 |
| BS2-2210-2RS | 50 | 1.9685 | 90 | 3.5433 | 28 | 1.1024 | 107 000 | 24 040 | 108 000 | 24 270 | 3 200 | 0.7 | 1.5 | 0.24 | 2.8 | 4.2 |
| BS2-2211-2RS | 55 | 2.1654 | 100 | 3.9370 | 31 | 1.2205 | 129 000 | 28 990 | 127 000 | 28 540 | 2 900 | 1.0 | 2.2 | 0.24 | 2.8 | 4.2 |
| BS2-2212-2RS | 60 | 2.3622 | 110 | 4.3307 | 34 | 1.3386 | 159 000 | 35 730 | 166 000 | 37 300 | 2 700 | 1.3 | 2.9 | 0.24 | 2.8 | 4.2 |
| BS2-2213-2RS | 65 | 2.5591 | 120 | 4.7244 | 38 | 1.4961 | 198 000 | 44 490 | 216 000 | 48 540 | 2 400 | 1.6 | 3.5 | 0.24 | 2.8 | 4.2 |
| BS2-2214-2RS | 70 | 2.7559 | 125 | 4.9213 | 38 | 1.4961 | 213 000 | 47 870 | 228 000 | 51 200 | 2 300 | 1.8 | 4.0 | 0.23 | 2.9 | 4.4 |
| BS2-2215-2RS | 75 | 2.9528 | 130 | 5.1181 | 38 | 1.4961 | 217 000 | 48 760 | 240 000 | 53 900 | 2 200 | 2.1 | 4.6 | 0.22 | 3.0 | 4.6 |
| BS2-2216-2RS | 80 | 3.1496 | 140 | 5.5118 | 40 | 1.5748 | 243 000 | 54 600 | 270 000 | 60 700 | 2 000 | 2.4 | 5.3 | 0.22 | 3.0 | 4.6 |
| BS2-2217-2RS | 85 | 3.3465 | 150 | 5.9055 | 44 | 1.7323 | 291 000 | 65 400 | 325 000 | 73 000 | 1 900 | 3.0 | 6.6 | 0.22 | 3.0 | 4.6 |
| BS2-2218-2RS | 90 | 3.5433 | 160 | 6.2992 | 48 | 1.8898 | 331 000 | 74 400 | 375 000 | 84 300 | 1 800 | 3.7 | 8.2 | 0.24 | 2.8 | 4.2 |
| BS2-2219-2RS | 95 | 3.7402 | 170 | 6.6929 | 51 | 2.0079 | 393 000 | 88 300 | 450 000 | 101 100 | 1 700 | 4.7 | 10.3 | 0.24 | 2.8 | 4.2 |
| BS2-2220-2RS5 | 100 | 3.9370 | 180 | 7.0866 | 55 | 2.1654 | 433 000 | 97 300 | 490 000 | 110 100 | 1 600 | 5.5 | 12.1 | 0.24 | 2.8 | 4.2 |
| BS2-2222-2RS5 | 110 | 4.3307 | 200 | 7.8740 | 63 | 2.4803 | 572 000 | 128 500 | 640 000 | 143 800 | 1 500 | 7.6 | 16.8 | 0.25 | 2.7 | 4.0 |
| BS2-2224-2RS5 | 120 | 4.7244 | 215 | 8.4646 | 69 | 2.7165 | 652 000 | 146 500 | 765 000 | 171 900 | 1 400 | 9.8 | 21.5 | 0.26 | 2.6 | 3.9 |
| BS2-2226-2CS5 | 130 | 5.1181 | 230 | 9.0551 | 75 | 2.9528 | 758 000 | 170 300 | 930 000 | 209 000 | 700 | 11.0 | 24.3 | 0.27 | 2.5 | 3.7 |
| 22228-2CS5 | 140 | 5.5118 | 250 | 9.8425 | 68 | 2.6772 | 744 000 | 167 200 | 900 000 | 202 200 | 670 | 14.0 | 30.9 | 0.24 | 2.8 | 4.2 |
| 22230-2CS5 | 150 | 5.9055 | 270 | 10.6299 | 73 | 2.8740 | 899 000 | 202 000 | 1 080 000 | 242 700 | 630 | 18.0 | 39.7 | 0.24 | 2.8 | 4.2 |
| 22232-2CS5 | 160 | 6.2992 | 290 | 11.4173 | 80 | 3.1496 | 1 044 000 | 234 600 | 1 290 000 | 289 900 | 600 | 22.5 | 49.6 | 0.25 | 2.7 | 4.0 |
| 22234-2CS5 | 170 | 6.6929 | 310 | 12.2047 | 86 | 3.3858 | 1 185 000 | 266 300 | 1 460 000 | 328 100 | 500 | 28.5 | 62.8 | 0.25 | 2.7 | 4.0 |
| 22236-2CS5 | 180 | 7.0866 | 320 | 12.5984 | 86 | 3.3858 | 1 239 000 | 278 400 | 1 560 000 | 350 600 | 530 | 28.9 | 63.7 | 0.24 | 2.8 | 4.2 |
| 22238-2CS5 | 190 | 7.4803 | 340 | 13.3858 | 92 | 3.6220 | 1 345 000 | 302 200 | 1 700 000 | 382 000 | 480 | 34.9 | 77.0 | 0.24 | 2.8 | 4.2 |
| 22240-2CS5 | 200 | 7.8740 | 360 | 14.1732 | 98 | 3.8583 | 1 529 000 | 343 600 | 1 930 000 | 433 700 | 430 | 42.1 | 92.8 | 0.24 | 2.8 | 4.2 |
| 22244-2CS5 | 220 | 8.6614 | 400 | 15.7480 | 108 | 4.2520 | 1 839 000 | 413 300 | 2 360 000 | 530 300 | 380 | 58.2 | 128.3 | 0.25 | 2.7 | 4.0 |

*Consult SKF USA Inc. prior to design change or order placement.*

## SKF Explorer

**Sealed Spherical Roller Bearing**
**Series: BS2-2310-2RS – BS2-2224-2RS5**
**Size: 50 mm – 120 mm**
**1.9685 in – 4.7244 in**

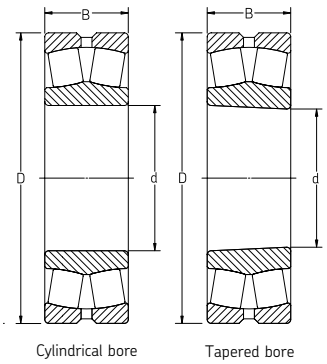
**Series: BS2-2308-2RS – 23044-2CS5**
**Size: 40 mm – 220 mm**
**1.5748 in – 8.6614 in**



Cylindrical bore Tapered bore

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| BS2-2310-2RS | 50 | 1.9685 | 110 | 4.3307 | 45 | 1.7717 | 228 000 | 51 200 | 224 000 | 50 300 | 3 000 | 2.1 | 4.6 | 0.37 | 1.8 | 2.7 |
| BS2-2311-2RS | 55 | 2.1654 | 120 | 4.7244 | 49 | 1.9291 | 280 000 | 62 900 | 280 000 | 62 900 | 2 800 | 2.8 | 6.2 | 0.35 | 1.9 | 2.9 |
| BS2-2312-2RS | 60 | 2.3622 | 130 | 5.1181 | 53 | 2.0866 | 325 000 | 73 000 | 335 000 | 75 300 | 2 500 | 3.4 | 7.5 | 0.35 | 1.9 | 2.9 |
| BS2-2313-2RS | 65 | 2.5591 | 140 | 5.5118 | 56 | 2.2047 | 357 000 | 80 200 | 360 000 | 80 900 | 2 400 | 4.2 | 9.2 | 0.35 | 1.9 | 2.9 |
| BS2-2314-2RS | 70 | 2.7559 | 150 | 5.9055 | 60 | 2.3622 | 413 000 | 92 800 | 430 000 | 96 600 | 2 100 | 5.1 | 11.2 | 0.33 | 2.0 | 3.0 |
| BS2-2315-2RS | 75 | 2.9528 | 160 | 6.2992 | 64 | 2.5197 | 462 000 | 103 800 | 475 000 | 106 700 | 2 100 | 6.5 | 14.3 | 0.35 | 1.9 | 2.9 |
| BS2-2316-2RS | 80 | 3.1496 | 170 | 6.6929 | 67 | 2.6378 | 516 000 | 116 000 | 530 000 | 119 100 | 2 000 | 7.2 | 15.9 | 0.35 | 1.9 | 2.9 |
| BS2-2318-2RS5 | 90 | 3.5433 | 190 | 7.4803 | 73 | 2.8740 | 637 000 | 143 100 | 695 000 | 156 200 | 1 700 | 9.8 | 21.6 | 0.33 | 2.0 | 3.0 |
| 22324-2CS5 | 120 | 4.7244 | 260 | 10.2362 | 86 | 3.3858 | 1 022 000 | 229 700 | 1 120 000 | 251 700 | 600 | 23.0 | 50.7 | 0.33 | 2.0 | 3.0 |
| 22326-2CS5 | 130 | 5.1181 | 280 | 11.0236 | 93 | 3.6614 | 1 178 000 | 264 700 | 1 320 000 | 296 600 | 500 | 29.0 | 63.9 | 0.33 | 2.0 | 3.0 |
| 22328-2CS5 | 140 | 5.5118 | 300 | 11.8110 | 102 | 4.0157 | 1 359 000 | 305 400 | 1 560 000 | 350 600 | 430 | 36.5 | 80.5 | 0.33 | 2.0 | 3.0 |
| 22330-2CS5 | 150 | 5.9055 | 320 | 12.5984 | 108 | 4.2520 | 1 541 000 | 346 300 | 1 760 000 | 395 500 | 400 | 43.5 | 95.9 | 0.33 | 2.0 | 3.0 |
| 22332-2CS5 | 160 | 6.2992 | 340 | 13.3858 | 114 | 4.4882 | 1 683 000 | 378 200 | 1 960 000 | 440 400 | 380 | 52.0 | 114.7 | 0.33 | 2.0 | 3.0 |
| 22338-2CS5 | 190 | 7.4803 | 400 | 15.7480 | 132 | 5.1969 | 2 236 000 | 502 500 | 2 650 000 | 595 500 | 340 | 77.7 | 171.3 | 0.33 | 2.0 | 3.0 |
| 22344-2CS5 | 220 | 8.6614 | 460 | 18.1102 | 145 | 5.7087 | 2 844 000 | 639 100 | 3 450 000 | 775 300 | 300 | 114.3 | 252.0 | 0.30 | 2.3 | 3.4 |
| BS2-2220-2RS5 | 100 | 3.9370 | 180 | 7.0866 | 55 | 2.1654 | 433 000 | 97 300 | 490 000 | 110 100 | 1 600 | 5.5 | 12.1 | 0.24 | 2.8 | 4.2 |
| BS2-2222-2RS5 | 110 | 4.3307 | 200 | 7.8740 | 63 | 2.4803 | 572 000 | 128 500 | 640 000 | 143 800 | 1 500 | 7.6 | 16.8 | 0.25 | 2.7 | 4.0 |
| BS2-2224-2RS5 | 120 | 4.7244 | 215 | 8.4646 | 69 | 2.7165 | 652 000 | 146 500 | 765 000 | 171 900 | 1 400 | 9.8 | 21.5 | 0.26 | 2.6 | 3.9 |
| BS2-2308-2RS | 40 | 1.5748 | 90 | 3.5433 | 38 | 1.4961 | 155 000 | 34 830 | 140 000 | 31 460 | 3 900 | 1.2 | 2.6 | 0.37 | 1.8 | 2.7 |
| BS2-2309-2RS | 45 | 1.7717 | 100 | 3.9370 | 42 | 1.6535 | 190 000 | 42 700 | 183 000 | 41 120 | 3 400 | 1.6 | 3.5 | 0.37 | 1.8 | 2.7 |
| 23022-2RS | 110 | 4.3307 | 170 | 6.6929 | 45 | 1.7717 | 326 000 | 73 300 | 440 000 | 98 900 | 1 500 | 3.8 | 8.4 | 0.21 | 3.2 | 4.8 |
| 23024-2RS5 | 120 | 4.7244 | 180 | 7.0866 | 46 | 1.8110 | 367 000 | 82 500 | 500 000 | 112 400 | 1 400 | 4.2 | 9.3 | 0.20 | 3.4 | 5.0 |
| 23026-2CS5 | 130 | 5.1181 | 200 | 7.8740 | 52 | 2.0472 | 452 000 | 101 600 | 610 000 | 137 100 | 800 | 6.0 | 13.2 | 0.21 | 3.2 | 4.8 |
| 23028-2CS5 | 140 | 5.5118 | 210 | 8.2677 | 53 | 2.0866 | 485 000 | 109 000 | 680 000 | 152 800 | 700 | 6.6 | 14.4 | 0.20 | 3.4 | 5.0 |
| 23030-2CS5 | 150 | 5.9055 | 225 | 8.8583 | 56 | 2.2047 | 532 000 | 119 600 | 750 000 | 168 500 | 670 | 8.0 | 17.5 | 0.20 | 3.4 | 5.0 |
| 23032-2CS5 | 160 | 6.2992 | 240 | 9.4488 | 60 | 2.3622 | 615 000 | 138 200 | 880 000 | 197 800 | 670 | 9.7 | 21.4 | 0.20 | 3.4 | 5.0 |
| 23034-2CS5 | 170 | 6.6929 | 260 | 10.2362 | 67 | 2.6378 | 746 000 | 167 600 | 1 080 000 | 242 700 | 630 | 13.0 | 28.7 | 0.22 | 3.0 | 4.6 |
| 23036-2CS5 | 180 | 7.0866 | 280 | 11.0236 | 74 | 2.9134 | 884 000 | 198 700 | 1 270 000 | 285 400 | 560 | 17.0 | 37.5 | 0.22 | 3.0 | 4.6 |
| 23040-2CS5 | 200 | 7.8740 | 310 | 12.2047 | 82 | 3.2283 | 1 059 000 | 238 000 | 1 530 000 | 343 800 | 480 | 22.0 | 48.5 | 0.22 | 3.0 | 4.6 |
| 23044-2CS5 | 220 | 8.6614 | 340 | 13.3858 | 90 | 3.5433 | 1 262 000 | 283 600 | 1 860 000 | 418 000 | 430 | 28.9 | 63.7 | 0.22 | 3.0 | 4.6 |

*Consult SKF USA Inc. prior to design change or order placement.*




Cylindrical bore Tapered bore

**SKF Explorer**
**Sealed Spherical Roller Bearing**
**Series: 23048-2CS5 – 23088-2CS5**
**Size: 240 mm – 440 mm**
**9.4488 in – 17.3228 in**

**Series: 23120-2RS5 – 23196-2CS5**
**Size: 100 mm – 480 mm**
**3.9370 in – 18.8976 in**

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 23048-2CS5 | 240 | 9.4488 | 360 | 14.1732 | 92 | 3.6220 | 1 341 000 | 301 300 | 2 080 000 | 467 400 | 400 | 31.8 | 70.1 | 0.21 | 3.2 | 4.8 |
| 23052-2CS5 | 260 | 10.2362 | 400 | 15.7480 | 104 | 4.0945 | 1 677 000 | 376 900 | 2 550 000 | 573 000 | 360 | 45.9 | 101.2 | 0.22 | 3.0 | 4.6 |
| 23060-2CS5 | 300 | 11.8110 | 460 | 18.1102 | 118 | 4.6457 | 2 222 000 | 499 300 | 3 450 000 | 775 300 | 320 | 71.5 | 157.7 | 0.22 | 3.0 | 4.6 |
| 23064-2CS5 | 320 | 12.5984 | 480 | 18.8976 | 121 | 4.7638 | 2 348 000 | 527 600 | 3 800 000 | 853 900 | 320 | 7.6 | 16.6 | 0.23 | 2.9 | 4.4 |
| 23080-2CS5 | 400 | 15.7480 | 600 | 23.6220 | 148 | 5.8268 | 3 515 000 | 789 900 | 5 850 000 | 1 314 600 | 240 | 143.3 | 316.0 | 0.21 | 3.2 | 4.8 |
| 23088-2CS5 | 440 | 17.3228 | 650 | 25.5906 | 157 | 6.1811 | 3 834 000 | 861 600 | 6 550 000 | 1 471 900 | 190 | 178.0 | 392.5 | 0.21 | 3.2 | 4.8 |
| 23120-2RS5 | 100 | 3.9370 | 165 | 6.4961 | 52 | 2.0472 | 386 000 | 86 700 | 490 000 | 110 100 | 1 700 | 4.6 | 10.0 | 0.27 | 2.5 | 3.7 |
| 23122-2CS5 | 110 | 4.3307 | 180 | 7.0866 | 56 | 2.2047 | 451 000 | 101 300 | 585 000 | 131 500 | 800 | 5.8 | 12.7 | 0.27 | 2.5 | 3.7 |
| 23124-2CS5 | 120 | 4.7244 | 200 | 7.8740 | 62 | 2.4409 | 535 000 | 120 200 | 695 000 | 156 200 | 720 | 7.6 | 16.6 | 0.27 | 2.5 | 3.7 |
| 23130-2CS5 | 150 | 5.9055 | 250 | 9.8425 | 80 | 3.1496 | 884 000 | 198 700 | 1 200 000 | 269 700 | 560 | 16.0 | 35.3 | 0.28 | 2.4 | 3.6 |
| 23132-2CS5 | 160 | 6.2992 | 270 | 10.6299 | 86 | 3.3858 | 1 030 000 | 231 500 | 1 400 000 | 314 600 | 530 | 20.5 | 45.2 | 0.28 | 2.4 | 3.6 |
| 23134-2CS5 | 170 | 6.6929 | 280 | 11.0236 | 88 | 3.4646 | 1 088 000 | 244 500 | 1 500 000 | 337 100 | 480 | 22.0 | 48.5 | 0.28 | 2.4 | 3.6 |
| 23136-2CS5 | 180 | 7.0866 | 300 | 11.8110 | 96 | 3.7795 | 1 264 000 | 284 000 | 1 800 000 | 404 500 | 430 | 28.0 | 61.7 | 0.28 | 2.4 | 3.6 |
| 23138-2CS5 | 190 | 7.4803 | 320 | 12.5984 | 104 | 4.0945 | 1 458 000 | 327 600 | 2 080 000 | 467 400 | 400 | 35.0 | 77.2 | 0.30 | 2.3 | 3.4 |
| 23140-2CS5 | 200 | 7.8740 | 340 | 13.3858 | 112 | 4.4094 | 1 668 000 | 374 800 | 2 360 000 | 530 300 | 380 | 43.0 | 94.8 | 0.30 | 2.3 | 3.4 |
| 23144-2CS5 | 220 | 8.6614 | 370 | 14.5669 | 120 | 4.7244 | 1 891 000 | 424 900 | 2 750 000 | 618 000 | 360 | 53.5 | 118.0 | 0.28 | 2.4 | 3.6 |
| 23148-2CS5 | 240 | 9.4488 | 400 | 15.7480 | 128 | 5.0394 | 2 191 000 | 492 400 | 3 200 000 | 719 100 | 340 | 66.5 | 146.6 | 0.28 | 2.4 | 3.6 |
| 23152-2CS5 | 260 | 10.2362 | 440 | 17.3228 | 144 | 5.6693 | 2 668 000 | 599 600 | 3 900 000 | 876 400 | 320 | 90.5 | 199.6 | 0.30 | 2.3 | 3.4 |
| 23156-2CS5 | 280 | 11.0236 | 460 | 18.1102 | 146 | 5.7480 | 2 788 000 | 626 500 | 4 250 000 | 955 100 | 300 | 97.0 | 213.9 | 0.28 | 2.4 | 3.6 |
| 23160-2CS5 | 300 | 11.8110 | 500 | 19.6850 | 160 | 6.2992 | 3 373 000 | 758 000 | 5 100 000 | 1 146 100 | 260 | 125.0 | 275.6 | 0.28 | 2.4 | 3.6 |
| 23164-2CS5 | 320 | 12.5984 | 540 | 21.2598 | 176 | 6.9291 | 3 929 000 | 882 900 | 6 100 000 | 1 370 800 | 260 | 165.0 | 363.8 | 0.30 | 2.3 | 3.4 |
| 23168-2CS5 | 340 | 13.3858 | 580 | 22.8346 | 190 | 7.4803 | 4 452 000 | 1 000 400 | 6 800 000 | 1 528 100 | 240 | 210.0 | 463.1 | 0.30 | 2.3 | 3.4 |
| 23172-2CS5 | 360 | 14.1732 | 600 | 23.6220 | 192 | 7.5591 | 4 521 000 | 1 016 000 | 6 950 000 | 1 561 800 | 220 | 213.2 | 470.1 | 0.28 | 2.4 | 3.6 |
| 23176-2CS5 | 380 | 14.9606 | 620 | 24.4094 | 194 | 7.6378 | 4 561 000 | 1 024 900 | 7 100 000 | 1 595 500 | 160 | 232.0 | 511.6 | 0.30 | 2.3 | 3.4 |
| 23180-2CS5 | 400 | 15.7480 | 650 | 25.5906 | 200 | 7.8740 | 4 864 000 | 1 093 000 | 7 650 000 | 1 719 100 | 150 | 255.0 | 562.3 | 0.28 | 2.4 | 3.6 |
| 23184-2CS5 | 420 | 16.5354 | 700 | 27.5591 | 224 | 8.8189 | 5 919 000 | 1 330 100 | 9 300 000 | 2 089 900 | 190 | 350.0 | 771.8 | 0.30 | 2.3 | 3.4 |
| 23188-2CS5 | 440 | 17.3228 | 720 | 28.3465 | 226 | 8.8976 | 6 220 000 | 1 397 800 | 10 000 000 | 2 247 200 | 180 | 360.0 | 793.8 | 0.28 | 2.4 | 3.6 |
| 23192-2CS5 | 460 | 18.1102 | 760 | 29.9213 | 240 | 9.4488 | 6 765 000 | 1 520 200 | 10 800 000 | 2 427 000 | 128 | 427.0 | 941.5 | 0.30 | 2.3 | 3.4 |
| 23196-2CS5 | 480 | 18.8976 | 790 | 31.1024 | 248 | 9.7638 | 7 367 000 | 1 655 500 | 12 000 000 | 2 696 600 | 170 | 485.0 | 1069.4 | 0.30 | 2.3 | 3.4 |

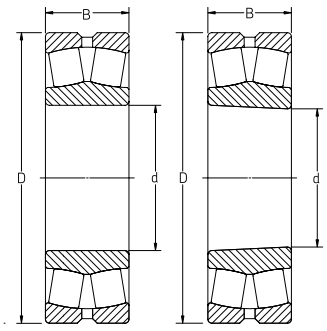
*Consult SKF USA Inc. prior to design change or order placement.*

## SKF Explorer

**Sealed Spherical Roller Bearing**
**Series: 23220-2RS – 23284-2CS5**
**Size: 100 mm – 420 mm**
**3.9370 in – 16.5354 in**

**Series: 23944-2CS**
**Size: 220 mm**
**8.6614 in**

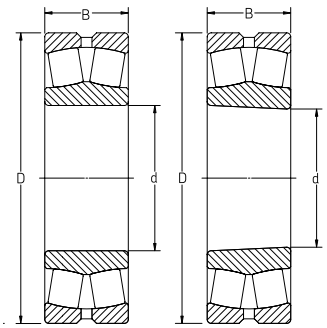
**Series: 24013-2RS5W – 24060-2CS5**
**Size: 65 mm – 300 mm**
**2.5591 in – 11.8110 in**



Cylindrical bore Tapered bore

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 23220-2RS | 100 | 3.9370 | 180 | 7.0866 | 60.3 | 2.3740 | 499 000 | 112 100 | 600 000 | 134 800 | 1 600 | 6.9 | 15.1 | 0.30 | 2.3 | 3.4 |
| 23220-2RS5 | | | 180 | 7.0866 | 60.3 | 2.3740 | 499 000 | 112 100 | 600 000 | 134 800 | 1 600 | 6.9 | 15.1 | 0.30 | 2.3 | 3.4 |
| 23222-2CS5 | 110 | 4.3307 | 200 | 7.8740 | 69.8 | 2.7480 | 627 000 | 140 900 | 765 000 | 171 900 | 640 | 9.9 | 21.7 | 0.33 | 2.0 | 3.0 |
| 23224-2CS5 | 120 | 4.7244 | 215 | 8.4646 | 76 | 2.9921 | 734 000 | 164 900 | 930 000 | 209 000 | 600 | 12.0 | 26.5 | 0.33 | 2.0 | 3.0 |
| 23226-2CS5 | 130 | 5.1181 | 230 | 9.0551 | 80 | 3.1496 | 828 000 | 186 100 | 1 060 000 | 238 200 | 530 | 14.5 | 32.0 | 0.31 | 2.2 | 3.3 |
| 23228-2CS5 | 140 | 5.5118 | 250 | 9.8425 | 88 | 3.4646 | 963 000 | 216 400 | 1 250 000 | 280 900 | 480 | 19.0 | 41.9 | 0.33 | 2.0 | 3.0 |
| 23230-2CS5 | 150 | 5.9055 | 270 | 10.6299 | 96 | 3.7795 | 1 132 000 | 254 400 | 1 460 000 | 328 100 | 430 | 24.5 | 54.0 | 0.33 | 2.0 | 3.0 |
| 23240-2CS5 | 200 | 7.8740 | 360 | 14.1732 | 128 | 5.0394 | 1 950 000 | 438 200 | 2 700 000 | 606 700 | 340 | 58.0 | 127.9 | 0.33 | 2.0 | 3.0 |
| 23272-2CS5 | 360 | 14.1732 | 650 | 25.5906 | 232 | 9.1339 | 5 669 000 | 1 273 900 | 8 300 000 | 1 865 200 | 160 | 332.0 | 732.1 | 0.35 | 1.9 | 2.9 |
| 23284-2CS5 | 420 | 16.5354 | 760 | 29.9213 | 272 | 10.7087 | 7 683 000 | 1 726 500 | 11 600 000 | 2 606 700 | 128 | 535.0 | 1179.7 | 0.35 | 1.9 | 2.9 |
| 23944-2CS | 220 | 8.6614 | 300 | 11.8110 | 60 | 2.3622 | 662 000 | 148 800 | 1 080 000 | 242 700 | 600 | 12.5 | 27.6 | 0.15 | 4.5 | 6.7 |
| 24013-2RS5W | 65 | 2.5591 | 100 | 3.9370 | 35 | 1.3780 | 137 000 | 30 790 | 173 000 | 38 880 | 2 600 | 1.0 | 2.1 | 0.27 | 2.5 | 3.7 |
| 24015-2RS5 | 75 | 2.9528 | 115 | 4.5276 | 40 | 1.5748 | 181 000 | 40 670 | 232 000 | 52 100 | 2 300 | 1.6 | 3.4 | 0.28 | 2.4 | 3.6 |
| 24020-2RS5 | 100 | 3.9370 | 150 | 5.9055 | 50 | 1.9685 | 296 000 | 66 500 | 415 000 | 93 300 | 1 700 | 3.2 | 6.9 | 0.28 | 2.4 | 3.6 |
| 24022-2RS5 | 110 | 4.3307 | 170 | 6.6929 | 60 | 2.3622 | 438 000 | 98 400 | 620 000 | 139 300 | 1 600 | 5.0 | 11.0 | 0.30 | 2.3 | 3.4 |
| 24024-2CS5 | 120 | 4.7244 | 180 | 7.0866 | 60 | 2.3622 | 457 000 | 102 700 | 670 000 | 150 600 | 670 | 5.5 | 12.0 | 0.28 | 2.4 | 3.6 |
| 24026-2CS5 | 130 | 5.1181 | 200 | 7.8740 | 69 | 2.7165 | 570 000 | 128 100 | 830 000 | 186 500 | 600 | 8.1 | 17.8 | 0.30 | 2.3 | 3.4 |
| 24028-2CS5 | 140 | 5.5118 | 210 | 8.2677 | 69 | 2.7165 | 601 000 | 135 100 | 900 000 | 202 200 | 560 | 8.6 | 18.9 | 0.28 | 2.4 | 3.6 |
| 24030-2CS5 | 150 | 5.9055 | 225 | 8.8583 | 75 | 2.9528 | 681 000 | 153 000 | 1 040 000 | 233 700 | 530 | 10.5 | 23.2 | 0.28 | 2.4 | 3.6 |
| 24032-2CS5 | 160 | 6.2992 | 240 | 9.4488 | 80 | 3.1496 | 784 000 | 176 200 | 1 200 000 | 269 700 | 450 | 13.0 | 28.7 | 0.28 | 2.4 | 3.6 |
| 24034-2CS5 | 170 | 6.6929 | 260 | 10.2362 | 90 | 3.5433 | 966 000 | 217 100 | 1 500 000 | 337 100 | 400 | 17.5 | 38.6 | 0.30 | 2.3 | 3.4 |
| 24036-2CS5 | 180 | 7.0866 | 280 | 11.0236 | 100 | 3.9370 | 1 136 000 | 255 300 | 1 730 000 | 388 800 | 380 | 23.0 | 50.7 | 0.31 | 2.2 | 3.3 |
| 24060-2CS5 | 300 | 11.8110 | 460 | 18.1102 | 160 | 6.2992 | 2 827 000 | 635 300 | 4 750 000 | 1 067 400 | 240 | 95.0 | 209.5 | 0.31 | 2.2 | 3.3 |

*Consult SKF USA Inc. prior to design change or order placement.*




Cylindrical bore Tapered bore

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 24120-2RS5 | 100 | 3.9370 | 165 | 6.4961 | 65 | 2.5591 | 470 000 | 105 600 | 640 000 | 143 800 | 1 700 | 5.7 | 12.5 | 0.35 | 1.9 | 2.9 |
| 24122-2CS5 | 110 | 4.3307 | 180 | 7.0866 | 69 | 2.7165 | 540 000 | 121 300 | 750 000 | 168 500 | 630 | 7.1 | 15.7 | 0.35 | 1.9 | 2.9 |
| 24124-2CS5 | 120 | 4.7244 | 200 | 7.8740 | 80 | 3.1496 | 680 000 | 152 800 | 950 000 | 213 500 | 560 | 10.3 | 22.7 | 0.37 | 1.8 | 2.7 |
| 24126-2CS5 | 130 | 5.1181 | 210 | 8.2677 | 80 | 3.1496 | 701 000 | 157 500 | 1 000 000 | 224 700 | 530 | 11.0 | 24.3 | 0.33 | 2.0 | 3.0 |
| 24128-2CS5 | 140 | 5.5118 | 225 | 8.8583 | 85 | 3.3465 | 797 000 | 179 100 | 1 160 000 | 260 700 | 450 | 13.5 | 29.8 | 0.35 | 1.9 | 2.9 |
| 24130-2CS5 | 150 | 5.9055 | 250 | 9.8425 | 100 | 3.9370 | 1 056 000 | 237 300 | 1 530 000 | 343 800 | 400 | 20.0 | 44.1 | 0.37 | 1.8 | 2.7 |
| 24132-2CS5 | 160 | 6.2992 | 270 | 10.6299 | 109 | 4.2913 | 1 229 000 | 276 200 | 1 760 000 | 395 500 | 380 | 25.0 | 55.1 | 0.37 | 1.8 | 2.7 |
| 24134-2CS5 | 170 | 6.6929 | 280 | 11.0236 | 109 | 4.2913 | 1 273 000 | 286 100 | 1 860 000 | 418 000 | 360 | 27.5 | 60.6 | 0.35 | 1.9 | 2.9 |
| 24136-2CS5 | 180 | 7.0866 | 300 | 11.8110 | 118 | 4.6457 | 1 452 000 | 326 300 | 2 160 000 | 485 400 | 360 | 34.5 | 76.1 | 0.37 | 1.8 | 2.7 |
| 24138-2CS5 | 190 | 7.4803 | 320 | 12.5984 | 128 | 5.0394 | 1 655 000 | 371 900 | 2 500 000 | 561 800 | 340 | 43.0 | 94.8 | 0.37 | 1.8 | 2.7 |
| 24140-2CS5 | 200 | 7.8740 | 340 | 13.3858 | 140 | 5.5118 | 1 871 000 | 420 400 | 2 800 000 | 629 200 | 320 | 53.5 | 118.0 | 0.37 | 1.8 | 2.7 |
| 24152-2CS5 | 260 | 10.2362 | 440 | 17.3228 | 180 | 7.0866 | 3 092 000 | 694 800 | 4 900 000 | 1 101 100 | 240 | 109.0 | 240.3 | 0.40 | 1.7 | 2.5 |
| 24156-2CS5 | 280 | 11.0236 | 460 | 18.1102 | 180 | 7.0866 | 3 190 000 | 716 900 | 5 100 000 | 1 146 100 | 220 | 115.0 | 253.6 | 0.37 | 1.8 | 2.7 |
| 24160-2CS5 | 300 | 11.8110 | 500 | 19.6850 | 200 | 7.8740 | 3 881 000 | 872 100 | 6 300 000 | 1 415 700 | 212 | 156.0 | 344.0 | 0.37 | 1.8 | 2.7 |

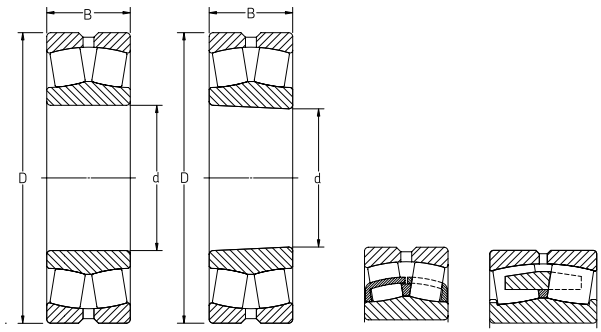
*Consult SKF USA Inc. prior to design change or order placement.*

**Shaker screen**

**SKF Explorer**

**Series: 22308 E/VA405 – 22322 EJA/VA405**
**Size: 110 mm – 75 mm**
**4.3307 in – 2.9528 in**

**Series: 22324 CCJA/W33VA405 – 22348 CCJA/W33VA405**
**Size: 110 mm – 180 mm**
**4.3307 in – 7.0866 in**




Cylindrical bore | Tapered bore | CC design | CA, CAF & CAFB design

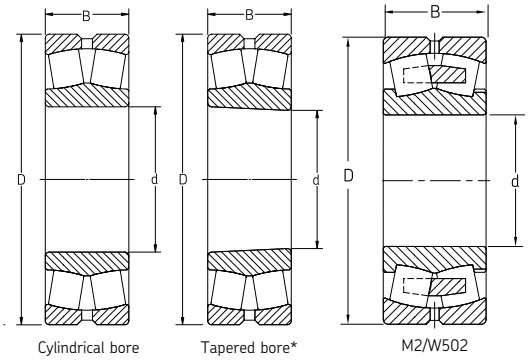
| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside dimeter D | | Width B | | Dynamic C | | Static $C_0$ | | Limiting speed | | | | | |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | kg | lb | e | $Y_1$ | $Y_2$ |
| 22308 E/VA405 | 110 | 4.3307 | 180 | 7.0866 | 60.3 | 2.3740 | 499 000 | 112 100 | 600 000 | 134 800 | 1 600 | 6.9 | 15.1 | 0.30 | 2.3 | 3.4 |
| 22309 E/VA405 | 120 | 4.7244 | 180 | 7.0866 | 60.3 | 2.3740 | 499 000 | 112 100 | 600 000 | 134 800 | 1 600 | 6.9 | 15.1 | 0.30 | 2.3 | 3.4 |
| 22310 E/VA405 | 120 | 4.7244 | 180 | 7.0866 | 60.3 | 2.3740 | 499 000 | 112 100 | 600 000 | 134 800 | 1 600 | 6.9 | 15.1 | 0.30 | 2.3 | 3.4 |
| 22311 E/VA405 | 110 | 4.3307 | 200 | 7.8740 | 69.8 | 2.7480 | 627 000 | 140 900 | 765 000 | 171 900 | 640 | 9.9 | 21.7 | 0.33 | 2.0 | 3.0 |
| 22312 E/VA405 | 120 | 4.7244 | 215 | 8.4646 | 76 | 2.9921 | 734 000 | 164 900 | 930 000 | 209 000 | 600 | 12.0 | 26.5 | 0.33 | 2.0 | 3.0 |
| 22313 E/VA405 | 130 | 5.1181 | 230 | 9.0551 | 80 | 3.1496 | 828 000 | 186 100 | 1 060 000 | 238 200 | 530 | 14.5 | 32.0 | 0.31 | 2.2 | 3.3 |
| 22314 E/VA405 | 140 | 5.5118 | 250 | 9.8425 | 88 | 3.4646 | 963 000 | 216 400 | 1 250 000 | 280 900 | 480 | 19.0 | 41.9 | 0.33 | 2.0 | 3.0 |
| 22315 EJA/VA405 | 150 | 5.9055 | 270 | 10.6299 | 96 | 3.7795 | 1 132 000 | 254 400 | 1 460 000 | 328 100 | 430 | 24.5 | 54.0 | 0.33 | 2.0 | 3.0 |
| 22316 EJA/VA405 | 200 | 7.8740 | 360 | 14.1732 | 128 | 5.0394 | 1 950 000 | 438 200 | 2 700 000 | 606 700 | 340 | 58.0 | 127.9 | 0.33 | 2.0 | 3.0 |
| 22317 EJA/VA405 | 360 | 14.1732 | 650 | 25.5906 | 232 | 9.1339 | 5 669 000 | 1 273 900 | 8 300 000 | 1 865 200 | 160 | 332.0 | 732.1 | 0.35 | 1.9 | 2.9 |
| 22318 EJA/VA405 | 420 | 16.5354 | 760 | 29.9213 | 272 | 10.7087 | 7 683 000 | 1 726 500 | 11 600 000 | 2 606 700 | 128 | 535.0 | 1179.7 | 0.35 | 1.9 | 2.9 |
| 22319 EJA/VA405 | 220 | 8.6614 | 300 | 11.8110 | 60 | 2.3622 | 662 000 | 148 800 | 1 080 000 | 242 700 | 600 | 12.5 | 27.6 | 0.15 | 4.5 | 6.7 |
| 22320 EJA/VA405 | 65 | 2.5591 | 100 | 3.9370 | 35 | 1.3780 | 137 000 | 30 790 | 173 000 | 38 880 | 2 600 | 1.0 | 2.1 | 0.27 | 2.5 | 3.7 |
| 22322 EJA/VA405 | 75 | 2.9528 | 115 | 4.5276 | 40 | 1.5748 | 181 000 | 40 670 | 232 000 | 52 100 | 2 300 | 1.6 | 3.4 | 0.28 | 2.4 | 3.6 |
| 22324 CCJA/W33VA405 | 110 | 4.3307 | 170 | 6.6929 | 60 | 2.3622 | 438 000 | 98 400 | 620 000 | 139 300 | 1 600 | 5.0 | 11.0 | 0.30 | 2.3 | 3.4 |
| 22326 CCJA/W33VA405 | 120 | 4.7244 | 180 | 7.0866 | 60 | 2.3622 | 457 000 | 102 700 | 670 000 | 150 600 | 670 | 5.5 | 12.0 | 0.28 | 2.4 | 3.6 |
| 22328 CCJA/W33VA405 | 130 | 5.1181 | 200 | 7.8740 | 69 | 2.7165 | 570 000 | 128 100 | 830 000 | 186 500 | 600 | 8.1 | 17.8 | 0.30 | 2.3 | 3.4 |
| 22330 CCJA/W33VA405 | 140 | 5.5118 | 210 | 8.2677 | 69 | 2.7165 | 601 000 | 135 100 | 900 000 | 202 200 | 560 | 8.6 | 18.9 | 0.28 | 2.4 | 3.6 |
| 22332 CCJA/W33VA405 | 150 | 5.9055 | 225 | 8.8583 | 75 | 2.9528 | 681 000 | 153 000 | 1 040 000 | 233 700 | 530 | 10.5 | 23.2 | 0.28 | 2.4 | 3.6 |
| 22334 CCJA/W33VA405 | 160 | 6.2992 | 240 | 9.4488 | 80 | 3.1496 | 784 000 | 176 200 | 1 200 000 | 269 700 | 450 | 13.0 | 28.7 | 0.28 | 2.4 | 3.6 |
| 22336 CCJA/W33VA405 | 170 | 6.6929 | 260 | 10.2362 | 90 | 3.5433 | 966 000 | 217 100 | 1 500 000 | 337 100 | 400 | 17.5 | 38.6 | 0.30 | 2.3 | 3.4 |
| 22338 CCJA/W33VA405 | 180 | 7.0866 | 280 | 11.0236 | 100 | 3.9370 | 1 136 000 | 255 300 | 1 730 000 | 388 800 | 380 | 23.0 | 50.7 | 0.31 | 2.2 | 3.3 |
| 22340 CCJA/W33VA405 | 300 | 11.8110 | 460 | 18.1102 | 160 | 6.2992 | 2 827 000 | 635 300 | 4 750 000 | 1 067 400 | 240 | 95.0 | 209.5 | 0.31 | 2.2 | 3.3 |
| 22344 CCJA/W33VA405 | 170 | 6.6929 | 260 | 10.2362 | 90 | 3.5433 | 966 000 | 217 100 | 1 500 000 | 337 100 | 400 | 17.5 | 38.6 | 0.30 | 2.3 | 3.4 |
| 22348 CCJA/W33VA405 | 180 | 7.0866 | 280 | 11.0236 | 100 | 3.9370 | 1 136 000 | 255 300 | 1 730 000 | 388 800 | 380 | 23.0 | 50.7 | 0.31 | 2.2 | 3.3 |

*Consult SKF USA Inc. prior to design change or order placement.*

**Shaker screen**
**Series: 452308 M2/W502 – 452340 M2/W502**
**Size: 40 mm – 200 mm**
**1.5748 in – 7.8740 in**

**Series: 453322 M2/W502 – 453332 M2/W502**
**Size: 110 mm – 160 mm**
**4.3307 in – 6.2992 in**

**Series: 453322 EJA/VA405 – 453332 CCJA/VA405**
**Size: 110 mm – 160 mm**
**4.3307 in – 6.2992 in**

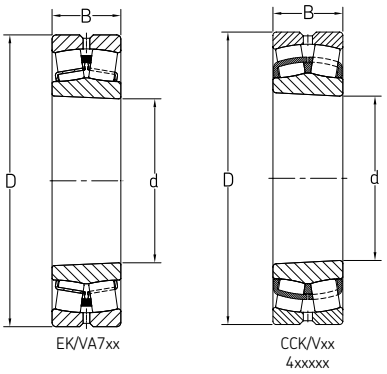



| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside diameter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | e | $Y_1$ | $Y_2$ |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | - | - | - |
| **452308 M2/W502** | 40 | 1.5748 | 90 | 3.5433 | 33 | 1.2992 | 107 000 | 24 100 | 112 000 | 25 200 | 5 600 | 8 000 | 1.00 | 2.20 | 0.37 | 1.80 | 2.70 |
| **452309 M2/W502** | 45 | 1.7717 | 100 | 3.9370 | 36 | 1.4173 | 133 000 | 29 900 | 150 000 | 33 700 | 4 800 | 7 000 | 1.35 | 3.00 | 0.37 | 1.80 | 2.70 |
| **452310 M2/W502** | 50 | 1.9685 | 110 | 4.3307 | 40 | 1.5748 | 168 000 | 37 800 | 186 000 | 41 800 | 4 300 | 6 300 | 1.85 | 4.10 | 0.37 | 1.80 | 2.70 |
| **452311 M2/W502** | 55 | 2.1654 | 120 | 4.7244 | 43 | 1.6929 | 199 000 | 44 700 | 232 000 | 52 200 | 4 000 | 6 000 | 2.35 | 5.20 | 0.35 | 1.90 | 2.90 |
| **452312 M2/W502** | 60 | 2.3622 | 130 | 5.1181 | 46 | 1.8110 | 235 000 | 52 800 | 280 000 | 62 900 | 3 800 | 5 300 | 2.95 | 6.50 | 0.35 | 1.90 | 2.90 |
| **452313 M2/W502** | 65 | 2.5591 | 140 | 5.5118 | 48 | 1.8898 | 258 000 | 58 000 | 305 000 | 68 600 | 3 400 | 5 000 | 3.55 | 7.80 | 0.35 | 1.90 | 2.90 |
| **452314 M2/W502** | 70 | 2.7559 | 150 | 5.9055 | 51 | 2.0079 | 299 000 | 67 200 | 360 000 | 80 900 | 3 200 | 4 500 | 4.30 | 9.50 | 0.35 | 1.90 | 2.90 |
| **452316 M2/W502** | 80 | 3.1496 | 170 | 6.6929 | 58 | 2.2835 | 374 000 | 84 100 | 465 000 | 104 500 | 2 800 | 4 000 | 6.10 | 13.40 | 0.35 | 1.90 | 2.90 |
| **452317 M2/W502** | 85 | 3.3465 | 180 | 7.0866 | 60 | 2.3622 | 408 000 | 91 700 | 490 000 | 110 200 | 2 600 | 3 800 | 7.25 | 16.00 | 0.33 | 2.00 | 3.00 |
| **452318 M2/W502** | 90 | 3.5433 | 190 | 7.4803 | 64 | 2.5197 | 460 000 | 103 400 | 570 000 | 128 100 | 2 400 | 3 600 | 8.60 | 19.00 | 0.35 | 1.90 | 2.90 |
| **452319 M2/W502** | 95 | 3.7402 | 200 | 7.8740 | 67 | 2.6378 | 518 000 | 116 400 | 670 000 | 150 600 | 2 400 | 3 400 | 10.00 | 22.00 | 0.35 | 1.90 | 2.90 |
| **452320 M2/W502** | 100 | 3.9370 | 215 | 8.4646 | 73 | 2.8740 | 610 000 | 137 100 | 800 000 | 179 800 | 2 200 | 3 200 | 13.00 | 28.70 | 0.35 | 1.90 | 2.90 |
| **452322 M2/W502** | 110 | 4.3307 | 240 | 9.4488 | 80 | 3.1496 | 725 000 | 163 000 | 965 000 | 216 900 | 2 000 | 2 800 | 18.00 | 39.70 | 0.35 | 1.90 | 2.90 |
| **452324 M2/W502** | 120 | 4.7244 | 260 | 10.2362 | 86 | 3.3858 | 845 000 | 190 000 | 1 140 000 | 256 300 | 1 800 | 2 600 | 22.00 | 48.50 | 0.35 | 1.90 | 2.90 |
| **452326 M2/W502** | 130 | 5.1181 | 280 | 11.0236 | 93 | 3.6614 | 978 000 | 219 900 | 1 320 000 | 296 700 | 1 700 | 2 400 | 28.50 | 62.80 | 0.35 | 1.90 | 2.90 |
| **452328 M2/W502** | 140 | 5.5118 | 300 | 11.8110 | 102 | 4.0157 | 1 130 000 | 254 000 | 1 560 000 | 350 700 | 1 500 | 2 200 | 34.50 | 76.10 | 0.35 | 1.90 | 2.90 |
| **452330 M2/W502** | 150 | 5.9055 | 320 | 12.5984 | 108 | 4.2520 | 1 290 000 | 290 000 | 1 800 000 | 404 600 | 1 400 | 2 000 | 41.50 | 91.50 | 0.35 | 1.90 | 2.90 |
| **452332 M2/W502** | 160 | 6.2992 | 340 | 13.3858 | 114 | 4.4882 | 1 400 000 | 314 700 | 1 960 000 | 440 600 | 1 300 | 1 900 | 50.00 | 110.20 | 0.35 | 1.90 | 2.90 |
| **452340 M2/W502** | 200 | 7.8740 | 420 | 16.5354 | 138 | 5.4331 | 1 020 000 | 229 300 | 2 900 000 | 651 900 | 1 100 | 1 500 | 93.00 | 205.00 | 0.33 | 2.00 | 3.00 |
| **453322 M2/W502** | 110 | 4.3307 | 240 | 9.4488 | 92.1 | 3.6260 | 817 000 | 183 700 | 1 100 000 | 247 300 | 1 900 | 2 800 | 20.50 | 45.20 | 0.40 | 1.70 | 2.50 |
| **453324 M2/W502** | 120 | 4.7244 | 260 | 10.2362 | 106 | 4.1732 | 978 000 | 219 900 | 1 340 000 | 301 200 | 1 700 | 2 600 | 27.00 | 59.50 | 0.43 | 1.60 | 2.30 |
| **453328 M2/W502** | 140 | 5.5118 | 300 | 11.8110 | 118 | 4.6457 | 1 240 000 | 278 800 | 1 730 000 | 388 900 | 1 500 | 2 200 | 40.90 | 90.20 | 0.40 | 1.70 | 2.50 |
| **453332 M2/W502** | 160 | 6.2992 | 340 | 13.3858 | 136 | 5.3543 | 1 640 000 | 368 700 | 2 400 000 | 539 500 | 1 300 | 1 900 | 60.20 | 132.70 | 0.40 | 1.70 | 2.50 |
| **453322 EJA/VA405** | 110 | 4.3307 | 240 | 9.4488 | 92.1 | 3.6260 | 950 000 | 213 600 | 1 120 000 | 251 800 | 2 000 | 2 800 | 20.50 | 45.20 | 0.33 | 2.00 | 3.00 |
| **453324 CCJA/VA405** | 120 | 4.7244 | 260 | 10.2362 | 106 | 4.1732 | 965 000 | 216 900 | 1 120 000 | 251 800 | 2 000 | 2 600 | 27.00 | 59.50 | 0.35 | 1.90 | 2.90 |
| **453326 CCJA/VA405** | 130 | 5.1181 | 280 | 11.0236 | 112 | 4.4094 | 1 120 000 | 251 800 | 1 320 000 | 296 700 | 1 800 | 2 400 | 35.50 | 78.30 | 0.35 | 1.90 | 2.90 |
| **453328 CCJA/VA405** | 140 | 5.5118 | 300 | 11.8110 | 118 | 4.6457 | 1 290 000 | 290 000 | 1 560 000 | 350 700 | 1 700 | 2 200 | 40.90 | 90.20 | 0.35 | 1.90 | 2.90 |
| **453330 CCJA/VA405** | 150 | 5.9055 | 320 | 12.5984 | 128 | 5.0394 | 1 460 000 | 328 200 | 1 760 000 | 395 600 | 1 600 | 2 000 | 47.50 | 104.70 | 0.35 | 1.90 | 2.90 |
| **453332 CCJA/VA405** | 160 | 6.2992 | 340 | 13.3858 | 136 | 5.3543 | 1 600 000 | 359 700 | 1 960 000 | 440 600 | 1 500 | 1 900 | 60.20 | 132.70 | 0.35 | 1.90 | 2.90 |

*** Tapered (K) bore available on limited sizes.**

***Consult SKF USA Inc. prior to design change or order placement.***

**Printing press**
**Series: 22209 CCK/VA759 – 23226 VAD**
**Size: 45.000 mm – 130.000 mm**
**1.7717 in – 5.1181 in**

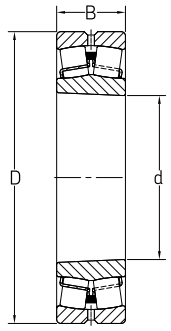



Please contact SKF Applications Engineering for tapered journal (X drawings) details.

| Designation | | Principal dimensions | | | | | | Basic load ratings | | | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Current | Basic/ replaced design | Bore d | | Outside diameter D | | Width B | | Dynamic C | | Static $C_0$ | | | | e | $Y_1$ | $Y_2$ |
| | | mm | in | mm | in | mm | in | N | lbf | N | lbf | kg | lb | - | - | - |
| **22209 CCK/VA759** | **22209 CCK/W33** | 45.000 | 1.7717 | 85 | 3.3465 | 23.0 | 0.9055 | 138 000 | 31 000 | 160 000 | 31 100 | 1.35 | 3.00 | 0.26 | 2.6 | 3.9 |
| **22211 EK/VA751** | **22211 VAE** | 55.000 | 2.1654 | 100 | 3.9370 | 25.0 | 0.9843 | 99 500 | 22 400 | 118 000 | 26 500 | 0.82 | 1.80 | 0.24 | 2.8 | 4.2 |
| **22212 EK/VA751** | **22212 VAD** | 60.000 | 2.3622 | 110 | 4.3307 | 28.0 | 1.1024 | 122 000 | 27 000 | 146 000 | 32 800 | 1.10 | 2.45 | 0.24 | 2.8 | 4.2 |
| **22212 EK/VA7582‡** | **22212 EK/VA751** | 60.000 | 2.3622 | 110 | 4.3307 | 28.0 | 1.1024 | 122 000 | 27 000 | 146 000 | 32 800 | 1.10 | 2.45 | 0.24 | 2.8 | 4.2 |
| **22220 VAE** | **22220 CCK/W33** | 100.000 | 3.9370 | 180 | 7.0866 | 46.0 | 1.8110 | 311 000 | 70 000 | 415 000 | 93 300 | 4.85 | 10.50 | 0.24 | 2.8 | 4.2 |
| **22220 EK/VA751** | **22220 EK/VA751** | 100.000 | 3.9370 | 180 | 7.0866 | 46.0 | 1.8110 | 425 000 | 95 500 | 490 000 | 110 200 | 4.80 | 10.60 | 0.24 | 2.8 | 4.2 |
| **22230 VAB** | **22230 CCK/W33** | 150.000 | 5.9055 | 270 | 10.6299 | 73.0 | 2.8740 | 736 000 | 166 000 | 1 080 000 | 243 000 | 18.00 | 39.50 | 0.26 | 2.6 | 3.9 |
| **22309 EK/VA751** | **450918** | 45.000 | 1.7717 | 100 | 3.9370 | 36.0 | 1.4173 | 138 000 | 31 000 | 160 000 | 31 100 | 1.35 | 3.00 | 0.37 | 1.8 | 2.7 |
| **22310 EK/VA751** | **467964** | 50.000 | 1.9685 | 110 | 4.3307 | 40.0 | 1.5748 | 176 000 | 39 600 | 200 000 | 45 000 | 1.85 | 4.10 | 0.37 | 1.8 | 2.7 |
| **22311 EK/VA751** | **22311 VAE** | 55.000 | 2.1654 | 120 | 4.7244 | 43.0 | 1.6929 | 199 000 | 44 800 | 232 000 | 52 200 | 2.35 | 5.20 | 0.35 | 1.9 | 2.9 |
| **22312 EK/VA751** | **467000** | 60.000 | 2.3622 | 130 | 5.1181 | 46.0 | 1.8110 | 235 000 | 52 900 | 280 000 | 63 000 | 2.95 | 6.50 | 0.35 | 1.9 | 2.9 |
| **22312 EK/VA7582‡** | **22312 EK/VA7583‡‡** | 60.000 | 2.3622 | 130 | 5.1181 | 46.0 | 1.8110 | 235 000 | 52 900 | 280 000 | 63 000 | 2.95 | 6.50 | 0.35 | 1.9 | 2.9 |
| **22312 EK/VA7583‡‡** | **22312 EK/VA751** | 60.000 | 2.3622 | 130 | 5.1181 | 46.0 | 1.8110 | 235 000 | 52 900 | 280 000 | 63 000 | 2.95 | 6.50 | 0.35 | 1.9 | 2.9 |
| **22315 CCK/VA755** | **22315 CCK/W33** | 75.000 | 2.9528 | 160 | 6.2992 | 55.0 | 2.1654 | 345 000 | 77 600 | 430 000 | 96 700 | 5.25 | 11.50 | 0.35 | 1.9 | 2.9 |
| **22315 VAE‡‡** | **466915** | 75.000 | 2.9528 | 160 | 6.2992 | 55.0 | 2.1654 | 345 000 | 77 600 | 430 000 | 96 700 | 5.25 | 11.50 | 0.35 | 1.9 | 2.9 |
| **22315 VAH‡** | **22315 VAE‡‡** | 75.000 | 2.9528 | 160 | 6.2992 | 55.0 | 2.1654 | 345 000 | 77 600 | 430 000 | 96 700 | 5.25 | 11.50 | 0.35 | 1.9 | 2.9 |
| **22319 VAC** | **22319 CCK/W33** | 95.000 | 3.7402 | 200 | 7.8740 | 67.0 | 2.6378 | 518 000 | 117 000 | 670 000 | 151 000 | 10.00 | 22.00 | 0.35 | 1.9 | 2.9 |
| **23122 VAF** | **23122 CCK/W33** | 110.000 | 4.3307 | 180 | 7.0866 | 56.0 | 2.2047 | 374 000 | 84 000 | 585 000 | 132 000 | 5.45 | 12.00 | 0.30 | 2.3 | 3.4 |
| **23124 VAA** | **23124 CCK/W33** | 120.000 | 4.7244 | 200 | 7.7840 | 62.0 | 2.4409 | 437 000 | 98 300 | 695 000 | 156 000 | 7.80 | 17.00 | 0.28 | 2.4 | 3.6 |
| **23130 VAA**** | **23130 CCK/W33** | 151.333 | 5.9579 | 250 | 9.8425 | 80.0 | 3.1496 | 725 000 | 163 000 | 1 200 000 | 270 000 | 16.00 | 35.50 | 0.30 | 2.3 | 3.4 |
| **23220 VAA** | **23220 CCK/W33** | 100.000 | 3.9370 | 180 | 7.0866 | 60.3 | 2.3470 | 414 000 | 93 200 | 600 000 | 135 000 | 6.70 | 15.00 | 0.33 | 2.0 | 3.0 |
| **ECB 23220 VAA** | **EVB 23220 VAA** | 100.000 | 3.9370 | 180 | 7.0866 | 60.3 | 2.3470 | 414 000 | 93 200 | 600 000 | 135 000 | 6.70 | 15.00 | 0.33 | 2.0 | 3.0 |
| **23222 CCK/VA756** | **23222 CCK/W33** | 110.000 | 4.3307 | 200 | 7.8740 | 69.8 | 2.7480 | 518 000 | 117 000 | 765 000 | 172 000 | 9.70 | 21.50 | 0.33 | 2.0 | 3.0 |
| **23226 VAD** | **23226 CCK/W33** | 130.000 | 5.1181 | 230 | 9.0551 | 80.0 | 3.1496 | 690 000 | 155 000 | 1 060 000 | 238 000 | 14.00 | 31.00 | 0.33 | 2.0 | 3.0 |

* Special bore size
** Controlled inner ring width
‡ Coater roll bearing w/ .000050 runout max
‡‡ Coater roll bearing w/ .000075 runout max.

***Consult SKF USA Inc. prior to design change or order placement.***



45xxxx & 46xxxx

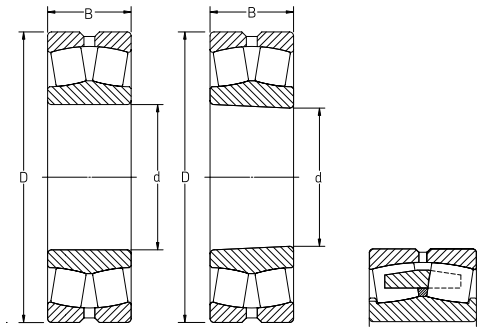
Please contact SKF Applications Engineering for tapered journal (X drawings) details.

| Designation | | Principal dimensions | | | | | | Basic load ratings | | | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Current | Basic/ replaced design | Bore d | | Outside diameter D | | Width B | | Dynamic C | | Static $C_0$ | | | | e | $Y_1$ | $Y_2$ |
| | | mm | in | mm | in | mm | in | N | lbf | N | lbf | kg | lb | - | - | - |
| **453538** | **22210 CCK/W33** | 50.000 | 1.9685 | 90 | 3.5433 | 23.0 | .9055 | 84 500 | 19 000 | 100 000 | 22 500 | 0.60 | 1.30 | 0.24 | 2.8 | 4.2 |
| **454548** | **23126 CCK/W33** | 130.000 | 5.1181 | 210 | 8.2677 | 64.0 | 2.5197 | 489 000 | 110 000 | 780 000 | 175 000 | 8.55 | 19.00 | 0.28 | 2.4 | 3.6 |
| **458681** | **22217 CCK/W33** | 85.000 | 3.3465 | 150 | 5.9055 | 36.0 | 1.4173 | 210 000 | 47 200 | 270 000 | 60 700 | 2.55 | 5.60 | 0.22 | 3.0 | 4.6 |
| **465123** | **22216 CCK/W33** | 80.000 | 3.1496 | 140 | 5.5118 | 33.0 | 1.2992 | 176 000 | 39 600 | 228 000 | 51 300 | 2.05 | 4.50 | 0.22 | 3.0 | 4.6 |
| **466144** | **23122 CCK/W33** | 110.000 | 4.3307 | 180 | 7.0866 | 56.0 | 2.2047 | 374 000 | 84 000 | 585 000 | 132 000 | 5.45 | 12.00 | 0.30 | 2.3 | 3.4 |
| **466144 A**** | **23122 CCK/W33** | 110.000 | 4.3307 | 180 | 7.0866 | 56.0 | 2.2047 | 374 000 | 84 000 | 585 000 | 132 000 | 5.45 | 12.00 | 0.30 | 2.3 | 3.4 |
| **466713** | **23230 CCK/W33** | 150.000 | 5.9055 | 270 | 10.6299 | 96.0 | 3.7795 | 937 000 | 211 000 | 1 460 000 | 328 000 | 24.00 | 53.00 | 0.35 | 1.9 | 2.9 |
| **466816** | **23226 CCK/W33** | 130.000 | 5.1181 | 230 | 9.0551 | 80.0 | 3.1496 | 690 000 | 155 000 | 1 060 000 | 238 000 | 14.00 | 31.00 | 0.33 | 2.0 | 3.0 |
| **466817** | **23228 CCK/W33** | 140.000 | 5.5118 | 250 | 9.8425 | 88.0 | 3.4646 | 799 000 | 180 000 | 1 250 000 | 281 000 | 18.50 | 41.00 | 0.33 | 2.0 | 3.0 |
| **466915** | **22315 CCK/W33** | 75.000 | 2.9528 | 160 | 6.2992 | 55.0 | 2.1654 | 345 000 | 77 600 | 430 000 | 96 700 | 5.25 | 11.50 | 0.35 | 1.9 | 2.9 |
| **467304** | **22314 CCK/W33** | 70.000 | 2.7559 | 150 | 5.9055 | 51.0 | 2.0079 | 311 000 | 70 000 | 380 000 | 85 400 | 4.30 | 9.50 | 0.35 | 1.9 | 2.9 |
| **467311** | **22316 CCK/W33** | 80.000 | 3.1496 | 170 | 6.6929 | 58.0 | 2.2835 | 374 000 | 84 200 | 455 000 | 102 000 | 6.20 | 13.50 | 0.35 | 1.9 | 2.9 |
| **467315** | **22317 CCK/W33** | 85.000 | 3.3465 | 180 | 7.0866 | 60.0 | 2.3622 | 420 000 | 94 500 | 520 000 | 117 000 | 7.25 | 16.00 | 0.33 | 2.0 | 3.0 |
| **467418** | **22218 CCK/W33** | 90.000 | 3.5433 | 160 | 6.2992 | 40.0 | 1.5748 | 253 000 | 56 900 | 340 000 | 76 400 | 3.25 | 7.15 | 0.23 | 2.9 | 4.4 |
| **468043** | **23222 CCK/W33** | 110.000 | 4.3307 | 200 | 7.8740 | 69.8 | 2.7480 | 518 000 | 117 000 | 765 000 | 172 000 | 9.70 | 21.50 | 0.33 | 2.0 | 3.0 |
| **468603** | **22222 CCK/W33** | 110.000 | 4.3307 | 200 | 7.8740 | 53.0 | 2.0866 | 408 000 | 91 800 | 560 000 | 126 000 | 7.00 | 15.50 | 0.25 | 2.7 | 4.0 |

* Special bore size
** Controlled inner ring width

*Consult SKF USA Inc. prior to design change or order placement.*

**Special bearings**
**Series: I-26310 CAM2/W33 – ECBI-112630 CAC/W33**
**Size: 200 mm – 350 mm**
**7.8740 in – 13.7795 in**




Cylindrical bore | Tapered bore | CAC & CA design

| Designation | Principal dimensions | | | | | | Basic load ratings | | | | Speed rating | | Mass | | Calculation factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bore d | | Outside diameter D | | Width B | | Dynamic C | | Static $C_0$ | | Reference speed | Limiting speed | | | e | $Y_1$ | $Y_2$ |
| | mm | in | mm | in | mm | in | N | lbf | N | lbf | r/min | r/min | kg | lb | - | - | - |
| **I-26310 CAM2/W33*** | 200 | 7.8740 | 380 | 14.9606 | 126 | 4.9606 | 1 730 000 | 390 000 | 2 700 000 | 610 000 | 750 | 950 | 68.00 | 150.00 | 0.33 | 2.0 | 3.0 |
| **I-26311 CAM2/W33*** | 220 | 8.6614 | 420 | 16.5354 | 138 | 5.4331 | 2 070 000 | 465 000 | 3 200 000 | 720 000 | 670 | 850 | 90.50 | 200.00 | 0.33 | 2.0 | 3.0 |
| **I-28809 CAM2/W33*** | 190 | 7.4803 | 280 | 11.0236 | 67 | 2.6378 | 644 000 | 145 000 | 1 140 000 | 256 000 | 1 700 | 2 200 | 15.00 | 33.00 | 0.21 | 3.2 | 4.8 |
| **I-28814 CAM2/W33*** | 240 | 9.4488 | 350 | 13.7795 | 83 | 3.2677 | 978 000 | 220 000 | 1 830 000 | 411 000 | 850 | 1 100 | 27.50 | 60.50 | 0.21 | 3.2 | 4.8 |
| **I-28821 CACM2/W33*** | 310 | 12.2047 | 455 | 17.9134 | 109 | 4.2913 | 1 680 000 | 378 000 | 3 250 000 | 730 000 | 630 | 800 | 66.00 | 145.00 | 0.21 | 3.2 | 4.8 |
| **I-37611 CAM2/W33**** | 220 | 8.6614 | 420 | 16.5354 | 138 | 5.4331 | 2 070 000 | 465 000 | 3 200 000 | 720 000 | 670 | 850 | 90.50 | 200.00 | 0.33 | 2.0 | 3.0 |
| **I-37617 CA/W33**** | 340 | 13.3858 | 640 | 25.1969 | 190 | 7.4803 | 4 080 000 | 920 000 | 6 550 000 | 1 500 000 | 480 | 600 | 150.00 | 640.00 | 0.30 | 2.3 | 3.4 |
| **I-112618 CA/W33**** | 250 | 9.8425 | 410 | 16.1417 | 128 | 5.0394 | 1 760 000 | 400 000 | 3 100 000 | 700 000 | 630 | 800 | 68.00 | 150.00 | 0.30 | 2.3 | 3.4 |
| **ECBI-112630 CAC/W33**** | 350 | 13.7795 | 590 | 23.2283 | 192 | 7.5591 | 3 740 000 | 840 500 | 6 800 000 | 1 530 000 | 430 | 530 | 220.00 | 485.00 | 0.30 | 2.3 | 3.4 |

* Cylindrical bore
** Tapered bore

*Consult SKF USA Inc. prior to design change or order placement.*